Marine Stewardship Council fisheries assessments

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Curonian Lagoon Perch and Pike-perch

Photo credit by D. Yarotsky (AtlantNIRO – Atlantic branch of FGBNU VNIRO, Kaliningrad)

Public Certification Report

Conformity Assessment Body (CAB)	UCSL United Certification Systems Limited
Assessment team	Geir Hønneland, Petr Vasilets, Blanka Lederer, Mohamed Samy-Kamal
Fishery client	P&G International Trading GmbH
Assessment type	Initial Assessment
Date	6 September 2022

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2 Glossary

ACAP	Agreement on the Conservation of Albatrosses and Petrels
ACCOBAMS	Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area
ACDR	Announcement Comment Draft Report
AEWA	Agreement on the Conservation of African-Eurasian Migratory Waterbirds
AIF	Absolute individual fecundity
AIS	Automatic Identification System
APC FCF	Agricultural Production Cooperative Fishing Collective Farm (in Russian – Сельскохозяйственный производственный кооператив Рыболовецкий Колхоз)
ASCOBANS	Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas
AtlantNIRO	Atlantic branch of the All-Russian Science Research Institute of Fisheries and Oceanography
BaltNIRO	Baltic Research Institute of Marine Fisheries and Oceanography (since 1962 and now – AtlantNIRO)
CAB	Conformity Assessment Body
CBD	Convention on Biological Diversity
CFMC	Centre of System for Monitoring of Fisheries and Communication, FGBU (Federal State Budgetary Institution)
CFP	EU's Common Fisheries Policy
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CPUE	Catches Per Unit Effort
CR	Critically Endangered – Category of the IUCN Red List for ETP species (in a particularly and extremely critical state)
DVR	Daily Vessel (catch) Report
EC	European Council
EEZ	Exclusive Economic Zone
EN	Endangered – Category of the IUCN Red List for ETP species (very high risk of extinction in the wild, meets any of criteria A to E for Endangered)
ETP	Endangered, Threatened and Protected species
EU	European Union
FAO	Food and Agriculture Organization
FCP	Fisheries Certification Process
FCR v2.1	Fishery Certification Requirements Version 2.1
FFA	Federal Fisheries Agency (or in Russian – Rosrybolovstvo)
FGBNU	Federal State Budgetary Research Institution
FGBU	Federal State Budgetary Institution
FSB	Federal Security Service of Russian Federation
FZ	Federal Low (in Russian – Федеральный закон, or ФЗ)
Glavrybvod	FGBU "Glavrybvod" – Federal State Budgetary Institution "Main Basin Administration for Fisheries and the Conservation of Aquatic Biological Resources" (In Russian: ФГБУ "Главрыбвод" – Федеральное государственное бюджетное учреждение «Главное бассейновое управление по рыболовству и сохранению водных биологических ресурсов»)

GT	Generation time
HCR	Harvest Control Rule
HELCOM	Baltic Marine Environment Protection Commission based on Convention for the protection of the marine environment of the Baltic Sea region (Helsinki Convention)
ICES	International Council for the Exploration of the Sea
IUCN	International Union for Conservation of Nature
IUU	Illegal Unreported and Unregulated (fishing)
JRLFC	Joint Russian-Lithuanian Fisheries Commission
KAFKA	The mathematical model "Cohort analysis with Kalman filter" (KAFKA, or in Russian – КАФКА) was developed to estimate age-structured stocks of hydrobionts (Mikheev, 2016)
KSTU	Kaliningrad State Technical University
l	In Fishing Rules (2020) l – the length of the fish is determined by measuring from the top of the snout (with the mouth closed) to the base of the middle rays of the caudal fin
L	In Fishing Rules (2020) L – the length of the fish is determined by measuring from the tip of the snout (with the mouth closed) to the end of the longest ray of the caudal fin, at the minimum angle of divergence of the upper and lower lobes of the caudal fin
LC	Least Concern - Category of the IUCN Red List for ETP species (unlikely to become extinct in the near future)
LLC	Limited Liability Company
LME	Large marine ecosystem
LTL	Low Trophic Level (species)
MCS	Monitoring Control and Surveillance
MLS	Minimum Landing Size
MSC	Marine Stewardship Council
NGOs	Non-Governmental Organizations
PA	Precautionary approach
PC	Possible catch = Recommended Catch (Yield)
PCDR	Public Comment Draft Report
PIs	Performance Indicators
PRI	Point of Recruitment Impairment
PSA	Productivity Susceptibility Analysis
RBF	Risk-Based Framework
RC	Recommended Catch (Yield) = Possible catch (PC)
RF	Russian Federation
RFR	Rule of Fishery Regulation (Russian analogy of HCR; in Russian – Правило Регулирования Промысла, or ПРП)
Rospripodnadzor	Federal Service for Supervision of Nature Management (In Russian: Rosprirodnadzor / Росприроднадзор)
SCOS	Special Committee on Seals
SGs	Scoring Guideposts
SI	Scoring Issue
SL	Standard length
SPA	Special Protected Area
SVPA	Separable virtual population analysis

TAC	Total Allowable Catch
TBD	To be determinated
TL	Total length
UCSL	United Certification Systems Limited, CAB
UN	United Nations Organization
UoA	Unit of Assessment
UoC	Unit of Certification
VME	Vulnerable Marine Ecosystem
VMS	Vessel Monitoring System
VNIRO	All-Russian Federal Research Institute of Fisheries & Oceanography, FGBNU (Federal State Budgetary Research Institution)
VU	Vulnerable - Category of the IUCN Red List for ETP species (meets one of the 5 red list criteria and thus considered to be at high risk of unnatural (human-caused) extinction without further human intervention)
WB TA FFA	West-Baltic (Zapadno-Baltiyskoe) Territorial Administration of Federal Fisheries Agency
WWF	Worldwide Fund for Nature

List of symbols and reference points

B	Biomass
B_{lim}	Minimum biomass below which recruitment is expected to be impaired or the stock dynamics are unknown.
B_{MSY}	Biomass corresponding to the maximum sustainable yield (biological reference point); the peak value on a domed yield-per-recruit curve.
B_{pa}	Precautionary biomass below which spawning stock biomass (SSB) should not be allowed to fall to safeguard it against falling to B_{lim}.
$B_{trigger}$	Value of spawning stock biomass (SSB) that triggers a specific management action.
cm	centimetre
F	Instantaneous rate of fishing mortality.
F_{lim}	Fishing mortality rate that is expected to be associated with stock ‘collapse’ if maintained over a longer time (precautionary reference point).
F_{MSY}	F giving maximum sustainable yield (biological reference point).
F_{pa}	Precautionary buffer to avoid that true fishing mortality is at F_{lim} when the perceived fishing mortality is at F_{pa}.
g	grams
K	Carrying Capacity
kg	kilograms
km	kilometres
L or TL	Length, or Total length
l	Length (in formulas)
M	Natural mortality rate
m	meters
MSY	Maximum Sustainable Yield
N	Abundance of stock (in number of fish or specimens, individuals)
SSB	Spawning Stock Biomass
t	Age (in formulas)
t	tons
W or *w*	Weight

3 Executive summary

This report is the Public CertificationReport (PCR) which provides details of the MSC assessment process for "Curonian Lagoon Perch and Pike-perch" fishery.

It follows the Announcement Comment Draft Report (ACDR) MSC published in August 2021. The Assessment Team prepared the Client and Peer Review Draft Report (CPRDR) report after receiving additional information during a site visit in December 2021. Based on this information, the report presented background information and provisional scores for three Principles and their associated Performance Indicators used in the MSC process. The Public Comment Draft Report (PCDR) was published in June 2022 and the Final Draft Report (FDR) in August 2022. The fishery passed the assessment with scores over 80 for each Principle; however, the assessment raised eight Conditions across the three MSC Principles.

The Target Eligibility Date for this assessment is the date of publication of the Public Comment Draft Report (PCDR) version of the assessment report.

The assessment team for this fishery assessment comprised of Dr. Geir Hønneland (Team Leader), Dr. Petr Vasilets (Principle 1 and 2 specialist), Blanka Lederer (Principle 2 specialist up until ACDR stage) and Dr. Mohamed Samy-Kamal (Principle 3 specialist).

Client fishery strengths

Principle 1:

- In general, the stock status of both target species is doing well last years due to good management of the fishery.
- There is a management system based on TAC for pike perch and Recommended Catch (RC) for perch.
- The stocks of both species are not overfished with sustainable level of biomass.
- Data collection and provision of scientific advice are routinely carried out.

Principle 2:

- The main bycatch stocks that have analytical or expert stock assessments are highly likely to be above biologically based limits.
- A precautionary management strategy is in place for all 'Aquatic Biological Resources' in Russian legislation, which covers most of the species caught in this fishery, through either a Total Allowable Catch (TAC) or a Recommended Catch (yield) (RC).
- There are measures in the Russian legislation at place which aim to avoid interactions with protected species.
- Low interaction with out-of-scope species, ETP species and with habitats.
- Ecosystem processes vary primarily with large-scale climatic and oceanographic conditions and the impact of these drivers outweighs any impacts from the fishery, which to date has remained within quota allocations, with the harvest strategies themselves developed and evaluated according to the specific principle of the precautionary approach, aimed at prevention or minimization of risks, timely adoption of pre-defined measures, and restoration and long-term maintenance of the exploited stocks.
- The fishery in the Curonian Lagoon does not impact demersal habitats.
- There is also a very extensive information base on habitats and the ecosystem within the Curonian Lagoon.
- There is no known shark finning in the fishery.

Principle 3:

- Russian management system gives the opportunity and encourages all stakeholders to participate in the management process.
- The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery.
- Organizations and individuals involved in the management process have been identified. Their functions, roles and responsibilities are explicitly defined and well understood.
- Clear long-term objectives that guide decision-making, consistent with MSC Principles, are explicit within management policy of Russia.

- The fishery in the Curonian Lagoon operates within an established management framework, with effective decision-making procedures, consultation mechanisms and enforcement measures.
- There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.

Client fishery weaknesses

Principle 1:

- There are no limit and target reference points for perch stock in the UoA.

Principle 2:

- No comprehensive information about fish bycatch, non-ETP marine mammals and seabird interactions to determine their possible status as secondary main species.

Principle 3:

- The high contribution of recreational and IUU harvest to total catch does not allow to consider the management as precautionary.
- There is a lack of important information for the Lithuanian side of the lagoon such as the methods for assessing the state of the populations and other aspects of Principle 1.
- The IUU fishing is high and comprises about ±20% of the officially reported harvest, which means that the MCS system does not show to be able to enforce relevant management measures.

It is noted that information for all three Principles have been reviewed and verified throughout the assessment process.

4 Report details

4.1 Authorship and peer review details

The assessment of the Curonian Lagoon Perch and Pike-perch fishery was conducted by the following Team from UCSL United Certification Systems Limited:

Team Leader: Dr. Geir Hønneland

Dr. Geir Hønneland holds a PhD in political science from the University of Oslo and an LL.M. in the Law of the Sea from the University of Tromsø, and has studied international fisheries management (with main emphasis on enforcement and compliance issues), international environmental politics and international politics in Polar regions. He was affiliated with the Fridtjof Nansen Institute in Oslo for more than 20 years, as PhD student and research fellow (1996-2006), research director (2006-2014) and director (2015-2019). Among his fisheries-related books is Making Fishery Agreements Work (Edward Elgar, 2012; China Ocean Press, 2016). Before embarking on an academic career, he worked five years for the Norwegian Coast Guard, where he was trained and certified as a fisheries inspector. Geir has been involved in MSC assessments since 2009 and has acted as P3 expert in more than 50 full assessments and re-assessments, as well as a number of pre-assessments and surveillance audits. His experience from full assessments includes a large number of demersal, pelagic and reduction fisheries in the Northeast Atlantic, North Pacific and Southern Ocean, including crustaceans, as well as inland, bivalve and enhanced salmon fisheries. In the Northeast Atlantic, he has covered the international management regimes in the Barents Sea, Norwegian Sea, North Sea, Skagerrak, Kattegat and the Baltic Sea, and the national management regimes in Norway, Sweden, Denmark, Iceland, Faroe Islands, Greenland, Finland, Russia, Poland, the UK, the Netherlands and Germany, as well as the EU level. Geir is qualified as an MSC Team Leader (Fisheries Standard v2.0, Fisheries Certification Process v2.2) and Chain of Custody Auditor (v2.0) and has also passed the ISO 19011-2018 course as Lead Auditor – Management Systems Auditing.

UCSL confirms that Dr. Geir Hønneland meets the competency criteria for team leader as specified in FCP v.2.2:
- He holds a PhD in political science;
- He has more than 25 years' experience in international fisheries management;
- He has passed MSC Team Leader training, including relevant updates (last update on September 24, 2021);
- He has passed the Traceability module (last update on February 23, 2022);
- He has passed the ISO 19011-2018 course as Lead Auditor – Management Systems Auditing (February 5, 2019).
- He has undertaken more than 20 of MSC fishery assessment or surveillance site visits as a P3 team member and/or TL in the last 5 years.

Therefore, UCSL United Certification Systems Limited confirms that Dr. Geir Hønneland meets the competency criteria for team leader as specified in FGCR v.2.4.1 (Table 1) and FCP v.2.2 (Table PC1, MSC 2020a), and contributes towards the Audit Team meeting the Fishery Team competency requirements (Table PC3, MSC 2020a). It is also confirmed that Dr. Geir Hønneland has no conflicts of interest in relation to the fishery under assessment. A full CV of Dr. Geir Hønneland is available upon request.

Principle 1 and 2 Lead: Dr. Petr Vasilets

Dr. Petr Vasilets worked for more than 25 years as a fishery scientist in the Kamchatka branch of VNIRO (Russian Federal Research Institute of Fisheries and Oceanography). He received PhD in biology in 2000 with a thesis on the "The smelts in the coastal waters of Kamchatka". He has over 50 scientific publications on various aspects of fisheries. In 2021, he successfully completed MSC online training, including MSC Risk Based Framework (RBF), for role "Fishery Team Leader". Petr has participated in 11 assessments conducted by CAB Marine Certification LLC (now — UCSL), as a team member (expert on Principle 1 and Principle 2). In 7 of them as a team leader. He has passed the Traceability and RBF training modules. Petr has also taken CQI and IRCA Certified EMS Lead Auditor Training course.

UCSL confirms that Dr. Petr Vasilets meets the competency criteria for team members as specified in FCP v.2.2:
- He holds a PhD in Marine Biology;
- He has more than 25 years' experience in fisheries;
- He has passed MSC Team Leader training, including relevant updates (January 18, 2021);
- He has passed the Traceability and RBF training modules (June 06, 2020);
- He has passed CQI and IRCA approved EMS Lead Auditor Training course (March, 2021).
- He has undertaken 11 MSC fishery assessment or surveillance site visits as a team member in the last 5 years.

UCSL United Certification Systems Limited confirms that Dr. Petr Vasilets meets the Team Member competency requirements (Table PC2, MSC 2020a), and contributes towards the Audit Team meeting the Fishery Team competency requirements (Table PC3, MSC 2020a). It is also confirmed that Dr. Petr Vasilets has no conflicts of interest in relation to the fishery under assessment. A full C.V. of Dr. Petr Vasilets is available upon request.

Principle 2 Lead on ACDR stage: Blanka Lederer

Ms. Blanka Lederer (Principle 2 expert on ACDR stage) has a graduate degree, and some professional experiences are in aquaculture, but most background focuses on fisheries. Before becoming an MSC assessor, she was a fisheries biologist for North Pacific Groundfish and At-Sea Hake Observer Programs. During six years, she worked on the catcher trawlers, catcher-processors, and longline vessels collecting data that provided the best scientific information to manage the fisheries and develop measures to minimize bycatch in the Bering Sea, Aleutian Islands, Gulf of Alaska, and West Coast. She worked as a Setline Survey Specialist collecting, independent from commercial fishing, halibut data for the International Pacific Halibut Commission in Southeast Alaska and Canada. She designed a commercial fishing apprenticeship program for California Sea Grant. She collected data on fisheries and bycatch reduction strategies in Mexico, Australia, and Costa Rica. She participated in multiple Scripps Institution of Oceanography research projects, including water studies, exploring deep-sea chemosynthetic environments, and the San Diego Coastal Expedition research cruise.

- She has an appropriate university degree in professional science,
- She has passed MSC Team Member training, including relevant updates (January 6, 2020),
- She can score a fishery using the default assessment tree and describe how conditions are set and monitored,
- She has passed the RBF training (June 4, 2021),
- She participated in more than 2 MSC fishery assessments in the last 5 years,
- She has experience in applying different types of interviewing and facilitation techniques and can effectively communicate with clients and other stakeholders.

UCSL United Certification Systems Limited confirms that Blanka Lederer meets the competency criteria and has the appropriate skills and experience required to serve as a P2 expert. Additionally, UCSL United Certification Systems Limited confirms that Ms. Blanka Lederer has no conflicts of interest in relation to the fishery under assessment. A full C.V. of Blanka Lederer is available upon request.

Principle 3 Lead: Dr. Mohamed Samy-Kamal

Dr. Mohamed Samy-Kamal is a fisheries scientist. He was a scholarship holder of the research institution (IAMZ-CIHEAM) of Zaragoza for his MSc and of the Spanish Agency for International Development and Cooperation (MAEC-AECID) of Madrid for his PhD. His research experience focused on the evaluation of management measures applied to fisheries and the evaluation of fisheries policy and governance. His research areas are fisheries management especially multi-species demersal fisheries of Mediterranean Sea, trawl selectivity, Red Sea fisheries and MPAs. Dr. Mohamed Samy-Kamal has authored a number of scientific articles, regularly participates in international fisheries conferences (e.g., Iberian Symposium of Marine Biology Studies) and used to teach as well as to supervise MSc theses in the international master program of Sustainable fisheries management organized by University of Alicante and IAMZ-CIHEAM. Dr. Mohamed Samy-Kamal has also taken numerous technical courses, including on MSC evaluation tools, MSC RBF and MSC Chain of Custody (CoC). During the last 5 years he has been involved in different MSC full-assessments and pre-assessments mainly in Russia and Estonia and has gained experience as MSC certification P3 assessor.

UCSL United Certification Systems Limited confirms that Dr. Mohamed Samy-Kamal meets the competency criteria for team members as specified in FCP v.2.2:

- He holds an MSc in Economics and Management of Fisheries and a PhD in Marine Science and Applied Biology and more than 3 years' research experience in fisheries;

- He has passed MSC Team Member training, including relevant updates (December, 2017);

- He has participated in more than 2 MSC fishery assessments as a P3 team member in the last 5 years;

- He has more than 3 years' experience as a practicing fishery manager and/or fishery/policy analyst/consultant;

- He has passed the Traceability (January 2019) and RBF training modules (December 20, 2017).

UCSL United Certification Systems Limited confirms that Dr. Mohamed Samy-Kamal meets the Team Member competency requirements (Table PC2, MSC 2020a), and contributes towards the Audit Team meeting the Fishery Team competency requirements (Table PC3, MSC 2020a). It is also confirmed that Dr. Mohamed Samy-Kamal has no conflicts of interest in relation to the fishery under assessment. A full C.V. of Dr. Mohamed Samy-Kamal is available upon request.

Use of the Risk-Based Framework (RBF):

Dr. Petr Vasilets, Dr. Mohamed Samy-Kamal and Blanka Lederer have been fully trained in the use of the MSC's Risk Based Framework (RBF).

Peer Reviewers:

The peer review college proposed 5 peer reviewers for this assessment and 3 were chosen. A C.V. summary for each PR is available in the Assessment downloads section of the fishery's entry on the MSC website and provided below.

Peer Reviewer 1: Dmitry Lajus

Dr. Dmitry Lajus, Associate Professor in the Department of Ichthyology and Hydrobiology of St Petersburg State University. Dr. Lajus holds a BS and MS from St. Petersburg University, and a PhD from the Zoological Institute of the Russian Academy of Sciences. His research interests include population biology of marine fish and invertebrates, population phenogenetics, stress assessment, history of fisheries, historical ecology, and population dynamics. Dr. Lajus has authored numerous scientific articles, book chapters, and scientific reports. He is involved in the MSC certification programme since 2007, working with Russian and Estonian fisheries. During this time he conducted 20 MSC pre-assessments of marine and freshwater fisheries, consulted of several fisheries helping them to achieve certification, co-authored 3 MSC full assessments reports on Pacific salmon and common perch in Russia, and conducted 3 peer-reviews.

Peer Reviewer 2: Dmitry Sendek

Dr Dmitry Sendek has worked since 1994 as a scientist with the Russian State Research Institute of Lake and River Fisheries (the institute conducts studies on 16 large water bodies of Federal significance, and supervises 30% of Russia's lake fund and 70% of its reservoir fund). His PhD covered the fishery management of fish of the family Coregonidae using genetic approaches. Since 2000, his direct duties have been to prepare an annual report on the current state of the fish stock and to present arguments in favour of total allowable catches (TAC) for Salmonidae populations in the Central Institute GosNIORKh responsibility zone. This study is conducted by GosNIORKh in accordance with the state programme supervised by the Federal Agency for Fishery (Ministry of Agriculture of Russia). Dr Sendek's work requires permanent communication and consultations with the Institute's specialists, who assess other types of aquatic biological resources and are involved in joint calculations of the fish stock and TAC for freshwater fish species. He has been a member of the Institute's Academic Council since 2007, which reviews all fish stock assessement data and TACs and has thereby gained a good knowledge of fish stock assessment methods used by fellow biologists from the Institute's branches in other regions of Russia. Dr Sendek's previous experience in working with MSC includes four fishery assessments as an expert on Principle 1 and two annual audits.

Peer Reviewer 3: Martin Louis Van Brakel

Dr. Martin van Brakel currently works as an international consultant on a range of fisheries and aquaculture related projects in Asia, contributing his expertise in coastal and freshwater fisheries. Recent assignments include the design and guidance of a catch assessment survey underpinning a business case for fish value chain development in the Karnali River, Nepal, and technical guidance for transboundary fisheries management in the Lower Mekong River Basin. He has been involved in stock assessment of coastal small pelagics, using length-based or length converted cohort analysis of data available from commercial fisheries, specifically scad mackerel stocks in Cape Verde and hilsa shad in Bangladesh. He has also been involved in the review of previous MSC assessments, amongst which pikeperch fisheries in Swedish lakes Mälaren and Vänern, and Lake Hjälmaren pikeperch fish-trap and gillnet fishery. He has an MSc in Biology, with focus on fisheries and aquatic ecology, as well as a PhD in aquaculture.

4.2 Version details

Table 1 – Fisheries program documents versions

Document	Version number
MSC Fisheries Certification Process	**Version 2.2**
MSC Fisheries Standard	**Version 2.01***
MSC General Certification Requirements	**Version 2.4.1**
MSC Reporting Template	**Version 1.2**

*Default assessment tree

5 Unit(s) of Assessment and Unit(s) of Certification and results overview

5.1 Unit(s) of Assessment and Unit(s) of Certification

5.1.1 Unit(s) of Assessment

UCSL United Certification Systems Limited as the Conformity Assessment Body confirms that Curonian Lagoon Perch and Pike-perch fishery is in scope for MSC assessment through meeting the following scope requirements:

- The fishery does not target amphibians, reptiles, birds or mammals (7.4.2.1, MSC 2020a);
- The fishery does not use poisons or explosives (7.4.2.2, MSC 2020a);
- The fishery is not conducted under a controversial unilateral exemption to an international agreement (7.4.2.3, MSC 2020a);
- The client or client group does not include an entity that has been successfully prosecuted for a forced or child labour violation in the last 2 years (7.4.2.4, MSC 2020a);
- The client or client group does not include an entity that has been convicted for a violation in law with respect to shark finning (7.4.2.10, MSC 2020a);
- There is a mechanism for resolving disputes, and disputes do not overwhelm the fishery (7.4.2.11, MSC 2020a).

Two Units of Assessment (UoAs) are described and assessed for Curonian Lagoon Perch and Pike-perch fishery, as presented in Table 2, below.

Table 2 – Unit(s) of Assessment (UoA)

UoA 1	**Description**
Species	Pike-perch *(Sander lucioperca)* (in Russian – Судак)
Stock	Territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic sea (in Russian – Куршский залив Балтийского моря). In FAO Code: 27 – North-East of Atlantic Ocean. Regional code in the Baltic sea – 26 (see Figure 1).
Fishing gear type(s) and, if relevant, vessel type(s)	Nets fishing using with: fixed frame gillnets, fixed bottom gillnets (according to records in fishing licenses (Safronova, 2018)). Mesh size = 70 mm or above. Vessel type – small tonnage vessels.
Client group	The Client group consists of two fishing enterprises of the Kaliningrad region of the Russian Federation: - Agricultural Production Cooperative Fishing Collective Farm named after Matrosova (further in the text – APC FCF imeni Matrosova) (Russian Federation, Kaliningrad region, Polessky district, town Golovkino, Morskaya str., House 2), in Russian – Сельскохозяйственный производственный кооператив «Рыболовецкий Колхоз «Имени Матросова» – СПК «РК «Имени Матросова», - Zalivino Limited Liability Company (further in the text – Zalivino LLC) (Russian Federation, Kaliningrad region, Polessky district, town Zalivino, Prichalnaya str., House 3) in Russian – Общество с ограниченной ответственностью "Заливино" – ООО «Заливино». Potential holder of MSC certificate will be a customer of products from Curonian Lagoon perch and pike-perch fishery – P&G International Trading GmbH (Brandenburgische Straβe, 29, 10707, Berlin, Federal Republic of Germany).
Other eligible fishers	It is possible to include any combination of other Russian fishing companies operating on the same geographic area and uses the same fishing gear as other eligible fishers.

Geographical area	Russian Federation, Kaliningrad region (in Russian – Калининградская область), territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic Sea (in Russian – Куршский залив Балтийского моря).
UoA 2	**Description**
Species	Perch or common perch *(Perca fluviatilis)* (in Russian – Окунь речной или обыкновенный)
Stock	Territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic Sea (in Russian – Куршский залив Балтийского моря). In FAO Code: 27 – North-East of Atlantic Ocean. Regional code in the Baltic Sea – 26 (see Figure 1).
Fishing gear type(s) and, if relevant, vessel type(s)	Nets fishing using with: fixed frame gillnets, fixed bottom gillnets (according to records in fishing licenses (Safronova, 2018)). Mesh size = 36-40 mm. Vessel type – small tonnage vessels.
Client group	The Client group consists of two fishing enterprises of the Kaliningrad region of the Russian Federation: - Agricultural Production Cooperative Fishing Collective Farm named after Matrosova (further in the text – APC FCF imeni Matrosova) (Russian Federation, Kaliningrad region, Polessky district, town Golovkino, Morskaya str., House 2), in Russian – Сельскохозяйственный производственный кооператив «Рыболовецкий Колхоз «Имени Матросова» – СПК «РК «Имени Матросова». - Zalivino Limited Liability Company (further in the text – Zalivino LLC) (Russian Federation, Kaliningrad region, Polessky district, town Zalivino, Prichalnaya str., House 3) in Russian – Общество с ограниченной ответственностью "Заливино" – ООО «Заливино». Potential holder of MSC certificate will be a customer of products from Curonian Lagoon perch and pike-perch fishery – P&G International Trading GmbH (Brandenburgische Straβe, 29, 10707, Berlin, Federal Republic of Germany).
Other eligible fishers	It is possible to include any combination of other Russian fishing companies operating on the same geographic area and uses the same fishing gear as other eligible fishers.
Geographical area	Russian Federation, Kaliningrad region (in Russian – Калининградская область), territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic Sea (in Russian – Куршский залив Балтийского моря).

5.1.2 Unit(s) of Certification

Two Units of Certification (UoCs) are described and assessed Curonian Lagoon Perch and Pike-perch fishery, as presented in Table 3, below.

Table 3 – Unit(s) of Certification (UoC)

UoC 1	Description
Species	Pike-perch *(Sander lucioperca)* (in Russian – Судак)
Stock	Territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic sea (in Russian – Куршский залив Балтийского моря). In FAO Code: 27 – North-East of Atlantic Ocean. Regional code in the Baltic sea – 26 (see Figure 1).
Fishing gear type(s) and, if relevant, vessel	Nets fishing using with: fixed frame gillnets, fixed bottom gillnets (according to records in fishing licenses (Safronova, 2018)). Mesh size = 70 mm or above. Vessel type – small

type(s)	tonnage vessels.
Client group	The Client group consists of two fishing enterprises of the Kaliningrad region of the Russian Federation: - Agricultural Production Cooperative Fishing Collective Farm named after Matrosova (further in the text – APC FCF imeni Matrosova) (Russian Federation, Kaliningrad region, Polessky district, town Golovkino, Morskaya str., House 2), in Russian – Сельскохозяйственный производственный кооператив «Рыболовецкий Колхоз «Имени Матросова» – СПК «РК «Имени Матросова», - Zalivino Limited Liability Company (further in the text – Zalivino LLC) (Russian Federation, Kaliningrad region, Polessky district, town Zalivino, Prichalnaya str., House 3) in Russian – Общество с ограниченной ответственностью "Заливино" – ООО «Заливино». Potential holder of MSC certificate will be a customer of products from Curonian Lagoon perch and pike-perch fishery – P&G International Trading GmbH (Brandenburgische Straβe, 29, 10707, Berlin, Federal Republic of Germany).
Other eligible fishers	It is possible to include any combination of other Russian fishing companies operating on the same geographic area and uses the same fishing gear as other eligible fishers.
Geographical area	Russian Federation, Kaliningrad region (in Russian – Калининградская область), territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic Sea (in Russian – Куршский залив Балтийского моря).
UoC 2	Description
Species	Perch or common perch *(Perca fluviatilis)* (in Russian – Окунь речной или обыкновенный)
Stock	Territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic Sea (in Russian – Куршский залив Балтийского моря). In FAO Code: 27 – North-East of Atlantic Ocean. Regional code in the Baltic Sea – 26 (see Figure 1).
Fishing gear type(s) and, if relevant, vessel type(s)	Nets fishing using with: fixed frame gillnets, fixed bottom gillnets (according to records in fishing licenses (Safronova, 2018)). Mesh size = 36-40 mm. Vessel type – small tonnage vessels.
Client group	The Client group consists of two fishing enterprises of the Kaliningrad region of the Russian Federation: - Agricultural Production Cooperative Fishing Collective Farm named after Matrosova (further in the text – APC FCF imeni Matrosova) (Russian Federation, Kaliningrad region, Polessky district, town Golovkino, Morskaya str., House 2), in Russian – Сельскохозяйственный производственный кооператив «Рыболовецкий Колхоз «Имени Матросова» – СПК «РК «Имени Матросова». - Zalivino Limited Liability Company (further in the text – Zalivino LLC) (Russian Federation, Kaliningrad region, Polessky district, town Zalivino, Prichalnaya str., House 3) in Russian – Общество с ограниченной ответственностью "Заливино" – ООО «Заливино». Potential holder of MSC certificate will be a customer of products from Curonian Lagoon perch and pike-perch fishery – P&G International Trading GmbH (Brandenburgische Straβe, 29, 10707, Berlin, Federal Republic of Germany).
Other eligible fishers	It is possible to include any combination of other Russian fishing companies operating on the same geographic area and uses the same fishing gear as other eligible fishers.
Geographical area	Russian Federation, Kaliningrad region (in Russian – Калининградская область), territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic Sea (in

	Russian – Куршский залив Балтийского моря).

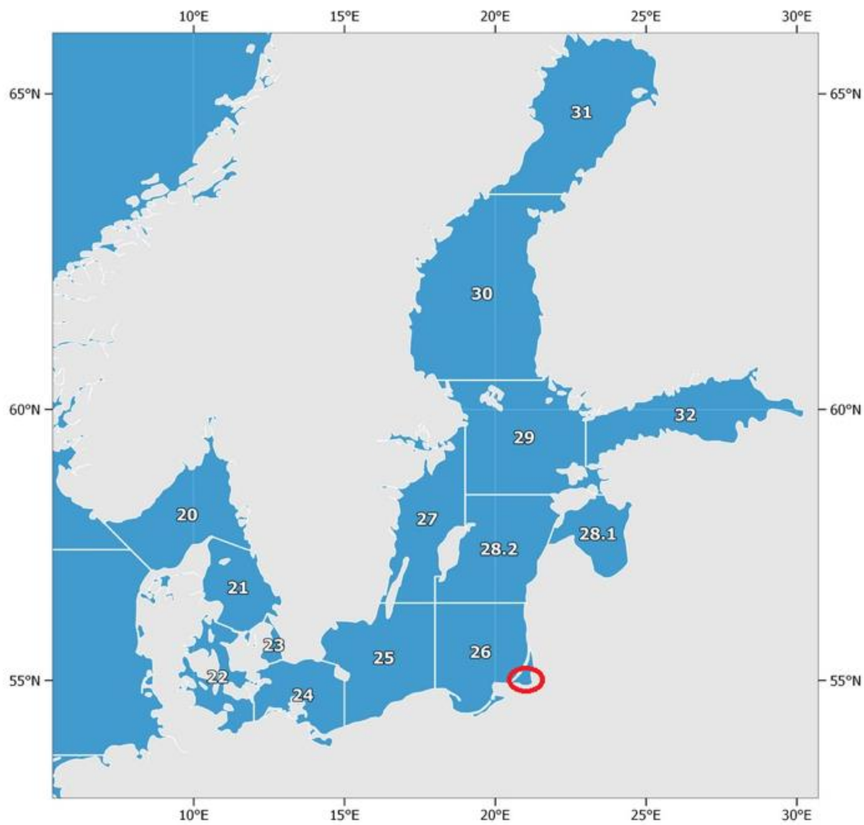


Figure 1 – Map showing location of the Curonian Lagoon Perch and Pike-perch fishery in the UoAs 1 and 2. Territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic Sea is shown in the red circle. (Source: https://fishandhome.com/assets/img/mapafao-3.jpg).

5.1.3 Scope of assessment in relation to enhanced or introduced fisheries

Curonian Lagoon Perch and Pike-perch fishery is not enhanced nor is it an introduced species-based fishery (ISBF). Therefore, enhanced and ISBF fishery assessment considerations do not apply.

5.2 Assessment results overview

5.2.1 Determination, formal conclusion and agreement

On completion of the review of information and scoring, the assessment team concludes that no PI is likely to score below 60 nor weighted average score for any of the three principles to score below 80 as described in Table 4. Based on the PDCR scoring the assessment team recommends this fishery for certification. However, the assessment team identified eight Conditions in Principles 1, 2, and 3 described in Table 5.

5.2.2 Principle level scores

Table 4 – Principle level scores

Principle	UoA 1	UoA 2
Principle 1 – Target species	80.0	80.2
Principle 2 – Ecosystem impacts	81.7	80.0
Principle 3 – Management system	82.9	82.9

5.2.3 Summary of conditions

Table 5 – Summary of conditions

Condition number	Condition	Performance Indicator (PI)	Deadline	Exceptional circumstances?	Carried over from previous certificate?	Related to previous condition?
1	Demonstrate within eight years that the pike-perch stock in the Curonian Lagoon is at or fluctuating around a level consistent with MSY.	1.1.1 – Stock status SIb (UoA1)	8 years after the initial certification	Yes	NA	NA
2	Within four years HCRs are likely to be robust to the main uncertainties.	1.2.2 – HCRs design and application SIb (UoA1&2)	4th Surveillance audit	No	NA	NA
3	Within four years there should be good information on all fishery removals from the stock.	1.2.3 – Information and monitoring SIc (UoA1&2)	4th Surveillance audit	No	NA	NA
4	Within four years, the stock assessment should take uncertainty into account.	1.2.4 – Assessment of stock status SIc (UoA1)	4th Surveillance audit	No	NA	NA

5	Demonstrate within four years that there is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	2.1.2 – Primary species management strategy SIe (UoA2)	4th Surveillance audit	No	NA	NA
6	Within four years, obtain quantitative information to assess the impact of UoAs on secondary species: species bycatch in fishery and gillnet interactions with mammals and seabirds.	2.2.3 – Secondary species information SIc (UoA1&2)	4th Surveillance audit	No	NA	NA
7	To demonstrate that the management system uses the precautionary approach and the best available evidence for the practical management of all species. Also, to demonstrate that the information on the fishery's performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	3.2.2 – Decision-making processes SIc and SId (UoA1&2)	3rd Surveillance audit	No	NA	NA
8	Demonstrate that a monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	3.2.3 – Compliance and enforcement SIa (UoA1&2)	3rd Surveillance audit	No	NA	NA

5.2.4 Recommendations

It is necessary to analyse the population structure of pike-perch in the waters of the Curonian Lagoon and at the exit from it into the Baltic Sea, the formation of feeding and pre-spawning aggregations, migration routes and correlate all this with the management of pike-perch fishing in the Russian and Lithuanian parts of the Curonian Lagoon.

6 Traceability and eligibility

6.1 Eligibility date

It is anticipated that the eligibility date would be set as the publication date of the Public Comment Draft Report (PCDR) version of the assessment report. This would be confirmed at the publication of the PCDR, if desired by the client and if product harvested after the eligibility date and sold or stored as under-assessment fish can be handled in conformity with the MSC requirements.

As the eligibility date is set before the certification date, any fish harvested after the eligibility date and sold or stored as under-assessment fish shall be handled in conformity with the following requirements (as per MSC FCP v2.2 7.8.2):

a. All under-assessment products shall be clearly identified and segregated from certified and non-certified products.

b. The client shall maintain full traceability records for all under-assessment product, demonstrating traceability back to the UoC and including the date of harvest.

c. Under-assessment products shall not be sold as certified or labelled with the MSC ecolabel, logo, or trademarks until fishery certification and product eligibility are confirmed.

The traceability and segregation systems in the fishery shall be implemented by the eligibility date.

6.2 Traceability within the fishery

There is a multistage control system in the Russian system for fisheries management. The first stage is inspections conducted by Coast Guard inspectors in the Curonian Lagoon within fishery activity. Inspectors check catch permits, number of and construction (technical parameters) of fishing gear, production ratios, quantity of production etc. The second stage is conducted in piers and factories. All unloading procedures can make under the control of Coast Guard (FSB) authorities. (See Section 7.4 for further information about the Russian enforcement system). Thus, the risk of non-certified gear used within the fishery and a possibility of vessels from the UoA fishing outside the UoA or in different geographical areas are minimizing.

There are not moving products from catching vessel to transport vessel with transhipment in the Curonian Lagoon. All other logistic procedures in the UoAs must be fulfilled in the presence of a Border Control (FSB) inspector who checks the catch permits, quantity of production and so on. In addition, the vessel will have to fulfil all above-mentioned procedures.

There are strict internal procedures on board the vessels (required by Russian fishery legislation) and a sophisticated system of enforcement measures at sea and on land to ensure that these requirements are complied with. Therefore, the risk of substitution of mixing certified (target species) and non-certified (bycatch species) catch is minimal.

Vessel logbooks are kept on catch vessels for one year; then they are kept by the fishing company for three more years. Separate written documentation is also issued for the transaction.

Catching vessels upload raw fish products on the pier of the coastal factories in the Kaliningrad region. Catching vessels have on board only products caught by them. There is one point of ownership change for the products (that is points from which subsequent Chain of Custody should start): port.

For products, there is one point of change of ownership (that is, the point from which the subsequent supply chain should begin - this is the pier where products are unloaded to the factory where raw fish (chilled or frozen) is processed into finished products.

Data on Traceability within the Curonian Lagoon Perch and Pike-perch fishery is presented in the Table 6, below.

Table 6 – Traceability within the Curonian Lagoon Perch and Pike-perch fishery

Factor	Description
Will the fishery use gears that are not part of the Unit of Certification (UoC)? If Yes, please describe: - If this may occur on the same trip, on the same	*No, never. Fishing boats are very small and do not carry any other fishing gears. FSA uses only fishing gears (specified) in the fishing permits (licenses) issued by the West-Baltic Territorial Administration of Federal Fishing Agency (WB TA FFA).* *Fishing gear used in the fishery and specified in the catch*

vessels, or during the same season; - How any risks are mitigated.	*permits in the documents submitted for MSC certification. The use of fishing gear specified in the catch permits is controlled by inspectors of the Coast Guard of the FSB Russia.*
Will vessels in the UoC also fish outside the UoC geographic area? If Yes, please describe: - If this may occur on the same trip; - How any risks are mitigated.	*No. The fishing area is located exclusively in the territorial waters of the Russian Federation in the Curonian Lagoon at the geographic coordinates specified in permits (licenses) issued by the by the WB TA FFA.* *The location of the fishing area and the fishing in the geographic coordinates specified in the catch permits monitored by the WB TA FFA and inspectors of the Coast Guard of the FSB Russia.*
Do the fishery client members ever handle certified and non-certified products during any of the activities covered by the fishery certificate? This refers to both at-sea activities and on-land activities. - Transport - Storage - Processing - Landing - Auction If Yes, please describe how any risks are mitigated.	*When fishing for certified target catch species, all of them are sorted out by species and size into separate boxes stored on board. After the catching, the raw material is delivered to the processing factory where processing, packaging and labelling occur i.e. CoC begins. Then, certified products are stacked (folded) into separate freezers (separate freezer holds) and stored until further transshipment abroad.* *To minimize the risk of mixing at each stage (transportation, storage, processing, unloading and auction), electronic records are maintained, certified products are stored, processed (accompanying documents), marked separately and subsequently tracked to minimize mixing risks.* *In the UoAs also catch other fish species (bream, crucian carp, etc.) which are not subject to MSC certification. These species are sorted and sent to other industries for the manufacture of products that enter the Russian domestic market. Given that these species are distinguishable from the targeted perch and pike-perch there is no risks of mixing certified and non-certified fish.*
Does transhipment occur within the fishery? If Yes, please describe: - If transhipment takes place at-sea, in port, or both; - If the transhipment vessel may handle product from outside the UoC; - How any risks are mitigated.	*No, there is no transshipment in the fishery in the Curonian Lagoon during the fishery. Each vessel brings its catch to the port and unloads it at the quayside in places approved by the government of the Kaliningrad region. The catch is poured into boxes and immersed in a refrigerator, in which the fish is transported by car for processing to the factory.* *And it should also be mentioned that further transport from unloading is within the scope of further chains.*
Are there any other risks of mixing or substitution between certified and non-certified fish? If Yes, please describe how any risks are mitigated.	*Never. To minimize the risk, catches of certified species, after sorting aboard, are processed, packaged, marked, stored and separated separately at the factory, and at each stage, electronic records of the quantity (volume) of products are kept.* *Because there are several fisheries having licenses to operating at the Curonian Lagoon and companies of the client group is just two of them.* *In order to eliminate the risk of mixing certified and non-certified fish, the following activities are carried out. Fish from other suppliers is stored in a different refrigerator at the factory. The number of refrigerating chambers allows the client to organize separate storage of certified and non-certified products (raw fish catch). Client owns raw material*

	warehouses, so certified and non-certified products would be set aside.

6.3 Eligibility to enter further chains of custody

The scope of this certification ends at the first point of landing directly from the fishing vessels, which is also the first change of ownership. Based on the information above, it is considered that traceability management systems operated by the vessels, the client group and the enforcement bodies are sufficiently robust to meet the MSC fisheries traceability requirements up to the first point of landing. In order for subsequent links in the distribution chain to be able to use the MSC logo, separate Chain of Custody certificates must be obtained.

7 Scoring

7.1 Summary of Performance Indicator level scores

The following draft performance indicator scores are provided below (Table 7). These scores may change as the Assessment Team receives and responds to new information provided through the assessment process, and as later versions of the assessment report are produced.

Table 7 – Performance Indicator scores.

Principle	Component	Performance Indicator (PI)		Score in UoA 1 (Pike-perch)	Score in UoA 2 (Perch)
1	Outcome	1.1.1	Stock status	70	83*
		1.1.2	Stock rebuilding	100	N/A
	Management	1.2.1	Harvest strategy	85	85
		1.2.2	Harvest control rules & tools	75	75
		1.2.3	Information & monitoring	75	75
		1.2.4	Assessment of stock status	75	80*
2	Primary species	2.1.1	Outcome	85	85
		2.1.2	Management	80	75
		2.1.3	Information	100	80
	Secondary species	2.2.1	Outcome	80*	80*
		2.2.2	Management	80	80
		2.2.3	Information	70	70
	ETP species	2.3.1	Outcome	80	80
		2.3.2	Management	80	80
		2.3.3	Information	80	80
	Habitats	2.4.1	Outcome	90	90
		2.4.2	Management	80	80
		2.4.3	Information	80	80
	Ecosystem	2.5.1	Outcome	80	80
		2.5.2	Management	80	80
		2.5.3	Information	80	80
3	Governance and policy	3.1.1	Legal & customary framework	85	85
		3.1.2	Consultation, roles & responsibilities	85	85
		3.1.3	Long term objectives	80	80
	Fishery specific management system	3.2.1	Fishery specific objectives	90	90
		3.2.2	Decision making processes	75	75
		3.2.3	Compliance & enforcement	75	75
		3.2.4	Monitoring & management performance evaluation	90	90

*RBF was used.

7.2 Principle 1

7.2.1 Principle 1 background

7.2.1.1 Pike-perch

Pike-perch (*Sander lucioperca*) (Figure 2) is a fish (not a LTL species) from large, turbid rivers and eutrophic lakes; brackish coastal lakes and estuaries.

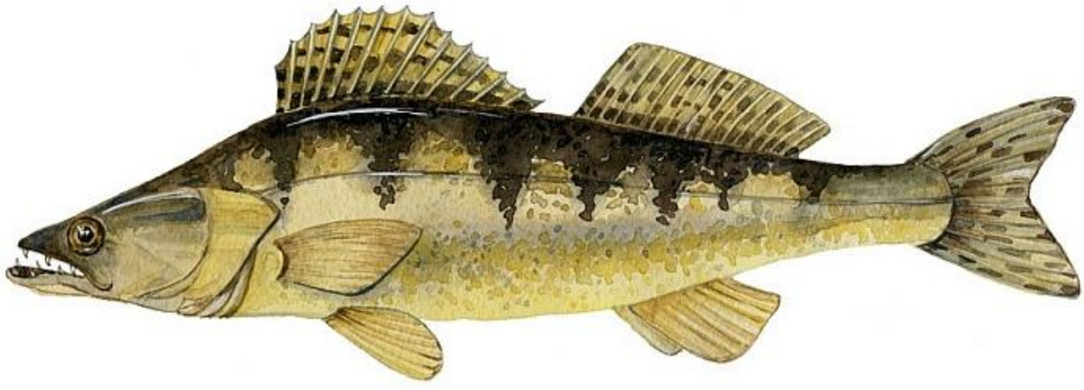


Figure 2 – Pike-perch *Sander lucioperca*. (Source: https://topspiski.com/wp-content/uploads/2019/01/sudak.jpg).

It is a widespread and abundant species (Figure 3) with no known major widespread threats.

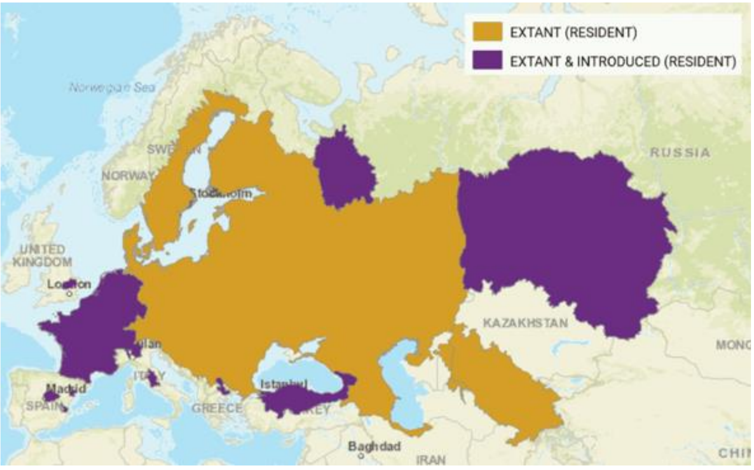


Figure 3 – Distribution range of pike-perch (Source: Freyhof, Kottelat, 2008).

7.2.1.1.1 Geographic Range

Caspian, Baltic, Black and Aral Sea basins; Elbe (North Sea basin) and Maritza (Aegean Sea basin) drainages. North to about 65° N in Finland. Introductions began in 1878 in Great Britain, followed by Italy, Strymon drainage (Greece) and continental Europe west of Elbe, Ebro, Tagus and Jucar drainages in Iberian Peninsula, Onega and Severnaya Dvina in White Sea basin. Widely introduced outside Europe in Anatolia, North Africa, Ob and Amur drainages (Siberia), Lakes Issyk-Kul (Kyrgyzstan), Balkhash and many smaller basins in central Kazakhstan (Freyhof, J. & Kottelat, M. 2008).

7.2.1.1.2 Age and Growth

In the Curonian Lagoon pike-perch lives up to 17 years. In 2009-2018, the commercial catches were dominated by fish aged 5 to 9 (Figure 4).

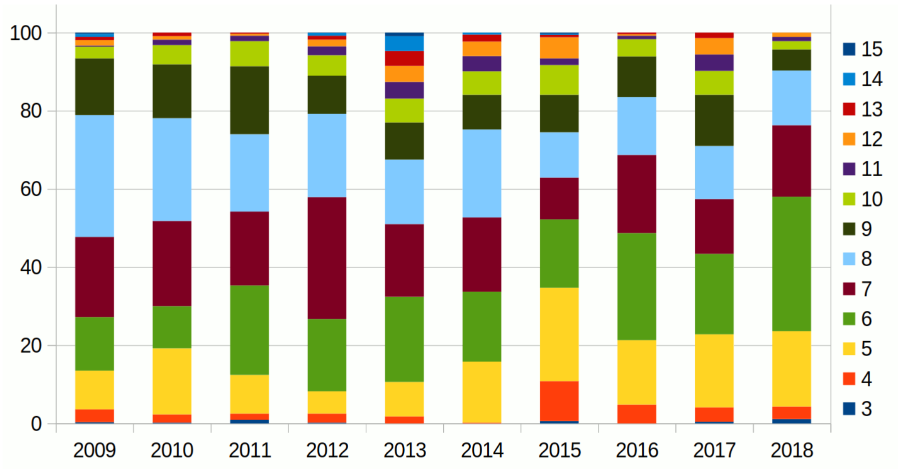


Figure 4 – Age composition of pike-perch from commercial catches in the Curonian Lagoon in 2009-2018. (Source: Lozhkin, 2020).
(Legend: X-axis – years; Y-axis - %).

Pike-perch in the Curonian Lagoon grows throughout life. The most intense linear growth occurs before the age of mass maturity (4 years), and then decreases. The weight gain, on the contrary, increases with age, and most intensively from the tenth age group. The results of biological analysis of pike-perch in the Curonian Lagoon for 1957-2002 revealed the following averaged relationships. The relationship between mass and length is described by the equation: $W = 0.023\ L^{2.909}$. Separately, for males and females, they have the form: $W = 0.019\ L^{2.926}$ и $W = 0.011\ L^{3.097}$.

The error of the regression equations is no more than 5%, which makes it possible to determine the mass of fish from length data. Linear growth and mass growth are described by the Bertalanffy equations:

$$Lt = 98.469\ [1 - e^{-0.085\ (t + 0.912)}] \qquad (R^2 = 0.996)$$

$$Wt = 27.987\ [1 - e^{-0.065\ (t + 1.449)}]^3 \qquad (R^2 = 0.942)$$

The errors in the regression equations were 2.34 and 0.65%, respectively (Golubkova, 2003).

The growth rate largely depends on the abundance of pike-perch in the Curonian Lagoon. The appearance in 1978 of a highly abundant generation of pike-perch led to a decrease in the growth rate of individuals from adjacent generations (Figure 5).

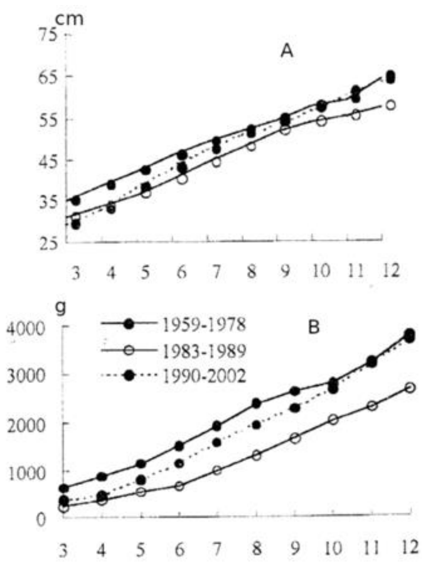


Figure 5 – Average length (A) and mass (B) of pike-perch depending on age in the Curonian Lagoon. X-axis – age (Source: Golubkova, 2003).

7.2.1.1.3Maturity

In the Curonian Lagoon, males mature in mass at 3 years, females at 4 years. Due to higher post-spawning death rates at the age of 5-6 years, males have shorter life cycle than females. They mature at smaller size and are on average younger than females.

In paper Golubkova *et al.* (2005) there are data about relation between total length and mature rate for pike-perch from the Vistula Lagoon that is near the Curonian Lagoon. From the Figure 6 we can see that by total length 46 cm 65% of fish is matured. Minimal legal size (total length) of pike-perch for fishing in Curonian Lagoon equal 46 cm.

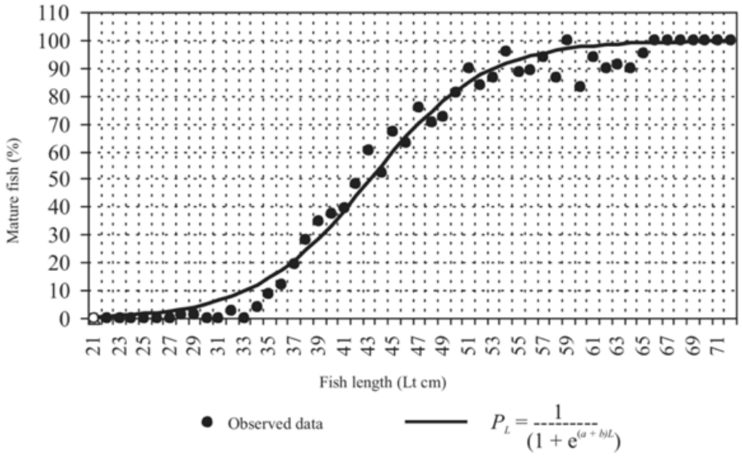


Figure 6 – Maturity ogive of pike-perch in the Vistula Lagoon (Source: Golubkova *et al*., 2005).

7.2.1.1.4Spawning

There is information, that in the Curonian Lagoon, pike-perch migrate to spawn to the lower reaches of the Nyamunas River Delta (Gaygalas, Gyarulaytis, 1974). Based on reviewed literature, three types of spawning migrations can be found in fresh waters where the pike-perch migrate from wintering areas to spawn in (i) open lake areas, (ii) lower reaches of rivers and (iii) river inlets. Three types of spawning migrations are also found in brackish waters: (i) migrations to the river inlets, (ii) migrations to lower reaches of rivers and (iii) migrations from brackish water to still waters in freshwater lakes. The gender system of pike-perch is gonochoristic, i.e. sexes are separate, and the mode of fertilization is external. Pike-perch spawn in pairs and can thus be classified as monogamous species (Deelder, Willemsen, 1964; Wootton, 1990). Pike-perch belongs to guarding and nest-spawning phytophils (Balon *et al.*, 1977).

In the Curonian Lagoon spawning takes place from late April to early June at a water temperature of 8 to 22° C, massively at a temperature of 15-18° C. The spawning time is mainly determined by temperature and wind conditions. Favourable environmental conditions (high level of water, early warming and the absence of sudden changes in water temperature) contribute to the survival of pike-perch eggs and the development of zooplankton, which is food for pike-perch larvae (Golubkova, 2003). The dependencies of the productivity of pike-perch generations on water temperature and water level are illustrated on the Figure 7 and 8.

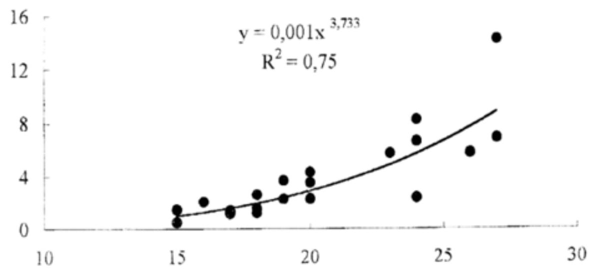


Figure 7 – Dependence of the productivity of pike-perch generations on the number of days with increasing water temperature in the Curonian Lagoon (Source: Golubkova, 2003).
Legend: X-axis – number of days with increasing water temperature; Y-axis – generation productivity index.

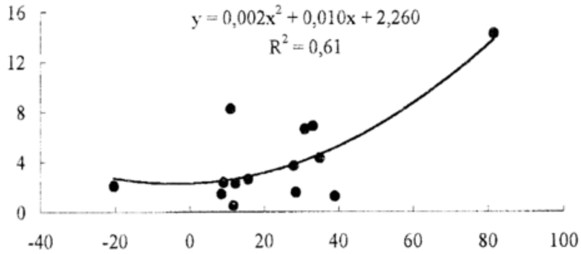


Figure 8 – Dependence of the productivity of pike-perch generations on water level in the Curonian Lagoon (Source: Golubkova, 2003).
Legend: X-axis – water level, cm; Y-axis – generation productivity index.

7.2.1.1.5Fecundity

Analysis of materials on absolute individual fecundity (AIF) of pike-perch demonstrates significant its fluctuations. The minimum was 24 thousand eggs (with a length of 32.1 cm, a weight of 420 g and an age of 3 years). The maximum was 1385 thousand eggs (with a length of 69.7 cm, weight of 4970 g, at the age of 12). The fecundity of pike-perch is closely related to the size and age of the females. The dependences of the AIF on length, weight and age are described by the following power functions:

$AIF = 76.999\ L^{0.802}$ ($R^2 = 0.987$)

$AIF = 94.889\ W^{1.088}$ ($R^2 = 0.973$)

$AIF = 94.884\ t^{0.989}$ ($R^2 = 0.989$)

A decrease in the growth rate of pike-perch individuals in the anomalous period 1982-1989, when the influence of a large generation of 1978 was traced, resulted in a twofold decrease in the AIF (Figure 9) (Golubkova, 2003).

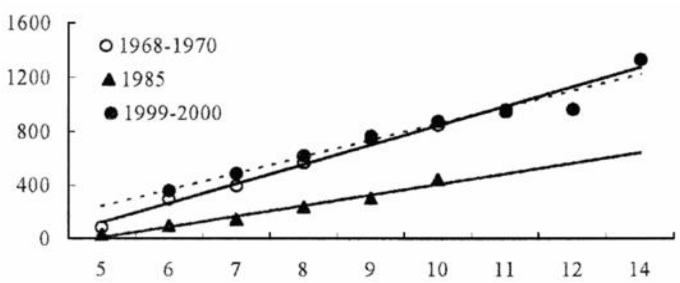


Figure 9 – Dependence of the absolute individual fecundity of pike-perch on age in the Curonian Lagoon (Source: Golubkova, 2003).
Legend: X-axis – age, years; Y-axis – absolute individual fecundity, thousands of eggs.

7.2.1.1.6Feeding

According to Golubkova (2003), in the Curonian Lagoon, in the spring, the main food items for pike-perch are smelt and inland smelt; in summer and autumn, the basis of the diet is inland smelt and ruffe. Less commonly, pike-perch feeds on perch, sabrefish, roach, and white bream. In the first year of life, the feeding behaviours of pike-perch are not uniform; juveniles consume zooplankton, mysids, and fish. In July, 10% of individuals switch to a predatory type of feeding; in August, the proportion of predators increases to 53%. By the nature of feeding and growth rate, by the autumn of the first year of life, juveniles are divided into large predators with an average length of 11.8 cm (mass 29.5 g), and small planktophages with an average length of 8.1 cm (mass 5.6 g) (Golubkova, 2003).

According to Rakauskas *et al*. (2013), based on stable isotope analysis results the main food items for adult pike-perch in the Curonian Lagoon were *Perca fluviatilis, Rutilus rutilus* , *Neogobius melanostomus, Gymnocephalus cernua, and Alburnus alburnus* (Table 8).

A significant decrease in the number of the main food items for adult pike-perch, namely inland smelt and ruffe in 1987-1989 and 1993-1987 in the Curonian Lagoon led to the fact that the pike-perch in search of food migrated to the shallow waters of the Curonian Lagoon, where juvenile cyprinids live, as well as to the coastal part of the Baltic Sea where dense accumulations of Baltic herring and sprat exist (Figure 10).

Table 8 – Diet composition of pike-perch from the Curonian Lagoon in 2010; percent contributions of fish prey species to predator's nutrition (Rakauskas *et al.*, 2013)*.

Prey species	*Sander lucioperca*
Perca fluviatilis S	12.1 ± 10.6
Perca fluviatilis M	16.5 ± 13.6
Gymnocephalus cernua	15.6 ± 13.6
Rutilus rutilus S	9.8 ± 8.3
Rutilus rutilus M	15.4 ± 13.5
Neogobius melanostomus	17.5 ± 13.4
Alburnus alburnus	12.9 ± 11.4

* Note: Data presented are results of IsoSource model (mean ± standard deviation); Fish size categories: S = small; M = medium.

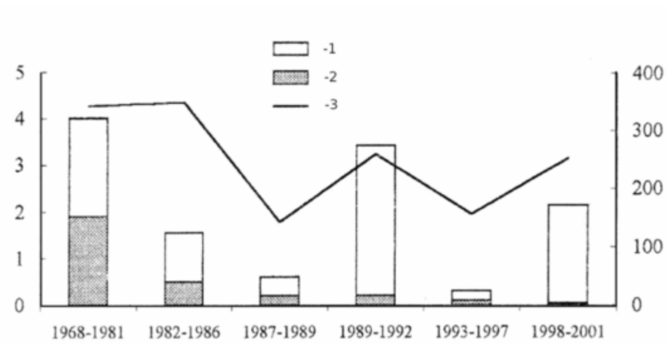


Figure 10 – Dynamics of biomass indices for ruffe (1), and smelt (2), and catches of pike-perch (3) in the Curonian Lagoon (Source: Golubkova, 2003).
Legend: X-axis – periods of time; Y- left axis – biomass indices in kg/trawl, Y- right axis – catches of pike-perch in tons.

7.2.1.1.7 Pike-perch fishery

Fishery in the Curonian Lagoon is mostly a family business. About 150 fishermen fish in the Lithuanian part and 200 fishermen in the Russian part of the Curonian Lagoon. From 2009 till 2012 the number of Lithuanian fishing companies decreased from 71 to 44. The main reason for the decrease in the number of fishing companies is that in 2009-2012 Lithuanian fishing companies used European Fisheries financial compensations for reorienting from commercial fishing businesses to recreational leisure fishing businesses. 21 fishing companies got financial support and 81 vessels withdrew from the fishing business, 6 fishing companies merged with others. On the Russian side quotas have been distributed to each company based on a historical approach for the period of 10 years. Due to this no big changes in the number of fishing companies and fishermen is possible and 36 fishing enterprises operated in the lagoon in 2012 (Zolubas *et al*., 2014).

In the Curonian Lagoon, since the end of the 60s of the XX century, fishing has been regulated, and the catch of important commercial objects, including pike-perch and perch, has been limited by TAC and RC. Management tools also include a minimum legal size (MLS), closed seasons and closed areas, and technical specifications for fishing gears design. To ensure compliance, a comprehensive monitoring, control and surveillance system is in place.

There are 31 fishing sites in the Lithuanian part of the Curonian Lagoon. Lithuanian fisherman must fish only in the sites, which are stated in the fishing license. There are 52 fishing sites on the Russian part of the Curonian Lagoon. Most of them are distributed to the former Fishing Collective Farm, despite its decreasing role in the fisheries (Zolubas *et al.*, 2014). Russian fishermen can catch fish not only within of fishing parcels. The area of sites for possible installation of gillnets is less than 20% of the total area of the Curonian Lagoon (Figure 11). One of the currently assessed firm "Agricultural Production Cooperative Fishing Collective Farm "imeni Matrosova" have legal access to fishing parcels No. 16 to 21 (Figure 11), which in total have an area almost 43 square km (less than 3% of the Curonian Lagoon area).

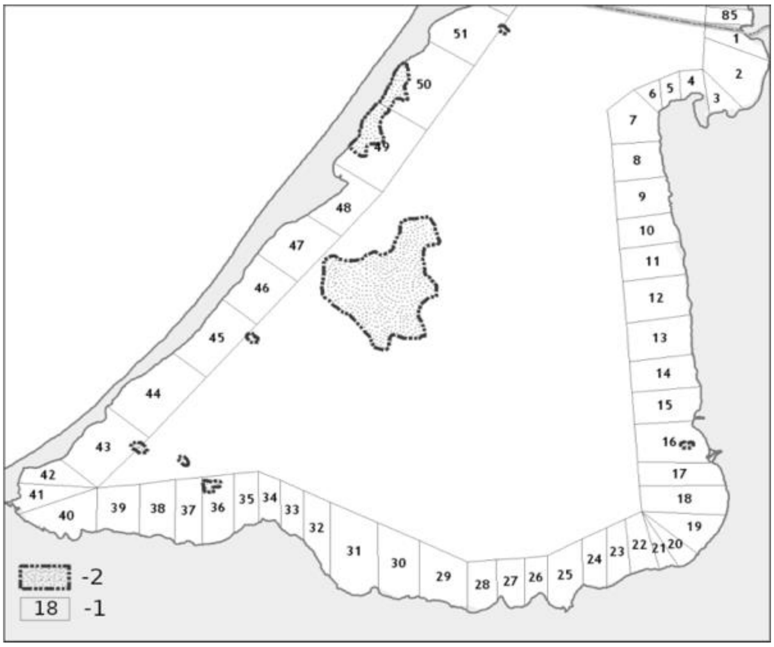


Figure 11 – Fishing parcels (1) and areas of possible location gillnets (2) in the Russian part of the Curonian Lagoon (Source: Northwest Russia..., 2008).

According to Safronova (2018), there are 32 companies operating in the Russian territorial waters in the Curonian Lagoon, two of them are the companies under certification, both located in the Polessky district of the Kaliningrad region: Agricultural Production Cooperative Fishing Collective Farm "Imeni Matrosova" located in the town Golovkino and Zalivino LLC located in the town Zalivino. The German company P&G International Trading GmbH is their partner in European Union buying fish from client companies for European market. Agricultural Production Cooperative Fishing Collective Farm "imeni Matrosova" was founded in 1948, Zalivino LLC in its current form works since 2002.

The fleet of both companies consists of 5 equal small fishing boats 10.7 m long intended for coastal fishery. Each boat is equipped with 2 small wooden boats, from which fishing is carried out. Agricultural Production Cooperative Fishing Collective Farm "imeni Matrosova" has 4 boats and Zalivino LLC has one boat. Crew number of each boat is 5 persons. Each boat has a permit for catch, where the terms of extraction (catch) of aquatic biological resources are spelled out: fishing area, species of aquatic biological resources, quotas, gears, time limits. Execution, issuance, registration of permits for the extraction (catch) of aquatic biological resources and the introduction of amendments to such permits are carried out by the federal government agency in the field of fisheries.

Every year common pike-perch quotas for the Curonian Lagoon are allocated to Russia and Lithuania by decision of the Joint Lithuanian-Russian Fishery Commission (Zolubas *et al.*, 2014) based on the TAC. The fishing efforts are regulated by annually setting up catch quota for each legal fisherman (Order Rosrybolovstva dated of 05.12.2019 No. 661).

Pike-perch is fished mainly with gill nets with a mesh size at least 70 mm knot-to-knot, the main catching periods are the first half of spring and autumn. In accordance with the Fishing Rules (2020), the use of gill nets is prohibited in the second half of spring and in summer.

In the Curonian Lagoon, since the end of the 60s of the XX century, fishery has been regulated, and the catch of important commercial species, including pike-perch, is limited. At present, in the Russian part of the Curonian Lagoon, pike-perch is fished mainly with large-mesh set (fixed) nets with a mesh size of 70 mm, the main catching periods are spring and autumn. In accordance with the Fishing Rules (2020), the use of these nets for the protection of spawning and juveniles is prohibited from April 20 to June 20.

Catch of pike-perch in the Russian part of the Curonian Lagoon in the period 1971-2019 fluctuated within a significant range of 87-265 tons (Figure 12), moreover, from 1971 to 1985, it was relatively stable and averaged 234 tons, and since the mid-1980s there has been a sharp decline. This was due to several factors.

At firstly, during these years catches of all fish species in the Curonian Lagoon decreased due to the economic crisis in the fishing industry, and secondly, the appearance in 1978 of an abnormally productive generation of pike-perch in the bay led to a powerful increase in its food pressure on the main food items – smelt and ruff, the number of which sharply decreased, while the growth rate and fertility of pike-perch decreased (Samokhvalova *et al*., 1987). In addition, pike-perch, due to insufficient food supply, went to feed in the coastal parts of the Curonian Lagoon and the Baltic Sea, where it became inaccessible to the traditional fishing method. As a result, the stock of pike-perch has decreased. Against the background of a prolonged depression in the stock of smelt and ruff, a similar situation was observed in 1993-1997 (Golubkova, 2003).

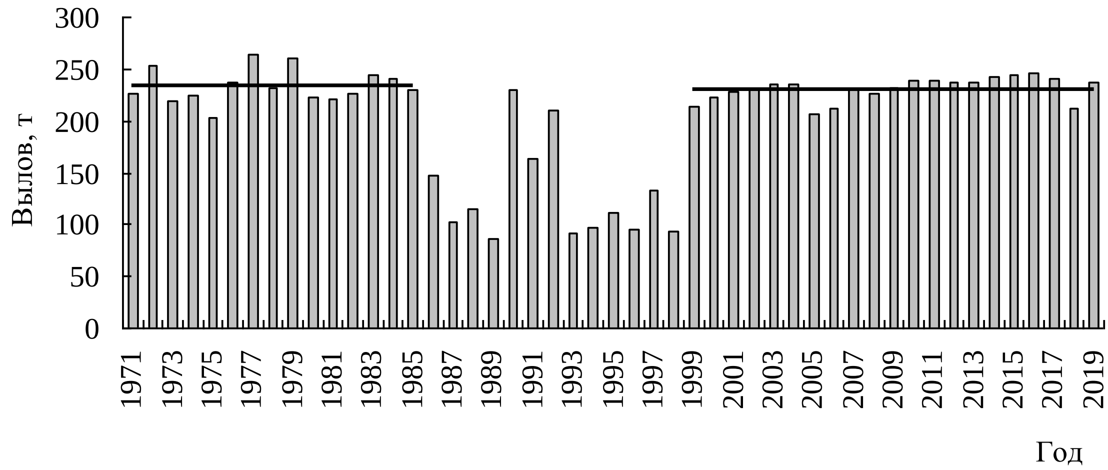


Figure 12 – Commercial catch of pike-perch in the Russian part of the Curonian Lagoon in 1971-2019, tons
X-axis – Years; Y-axis – Catch, tons (Source: Materials, 2020a, 2020b).

The Fishing Rules (2020) for pike-perch established a fishing measure: for a standard (commercial) length – 40 cm; in absolute (zoological) length (AC) – 46 cm. Pike-perch begins to be fished from 3-4 years of age (the age of partial recruitments of the commercial stock), 5-year-olds completely enter the fishery.

7.2.1.1.8Pike-perch stock status

Pike-perch commercial catches in the UoA in in 2019 were from 4-13-year-olds individuals, 6–8-year-olds dominated (70.5% of the abundance). The main biological characteristics in 2020 were within the range of average long-term fluctuations: the average length of the fish was 46 cm, the average weight was 1492 g, and the average age was 7.3 years (Tables 9 and 10).

Pike-perch is an important species of fishery in the Curonian Lagoon. Its main biological characteristics remain relatively stable over a fairly long period, which makes it possible to characterize the living conditions of the species in the Curonian Lagoon in the modern period as favorable. According to the studies, the commercial stock of pike-perch is currently in a satisfactory condition; its values are close to the average long-term level, which allows for a stable fishery.

Fishing is a constant factor in the impact on the environment. It is carried out on a rational basis, does not damage the aquatic biological resources of the bays, and at the same time is a socially significant industry in the Kaliningrad region.

AtlantNIRO conducts comprehensive ichthyological, hydrochemical and hydrobiological monitoring of the Curonian Lagoon. For more than 50 years of observation in the structure of ichthyocenosis, phytoplankton, zooplankton, zoobenthos, as well as in the chemical composition of water, no changes have been revealed associated with fishing activity. Thus, fishing for pike-perch in the Curonian Lagoon does not damage the environment.

Table 9 – Average size, weight and age characteristics of pike-perch from catches in Curonian Lagoon during 2010-2019 (Source: Materials, 2020a).

Characteristics (average)	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Average**
Commercial size, cm	46	47	48	48	47	43	45	47	43	47	46	46
Weight, gram	1632	1726	1844	1886	1770	1270	1387	1751	1297	1653	1492	1622
Age, years	7.3	7.3	7.5	8.0	7.6	6.9	6.8	7.3	6.5	7.3	7.0	7.3

Table 10 – Age composition (%) of pike-perch from commercial catches in the Curonian Lagoon in 2010-2019, percentage of abundance (Source: Materials, 2020a).

Age groups, years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
3	0.2	0.9	0.2	-	-	0.6	-	0.4	1.1	-
4	2.1	1.6	2.3	1.8	0.2	10.2	4.8	3.7	3.2	0.4
5	16.9	9.9	5.7	8.8	15.6	23.9	16.5	18.7	19.3	7.5
6	10.8	22.9	18.5	21.8	17.9	17.5	27.4	20.6	34.4	32.9
7	21.8	18.9	31.2	18.6	19.0	10.7	20.0	14.0	18.3	27.5
8	26.3	19.8	21.3	16.5	22.5	11.6	14.8	13.6	14.0	10.1
9	13.8	17.4	9.8	9.5	8.9	9.6	10.4	13.1	5.4	9.3
10	4.9	6.4	5.2	6.1	6.0	7.6	4.4	6.1	2.1	7.1
11	1.4	1.4	2.3	4.3	3.9	1.7	0.9	4.2	1.1	2.8
12	0.9	0.5	1.7	4.1	3.7	5.4	0.4	4.2	1.1	1.6
13	0.9	0.3	1.0	3.8	1.8	0.6	0.4	1.4	-	0.8
14	-	-	0.7	3.8	0.5	0.3	-	-	-	-
15	-	-	0.1	0.9	-	0.3	-	-	-	-

7.2.1.1.9Pike-perch Harvest Strategy, Harvest Control Rules and TAC Forecast

The harvest strategy for pike-perch in the Russian part of the Curonian Lagoon includes a precautionary annual TACs (Table 11**)** based on estimates of commercial stock biomass in relation to the limit and target reference points (Table 12) that have been implemented in HCR. In addition, there are catch quotas for each legal participant in commercial fishery.

Table 11 – Level of implementation of TAC for pike-perch in the Russian part of the Curonian Lagoon in 2010-2020 (Source: Materials, 2020a).

Parameters	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
TAC, tons	260	260	260	260	260	260	260	260	260	260	260
Catch, tons	239	238	238	237	242	245	246	240	211	237	240
Developing of TAC, %	92	92	92	91	93	94	95	92	81	91	92

The key harvest control rule (HCR) is that the annual TAC is set based upon the estimate of stock biomass in relation to designated target and limit biomass reference points (Figure 13, Table 12) as follows:

- If the commercial stock biomass is within the healthy zone, i.e. above the target reference point (B_{pa} = 554 tons), then the exploitation level is set at no higher than the target exploitation level (F_{pa} = 0.32);
- If the legal-sized stock is in the cautious zone, i.e. above the biomass limit reference point (B_{lim} = 396 tons), but below the target reference point, the exploitation level (F_t) is estimated as $F_t = F_{pa} \times (B_t - B_{lim})/(B_{pa} - B_{lim})$;
- If the legal stock is in the critical zone, i.e. below the limit reference point, the exploitation level is set to zero (F_t = 0). The fishery is therefore closed and only fishing for science is permitted.

So, there is the HCR to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached. Actually, due to the precautionary approach the exploitation level of pike-perch in Curonian Lagoon is set below of the target exploitation level.

The materials and information used to justify the Total allowable catch (TAC) for pike-perch in the Curonian Lagoon are usually representative and presented in sufficient quantities. The volume of the collected and processed material in 2019 was: a complete biological analysis with the taking of structures recording the age – 500 specimens. The information database of the Atlantic branch of the FGBNU "VNIRO" (AtlantNIRO) on the fishery and biology of fish and long-term data of accounting trawl surveys is also used. Statistical data on the catch of aquatic biological resources provided by the West-Baltic (in Russian: Zapadno-Baltiyskoe) Territorial Administration of the Federal Fisheries Agency. The structure and quality of the data available for forecasting correspond to the I (first) level of information support for calculations (Babayan, 2000).

The rationale for the choice of the stock assessment method is based on the assessment of the abundance and biomass of the commercial stock of pike-perch in the Curonian Lagoon, which is carried out using the KAFKA mathematical model (Cohort Analysis with Kalman Filter) (Mikheev, 2016; Methodological recommendations ..., 2018). According to the order of the Federal Fisheries Agency of 06.02.2015 No. 104, this model is intended for calculating the stocks of aquatic biological resources (ABR) referred to the 1st level of information support.

The minimum biomass B_{lim} for the observation period from 1989 to 2019, calculated using cohort analysis with the Kalman filter was chosen as a boundary reference point for biomass. We also used a threshold (precautionary) biomass preference point – B_{pa}, a boundary reference point for fishing intensity - the fishing mortality rate F_{lim} and the threshold value of the fishing mortality rate F_{pa} (Table 12) (Babayan, 2000; ICES Advice, 2017).

Table 12 – Biological reference points for pike-perch in the Curonian Lagoon (Source: Materials, 2020a).

Criterion	Reference point	Value	Method of assessment
Boundary reference points	B_{lim}	396 т	The minimum value of the commercial stock
	F_{lim}	0.45	Consistent with B_{lim}
Precautionary approach	B_{pa}	554 т	B_{pa}=1.4× B_{lim}
	F_{pa}	0.32	F_{pa}=F_{lim}/1.4

According to the order of the Federal Fisheries Agency of 06.02.2015 No. 104, the justification of the TAC is carried out in accordance with the principles of the precautionary approach. The determination of the rules for the regulation of the fishery was carried out using the management reference points for biomass and fishing mortality.

The harvest control rule (HCR) for the Curonian Lagoon pike-perch fishery, designed to ensure sustainable fishing in the long term, is presented in Figure 13, which shows retrospective data for the period from 1989 to 2019 in coordinates of the biomass of the commercial stock, fishing mortality and the forecast of the stock for 2021.The data shown in the figure indicate that the value of the stock of pike-perch in the modern period is within biologically safe limits.

To ensure a stable state of the commercial stock of pike-perch in the Curonian Lagoon and its catch at the current level, the value of the commercial mortality F_{bar5-9} for the forecast 2020-2021 recommended at the average level of 2010-2018 at the rate of 0.29.

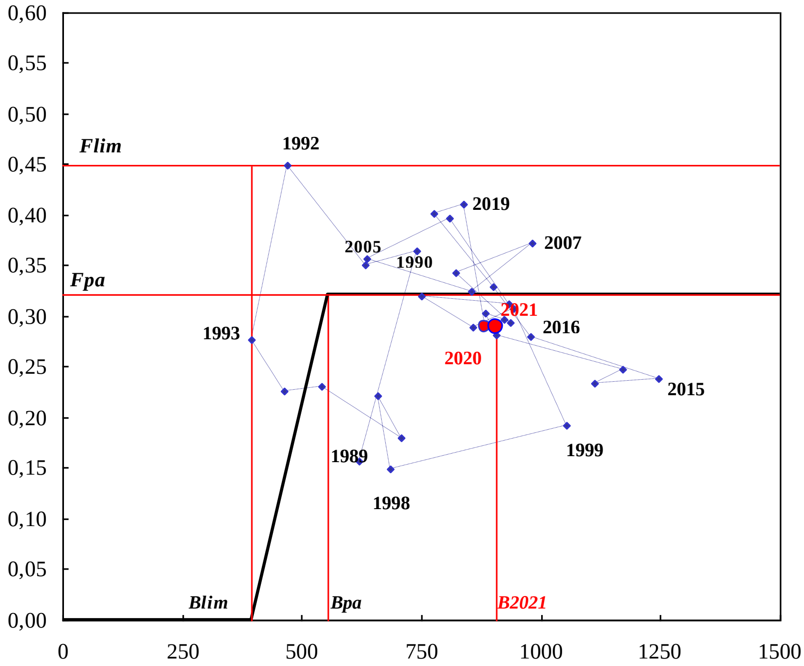


Figure 13 – Harvest Control Rule (HCR), reference points, and the commercial stock of pike-perch in 1989-2021 Legend: X-axis – commercial stock, t; Y-axis – fishing mortality. (Source: Materials, 2020a).

The pike-perch fishery in 2021 will be based on the 2012-2015 generations births whose productivity varies (Figure 14). Considering the multi-age structure of the commercial stock, its value will generally correspond to the average long-term one.

The stock of the species was calculated and its forecast for 2021 was carried out using the KAFKA model, which includes several settings. The ***s*** parameter is set by default in the range from 0 to 1. The ***delta*** parameter is fixed at 1. The parameters of the genetic algorithm are set by default: number of iterations - 50; the number of initial vectors is 1000; bit width of the grid – 16 (Methodical recommendations ..., 2018).

The following data were used in the model:

- matrix of pike-perch catches by years (1989-2019) and ages (5-12 years old, 13+ -group), in thousand individuals;
- indices of the number of 5-13-year-olds, representing the catch in thousand individuals for research survey;
- stock indices according to fishery statistics, expressed in thousands of specimens / month;
- average long-term weighed portions (2010-2019) by age (kg).

Recruitment (R) for 2020 and 2021 preliminarily estimated as a long-term average and set at 173.1 thousand specimens. The estimated catch for 2020 is set in the model as the previously calculated TAC for 2020 - 260 tons or 160 thousand specimens.

According to the calculated data, the number of the commercial part of the pike-perch stock in the Russian part of the Curonian Lagoon in 2021 will amount to 573.6 thousand specimens, biomass - 905 tons (Tables 13 and 14).

After determining the abundance and biomass of the stock using the KAFKA cohort model and the value of the fishing intensity with using the HCR, an estimate of the TAC for pike-perch for 2021 was obtained (260 tons).

The obtained predicted values of the biomass of the commercial stock and the Total allowable catch of pike-perch in the Curonian Lagoon are in the area of safe commercial use, according to the HCR. The biomass of the commercial stock over the last decade (2010-2019) averaged 974 tons. The predicted biomass of the species (905 tons) for 2021 is within the 95% confidence interval (Table 15); its value (B_{2021} = 905 t) is 1.6 times higher than the biomass of the precautionary approach (B_{pa} = 554 t) and 2.3 times higher than the limiting biomass (B_{lim} = 396 t). Accordingly, the fishery stock of pike-perch in 2021 will be within biologically safe limits.

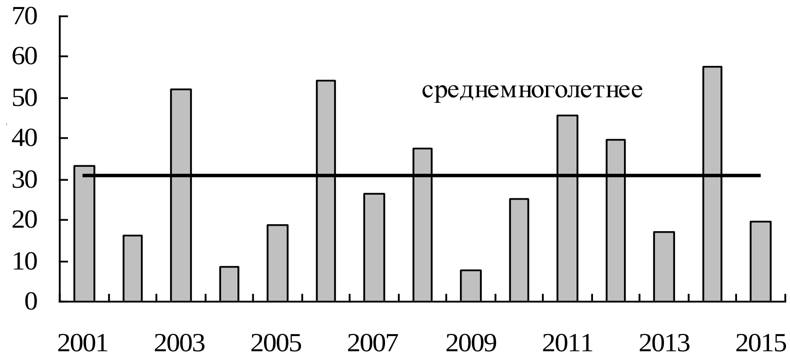


Figure 14 – Interannual dynamics of indices of the number (Y-axis, conventional units) of pike-perch generations in the Curonian Lagoon according to trawl survey data, line – long-term average (Source: Materials, 2020a).

Table 13 – The number of commercial pike-perch stock in the Russian part of the Curonian Lagoon and its forecast for 2021, thousand specimens (Source: Materials, 2020a).

Age, years	**Year of fishery**											
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020***	**2021***
5	178.1	153.1	145.8	152.4	192.4	245.9	211.4	239.3	324.7	94.4	173.1	208.9
6	105.9	143.8	131.2	135.1	139.1	170.8	182.8	102.2	157.6	270.4	83.1	88.3
7	109.7	86.6	107.1	107	107.7	114.6	125.0	71.3	55.6	101.5	223.1	222.3
8	89.9	73.0	57.2	65.7	83.7	81.7	87.1	47	39.2	25.8	62.1	45.9
9	43.8	46.9	42.6	29.0	44.9	52.9	50.3	31.3	21.1	16.4	11.3	6.0
10	24.0	21.3	20.9	29.6	17.1	32.7	26.1	14.5	9.7	12.4	3.1	0.7
11	5.5	15.8	11.5	14.0	21.9	8.9	11.4	9.4	4.5	6.2	2.2	0.5
12	1.9	3.1	13.3	8.6	8.6	16.6	4.1	6.1	2.6	2.8	2.1	0.9
13+	1.5	0.4	2.3	11.1	3.4	3.6	1.2	2.0	0.1	0.8	0.4	0.1
Total	560.3	544.0	531.9	552.5	618.8	727.7	699.4	523.1	615.1	530.7	560.5	573.6

* Note: predicted value.

Table 14 – Commercial stock and commercial mortality of pike-perch in the Curonian Lagoon (Source: Materials, 2020a).

Year of fishery	Abundance of stock (N), thousand specimens	Biomass (B), tons	Commercial fishing mortality (F_{bar5-9})
2010	560.3	922	0.30
2011	544.0	885	0.30
2012	531.9	907	0.28
2013	552.5	1171	0.25
2014	618.8	1113	0.23
2015	727.7	1245	0.24
2016	699.4	979	0.28
2017	523.1	899	0.33
2018	615.1	777	0.40
2019	530.7	837	0.41
2020*	560.5	885	0.29
2021*	573.6	905	0.29

* Note: predicted value.

Table 15 – Predicted values of the commercial stock of pike-perch in the Curonian Lagoon and their 95% confidence interval (Source: Materials, 2020a).

Year of forecast	Biomass of stock, tons	Confidence interval - 95 %	
		Upper limit	Low limit
2020	885	1219	551
2021	905	1378	433

There are other rules for the regulation of fishing: a minimum legal size (for pike-perch is 46 cm TL), closed seasons and closed areas, technical specifications for fishing gears design. Gillnets with mesh sizes less than 70 mm cannot be used in pike-perch fishery. To ensure compliance, a comprehensive monitoring, control, and surveillance system is in place.

There is robust enforcement of fishery management regulations. At national level in Russia, the Federal Fisheries Act was adopted by the Federal Assembly (the Russian Parliament) in 2004 and has subsequently been revised several times. There are Fishing Rules of the West Basin (Fishing Rules, 2020) that take into account the local peculiarities of fishing.

The logbook completion is mandatory for fishermen after each fishing operation. They must also submit statistical reports to the controlling organizations twice a month. This approach makes it difficult for the quotas to be exceeded.

When the percentage of undersized fish in a catch exceeds a threshold of 10% by number, the vessel must move on to an area where the abundance of undersized fish is lower.

There is a stock monitoring programme. Biological characteristics and stock status are monitored during research surveys. Annually are conducted 3 trawl surveys for a census of juvenile fish and at least one bottom trawl survey for a census of adult fish.

Major sources of uncertainty in the estimate of stock biomass and abundance are variations associated with the annual research surveys, the uncertainty in predicting annual recruitment, and volume of recreational and illegal catches. They are taking into account through the setting of highly precautionary TAC.

7.2.1.2 Perch

Perch *Perca fluviatilis* (L.) (Figure 15) is a fish (not a LTL species) which lives under a very wide range of habitats – estuaries, lakes of all types, medium-sized streams and large rivers.

Figure 15 – Perch *Perca fluviatilis* (Source: https://kalendargoda.com/okun-lovlya-i-klev-okunya-2019-zima-vesna-leto-i-osen).

Perch is a widespread (Figure 16) and abundant species with no known major threats. In the Curonian Lagoon, perch is an important target species for commercial and recreational fishers and a food species for predatory fishes and aquatic birds (Putys, 2012).

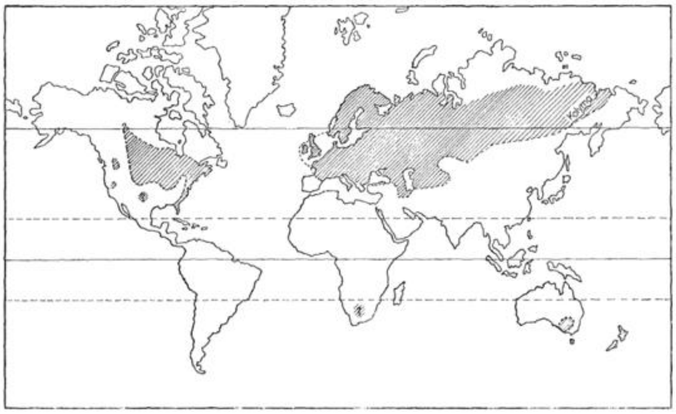


Figure 16 – Distribution range of perch (Source: Thorpe, 1977).

7.2.1.2.1 Geographic Range

Eurasia: throughout Europe to northernmost extremity of Scandinavia, except Iberian Peninsula, central Italy, and Adriatic basin; Aegean Sea basin in Matriza and from Struma to Aliakmon drainages; Aral Sea basin; Siberia in rivers draining the Arctic Ocean eastward to Kolyma. Species is widely introduced. Several countries report adverse ecological impact after introduction. On the territory of Lithuania, perch was found in 92 surveyed lakes and ponds (Virbickas, 2016).

7.2.1.2.2 Age and growth

In the Curonian Lagoon, perch lives up to 11 years. The dependence of the weight of the fish from its length is expressed by a power function (Figure 17). During research surveys in the Curonian Lagoon in 2002 - 2011, trawl catches were dominated by perch 7-15 cm long, their share was 44% of the total number of caught individuals. The predominance of the younger and the constant presence of older age groups were also noted, which is characteristic of a stable state of the population (Bazhenova, 2012).

The linear growth rate of perch from the Curonian Lagoon is similar to that of fish from other reservoirs of the Kaliningrad region (Figure 18). The average standard length of a perch at the age of 6 was 24 cm. From the first to the fourth years, the fish grow on average 5 cm per year, in the fifth and sixth years, 2 cm per year.

According to Ložys (2004), field observations revealed that body length, condition factor, fatness coefficient and fat content in muscles were significantly higher in perch young-of-the-year inhabiting the cooler, brackish waters of the Baltic Sea than in individuals inhabiting the Curonian Lagoon.

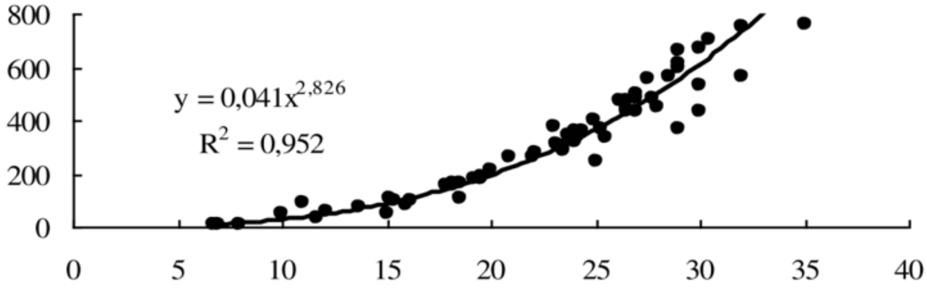


Figure 17 – Length-to-weight relationship of perch in the Curonian Lagoon.
Legend: X-axis – length, cm; Y-axis – weight, g.

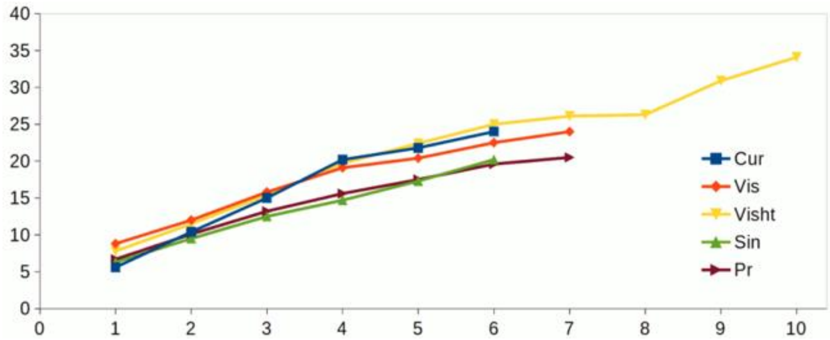


Figure 18 – Average standard length of perch depending on age in water bodies of the Kaliningrad region.
Legend: X-axis – age, years; Y-axis – standard length, cm. Cur – Curonian Lagoon, Vis – Vistula Lagoon, Visht – Vishtynetskoe Lake, Sin – Sinyavinsky quarry, Pr - Pravdinskoe reservoir (Source: Baranovskiy, 2010).

7.2.1.2.3Distribution

Analysis of the research trawl surveys, that were carried out in the Russian part of the Curonian Lagoon (Figure 19) in 2002–2011 by AtlantNIRO, showed the following. The share of perch among other fish in trawl catches varied significantly – from 0.1 to 5.2% in terms of abundance and from 0.1 to 4.1% in terms of biomass. The variability of these parameters was high – 89% for abundance and 87% for biomass. On average, during the study period, the share of perch in the catches was 1.5 ± 0.45% in terms of abundance, 1.3 ± 0.37% in terms of biomass. The frequency of occurrence of perch is 67.5% on average. Perch was found throughout the bay, with a predominant habitat in the deeper southern part (stations 1, 5, 6, 7 and 9), where the maximum number of catches was observed from 5 to 15 specimens per trawl. In the rest of the lagoon area, catches of 3 to 7 specimens per trawl were observed. A similar pattern was observed in the distribution of perch biomass. According to the research, the average values of the perch abundance index in the Russian part of the Curonian Lagoon were 7.0 ± 2.0 specimens per trawl, the biomass index – 1.5 ± 0.4 kg/trawl. The distribution of perch was largely depended on the weather conditions and differences in the hydrochemical regime (Bazhenova, 2012).

7.2.1.2.4*Maturity and spawning*

Perch becomes sexually mature starting at 2 years of age. The range of values of AIF of perch in age 2-6 years was 19–250 thousand eggs, on average 39.0 ± 2.20 thousand eggs, and it depended on the length of the females. According to Ložys (2017), intense spawning of perch in the Curonian Lagoon in 2013-2017 took place from the second half of April to the beginning of May. Eggs grouped in long ribbons are found over submerged objects.

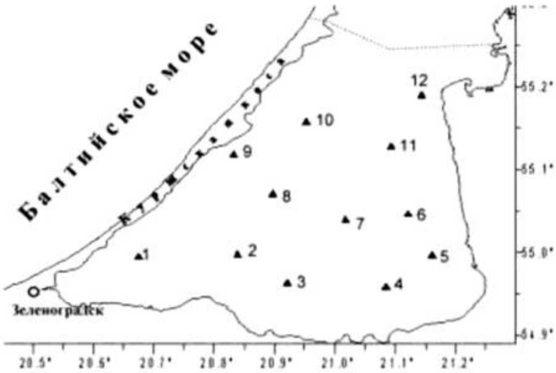


Figure 19 – Map of trawl stations in AtlantNIRO research surveys in the Russian part of the Curonian Lagoon (Source: Bazhenova, 2012).

7.2.1.2.5 *Feeding*

In eutrophic lakes in northern Turkey, perch feeds on prey fish and macroinvertebrates. The most important food items were *Scardinius erythrophthalmus* and *Perca fluviatilis*, followed by Chironomidae larvae. Diet composition and feeding habits varied seasonally and ontogenetically (Yazıcıoğlu *et al*., 2016).

According to Rakauskas *et al*. (2013), based on stable isotope analysis results the main food items for adult perch in the Curonian Lagoon were *Rutilus rutilus*, *Perca fluviatilis, Alburnus alburnus, Neogobius melanostomus, and Gymnocephalus cernua* (Table 16).

Table 16 – Diet composition of perch from the Curonian Lagoon in 2010; percent contributions of fish prey species to predator's nutrition (Rakauskas *et al*., 2013).

Prey species	**Perch *Perca fluviatilis***
Perch *Perca fluviatilis* S*	9.3 ± 7.9
Perch *Perca fluviatilis* M*	9.8 ± 8.3
Ruffe (or pope) *Gymnocephalus cernua*	15.7 ± 13.8
Roach *Rutilus rutilus* S*	10.8 ± 9.3
Roach *Rutilus rutilus* M*	19.2 ± 14.3
Round goby *Neogobius melanostomus*	17.4 ± 14.3
Bleak *Alburnus alburnus*	17.9 ± 14.3

* Note: Data presented are results of IsoSource model (mean ± standard deviation); Fish size categories: S = small; M = medium.

7.2.1.2.6 Perch fishery

Perch fishing efforts in the UoA are regulated by setting up a precautionary annual RC. Commercial companies must have an official approval for participating in fishery. At present, in the Russian part of the lagoon, perch is fished mainly with gill nets with a mesh size of 36 – 40 mm knot-to-knot.

For perch, there are commercial catch statistics since 1926 (Figure 20). The maximum annual catches (349-490 tons) were in 1926-1940.The minimum catch (70 t) was in 1996. In the last decade, the average catch in the Curonian Lagoon was 176 tons, with 75% caught by Russia and 25% by Lithuania.

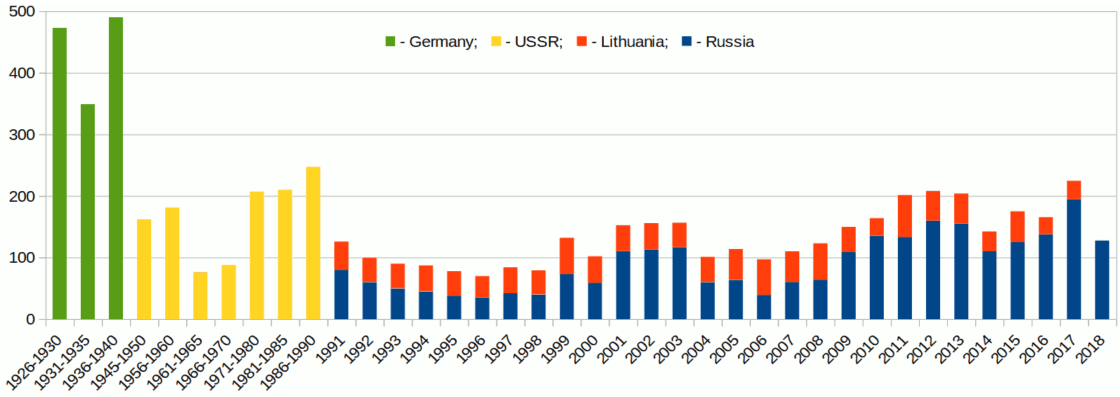


Figure 20 – Commercial catches of perch in the Curonian Lagoon, in 1926-2018 (Source: Based on the data of Ložys, 2017 and Gushchin *et al*., 2019).
Legend: X-axis – years; Y-axis – catch in tons. Until 1990, catches are given in average for 5-year periods.

The materials and information used to justify the Recommended Catch (RC) for perch in the Curonian Lagoon are usually representative and presented in sufficient quantities. The volume of the collected and processed material in 2019 was: a complete biological analysis with the taking of structures recording the age - 200 specimens and mass length measurements – 430 specimens. The information of long-term databases of biostatistical data on the fishing of aquatic biological resources (1958-2019) of the Atlantic branch of the FGBNU "VNIRO" ("AtlantNIRO") and long-term data of accounting trawl surveys is also used. Statistical data on the catch of aquatic biological resources provided by the Zapadno-Baltiyskoe Territorial Administration of the Federal Fisheries Agency.

But insufficient completeness of available information on freshwater perch in the Curonian Lagoon, namely the lack of data on catch per effort, excludes the possibility of using exploited stock models. The structure and quality of the data available for forecasting correspond to the III level of information support.

To substantiate the catch volume of perch in the Curonian Lagoon, an expert method was used based on an analysis of commercial biological parameters in the current year, as well as their interannual dynamics.

The perch stock of the Curonian Lagoon is in a stable and satisfactory condition (see Section 7.2.1.2.7 and 7.2.1.2.8). Since 2009, the catch of this species has been carried out on the basis of agreements for the use of aquatic biological resources classified as fishing objects, the total allowable catch of which is not established.

7.2.1.2.7Perch stock status

To substantiate the RC of perch in the Curonian Lagoon, an expert method is used, based on the analysis the biological parameters of stock in the current year, as well as their interannual dynamics. Research by the AtlantNIRO (Lozhkin, 2020) has shown that the stock of perch is in a stable, satisfactory condition. According to observations in 2020, the main biological indicators of individuals in the commercial catches were at the level of long-term values: average length – 22 cm, weight – 252 g, 4-5-year-olds dominated in the fishery (more than 60% of the number), the average age of fish was 4.2 years (Table 17).

Table 17 – Biological characteristics of perch from commercial catches in the Curonian Lagoon in 2011-2020 (Source: Correction, 2021).

Parameter / Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Mean
Average standard length, cm	23	25	23	25	26	25	23	21	23	22	24
Average weight, g	296	310	300	310	328	312	294	258	289	252	295
Average age, years	5.1	4.5	5.0	4.5	4.5	4.2	3.8	3.2	4.1	4.2	4.3

The report of the Centre for Natural Research (Vilnius) provides a description of the perch stock status in the Curonian Lagoon in 2003-2017 (Ložys, 2020). The analysis of scientific catches of perch by gill nets with mess size 40–45 mm showed that their relative abundance and biomass increased in the period 2003–2017. This change was mainly influenced by the particularly high abundance in 2011–2012 (Figure 21). During the same period, the average length and weight of perch also increased (Figure 22). In the 2015-2017 population, the majority were individuals of 10.0–15.0 cm in total length (TL). The number of large perch longer than 30 cm in length was 2.4% in 2015, 2.1% in 2016, and 0.5% in 2017 (Figure 23). The authors of the report concluded that perch stock will remain stable over the next five years as younger cohorts grow.

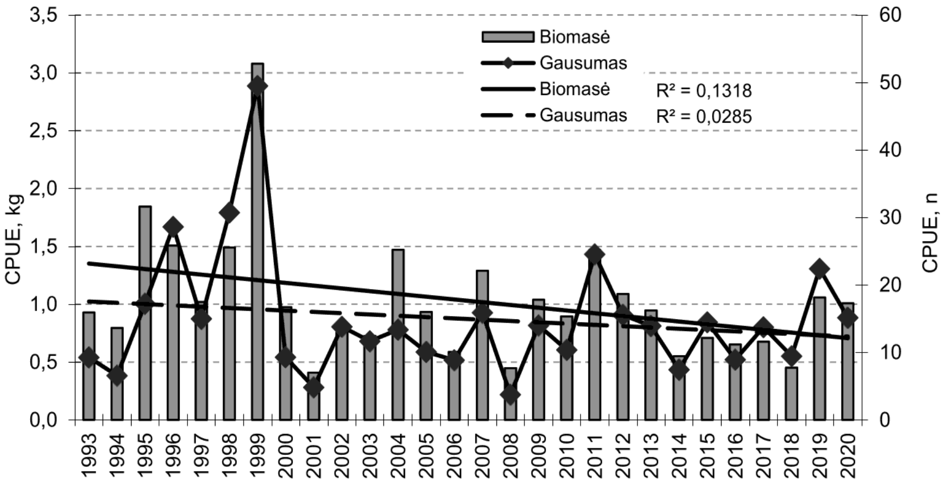


Figure 21 – Relative abundance and biomass of perch (CPUE) in catches of gill nets with mesh 40-45 mm in 1993-2020 in the Curonian Lagoon (Source: Ložys, 2020).

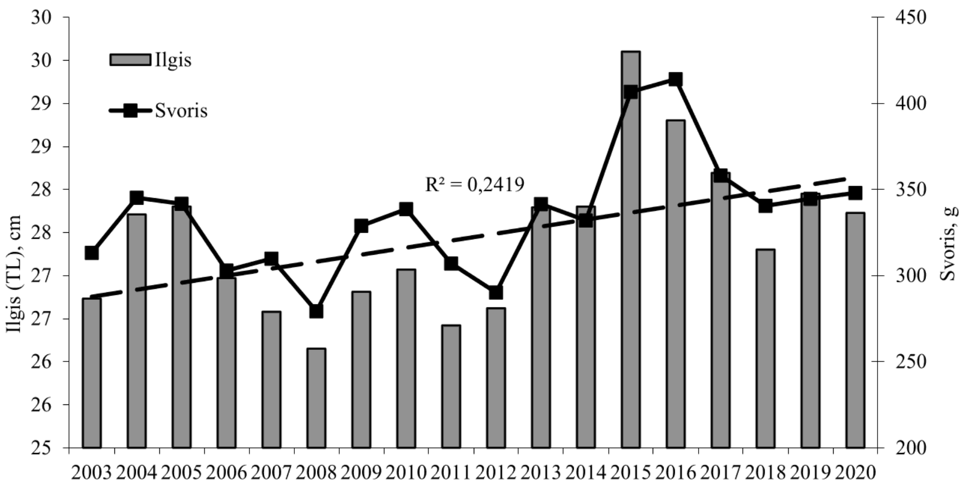


Figure 22 – Average length (TL) and weight of perch in catches of gill nets with mesh 40-45 mm in 2003-2020 in the Curonian Lagoon. (Source: Ložys, 2020).

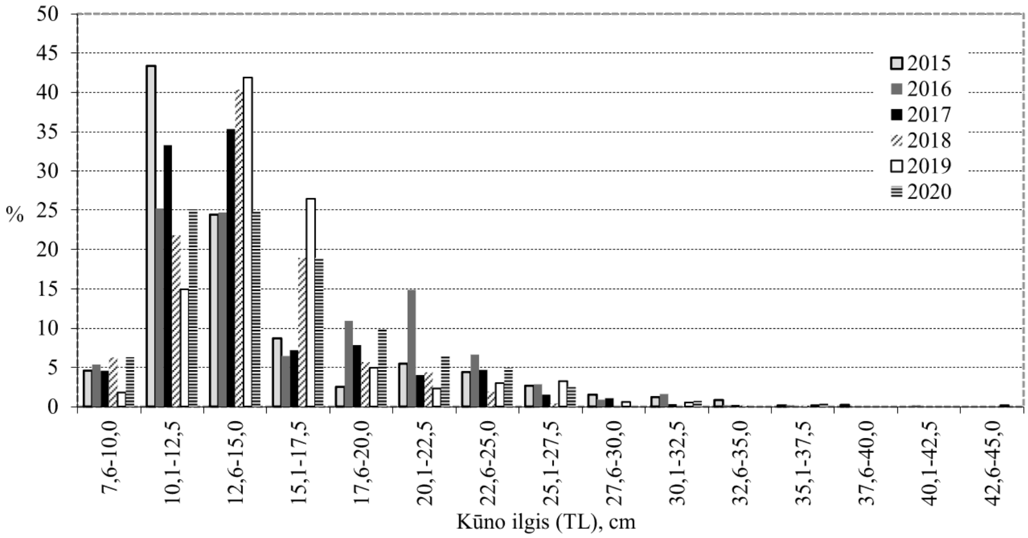


Figure 23 – Distribution of perch in total length groups in catches of gill nets with mesh 14–70 mm in 2015–2020 in the Curonian Lagoon (Source: Ložys, 2020).

7.2.1.2.8 Perch Harvest Strategy, Harvest Control Rules and RC Forecast

The harvest strategy for perch in the Russian part of the Curonian Lagoon includes a precautionary annual RC (Table 18) based on estimates of the biological indicators of the commercial stock: biomass, age, mass, size (Table 17), and Catches Per Unit Effort (CPUE) (Figure 24).

Table 18 – RC, catch, and RC removal by years in the Russian part of the Curonian Lagoon (Source: Correction, 2021).

Parameter	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RC, t	150	150	150	150	150	150	150	150	150	200	200	200
Catch, t	109	135	133	160	150	110	125	138	195	127	214	242
RC removals, %	73	90	89	110	100	73	83	92	130	64	105	121

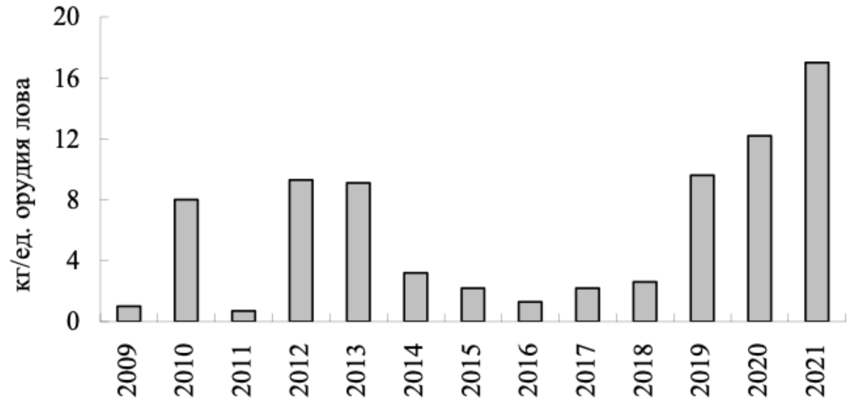


Figure 24 – Annual dynamics of CPUE (Y-axis) of perch in commercial catches in UoA (Source: Correction, 2021).

The HCR includes an annual RC that is established based on an assessment of stock biological indicators (age – size composition of commercial catches, CPUE in commercial catches, and catches in research trawl surveys).

There are other rules for the regulation of fishing: a minimum legal size (MLS) for perch is 18 cm (TL), closed seasons and closed areas, technical specifications for fishing gears design. Gillnets with mesh sizes less than 36 mm cannot be used in perch fishery. To ensure compliance, a comprehensive monitoring, control, and surveillance system is in place.

There is robust enforcement of fishery management regulations. At national level in Russia, the Federal Fisheries Act was adopted by the Federal Assembly (the Russian Parliament) in 2004 and has subsequently been revised several times. There are Fishing Rules of the West Basin (Fishing Rules, 2020) that consider the local peculiarities of fishing.

The logbook completion is mandatory for fishermen after each fishing operation. They must also submit statistical reports to the controlling organizations twice a month. This approach makes it difficult for the quotas to be exceeded.

When the percentage of undersized fish in a catch exceeds a threshold of 10% by number, the vessel must move on to an area where the abundance of undersized fish is lower.

There is a stock monitoring programme. Biological characteristics and stock status are monitored during research surveys. Annually are conducted 3 trawl surveys for a census of juvenile fish and at least one bottom trawl survey for a census of adult fish.

Major sources of uncertainty in the estimate of stock biomass and abundance are variations associated with the annual research surveys, the uncertainty in predicting annual recruitment, and volume of recreational and illegal catches. They are considering through the setting of highly precautionary RC.

Justification of the choice of the method of stock assessment

To predict the Recommended Catch (RC) value of the perch in the Curonian Lagoon at the available third level of information support for calculations, the DLMTool package implemented in the R software environment was used, which includes only methods that work in conditions of input data shortage. The simplest options of the package with specific control schemes for the available data were used. When implementing these non-model methods included in the DLMTool package, it is assumed that the catch statistics contain errors distributed according to the lognormal law. The use of such non-model methods for substantiating RV results in the distribution of recommended catch values obtained during stochastic experiments. In this case, were used methods, operating only with data on the dynamics of the catch:

1. AvC: implements a fishery management scheme of the "status quo" type, according to which the RV is defined as the average catch for the observation period (2009-2020).

2. CC1: a management scheme aimed at maintaining a constant catch value.

3. CC2-CC5: methods like CC1 with a correction coefficient x of 0.1-0.4, respectively.

Fishery and biological parameters and their interannual dynamics were used as indicators of the state of the stock.

To determine the value of the RV of freshwater bass of the Curonian Lagoon, a strategy was adopted aimed at maintaining a constant catch value, the CC1 management scheme. The chosen strategy allows adjusting the volume of the recommended catch of freshwater bass in the Curonian Lagoon for 2022, considering its catch in 2021, to 270 tons (Figure 25).

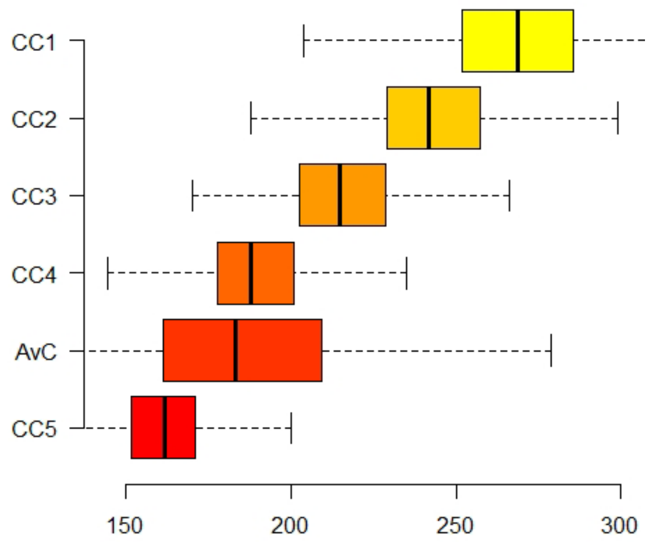


Figure 25 – Forecast of the value of RV perch in the UoA (Source: Correction, 2021).

Analysis and diagnostics of the results obtained showed that on the histogram of the frequency distribution of bass catch values with an interval of 10 tons, according to the CC1 control scheme, the maximum (value 260-270 tons) corresponds to the middle of the run-up of catch data, the shape of the diagram indicates the stability of the process (Figure 26).

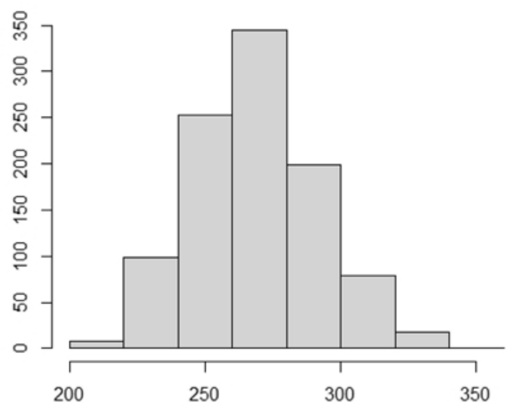


Figure 26 – Histogram of frequency distribution of perch catch values in the UoA with an interval of 20 t (management scheme CC1) (Source: Correction, 2021).

7.2.2 Information and Monitoring

Russia

Environmental monitoring of the fishery by the government is required under Chapter 5, Article 42 in Federal Law of 20.12.2004 166-FZ (FL, 2004), which explicitly mentions the distribution, abundance, quality and reproduction of aquatic bio resources and habitats, the fishery and preservation of aquatic bio resources. According to the law, the fishery research institute AtlantNIRO performs annual research surveys in Curonian Lagoon to collect data on the species composition of fish community, length, weight, age, sex, fertility, maturity, quality of environment, and etc. AtlantNIRO regularly conducts research of food reserve for juvenile fish and adult plankton-eater fishes (Naumenko, Ushakova, 2017). The data are collected and analysed to estimate the stock structure and calculate TAC for pike-perch and RC for perch. There is no information on subpopulations of pike-perch and perch within the Curonian Lagoon or conditions favourable to subpopulations, therefore it is assumed that there is one population for each species.

The fishing companies maintain daily catch records that are monitored on a routine basis to determine the cumulative catch against the allocated quota. The companies must also submit statistical reports to the controlling organizations twice a month. These measures enable strict control over the catch to prevent the quota being exceeded.

There is good information on the fleet composition. Detailed information on the characteristics (length, tonnage, etc.) of each of the vessels engaged in the fishery. A list of these vessels was provided to the auditors.

Information on removals from the stock by other commercial fisheries is regularly provided to the Fisheries Administration. Recreational catches in Curonian Lagoon are not directly recorded, but there is expert assessment of their volume. An expert assessment of illegal catches is also carried out. In total, recreational and illegal catches in Curonian Lagoon can reach 20% of commercial catches (Gushchin, Shavrina, 2018) and they are taken into account by a precautionary TAC and RC.

Lithuania

Šilute Wildlife Protection Inspectorate collects monthly commercial fisherman reports with the following information: fishing location (fishing square), fishing gear type, quantity, duration (in days), and catch by species, and initial sale price (Ivanauskas et al., 2022).

7.2.3 Catch profiles

The catch profile for pike-perch is shown in Figure 12.

The catch profile for perch is shown in Figure 20.

7.2.4 Total Allowable Catch (TAC) and catch data for pike-perch and perch

There's a TAC set for pike-perch in the Curonian Lagoon (Table 19), but not for perch. Catch of perch is regulated using parameter so called Recommended (or Possible) Catch (or yield) (RC). Both TAC and RC are approved for each calendar year for constituent territories of the Russian Federation for waterbodies and water biological resources. The basis for approval is scientifically based forecasts of the state of aquatic biological resources stocks, which are developed by research institutes administered by Federal Fisheries Agency. The catch data for the target species in recent years (as provided by the client) are presented in Table 19 and 20.

Table 19 – TAC and catch data, pike-perch*

TAC	Year	**2021**	Amount	**260, t**
UoA share of TAC	Year	**2021**	Amount	**63.689, t**
Total green weight catch by UoC	Year (most recent)	**2021**	Amount	**63.492, t**
Total green weight catch by UoC	Year (second most recent)	**2020**	Amount	**25.200, t**

* Note: In 2021 – including catch according to fish quotas of LLC "Marita".

Table 20 – RC and catch data for perch

RC	Year	**2021**	Amount	**200, t**
UoA share of RC	Year	**2021**	Amount	**80, t**
Total green weight catch by UoC	Year (most recent)	**2021**	Amount	**79.768, t**
Total green weight catch by UoC	Year (second most recent)	**2020**	Amount	**39.905, t**

* Note: In 2021 – including catch according to fish quotas of LLC "Marita".

7.2.5 Principle 1 Performance Indicator scores and rationales

PI 1.1.1 – Stock status (for UoA 1 and UoA 2)

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Stock status relative to recruitment impairment			
	Guide post	It is **likely** that the stock is above the point where recruitment would be impaired (PRI).	It is **highly likely** that the stock is above the PRI.	There is a **high degree of certainty** that the stock is above the PRI.
	Met?	**Pike-perch – Yes** **Perch – Yes**	**Pike-perch – Yes** **Perch – Yes**	**Pike-perch – No** **Perch – No**

Rationale

Pike-perch

The status of the Curonian Lagoon pike-perch stock are assessed on an annual basis by Russian and Lithuanian scientists. There is Joint Russian-Lithuanian Fisheries Commission (JRLFC). In the course of the commission's work, stock status are discussed, as well as TACs and national quotas for pick-perch in the Curonian Lagoon are established. For 2021, the Russian quota for pike-perch is 260 tons, and for Lithuania - 110 tons.

Lithuanian stock assessment.

According to Andrašūnas et al. (2022), B/Bmsy >= 0.7 for pike-perch in the Curonian Lagoon from 2000 (Figure 45 A).

Russian stock assessment.

The minimal value of commercial stock biomass for the observation period 1988 to 2019 was chosen as the limit reference point Blim = 396 tons. Blim is considered to be a conservative proxy for the PRI. Since 1994, the biomass estimates were higher than Blim (Figure 13, Table 14). Independent research trawl surveys show high abundance of juvenile pike-perch in 2014 (Figure 14) which will be recruited into the fishery in 2018-2020. It is highly likely that the stock is above the PRI. According to TAC forecast of the VNIRO (Materials, 2020a), with a 95% probability, the pike-perch commercial biomass in Curonian Lagoon in 2021 will be in the range of 433-1378 tons (Table 15). This means that with a probability of 95% it will be more than Blim. According to MSC Fisheries Standard v2.01, SA2.2.1.2, – "Highly likely means greater than or equal to the 80th percentile". **SG 60 and SG 80 are met**.

During the site visit, two experts from the Lithuanian side, Robertas Kubilius (Chief ecologist of the Nemunas Delta Regional Park, Lithuania) and Antanas Kontautas (Head of Fishery Data collection programme in the Klaipeda University), expressed doubts that the pike-perch stock in Curonian Lagoon exceeds the Blim. They also reported that they have information about the occurrence and biological characteristics of pike-perch only in the Lithuanian part of the Curonian Lagoon. And that changes in these indicators may be due to changes in water salinity in the Lithuanian part of the lagoon, which is located closer to the sea. Based on this information, the team decided that there is no high degree of certainty that the pike-perch stock in the UoA is above the PRI. **SG 100 is not met**.

Perch

Lithuanian stock assessment.

According to Andrašūnas et al. (2022), B/Bmsy > 1 for perch in the Curonian Lagoon from 2012. (Figure 45 B).

Russian stock assessment.

The expert method is used to substantiate the RC of perch in the Curonian Lagoon. The method is based on the analysis the biological parameters of stock in the current year, as well as its interannual dynamics. As perch has no stock status reference points available, derived either from analytical stock assessment or using empirical approaches the Risk Based Framework (RBF) is required for the assessment (Table 3 of MSC Fisheries Certification Process, v.2.2) with a workshop conducted with stakeholders at the site visit (see section 8.8). Perch received an **MSC derived score of 83** (Table 91). Therefore, **SG 60 and SG 80 are met but not SG 100**.

b	Stock status in relation to achievement of Maximum Sustainable Yield (MSY)			
	Guide post		The stock is at or fluctuating around a level consistent with MSY.	There is **a high degree of certainty** that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
	Met?		**Pike-perch – No** **Perch –Yes**	**Pike-perch – No** **Perch – No**

Rationale

Pike-perch

Lithuanian stock assessment.

According to Andrašūnas et al. (2022), B/Bmsy < 0.8 for pike-perch in the Curonian Lagoon from 2000 (Figure 45 A).

Russian stock assessment.

There is the precautionary commercial stock biomass reference point B_{pa} = 1.4 * B_{lim} = 554 tons, that is used as target reference point for HCR. It was below the B_{pa} only 4 out of 30 past years (13% of cases), in 1992-1995 (Figure 13). Since 1996, the biomass estimates were higher than B_{pa}. In 2021 B_{2021} = 905 t; 905/B_{pa} = 1.63.

Taking into account the differences between the Russian and Lithuanian assessments, the team cannot state that the pike-perch stock in the Curonian Lagoon is at or fluctuating around a level consistent with MSY.

SG 80 and SG 100 are not met.

Perch

Lithuanian stock assessment.

According to Andrašūnas et al. (2022), B/Bmsy > 1 for perch in the Curonian Lagoon from 2012. (Figure 45 B).

Russian stock assessment.

The expert method is used to substantiate the RC of perch in the Curonian Lagoon. The method is based on the analysis the biological parameters of stock in the current year, as well as its interannual dynamics. As perch has no stock status reference points available, derived either from analytical stock assessment or using empirical approaches the Risk Based Framework (RBF) is required for the assessment (Table 3 of MSC Fisheries Certification Process, v.2.2) with a workshop conducted with stakeholders at the site visit (see section 8.8). Perch received an **MSC derived score of 83** (Table 91). Therefore, **SG 80 is met but not SG 100**.

References

- Andrašūnas et al. (2022)
- Babayan, 2000;
- Correction, 2021;
- Golubkova *et al*., 2005;
- Lozhkin, 2020;
- Materials, 2020a, b.

Stock status relative to reference points

	Type of reference point	Value of reference point	Current stock status relative to

			reference point
Reference point used in scoring stock relative to PRI (SIa)	**Pike-perch** – B_{lim}	*Russian:* 396 tons commercial stock biomass. *Lithuanian:* B_{lim} = 0.5 B_{msy}	*Russian stock assessment* 905 / B_{lim} = 2.29 *Lithuanian stock assessment* B_{2020}/B_{msy} = 0.7
	Perch – No, RBF was used	-	-
Reference point used in scoring stock relative to MSY (SIb)	**Pike-perch** Russian – B_{pa} *Lithuanian:* B_{msy}	*Russian:* 554 tons commercial stock biomass. *Lithuanian:* no absolute value	*Russian stock assessment* 905 / B_{pa} = 1.63 *Lithuanian stock assessment* B_{2020}/B_{msy} = 0.7
	Perch – No, RBF was used	-	-

Draft scoring range and information gap indicator added at Announcement Comment Draft Report	
Draft scoring range	**Pike-perch – ≥80** **Perch – RBF**
Information gap indicator	Pike-perch – Information sufficient to score PI. Perch – The RBF was used to score PI.
Overall Performance Indicator scores added from Client and Peer Review Draft Report	
Overall Performance Indicator score	**Pike-perch – 70** **Perch – 83***
Condition number (if relevant)	**1 (UoA 1)**

*RBF was used in the UoA 2 to get obtain the PI 1.1.1 score. According to MSC Fisheries Certification Process v2.2, 7.17.5.2, the Assessment Team shall apply an exception if the score is automated from the RBF worksheet and include the worksheet score without rounding up or down.

PI 1.1.2 – Stock rebuilding

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring Issue		SG 60	SG 80	SG 100
a	Rebuilding timeframes			
	Guide post	A rebuilding timeframe is specified for the stock that is the **shorter of 20 years or 2 times its generation time**. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed **one generation time** for the stock.
	Met?	**Pike-perch – Yes** **Perch – NA**		**Pike-perch – Yes** **Perch – NA**
Rationale				

Pike-perch

Russian fish managers think that pike-perch stock in Russian part of the Curonian Lagoon is above Btr (Materials, 2020a, 2020b, 2022). Lithuanian fish managers think that pike-perch stock in the Curonian Lagoon is below Bmsy (Andrašūnas et al., 2022). In connection with these disagreements PI1.1.1b SG80 is not met for pike-perch. The condition is set. It is necessary to reach an agreement between Lithuania and Russia on the status of pike-perch stocks in the Curonian Lagoon as a whole. If the stock is below the target control point (Btr), in this case it should be restored to Btr.

The generation time for pike-perch is 8.2 years[1]. The rebuilding timeframe (8 years) is specified which does not exceed one generation time for the stock. **The SG 60 and SG 100 are met**.

Perch

RBF was used for perch. Therefore, this SI is not scored.

b	Rebuilding evaluation			
	Guide post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is **evidence** that the rebuilding strategies are rebuilding stocks, **or it is likely** based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the **specified timeframe**.	There is **strong evidence** that the rebuilding strategies are rebuilding stocks, **or it is highly likely** based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the **specified timeframe**.
	Met?	**Pike-perch – Yes** **Perch – NA**	**Pike-perch – Yes** **Perch – NA**	**Pike-perch – Yes** **Perch – NA**
Rationale				

[1] https://www.fishbase.in/summary/Sander-lucioperca.html

Pike-perch

Russian fish managers think that pike-perch stock in Russian part of the Curonian Lagoon is above Btr (Materials, 2020a, 2020b, 2022). Lithuanian fish managers think that pike-perch stock in the Curonian Lagoon is below Bmsy (Andrašūnas et al., 2022). In connection with these disagreements PI1.1.1b SG80 is not met for pike-perch. The condition is set for PI1.1.1. The team believes that it is necessary to reach an agreement between Lithuania and Russia on the status of pike-perch stock in the Curonian Lagoon as a whole through the Joint Russian-Lithuanian Fisheries Commission (JRLFC). If the stock is below the target reference point (Btr), in this case it should be restored to Btr. The existing harvest strategies in both Lithuania (see Section 8.12) and Russia (see Section 7.2.1.2.8) have all the means to regulate fishing efforts. It is highly likely based on previous performance, that it will be able to rebuild the stock within the specified timeframe, if it is really necessary. **SG 60, SG 80 and SG 100 are met**.

Perch

RBF was used for perch. Therefore, this SI is not scored.

References

- Andrašūnas et al., 2022;
- Materials, 2020a, b;
- MSC Fisheries Standard, v.2.01;
- MSC Fisheries Certification Process, v.2.2.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report	
Draft scoring range	**N/A**
Information gap indicator	Information sufficient to score PI
Overall Performance Indicator scores added from Client and Peer Review Draft Report	
Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 1.2.1 – Harvest strategy

<table>
<tr><th colspan="2">PI 1.2.1</th><th colspan="3">There is a robust and precautionary harvest strategy in place</th></tr>
<tr><td colspan="2">Scoring Issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="3">a</td><td colspan="4">Harvest strategy design</td></tr>
<tr><td>Guide post</td><td>The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.</td><td>The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.</td><td>The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.</td></tr>
<tr><td>Met?</td><td>Pike-perch – Yes
Perch – Yes</td><td>Pike-perch – Yes
Perch – Yes</td><td>Pike-perch – No
Perch – No</td></tr>
<tr><td colspan="5">Rationale</td></tr>
</table>

UoA 1 (Pike-perch)

The harvest strategy for pike-perch in the Curonian Lagoon is based on TAC established by Russian and Lithuanian managers through the Joint Russian-Lithuanian Fisheries Commission (JRLFC). It is based on the updated annual estimates of the stock size calculated in the assessment before the season commences. The JRLFC meets annually to discuss stock status and agree TAC. Between these meetings, in-season management in Russia is performed by the Federal Fishery Agency, and in Lithuania by Ministry of Environment of the Republic of Lithuania.

The harvest strategy also includes distribution of quota among two countries and determining specific fishing rules separately in Russia and in Lithuania, which take into account: the types of fishing allowed; requirements to preserve aquatic bioresources; restrictions of fishing and other activities connected with the exploitation of different species, such as minimum size limits and the ban of fishing activities in certain areas; the size, design and mesh size of fishing gears; allowable fishery times in water bodies of commercial fishery; and other restrictions established according to national laws.

The Russian management system subdivides national quota among users, and each user terminates fishing when their individual quota is approached. Because of the individual quota system, and not all users fully use their quota, part of Russian quota is not taken. Fishers in both countries need to complete logbooks and to make regular reports. This approach makes it difficult for the national quotas in Russian and Lithuanian parts of the lagoon to be exceeded (see Section 7.4).

In both countries are the stock monitoring programmes. Russian research institute AtlantNIRO performs annual research surveys in the Curonian Lagoon to collect data on the fish species composition, length, weight, age, sex, fertility, maturity, food supply, quality of environment etc. The data are analysed to estimate the stock structure and calculate TAC. On the Lithuanian side, scientific research is carried out by the Center for Natural Research.

It seems reasonable to conclude that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.

SG 60 and SG 80 are met.

However, there is no evidence to demonstrate the harvest strategy has been ‘designed’ to meet stock management objectives reflected in PI 1.1.1. **SG 100 is not met**.

UoA 2 (Perch)

In both countries the objective for the fishery is to maintain a sustainable perch fishery in the Curonian Lagoon.

In Russia it includes a recommended catch (RC). It is based on the updated annual estimates of the stock size calculated in the assessment before the season commences. When the catch of perch reaches the value of the RC, commercial fishing stops.

In Lithuania there are no catch quotas for perch, but exploitation rate is managed by control of number of fishing gears. These are responsive to trends in a number of separate indices of the stock (CPUE and stock size composition) to ensure the fishery operates at a low risk of overfishing.

Russian and Lithuanian managers through the Joint Russian-Lithuanian Fisheries Commission (JRLFC) exchange information about the state of the stocks.

The harvest strategy in both countries determining specific fishing rules separately in Russia and in Lithuania, which take into account: the types of fishing allowed; requirements to preserve aquatic bioresources; restrictions of fishing and other activities connected with the exploitation of different species, such as minimum size limits and the ban of fishing activities in certain areas; the size, design and mesh size of fishing gears; allowable fishery times in water bodies of fishery; and other restrictions established according to national laws.

Fishers in both countries need to complete logbooks after each fishing operation and to make regular reports.

In both countries are the stock monitoring programmes. Russian research institute AtlantNIRO performs annual research surveys in the Curonian Lagoon to collect data on the fish species composition, length, weight, age, sex, fertility, maturity, food supply, quality of environment etc. The data are analysed to estimate the stock structure and calculate RC. On the Lithuanian side, scientific research is carried out by the Center for Natural Research.

Since 2003, perch CPUE (Figure 21) and length (Figure 22) have been relatively stable. According to Andrašūnas et al. (2022), for perch in the Curonian Lagoon B/Bmsy > 1 since 2012 (Figure 45 B).

It seems reasonable to conclude that the harvest strategy for perch is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80. **SG 60 and SG 80 are met**.

However, there is no evidence to demonstrate the harvest strategy has been ‘designed’ to meet stock management objectives reflected in PI 1.1.1. **SG 100 is not met**.

b	Harvest strategy evaluation			
	Guide post	The harvest strategy is **likely** to work based on prior experience or plausible argument.	The harvest strategy may not have been fully **tested** but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been **fully evaluated** and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	**Both species – Yes**	**Both species – Yes**	**Both species – No**

Rationale

For many years catch, stock biomass and age structure for **both species** have been reasonably stable, without any sign of recruitment overfishing. For **pike-perch and perch**, this is confirmed by data collected in annual research surveys with using of bottom trawl in Russia (Materials, 2022) and gillnets with different mesh sizes in Lithuania (Andrašūnas et al, 2022). In addition, for **pike-perch**, this is confirmed by calculations with using of a SVPA model (Table 13). Responsiveness of the management system to stock status is demonstrated by decision of Lithuania reduce the number of main fishing gear, especially gillnets with a mesh of 40-50 mm (Andrašūnas et al, 2022). Russia took into account Lithuania's concern about the state of the pikeperch stock and reduced its TAC for 2023 from 260 to 250 tons, which is 15% lower than allowed under the harvest control rule (Materials, 2022). Therefore, the harvest strategy worked well and achieved the stock management objectives for **both species SG 60 and SG 80 are met.**

There is no evidence that the performance of the harvest strategy has been fully evaluated for **both species SG 100 is not met**.

c	Harvest strategy monitoring			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy		

		is working.		
	Met?	**Both species – Yes**		

Rationale

Both species.

The Lithuanian and Russian fishermen must complete the logbook after each fishing operation and sent the information to authorities (The Fisheries Service in Lithuania and the Centre of System for Monitoring of Fisheries and Communication in Russia).

In Russian part of the Curonian Lagoon, biological parameters and stock status are monitored during research surveys. VNIRO annually conducted 3 trawl surveys for a census of juvenile fish and at least one bottom trawl survey for a census of adult fish (Materials, 2022).

In Lithuania, the Fisheries Service collects and manages recreational fishing data on the annual catches and weights or lengths of catches of Baltic fish species (only cod, salmon, sea trout and eels) and the number of fish released in the Baltic Sea and Lithuanian inland waters, as well as incidental fishing. Also, data on incidental bycatches of birds, mammals, reptiles and species protected by Union legislation and international that recorded during scientific observation fishing vessels (if any) or recorded by fishermen themselves in logbooks; and data to assess the activities of Union fishing vessels in European Union and non-Union waters. Klaipeda University collects and manages biological data of the fisheries sector from commercial fishing, data on variables in various fields, data on the impact of the fisheries sector on the marine ecosystem, conducts research on fish stocks and other scientific research at sea (http://zuv.lt/).

There is the Joint Russian-Lithuanian Fisheries Commission (JRLFC) for data exchange between Lithuania and Russia.

Monitoring is therefore in place that is expected to determine whether the harvest strategy is working.

SG 60 is met for both species.

d	Harvest strategy review			
	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			**Both species – Yes**

Rationale

Both species.

At national level in Russia, the Federal Fisheries Act (FL, 2004) was adopted by the Federal Assembly (the Russian Parliament) in 2004 and has subsequently been revised several times. TAC and RC are set annually by the Federal Fisheries Agency (FFA) and all other regulations are considered on an annual basis.

At the national level in Lithuania, fisheries legislation is regularly reviewed (see Section 7.4.2.2). Ministry of Environment of the Republic of Lithuania every year orders in the Center for Natural Research the Studies on fish resources in the Curonian Lagoon and recommendations for the rational administration of fish resources (Ložys, 2021).

The JRLFC annual meetings provide a good forum for regular reviews of the strategy where Lithuanian and Russian ichthyologists hold bilateral consultations and exchange information. The **SG 100 is met for both species**.

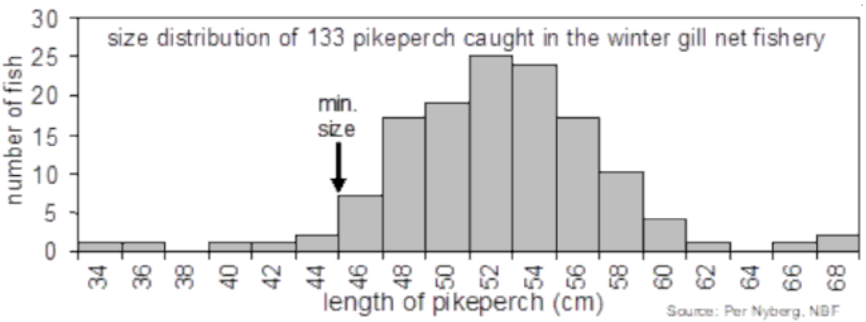
e	Shark finning			
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is

				not taking place.
	Met?	**Both species – NA**	**Both species – NA**	**Both species – NA**
Rationale				
Sharks are not a target species and therefore this scoring issue is not scored.				
f	Review of alternative measures			
	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	**Pike-perch – Not relevant** **Perch – Not relevant**	**Pike-perch – Not relevant** **Perch – Not relevant**	**Pike-perch – Not relevant** **Perch – Not relevant**

Rationale

Pike-perch

In Russia and Lithuania, it is forbidden to use the gillnets with a mesh size of less than 70 mm (knot to knot) in pike-perch fishery. The minimum commercial size of pike-perch is set in both countries (TL = 46 cm). Most of non-commercial-sized pike-perch can escape through gillnets with a mesh of this size (see figure below).



Size distribution of pikeperch caught in the gillnets (60 mm mesh size knot to knot) used in Lake Hjälmaren (Lloyd's Register, 2019)

This is allowed to have (and to land) up to 10% by number of the total catch in Russia (Fishing rules, 2020) and up to 5% by weight in Lithuania (RLFR, 2005) of undersized fish in catches, so small pike-perch can be sold to consumers. There does not appear to be unwanted catch of the pike-perch in the UoA and therefore this scoring **issue is not scored**.

Perch

In Russia, the legal mesh size for gillnets in perch fishery is 36 mm (knot to knot). But fishers use larger net sizes. Mesh sizes used (40 mm) mean that catches of undersized fish (less than 18 cm TL) are very rare in the gillnet catches (Table 98). According to (MRAG, 2021), it is known, that all immature perch pass through the nets of minimal allowed mesh size and avoid entanglement in them. According to the Fishing rules (2020), it is allowed to have up to 10% (by number of the total catch) of undersized fish in catches. Therefore, all the perch catch is processed.

In Lithuania, the legal mesh size for gillnets in perch fishery is 40 mm (knot to knot). Minimum commercial size is

same as in Russia (TL => 18 cm). Bycatch of undersized perch is allowed up to 5% by weight (RLFR, 2005). Therefore, all perch caught can almost always be processed. There does not appear to be unwanted catch of the perch in the UoA and therefore this scoring **issue is not scored**.
References
• FL, 2004; • Lloyd's Register, 2019; • Lozhkin, 2020; • Ložys, 2021; • Fishing rules, 2020; • Materials, 2020a, b; • MRAG, 2021; • Order of Rosrybolovstvo dated of 05.12.2019 No 661; • RLFR, 2005.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report	
Draft scoring range	**Both species – ≥80**
Information gap indicator	**Information sufficient to score PI**
Overall Performance Indicator scores added from Client and Peer Review Draft Report	
Overall Performance Indicator score	**Pike-perch – 85** **Perch – 85**
Condition number (if relevant)	**NA**

PI 1.2.2 – Harvest control rules and tools

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue		SG 60	SG 80	SG 100
a	HCRs design and application			
	Guide post	**Generally understood** HCRs are in place **or available** that are **expected** to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	**Well defined** HCRs are **in place** that **ensure** that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock **fluctuating around** a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock **fluctuating at or above** a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, **most** of the time.
	Met?	**Pike-perch – Yes** **Perch – Yes**	**Pike-perch – Yes** **Perch – Yes**	**Pike-perch – No** **Perch – No**

Rationale

Pike-perch

In the Russian part of the Curonian Lagoon the key harvest control rule is that the annual TAC is set based upon the estimate of stock biomass in relation to designated target and limit biomass reference points as follows:

• If the commercial stock biomass is within the healthy zone, i.e. above the target reference point (B_{pa} = 802 tons), then the exploitation level is set at no higher than the target exploitation level (F_{pa} = 0.36);

• If the legal-sized stock is in the cautious zone, i.e. above the biomass limit reference point (B_{lim} =573), but below the target reference point, the exploitation level (F_t) is estimated as $F_t = F_{pa} \times (B_t - B_{lim})/(B_{pa} - B_{lim}$ tons);

• If the legal stock is in the critical zone, i.e. below the limit reference point, the exploitation level is set to zero (Ft = 0). The fishery is therefore closed and only fishing for science is permitted. See the Section 7.2.1.1.9 for more details.

A similar approach is used to set the TAC in the Lithuanian part of the Curonian Lagoon (Andrašūnas et al., 2022). In the fisheries management of both countries, the HCRs involve the use of tools such as a minimum legal size, closed seasons and areas, and technical specifications for fishing gears design. So, there are the HCRs to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached. Actually, due to the precautionary approach, the exploitation level of pike-perch in Curonian Lagoon is set below of the target exploitation level. The current harvest control rules are well-defined, exploitation rate is reduced as the PRI is approached, and are precautionary enough to ensure that the stock will fluctuate around or above the target reference point. **SG 60 and 80 are met.**

There is no evident that the HCRs are taking into account the ecological role of the stock. **SG 100 is not met**.

Perch

In the Russian and Lithuanian parts of the Curonian Lagoon perch fishery does not have an explicit harvest control rules but a suite of well-defined management tools and measures are in place that are consistent with ensuring the susceptibility of target species to removal is 'no higher than that which would cause the risk to the target species to be above an acceptable risk range' (GSA2.5.2-2.5.5, MSC FS v2.01 2018) that is considered relevant to the scale and intensity of the fishery. The main provisions of the tools and measures are stated in writing in the Fishing Rules for the Western Basin of Russia (Fishing Rules, 2020) and in Republic of Lithuania law on fisheries (RLLF, 2000; RLFR, 2005).

Data of annual research surveys and biological indicators (age structure, length, weight, CPUE) of stock are used for estimating of stock abundance in both countries. In Russia these are bottom trawl surveys, in Lithuania - gillnet surveys. HCRs involve the use of tools such as a minimum legal size (MLS), closed seasons and areas, and technical specifications for fishing gears design (RLLF, 2000; RLFR, 2005).

In addition, for Russian part of the Curonian Lagoon the Recommended Catch (RC) for perch is estimated on an annual basis in the beginning of fishing season and controls the exploitation rate to reflect changes in the abundance of the stock. Once the perch catch reaches the value of RC, fishing permits are cancelled and the fishing itself stops. It should be mentioned here that the Russian part of the Curonian Lagoon is 3 times larger than the Lithuanian part. Accordingly, the catch of perch is larger. Active management of catch size with RC reduces the probability of perch stock falling below the PRI.

So, there is well-defined HCRs that ensure that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around a target level consistent with MSY. **SG 60 and SG 80 are met**

There is no evident that the HCRs are taking into account the ecological role of the stock. **SG 100 is not met**.

<table>
<tr><td rowspan="3">b</td><td colspan="4">HCRs robustness to uncertainty</td></tr>
<tr><td>Guide post</td><td></td><td>The HCRs are likely to be robust to the main uncertainties.</td><td>The HCRs take account of a wide range of uncertainties including the ecological role of the stock, and there is evidence that the HCRs are robust to the main uncertainties.</td></tr>
<tr><td>Met?</td><td></td><td>Both species – No</td><td>Both species – No</td></tr>
</table>

Rationale

Both species

There are uncertainties in estimating of stock biomass based on annual surveys because of variations in catchability of fish. Also there are uncertainties associated with recreational fishery and illegal catches. It is not clear that the HCRs are likely to be robust to the uncertainties related with levels of mortality associated with recreational and IUU fisheries. **SG 80 and SG 100 are not met for both UoAs**.

<table>
<tr><td rowspan="3">c</td><td colspan="4">HCRs evaluation</td></tr>
<tr><td>Guide post</td><td>There is some evidence that tools used or available to implement HCRs are appropriate and effective in controlling exploitation.</td><td>Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.</td><td>Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs.</td></tr>
<tr><td>Met?</td><td>Both species – Yes</td><td>Both species – Yes</td><td>Both species – No</td></tr>
</table>

Rationale

Pike-perch

Monitoring (catches, abundance, size-age structure) and effort control exist in Lithuanian (Andrašūnas et al., 2022) and Russian (AtlantNIRO, 2020a, 2020b) management systems and expected to be effective in maintaining sustainable exploitation rates. Reductions in effort are considered to be effective tools in protecting the stock from overfishing, and allow the rebuilding of the stock, in case of recruitment problems. Decisions to reduce efforts can be implemented and reduce even already issued fishing licences. The age composition of commercial pike-perch catches includes at least 10 age classes. Results of Russian annual bottom trawl research surveys show that stock biomass level has been maintained at productive levels (AtlantNIRO, 2020a, 2020b). These facts can be used as indicators that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. **SG 60 and 80 are met**.

There are disagreements between Lithuania and Russia in assessing the status of the pike-perch stock in the Curonian Lagoon. And although both sides are currently reducing fishing efforts, we cannot say that the evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs.

SG 100 is not met. **Perch** Monitoring (catches, abundance, size-age structure) and effort control exist in Lithuanian and Russian management systems and expected to be effective in maintaining sustainable exploitation rates. Reductions in effort are considered to be effective tools in protecting the stock from overfishing, and allow the rebuilding of the stock, in case of recruitment problems. Decisions to reduce efforts can be implemented and reduce even already issued fishing licences. The age composition of commercial perch catches has been stable over the past 10 years and includes at least 5 age classes. Interannual dynamics of biological indexes shows that the perch stock status has been maintained at a productive level (see Section 7.2.1.2.7). This is confirmed by Russian and Lithuanian studies. These facts can be used as indicators that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. **SG 60 and SG 80 are met**. There is no evidence that clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs. **SG 100 is not met**.	
References	
• Babayan, 2000; • Correction, 2021; • Gushchin, Shavrina, 2018; • Lozhkin, 2020; • Materials, 2020a, b.	
Draft scoring range and information gap indicator added at Announcement Comment Draft Report	
Draft scoring range	**Pike-perch – ≥80** **Perch 60-79**
Information gap indicator	**Pike-perch – Information sufficient to score PI.** **Perch – more information sought.** Blim and Btr (or their equivalent) for perch stock.
Overall Performance Indicator scores added from Client and Peer Review Draft Report	
Overall Performance Indicator score	**Pike-perch – 75** **Perch – 75**
Condition number (if relevant)	**2**

PI 1.2.3 – Information and monitoring

PI 1.2.3		**Relevant information is collected to support the harvest strategy**		
Scoring Issue		SG 60	SG 80	SG 100
a	Range of information			
	Guide post	**Some** relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	**Sufficient** relevant information related to stock structure, stock productivity, fleet composition and other data are available to support the harvest strategy.	A **comprehensive range** of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	**Both species – Yes**	**Both species – Yes**	**Both species – No**

Rationale

Both species

In Russian part of the Curonian Lagoon, the fishing companies maintain daily catch records that are monitored on a routine basis to determine the cumulative catch. This enables strict control over the catch to prevent the quota being exceeded. Environmental monitoring of the fishery by the government is required under chapter 5, article 42 in Federal Law of 20.12.2004 No. 166-FZ (FL, 2004), which explicitly mentions the distribution, abundance, quality and reproduction of aquatic bio resources and habitats, the fishery and preservation of aquatic bio resources. According to the law, AtlantNIRO performs annual research surveys in Curonian Lagoon to collect data on the species composition, length, weight, age, sex, fertility, maturity, food supply, quality of environment, etc (see Sections 7.2.1.1 and 7.2.1.2). The data are collected and analysed to estimate the stock structure and calculate TAC and RC.

In Lithuanian part of the Curonian Lagoon, the fishing companies also maintain daily catch records that are monitored by Lithuanian authorities on a routine basis to determine the cumulative catch. Monitoring of the fishery by the government is required under Republic of Lithuania law on fisheries (RLLF, 2000). By order of the Ministry of Environment of the Republic of Lithuania, Lithuanian scientists, as well as their Russian counterparts, annually collect data on the species composition, length, weight, age, sex, fertility, maturity, food supply, quality of environment, etc (Andrašūnas et al., 2022).

The Joint Russian-Lithuanian Fisheries Commission (JRLFC) meets annually to discuss stocks status and share data. Therefore, sufficient relevant information related to the distribution and age structure of the stock, biological information on the stock productivity, fleet composition and gear used, stock abundance, level of fishery removals and some environmental and ecological data are available to support the harvest strategy. **SG 60 and SG 80 are met for all UoAs**.

There is no evidence that a comprehensive range of information is available. The **SG 100 is not met for all UoAs**.

b	Monitoring			
	Guide post	Stock abundance and UoA removals are monitored and **at least one indicator** is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are **regularly monitored at a level of accuracy and coverage consistent with the harvest control rule**, and **one or more indicators** are available and monitored with	**All information** required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent **uncertainties** in the information [data] and the

			sufficient frequency to support the harvest control rule.	robustness of assessment and management to this uncertainty.
	Met?	**Both species – Yes**	**Both species – Yes**	**Both species – No**

Rationale

Both species

To monitoring the abundance and biomass of the stock and its biological parameters, research surveys are regularly carried out in Lithuanian and Russian parts of the Curonian Lagoon.

In Russian part of the lagoon, annually are conducted 3 trawl surveys for a census of juvenile fish and at least one bottom trawl survey for a census of adult fish. According to the results of survey, the TAC can be corrected even in the current year. In Lithuanian part, annually are conducted gillnets surveys (mesh sizes 14-70). Scientists from Natural Research Center and fisheries managers provide advice on stocks management (Andrašūnas et al., 2022).

In Lithuania and in Russia all legal fishermen must complete the logbooks after fishing operations and submit statistical reports to the controlling organizations. The controlling organizations can check the logbooks at any time. Therefore, stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the HCRs, and at least one indicator are available and monitored with sufficient frequency to support the HCRs in both countries. **SG 60 and SG 80 are met for both UoAs**.

There is no evidence to demonstrate that all information required by the HCR is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information and the robustness of assessment and management to this uncertainty. **SG 100 is not met for both UoAs**.

c	Comprehensiveness of information			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		**Both species – No**	

Rationale

Both species

Information on removals from the stock by other commercial fisheries is regularly provided to the Fisheries Administrations in Lithuania and Russia. Recreational catches in the Curonian Lagoon are not directly recorded. An expert assessment of illegal catches is carried out. According to Gushchin & Shavrina (2018), in total, recreational, and illegal catches in Curonian Lagoon reach 20% of commercial catch. However, more information is needed to better understand the impact of recreational and IUU fisheries on the stocks of target species.

SG 80 is not met for both UoAs.

References

- Andrašūnas et al., 2022;
- Correction, 2021;
- FL, 2004.
- Gushchin, Shavrina, 2018.
- Lozhkin, 2020;
- Materials, 2020a, b;
- RLLF, 2000.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**Both species – ≥80**
Information gap indicator	**Information sufficient to score PI**
Overall Performance Indicator scores added from Client and Peer Review Draft Report	
Overall Performance Indicator score	**Both species – 75**
Condition number (if relevant)	**3**

PI 1.2.4 – Assessment of stock status

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
a	Appropriateness of assessment to stock under consideration			
	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		**Pike-perch – Yes** **Perch – Yes**	**Pike-perch – No** **Perch – No**
Rationale				

Pike-perch

In Russian part of the Curonian Lagoon the annual TAC based on estimates of commercial stock biomass in relation to the limit and target reference points that have been implemented in HCR. The abundance and biomass of the commercial pike-perch stock are estimated using a Separable Virtual Population Analysis (SVPA). The method used has been applied in other pike-perch fisheries (Abdolmalaki and Psuty, 2007). To determine the number of recruits for the forecast year, the estimates of the yield of generations are used according to the results of scientific trawl surveys. The calculation of the abundance and biomass are carried out for fish in age of 5-13 years.

Lithuanian scientist also started to use target reference point (Bmsy) for assessment (with using CMSY model) pike-perch stock status (Andrašūnas et al., 2022). Currently, they use indicators, such as CPUE and age-size composition to manage the stock (Ložys, 2021). To assess the biological parameters of pike-perch, they use catches from gillnets with meshes of 14-70 mm.

Russian and Lithuanian managers through the Joint Russian-Lithuanian Fisheries Commission (JRLFC) exchange information, discuss the state of the stock and to set annual TAC for pike-perch in Lithuanian and Russian part of the Curonian Lagoon.

The team decided that the assessment is appropriate for the stock and for the harvest control rule. **SG 80 is met.**

There is no evidence, that the assessment takes into account the major features relevant to the biology of the species and the nature of the UoA. **SG 100 is not met**.

Perch

The RBF was used to score PI 1.1.1 for perch (UoA 1), with a workshop conducted with stakeholders at the site visit. Perch received MSC derived score of 83 (see section 8.8 for rationale). According to Table PF1 of MSC Fisheries Certification Process v.2.2, if RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to PI 1.2.4. Therefore, **SG 80** is met but not **SG 100**.

b	Assessment approach			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	**Pike-perch – Yes** **Perch – Yes**	**Pike-perch – Yes** **Perch – Yes**	

Rationale

Pike-perch

In Russia, the assessment estimates stock status relative to reference points appropriate to the species category (Materials, 2020a, 2020b, 2022). Lithuanian scientist also start to use target reference point (Bmsy) for assessment pike-perch stock status the Curonian Lagoon (Andrašūnas et al., 2022). **SG 60 is met**.

In Russia, reference points (Blim and Btr) are in place, commercial stock biomass can be estimated in relation to these reference points. They are appropriate to the stock. The reference points were developed based on expert knowledge about time series of pike-perch abundance (Materials, 2020a, 2020b, 2022). Lithuanian scientist developed target reference point (Bmsy) with using CMSY model (version CMSY_2019_9f. R) (Andrašūnas et al., 2022). Russian and Lithuanian managers through the Joint Russian-Lithuanian Fisheries Commission (JRLFC) exchange information, discuss the state of the stock and to set annual TAC for pike-perch in Lithuanian and Russian part of the Curonian Lagoon. **SG 80 is met**.

Perch

The RBF was used to score PI 1.1.1 for perch (UoA 1), with a workshop conducted with stakeholders at the site visit. Perch received MSC derived score of 83 (see section 8.8 for rationale). According to Table PF1 of MSC Fisheries Certification Process v.2.2, if RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to PI 1.2.4. Therefore, **SG 60** and **SG 80** are met.

c	Uncertainty in the assessment			
	Guide post	The assessment **identifies major sources** of uncertainty.	The assessment **takes uncertainty into account**.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a **probabilistic** way.
	Met?	**Pike-perch – Yes** **Perch – Yes**	**Pike-perch – No** **Perch – Yes**	**Pike-perch – No** **Perch – No**

Rationale

Pike-perch

In Lithuania and Russia, the assessment identifies major sources of uncertainty: variations associated with the annual research surveys and the uncertainty in predicting annual recruitment. Recreational catches in Curonian Lagoon are not directly recorded, but there is expert assessment of their volume. An expert assessment of illegal catches is also carried out. According to Gushchin and Shavrina (2018), recreational and illegal catches in Curonian Lagoon can reach 20% of commercial catch. The information is annually discussed on the Joint Russian-Lithuanian Fisheries Commission. **SG 60 is met**.

It is clear that the assessment identifies major sources of uncertainties. But it is not clear how uncertainties about IUU and recreational fishing volumes are accounted for. **SG 80 and SG 100 are not met**.

Perch

The RBF was used to score PI 1.1.1 for perch (UoA 1), with a workshop conducted with stakeholders at the site visit. Perch received MSC derived score of 83 (see section 8.8 for rationale). According to Table PF1 of MSC Fisheries Certification Process v.2.2, if RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to PI 1.2.4. Therefore, **SG 60** and **SG 80** are met but not **SG 100**.

d	Evaluation of assessment			
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been

				rigorously explored.
	Met?			**Pike-perch – No** **Perch – No**

Rationale

Pike-perch

There is no evidence that alternative hypotheses and assessment approaches have been rigorously explored. **SG 100 is not met**.

Perch

The RBF was used to score PI 1.1.1 for perch (UoA 1), with a workshop conducted with stakeholders at the site visit. Perch received MSC derived score of 83 (see section 8.8 for rationale). According to Table PF1 of MSC Fisheries Certification Process v.2.2, if RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to PI 1.2.4. Therefore, **SG 100 is not met**.

e	Peer review of assessment			
	Guide post		The assessment of stock status is subject to peer review.	The assessment has been **internally and externally** peer reviewed.
	Met?		**Pike-perch – Yes** **Perch – Yes**	**Pike-perch – Yes** **Perch – No**

Rationale

Pike-perch

Lithuanian and Russian scientists conduct the stock assessment and estimate a TAC for the pike-perch. The procedure for determining and approving the TAC of aquatic biological resources in Russian waters is given in the "Decree of the Government of the Russian Federation of June 25, 2009 N 531 "On the determination and approval of the total allowable catch of aquatic biological resources and its change" (with amendments and additions)"[2]. In Russia results are presented and reviewed at institutes' Scientific Councils. This peer review is internal. The assessment is modified in light of comments at the above review and forwarded to the head of the fisheries research institute, VNIRO (Moscow). VNIRO scientists review the material they receive on TAC for the pike-perch, and make their comments and proposals at an extended meeting of institutes' Scientific Councils with participation of scientists from VNIRO and industry representatives. Institutes then revise the draft advice in response to the VNIRO comments. The final TAC recommendations are further reviewed by the independent the State Ecological Expertise of the Ministry of Nature comprised of independent scientists representing Academy of Science and universities. The VNIRO and the Ministry of Nature Ecological Expertise peer reviews are external.

The result is reviewed on the Joint Russian-Lithuanian Fisheries Commission. **SG 80 and 100 are met**.

Perch

The RBF was used to score PI 1.1.1 for perch (UoA 1), with a workshop conducted with stakeholders at the site visit. Perch received MSC derived score of 83 (see section 8.8 for rationale). According to Table PF1 of MSC Fisheries Certification Process v.2.2, if RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to PI 1.2.4. Therefore, **SG 80** is met but not **SG 100**.

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- Babayan, 2000;

[2] https://legalacts.ru/doc/postanovlenie-pravitelstva-rf-ot-25062009-n-531/

• Correction, 2021; • Gushchin, Shavrina, 2018; • Lozhkin, 2020; • Materials, 2020a, b.	
Draft scoring range and information gap indicator added at Announcement Comment Draft Report	
Draft scoring range	**Pike-perch – ≥80** **Perch will be used RBF, therefore this PI is not scored**
Information gap indicator	**Information sufficient to score PI**
Overall Performance Indicator scores added from Client and Peer Review Draft Report	
Overall Performance Indicator score	**Pike-perch – 75** **Perch – 80**
Condition number (if relevant)	**4 (UoA 1)**

7.2.6 Principle 1 References

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7.3 Principle 2

7.3.1 General information for the Curonian Lagoon

As part of this full assessment “Curonian Lagoon Perch and Pike-perch” fishery for perch and pike-perch is considered by two types of fixed gillnets. Fishing is carried out in the Curonian Lagoon of the Baltic Sea, in the Russian zone of lagoon which belongs to the inland marine waters of the “territorial sea” of Russia.

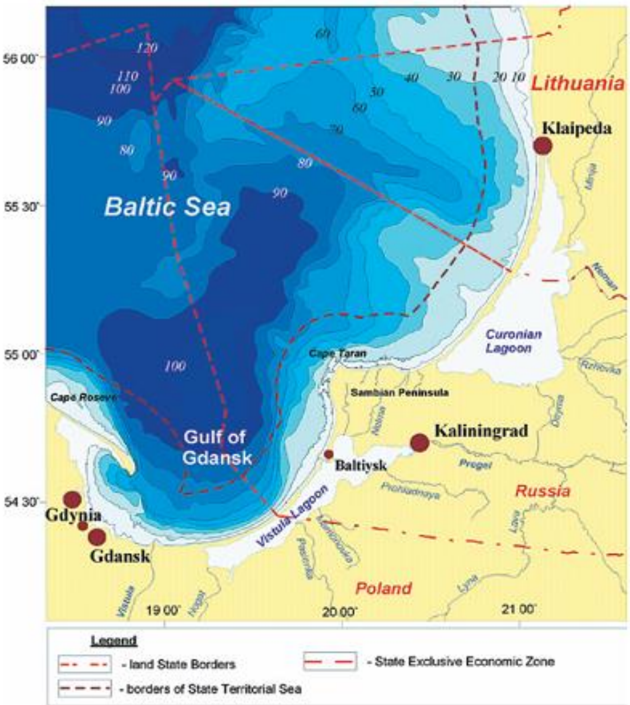


Figure 27 – Geographical position of the Curonian Lagoon in the Baltic Sea (Source: Transboundary waters…, 2008).

The Curonian Lagoon of the Baltic Sea is quite well studied in hydrological and hydrobiological terms since fishing has been carried out in it for several centuries and it is an important fishing area both in the Kaliningrad region and among the inland water bodies of the western European part of Russia.

AtlantNIRO (Atlantic branch of FGBNU “VNIRO”, Kaliningrad – http://www.atlant.vniro.ru/) studies use materials from experimental trawl surveys conducted in the Curonian Lagoon annually since 1957 in the autumn period, according to a standard grid at 14 stations (Figure 28), with trawls of three modifications with the following parameters: Danish bottom trawl – length 23.2 m, opening – 7,5 m^2, mesh in the codend – 18 mm; ruffe bottom trawl – length 15.0 m, opening 3.7 m^2, mesh in the codend – 5 mm; juvenile pelagic trawl – length 5 m, opening 4.5 m^2, mesh in the codend – 5 mm. The time of trawling with a Danish trawl is 30 minutes, a ruffe and a juvenile trawl – 15 minutes. The data of summer juvenile surveys (July, August), conducted since 1972, and on a regular basis since 1995, are also used. According to the results of surveys with Danish, ruffe, and juvenile trawls, the indices of abundance and biomass were calculated annually for mass fish species, including pike-perch and perch. These indices represent the catch per standard trawl (specimen per one trawling and kg / trawl). The collection and processing of primary material is carried out by scientists in accordance with generally accepted and widely tested methods. Scientists measured the length of the fish from the top of the snout (with the mouth closed) to the base of the middle rays of the caudal fin. The length and weight of the fish was determined with accuracy of 1 cm and 10 g, respectively, in small (juvenile) individuals – up to 1 mm and 1 g. The age of the fish is determined by the scales.

The Curonian Lagoon is located on the southeastern coast of the Baltic Sea. The shape of the bay resembles a right-angled triangle, with a wider southern part, it gradually narrows to the north and turns into a narrow strait connecting the reservoir with the sea near the port of Klaipeda. In the west, the bay is separated from the sea by the Curonian Spit – a narrow sandy embankment 1 to 4 km wide. The geographical position of the Curonian Lagoon is determined by the following coordinates:

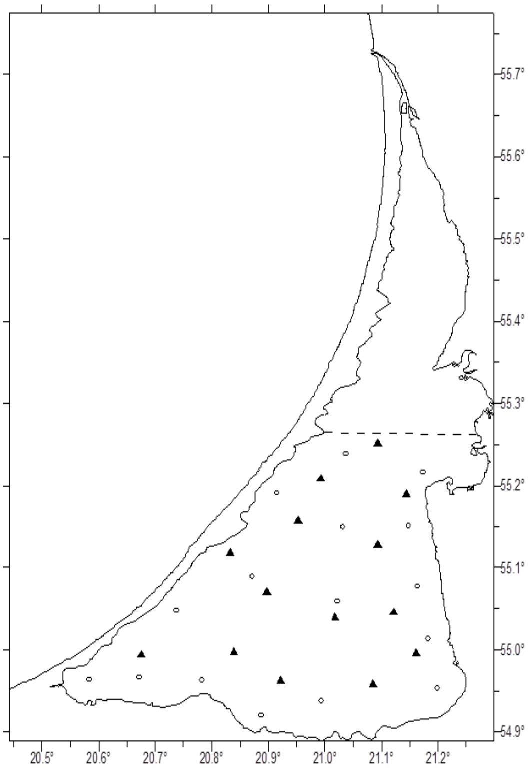
North point: $\varphi = 55^0 43'34''$; $\lambda = 21^0 5'54''$.

South point: $\varphi = 54^0 53'27''$; $\lambda = 21^0 5'7''$.

West point: $\varphi = 54^{0}57'31''$; $\lambda = 20^{0}31'54''$.

East point: $\varphi = 55^{0}18'7''$; $\lambda = 21^{0}18'3''$.

The mirror surface area of the Curonian Lagoon is 1 584 km^2, about three quarters (central and southern part of the lagoon) is the inland marine waters of the “territorial sea” of the Russian Federation. The northern part is the water area of the Republic of Lithuania. The volume of water in the bay is 6.2 km^3, the main part of which is located in the southern part, where depths from 4 to 6 m prevail. The northern part is shallower, depths up to 2 m dominate here. The eastern edge of the Curonian Lagoon is shallower than its western part. The average depth of the bay is 3.7 m, the maximum depth reaches 7.4 m in the Klaipeda Strait. In the same area, an artificial deepening of the bottom is being carried out, reaching 18 m. The water level in the Curonian Lagoon is on average 12 cm above the average level of the Baltic Sea. Geologically, the territory of the Curonian Lagoon is located within the Polish-Lithuanian depression, which was formed under the influence of tectonic movement and glacial activity. The emergence and further development of the reservoir is closely related to the history of the Baltic Sea. There are three periods of formation of the Curonian Lagoon: the time of periglacial water bodies; time of seaside lakes; time of the Curonian Lagoon. The Curonian Lagoon acquired its present appearance 4.0-4.5 thousand years ago. However, to this day under the influence of tectonic processes the configuration of its shores and bed changes. The reservoir becomes shallow, the southern coast recedes, the northern part of the lagoon rises (Gudelis, 1959).



○ Juvenile and Ruffe trawls ▲ Danish trawl - - - – Russian-Lituanian Boundary

Figure 28 – General view of the Curonian Lagoon and the scheme of research trawls in the Russian zone of the lagoon (Source: Golubkova, 2003).

The variety of coastal water bodies is very large, which serves as the basis for incessant attempts to identify and classify them. Until now, there is no clear definition of the concept of "estuary". In encyclopedic dictionaries, estuaries are defined as funnel-shaped expansions of river mouths that are exposed to the effects of sea waters (Wikipedia, http://en.wikipedia.org/). The most often cited definition by D. Pritchard (Pritchard, 1967), according to which the estuary is a semi-closed coastal water body that has a free connection with the open sea, and in which seawater is mixed with the continental runoff. Most coastal water bodies fall under this definition (Khlebovich, 1986; Caspers, 1967; Kjerfve, 1986).

Most researchers are inclined to believe that estuaries need a gradient in the “critical salinity” zone (Khlebovich, 1974, 1986; Khlebovich *et al*., 2006; Telesh, 2006). According to these concepts, the Curonian and Vistula Lagoons should be classified as estuarine ecosystems. Considering the shallowness and the degree of closure of these bays, they can be positioned as lagoon-type estuaries (Kjerfve, 1986).

7.3.2 The structure of the ichthyofauna of the Curonian Lagoon as a lagoon-type reservoir

According to I. Manyukas (1959) in the Curonian Lagoon in the 1950s, 43 species of cyclostomes and fish were found; the current list includes 48 species belonging to 15 families (Table 21).

Table 21 – Species composition of the ichthyofauna of the Curonian Lagoon (Source: Golubkova, 2003).

Family	Species, Latin name	Species, common name (English / Russian)
Fam. PETROMYZONTIDAE	*Lampetra fluviatilis* (L.)	European river lamprey / Речная минога
	L. planeri (Bloch)	European brook lamprey / Ручьевая минога
	Petromyzon marinus L.	Sea lamprey / Морская минога
Fam. ACIPENSERIDAE	*Acipenser ruthenus* (L.)	Sterlet / Стерлядь
	A. sturio (L.)	European sturgeon or Atlantic sturgeon / Балтийский осётр
Fam. CLUPEIDAE	*Alosa fallax* (Lacepede)	Twait shad / Финта атлантическая
Fam. SALMONIDAE	*Salmo salar* L.	Atlantic salmon / Атлантический лосось (сёмга)
	S. trutta trutta L.	Sea trout / Кумжа (лосось – таймень)
Fam. COREGONIDAE	*Coregonus lavaretus* (L.)	European whitefish / Сиг
	C. peled (Gmelin)	Peled / Пелядь
Fam. OSMERIDAE	*Osmerus eperlanus* (L.)	European smelt / Европейская корюшка
	O. e. eperlanus m. spirinchus (Pallas)	Lake form of European smelt (small) / Снеток
Fam. ESOCIDAE	*Esox lucius* L.	Pike / Щука
Fam. CYPRINIDAE	*Abramis ballerus* (L.)	Zope or Blue bream / Синец
	A. brama (L.)	Bream / Лещ
	Alburnoides bipunctatus (Bloch)	Schneider / Быстрянка
	Alburnus alburnus (L.)	Common bleak / Уклея
	Leuciscus aspius (L.)	Asp / Жерех
	Barbus barbus (L.)	Common barbel / Усач
	Blicca bjoerkna (L.)	White bream or Silver bream / Густера
	Carassius auratus gibelio (Bloch)	Prussian carp / Серебрянный карась
	C. carassius (L.)	Crucian carp / Золотой карась
	Chondrostoma nasus (L.)	Common nase / Подуст
	Cyprinus carpio (L.)	Wild carp / Сазан, карп
	Gobio gobio (L.)	Gudgeon / Пескарь
	Leucaspius delineatus (Heck.)	Sunbleak / Верховка
	Leuciscus cephalus (L.)	European chub / Голавль
	L. idus (L.)	Ide / Язь
	L. leuciscus (L.)	Common dace / Елец
	Pelecus cultratus (L.)	Ziege or sabrefish / Чехонь
	Phoxinus phoxinus (L.)	Common minnow / Гольян обыкновенный
	Rhodeus sericeus amarus (Bloch)	European bitterling / Горчак
	Rutilus rutilus (L.)	Roach / Плотва
	Scardinius erythrophtalmus (L)	Common rudd / Красноперка
	Tinca tinca (L.)	Tench / Линь
	Vimba vimba (L.)	Vimba bream / Рыбец, или сырть
Fam. COBITIDAE	*Cobitis taenia* (L.)	Spined loach / Щиповка
	Misgurnus fossilis (L.)	Weatherfish / Вьюн
	Nemachilus barbatulus (L.)	Stone loach / Голец обыкновенный

Family	Species, Latin name	Species, common name (English / Russian)
Fam. SILURIDAE	*Silurus glanis* L.	Wels / Сом
Fam. ANGUILLIDAE	*Anguilla anguilla* (L.)	European eel / Речной угорь
Fam. GADIDAE	*Lota lota* (L.)	Burbot / Налим
Fam. GASTEROSTEIDAE	*Gasterosteus aculeatus* L.	Three-spined stickleback / Трёхиглая колюшка
	Pungitius pungitius (L.)	Nine-spined stickleback / Девятииглая колюшка
Fam. PERCIDAE	*Gymnocephalus cernuus* (L.)	Ruffe or pope / Ёрш
	***Perca fluviatilis* L.**	**Perch / Окунь**
	***Sander lucioperca* (L.)**	**Pike-perch / Судак**
Fam. PLEURONECTIDAE (Flatfish)	*Platichthys flesus trachurus* Duncker	European flounder / Речная камбала

During the 40-year observation period, 6 fish species fell out of the ichthyofauna of the bay. These are Baltic sturgeon, sterlet, schneider, nase, minnow, weatherfish. 2 species have been found again – peled and Prussian carp (Khlopnikov *et al*., 1998).

V.M. Osadchy (2000) noted that four ecological groups of commercial fish species can be distinguished in the Curonian Lagoon:

- migratory (river lamprey, sea lamprey, Baltic sturgeon, twait shad, Atlantic salmon, sea trout, whitefish, smelt, vimba bream, eel),

- common freshwater (lake form of smelt, pike, bream, bleak, asp, white (silver) bream, Prussian carp, Crucian carp, common carp, ide, roach, rudde, tench, wels, burbot, ruffe, **perch, pike-perch**),

- marine fish (sprat, Atlantic (Baltic) cod, three-spined stickleback, river flounder),

- river (chub, nase, barbel).

According to these observations there have been no significant changes in the species composition of the ichthyofauna of the Curonian Lagoon in the 30 years (Osadchy, 2000).

Also V.M. Osadchy (2000) noted that the ichthyofauna of the Curonian Lagoon includes 53 fish species from 18 families, including: lampreys (Petromyzontidae) – 3, sturgeons (Acipenseridae) – 2, herrings (Clupeidae) – 3, salmonids (Salmonidae) – 2, whitefishes (Coregonidae**)** – 1, smelts (Osmeridae) – 2, pikes (Esocidae) – 1, cyprinids (Cyprinidae) – 24, loaches (Cobitidae) – 3, catfishes (Siluridae) – 1, eels (Anguillidae) – 1, gadids (Gadidae) – 2, sticklebacks (Gasterosteidae) – 2, needlefishes (Belonidae) – 1, perchs (Percidae) – 3, sand lances (Ammodytidae) – 1, lumpfishes (Cyclopteridae) – 1, flatfishes (Pleuronectidae) – 1. The basis of the ichthyofauna of the bay is the Cyprinids family (Cyprinidae), whose representatives have adapted well to the habitat in the lagoon and are the main commercial species (bream, roach, Crucian carp, sabrefish, tench, asp). The second in terms of commercial value is the Perch family (Percidae) although it is significantly inferior to the previous one in species diversity. Pike-perch, perch and ruffe inhabit the entire water area of the Lagoon and are actively developed by fishing. The Smelt family (Osmeridae) is represented by one species – smelt and its freshwater form (lake form of European smelt) and closes the list of the most important fish species in commercial terms.

Nevertheless T. Golubkova (2003) also noting that no significant qualitative change in the species composition of the ichthyofauna in the Curonian Lagoon was revealed, she revealed that, however, a number of valuable species have significantly reduced their numbers and biomass, these are vimba bream, pike, whitefish, and eel. The stock of whitefish, vimba and pike decreased due to the violation of the spawning conditions of these species, in particular, the construction of a power plant in Kaunas, the dam of which blocked the passage of spawning producers to the main spawning grounds located on the river Neman. The conditions for pike reproduction have worsened as a result of the operation of hydraulic structures on polder systems, which leads to a reduction in the area of natural spawning grounds and makes it difficult for juveniles to move into the Curonian Lagoon (Samokhvalova, 1975).

Whitefish is in a depressed state due to the increasing trophicity of the Lagoon. This species reproduces normally in oligotrophic water bodies. The state of the whitefish population can be improved through artificial reproduction.

The most significant decline was in the eel stock in the Curonian Lagoon. In the 1960s, its catch was about 300 tons per year, at present its catch is less than 10 tons per year. A decrease in the stock of eel in the bay is associated with a decrease in the natural entry of juveniles into the reservoir, which is determined by external factors. It is known that the stock of the species is currently at a low level in all parts of the range. It is possible to restore the normal state of the species in the Curonian Lagoon by means of artificial stocking.

The structure of the ichthyofauna of the Curonian Lagoon is represented by these main trophic groups – benthophages, planktophages, phytophages, predators, facultative predators, and parasites. Most of the species are benthophages and predators – 66% of the total number of species (Figure 29).

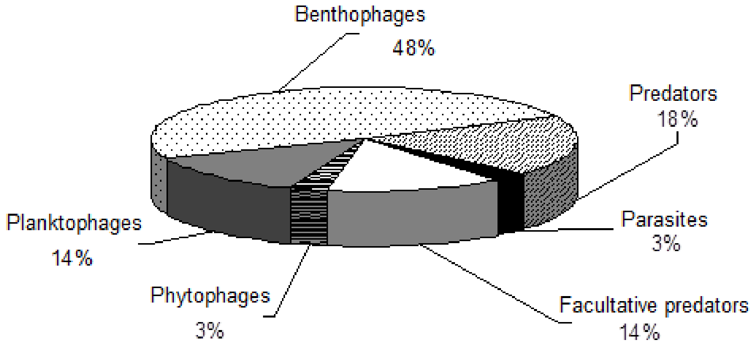


Figure 29 – The ratio of the fish species by trophic levels in the Curonian Lagoon (Source: Golubkova, 2003).

The most numerous among benthophages are bream, roach, ruffe, among predators – pike-perch and perch. Planktophages are represented mainly by three-spined stickleback, sabrefish and smelt. The latter two species are also optional predators. In addition, whitefish, chub, ide, and twait shad are optional predators. Phytophages and parasites are most poorly represented, 1 and 2 species, respectively, are rudde, and river and sea lampreys.

The main fishing grounds in the Curonian Lagoon are bream, roach, pike-perch, smelt, lake form of smelt, ruffe, perch; in recent years, the number of sabrefish has increased, the catch of these species averages 4 148 tons per year, or 91% of the total catch in the reservoir. The remaining 9% are eel, pike, burbot, silver bream, Crucian carp, vimba, three-spined stickleback, and other small species (Figure 30).

Estimation of the abundance and biomass was carried out only for the commercial part of the population of the most important and numerous commercial fish species – bream, pike-perch, roach, smelt, ruffe. In terms of numbers, ruffe dominates, followed by bream, smelt, roach and pike-perch (Figure 31).

Most of the biomass, more than 10,000 tons, relates to the commercial part of the bream population, followed by roach, pike-perch, ruffe, and smelt (Figure 32).

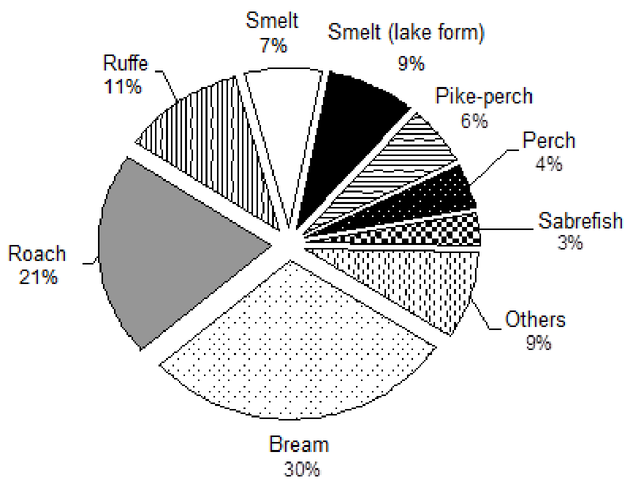


Figure 30 – Ratio of total catch of fish species in the Curonian Lagoon (Source: Golubkova, 2003).

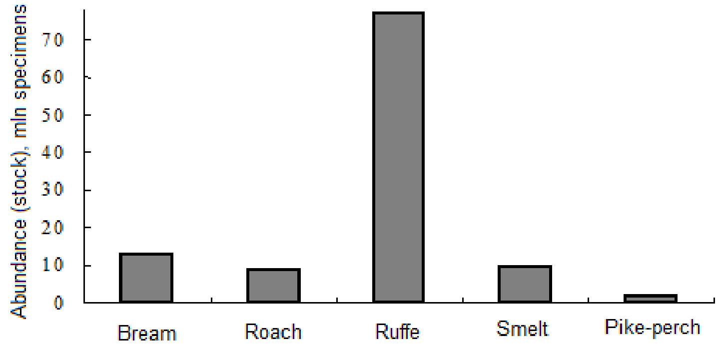


Figure 31 – The number of the commercial part of the populations of the main commercial species of the Curonian Lagoon (Source: Golubkova, 2003).

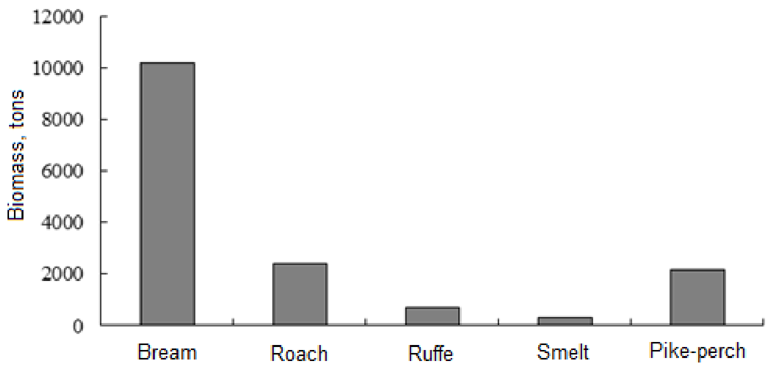


Figure 32 – Biomass of the commercial part of the populations of the main commercial species of the Curonian Lagoon (Source: Golubkova, 2003).

7.3.3 Species included in the assessment

The averaged (mean long-term) composition of catches by gillnets (fixed frame and bottom) used in the fishery in the UoAs by the client group is compiled and shown in the Table 22.

Table 22 – The composition of species as a percentage (%) based on the ratio of the biomass of species in the total catch by gillnets based on average long-term data collected by AtlantNIRO and data specified in quotas of enterprises of the client group in 2018 (Sources: Noskov, 1962; Golubkova, 2003; Safronova, 2018; Checklist ..., 2020).

Species (fish from the aquatic biological resources) – common English / Russian names	Data on the composition from the catch of fixed gillnets with size mesh in 40 – 70 mm (average means based on experimental studies of the AtlantNIRO (former BaltNIRO) (Noskov, 1962)	Data on the composition from the catch of the important numerous species mainly of fixed gillnets based on the long-term data of the AtlantNIRO (Golubkova, 1962)	Data on the composition from the catch of fixed gillnets based on the materials from Client (Checklist, and its permits in 2018 (Safronova, 2018)	Average data on the composition from the catch of the fixed gillnets in UoAs used later for definitions of the primary and secondary species in this assessment
Bream /лещ	43.7	41.1	42.8	**42.5**
Roach / плотва	3.7	28.8	12.2	**14.8**
Sabrefish / чехонь	12.3	4.1	6.1	**7.5**
Perch / окунь*	**3.5**	**5.5**	**7.4**	**7.4**
Pike-perch / судак*	**28.6**	**8.2**	**5.3**	**6.8**
Twait shad / финта	-	-	1.7	**1.7**
Burbot / налим	3.2	-	1.1	**1.1**
Pike / щука	3.7	-	2.3	**1.1**
Vimba bream / сырть (или рыбец)	<0.1		1.6	**1.1**
White bream / густера	1.1	-	1.9	**1.1**
Asp / жерех	-	-	1.9	**1.1**
Prussian carp / карась серебристый**	-	-	0.95	**1.1**
Crucian carp / карась золотой**	-	-	0.95	**1.1**
Rudd / красноперка	-	-	1.9	**1.1**
Tench / линь	-	-	1.9	**1.1**
Wels / сом	-	-	1.9	**1.1**
Ide / язь	-	-	1.9	**1.1**
Bleak / уклея	-	-	1.9	**1.1**
Whitefish / сиг	-	-	0.3	**0.3**
Other fish / прочие рыбы***	<0.1	12.3	1.9	**5.8**
Sum in %	100	100	100	**100**

Notes:
* - Target species – pike-perch and perch, are highlighted in bold.
** - Prussian and Crucian carps are not separated by species when accounting for catch.
*** - Species are presented in total catch mostly from small size Cyprinids and accidentally caught fish in small numbers (not included to fishing permits with specific names and quantity quotas).

In accordance with the fishing permits issued to the enterprises of the client group (Safronova, 2018), these enterprises use the following types of fixed gill nets (all nets were manufactured by Baltfishsnast LLC according to the corresponding passport parameters for this fishing gear):

- fixed frame gill nets with a mesh size of 70, 75, 80 and 90 mm and a height of 3 m, as well as fixed bottom gill nets with a mesh size of 70 mm; these nets are used primarily for catching bream, **pike-perch**, burbot, pike and whitefish;
- fixed bottom gill nets with a mesh size of 40 mm and a height of 3 m are used for catching **perch**, sabrefish, roach, twait shad;
- fixed bottom gill nets with a mesh size of 40 mm and frame gill nets with a mesh size of 70 mm can be used for catching vimba bream;
- all of the listed types of fixed gill nets are also used for catching other freshwater fish species as a bycatch to the main species of catch and including mostly small size Cyprinids: silver bream, asp and others.

Table 23 – Catches composition (%) in the Client fishery in the UoAs in 2017-2021 (Source: The Client, 2021).

Name	2017	2018	2019	2020	2021	Total
Pike-perch	5.7	5.7	6	5.8	12.6	7.4
Perch	6	9	9.2	9.2	15.8	10.2
Bream	57.5	48.8	47.6	48.2	40.6	47.8
Roach	9.5	11.2	11.8	12.1	10.1	11
Sabrefish	6.8	6	5.4	5	3.6	5.3
White bream	7.3	10	10.4	10.4	9	9.5
Asp	3	3.8	3.9	3.8	3.4	3.6
Vimbra bream	1.8	2.6	2.6	2.6	2.3	2.4
Prussian carp	0.9	1.2	1.3	1.2	1.1	1.1
Burbot	0.9	1	1	1	0.9	1
Pike	0.6	0.7	0.8	0.7	0.6	0.7
Catch, t	329.087	443.249	434.022	434.677	503.363	2144.398

The scale categories of the RBR (2020) and RBKR (2010) in relation to those of the IUCN Red List[3] are given below.

Category 0 – corresponds to category **EX** (Extinct) and **EW** (Extinct in the Wild) of the IUCN Red List.

Category 1 and **2** – corresponds to categories **CR** (Critically Endangered), **EN** (Endangered) and category **VU** (Vulnerable) of the IUCN Red List.

Category 3 - corresponds to categories **NT** (Near Threatened) (species close to extinction threat), **LC** (Least Concern) of the IUCN Red List.

Category 4 - corresponds to category **DD** (Data Deficient) of the IUCN Red List.

Category 5 – there is no corresponding category in the IUCN Red List.

[3] https://www.iucnredlist.org/

ETP species are highlighted like this.

Table 24 – Water birds of the Curonian Lagoon.

Scientific name	English name	Russian name	IUCN Red List	RBR	RBKR	Caught in gillnets in Curonian Lagoon, (280 in total)*	**iNaturalist** (total 4412 observations)
Actitis hypoleucos	Common Sandpiper	Перевозчик	LC	-	-	-	4
Anas acuta	Northern Pintail	Шилохвость	LC	-	-	-	4
Anas crecca	Common Teal	Чирок-свистунок	LC	-	-	-	1
Anas platyrhynchos	Mallard	Кряква	LC	-	-	-	244
Anser albifrons	Greater White-fronted Goose	Гусь белолобый	LC	-	-	-	4
Anser fabalis	Bean Goose	Гуменник	LC	-	-	-	3
Ardea cinerea	Grey Heron	Серая цапля	LC	-	-	-	47
Aythya fuligula	Tufted Duck	Хохлатая чернеть	Global LC Europe NT	-	-	-	2
Aythya marila	Greater Scaup	Морска́я че́рнеть	LC	-	-	10	1
Aythya nyroca	Ferruginous Duck	Белоглазый нырок	Global NT Europe LC	2	1	-	0
Branta bernicla	Brent Goose	Черная казарка	LC	-	-	-	1
Branta leucopsis	Barnacle Goose	Казарка белощекая	LC	-	-	-	1
Bucephala clangula	Common Goldeneye	Обыкновенный̆ гоголь	LC	-	-	12	8
Calidris canutus	Red Knot	Исландский песочник	Global NT Europe LC	2	-	-	6
Calidris ferruginea	Curlew Sandpiper	Краснозобик	Global NT Europe VU	2	-	-	1
Clangula hyemalis	Long-tailed Duck	Морянка	Global VU, Europe LC	-	-	-	25
Fulica atra	Common Coot	Лысуха	Global LC Europe NT	-	-	-	90
Gavia arctica	Arctic Loon	Чернозобая гагара	LC	-	-	-	0
Gavia stellata	Red-throated Loon	Краснозобая гагара	LC	-	-	8	1
Larus argentatus	European Herring Gull	Серебристая чайка	LC	-	-	-	104
Larus cachinnans	Caspian Gull	Хохотунья	LC	-	-	-	3
Larus canus	Mew Gull	Сизая чайка	LC	-	-	-	35
Larus marinus	Great Black-backed Gull	Морская чайка	LC	-		-	9
Larus ridibundus	Black-headed Gull	Озёрная (обыкновенная) чайка	LC	-	-	-	204
Melanitta fusca	Velvet Scoter	Турпан	VU	-	-	-	8
Melanitta nigra	Common Scoter	Синьга	LC	-	-	-	0
Mergellus albellus	Smew	Луток	LC	-	-	8	0
Mergus merganser	Goosander	Большой крохаль	LC	-	-	13	11
Mergus serrator	Red-breasted Merganser	Длинноносый крохаль	Global LC Europe NT	-	-	-	2
Phalacrocorax carbo	Great Cormorant	Большой баклан	LC	-	-	189	97

Podiceps cristatus	Great Crested Grebe	Чомга, или большая поганка	LC	-	-	40	28
Podiceps nigricollis	Black-necked Grebe	Черношейная поганка	Global LC Europe VU	-	1	-	0
Sterna hirundo	Common Tern	Речная крачка	LC	-	-	-	20
Tadorna tadorna	Common Shelduck	Пеганка	LC	-	3	-	3
Tringa ochropus	Green Sandpiper	Черныш	LC	-	-	-	1
Uria aalge	Common Murre	Тонкоклювая кайра (балтийская популяция)	LC	2	-	-	0

Sources: **iNaturalist**, Morkūnas *et al*., 2020, Red Book of the Russian Federation (RBR, 2020), Red Book of the Kaliningrad Region (RBKR, 2010), Tarzia *et al*., 2017,
* Morkūnas et al., 2020

Table 25 – Mammals of the Baltic Sea.

Scientific name	English name	Russian name	IUCN Red List	RBR*	RBKR**	Inhabits the BR?
Lutra lutra	Eurasian Otter	Выдра	NT	-	-	In the rivers
Ondatra zibethicus	Muskrat	Ондатра	LC	-	-	Yes
Phoca vitulina	Harbor seal (Baltic population)	Обыкновенный тюлень (балтийская популяция)	LC	1	1	Occurs in the sea, almost never occurs in the Russian part of the lagoon
Halichoerus grypus	Grey seal	Длинномордый (серый) тюлень	LC	1	1	Occurs in the sea, almost never occurs in the Russian part of the lagoon
Pusa hispida subsp. botnica	Baltic ringed seal	Кольчатая нерпа, балтийский подвид	LC	1	2	Occurs in the sea, almost
Phocoena phocoena	Harbor Porpoise	Морская свинья	Global LC Europe VU	1	-	Never occurs in the Russian part of the lagoon

* Red Book of the Russian Federation (RBR, 2020)
** Red Book of the Kaliningrad Region (RBKR, 2010)

7.3.4 Management measures relevant to Principle 2

Management measures set out in the Fishing Rules of the West Fishery Basin of the Russian Federation (Fishing Rules, 2020), relevant to Principle 2 issues.

This Fishing Rules (2020) includes the main requirements for the harvesting of aquatic biological resources:

Paragraph 2. The Western fishery basin includes **the Baltic Sea** with the basins of rivers flowing into it, Lake Ladoga with the basins of rivers flowing into it and all water bodies of fishery significance of the **Kaliningrad**, Leningrad, Pskov, Novgorod regions and the federal city of St. Petersburg, with the exception of ponds and flooded quarries owned by the constituent entities of the Russian Federation, municipal and private property.

Paragraph 7. In order to preserve rare and endangered species of aquatic biological resources included in the Red Data Book of the Russian Federation and (or) the Red Data Book of a constituent entity of the Russian Federation, the harvesting (catch) of such types of aquatic biological resources is prohibited.

Subparagraph 9.1. Legal entities and individual entrepreneurs:

- provide separate accounting of the catch of aquatic biological resources and the acceptance of catches of aquatic biological resources by types of aquatic biological resources, indication of the weight (size) ratio of species in the catch of aquatic biological resources, fishing gears (catch) and places of harvesting (catch) (area, subarea, fishing zone, fishing subzone, fishing parcel) in the fishing log and other reporting documents;
- submit to the territorial administrations of the Federal Fisheries Agency information on the harvesting (catch) of aquatic biological resources.

Subparagraph 14.1. Legal entities and individual entrepreneurs to carry out the harvesting (catch) of aquatic biological resources:

- in excess of the quotas (volumes) allocated to them for the harvesting (catch) of aquatic biological resources in the areas of harvesting (catch) and species of aquatic biological resources and the amount of bycatch permitted by the Fishing Rules;

Subparagraph 14.3. Legal entities and individual entrepreneurs:

- accept (hand over), have on board a vessel or on a harvesting (catching) parcel catches of aquatic biological resources (or fish or other products from them) of one species under the name of another species or without indicating in the fishing log or technological log of the species composition of the catch of aquatic biological resources;
- accept (hand over) the catches of aquatic biological resources without weighing or determining the amount of catch of aquatic biological resources by the volume-weight method, and (or) recalculating per item with subsequent recalculation by the average weight of aquatic biological resources;
- have on board ships and floating equipment, on harvesting (catching) parcels located in the areas (places) of harvesting (catch), as well as in the places of production of fish and other products from aquatic biological resources, aquatic biological resources (including their fragments (parts) and (or) fish or other products from them), not accounted for in the fishing log, technological log, acceptance documents;
- use fixed (anchor) fishing (catching) gears, without indicating their position with the help of buoys or identification marks, which bear information about the name of the legal entity or individual entrepreneur carrying out the harvesting (catching) of aquatic biological resources, and the number of the harvest (catch) permit) aquatic biological resources;
- have on board the vessel and floating equipment, harvesting (catching) parcels and in places of harvesting (catch) (when fishing outside harvesting (catch) parcels) in working condition, suitable for fishing, harvesting (catching) gears, the use of which in this area and at a given period of time is prohibited, as well as aquatic biological resources, the harvesting (catch) of which in this area and at a given period of time is prohibited, or their parts;

Subparagraph 14.4.2. set:

- fixed harvesting (catch) gears in a checkerboard pattern with a distance of less than 0.1 km between orders along one line and (or) between lines;

Subparagraph 14.4.3. to throw away (destroy) or release the harvested (caught) aquatic biological resources permitted for harvesting (catching).

Subparagraph 14.4.4. In the case of harvesting (catching) prohibited species of aquatic biological resources or exceeding the permitted bycatch of aquatic biological resources not specified in the permit for the harvesting (catching) of aquatic biological resources, for which the total allowable catch (hereinafter – TAC) is established, they must be with the least damage, regardless of their state, released into natural habitat.

- At the same time, legal entities, individual entrepreneurs and citizens are obliged to:
- change the position of harvesting (catch) (the route of the next trawling or the position of the next trawl, the setting of the harvesting (catch) must be at least 5 nautical miles (for sea areas) and at least 0.5 km (in inland waters, for excluding inland sea waters) from any point of the previous trawling, sweeping or setting) or replace the harvesting (catch) with others, including those with a larger mesh size (step of mash), and if the permitted bycatch is exceeded again, stop the harvesting (catch) of aquatic biological resources in a given area or on a given fishing (fishery) parcel and remove fishing (catch) gears or bring them into a state that does not allow fishing;
- reflect your actions in the ship's documents and the fishing log and send this information to the territorial bodies of the Federal Fisheries Agency for Fishery;

Subparagraph 14.4.5. to use fishing (catching) implements having a size and rigging, as well as a mesh size (step of mesh) that do not meet the requirements of the Fishing Rules;

Subparagraph 14.4.7. allow the presence of fixed nets in the water, counting from the moment of their complete installation, recorded in the fishing log, until the beginning of their bulkhead or hauling on the shore or side of the vessel (stagnation of nets), exceeding:

- 48 hours – from May 1 to August 31;
- 72 hours – from September 1 to April 30;

Subparagraph 14.4.10. to allow pollution of water bodies of fishery significance and deterioration of the natural habitat of aquatic biological resources.

SECTION III. Commercial and coastal fishing

Paragraph 16. Curonian Lagoon with basins of rivers flowing into it:

16.1. Areas prohibited for the extraction (catch) of aquatic biological resources:

- throughout the year, it is prohibited to harvest (catch) all species of aquatic biological resources, except for the harvest (catch) of European smelt, freshwater ruff, bleak, sticklebacks, three-spined and nine-spined sticklebacks, smelt and lampreys during the spring harvesting (catch) - from ice breakup until June 1 in the following areas:
- in the Curonian Lagoon between the mouth of the Severnaya River (Skirvite) and the village of Mysovka at a distance of less than 3 km from the coastline;
- before the mouths of the Matrosovka, Nemonin, Deima, Tovarnaya and Trostyanka rivers at a distance of less than 0.5 km to the right and left of the mouths and at a distance of less than 2 km into the Curonian Lagoon;
- in the period from November 10 to December 10 in the area bounded by straight lines connecting points with the following coordinates:

  54° 56.4′ N – 20° 36.1′ East longitude
  54° 58.0′ N – 20° 36.1′ East longitude
  54° 58.0′ N – 20° 38.5′ East longitude
  54° 56.4′ N – 20° 38.5′ East longitude and further to the starting point.

Subparagraph 16.2. Terms (periods) prohibited for the harvesting (catch) of aquatic biological resources:

- from April 20 to August 31 – with all gears of harvesting (catch), with the exception of gears of harvesting (catch) for harvest (catch):
- from June 20 to August 31 – freshwater perch, roach, sabrefish, silver bream, crucian carp with venters and traps;
- from April 20 to June 20 – freshwater perch, roach, sabrefish, silver bream, crucian carp with venters and traps, fixed nets at a distance of at least 1 km from the coastline;
- from June 20 to August 31 – freshwater perch, roach, sabrefish, silver bream, crucian carp with fixed nets with streamer lines at least 30 cm long between the bottom line and the loads at a distance of at least 1 km from the coastline;
- Bycatch of other species is carried out in accordance with paragraph 16.7 of the Fishing Rules (2020).

Subparagraph 16.3. Species of aquatic biological resources prohibited for harvesting (catch):

- Atlantic salmon (salmon);
- Specialized fishing for vimba bream, whitefish.

Subparagraph 16.4. Types of forbidden gears and methods of harvesting (catch) of aquatic biological resources:

fixed gill nets with a length of more than 400 meters, installed from each other at a distance of less than 150 meters along the line and less than 200 meters between the lines; the total length of fixed nets installed in the line should not exceed 1 km.

Subparagraph 16.5. The size (step of mesh) of the mesh of the harvesting (catch) gears, the size and design of the gears for the harvesting (catch) of aquatic biological resources:

Subparagraph 16.5.1. When carrying out the harvesting (catch) of aquatic biological resources, gears for the harvesting (catch) of aquatic biological resources are used in accordance with the technical documentation. The use of other gears for harvesting (catching) is not allowed.

- grids with a mesh size (step of mesh) less than indicated in Table A:

Table A

Name of aquatic biological resources	Size (step of mesh) of the mesh, mm
Bream, pike-perch, pike, asp, freshwater wels, burbot	70
Roach, freshwater perch, sabrefish, silver bream, crucian carp, tench, rudde, ide	36
European smelt, bleak	16

- The size (step of mesh) of the mesh for roach, freshwater perch, sabrefish, silver bream, crucian carp, tench, rudde, ide cannot exceed 40 mm.

Subparagraph 16.6. The minimum size of harvested (caught) aquatic biological resources (commercial size):

Subparagraph 16.6.1. It is prohibited to harvest (catch), landing, process, transhipment, transport, store and uploading aquatic biological resources landing, process, transhipment, transport, store and uploading of aquatic biological resources having fresh length (in cm) less than indicated in Table B, except for cases of permitted bycatch.

- The size (step of mesh) of the mesh for roach, freshwater perch, sabrefish, silver bream, crucian carp, tench, rudde, ide cannot exceed 40 mm.

Table B

Name of aquatic biological resources	Commercial size (MLS), cm	
	l	L
Pike-perch	40	46
Bream	29	35
Pike, burbot, asp	45	50
Roach, freshwater perch	15	18
Sabrefish	28	32
Freshwater wels	70	75
Vimba bream	24	28
Whitefish	32	36

- l – the length of the fish is determined by measuring from the top of the snout (with the mouth closed) to the base of the middle rays of the caudal fin.
- L – the length of the fish is determined by measuring from the tip of the snout (with the mouth closed) to the end of the longest ray of the caudal fin, at the minimum angle of divergence of the upper and lower lobes of the caudal fin.
- A fish is considered to be of commercial size if its length (l or L) corresponds to the value indicated in Table B or exceeds this value.

Subparagraph 16.6.2. The bycatch of aquatic biological resources of a non-commercial size is allowed no more than 10% of the total catch of aquatic biological resources (on board a vessel or unloaded) of fish species specified in clause 16.6.1 of the Fishing Rules.

Subparagraph 16.7. Bycatch of some species in the implementation of the harvest (catch) of other types of aquatic biological resources:

- The volume and composition of the permitted bycatch of aquatic biological resources is allowed against the volume of species specified in the permit.

7.3.5 Main primary species

According to MSC FCP v2.2, **primary species** in Principle 2 are those for which all of the following criteria are met:

- Species in the catch that are not covered under Principle 1 because they are not included in the UoAs;
- Species that are within scope of the MSC program as defined in MSC FCP v2.2 Section 7.4; and
- Species where management tools and measures are in place, intended to achieve stock management objectives reflected in either limit or target reference points.

Secondary species in Principle 2 are species in the catch which are not covered under Principle 1 because they are not included in the UoAs and:

- Are not considered "primary" as defined above for primary species; or
- Species that are out of scope of the program, but where the definition of ETP species is not applicable.

Assessment team designate "main" primary and secondary species as those which comprise at least 5% of the total catch, or at least 2% of the total catch for "more vulnerable/less resilient" species, whose life history characteristics may make them more prone to overexploitation. All "out of scope" secondary species must be classified as "main."

7.3.5.1 Bream, *Abramis brama* (Лещ)

In the Curonian Lagoon, since the end of the 1960s, fishing has been regulated, and the catch of important commercial species, including bream, has been limited. At present, in the Russian part of the Curonian Lagoon bream fishing is carried out mainly with large-mesh fixed gill nets with a mesh size of 70 mm, the main harvest periods are spring and autumn. In accordance with the Fishing Rules (2020), the use of these gill nets for the protection of spawning and juvenile fish is prohibited from April 20 to June 20. As a result of the rationalization of fishing, the stock of bream has become relatively stable.

Long-term data on the catch of bream in the Russian part of the Curonian Lagoon are shown in Figure 33. For the period from 1971 to 2019 it fluctuated within 689-1232 tons, averaging 950 tons. In the last decade, the catch and the share of TAC development remain at a high level, on average в 1068 tons and 95%, respectively (Table 26). In 2019, these indicators were 1105 tons and 96%, with the value of the TAC for the Russian part of the Lagoon in 1150 tons.

Table 26 – The level of development of TAC for bream in the Russian part of the Curonian Lagoon in 2010-2019 (Source: AtlantNIRO, 2020a).

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TAC, tons	1150	1150	1150	1150	1150	1000	1100	1100	1200	1150
Catch, tons	1022	1097	1101	1080	1083	979	1088	1081	1040	1105
Development of TAC, %	89	95	96	94	94	98	99	98	87	96

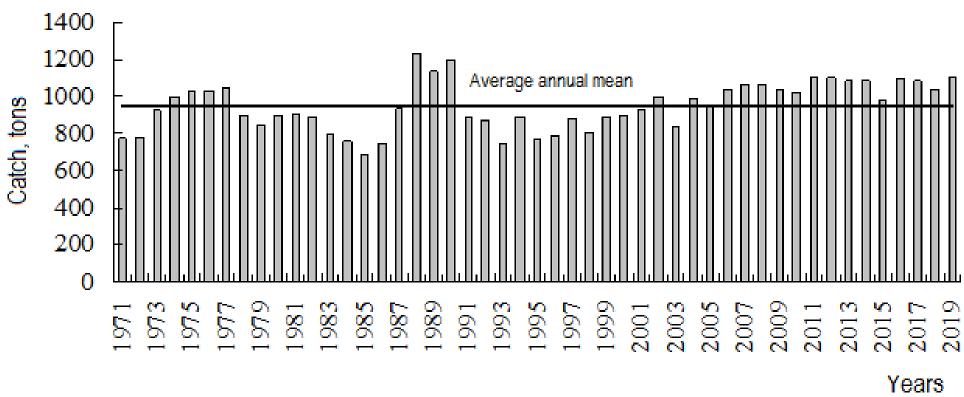


Figure 33 – Commercial catch of bream in the Russian part of the Curonian Lagoon in 1971-2019, tons (Source: AtlantNIRO, 2020a).

For bream the minimum length of individuals allowed for harvest has been established (commercial measure), the indicators of which are 29 cm – standard (commercial) and 35 cm – absolute (zoological) length. The species begins to be fished from the age of 5-6 years (the age of partial replenishment of the commercial stock), 7–year-olds completely enter the fishery.

The commercial part of the bream stock in 2019 was represented by 7–16-year-old individuals. The 10–13-year-old fish dominated (80.9% of the population). Average indicators of length, weight, and age of fish from commercial catches were within the range of long-term fluctuations: length - 37 cm, weight - 1117 g, age - 11.5 years (Table 27 and 28).

Table 27 – Biological indicators of bream in the Curonian Lagoon from commercial catches in 2010-2019 (Source: AtlantNIRO, 2020a).

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average
Average commercial length, cm	35	33	34	37	37	35	35	36	36	37	36
Average weight of 1 specimen, gram	996	933	968	1121	1156	994	1066	1121	1147	1117	1062
Average age, years	10.6	9.9	10.1	11.6	11.5	10.0	10.4	10.9	11.3	11.5	10.8

Table 28 – Age composition of bream from commercial catches in the Curonian Lagoon in 2010-2019, percentage of abundance (Source: AtlantNIRO, 2020a).

Age, years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
5	0.4	0.4	-	-	-	-	-	-	-	-
6	1.2	1.2	0.2	0.1	0.4	0.2	0.1	0.6	-	-
7	3.0	6.0	4.1	0.9	0.5	4.9	1.6	1.1	1.6	0.7
8	9.0	16.2	14.1	4.1	8.9	17.6	9.2	9.6	5.5	3.1
9	14.9	26.9	29.6	11.6	12.6	25.5	22.7	12.8	6.6	6.6
10	21.5	18.1	16.7	13.9	11.0	17.4	25.9	15.6	15.5	15.6
11	13.5	9.8	12.5	13.3	14.6	12.4	15.9	20.9	22.0	23.5
12	15.9	10.1	8.3	18.1	14.8	8.6	9.4	20.0	24.9	27.7
13	10.9	5.9	6.4	18.6	15.4	7.5	9.8	11.4	16.0	14.1
14	5.8	3.8	5.6	13.5	13.2	4.6	3.4	5.9	6.0	5.0
15	2.9	1.2	2.1	3.8	6.7	0.9	1.5	1.6	1.1	2.5
16	1.0	0.3	0.3	1.9	1.6	0.2	0.4	0.4	0.8	1.2
17	-	0.1	0.1	0.2	0.3	0.2	0.1	0.1	-	-

As a boundary reference point for biomass, scientists chose its minimum value *Blim* for the observation period from 1989 to 2019, calculated using cohort analysis with the Kalman filter (Mikheev, 2016). Also, a precautionary biomass reference was used – *Bpa*, a boundary reference point for fishing intensity – the fishing mortality rate *Flim* and the precautionary value of the fishing mortality rate *Fpa* (Table 29) (Babayan, 2000; ICES Advice, 2017).

Table 29 – Biological reference point s for the Curonian Lagoon bream (Source: AtlantNIRO, 2020a).

Criterion	Indices	Means	Method of assessment
Boundary reference points	B_{lim}	3205 tons	Minimal mean of commercial stock biomass
	F_{lim}	0,55	According with B_{lim}
Precautionary approach	B_{pa}	4487 tons	B_{pa}=1.4× B_{lim}
	F_{pa}	0,39	F_{pa}=F_{lim}/1.4

According to the calculated data, the number of the commercial part of the bream stock in the Russian part of the Curonian Lagoon in 2021 will amount to 4465 thousand specimens, biomass – 5 177 tons (Table 30 and 31).

After determining the abundance of the stock using the KAFKA cohort model, as well as the magnitude of the fishing intensity, using the HCR, and the management option at the “Status quo” level, the TAC estimate for 2021 was obtained, which was 1150 tons, which corresponds to the level of 2019-2020.

Table 30 – The size of the commercial stock of bream in the Russian part of the Curonian Lagoon and its forecast for 2021, thousand specimens (Source: AtlantNIRO, 2020a).

Age, years	Year of fishery											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020*	2021*
7	1431	1216	1391	1701	1836	1459	1039	607	517	283	776	867
8	1247	1384	1120	1087	1491	1826	1408	1022	591	503	276	300
9	1099	1155	1164	747	922	1408	1653	1314	930	541	472	494
10	892	946	772	601	556	804	1158	1421	1190	870	476	468
11	638	671	693	434	407	453	632	893	1271	1050	716	657
12	397	499	536	420	265	270	331	471	691	1071	817	710
13	202	234	358	341	210	131	185	235	277	465	797	663
14	83	90	151	219	137	66	57	84	120	125	325	254
15+	42	24	35	59	74	13	21	22	21	65	76	52
Total	6031	6219	6220	5609	5898	6430	6484	6069	5608	4973	4731	4465

Note: * - predicted value.

Table 31 – Commercial stock and commercial mortality of bream in the Russian part of the Curonian Lagoon (Source: AtlantNIRO, 2020a).

Year	Abundance of stock (N), thousand specimens	Biomass (B), т	Fishery mortality ($F_{bar9-12}$)
2010	6031	6430	0.25
2011	6219	5875	0.23
2012	6220	6082	0.23
2013	5609	6714	0.27
2014	5898	7001	0.29
2015	6430	6176	0.24
2016	6484	6582	0.23
2017	6069	6581	0.21
2018	5608	6375	0.17
2019	4973	5764	0.19
2020*	4731	5484	0.22
2021*	4465	5177	0.22

Note: * - predicted value.

7.3.5.2 Sabrefish, *Pelecus cultratus* (Чехонь)

Regulated fishing has been carried out in the Curonian Lagoon since the late 1960s. In accordance with the Fishing Rules (2020) sabrefish is fished mainly with small-mesh fixed nets with size of mesh in 40 mm. The main fishing periods of sabrefish are spring and autumn. For sabrefish, the minimum commercial length is 28 cm (total length).

Sabrefish is a numerous and important fishing species in the Curonian Lagoon. The catch of the species is subject to significant fluctuations, which is due to the dynamics of the stock and the intensity of its commercial exploitation (Figure 34). Specialized fishing for sabrefish in the Curonian Lagoon was started in 1970s of the XX century (Osadchy, 2000). In the 1980s, the stock of the species was in good condition, during this period the catch reached high values. Since 1989, the catch has sharply decreased, and since 1994 it began to gradually increase and in the 2000s it stabilized at a high level, averaging 311 tons. In the last three years, a decrease in catch has been noted, due to both a slight decrease in the stock of the species in the Lagoon, and the feature of the organization of the fishery. In 2019 232 tons of sabrefish were caught, the development of the TAC was 77% (Table 32).

In 2019 the size-age composition of the commercial catches of sabrefish corresponded to the average long-term values. The main biological characteristics were as follows: average length – 31 cm, average weight – 322 g, average age – 7.2 years (Table 33).

In the catch sabrefish was represented by 5-11-year-old individuals, the basis of the commercial catch was 6-9-year-olds individuals (90.7% of the abundance) (Table 34).

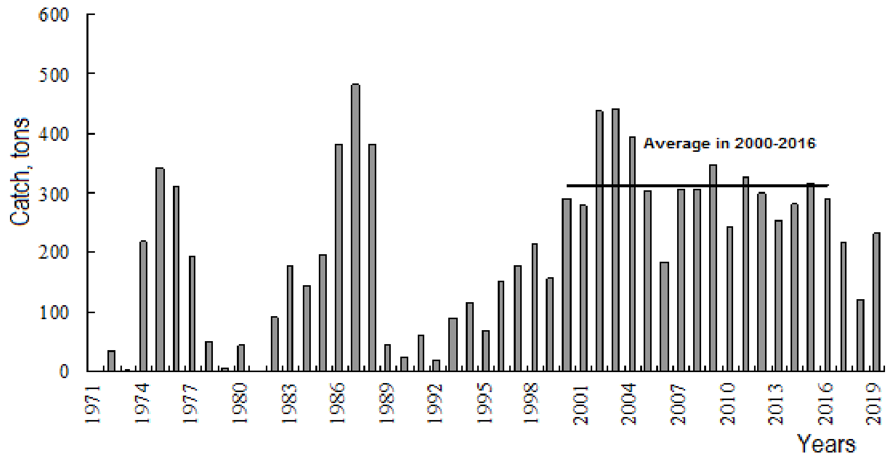


Figure 34 – Commercial catch of sabrefish in the Russian part of the Curonian Lagoon in 1971-2019, tons (Source: AtlantNIRO, 2020a).

Table 32 – The level of development of TAC for sabrefish in the Russian part of the Curonian Lagoon in 2010-2019 (Source: AtlantNIRO, 2020a).

Indicators	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
TAC, tons	400	400	350	350	350	350	350	350	350	300
Catch, tons	244	325	299	254	282	313	291	216	121	232
Development of TAC, %	61	81	85	73	81	89	83	62	35	77

Table 33 – Biological characteristics of sabrefish from the commercial catch in the Curonian Lagoon in 2010-2019 (Source: AtlantNIRO, 2020a).

Indicators	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Average**
Average commercial length, cm	31	31	31	30	31	32	32	32	31	31	31
Average weight of 1 specimen, gram	346	326	325	322	324	356	348	325	312	322	331
Average age, years	7.1	6.8	6.6	7.0	7.1	7.5	7.4	7.5	7.0	7.2	7.1

Table 34 – Age composition of sabrefish from the commercial catch in the Curonian Lagoon in 2010-2019, percentage of the abundance (Source: AtlantNIRO, 2020a).

Age, years	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
3	0.05	0.3	-	-	-	-	-	-	-	-
4	-	-	0.9	2.3	1.6	0.1	0.1	-	1.6	-
5	2.3	4.4	8.9	19.8	8.5	3.9	13.3	2.0	16.2	7.2
6	29.4	40.2	34.8	19.3	29.3	16.3	17.1	25.7	28.3	23.0
7	40.0	34.2	44.7	21.3	23.3	32.3	26.0	28.9	21.1	31.5
8	18.1	14.7	8.1	16.7	20.6	26.9	18.6	18.5	13.5	24.9
9	8.3	4.3	1.7	12.0	12.5	14.8	16.4	16.1	13.0	11.3
10	0.8	1.5	0.7	6.4	2.0	4.2	6.5	7.2	3.9	1.9
11	1.0	0.4	0.1	1.7	2.2	1.4	1.9	1.6	2.4	0.2
12	-	-	0.1	0.5	-	0.1	0.1	-	-	-

The minimum biomass value *Blim* at the *Bloss* level defined as the minimal stock value for the period of low biomass was chosen as a boundary reference point for biomass. The fishing mortality rate *Flim* (Table 35) (ICES Advice, 2017) is used as a boundary reference point for the intensity of fishing.

Table 35 – Biological reference points for sabrefish of the Curonian Lagoon (Source: AtlantNIRO, 2020a).

Criterion	Indices	Means	Method of assessment
Boundary reference points	B_{lim}	469 tons	B_{loss} (minimal stock during a period of low biomass)
	F_{lim}	0.74	According with B_{lim}

According to the Order of the Federal Fisheries Agency dated 06.02.2015 No. 104, the justification of the TAC is carried out in accordance with the principles of the precautionary approach. The management strategy for the sabrefish stock in the form of the HCR was defined using management benchmarks for biomass and fishery mortality. The HCR of sabrefish designed to ensure sustainable fisheries in the long term is shown in Figure 35 which shows retrospective data and a forecast of the stock for 2021 in coordinates of the biomass of the commercial stock and the fishing mortality.

As it follows from Figure 35 the stock of sabrefish of the Curonian Lagoon in the near future will be within biologically safe limits. Considering the current state of the commercial stock of the species, the value of the fishing mortality F_{bar6-8} for the predicted 2021 is recommended at 0.37.

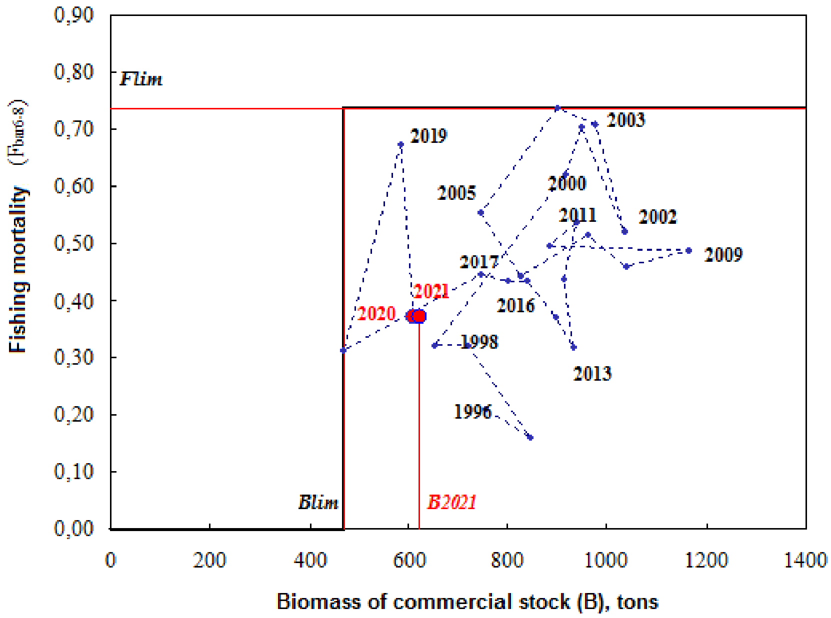


Figure 35 – Stock of sabrefish of the Curonian Lagoon in 1996-2019 and the HCR (Source: AtlantNIRO, 2020a).

The basis of the commercial stock of sabrefish in 2021 will be the generations of 2013-2014 years of births, the yield of which is close to the average annual level, and the productive generation of 2012 (Figure 36). Also, in the stock of the sabrefish will be present generations of 2015, 2010-2011, the yield of which is below the average long-term level.

The stock of the sabrefish was calculated and its forecast for 2021 was carried out using the KAFKA model, which includes several settings. The *s* parameter is set by default in the range from 0 to 1. The *delta* parameter is fixed at 1. The parameters of the genetic algorithm are set by default: number of iterations – 50; the number of initial vectors is 1000; bit width of the grid – 16 (Methodical recommendations..., 2018).

The following data were used in this model for sabrefish:

- matrix of catches of sabrefish by years (1996-2019) and ages (5-10 years old, 11 + -group), in thousand individuals;

- indices of the number of 5-11-year-olds, representing the catch in thousands of specimens, for accounting survey;

- stock indices according to fishery statistics, expressed in thousands of specimens / month;

- average long-term weights for 1 specimen (2010-2019) by age (kg).

Replenishment (R) for 2020 and 2021 preliminarily estimated as a long-term average and set at 795 thousand specimens. The estimated catch for 2020 is set in the model as the previously calculated TAC for 2020 – 250 tons or 755 thousand specimens.

According to the calculated data, the number of the commercial part of the sabrefish stock in the Russian part of the Curonian Lagoon in 2021 will amount to 1,869 thousand individuals, biomass – 622 tons (Table 36 and 37).

After determining the abundance of the stock using the KAFKA cohort model, as well as the value of the fishing intensity, using the HCR, an estimate of the TAC for 2021 was obtained for 2021, the recommended amount is 230 tons, which is 20 tons lower than the TAC for 2020 (250 tons) and 70 tons lower than the TAC for 2019 (300 tons).

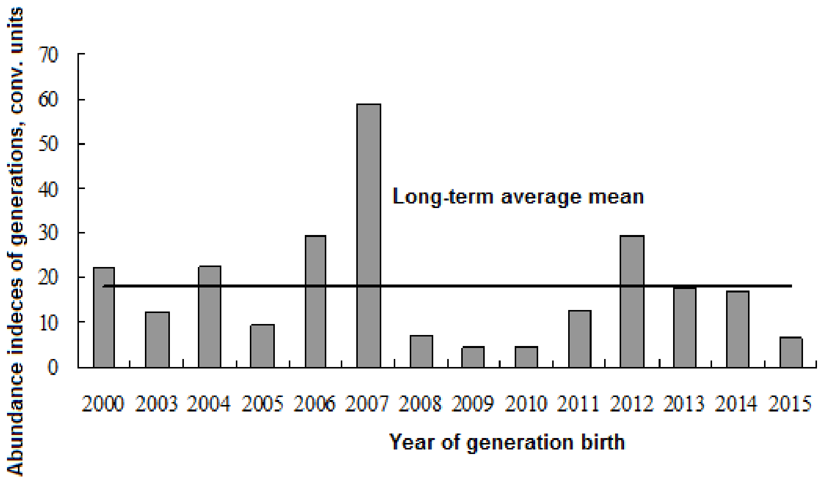


Figure 36 – Generation indices of sabrefish in the Curonian Lagoon according to trawl survey data, in conventional units (Source: AtlantNIRO, 2020a).

Table 36 – The number of the commercial stock of sabrefish in the Curonian Lagoon and its forecast for 2021, thousand specimens (Source: AtlantNIRO, 2020a).

Age, years	**Year of fishery**											
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020***	**2021***
5	1121	952	1002	996	665	599	792	715	514	710	795	929
6	751	1104	879	782	822	578	564	635	407	444	657	712
7	519	544	703	541	630	567	434	397	284	297	279	205
8	192	237	203	293	373	427	282	210	138	202	70	19,5
9	75	64	90	124	162	194	190	123	65	85	24	3,2
10	8	17	20	66	29	53	64	53	16	14	4	0,2
11+	4	3	2	12	15	12	16	9	5	1	1	0,1
Sum	2670	2921	2899	2814	2696	2430	2342	2142	1429	1753	1830	1869

Note: * - predicted value.

Table 37 – Commercial stock and commercial fishing mortality of sabrefish in the Curonian Lagoon (Source: AtlantNIRO, 2020a).

Year	Abundance of commercial stock (N), thousand specimens	Biomass of commercial stock (B), tons	Fishing mortality (F_{bar6-8})
2010	2670	882	0.50
2011	2921	938	0.54
2012	2899	912	0.44
2013	2814	932	0.32
2014	2696	897	0.37
2015	2430	840	0.44
2016	2342	800	0.44
2017	2142	743	0.45

2018	1429	469	0.31
2019	1753	583	0.67
2020*	1830	609	0.37
2021*	1869	622	0.37

Note: * - predicted value.

The obtained predicted values of the biomass of the commercial stock and the TAC of sabrefish are in the area of safe commercial use, according to the RFR. The biomass of the commercial stock of sabrefish in the Curonian Lagoon over the past decade (2010-2019) averaged 800 tons. The predicted biomass of the sabrefish (622 tons) for 2021 is within the 95% confidence interval (Table 38); its value (B_{2021} = 622 t) is 1.3 times higher than the limiting biomass (B_{lim} = 469 t). Accordingly, despite a slight decrease in the stock of sabrefish, its value is within the biologically safe limits (Figure 35).

Table 38 – Predicted values of the commercial stock of sabrefish in the Curonian Lagoon and their 95% confidence interval (Source: AtlantNIRO, 2020a).

Year of forecast	**Biomass of stock, tons**	Confidence interval in **95 %**	
		Upper level	**Low level**
2020	609	738	479
2021	622	805	439

7.3.6 Minor primary species

According to the expert team, there are no Minor primary species in this fishery.

In the ACDR, the following were identified as the Minor primary species:

- Atlantic twait shad
- Vimba bream
- White bream
- Burbot
- Asp
- Pike
- Crucian carp
- Prussian carp
- Rudde
- Tench
- Freshwater wels
- Bleak
- Ide

But our analysis showed that all they do not fully meet the requirements of the "Primary" category, since there is no limit or target biological reference points for them. The share of each of them (except for white bream) in the total commercial catch is less than 1%. Therefore, we consider them in the category of the Minor secondary species.

Our analysis showed that the percentage of white bream in the Client catches higher than 5% (see Table 23). Therefore, we consider white bream in the Main Secondary Species section.

7.3.7 Main secondary species

7.3.7.1 Fish

7.3.7.1.1 Roach, *Rutilus rutilus* (Плотва)

In the ACDR, roach was identified as the Main primary species. But our analysis showed that roach does not fully meet the requirements of the "Primary" category, since there is no limit or target biological reference points for it. Therefore, we consider roach in the Main Secondary Species section.

The commercial catch of roach in 2019 in the Russian part of the Curonian Lagoon amounted to 430 tons, or 75% of the TAC (Table 39).

Table 39 – The level of development of the TAC for roach in the Russian part of the Curonian Lagoon in 2010-2019 (Source: AtlantNIRO, 2020a).

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TAC, tons	570	570	570	570	570	570	570	570	570	570
Catch, tons	471	478	475	448	514	535	491	500	354	430
Development of TAC, %	83	84	83	79	90	94	86	88	62	75

Fishing for roach is carried out mainly by small-mesh (40 mm) fixed gill nets together with sabrefish and freshwater perch in the spring-summer period. Roach is also a constant bycatch in other types of fisheries in the Curonian Lagoon. The volume of its catch depends on the intensity of the spring-summer fishery, which is periodically imposed with restrictions. In retrospect of the commercial use of this species, it is possible to distinguish periods with permitted spring fishing with small-particle fishing gear – these are the 1980s of the twentieth century and the modern period – from the beginning of the 2000s. At this time, the catch of roach reached its maximum values, and its average volume was 450 tons, at other times the average catch was at the level of 200-250 tons (Figure 37). At the same time, the main biological parameters of roach in catches remained practically unchanged, which indirectly indicates a satisfactory state of the stock of the species and the absence of signs of its overexploitation (Table 40 and 41). In 2019, the average indicators of individuals in the fishery were: length – 21 cm, weight – 202 g, age – 6.2 years.

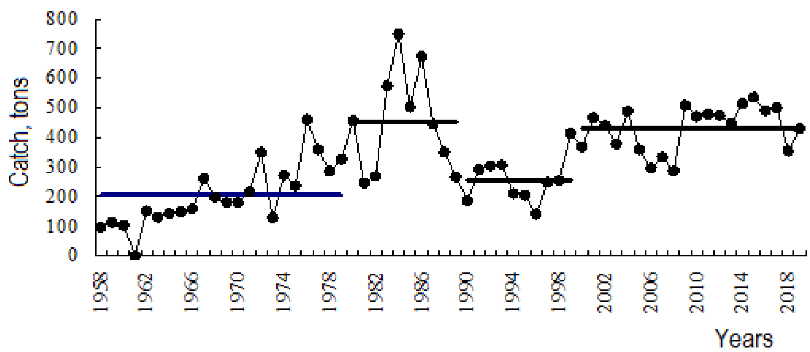


Figure 37 – Dynamics of the commercial catch of roach in the Curonian Lagoon in 1958-2019, tons (Source: AtlantNIRO, 2020a).

The analysis of biostatistical indicators of the roach population indicates the optimal degree of exploitation of its stock by modern fishery. Currently, this species is in demand on the market, and the interest of fishing organizations in its production in the near future remains high. Fishing rules… (2020) allow spring fishing with fine mesh fixed nets, so the intensity of fishing for roach may remain at the 2001-2019 level.

The linear trend makes it possible to predict the fishing catch of roach in the Curonian Lagoon in 2021 in the amount of 526 tons (Figure 38). Taking into account the catch for research and control purposes (1 ton), as well as expert assessments of amateur fishing (30-50 tons per year), the TAC of roach in the Curonian Lagoon in 2021 may amount to 570 tons, which corresponds to the level of previous years.

Table 40 – Biological indicators of roach from the commercial catch in the Curonian Lagoon in 1971-2019 (Source: AtlantNIRO, 2020a).

Indicators	1971-1980	1981-1990	1991-2000	2001-2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average in 2008-2019
Average commercial length, cm	21	22	23	23	22	23	22	23	23	23	22	22	22	22	21	21	22
Average weight of 1 fish, gram	205	255	294	299	279	324	292	276	299	269	253	254	265	251	207	202	264
Average age, years	6.9	8.0	7.5	7.1	7.3	8.4	7.9	7.7	7.2	7.1	6.8	7.8	7.5	7.3	6.9	6.2	7.3

Table 41 – Age composition of roach from the commercial catch in the Curonian Lagoon in 2010-2019, percentage of the abundance (Source: AtlantNIRO, 2020a).

Age, years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
3	-	0.1	-	-	-	-	-	0.1	0.5	1.4
4	-	0.2	0.3	0.1	0.5	0.3	3.8	1.3	4.5	3.9
5	2.0	3.8	11.5	4.1	9.3	1.2	4.7	5.8	5.8	5.9
6	16.8	17.6	21.4	16.3	34.1	10.2	20.3	18.7	33.0	22.6
7	29.1	25.5	26.6	16.6	35.6	29.1	19.9	20.1	17.2	35.4
8	22.8	25.2	22.1	23.8	12.0	30.9	24.4	23.2	16.2	17.8
9	15.9	14.3	11.5	18.9	5.3	19.7	16.3	17.4	13.5	8.9
10	5.8	8.1	4.2	11.9	2.7	7.8	5.3	5.8	5.1	2.9
11	5.2	4.0	1.4	5.3	0.2	0.7	4.3	4.6	2.1	0.8
12	1.7	1.2	1.0	3.0	0.3	0.1	1.0	3.0	1.3	0.3
13	0.7	-	-	-	-	-	-	-	0.8	0.1

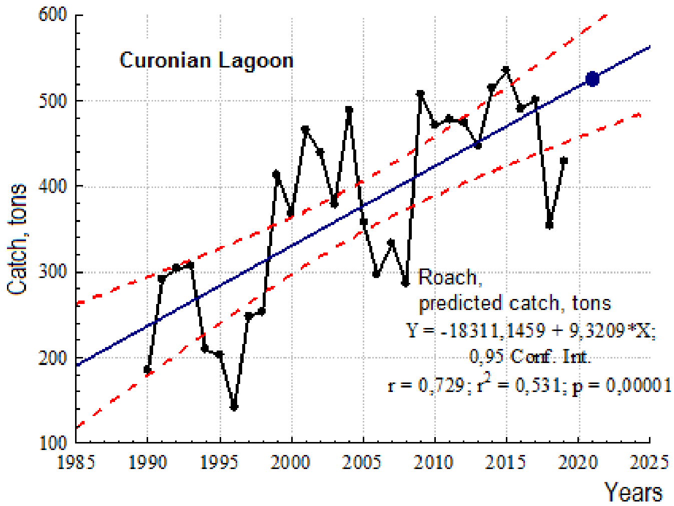


Figure 38 – Long-term dynamics and forecast of commercial catch of roach in the Curonian Lagoon, tons (Source: AtlantNIRO, 2020a).

The Risk Based Framework (RBF) was used for the roach assessment with a workshop conducted with stakeholders at the site visit (see Section 8.8 for rationale). Roach received an MSC PSA-derived **score of 87** (Table 82).

7.3.7.1.2 White bream, *Blicca bjoerkna* (Густера)

In the ACDR, white bream was identified as the minor secondary species. But our analysis showed that the percentage of this species in the Client catches higher than 5% (see Table 23). Therefore, we consider white bream in the Main Secondary Species section.

Table 42 – White bream catch (tons) in UoC in 2017 – 2021 (Source: the Client).

Year	Matrosova	Zalivino	Total
2017	23.98	0	23.98
2018	22.895	21.42	44.315
2019	23.35	22	45.35
2020	23.67	21.498	45.168
2021	23.345	21.817	45.162
Total	117.24	86.735	203.975

According to The IUCN Red List of Threatened Species, white bream is Least Concern (LC) species (Freyhof, 2010b). A widespread, abundant species with no known major widespread threats. European Union 27 = LC. White bream is absent in the red books of Russia (RBR, 2020) and the Kaliningrad region (RBKR, 2010).

Geographic Range Information

North, Baltic, White, Black (south to Rioni drainage) and Caspian Sea basins, Atlantic basin southward to Adour drainage (France; possibly introduced southward of Loire) and Mediterranean basin in France (Hérault and Rhône drainages). In Aral, Marmara and Anatolian Black Sea basins west of Ankara. Naturally absent from Iberian Peninsula, Italy, Adriatic basin, Crimea, Great Britain (except southeast), Scandinavia north of Sundsvall (Sweden) and 65° N (Finland). Locally introduced in Spain and north-eastern Italy. In France apparently introduced in small coastal drainages of Var.

Habitat: A wide variety of shallow, warm lowland lakes and slow-flowing lower reaches of large rivers and canals. Often very abundant on bottom of large sandy rivers. Spawns along shores on submerged vegetation, roots or even on shallow gravel bottom.

Biology: Predominantly nocturnal. Gregarious. Lives more than 10 years. Males reproduce for the first time at two years, females at three. Most individuals spawn 2-3 times per season, at intervals of about 10 days and spawn in more than one year. Spawns in May-July at temperatures above 15°C, in early morning. Eggs are sticky and larvae inhabit still water bodies. Feeds on benthic invertebrates (Freyhof, 2010b).

The Risk Based Framework (RBF) was used for the white bream assessment with a workshop conducted with stakeholders at the site visit (see Section 8.8 for rationale). White bream received an MSC PSA-derived **score of 89** (Table 83).

7.3.7.2 Mammals

Three species of seals and harbour porpoise can be found in the Baltic Sea on the seaside of the Curonian Spit (Table 25). All of them have the status of the 1st category – endangered species of the Red Book of the Russian Federation (RBR, 2020), therefore, we will discuss them in section 7.3.9.1

In this section, we will mention the Eurasian beaver and the Eurasian otter that can be found on the shores of the Curonian Lagoon.

7.3.7.2.1 *Muskrat, Ondatra zibethicus* (Ондатра)

In Russian part of the Curonian Lagoon, no bycatch of the muskrat has been recorded in the gillnet fishery. The muskrat of the Kaliningrad region is not listed in the Red Book of the Russian Federation (RBR, 2020). According to the IUCN Red List of Threatened Species (Cassola, 2016), the muskrat is Least Concern (LC) species.

The muskrat is a neozoon species that has occupied many countries of continental North Europe after its introduction from north America as fur animals. Due to its burrowing activity, it damages river and canal banks and structures of flood control. For this reason, the eradication of this alien species is recommended (Schuster *et al.*, 2021).

Stakeholders do not have information on its interaction with gillnets in the UoAs. Therefore, we don't include this species in the final table of the Scoring elements (Table 52).

7.3.7.2.2 Eurasian beaver*, Castor fiber* (Обыкновенный бобр)

In Russian part of the Curonian Lagoon, no bycatch of the Eurasian beaver has been recorded in the gillnet fishery. Stakeholders do not have information on its interaction with gillnets in UoA. Therefore, we don't include this species in the final table of the Scoring elements (Table 52).

The Eurasian beaver of the Kaliningrad region is not listed in the Red Book of the Russian Federation (RBR, 2020). According to the IUCN Red List of Threatened Species (Kryštufek *et al.*, 2007), Eurasian beaver is Least Concern (LC) species. All citations in this section are based on Kryštufek *et al.* (2007).

The European beaver has shown good recovery across much of its range, as a result of conservation programmes. The highest numbers are found within Europe. Conservation measures are ongoing to prevent the population declining again and as long as these continue, there is no reason to continue to assess the species as threatened or Near Threatened. Now Least Concern.

GEOGRAPHIC RANGE INFORMATION

The Eurasian beaver Castor fiber was once widespread in Europe and Asia. However, by the beginning of the 20th century, over-hunting had drastically reduced both the numbers and range of the species. In Europe, only a few isolated sites remained: parts of the Rhone (France) and Elbe (Germany), southern Norway, the Neman River and Dnepr Basin (Belarus) and Voronezh (Russia). Reintroductions have enabled the beaver to return to much of its former range, and there are now a number of rapidly expanding populations extending from Spain and France across central and eastern Europe to European Russia, and in Scandinavia and parts of western Finland. Free-living populations of beavers are now established or establishing in most regions of their former European range, the main exceptions to date being Portugal, the south Balkans and Great Britain. It is generally a lowland species, but occurs up to 850 m in Europe (Kryštufek *et al.*, 2007).

POPULATION INFORMATION

By the beginning of the 20th century, the global population had been reduced to eight populations, totalling approximately 1,200 individuals. Protection (beginning with a hunting ban implemented in Norway in 1845), natural spread and reintroductions have resulted in a rapid recovery in numbers and range, particularly in Europe. In 1998, the global population was estimated at 430,000, by 2002 it had reached at least 593,000, and in 2006 the minimum estimate was 639,000. This is almost certainly a considerable underestimate, as both population and range are in rapid expansion. Considerable further expansion in range and population, especially in western Europe and the lower Danube basin, can be expected. If current trends continue, the Eurasian beaver will be a fairly common mammal in much of Europe within the next few decades. However, populations in Asia are still considered small. In Mongolia, reintroductions have been successful and the population has reached 150, and in China the population has reached 800 (Kryštufek *et al.*, 2007).

HABITAT AND ECOLOGY INFORMATION

Beavers are adapted for a semi-aquatic life, using a variety of freshwater systems, including rivers, streams, irrigation ditches, lakes, and swamps. They generally prefer freshwater habitats surrounded by woodland, but may occur in agricultural land or even suburban and urban areas. In northern Scandinavia, beavers may be found right up to the limit of the willow zone in the mountains, where knee-high willow bushes are the only woody vegetation and it is iced over for 8 months of the year. This is not preferred habitat, but they can survive there. In many places, beavers live both on the valley floor, and on the mountain plateau above (where it is wooded), with a break in distribution where streams flow down the steep valley sides. In general beavers should be able to live in almost any freshwater habitat where there are trees or shrubs and the gradient is not precipitous. However, patterns of recolonisation demonstrate a clear preference for still or slow, laminar water flow if it is available (Kryštufek *et al.*, 2007).

THREATS INFORMATION

The beaver's historic decline was caused by over-hunting for fur, meat and castoreum (a secretion from the scent glands), combined with loss of wetland habitats. Beaver populations were severely reduced in most countries by medieval times, but the species clung on in marshes and other inaccessible places until the advent of efficient steel traps and accurate firearms in the 17th century; and then through to the 19th century there was a rash of final extinctions for these reasons combined with drainage of many of the large marshland areas in which the species clung on (all of the European refugia where the species survived, except in Norway, are extensive marshlands). Today, beaver populations in Europe are expanding rapidly, and there are no major threats (e.g. threats of a magnitude likely to cause decline at the regional level). Competitive exclusion of the native European beaver *C. fiber* by its American cousin *C. canadensis* may be a threat in parts of Finland and north-west Russia, but it is not a major threat regionally. In Europe North American beavers are now confined entirely to Finland and north-west Russia, where populations are increasing only slowly (due to heavy harvesting). The former population at a reservoir near Paris has been removed, and populations introduced to Poland and Austria have apparently gone extinct in competition with *C. fiber*, the opposite of what has tended to happen in Finland and north-west Russia. There are no serious prospects of further introductions. (Kryštufek *et al.*, 2007).

CONSERVATION ACTIONS INFORMATION

A number of conservation measures have contributed to the species' recovery in Europe, including reintroductions and translocations, hunting restrictions, and habitat protection. It is listed under the Bern Convention (Appendix III) and the EU Habitats and Species Directive (Annex V for the Swedish and Finnish populations, Annex II & IV for all others). In Finland, *C. canadensis* populations are controlled to prevent them spreading into the west where *C. fiber* occurs. Halley and Rosell (2002) recommend regulated hunting as the optimal management regime in managed landscapes with healthy beaver populations. Management of beaver populations should be at the watershed scale, except where large human-made dams form significant barriers to spread. Early provision of interpretation and public viewing opportunities is also recommended, as this provides a benefit to the local economy through wildlife tourism and helps foster positive attitudes to beavers. This has been a successful feature of several recent reintroductions. Reintroduction to Italy has been recommended in a European Union/Bern Convention Nature and Environment Series document (Nolet, 1996). Considerable efforts have been made to develop a beaver reintroduction programme in Scotland, and a full public consultation showed strong support for such a scheme among the general public, including in rural areas where beavers were likely to be released (Cited after Kryštufek *et al.,* 2007).

7.3.7.2.3 Eurasian otter, *Lutra lutra* (Выдра)

In Russian part of the Curonian Lagoon, no bycatch of the Eurasian otter has been recorded in the gillnet fishery. Stakeholders do not have information on its interaction with gillnets in UoA. Therefore, we don't include this species in the final table of the Scoring elements (Table 52).

The Eurasian otter of the Kaliningrad region is not listed in the Red Book of the Russian Federation (RBR, 2020). According to the IUCN Red List of Threatened Species (Conroy *et al*., 2007), Eurasian otter is Least Concern (LC) species. All citations in this section are based on Conroy *et al.* (2007).

The species is listed as Near Threatened because it has undergone historical declines but is now recovering across most of Europe (although declines are ongoing in some areas). However, if conservation actions for the species were stopped or reduced, the species would very quickly move back into a threatened category. Hence the Near Threatened listing is a precautionary one based on Criterion A3 and A4, as it is suspected that if conservation measures ceased, declines over a 12 year (=3 generation) period in the future, or including both the past and the future, might approach 30%.

GEOGRAPHIC RANGE INFORMATION

The Eurasian otter has the widest distribution of all otter species. Its range covers parts of three continents: Europe, Asia and Africa. Originally the species was widespread throughout Europe, but it declined dramatically in the 1960s and 1970s, and has disappeared from parts of central and northern Europe (it is probably extinct in Liechtenstein, the Netherlands, and Switzerland: Prigioni 1999). It is not found on most of the Mediterranean islands due to the lack of appropriate habitat, although it is found on Corfu (Greece). Little is known about the original distribution in Africa and Asia. Otters have been found in brackish waters below sea level in the Netherlands, and up to 2,400 m in the Pyrenees. Outside Europe they have been recorded up to 4,120 m in Tibet (Reuther and Hilton-Taylor, 2004).

POPULATION INFORMATION

Expanding throughout most of its European range following historic declines up until the 1960s, 1970s and 1980s; although in the European part of Russia there have been recent marked declines, and isolated populations in countries like Turkey, Italy, Georgia, Armenia are still declining. The UK population started to recover in the 1960s (Battersby, 2005). The population in Portugal is stable and did not show much decrease historically (Cabral *et al*., 2005). In Norway, although the range is increasing on the south-western coast, the population appears to have declined again since the mid 1990s (T. Heggberget pers. comm., 2006).

HABITAT AND ECOLOGY INFORMATION

It is known from a wide variety of aquatic habitats, including highland and lowland lakes, rivers, streams, marshes, swamp forests and coastal areas. It is very adaptable, using saltwater as well as freshwater habitats, and even sewerage systems in urban areas. In most parts of its range otter distribution is correlated with presence of riverbank vegetation. Otters in different regions may depend upon different features of the habitat, but the important component of otter habitat, for breeding purposes, is the presence of holes in the river bank, including cavities among tree roots, piles of rock, wood or debris. The Eurasian otter avoids deep water. Their distribution in coastal areas is strongly correlated with the presence of freshwater. The location of breeding holts is not confined to river banks; there is evidence to indicate that sometimes the species breeds well away from water and the pups are moved to holts on the river banks once they are a few months old (Reuther and Hilton-Taylor, 2004).

THREATS INFORMATION

The aquatic habitats of otters are extremely vulnerable to man-made changes. Canalisation of rivers, removal of bank side vegetation, dam construction, abstraction of water for irrigation, draining of wetlands, agricultural activities and associated man-made impacts on aquatic systems are all unfavourable to otter populations. Pollution is major threat to the otters in western and central Europe, the main pollutants posing a danger to otters are the organochlorines dieldrin (HEOD) and DDT/DDE, polychlorinated biphenyls (PCBs) and the heavy metal mercury. Coastal populations are particularly vulnerable to oil spills. Acidification of rivers and lakes results in the decline of fish biomass and reduces the food resources of the otters. The same effects are known to result from organic pollution by nitrate fertilisers, untreated sewage, or farm slurry. In addition, major causes of mortality from several countries are drowning, road kills, and poaching. Fyke nets set for eels and other fish as well as creels set for marine crustaceans are very attractive to otters, and many that try to enter these traps are entangled and drowned. A further potential threat is strangulation by transparent, monofilament drift net. A potential risk comes from traps designed to kill other species, especially underwater cages constructed to drown muskrats. Illegal hunting is still a problem in many parts of their distribution range. In several European countries political pressure especially by fishermen has resulted in granting of licenses for killing otters (Reuther and Hilton-Taylor 2004). Illegal killing for the trade of pelts is on the increase in Ukraine and Danube Delta, and probably in the eastern parts of its global range (European Mammal Assessment Workshop, 2006).

CONSERVATION ACTIONS INFORMATION

It is strictly protected under international legislation and conventions: CITES Appendix I (Reservation by Russian Federation), Bern Convention Appendix II, EU Habitats and Species Directive Annexes II and IV, and EC 338/97 Annex A. Additionally it is protected under national law in many range states. A European Breeding Programme (EEP) for self-sustaining captive populations was started in 1985. Monitoring programmes have been established in many range states in Europe. Road barriers and tunnels under roads are required to reduce the impact of road kills (especially in countries like Germany where road kills are the main threat). Much more monitoring is required, but also better survey techniques are required. For example, the population on the Shetlands is well-surveyed, and survey results show no indications of decline, but evidence from other sources (breeding holts, changes in diet, etc.) indicate that declines are in fact happening (J. Conroy pers. comm., 2006) (Cited after Conroy *et al*., 2007).

7.3.7.3 Birds

According to Field *et al.* (2019), the Baltic Sea is a global ‘hotspot’ for bird bycatch in gillnet fisheries and is globally important for wintering sea ducks, but no technical solution has been found yet to reduce bird bycatch in gillnet fisheries in the Baltic. Authors report on trials conducted in the Baltic Sea to test whether two different gillnet modifications with visual stimuli can effectively reduce bird bycatch while maintaining volume of fish caught. They conducted paired trials of two types of visual stimuli attached to nets: 1) high contrast monochrome net panels and 2) net lights (constant green and flashing white LED lights). They measured the amount of fish and birds caught in standard nets and those modified with the visual stimuli. Neither of the two most commonly caught species, Long-tailed Ducks (*Clangula hyemalis*) and Velvet Scoters (*Melanitta fusca*), were deterred from lethal encounters with nets by either black-and-white panels or by steady green or flashing white net lights. Long-tailed Ducks were caught in larger numbers in nets equipped with flashing white net lights than in unmodified nets at the same location. Catch rates of commercial fish were not affected by net lights or net panels placed within the nets. Hence, while the deterrents that we tested successfully maintained fish catch, they failed to reduce bird bycatch and are therefore ineffective. Authors discuss likely avenues for future investigation of bycatch mitigation methods for gillnet fisheries, including species and location response to net lights, managed fishery closures, above-water distraction of birds and gear switching.

According to Morkūnas *et al.* (2020), Tarzia *et al.* (2017), Red Book of the Kaliningrad Region (RBKR, 2010) and the site **inaturalist.org**, 36 water-related bird species live in the Kaliningrad region (Table 24). Six of these bird species can be classified as ETP species.

Started in 2017 and finishing in 2020, the project “Untangling the net: tackling bird bycatch in Baltic gillnet fisheries” had among its objectives evaluation of bycatch of bird species in the Curonian Lagoon, for the first time involving simultaneous data collection in both the Lithuanian and Russian parts of the lagoon. Bycatch incidences were collected in collaboration with 11 fishermen (seven from Lithuania and four from Russia) using a self-reporting methodology. Over two years of data collection (2018 and 2019), a total of 296 bycatch events were recorded from both gillnets and fish traps, including 159 birds bycaught in Lithuania and 137 in Russia. Peak of bycatch occurred in autumn when large numbers of migratory birds arrived in the lagoon. The two most affected bird species were the Great Cormorant (*Phalacrocorax carbo*) and the Great Crested Grebe (*Podiceps cristatus*), 189 and 40 individuals, respectively. Other species included the Goosander (*Mergus merganser*) (13 individuals), Goldeneye (*Bucephala* *clangula*) (12), Greater Scaup (*Aythya marila*) (10), Red-throated Diver (*Gavia stellata*) (8), and Smew (*Mergus albelus*) (8). Overall, piscivorous birds were the most impacted, followed by benthos-feeding species (Morkūnas *et al*., 2020).

The greatest threat to waterfowl is represented by hunting, ruining nests by animals and pollution of water bodies with oil products.

For example, in 2021, **hunting** for waterfowl is allowed in the Kaliningrad region from 28 August to 31 December. For cormorants - from August 14 to December 31. Plus, another 10 days in the spring. The daily rate of shooting per person - waterfowl - 3 pieces, cormorants - 5 pieces. The carrying capacity of the hunting grounds (25 sites) is 1205 people per day. That is, the rules are allowed to catch 3615 pieces of waterfowl and 6025 cormorants daily (Order of the Ministry of Natural Resources and Ecology of the Kaliningrad Region 2021 No. 269 dated July 15).

Below, we assessed the attributes of the Productivity Susceptibility Analysis (PSA) for all 7 bird species whose mortality was reported in the Curonian Lagoon in gillnet fishery (Morkūnas *et al.*, 2020). The PSA results indicate that all 7 species are at low risk (Table 43).

Table 43 – Productivity Susceptibility Analysis for waterbird species whose mortality is connected with the UoAs.

Attribute	Value and scores	Common Goldeneye	Goo-sander	Great Cormorant	Great Crested Grebe	Greater Scaup	Red-throated Loon	Smew
PSA productivity attributes and scores								
Average age at maturity, years	1) <5 2) 5-15 3) >15	2	2	2	2	2	2	2
Average maximum age, years	1) <10 2) 10-25 3) >25	3	3	3	3	3	3	3
Fecundity, eggs per year	1) > 20000 2) 100 – 20000 3) <100	3	3	3	3	3	3	3
Average maximum size, cm	1) <100 2) 100-300 3) >300	2	2	2	2	2	2	2
Average size at maturity, cm	1) <40 2) 49-200 3) >200	2	2	2	2	2	2	2
Reproductive strategy	1) Broadcast spawner 2) Demersal egg layer 3) Live bearer	2	2	2	2	2	2	2
Trophic Level	1) <2.75 2) 2.75-3.25 3) >3.25	3	3	3	3	3	3	3
Total productivity score (average)		2.43	2.43	2.43	2.43	2.43	2.43	2.43
PSA susceptibility attributes and scores								
Areal overlap (availability): % Overlap of the fishing effort with a species concentration of the stock	<10 2) 10-30 3) >30	1	1	1	1	1	1	1
Encounterability: The position of the stock/species within the water column relative to the fishing gear, and the position of the stock/species within the habitat relative to the position of the gear	1) Low overlap with fishing gear. 2) Medium overlap with fishing gear. 3) High overlap with fishing gear (high encounterability). Default score for target species (Principle 1).	1	1	1	1	1	1	1

Selectivity of gear type: Potential of the gear to retain species	1) Low 2) Medium 3) High	3	3	3	3	3	3	3
Post-capture mortality: The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival	1) Low 2) Medium 3) High	3	3	3	3	3	3	3
Total susceptibility score (multiplicative)		1.20	1.20	1.20	1.20	1.20	1.20	1.20
PSA Score		**2.71**	**2.71**	**2.71**	**2.71**	**2.71**	**2.71**	**2.71**
MSC PSA-derived score		**81**	**81**	**81**	**81**	**81**	**81**	**81**

7.3.7.3.1Common Goldeneye*, Bucephala clangula* (Обыкновенный гоголь)

According to The IUCN Red List of Threatened Species, Common Goldeneye is Least Concern (LC) species (BirdLife International, 2021a). The species is absent in the Red Books of Russia (RBR, 2020) and the Kaliningrad Region (RBKR, 2010). All citations below in this section are based on BirdLife International (2021a).

Generation length – 7.1 years.

Hunting – Yes.

Justification

European regional assessment: Least Concern (LC)

EU28 regional assessment: Least Concern (LC)

At both European and EU28 scales, this species has an extremely large range (its extent of occurrence (EOO) is much larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large, (much larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species, therefore criterion E cannot be applied.

For these reasons the species is evaluated as Least Concern within both Europe and the EU28.

Geographic Range Information

In Europe, this species breeds largely in Russia, with notable populations also found in Finland and Sweden.

In winter, this species occurs notably in Sweden, Denmark, Germany, Estonia, Norway, Poland and the United Kingdom.

Population Information

The European breeding population is estimated at 385,000-495,000 pairs, which equates to 770,000-990,000 mature individuals. The breeding population in the EU28 is estimated at 187,000-241,000 pairs, which equates to 374,000-481,000 mature individuals.

Trend Justification: In both Europe and the EU28, the population size is estimated to be decreasing between 20-25% in 21 years (three generations).

Habitat and Ecology Information

The species is restricted to water close to the shore and less than 10 m deep (Scott and Rose, 1996). When breeding the species shows a preference for oligotrophic lakes devoid of fish (Kear, 2005) but with abundant invertebrate life (Johnsgard, 1978), and requires tree-holes (or artificial nestboxes) for nesting. Suitable habitats include freshwater lakes, pools, rivers (Carboneras *et al*., 2014) and deep marshes (Johnsgard, 1978) surrounded by coniferous forest (Carboneras *et al*., 2014). The species winters mainly at sea (Scott and Rose, 1996) on inshore waters, estuaries, coastal lagoons (Carboneras *et al*., 2014) and shallow bays (Kear, 2005), especially in the vicinity of sewage outfalls (Carboneras *et al*., 2014). Further to the south and on migration the species may also frequent large rivers, lakes and reservoirs (Scott and Rose, 1996). The species breeds from April in solitary pairs. The species nests in hollows of mature trees (Carboneras *et al*., 2014) formed by woodpeckers or by bacterial or fungal heart-rot invasions (Kear, 2005). The species will also nest in artificial nest boxes. Clutches are usually between eight and eleven. It feeds predominantly on aquatic invertebrates such as molluscs, worms, crustaceans, aquatic insects and insect larvae, as well as amphibians, small fish and some plant material (mainly in the autumn) such as seeds, roots and the vegetative parts of aquatic plants (Carboneras *et al*., 2014). Most of this species is fully migratory although it may only travel short distances (Kear, 2005), but certain populations in the north-west of Europe may also be sedentary (Carboneras *et al*., 2014).

Although the generation length for both EU and Europe regional assessments were calculated using the same methodology, new information arriving after the EU assessments were undertaken gave rise to an update in the generation lengths. This new information was then used for the Europe level assessments giving rise to a difference between the generation lengths used for the EU and Europe regions.

Threats Information

The species is very sensitive to habitat alterations. In the winter, the main threats for this species are from major oil incidents near the coast or from eating contaminated food (organochlorines and polychlorinated biphenyls are elevated in some important wintering areas), as large flocks will often gather to feed around sewer outfalls. The species is hunted sustainably in Denmark (Bregnballe *et al*., 2006); however the impact of hunting of this species across its range is unknown, although an estimated 100,000–250,000 were once shot annually in north-west and central Europe. Lead shot ingestion however, does not appear to be a significant risk, at least compared to some other species of seaducks (Carboneras *et al*., 2014). Modern forestry management work is limiting as it does not favour the retention of old and decaying trees with likely nest holes (Hagemeijer and Blair, 1997).

Conservation Actions Underway

CMS Appendix II. EU Birds Directive Annex II. In some areas nestbox erection programmes have been shown to cause significant range expansions and population increases (Dennis, 1987; Carboneras *et al*., 2014), although an experiment in southern Finland found that even though nestbox provision increased breeding numbers of the species there was a negative density-dependent effect on reproductive output (i.e. the number of fledged young did not increase despite an increase in breeding pairs) (Poysa and Poysa, 2002).

Conservation Actions Proposed

In general nesting habitats may benefit from a more extended rotation of timber harvesting (Kear, 2005) and the species may benefit from the introduction of strict legislation on oil transportation. Monitoring and research should be introduced to determine the impact of hunting on this species (Cited after BirdLife International, 2021a).

7.3.7.3.2 Goosander, *Mergus merganser* (Большой крохаль)

According to The IUCN Red List of Threatened Species, goosander is Least Concern (LC) species (BirdLife International, 2021b). The species is absent in the Red Books of Russia (RBR, 2020) and the Kaliningrad Region (RBKR, 2010). All citations below in this section are based on BirdLife International (2021b).

Generation length – 5.5 years.

Hunting – Yes.

Justification

European regional assessment: Least Concern (LC)

EU28 regional assessment: Least Concern (LC)

In Europe, this species has an extremely large range (its extent of occurrence (EOO) is much larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large (larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). The population trend appears to be increasing, and hence the species does not approach the thresholds for Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species; therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in Europe.

In the EU28, this species has a very large range (its extent of occurrence (EOO) is larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large (larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). The population trend appears to be increasing, and hence the species does not approach the thresholds for Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species; therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in the EU28.

Geographic Range Information

In Europe, the species breeds primarily in Sweden, Finland and Russia, with significant numbers in the United Kingdom and Norway.

Population Information

The European breeding population is estimated at 81,000-134,000 pairs (162,000-267,000 mature individuals), and the European wintering population is estimated at 179,000-275,000 individuals (119,000-184,000 mature individuals). The breeding population in the EU28 is estimated at 63,000-105,000 pairs (126,000-209,000 mature individuals), and the wintering population in the EU28 is estimated at 160,000-245,000 individuals (106,000-164,000 mature individuals). For details of national estimates, see the supplementary information.

Trend Justification: In both Europe and the EU28 the breeding population size is estimated to be increasing, while the wintering population size is estimated to be stable.

Habitat and Ecology Information

The species breeds on large clear freshwater lakes, pools, the upper reaches of rivers (Billerman *et al*., 2020) and streams in the boreal, montane (Kear, 2005) and temperate forest zones (Johnsgard, 1978). It requires waters with a fairly high productivity of fish surrounded by mature hardwood trees with holes excavated by woodpeckers or natural cavities for nesting in (Kear, 2005). The species winters on large unfrozen lakes, rivers, lagoons, brackish waters and marshes, generally avoiding highly saline waters (Madge and Burn, 1988) although it may move to estuaries, coastal lagoons and sheltered sea coasts with waters less than 10 m deep in particularly harsh winters (Scott and Rose, 1996). The species arrives on its breeding areas between March and May (Scott and Rose, 1996), actually breeding as early as late-March (although often considerably later in more northerly regions) (Madge and Burn, 1988).The species nests in holes excavated by large woodpeckers or natural cavities in mature hardwood trees with entry holes more than 15 m above the ground (Kear, 2005). When natural tree-nesting sites are not available the species will use artificial nestboxes (Johnsgard, 1978; Billerman *et al*., 2020) or may nest in rock clefts (Flint *et al*., 1984), among tree roots in undercut banks, on cliff ledges or in dense scrub or loose boulders on islands (Kear, 2005). Clutches are usually eight to twelve eggs. Its diet consists predominantly of fish, but may also include aquatic invertebrates (such as molluscs, crustaceans, worms, and adult and larval insects), amphibians, small mammals and birds (Billerman *et al.*, 2020). Northern breeding populations of this species are fully migratory (Snow and Perrins, 1998) although breeders in temperate regions are sedentary or only travel short distances (Billerman *et al*., 2020).

Although the generation length for both EU and Europe regional assessments were calculated using the same methodology, new information arriving after the EU assessments were undertaken gave rise to an update in the generation lengths. This new information was then used for the Europe level assessments giving rise to a difference between the generation lengths used for the EU and Europe regions.

Threats Information

The species is subject to persecution by anglers and fish-farmers who accuse it of depleting fish stocks (Billerman *et al*., 2020). The species is also threatened by the degradation of freshwater lakes through drainage and petroleum pollution in Russia (Grishanov, 2006). The species is susceptible to avian influenza so may be threatened by future outbreaks of the virus (Melville and Shortridge, 2006). The species is hunted in Russia (Grishanov, 2006) (although it is not a popular game bird (Kear, 2005)), and its eggs used to be (and possibly still are) harvested in Iceland (Gudmundsson, 1979).

Conservation Actions Underway

CMS Appendix II. EU Birds Directive Annex II. There are currently no known conservation measures for this species.

Conservation Actions Proposed

The erection of nest boxes may encourage the use of local areas by this species (Kear, 2005). Future research to inform the conservation and management of this species should include investigations into its breeding requirements, winter habitats and population size (Mallory and Metz, 1999). Strict legislation on petroleum drilling and transport should be enforced and important areas protected from drainage and other habitat modifications. Research into the impact this species has on fish stocks and ways to minimise conflict should be established (Cited after BirdLife International, 2021b).

7.3.7.3.3Great Cormorant, *Phalacrocorax carbo* (Большой баклан)

According to The IUCN Red List of Threatened Species, Common Goldeneye is Least Concern (LC) species (BirdLife International, 2021c). The species is absent in the Red Books of Russia (RBR, 2020) and the Kaliningrad Region (RBKR, 2010). All citations below in this section are based on BirdLife International (2021c).

Generation length – 8.8 years.

Hunting – Yes.

Justification

European regional assessment: Least Concern (LC)

EU28 regional assessment: Least Concern (LC)

In Europe, this species has an extremely large range (its extent of occurrence (EOO) is much larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large (larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). The population trend appears to be increasing, and hence the species does not approach the thresholds for Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species; therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in Europe.

In the EU28 this species has a very large range (its extent of occurrence (EOO) is larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large (larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). The population trend appears to be increasing, and hence the species does not approach the thresholds for Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species; therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in the EU28.

Geographic Range Information

In Europe, the species breeds primarily in Russia and Ukraine, with significant numbers in Sweden, Denmark, Poland, Germany, Finland, the Netherlands, Estonia and Norway.

Population Information

The European breeding population is estimated at 414,000-515,000 pairs (828,000-1,030,000 mature individuals), and the European wintering population is estimated at 832,000-1,080,000 individuals (554,000-720,000 mature individuals). The breeding population in the EU28 is estimated at 220,000-267,000 pairs (444,000-533,000 mature individuals), and the wintering population in the EU28 is estimated at 602,000-757,000 individuals (401,000-505,000 mature individuals).

Trend Justification: In both Europe and the EU28 the breeding population size and the wintering population size are estimated to be increasing.

Habitat and Ecology Information

Throughout its range the species is sedentary or locally dispersive, with northerly populations also making strong migratory movements (Billerman *et al*., 2020). The species frequents both coastal and inland habitats (Brown *et al*., 1982; Johnsgard, 1993; Snow and Perrins, 1998; Nelson, 2005; Billerman *et al*., 2020). In marine environments it occurs in sheltered coastal areas on estuaries (Billerman *et al*., 2020), saltpans, coastal lagoons (Johnsgard, 1993; Billerman *et al*. 2020), deltas (Johnsgard, 1993) and coastal bays (Brown *et al*., 1982), requiring rocky shores, cliffs and islets for nesting (Billerman *et al*., 2020) but generally avoiding deep water and rarely extending far offshore (Snow and Perrins, 1998). It also inhabits fresh, brackish or saline inland wetlands (Nelson, 2005) including lakes, reservoirs, wide rivers, flood waters (Billerman *et al*., 2020), deep marshes with open water, swamps and oxbow lakes (Johnsgard, 1993), requiring trees, bushes, reedbeds or bare ground for nesting (Billerman *et al*., 2020) and avoiding overgrown, small, very shallow or very deep waters (Nelson, 2005). The species's diet consists predominantly of fish, including sculpins, Capelin, gadids (Gremillet *et al*., 2004) and flatfish (Leopold *et al*., 1998) as well as crustaceans, amphibians (Billerman *et al*., 2020), molluscs and nestling birds (Brown *et al*., 1982). At sea the species preys mostly on bottom-dwelling fish, occasionally also taking shoaling fish in deeper waters (Billerman *et al*., 2020).

Although the generation length for both EU and Europe regional assessments were calculated using the same methodology, new information arriving after the EU assessments were undertaken gave rise to an update in the generation lengths. This new information was then used for the Europe level assessments giving rise to a difference between the generation lengths used for the EU and Europe regions.

Threats Information

The species is often persecuted by the aquaculture industry and may be shot, drowned or poisoned in attempts to control numbers (Carss, 1994; ICN, 2006) or for hunting (Bzoma *et al*., 2011). It may also suffer from disturbance and displacement from coastal wind farms (wind turbines) (Bradbury *et al*., 2014), and is susceptible to avian influenza

(Melville and Shortridge, 2006) and Newcastle disease (Kuiken, 1999) so may be threatened by future outbreaks of these viruses (Kuiken, 1999; Melville and Shortridge, 2006). Recreational activities taking place at sea may also cause displacement from critical habitat. The species is susceptible to oil spills across its range. It is also highly vulnerable to bycatch in gillnets (Žydelis *et al*., 2013), and the species is also caught in longlines (Bellebaum *et al*., 2009) and purse seines (Oliveira *et al*., 2015).

Conservation Actions Information

Conservation Actions Underway

The species is listed under the African Eurasian Waterbird Agreement. The species occurs in 242 Important Bird Areas. Within the EU it is listed in 245 Special Protection Areas.

Conservation Actions Proposed

Continued monitoring of population control measures (Cited after BirdLife International, 2021c).

7.3.7.3.4 Great Crested Grebe*, Podiceps cristatus* (Чомга, или большая поганка)

According to The IUCN Red List of Threatened Species, Common Goldeneye is Least Concern (LC) species (BirdLife International, 2021d). The species is absent in the Red Books of Russia (RBR, 2020) and the Kaliningrad Region (RBKR, 2010). All citations below in this section are based on BirdLife International (2021d).

Generation length – 5.9 years.

Hunting – Yes.

Justification

European regional assessment: Least Concern (LC)

EU28 regional assessment: Least Concern (LC)

In Europe, this species has an extremely large range (its extent of occurrence (EOO) is much larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large (larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). The population trend appears to be stable, and hence the species does not approach the thresholds for Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species; therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in Europe.

In the EU28, this species has an extremely large range (its extent of occurrence (EOO) is much larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large (larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). The population trend appears to be decreasing by 19%, and hence the species does not approach the thresholds for Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species; therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in the EU28.

Geographic Range Information

In Europe, the species breeds primarily in Russia, with significant numbers in Finland, Germany, Spain, Sweden, Romania, Ukraine and Poland.

Population Information

The European breeding population is estimated at 386,000-530,000 pairs (772,000-1,060,000 mature individuals), and the European wintering population is estimated at 279,000-381,000 individuals (186,000-254,000 mature individuals). The breeding population in the EU28 is estimated at 183,000-263,000 pairs (367,000-526,000 mature individuals), and the wintering population in the EU28 is estimated at 168,000-220,000 individuals (112,000-147,000 mature individuals).

Trend Justification: In Europe the breeding and the wintering population sizes are estimated to be stable. In the EU28 the breeding population size is estimated to be decreasing by 19%, and the wintering population size is estimated to be increasing.

Habitat and Ecology Information

The species breeds on fresh or brackish waters with abundant emergent and submerged vegetation, showing a preference for non-acidic eutrophic waterbodies with flat or sloping banks and muddy or sandy substrates (Snow and

Perrins, 1998) and large areas of open water. Suitable habitats include small pools or lakes, backwaters of slow-flowing rivers and artificial waterbodies (Billerman *et al*., 2020). The species overwinters on large exposed ice-free (Fjeldsa, 2004) lakes and reservoirs, moving to sheltered coastal inshore waters (Snow and Perrins, 1998) less than 10 m deep (Fjeldsa, 2004) such as brackish estuaries, deltas, tidal channels and tidal lagoons (Snow and Perrins, 1998) during cold spells (Fjeldsa, 2004). In Europe, it breeds between April and September. The nest is a platform of aquatic plant matter either floating on water and anchored to emergent vegetation or built from the lake bottom in shallow water (Billerman *et al*., 2020). Typical nest sites include reedbeds or flooded thickets as well as more open sites such as floating mats of water-weed or kelp fronds (Fjeldsa, 2004). Normally three to five eggs are laid. Its diet consists predominantly of large fish as well as insects, crustaceans (e.g. crayfish, shrimps) and molluscs, occasionally also adult and larval amphibians. The species's invertebrate consumption is highest during the breeding season. The majority of this species is fully migratory although some populations may only undergo local dispersive movements (Billerman *et al*., 2020).

Although the generation length for both EU and Europe regional assessments were calculated using the same methodology, new information arriving after the EU assessments were undertaken gave rise to an update in the generation lengths. This new information was then used for the Europe level assessments giving rise to a difference between the generation lengths used for the EU and Europe regions.

Threats Information

The species suffered declines in the nineteenth century as a result of hunting for the plume trade (this is no longer a threat). Amelioration of climate has actually helped this species expand in some areas (Billerman *et al*., 2020). The species is commonly drowned accidentally in monofilament gill nets (fishing nets) (Fjeldsa, 2004; Billerman *et al*., 2020). It may also be threatened by future coastal oil spills (Gorski *et al*., 1977), and is susceptible to avian influenza so may be threatened by future outbreaks of the virus (Melville and Shortridge, 2006).

Conservation Actions Underway

The species was included in the Grebes Status Survey and Conservation Action Plan published in 1997 (O'Donnel and Fjeldsa, 1997).

Conservation Actions Proposed

The conservation of this species relies on the protection of lake habitats, limiting water-based recreation at key sites and enhancing nesting habitat in predator-free environments. Key international sites should be identified and protected. Evaluate the potential of the species as a keystone indicator of wetland health (O'Donnel and Fjeldsa, 1997). Mitigation measures to reduce bycatch should be enforced. Strict legislation on the transportation of oil should be implemented to reduce the risk of future spills (Cited after BirdLife International, 2021d).

7.3.7.3.5Greater Scaup*, Aythya marila* (Морская чернеть)

According to The IUCN Red List of Threatened Species, Common Goldeneye is Least Concern (LC) species (BirdLife International, 2021e). The species is absent in the Red Books of Russia (RBR, 2020) and the Kaliningrad Region (RBKR, 2010). All citations below in this section are based on BirdLife International (2021e).

Generation length – 5.1 years.

Hunting – Yes.

Justification

European regional assessment: Least Concern (LC)

EU28 regional assessment: Endangered (EN)

In Europe, this species has an extremely large range (its extent of occurrence (EOO) is much larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large, (much larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). Despite the fact that the population trend appears to be decreasing, the decline is not believed to be sufficiently rapid to approach the thresholds for Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species, therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in Europe.

In the EU28, this species has an extremely large range (its extent of occurrence (EOO) is much larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large, (much larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). The population trend appears to be decreasing at a very rapid rate which meets the thresholds for Endangered (EN) under the population size reduction criterion A and is therefore assessed as such in the EU28. There is not considered to be significant potential for rescue from outside the region, and therefore the final category remains unchanged.

Geographic Range Information

This species breeds across the northern limits of Europe, although its population is almost entirely concentrated in Russia, with small populations found in other northern European countries such as Iceland and Sweden.

It winters further south, reaching the Adriatic Sea, northern Black Sea and western Caspian Sea in Europe (Carboneras and Kirwan, 2014). Countries with notable wintering populations include the Netherlands, Germany, Sweden, Ukraine and Denmark.

Population Information

The breeding population in Europe is estimated at 48,200-84,800 pairs, which equates to 96,400-170,000 mature individuals. In the EU28 the breeding population is estimated at 1,000-1,500 pairs, which equates to 2,100-3,000 mature individuals. In winter, the European population is estimated at 147,000-318,000 individuals, which equates to 98,400-212,000 mature individuals. The winter population in the EU28 is estimated at 133,000-281,000 individuals, which equates to 88,600-188,000 mature individuals. For details of national estimates, see the Supplementary Information.

Trend Justification: In Europe, although this species has been shown to be declining by over 30% between 2015-2018 (Marchowski, 2020) in the north-west of the region, which could be partially caused by a redistribution of the species the breeding population size in the whole of Europe is estimated to be overall decreasing by approximately 15% (best estimate) in 15 years (three generations). In the EU28, the breeding population is estimated to have decreased by 27-87% with a best estimate of 56% over the past three generations, is expected to decrease by 53% between 2006-2021 and by 32% in the next three generations. In winter, the population size in both Europe and the EU28 is estimated to be increasing. These trends were calculated using the IUCN Criterion A tool, and based on data from the Icelandic Red List (Náttúrufræðistofnun Íslands, 2018) and the national population figures provided in the Supplementary Information (see this document for details of national estimates).

Habitat and Ecology Information

The species breeds in tundra, moorland regions (Kear, 2005) and wooded tundra (Scott and Rose, 1996) in the high Arctic, occupying small, shallow (Carboneras and Kirwan, 2014), freshwater lakes, pools and rivers (Kear, 2005) with grassy shorelines and high densities of invertebrate life (Johnsgard, 1978). It shows a preference for water less than 6 m deep (usually 2 m) for diving. The species winters on shallow coastal waters (Kear, 2005) less than 10 m deep (Scott and Rose, 1996) as well as sheltered bays, estuaries and brackish coastal lagoons. It is also found inland on large lakes (Carboneras and Kirwan, 2014) and reservoirs during this season (Madge and Burn, 1988). It breeds in the high Arctic from late-May or early-June (depending on the timing of the Arctic thaw) (Kear, 2005) in single pairs or loose groups (Carboneras and Kirwan, 2014), often with colonies of nesting gulls or terns (Kear, 2005) although it is not itself a colonial species (Snow and Perrins, 1998). The nest is a shallow depression on the ground close to water, either in thick vegetation (Carboneras and Kirwan, 2014), in cracks in rocks, under woody shrubs or under perennial herbaceous vegetation less than 50 cm high (Iceland) (Johnsgard, 1978). Clutch size is normally 8–11 eggs. The species is omnivorous. Its diet consisting predominantly of molluscs but also includes laver shells (Hydrobia), insects, aquatic insect larvae, crustaceans, worms, small fish, and the roots, seeds and vegetative parts of aquatic plants such as sedges and water weeds. This species is fully migratory (Carboneras and Kirwan, 2014). The autumn migration begins after the moulting period in mid-August (Scott and Rose, 1996), with males tending to remain much further north than females or immatures (Carboneras and Kirwan, 2014) leading to some sexual segregation during the winter (Madge and Burn, 1988).

Although the generation length for both EU and Europe regional assessments were calculated using the same methodology, new information arriving after the EU assessments were undertaken gave rise to an update in the generation lengths. This new information was then used for the Europe level assessments giving rise to a difference between the generation lengths used for the EU and Europe regions.

Threats Information

The species is susceptible to oil pollution (Kirby et al., 1993; Kear, 2005) when moulting and in winter and may be threatened by high levels of organochloride contaminants (Kear, 2005). Its habit of congregating around coastal sewage outlets in the winter also puts it at risk from other pollution types (Carboneras and Kirwan, 2014). Oil and gas exploration have caused habitat loss in European Russia and losses of feeding opportunities in some wintering areas through the over-harvesting of mussels and cockles, eutrophication and offshore windfarms are also considered possible threats. (Jensen, 2009). Large numbers often drown due to entanglement in fishing nets (Kirby et al., 1993). It is susceptible to avian influenza, so may be threatened by future outbreaks of the virus (Melville and Shortridge, 2006). The species is hunted legally for sport in seven countries of the European Union (Kear, 2005) (e.g. Denmark [Bregnballe *et al.*, 2006]) and suffers from disturbance from hunting (Evans and Day, 2002). In Sweden the presence of Mink (Mustela vison) has probably contributed to the decline of birds on the Stockholm archipelago (Jensen, 2009).

Conservation Actions Underway

CMS Appendix II. This species is listed on Annex II (and III) of the EU Birds Directive and can only be hunted in those ten Member States specifically mentioned in the Birds Directive: Belgium, Denmark, Germany, Greece, France, Ireland, Latvia, Netherlands, Romania and U.K.. There are management plans to reduce fishery activity at two sites in the Netherlands (Ijsselmeer and Waddenzee) and in Finland a large-scale eradication of Mink (Mustela vison) in the Quark as an EU LIFE project (Jensen, 2009) began in 2001 (Anon., 2005).

Conservation Actions Proposed

Preservation of large areas of breeding habitat in northern Europe and its highly localised north-west European wintering grounds. Identify Important Bird Areas and protect habitats and sites. Implement stricter regulations on oil exploitation and transportation. Restrict hunting. Conduct further research on the effects of disturbance from hunting and the nomadic habits of the species outside the breeding season (Tucker and Heath, 1994). Continue Mink eradication programme (Cited after BirdLife International, 2021e).

7.3.7.3.6Red-throated Loon, *Gavia stellata* (Краснозобая гагара)

According to The IUCN Red List of Threatened Species, Common Goldeneye is Least Concern (LC) species (BirdLife International, 2021f). The species is absent in the Red Books of Russia (RBR, 2020) and the Kaliningrad Region (RBKR, 2010). All citations below in this section are based on BirdLife International (2021f).

Generation length – 8.3 years.

Hunting – Yes.

Justification

European regional assessment: Least Concern (LC)

EU28 regional assessment: Least Concern (LC)

In Europe, this species has an extremely large range (its extent of occurrence (EOO) is much larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large (larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). The population trend is not known, but the population is not believed to be decreasing sufficiently rapidly to approach the thresholds for Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species, therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in Europe.

In the EU28, this species has a very large range (its extent of occurrence (EOO) is larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is very large (larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). The population trend appears to be increasing, and hence the species does not approach the thresholds for Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species, therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in the EU28.

Geographic Range Information

In Europe, the species breeds primarily in Greenland and the European part of Russia, with small numbers in Norway, Iceland, Sweden and the United Kingdom.

Population Information

The European breeding population is estimated at 45,500-72,800 pairs (91,100-146,000 mature individuals), and the wintering population is estimated at 56,100-72,200 individuals (37,400-48,100 mature individuals). The breeding population in the EU28 is estimated at 3,000-4,800 pairs (6,000-9,600 mature individuals), and the wintering population at 52,400-66,800 individuals (34,900-44,600 mature individuals).

Trend Justification: In Europe the population size trend is unknown. In the EU28 the population size is estimated to be increasing.

Habitat and Ecology Information

On migration this species may form large flocks of 200–1,200 individuals, with similar concentrations occurring on rich marine fishing grounds during the winter (Billerman *et al*., 2020). The species breeds on freshwater pools or lakes in open moorland, blanket bogs (Billerman *et al*., 2020) or open and wet peatland habitats (Campbell, 1987). Outside of the breeding season the species frequents inshore waters along sheltered coasts, occasionally occurring inland

(Billerman *et al*., 2020) on lakes, pools, reservoirs and rivers (Snow and Perrins, 1998). Its diet consists predominantly of fish as well as crustaceans, molluscs, frogs, fish spawn (Billerman *et al*., 2020), aquatic insects, annelid worms (Snow and Perrins, 1998) and plant matter (Billerman *et al*., 2020). In winter its diet is almost predominantly fish, and in the Baltic Sea they opportunistically feed on spawning Herring, Smelt and Percids.

Although the generation length for both EU and Europe regional assessments were calculated using the same methodology, new information arriving after the EU assessments were undertaken gave rise to an update in the generation lengths. This new information was then used for the Europe level assessments giving rise to a difference between the generation lengths used for the EU and Europe regions.

Threats Information

When breeding the species is threatened by water level fluctuations and acidification of breeding waters heavy metal pollution and the afforestation of peatland or moorland habitats (Billerman *et al*., 2020). It is also sensitive to human disturbance from recreational activities and shoreline development (e.g. construction work near breeding lakes) (Meek *et al*., 1993) and will desert sites if there is too much human activity (Billerman *et al*., 2020). During the winter the species is highly vulnerable to coastal oil spills, especially in areas where large concentrations form (e.g. on rich fishing grounds) (Skov *et al*., 2011; Billerman *et al*., 2020). The North, Baltic and Mediterranean Seas have experienced severe oil spill events in the past, and remain regions at risks of future spills particularly with expanding oil exploration activity. This species is also highly sensitive to disturbance from coastal wind farms (wind turbines) during winter, causing a risk for habitat displacement and collision (Garthe and Huppop, 2004; Bradbury *et al*., 2014). The species suffers mortality at sea and on large lakes due to entanglement and drowning in inshore gillnets (Billerman *et al*., 2020), with potentially significant impacts on the breeding and wintering population within the Baltic Sea, where large numbers of birds overlap with intensive gillnet fisheries (Žydelis *et al*., 2013). It is also highly sensitive to disturbance at sea, particularly from vessel traffic along shipping lanes, a particular problem in North Sea and the Baltic region due to high numbers of vessels passing (Schwemmer *et al*., 2011) It is susceptible to avian influenza so may be threatened by future outbreaks of the virus (Melville and Shortridge, 2006). As a species which breeds in the Arctic it is likely to be affected by impacts from climate change, including habitat changes and prey availability (Ganter *et al*., 2014).

Conservation Actions Underway

The species is listed on Annex II of the Convention on Migratory Species, and is listed under the African Eurasian Waterbird Agreement. Listed on Annex II of the Bern Convention, and Annex I of the EU Birds Directive. Listed as critically endangered on the HELCOM convention. There are 58 Important Bird and Biodiversity Areas for this species. Within the EU it occurs and is protected in 426 Special Protection Areas. Since the 1970s, conservation work in Finland has included building artificial rafts for this species to reduce predation risk, which has led to higher breeding success in some areas. Within the North Sea (Germany) work is underway to test alternative fishing gears to gillnets, while in Lithuania gillnet bycatch mitigation is being trialled.

Conservation Actions Proposed

Development of mitigation measures for gillnet bycatch for commercial and artisanal fishing vessels. Prevention of chronic oil pollution and oil spill events, and development of rapid, trans-boundary plans for oil spill response. Protection of feeding grounds, and regulations for vessel traffic, management of recreational activities at important breeding and non-breeding sites, careful siting of windfarms away from critical habitat or migration pathways (Cited after BirdLife International, 2021f).

7.3.7.3.7Smew, *Mergellus albellus* (Луток)

According to The IUCN Red List of Threatened Species, Common Goldeneye is Least Concern (LC) species (BirdLife International, 2021g). The species is absent in the Red Books of Russia (RBR, 2020) and the Kaliningrad Region (RBKR, 2010). All citations below in this section are based on BirdLife International (2021g).

Generation length – 4.2 years.

Hunting – Yes.

Justification

European regional assessment: Least Concern (LC)

EU28 regional assessment: Least Concern (LC)

In Europe, this species has an extremely large range (its extent of occurrence (EOO) is much larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). The population size is large (larger than 10,000 mature individuals), and hence it does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D). The population trend appears to be increasing, and hence the species does not approach the thresholds for

Vulnerable under the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species, therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in Europe.

In the EU28, this species has a very large range (its extent of occurrence (EOO) is larger than 20,000 km² and its area of occupancy (AOO) is much larger than 2,000 km²), and hence it does not approach the thresholds for Vulnerable under the range size criteria (criteria B and D2). Although the population size is small, the population trend appears to be stable, and hence the species does not approach the thresholds for Vulnerable under the population size criteria (criteria C and D) or the population size reduction criterion (criterion A). The probability of extinction has not been calculated for this species, therefore criterion E cannot be applied. For these reasons the species is evaluated as Least Concern in the EU28.

Geographic Range Information

In Europe, the species breeds primarily in the European part of Russia, Finland and Sweden.

Population Information

The European breeding population is estimated at 10,800–17,000 pairs (21,700–34,000 mature individuals), and the European wintering population is estimated at 48,700–166,000 individuals (32,400–111,000 mature individuals). The breeding population in the EU28 is estimated at 2,800–7,000 pairs (5,600–13,900 mature individuals), and the wintering population in the EU28 is estimated at 28,600–44,600 individuals (19,000–29,800 mature individuals).

Trend Justification: In both Europe and the EU28 the breeding population size is estimated to be stable. In Europe the wintering population size is estimated to be stable. In the EU28 the wintering population size is estimated to be increasing.

Habitat and Ecology Information

It breeds on freshwater oligotrophic lakes, pools, oxbow lakes, backwaters of large slow-flowing rivers, muskegs (bogs) (Kear, 2005) and flooded riverside woods (Johnsgard, 1978; Snow and Perrins, 1998) in the coniferous and mixed deciduous/evergreen forest zones (Snow and Perrins, 1998; Billerman *et al*., 2020). It shows a preference for shallow water, and requires mature broadleaved trees with holes in which to nest (Johnsgard, 1978). The species overwinters on large freshwater lakes, brackish coastal lagoons, estuaries (Billerman *et al*., 2020), reservoirs (Johnsgard, 1978), ice-free rivers (Kear, 2005) and sheltered coastal bays (Madge and Burn, 1988) (although rarely on the open sea) (Billerman *et al*., 2020), often resting and feeding on small bodies of water or small streams when on passage (Kear, 2005). It arrives on the breeding grounds from April (Kear, 2005) or early-May and breeds from mid-May onwards (Madge and Burn, 1988). The species nests in tree hollows (Billerman *et al*., 2020) up to 10 m or more above the ground (Kear, 2005) in mature broadleaved trees (Johnsgard, 1978). It may also nest in artificial nest boxes. Typically it lays seven to nine eggs (Billerman *et al*., 2020). During the breeding season its diet consists predominantly of benthic aquatic invertebrates such as adult and larval, crustaceans, molluscs and polychaete worms, as well as fish (Kear, 2005), amphibians and plant matter. During the winter and in early spring however the species mainly feeds on fish. This species is highly migratory (Billerman *et al*., 2020).

Although the generation length for both EU and Europe regional assessments were calculated using the same methodology, new information arriving after the EU assessments were undertaken gave rise to an update in the generation lengths. This new information was then used for the Europe level assessments giving rise to a difference between the generation lengths used for the EU and Europe regions.

Threats Information

Where it occurs in large numbers on coastal waters the species is particularly vulnerable to oil pollution (Billerman *et al*., 2020). Populations declined in Europe throughout the 19th and 20th centuries due to habitat degradation and loss (e.g. the loss of mature trees in river valleys as a result of logging, conversion to agriculture and river canalisation). The species has also suffered local declines as a result of predation by American Mink (Neovison vison) (Kear, 2005) and is susceptible to avian influenza, therefore it may be threatened by future outbreaks of the virus (Melville and Shortridge, 2006). The species is susceptible to a certain amount of hunting pressure when on passage and during the winter (Billerman *et al*., 2020). Climate change is also affecting the range of this species (Pavón-Jordán *et al.*, 2015).

Conservation Actions Underway

CMS Appendix II. Bern Convention Appendix II. EU Birds Directive Annex I. The total population of this species wintering in north-east Europe has increased from 6% to a third in two decades. SPAs have proven effective in accommodating this range shift, with population growth in this region doubling inside EU Birds Directive's SPAs compared to those outside over the last 25 years (Pavón-Jordán *et al.*, 2015).

Conservation Actions Proposed

Gaps in the current network of protected areas need to be filled and national and international assessments of the EU Natura 2000 network should be made regularly (Pavón-Jordán *et al.*, 2015). Strict legislation on oil transportation needs to be implemented and enforced to minimise the risk of spills. Investigation into the impacts of American Mink should be undertaken and suitable eradication methods trialled. In areas where the species is hunted, research and legislation is needed to ensure that it is sustainable (Cited after BirdLife International, 2021g).

7.3.8 Minor secondary species

7.3.8.1 Atlantic twait shad *Alosa fallax fallax* (Финта атлантическая)

Insufficient completeness of available information on the Curonian Lagoon twait shad namely the lack of data on catch per effort, excludes the possibility of using models of the exploited stock. The structure and quality of data available for forecasting correspond to the III level of information support.

By Order of the Ministry of Natural Resources and Ecology of the Russian Federation No. 242 dated April 28, 2011, the Atlantic twait shad was excluded from the List of wildlife objects included in the Red Data Book of the Russian Federation. Thus, since 2012 Atlantic twait shad can be used by fishery. Considering that twait shad is a bycatch in the specialized fishery for sabrefish and roach in the Curonian Lagoon, it seems most rational to catch it on the basis of agreements for the use of aquatic biological resources in accordance with the annual Order of the Federal Fisheries Agency "On measures to implement the Decree of the Government of the Russian Federation dated August 25, 2008 No. 643".

In 2008-2011 fishing collective farms of the Kaliningrad region: "Fisherman of the Baltic", “imeni Matrosova”, "Dobrovoletc", "Truzhennik morya" received permits from Rosprirodnadzor to harvest twait shad in the Curonian Lagoon of the Baltic Sea in order to monitor the state of its population. Information collected in these years, as well as data from the fishing catches 2012-2019 used to assess the state of a stock of this species. The volume of collected and processed material in 2019 was: 105 individuals for biological analysis with age determination (AtlantNIRO, 2020b).

In the 2019 catch 57 tons of twait shad were caught (Table 44) which was represented by individuals aged from 3 to 5 years old. Traditionally, the main catch fell on 3–4-year-old fish (about 80% of the abundance), the average weight of 1 specimen in the catches was 589 g, the average length was 35 cm, and the average age was 3.5 years. In general, the parameters of the Atlantic twait shad in catches in 2019 were like those in 2009-2018 (Table 45).

Table 44 – The level of development of Recommended Catch (RC) for Atlantic twait shad in the Russian part of the Curonian Lagoon in 2012-2019 (Source: AtlantNIRO, 2020b).

Indicators	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
RC, tons	60	60	60	60	60	60	60	60
Catch, tons	10	3	20	11	39	41	10	57
Development of RC, %	17	5	33	18	65	68	17	95

As in previous years mature individuals were present in the 2019 catches. The ratio of sexes and stages of maturity varied depending on the place and time of sampling; in general, the sex structure was represented by females and males with gonads at IV, V, VI-IV, VI-V stages of maturity, maturity stage IV predominated. The biological analysis determined the degree of intestinal filling and obesity. The bulk of the fish did not eat (content 0.2 points of stomach) and had a low obesity indicator (0.01 points). A similar was observed in 2009-2018, which is typical for spawning fish.

Table 45 – Biological characteristics of the Atlantic twait shad in the Curonian Lagoon from the catches of 2010-2019 (Source: AtlantNIRO, 2020b).

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average
Average commercial length, cm	39	40	39	39	38	37	37	36	33	35	37
Average weight of 1 specimen, gram	620	650	580	603	578	523	530	524	518	589	572
Average age, years	3.6	3.8	3.6	3.8	3.5	3.2	3.1	3.0	3.0	3.5	3.4

According to expert estimates the Recommended (Possible) Catch of the Atlantic twait shad in 2021 in the Russian part of the Curonian Lagoon may be 60 tons.

7.3.8.2 Burbot *Lota lota* (Налим)

Insufficient completeness of available information on burbot in the Curonian Lagoon, namely the lack of data on catch per effort, excludes the possibility of using models of the exploited stock. The structure and quality of data available for forecasting correspond to the III level of information support according to the Order of the Federal Fisheries Agency dated 06.02.2015 No. 104.

To substantiate the volume of catch of burbot in the Curonian Lagoon, an expert method was used, based on the analysis of commercial and biological parameters in the current year, as well as their interannual dynamics.

Burbot fishing is most efficient in rivers during the autumn pre-spawning period. However, such specialized harvesting of burbot in the Curonian Lagoon is not organized. Burbot is a bycatch in fishing gear used during traditional fishing periods. In this regard, the catches of the species are small, the catch in 2019 in the Russian part of the reservoir amounted to 4 tons (Table 46).

Table 46 – The level of development of Recommended Catch (RC) for burbot in the Russian part of the Curonian Lagoon in 2010-2019 (Source: AtlantNIRO, 2020b).

Indicators	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
RC, tons	30	30	30	30	30	30	30	30	30	30
Catch, tons	9	14	12	14	15	16	19	14	8	4
Development of RC, %	30	47	40	47	50	53	63	47	27	13

The low intensity of fishing makes it difficult to collect biological material, assess the stock and predict the catch of burbot using analytical modelling methods. In 2021, for the Russian water area of the Curonian Lagoon, it is recommended to catch burbot at the level of the last ten years – In the amount of 30 tons. Achievement of such a catch is possible if specialized fishing is organized.

7.3.8.3 Pike *Esox lucius* (Щука)

Insufficient completeness of available information on pike in the Curonian Lagoon, namely the lack of data on catch per effort, excludes the possibility of using models of the exploited stock. The structure and quality of data available for forecasting correspond to the III level of information support according to the order of the Federal Fisheries Agency dated 06.02.2015 No. 104.

To substantiate the volume of the catch of pike in the Curonian Lagoon, an expert method was used, based on an analysis of the commercial biological parameters in the current year, as well as their interannual dynamics.

There is no specialized pike fishery in the Lagoon, the species is a bycatch in the fishing gear used throughout the year. Since the 1960s, the stock of the species has been at a stable but low level, this is a consequence of the violation of the conditions of natural reproduction. In 2019, about 12.6 tons of pike were caught in the Russian part of the Curonian Lagoon (Table 47).

Table 47 – The level of development of Recommended Catch (RC) for pike in the Russian part of the Curonian Lagoon in 2010-2019 (Source: AtlantNIRO, 2020b).

Indicators	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
RC, tons	50	50	50	50	50	50	50	50	50	50
Catch, tons	7	8	9	9	7	8	10	10	5,9	13
Development of RC, %	14	16	18	18	14	16	20	20	12	26

Due to the low intensity of fishing the collection of biological material for pike is difficult. This forces us to limit ourselves to an expert assessment of the state of the stock. For the Russian water area in 2021, a pike catch of 0.050 thousand tons is recommended. This value corresponds to the level of 2004-2019.

7.3.8.4 Vimba bream *Vimba vimba* (Рыбец, или сырть)

Insufficient completeness of available information on vimba bream in the Curonian Lagoon, namely the lack of data on catch per effort, excludes the possibility of using exploited stock models. The structure and quality of data available for forecasting correspond to the III level of information support according to the order of the Federal Fisheries Agency dated 06.02.2015 No. 104.

Until recently vimba bream in the Russian part of the Curonian Lagoon was only encountered and was not of interest to fishing organizations. At the same time, Lithuanian fishermen carry out its specialized fishery, annually catching from 40 to 80 tons. In recent years, domestic catchers have consistently started to note vimba bream as a bycatch in fixed gill nets, and from year to year its share in catches is increasing. Taking into account the transboundary nature of the Curonian Lagoon and the demand for this aquatic biological resource, it seems necessary to legalize the Russian vimba fishing. This species is included in the list of species of aquatic biological resources classified as coastal fisheries, which makes it possible to fish. Since 2016 the Recommended Catch has been established for vimba bream, the level of its development has gradually increased (Table 48). At the moment, fishing organizations are successfully developing this aquatic bioresource which is facilitated by the established market conditions.

Table 48 – The level of development of Recommended Catch (RC) for vimba bream in the Russian part of the Curonian Lagoon in 2016-2019 (Source: AtlantNIRO, 2020b).

Indicators	**2016**	**2017**	**2018**	**2019**
RC, tons	50	50	50	50
Catch, tons	15	25	26	70
Development of RC, %	30	50	50	140

Based on last year's fishery statistics, we consider it possible to slightly increase the future catch. According to expert estimates the Recommended (possible) Catch of the vimba bream in 2021 may be 0.070 thousand tons. This value is on 20 tons higher than the level of 2016-2019.

7.3.8.5 Whitefish *Coregonus lavaretus* (Сиг)

Insufficient completeness of available information on whitefish in the Curonian Lagoon, namely extremely low catch, lack of data on catch per effort, excludes the possibility of using exploited stock models. The structure and quality of the data available for forecasting correspond to the III level of information support according to the order of the Federal Fisheries Agency dated 06.02.2015 No. 104.

The Curonian Lagoon has been intensively eutrophied in recent decades, which contributes to the accumulation of silts at the bottom. Silting up of spawning grounds leads to a reduction in their areas and a deterioration in the conditions for incubation of eggs. This, in turn causes a decrease in the natural recruitment of the whitefish population. For these reasons, the stock is depressed. The way out of this situation was work on the artificial restoration of the whitefish stock.

As a result of the activities of the Experimental fish-breeding hatchery of the Federal State Budgetary Institution "Glavrybvod" (formerly "Zapbaltrybvod") in 2010-2019 from 168 to 310 thousand individuals were produced annually in the Curonian Lagoon (Table 49) with juvenile whitefish weighing 1-10 g.

Catch of whitefish have been increasing in recent years (Table 50), which may indicate the effectiveness of fish farming.

For hatchery reproduction purposes about 1 ton of whitefish is needed. According to the Fishing Rules (2020) specialized fishing for whitefish in the Curonian Lagoon is prohibited, but as a bycatch it is inevitably caught with fishing gear. The volume of this catch, taking into account the statistics of recent years, is approximately 2 tons annually. The Recommended Catch of whitefish for the Russian part of the Lagoon in 2021 is 3 tons (AtlantNIRO, 2020b).

Table 49 – The results of the work of the Experimental Fish Hatchery for the release of juvenile whitefish into the Curonian Lagoon of the Baltic Sea from 2010-2019 (Source: AtlantNIRO, 2020b).

Year	Planned indicators, million juveniles	Actual release of juveniles, million juveniles	Average weight of one released juvenile, gram
2010	0.150	0.228	2-10
2011	0.150	0.204	2-10
2012	0.150	0.168	2-10
2013	0.150	0.225	2-10
2014	0.150	0.197	2-10
2015	0.150	0.162	2-10
2016	0.150	0.230	1-10
2017	0.150	0.310	1-10
2018	0.306	0.309	2.9
2019	0.363	0.365	1.8

Table 50 – The level of development of Recommended Catch (RC) for whitefish in the Russian part of the Curonian Lagoon in 2010-2019 (Source: AtlantNIRO, 2020b).

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
RC, tons	2*	2*	2*	2*	2*	2*	2*	2*	2*	2*
Catch, tons	0.4	0.5	0.8	0.6	0.2	0.5	0.2	0.9	0.9	2.3

*Note: including the quota for hatchery reproduction – 1 ton.

7.3.8.6 Other secondary minor species

- Asp, *Aspius aspius*
- Crucian and Prussian carp, *Carassius carassius sp.*
- Rudde, *Scardinius erytrophthalmus*
- Tench, *Tinca tinca*
- Freshwater, wels *Silurus glanis*
- Bleak, *Alburnus alburnus*
- Ide, *Leuciscus idus*

These fish of other primary minor species have a rather low abundance in the Curonian. They live in the coastal part of the Lagoon and in the estuarine areas of rivers. There are no specialized fisheries, they are harvested as bycatch in commercial fishing gear and by amateur fishermen.

It seems expedient to introduce group quotas for these species. Their catch is small; the harvest volumes of specific users are largely determined by random factors. This raises the problem of efficient distribution of small quotas. The strict fixation of such quotas by species forces fishermen to distort statistical reporting, even in the case of insignificant overfishing. For 2021, the catch of white bream, asp, Crucian and Prussian carps, rudde, tench, freshwater wels, bleak, was recommended in the amount of 0.300 thousand tons in sum.

7.3.9 ETP species

According to MSC Fisheries Standard v2.01 (SA3.1.5), the team shall assign ETP (endangered, threatened or protected) species as follows:
SA3.1.5.1 SA3.1.5.2
Species that are recognised by national ETP legislation;
Species listed in the binding international agreements given below:
a. Appendix 1 of the Convention on International Trade in Endangered Species (CITES), unless it can be shown that the particular stock of the CITES listed species impacted by the UoA under assessment is not endangered.
b. Binding agreements concluded under the Convention on Migratory Species (CMS), including:
ii. Annex 1 of the Agreement on Conservation of Albatross and Petrels (ACAP);
iii. Table 1 Column A of the African-Eurasian Migratory Waterbird Agreement (AEWA);
iv. Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS);
v. Annex 1, Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS);
vi. Wadden Sea Seals Agreement;
vii. Any other binding agreements that list relevant ETP species concluded under this Convention.
Species classified as ‘out-of scope’ (amphibians, reptiles, birds and mammals) that are listed in the IUCN Red List as vulnerable (VU), endangered (EN) or critically endangered (CE).
According to Good *et al*. (2020), fisheries bycatch is one of the biggest threats to seabird populations. Managers need to identify where and when bycatch occurs and ensure effective action. In 1999, the Food and Agriculture Organization of the United Nations released the International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-s) encouraging states to voluntarily assess potential seabird bycatch problems and implement a National Plan of Action (NPOA) if needed. However, the IPOA-s is ambiguous about the steps and objectives, diminishing its value as a conservation tool. In their paper, authors reviewed National Plans of Action NPOAs to identify approaches taken to determine whether seabird bycatch is problematic, how bycatch minimisation and population objectives are set, and if thresholds are specified for managing impacts. Their aim was to recommend measures for improving consistency and effectiveness in future NPOAs and other management frameworks for seabirds, with relevance for other threatened marine vertebrates including sharks, turtles, pinnipeds and cetaceans. Globally, 16 NPOAs have been published, but few effectively linked seabird bycatch risk, objectives and management. However, authors identified the following best-practice elements that could improve NPOA design: (1) defining explicit risk criteria and methods to assess bycatch problems; (2) setting specific and measurable objectives for minimising bycatch and achieving desired population status; and (3) defining fishery-specific thresholds to trigger management action linked to the population objective. Consistent adoption of NPOA best practice, particularly in states that have not already developed an NPOA, would help to mitigate bycatch threats and ensure fisheries do not reduce the viability of seabird populations.

7.3.9.1 Mammals

Three species of seals and harbour porpoise can be found in the Baltic Sea (Table 25). All of them have the status of the 1st category – endangered species of the Red Book of the Russian Federation (RBR, 2020). Since the salinity of the water in the Russian part of the Curonian Lagoon is extremely low, marine mammals are almost never encountered here. There are many reports of seals living in the Bering Sea from the sea side of the Curonian Spit. We have not found scientific reports on their discovery in the Russian part of the Curonian Lagoon. No cases of their entering the gillnets were recorded in the UoAs. Nevertheless, below we give a description of all species.

7.3.9.1.1 Eastern Atlantic harbor seal *Phoca vitulina subsp. vitulina*

In Russian part of the Curonian Lagoon, no bycatch of the Eastern Atlantic harbor seal was recorded. Stakeholders do not have information on its interaction with gillnets in UoA. Therefore, we don't include this species in the final table of the Scoring elements (Table 52).

Baltic population of Eastern Atlantic harbor seal has status of Category 1 – endangered species in the Red Book of the Russian Federation (RBR, 2020). Eastern Atlantic harbor seal is listed as Least Concern in the IUCN Red List (https://www.iucnredlist.org/species/17013/6723347). Available data show that the Eastern Atlantic harbor seal (European subspecies of common seal) population is relatively large and widespread. Declines in numbers have recently occurred or are still occurring in some areas (e.g., Shetland and Orkney Islands, Firth of Tay), but **in other parts of the range numbers are thought to be stable or increasing (Baltic Sea**, southern Scandinavia).

Historical population reductions in the Baltic Sea, Wadden Sea, and France were due to hunting, and in the Baltic Sea also due to the effects of contaminants. Along the Belgian coast, Harbour Seals were frequently sighted until the 1950s, but thereafter there were no colonies due to high levels of disturbance (Hassani *et al*., 2010).

Data on abundance of Eastern Atlantic Harbour Seals are variable in quality and incomplete (Bjorge *et al*., 2010). Nevertheless, estimates indicate that Harbor Seals are most abundant in Iceland (12,000 in 2006), Norway (10,000 in 2008), southern Scandanavia (25,000-32,400 in 2007-2008), Wadden Sea (25,000-31,800 in 2007-2008) and the UK and Northern Ireland (29,000 in 2010; Special Committee on Seals (SCOS, 2012)).

Since about 2000, Harbour seal counts have declined in Shetland (30% between 2000 and 2009), Orkney (down 78% between 2000 and 2013), and the Firth of Tay (down 93% between 2000 and 2013). Other areas in the UK appear to be roughly stable or increasing (SCOS, 2012).

Like is the case with other subspecies of Harbour Seals, Eastern Atlantic Harbour Seal population monitoring programs are based on counts obtained during the moult and are therefore subject to biases unless corrections are made for animals at sea and therefore not available to be counted, and changes in age and sex structure of the population which may influence haul-out behavior during the moult (Härkönen *et al*., 1999; Thompson *et al*., 1997).

Overall, the population of Eastern Atlantic Harbour Seals likely numbers about 110,000 – 140,000 individuals (Bjorge *et al*., 2010). The overall trend in numbers is unknown. Number of mature individuals is 62.500 individuals in 2015 (https://www.iucnredlist.org/species/17020/66991409#assessment-information).

Eastern Atlantic harbor seal distributes in water area of the Baltic Sea off the coast of the Kaliningrad region, it is much more rare than the gray seal and ringed seal. Meetings of these animals are likely off the coast of the Kaliningrad (Sambia) peninsula, Curonian and Vistula spits.

Necessary security measures. Implementation of the recommendations of the Helsinki Convention for the Protection of the Baltic Sea (https://helcom.fi/about-us/convention/) on the prohibition of discharges into the water area of DDT, PCBs, petroleum products, cadmium, biogenic compounds, etc.

7.3.9.1.2 Baltic ringed seal *Pusa hispida subsp. botnica*

In Russian part of the Curonian Lagoon, no bycatch of the Baltic ringed seal was recorded. Stakeholders do not have information on its interaction with gillnets in the UoAs. Therefore, we don't include this species in the final table of the Scoring elements (Table 52).

Baltic ringed seal has status of Category 1 - endangered species in the Red Book of the Russian Federation (RBR, 2020).

Baltic ringed seal is listed as Least Concern in the IUCN Red List (https://www.iucnredlist.org/species/41673/66991604).

The size of the Baltic ringed seal (Baltic subspecies of ringed seal) population in the Baltic region at the beginning of the 20th century was estimated to be a minimum of 180,000-200,000 based on hindcast modelling using detailed hunting statistics. Hunting pressure reduced ringed seal numbers to about 25,000 in the 1940s, after which the population seems to have been stable up to 1965. Impaired fertility caused by organochlorine pollution led to a population crash in the 1970s, at which time only some 3,000 Ringed Seals remained (Harding and Härkönen, 1999).

The for Baltic ringed seal in the Baltic region does not meet any of the IUCN criteria for Threatened categories, and is listed as Least Concern (Härkönen, 2015; https://www.iucnredlist.org/species/41673/66991604).

The total population was estimated to be about 7,000 in the late 1990s, with 75% found in Bothnian Bay. Surveys in this area showed that counted numbers increased from 2,200 in 1988 to 8,100 in 2013, which indicates a mean annual growth rate of 4.6%. Surveys before 2014 were carried out under conditions where the winter sea ice cover was intact. In the springs of 2014 and 2015 much of the sea ice had melted and significantly greater numbers of Seals were hauled out as compared with earlier surveys. Estimated hauled out numbers were 16,200 in 2014 and 17,600 in 2015 (Härkönen, pers. comm.). In the Gulf of Riga it is thought that the 1,400 Seals counted in 1996 have been experiencing a steady decline since that time. The small subpopulation in the Gulf of Finland (about 300 animals in 1994) appears to have decreased to about 100 animals (Baltic Marine Environment Protection Commission (HELCOM), 2013). An estimate for the total population size (corrected for animals not counted in surveys) in 2015 is about 23,000 (Härkönen pers. comm. cited from - https://www.iucnredlist.org/species/41673/66991604#population).

Current sea ice trends in the Baltic and future projections pose a major threat to all southern populations in the Baltic; by 2034 only the Bay of Bothnia is likely to retain fairly good winter sea ice habitat for Ringed Seals (Meier *et al*., 2004). Modelling of population effects of reduced ice and shorter winters show that deteriorating ice conditions will severely hamper the population growth rate in all areas of Ringed Seal distribution in the Baltic. The model predicted the total Baltic Ringed Seal population will peak in 2068 at 38,740, and decline to 30,730 in 2100 (Sundqvist *et al*., 2012).

Pacifici *et al*. (2013) estimated the generation time for ringed seals as 18.6 years, and three generations would be approximately 56 years. Abundance was estimated at 25,000 in the 1950s and 23,000 in 2015, indicating similar population sizes over the past three generations. Number of mature individuals of Baltic ringed seal is 11.500 individuals in 2015 (https://www.iucnredlist.org/species/41673/66991604#population).

Baltic ringed seal is a nomadic species found in the territorial waters of the Baltic Sea, adjacent to the land borders of the Kaliningrad region. It occurs rarely in the Baltic Sea off the coast of the Kaliningrad region, but relatively regularly. Records of these animals are annually noted off the coast of the Kaliningrad (Sambia) the peninsula (the settlement of Yantarny village, the cities of Svetlogorsk, Pionersky) and the Curonian Spit.

Necessary security measures. Implementation of the recommendations of the Helsinki Convention for the Protection of the Baltic Sea (https://helcom.fi/about-us/convention/) on the prohibition of discharges into the water area of DDT, PCBs, petroleum products, mercury, cadmium, biogenic compounds, etc.

7.3.9.1.3Grey seal *Halichoerus grypus*

In Russian part of the Curonian Lagoon, no bycatch of grey seal was recorded. Stakeholders do not have information on its interaction with gillnets in the UoAs. Therefore, we don't include this species in the final table of the Scoring elements (Table 52).

Grey seal has status of Category 1 - endangered species in the Red Book of the Russian Federation (RBR, 2020).

Gray seal is listed as Least Concern in the IUCN Red List (https://www.iucnredlist.org/species/61382025/61382327).

Grey seals have a cold temperate to sub-Arctic distribution in North Atlantic waters over the continental shelf (Hall, 2002). There are three populations isolated both geographically and by the timing of reproduction (Bonner, 1981); mtDNA differences are large between these three breeding areas, though the Baltic and Northeast Atlantic populations are much closer to one another than to the Northwest Atlantic population (Boskovic *et al*., 1996). In the western Atlantic, the population is centered on the eastern Scotian Shelf off northeastern North America, but the Grey Seal ranges from the Gulf of Maine to southern Labrador, including the Gulf of St Lawrence (Lesage and Hammill, 2001). The northeast Atlantic population is concentrated around the UK and Ireland but is also found around Iceland, the Faroe Islands, and along the European mainland coast from the Kola Peninsula south to southern Norway, and from Denmark to Brittany in France. The Baltic Sea subpopulation is confined to the Baltic Sea (Bonner, 1981; Hall, 2002). Vagrants are known from as far south as New Jersey in the western Atlantic and Portugal in the eastern Atlantic (Rice, 1998).

Number of mature individuals of Grey seal is 66.000 individuals in 2016 (https://www.iucnredlist.org/species/61382025/61382327).

Grey seal is a nomadic species found in the territorial waters of the Baltic Sea adjacent to the land borders of the Kaliningrad region. It is rare in the Baltic Sea off the coast of the Kaliningrad Region, but relatively regularly. Annually meetings of these animals are recorded near the shores of the Kaliningrad (Sambia) Peninsula (the cities of Baltiysk, Svetlogorsk, Pionersky, the village of Kulikovo), Curonian and Baltic (Vistula) spits.

Necessary security measures. Implementation of the recommendations of the Helsinki Convention for the Protection of the Baltic Sea (https://helcom.fi/about-us/convention/) on the prohibition of discharges into the water area of DDT, PCBs, petroleum products, mercuryб cadmium, biogenic compounds, etc.

7.3.9.1.4*Harbour porpoise, Phocoena phocoena*

In Russian part of the Curonian Lagoon, no bycatch of harbour porpoise was recorded. Stakeholders do not have information on its interaction with gillnets in the UoAs. Therefore, we don't include this species in the final table of the Scoring elements (Table 52).

Harbour porpoise Baltic Sea subpopulation has status of Category 1 - endangered species in the Red Book of the Russian Federation (RBR, 2020).

Harbour porpoise Baltic Sea subpopulation is listed as Critically Endangered in the IUCN Red List (Hammond *et al*., 2008).

The historic range of the harbour porpoise extended into the north-eastern parts of the Baltic Sea. Circumstantial evidence shows that in the late 19th and early 20th century, harbour porpoises had a wide distribution range in the Baltic Sea and the species was more abundant than presently. A review of historical records gives examples of sightings in the northern Gulf of Bothnia, in the eastern Gulf of Finland and into the river Neva as far as Lake Ladoga, and in Estonian and Latvian waters including the river Daugava near Riga. During the second half of the 20th century, numbers of harbour porpoises have declined and the distribution range narrowed (Koschinski, 2001).

All citations below in this section are based on Hammond *et al*. (2008).

Taxonomic Notes

Several genetic and morphometric studies have concluded that the Baltic Porpoises are a separate subpopulation distinct from those living in Kattegat, Skagerrak and North Sea (e.g., Tiedeman et al. 1996, Huggenberger *et al*., 2002). A recent genetic study found no differences that would justify a separate Baltic subspecies (Palme *et al*., 2004).

Justification

The current information on abundance provides evidence for a population size of fewer than 250 mature animals in the Baltic Sea subpopulation. A continued decline in mature animals can be inferred based on the current information on bycatches. All individuals in the Baltic Sea population belong to one subpopulation.

Geographic Range Information

In the Baltic Sea area the historic range apparently included all of the Kattegat / Skagerrak area, the Gulfs of Riga, Finland, and Bothnia, and much of the Baltic Sea proper. However, in the latter half of the 1900s, the range was reduced considerably, and currently porpoises are considered to be virtually absent in the north-eastern Baltic (Koschinski, 2002).

Population Information

The abundance of the Baltic Sea stock has been estimated at 599 (CV=57%; 95% confidence interval = 200-3,300) (Hiby and Lovell, 1996), of which about 50% or 300 would likely be mature (Taylor *et al*., 2007). Using a precautionary approach (Wade, 1998), a minimum abundance estimate of mature animals would be the lower 20th percentile of the abundance estimate of mature individuals, equal to 192. Scheidat *et al*. (2004) reported that on the Oderbank east of Rügen, Baltic Harbor Porpoise densities between May and August 2002 were high relative to nearby Mecklenburg and Kiel Bights. There is evidence that porpoises in the Kattegat–Skagerrak area migrate to the North Sea (Teilmann *et al*., 2004).

Although there are no reliable estimates of pre-exploitation subpopulation size, harbor porpoises were once numerous in the Baltic proper (Kinze, 1995).

Habitat and Ecology Information

The Baltic Sea is a semi-enclosed, relatively shallow shelf sea with some deeper basins of more than 200 m depth. There is a gradient in salinity with declining salinity towards east and north. Winter sea-ice normally covers the northern and eastern parts of the Baltic Sea.

In the Baltic Sea and vicinity, herring, sprat, and cod are the main prey items, and many prey species are benthic or demersal (Read, 1999; Boerjesson *et al*., 2003).

Threats Information

Historically, large commercial catches occurred when porpoises migrated through the Danish Straits, mainly during winter and spring months. Annual catch levels averaged about 1,000 porpoises during most of the nineteenth century, increasing to 2,000 at the end of the century with a subsequent declining trend during the twentieth century until catches increased again in the 1940s. According to Kinze (1995), historical directed catches in the Baltic proper might have been higher than the catches in the Danish Straits.

Today, the most significant threat is incidental catches in fishing nets, primarily various types of gillnets (including both set gillnets and driftnets; Berggren 1994, Koschinski, 2002). In addition to gillnets, Harbor Porpoises are also taken in smaller numbers in trawls (Berggren, 1994). The current bycatch, known to be at least seven porpoises per year, is thought to be unsustainable, and Baltic porpoises may become extinct in the near future unless actions are taken to prevent future anthropogenic mortality. Skóra and Kuklik (2003) recorded information on 62 observations of harbor porpoises in Polish waters during 1990-1999. Of these, 45 (75.6%) were reported bycaught in fishing gear, 10 observed at sea and 7 found dead on the shore. The bycatches occurred mostly in semi-driftnets (anchored at one end) set for salmonids and bottom-set gillnets set for cod.

The annual bycatch in German Baltic fisheries is assumed to be between 3-5 porpoises (ICES, 2005). Eight porpoises in Poland and two in Latvia were reported bycaught in 2003-2004 (ICES, 2005). In Finland two porpoises were reported bycaught in the period 1986-1999. No bycatches were reported from Finland after 1999 (ICES, 2003).

Pollution is of particular concern in the Baltic Sea where toxic compounds (in particular PCBs) have been described as the likely source for reduced fertility and population decline in Baltic Sea pinnipeds (Helle *et al*., 1976; Helle, 1980; Bergman and Olsson, 1986; Bergman, 1999). Porpoises from the Baltic Sea have up to 254% higher mean levels of PCBs than corresponding samples from the Kattegat and Skagerrak (Berggren *et al*., 1999; Bruhn *et al*., 1999), and currently, a number of lesions and pathological changes are reported from the Baltic Sea porpoises (Siebert *et al*., 1999; Clausen and Andersen, 1988), including pneumonia, liver fibrosis, arthrosis, abscesses in muscles, lungs and other organs, skin lesions and heavy attacks from parasites (Siebert *et al*., 1999; Clausen and Andersen, 1988). Therefore, pollution cannot be excluded as a contributing factor in the past decline in abundance in the Baltic Sea. However, a recent decline of PCB concentration in Baltic Sea biota has been observed (Bignert *et al*., 2003).

Conservation Actions Information

The species is listed in Appendix II of CITES.

The European Union adopted a Council Regulation 812/2004 entering into force in July 2004. This regulation is aimed at reducing the incidental catch of small cetaceans in fisheries in European Union waters. The regulation includes measures restricting Baltic Sea drift net fisheries, providing for mandatory use of acoustic deterrent devices (pingers) in some EU gillnet fisheries in the Baltic Seas, and the use of onboard observers on vessels of over 15 m in length. Immediate actions to reduce the magnitude of bycatches are necessary. A review of the progress of implementing the regulation was scheduled for 2007 (Cited after Hammond *et al*., 2008).

7.3.9.2 Birds

According to Field *et al*. (2019), the Baltic Sea is a global 'hotspot' for bird bycatch in gillnet fisheries and is globally important for wintering sea ducks, but no technical solution has been found yet to reduce bird bycatch in gillnet fisheries in the Baltic. Authors report on trials conducted in the Baltic Sea to test whether two different gillnet modifications with visual stimuli can effectively reduce bird bycatch while maintaining volume of fish caught. They conducted paired trials of two types of visual stimuli attached to nets: 1) high contrast monochrome net panels and 2) net lights (constant green and flashing white LED lights). They measured the amount of fish and birds caught in standard nets and those modified with the visual stimuli. Neither of the two most commonly caught species, Long-tailed Ducks (*Clangula hyemalis*) and Velvet Scoters (*Melanitta fusca*), were deterred from lethal encounters with nets by either black-and-white panels or by steady green or flashing white net lights. Long-tailed Ducks were caught in larger numbers in nets equipped with flashing white net lights than in unmodified nets at the same location. Catch rates of commercial fish were not affected by net lights or net panels placed within the nets. Hence, while the deterrents that we tested successfully maintained fish catch, they failed to reduce bird bycatch and are therefore ineffective. Authors discuss likely avenues for future investigation of bycatch mitigation methods for gillnet fisheries, including species and location response to net lights, managed fishery closures, above-water distraction of birds and gear switching.

According to Morkūnas *et al*. (2020), Tarzia *et al*. (2017), Red Book of the Kaliningrad Region (RBKR, 2010) and **inaturalist.org**, 36 water-related bird species live in the Kaliningrad region. Seven of these bird species can be classified as ETP species (Table 24).

Started in 2017 and finishing in 2020, the project "Untangling the net: tackling bird bycatch in Baltic gillnet fisheries" had among its objectives evaluation of bycatch of bird species in the Curonian Lagoon, for the first time involving simultaneous data collection in both the Lithuanian and Russian parts of the lagoon. Bycatch incidences were collected in collaboration with 11 fishermen (seven from Lithuania and four from Russia) using a self-reporting methodology. Over two years of data collection (2018 and 2019), a total of 296 bycatch events were recorded from both gillnets and fish traps, including 159 birds bycaught in Lithuania and 137 in Russia. Peak of bycatch occurred in autumn when large numbers of migratory birds arrived in the lagoon. The two most affected bird species were the Great Cormorant (*Phalacrocorax carbo*) and the Great Crested Grebe (*Podiceps cristatus*), 189 and 40 individuals, respectively. Other species included the Goosander (*Mergus merganser*) (13 individuals), Goldeneye (*Bucephala clangula*) (12), Greater Scaup (*Aythya marila*) (10), Red-throated Diver (*Gavia stellata*) (8), and Smew (*Mergus albelus*) (8). Overall, piscivorous birds were the most impacted, followed by benthos-feeding species (Morkūnas *et al*., 2020).

All birds caught in the gill nets during the study period belong to the LC (Least Concern) category of the IUCN Red List. We discussed them in section 7.3.7.3. ETP bird species were not found in the bycatch of gillnets in the Curonian Lagoon.

7.3.9.3 Fish

7.3.9.3.1 Sea Lamprey, *Petromyzon marinus* (Минога морская)

Sea lamprey has status of category 4 (undefined by status) in the Red Book of the Russian Federation (RBR, 2020), and of category 1 (endangered species) in the Red Book of the Kaliningrad region (RBKR, 2010). Sea lamprey is listed as Least Concern in the IUCN Red List (Freyhof, 2010).

In Russian part of the Curonian Lagoon, no bycatch of the sea lamprey in gillnets fishery was recorded. Stakeholders do not have information on its interaction with gillnets in UoA. Therefore, we don't include this species in the final table of the Scoring elements (Table 52).

A brief description of the species is given below based on Freyhof (2010).

JUSTIFICATION

Generally rare, but widespread. Populations in central and western Europe, which had declined because of pollution problems, have been recovering since the 1980s.

European Union 27 = LC. Same rationale as above.

GEOGRAPHIC RANGE INFORMATION

Both sides of North Atlantic, north to Iceland and along Norwegian coasts to Barents Sea (River Ura, Kola Peninsula). North Sea, Baltic and western and central Mediterranean basins, very rare in Baltic basin, only known to enter Odra, Vistula (Poland, Germany), Western Dvina (Latvia), Narova and Luga (Russia) drainages. Several landlocked populations in North America; none in Europe.

POPULATION INFORMATION

Abundant.

HABITAT AND ECOLOGY INFORMATION

Habitat: Adults at sea, off-shore; spawns in strong-current habitats of rivers and streams. Ammocoetes in detritus-rich sands or clay sediments.

Biology: Anadromous, parasitic. Adults migrate into rivers from autumn to winter. Spawns in couples in April-July, mostly in May and early June, when temperature reaches at least 15°C. Spawning individuals cease their normal daylight avoidance reaction and reproduce on sunny days. Males dig a shallow nest in habitats with strong current. Dies after spawning. Ammocoetes stage lasts 51/2-71/2 years in freshwater. Feeds on diatoms and detritus, metamorphoses at 130-150 mm TL in late summer and migrates to sea. At sea, adults parasite a wide variety of fish species and even whales and other cetaceans. Usually does not kill its hosts, but feeds on small amounts of blood and body fluid for several days on a single host. Adults feed for about 3 years before migrating to spawning grounds. In 1921, the landlocked population of Lake Ontario entered the other Great Lakes of North America, 90 years after the opening of the Welland Canal in 1829. In combination with other factors, it caused a sharp decline of many native species and the extinction of three endemic Coregonidae. Expectedly, recent molecular studies suggest that the European and North American populations might be different species.

THREATS INFORMATION

No major threats known.

7.3.10 Habitats

The MSC Principles and Criteria require that fisheries do not cause serious or irreversible harm to habitat structure and function. When assessing the status of habitats and the impacts of fishing, teams are required to consider the full area managed by the local, regional, national, or international governance body(s) responsible for fisheries management in the area(s) where the UoA operates (the "managed area" for short) (SA3.13.5, MSC FCR v2.0). The MSC also specifies that the team shall use all available information (e.g. bioregional information) to determine the range and distribution of the habitat under consideration, and whether this distribution is entirely within the 'managed area' or extends beyond the 'managed area' (SA3.13.5.1, MSC FCR v2.0).

The Russian part of the Curonian Lagoon (southern) is rather shallow with a maximum depth of 3-5 meters (Figure 39) (See also: Orlenok (ed.), 2002). Demersal sediments in the Lagoon are represented by silt for most squares of the bottom and sand (Figure 40)

Considering the shallowness of the Curonian Lagoon and the absence of demersal sediments typical for the habitat of benthic communities, which include VME (Vulnerable Marine Ecosystem) and or potentially closely related species, the assessment team did not identify benthic habitats in the UoAs that are sensitive to the impact of fishing.

Fixed frame and bottom gill nets with different mesh sizes (from 40 to 90 mm) used by the client in the full assessed fishery are passive fishing gear that does not adversely effect on the benthic communities, including small bivalve mollusks and crustaceans.

Bottom communities in the Curonian Lagoon are mainly represented by demersal zoobenthos, which serves as food for most commercial fish – benthophages and herbivorous fish. Description of zoobenthos representatives is given according to the papers of Osadchy (2000) and Golubkova (2003). There are also earlier generalizing articles on forage benthos, which consider its species composition, numerical indicators for the density of biomass distribution and other parameters (Pergament, 1958; Investigations in the Curonian and Vistula Lagoons, 1965; Fish resources of the Curonian Lagoon, 1985, etc.).

In the Curonian Lagoon zoobenthos is represented by 317 species; it is based on different molluscs, oligochaetes and chironomids. *Dreissena polymorpha* (Pallas) prevails among molluscs, *Chironomus f. l. semireductus* Lenz - among chironomids, among oligochaetes – *Potamothrix hammoniensis* (Mich) (Aristova, 1965, 1971). The complex of benthic organisms in the northern part of the Lagoon also includes brackish water species. In this part of the reservoir there are accumulations of *Dreissena*. An increase in chironomids and oligochaetes is noted near the western coast, and molluscs are concentrated on the dense sediments of the central part of the Lagoon and in the estuarine spaces (Krylova, 1984).

Due to the nature of the sediments in the Lagoon 5 biocenoses are distinguished with dominance: *Chironomus f. l. semireductus*, *Dreissena polymorpha*, *Valvata piscinalis*, Ostracoda, Polychaeta.

The seasonal variation of the dynamics of the abundance and biomass of chironomids and oligochaetes in the Curonian Lagoon is characterized by two maxima – in May and August, and two minima between them – in June-July, and September, which is associated with the emergence of chironomid adults and the reproduction of oligochaetes. The biomass of molluscs increases from spring to summer due to the development and growth of individuals of a new generation. During periods of maximum biomass of "soft" benthos is 25.8 g / m^2, including chironomids – 22, oligochaetes – 6 g / m^2. On average, during the growing season, the biomass of "soft" benthos is 15.6 g / m^2, chironomids – 12.1 g / m^2, oligochaetes – 3.8 g / m^2 (Rudinskaya, 1994; Jagminiene, 1994). The fishery is a pelagic fishery using mid-water trawls, so no interaction with demersal habitats is anticipated.

Although the Russian fishing and environmental legislation does not contain special measures for the preservation of sensitive habitats and VME (Spiridonov *et al*., 2018), nevertheless, Russia fulfils the conditions of the Helsinki Convention (1992) on the conservation of biotopes in the Russian part of the Baltic Sea, since Russia adopted this convention in 1998. Russia also accepted the terms of the Convention on the Conservation of Biological Diversity (1992, https://www.cbd.int/undb/media/factsheets/undb-factsheets-ru-web.pdf) for implementation.

In Boedeker *et al*. (1998) the authors review vulnerable habitats in the Baltic Sea and proposed conservation measures (see Table 51). Nevertheless, although the Curonian Lagoon is a part of the hydrological system of the Baltic Sea, sensitive biotopes to fishing impact (as defined by Boedeker *et al*., 1998) are absent in the Lagoon in our opinion, therefore they are not subject to assessment in the UoAs.

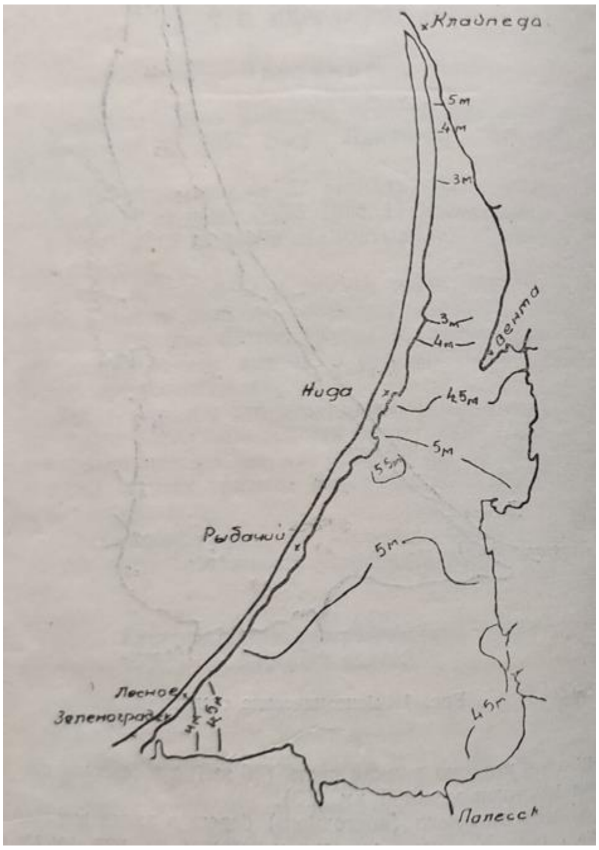


Figure 39 – Depth distribution in the Curonian Lagoon. Lines show isobaths at 3; 4; 4.5 and 5 meters. (Source: Pergament, 1958).

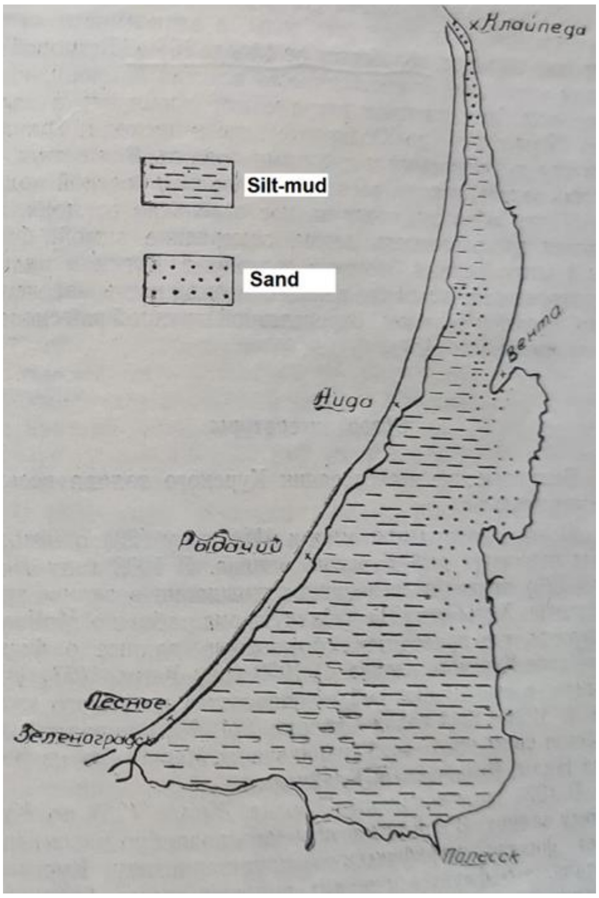


Figure 40 – Distribution of demersal sediments in the Curonian Lagoon. (Source: Pergament, 1958).

Table 51 – Some “red-listed” species occurring in the sensitive (or “red-listed”) biotopes in the Baltic Sea region (based on some examples and is not exhaustive) (Source: Boedeker *et al*., 1998 – Table 11 in the original text).

Code Name of red-listed biotope or biotope complex	Red List category and criteria	Characteristic species or taxonomic group of the red-listed biotope or biotope complex		Species Red List category and criteria
1110 Sandbanks slightly covered by sea water all the time	VU: C1	Wintering birds	*Melanitta nigra* *Gavia stellata* *Gavia arctica*	EN: A2b CR: A2b CR: A2b
		Fish and lamperey species	*Pomatoschistus* spp.	
1130 Estuaries	CR: C1	Macrophytes	*Zostera noltii*	VU: B2ab(iii,iv)
		Breeding birds	*Charadrius alexandrinus*	CR: D
		Macrophytes	Charales	
			Potamogeton spp.	
1150 Coastal lagoons	EN: C1	Macrophytes	*Lamprothamnium papulosum*	EN: B2ab(ii,iii,iv,v)
		Benthic invertebrates	*Abra* ssp.	
1170 Reefs	VU: C1	Benthic invertebrates	*Modiolus modiolus*	VU: A2c
1620 Boreal Baltic islands and small islets	NT: C1	Mammals	*Phoca hispida botnica*	VU: A3c
		Breeding birds	*Larus fuscus fuscus*	VU: A2abce
			Arenaria interpres	VU: A2abce + 3ce + 4abce
		Wintering- /Breeding birds	*Cepphus grylle grylle*	NT: A2b
1650 Boreal Baltic narrow inlets	VU: C1	Macrophytes	*Nitellopsis obtusa*	NT: B2a
AA.H1B4, AA.I1B4, AA.J1B4, AA.M1B4 Baltic photic muddy or coarse sediment, sand or mixed substrate dominated by Charales	NT: A1	Macrophytes	*Chara horrida*	NT: B2b(ii,iii,iv,v)
			Chara braunii	VU: B2ab(iii)
			Lamprothamnium papulosum	EN: B2ab(ii,iii,iv,v)
			Charales *(Nitella hyalina)*	VU: B2ab(iii)
			Nitellopsis obtusa	NT: B2a
AA.J3L10, AB.J3L10 Baltic photic and aphotic sand dominated by multiple infaunal bivalve species: *Macoma calcarea*, *Mya truncata*, *Astarte* spp. *Spisula* spp.	NT: A1	Benthic invertebrates	*Macoma calcarea* *Mya truncata*	VU: A2c NT: A2c
AB.H1I2 Baltic aphotic muddy sediment dominated by *Haploops* spp.	EN: A1	Benthic invertebrates	*Haploops tenuis*	EN: B1ab(i,iii) +2ab(ii,iii)
			Haploops tubicola	VU: B1ab(i,iii) +2ab(ii,iii)
AC Baltic Sea seasonal sea ice	VU: A1+2a	Mammals	*Phoca hispida bothnica*	VU: A3c
AB.A1G2, AB.M1G2 Baltic aphotic rock and boulders or mixed hard and soft substrates dominated by sea anemones (Actiniarida)	NT: A1	Benthic invertebrates	*Stomphia coccinea*	VU: B1ab(iii)
AA.D, AB.D Baltic photic and aphotic maërl beds (unattached particles of coralline red algae)	EN: B1+2a(ii)	Benthic invertebrates	*Corystes cassivelaunus*	NT: D2
			Thia scutellata	DD

7.3.11 Ecosystem

This section is based on materials from D. Safronova (2018) and except where otherwise indicated. It is also possible to use the information on the ecosystem of the Curonian Lagoon set out in other sections of Principle 2 (see above) and generalizing dissertation theses of V. Osadchy (2000) and T. Golubkova (2003).

Principle 2 of the Marine Stewardship Council standard states that: “*Fishing operations need to be managed to maintain the structure, productivity, function and diversity of the ecosystem upon which the fishery depends, including other species and habitats*”.

Aquatic ecosystem of the Curonian Lagoon is a complex ecosystem with many interacting processes. It is an open system, influenced by the exchange of freshwater from the Nemunas River and other smaller rivers and saline water of the Baltic Sea. Water salinity in the northern part of the lagoon may fluctuate between 0.1-7 PSU and representatives of marine, brackish and freshwater species live there. The lagoon itself is predominantly freshwater due to the discharge from the Nemunas River and other smaller rivers. However, depending on wind direction, affecting brackish water inflow from the Baltic Sea, the salinity in the central and northern parts may episodically increase up to 5-6 PSU (Dailidienėl, Davulienė, 2007). Brackish water intrusions are most common during August to October when 70% of the total annual input occurs (Pustelnikovas, 1994).

A very small depth, active water dynamics and intensive sedimentation in the lagoon considerably affect the sediment distribution patterns and their changes over time. The dominant bottom substrates are sand, silt, and shell deposits.

Mud only prevails in the southern part of the Curonian Lagoon, i.e. in the zone of intensive sedimentation (Trimonis *et al*., 2003). Due to the high substrate variability and the high freshwater input from the Nemunas River, the Curonian Lagoon belongs to one of the most macrozoobenthos diverse estuarine areas of the Baltic Sea (e.g. in comparison with Vistula Lagoon, Szczecin Lagoon, Boddens of Darß-Zingst) (Zettler, Daunys, 2007). The recent macrofauna inventory compiled for the littoral zone of the lagoon includes approximately 280 benthic species (Zettler, Daunys, 2007). Salinity is the main factor determining benthic species distribution in the Curonian Lagoon (Daunys, 2001). Benthic fauna in the strait area is a mixture of freshwater and everyhaline organisms, with a total of 49 benthic and nektobenthic species identified (Bubinas, Vaitonis, 2003). The lagoon has been heavily polluted from a combination of shipping, military and industrial sources.

Due to pollution, overfishing, dam building and natural changes of the lagoon ecosystem during the last 100 years some fish species populations were violated and lost their role in fishing industry. For example, the catch in the Curonian Lagoon of whitefish has declined from 100 t in 1934 down to zero, vimba from 265 in 1960 down to 3 t in 1994, eel from 482 t in 1966 down to 0.1 t, pike from 190 t in 1960 down to 10 t (Zolubas *et al*., 2014).

It should be noted that AtlantNIRO constantly monitors the Russian part of the Curonian Lagoon, conduct an accounting trawl surveys according to the approved grid of stations (Golubkova, 2003): trawl surveys for accounting for commercial fish, with a juvenile trawl for accounting for juvenile of commercial fish, and a special ruffe trawl for accounting for small-sized fish (ruffe, smelt, etc.). AtlantNIRO also periodically conducts benthic surveys to account for forage benthos, plankton surveys to account for phyto- and zooplankton. All these data are annually used by scientists to assess the stocks of commercial fish in the Curonian Lagoon, to establish their catch rates – TAC and Recommended Catch (RC). It should be noted here that this is sufficient to ensure the sustainability of fisheries in the Curonian Lagoon, but for individual components of the ecosystem it would be desirable to use the ecosystem approach and modelling ecosystem processes, to better study the trophic relationships between the inhabitants of the Curonian Lagoon, as well as the impact of fishing on the ecosystem as a whole.

7.3.12 Principle 2 scoring elements

The Principle 2 scoring elements in Curonian Lagoon perch and pike-perch fishery are presented below in Table 52.

Table 52 – Scoring elements in P2 section.

Component	Scoring elements	Designation	Data-deficient
Primary	Fish: Perch in UoA 1 Pike-perch in UoA 2 Bream Sabrefish	Main	No
Secondary	Fish: • Roach • White bream	Main	Yes
Secondary	Birds: • Common Goldeneye • Goosander • Great Cormorant • Great Crested Grebe • Greater Scaup • Red-throated Loon • Smew	Main	Yes
Secondary	Fish: • Atlantic twait shad • Vimba bream • Burbot • Asp • Pike • Crucian carp • Prussian carp • Rudde • Tench • Freshwater Wels • Bleak • Ide • Other*	Minor	Yes
ETP	Seabirds, marine mammals, fish	N/A	No
Habitats	Fine sediments	Main	No
Ecosystem	Trophic structure and function within the Curonian Lagoon ecosystem, with	NA	No

	benthophagus, phytophagous and predator fish as the key species.		

* See Table 21 – Species composition of the ichthyofauna of the Curonian Lagoon (Source: Golubkova, 2003).

7.3.13 Principle 2 Performance Indicator scores and rationales

PI 2.1.1 – Primary species outcome

PI 2.1.1		The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI		
Scoring Issue		SG 60	SG 80	SG 100
a	Main primary species stock status			
	Guide post	Main primary species are **likely** to be above the PRI. OR If the species is below the PRI, the UoA has measures in place that are **expected** to ensure that the UoA does not hinder recovery and rebuilding.	Main primary species are **highly likely** to be above the PRI. OR If the species is below the PRI, there is either **evidence of recovery** or a demonstrably effective strategy in place **between all MSC UoAs which categorise this species as main**, to ensure that they collectively do not hinder recovery and rebuilding.	There is a **high degree of certainty** that main primary species are above the PRI **and are** fluctuating around a level consistent with MSY.
	Met?	Pike-perch in UoA2 - Yes Perch in UoA 1 - Yes Bream - Yes in UoAs 1&2 Sabrefish - Yes in UoAs 1&2	Pike-perch in UoA2 - Yes Perch in UoA 1 - Yes Bream - Yes in UoAs 1&2 Sabrefish - Yes in UoAs 1&2	Pike-perch in UoA2 - No Perch in UoA 1 - No Bream - Yes in UoAs 1&2 Sabrefish - No in UoAs 1&2
Rationale				

Pike-perch in UoA 2

Fishing gear in UoA 2 – gillnets with mesh 40 mm. Pike-perch is target species in UoA 1 and main primary species in UoA 2. In PI 1.1.1 rationale is shown, that the pike-perch stock in the Curonian Lagoon is highly likely to be above the PRI. **SG 60 and SG 80 are met**.

There is no high degree of certainty that the pike-perch stock in the Curonian Lagoon is above the PRI and are fluctuating around a level consistent with MSY. **SG 100 is not met**.

Perch in UoA 1

Fishing gear in UoA 1 – gillnets with mesh 70 mm. Perch is target species in UoA 2 and main primary species in UoA 1. In PI 1.1.1 rationale is shown (RBF was used), that the perch stock in the Curonian Lagoon is highly likely to be above the PRI. **SG 60 and SG 80 are met**.

There is no high degree of certainty that the perch stock in the Curonian Lagoon is above the PRI and are fluctuating around a level consistent with MSY. **SG 100 is not met**.

Bream in both UoAs

Fishing gear – gillnets with mesh 70 mm in UoA 1, with mesh 40 mm in UoA 2. In the Curonian Lagoon, since the end of the 1960s, fishing has been regulated, and the catch of important commercial species, including bream, has been limited. At present, in the Russian part of the Curonian Lagoon bream fishing is carried out mainly with large-mesh fixed gill nets with a mesh size of 70 mm. There is a bycatch of juvenile bream by gill nets with a mesh size of 40 mm. In order to get more information on this issue, we have set a condition in PI2.1.2e. The main harvest periods are spring and autumn. In accordance with the Fishing Rules for West Fisheries Basin (Fishing Rules, 2020), the use of these gill nets for the protection of spawning and juvenile fish is prohibited from April 20 to June 20. As a result of the rationalization of fishing, the stock of bream has become relatively stable. As a boundary reference point for biomass, scientists chose its minimum value Blim for the observation period from 1989 to 2019, calculated using cohort analysis with the Kalman filter (Mikheev, 2016). Also, a precautionary biomass reference was used – *Bpa*, a boundary reference point for fishing intensity – the fishing mortality rate *Flim* and the precautionary value of the fishing mortality rate *Fpa* (Table 53) (Babayan, 2000; ICES Advice, 2017).

Table 53 – Biological reference point s for the Curonian Lagoon bream (Source: AtlantNIRO, 2020a).

Criterion	Indices	Means	Method of assessment
Boundary reference points	B_{lim}	3205 tons	Minimal mean of commercial stock biomass
	F_{lim}	0.55	According with B_{lim}
Precautionary approach	B_{pa}	4487 tons	B_{pa}=1.4× B_{lim}
	F_{pa}	0.39	F_{pa}=F_{lim}/1,4

According to the calculated data, the number of the commercial part of the bream stock in the Russian part of the Curonian Lagoon in 2021 will amount to 4 465 thousand specimens, biomass – 5 177 tons (AtlantNIRO, 2020a). After determining the abundance of the stock using the KAFKA cohort model, as well as the magnitude of the fishing intensity, using the harvest control rules (HCR) and the management option at the “Status quo” level, the TAC estimate for 2021 was obtained, which was 1150 tons, which corresponds to the level of 2019-2020. Since 2010, the biomass of the commercial bream stock in the UoAs has not dropped below target biomass Bpa = 4487 tons (Table 31). Therefore, there is a high degree of certainty that the stocks is above the PRI and are fluctuating around a level consistent with MSY. **SG 60, SG 80 and SG 100 are met**.

Sabrefish in both UoAs

Fishing gear – gillnets with mesh 70 mm in UoA 1, with mesh 40 mm in UoA 2. Regulated fishing has been carried out in the Curonian Lagoon since the late 1960s. In accordance with the Fishing Rules... (2020) sabrefish is fished mainly with small-mesh fixed nets with size of mesh in 40 mm. The main fishing periods of sabrefish are spring and autumn. For sabrefish, a fishing measure is set – 28 cm (commercial length). Sabrefish is a numerous and important fishing species in the Curonian Lagoon. The catch of the species is subject to significant fluctuations, which is due to the dynamics of the stock and the intensity of its commercial exploitation (Figure 34). Specialized fishing for sabrefish in the Curonian Lagoon was started in 1970s of the XX century (Osadchy, 2000). In the 1980s, the stock of the species was in good condition, during this period the catch reached high values. Since 1989, the catch has sharply decreased, and since 1994 it began to gradually increase and in the 2000s it stabilized at a high level, averaging 311 tons. In the last three years, a decrease in catch has been noted, due to both a slight decrease in the stock of the species in the Lagoon, and the feature of the organization of the fishery. In 2019 232 tons of sabrefish were caught, the development of the TAC was 77%.

The minimum biomass value *Blim* at the *Bloss* level defined as the minimal stock value for the period of low biomass was chosen as a boundary reference point for biomass. The fishing mortality rate *Flim* (Table 54; ICES Advice, 2017) is used as a boundary reference point for the intensity of fishing.

Table 54 – Biological reference points for sabrefish of the Curonian Lagoon (Source: AtlantNIRO, 2020a).

Criterion	Indices	Means	Method of assessment
Boundary reference points	B_{lim}	469 tons	B_{loss} (minimal stock during a period of low biomass)
	F_{lim}	0.74	According with B_{lim}

Considering the current state of the commercial stock of the species, the value of the fishing mortality F_{bar6-8} for the predicted 2021 is recommended at 0.37 (AtlantNIRO, 2020a). Since 2010, the biomass of the commercial sabrefish stock in the UoAs has not dropped below limit biomass B_{lim} = 469 tons (Table 37). Therefore, sabrefish stock in the UoAs is highly likely to be above the PRI. **SG 60 are SG 80 are met**.

For sabrefish stock in the UoAs there are no target reference points consistent with MSY. **SG 100 is not met.**

b	Minor primary species stock status			
	Guide post			Minor primary species are highly likely to be above the PRI. OR

				If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species.
	Met?			**NA**
Rationale				

There are no Minor primary species for these fisheries and this scoring issue is scored as NA.

References

- AtlantNIRO, 2020a, b;
- Babayan, 2000;
- Fishing Rules, 2020;
- Golubkova, 2003;
- ICES Advice, 2017;
- Safronova, 2018.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥ 80**
Information gap indicator	**More information sought** *More information is sought on minor primary species. Although information is lacking about minor primary species, the catch reports are considered likely to be sufficient to identify the main primary species, so this PI is not scored down for information gaps.*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**UoA 1 – 85** **UoA 2 – 85**
Condition number (if relevant)	**NA**

PI 2.1.2 – Primary species management strategy – All UoAs

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to be above the PRI.	There is a **partial strategy** in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the PRI.	There is a **strategy** in place for the UoA for managing main and minor primary species.
	Met?	**Yes**	**Yes**	**No**
Rationale				

Fishing gear – gillnets with mesh 70 mm in UoA 1, with mesh 40 mm in UoA 2. The main primary species (perch in UoA 1, pike-perch in UoA 2, bream, sabrefish) are managed via a TAC. There are also measures in place to limit non-target catch of the UoAs – minimum mesh size and time/area closures. There is some restrictions on discards. According to the Fishing Rules (2020) and the internal instruction of the Client, when fishing with small-meshed gillnets, the by-catch of juveniles is not allowed more than 10% of the total number of all fish species. If the catch of immature fish is exceeded, the captain (foreman) must record the catch in the fishing log and change the fishing place. The surplus juvenile fish should be immediately released into the natural habitat with the least damage. There are closed places and seasons. These measures could be considered a ‘strategy’ to manage bycatch of main primary species, since the primary species are evaluated using reference points to ensure that impacts remain acceptable. **SG 60 and SG 80 are met.**

Without better analysis of population dynamics, including monitoring and sampling strategies, catch curves, and stock estimates, the Assessment Team does not assign a score of 100. **SG100 is not met.**

b	**Management strategy evaluation**			
	Guide post	The measures are considered **likely** to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some **objective basis for confidence** that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.
	Met?	**Yes**	**Yes**	**No**
Rationale				

For the main primary species, the management strategy appears to be working, since the stock is considered by AtlantNIRO (2020a) to be healthy and fished sustainably (overfishing not occurring) There is Fishing Act (2004) and Fishing Rules (2020) which include some measures in coastal fisheries, including MLS and closed places and seasons.

There is objective basis for confidence that this strategy applied to the gillnet fisheries in UoAs work in maintaining bycatch species at levels which are highly likely to be above the PRI (See PI 2.1.1). **SG 60 and SG 80 are met**.

However, there is no testing of the effects of intensive fishing in local areas and its possible impacts to sub-populations, either with monitoring or statistical modelling. **SG100 is not met.**

c	**Management strategy implementation**			
	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is **clear evidence** that the partial strategy/strategy is being **implemented successfully and is achieving its overall objective as set out in scoring issue (a).**
	Met?		**Yes**	**No**
Rationale				

Measures of healthy stock status for main primary species as defined in PI 2.1.1 provide some evidence that the partial strategy works. Fishery managers implement the strategy with monitoring, enforcement, and scientific review. **SG80 is met.**

There is no clear evidence that the partial strategy is being implemented successfully. **SG100 is not met.**

d	**Shark finning**			
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**NA**	**NA**	**NA**
Rationale				

Not relevant. Sharks are not caught in this fishery.

e	**Review of alternative measures**			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.
	Met?	**UoA 1 – NA** **UoA 2 – Yes**	**UoA 1 – NA** **UoA 2 – No**	**UoA 1 – NA** **UoA 2 – No**
Rationale				

UoA 1 (Pike-perch)

Fishing gear - gillnets with mesh 70 mm. There are no unwanted catches of primary species.

UoA 2 (Perch)

Fishing gear - gillnets with mesh 40 mm. Pike-perch and bream matures later and grows faster than perch, so gillnets of small mesh size could potentially take considerable amounts of pike-perch and bream juveniles. According to the Fishing Rules (2020) and the internal instruction of the Client, when fishing with small-meshed gillnets, the by-catch of juveniles is not allowed more than 10% of the total number of all fish species. If the catch of immature fish is exceeded, the captain (foreman) must record the catch in the fishing log and change the fishing place. The surplus juvenile fish should be immediately released into the natural habitat with the least damage. The alternative measures are potential topics at regular fishery council meetings, where management authorities receive feedback on management practices from the industry and other interested stakeholders. **SG 60 is met.**

While there are several possible measures to minimize UoA 2-related mortality of unwanted catch, there is no evidence of a regular review of the potential effectiveness and practicality of alternative measures to minimize mortality of unwanted catch of the pike-perch and bream juveniles when fishing with small-meshed gillnets in the Curonian Lagoon and that they are implemented as appropriate. **SG 80 and SG 100 are not met**.

References

- AtlantNIRO, 2020a, b;
- Fishing Act, 2004;
- Fishing Rules, 2020;
- Safronova, 2018.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI** *We need to confirm if there is unwanted catch of any primary species and if so whether there is review of measures to reduce it.*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**UoA 1 – 80** **UoA 2 – 75**
Condition number (if relevant)	**5 (UoA 2)**

PI 2.1.3 – Primary species information – All UoAs

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
Scoring Issue		SG 60	SG 80	SG 100
a		Information adequacy for assessment of impact on main primary species		
	Guide post	Qualitative information is **adequate to estimate** the impact of the UoA on the main primary species with respect to status. **OR** **If RBF is used to score PI 2.1.1 for the UoA:** Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.	Some quantitative information is available and is **adequate to assess** the impact of the UoA on the main primary species with respect to status. **OR** **If RBF is used to score PI 2.1.1 for the UoA:** Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.	Quantitative information is available and is **adequate to assess with a high degree of certainty** the impact of the UoA on main primary species with respect to status.
	Met?	**UoA 1 – Yes** **UoA 2 – Yes**	**UoA 1 – Yes** **UoA 2 – Yes**	**UoA 1 – Yes** **UoA 2 – No**
Rationale				

UoA 1 (Pike-perch)

Fishing gear in UoA 1 – gillnets with mesh 70 mm. Bream and sabrefish are the only main primary species in the UoAs. Input data for their stocks assessment are: commercial catches (TAC); natural mortalities (F) (ICES Advice, 2017; Methodical recommendations..., 2018). Research on the dynamics of coastal freshwater commercial fish stocks as well as non-industrial fish (incl. protected species) and fish communities continued in 2020-2021 mainly in permanent research areas. Therefore, quantitative information is available and is adequate to assess with a high degree of certainty the impact of the UoAs on main primary species with respect to their status. Therefore, **SG 60, SG 80 and SG 100 are met**.

UoA 2 (Perch)

Fishing gear in UoA 2 – gillnets with mesh 40 mm. Bream and sabrefish are the only main primary species in the UoAs. Input data for their stocks assessment are: commercial catches (TAC); natural mortalities (F) (ICES Advice, 2017; Methodical recommendations..., 2018). Research on the dynamics of coastal freshwater commercial fish stocks as well as non-industrial fish (incl. protected species) and fish communities continued in 2020-2021 mainly in permanent research areas. Therefore, some quantitative information is available and is adequate to assess the impact of the UoA on the main primary species with respect to status. **SG 60 and SG 80 are met**.

More information need about bycatch of juvenile main primary fish species with small-mesh gillnets to assess with a high degree of certainty the impact of the UoA on main primary species with respect to status. **SG 100 is not met.**

b		Information adequacy for assessment of impact on minor primary species		
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.

	Met?			**NA**
Rationale				

Not relevant. There are no minor primary species in the fisheries.

c	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage **main** primary species.	Information is adequate to support a **partial strategy** to manage **main** primary species.	Information is adequate to support a **strategy** to manage **all** primary species, and evaluate with a **high degree of certainty** whether the strategy is achieving its objective.
	Met?	**UoA 1 – Yes** **UoA 2 – Yes**	**UoA 1 – Yes** **UoA 2 – Yes**	**UoA 1 – Yes** **UoA 2 – No**
Rationale				

UoA 1 (Pike-perch)

Fishing gear in UoA 1 – gillnets with mesh 70 mm. Perch, bream and sabrefish are the only primary species in the UoA. Both fishery-dependent and fishery-independent data are used to support management measures. The strategy for management of the primary species includes permit requirements, TAC or RC, and reference points (see Sections 7.2.1.2 and 7.3). Catch data are collected to assure that TAC is complied with. Biomass is monitored and assessed relative to reference points. The information provided through catch statistics, research surveys. Therefore, the information is adequate to support a strategy to manage all primary species and evaluate with a high degree of certainty whether the strategy is achieving its objective. **SG 60, SG 80 and SG 100 are met**.

UoA 2 (Perch)

Fishing gear in UoA 2 – gillnets with mesh 40 mm. Pike-perch, bream and sabrefish are the only primary species in the UoAs. Both fishery-dependent and fishery-independent data are used to support management measures. The strategy for management of the primary species includes permit requirements, TAC or RC and reference points (see Sections 7.2.1.1 and 7.3). Catch data are collected to assure that TAC or RC is complied with. Biomass is monitored and assessed relative to reference points. The information provided through catch statistics, research surveys. Primary species are highly likely to be above the PRI (see PI 2.1.1). Therefore, the information is adequate to support a partial strategy to manage main primary species. **SG 60 and SG 80 are met**.

More information needs about bycatch of juvenile primary fish species with small-mesh gillnets to evaluate with a **high degree of certainty** whether the strategy is achieving its objective. **SG 100 is not met.**

References

- AtlantNIRO, 2020a, b;
- Babayan, 2000;
- Fishing Rules, 2020;
- ICES Advice, 2017;
- Methodical recommendations, 2018.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥ 80**

Information gap indicator	*More information is sought on minor primary species.*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**UoA 1 – 100** **UoA 2 – 80**
Condition number (if relevant)	**NA**

PI 2.2.1 – Secondary species outcome – All UoAs

<table>
<tr><th colspan="2">PI 2.2.1</th><th colspan="3">The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit</th></tr>
<tr><td colspan="2">Scoring Issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="3">a</td><td colspan="4">Main secondary species stock status</td></tr>
<tr><td>Guide post</td><td>Main secondary species are likely to be above biologically based limits.
OR
If below biologically based limits, there are measures in place expected to ensure that the UoA does not hinder recovery and rebuilding.</td><td>Main secondary species are highly likely to be above biologically based limits.
OR
If below biologically based limits, there is either evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding.
AND
Where catches of a main secondary species outside of biological limits are considerable, there is either evidence of recovery or a, demonstrably effective strategy in place between those MSC UoAs that have considerable catches of the species, to ensure that they collectively do not hinder recovery and rebuilding.</td><td>There is a high degree of certainty that main secondary species are above biologically based limits.</td></tr>
<tr><td>Met?</td><td>Yes – all species</td><td>Yes – all species</td><td>No – all species</td></tr>
<tr><td colspan="5">Rationale</td></tr>
</table>

Roach, *Rutilus rutilus* (Плотва)

There is some quantitative information about the state of the roach stock in the Curonian Lagoon (see Section 7.3.7.1.1). For the period from 1971 to the present, the main biological indicators of roach (average age and length) have not undergone significant changes (Table 40), which indicates a stable state of the stock. Fish at the age of 6–9 years constituted the basis of the commercial catches (Table 41). Dynamics of the commercial catch of roach in the Curonian Lagoon in 1958-2019 is shown in Figure 37.

The Risk Based Framework (RBF) was used for the roach assessment with a workshop conducted with stakeholders at the site visit (see Section 8.8 for rationale). Roach received an MSC PSA-derived **score of 87** (Table 82).

White bream, *Blicca bjoerkna* (Густера)

The Risk Based Framework (RBF) was used for the white bream assessment with a workshop conducted with stakeholders at the site visit (see Section 8.8 for rationale). White bream received an MSC PSA-derived **score of 89** (Table 83).

BIRDS:

The Risk Based Framework (RBF) was used for the assessment of birds with a workshop conducted with stakeholders at the site visit (see Section 8.8 for rationale).

Common Goldeneye, *Bucephala clangula* (Обыкновенный гоголь)

Goosander, *Mergus merganser* (Большой крохаль)

Great Cormorant, *Phalacrocorax carbo* (Большой баклан)

Great Crested Grebe, *Podiceps cristatus* (Чомга, или большая поганка)

Greater Scaup, *Aythya marila* (Морская чернеть)

Red-throated Loon, *Gavia stellata* (Краснозобая гагара)

Smew, *Mergellus albellus* (Луток)

MSC PSA-derived **score > 80** for all birds = (Tables 84 – 90).

Total for all species

The score for each score element is > 80. Therefore, **SG 80 is met**.

FCP v2.2, Annex PF4.1.4 sets out that assessment teams may choose to score only main species when evaluating PI 2.1.1 and 2.2.1, following Fisheries Standard v2.01 Annex SA3.4.2. If only main species are scored then the final MSC score for this PI is capped at 80 (FCP v2.2, Annex PF5.3.2).

Therefore, **SG 100 is not met**.

b	**Minor secondary species stock status**			
	Guide post			Minor secondary species are highly likely to be above biologically based limits. OR If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species
	Met?			**No – all species**
Rationale				

Minor secondary species are considered in Section 7.3.8. While it is unlikely that the gillnet pike-perch and perch fisheries in the UoAs hinder the recovery of the minor secondary species, there is no evidence to prove it. For this reason, the fisheries do not meet criteria for SG 100, and the Assessment Team determines a score of 80.

References

- AtlantNIRO, 2020a, b;
- BirdLife International, 2019, 2021a-g;
- Morkūnas *et al*., 2020.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**RBF**
Information gap indicator	*We have no information on discards on which to base an analysis of secondary species composition or to evaluate whether there are any minor secondary bycatch species which are discarded.* *We also have no information on interactions with out-of-scope minor secondary species, although the various other sources of information have allowed us to identify a list of potential species.*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 2.2.2 – Secondary species management strategy

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a **partial strategy** in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a **strategy** in place for the UoA for managing main and minor secondary species.
	Met?	**Fish – Yes** **Birds – Yes**	**Fish – Yes** **Birds – Yes**	**Fish – No** **Birds – No**
Rationale				

Fish:

The main secondary fish species (roach and white bream) and many minor secondary fish species are managed via a RC. There are also measures in place to limit non-target catch of the UoAs – minimum mesh size and minimum landing size, some restrictions on discards and time/area closures. This could be considered a ‘partial strategy’ to manage bycatch of secondary fish species that is expected to maintain secondary species at levels which are highly likely to be above biologically based limits. **SG 60 and SG 80 are met**.

There is no information about existing comprehensive strategy in place for the UoAs for managing main and minor secondary species. **SG100 is not met.**

Birds:

The current bycatch mitigation measures generally represent the measures applicable to bird species – these are closed seasons and closed areas of the Curonian Lagoon. Fishermen do not seek to catch water birds, as D. Safronova (2018) notes, cases of their hitting are rare. Russia and the Kaliningrad Region have classified Special Protected Areas (PAs) for a number of aquatic birds. For example, in the Kaliningrad region there is the Curonian Spit State National Park, where many species of water birds are nesting, as well as several regional reserves on the territories of the Slavsky and Zelenogradsky municipal districts adjacent to the Curonian Lagoon. Russia is a party to many agreements and conventions for the conservation of seabirds. This could be considered a ‘partial strategy’ to manage bycatch that is expected to maintain secondary bird species at levels which are highly likely to be above biologically based limits. **SG 60 and SG 80 are met**.

There is no information about existing comprehensive strategy in place for the UoAs for managing main and minor secondary species. **SG 100 is not met.**

b	**Management strategy evaluation**			
	Guide post	The measures are considered **likely** to work, based on plausible argument (e.g. general experience, theory or comparison with similar	There is **some objective basis for confidence** that the measures/partial strategy will work, based on some information directly about the	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on information directly about the UoA and/or species

		UoAs/species).	UoA and/or species involved.	involved.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The current national and international systems of legislation for the management and protection of all species in UoAs fulfil its functions. Accurate catch data, observations by management, scientific and enforcement officials support the absence of significant negative impacts of the UoAs on fish, waterbirds, and marine mammals. **SG 60 and SG 80 are met**.

There is no evidence about a testing that supports high confidence that the partial strategy/strategy are working for managing main and minor secondary species. **SG 100 is not met**.

c	**Management strategy implementation**			
	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is **clear evidence** that the partial strategy/strategy is being **implemented successfully and is achieving its objective as set out in scoring issue (a).**
	Met?		**Yes**	**No**
Rationale				

The fishery management strategy in the UoAs is comprehensive, and enforcement is undertaken at a relatively high level. The Assessment Team was presented with enforcement data, and it is apparent that there are some regulatory infringements, but quota uptake, for example, is very closely monitored and is demonstrably being managed appropriately. Small interactions between this fishery and main primary seabirds provides some evidence that the strategy is being implemented successfully. **SG 80 is met**.

There is no clear evidence that the strategy is achieving its objective as set out in scoring issue A. **SG 100 is not met**.

d	**Shark finning**			
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**NA**	**NA**	**NA**
Rationale				

No sharks have been identified as possible secondary species, and it is reported that shark fishing does not take place in this fishery. Not applicable. There is **no scoring for SId**.

e	**Review of alternative measures to minimise mortality of unwanted catch**			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of **unwanted**	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of **unwanted**	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of **unwanted**

		catch of main secondary species.	catch of main secondary species and they are implemented as appropriate.	catch of all secondary species, and they are implemented, as appropriate.
	Met?	**Yes**	**Yes**	**No**
Rationale				

There is a review of the potential effectiveness and practicality of alternative measures to minimise UoAs-related mortality of seabirds and marine mammals. In the Baltic Sea, protected and endangered species are monitored through the WGBYC and the collection of bycatch data by research institutes. Good *et al*. (2020) reviewed NPOAs to identify approaches taken to determine whether seabird bycatch is problematic, how bycatch minimisation and population objectives are set, and if thresholds are specified for managing impacts. Last time the Working Group on Marine Mammal Ecology met in 2021 to address new information on marine mammal ecology relevant to management (ICES, 2021b). Latest report of the Working Group on Bycatch of Protected Species published in 2020 (ICES, 2020c). There is a detailed review of the literature on the issue of reducing the impact of fishing gear on marine mammals by Hamilton, Baker (2019). The reviewing by internal management system is present. **SG 60 and SG 80 are met**.

The assessment team is not sure that there is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoAs-related mortality of unwanted catch of all secondary species, and they are implemented, as appropriate. **SG 100 is not met**.

References

- Golubkova, 2003;
- Good *et al*. 2020;
- Hamilton, Baker, 2019;
- ICES, 2019, 2020c, 2021b;
- Safronova, 2018.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**60-79**
Information gap indicator	**More information sought** *More information is sought,* that the measures/strategy is being implemented successfully and will work. *As for 2.1.1, and we also need to confirm if there is unwanted catch of any primary species and if so whether there is review of measures to reduce it.*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 2.2.3 – Secondary species information – All UoAs

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species		
Scoring Issue		SG 60	SG 80	SG 100
a		Information adequacy for assessment of impacts on main secondary species		
	Guide post	Qualitative information is **adequate to estimate** the impact of the UoA on the main secondary species with respect to status. OR **If RBF is used to score PI 2.2.1 for the UoA:** Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.	Some quantitative information is available and **adequate to assess** the impact of the UoA on main secondary species with respect to status. OR **If RBF is used to score PI 2.2.1 for the UoA:** Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.	Quantitative information is available and **adequate to assess with a high degree of certainty** the impact of the UoA on main secondary species with respect to status.
	Met?	**Yes**	**Yes**	**No**
Rationale				

As none of the main secondary species have stock status reference points available, derived either from analytical stock assessment or using empirical approaches, the MSC Risk Based Framework (RBF) was used for the assessment of main secondary species.

There is quantitative information from the fishery logbooks which records the abundance of bycatch of fish species. There is quantitative information from the annual scientific research surveys in the Curonian Lagoon (AtlantNIRO, 2020a, 2020b). In 2018-2020, studies of the bycatch of waterfowl were carried out in the gillnet fishery in the Curonian Lagoon (Morkūnas *et al*., 2020). There is also some quantitative information available on productivity and susceptibly attributes from a range of published studies. Therefore, some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species. **SG 60 and SG 80 are met**.

Quantitative information is not available to assess with a high degree of certainty the impact of the UoAs on main secondary species. **SG 100 is not met**.

b		**Information adequacy for assessment of impacts on minor secondary species**		
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
	Met?			**No**
Rationale				

There is no conclusive evidence that quantitative information is adequate to estimate the impact of the UoAs on minor secondary species with respect to status. **SG 100 is not met**.

c	Information adequacy for management strategy			
	Guide post	Information is adequate to support **measures** to manage **main** secondary species.	Information is adequate to support a **partial strategy** to manage **main** secondary species.	Information is adequate to support a **strategy** to manage **all** secondary species, and **evaluate** with a **high degree of certainty** whether the strategy is **achieving its objective**.
	Met?	**Yes**	**No**	**No**

Rationale

The information described in SI 2.2.3A is adequate to support measures to manage main secondary species. **SG 60 is met**.

The team needs more data on bycatch structure in the UoAs and gillnet interactions with mammals and seabirds for decide if the information is adequate to support a partial strategy to manage main secondary species. **SG 80 and SG 100 are not met**.

References

- AtlantNIRO, 2020a, b;
- Morkūnas et al., 2020.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**60-79**
Information gap indicator	**More information sought** *More information is sought on the main secondary species. We also need to confirm if there is unwanted catch of any primary species and if so whether there is review of measures to reduce it.*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**70**
Condition number (if relevant)	**6 (UoA1 & UoA2)**

PI 2.3.1 – ETP species outcome – All UoAs

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Effects of the UoA on population/stock within national or international limits, where applicable			
	Guide post	Where national and/or international requirements set limits for ETP species, the **effects of the UoA** on the population/ stock are known and **likely** to be within these limits.	Where national and/or international requirements set limits for ETP species, the **combined effects of the MSC UoAs** on the population /stock are known and **highly likely** to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a **high degree of certainty** that the **combined effects of the MSC UoAs** are within these limits.
	Met?	**NA**	**NA**	**NA**
Rationale				

The assessment team is not aware of any national and/or international requirements set limits for ETP species which may be encountered by the fishery under assessment. This SI is therefore not scored according to the MSC interpretation.

b	Direct effects			
	Guide post	Known direct effects of the UoA are likely to not **hinder recovery** of ETP species.	Direct effects of the UoA are **highly likely** to not **hinder recovery** of ETP species.	There is a **high degree of confidence** that there are no **significant detrimental direct effects** of the UoA on ETP species.
	Met?	**Yes**	**Yes**	**No**
Rationale				

At the stage of the ACDR, it was planned to use the RBF. But it turned out that there are no ETP species in the bycatch. Therefore, the Assessment Team refused to use the RBF for PI 2.3.1.

Possibly due to the low salinity of the water, marine mammals do not enter the Russian part of the Curonian Lagoon. In 2018-2020, studies of the bycatch of waterfowl were carried out in the gillnet fishery in the Curonian Lagoon (Morkūnas *et al*., 2020). Cases of numerous bird species entering the gill nets have been reported. ETP species were not found in the bycatch (See section 7.3.9.2). The sea lamprey, which is listed in the Red Book of the Kaliningrad region (RBKR, 2010), is not found in the catches of gillnets.

Russian legislation provides for the protection of ETP species included in the Red Book of the Russian Federation. According to observations, none of these species were adversely affected by the fishery. Fisheries authorities have determined that the fishery has low impacts on ETP species, which does not require the collection of specific data on interactions. Russian legislation requires fishing operations to avoid adverse impacts on the Red Data Book species present in the area. The low occurrence of ETP species in the fishing area provides a high likelihood that the effects of fishing are negligible.

The visit was attended by Konstantin Zgurovsky and Alexey Golenkevich (experts of the WWF Russia), Robertas Kubilius (Chief ecologist of the Nemunas Delta Regional Park, Republic of Lithuania), Antanas Kontautas (Head of Fishery Data collection programme in the Klaipeda University, Marine research Institute, Republic of Lithuania), Tatiana Golubkova (Head of the Center of Aquatic Bioresources of the Western Fishery Basin in the Atlantic branch of

VNIRO, Russia), Sergey Shibaev and Konstantin Tylik (scientists from the Kaliningrad State Technical University, Russia), who do not consider the impact of gill nets to be the main source of death of ETP species. **SG 60 and SG 80 are met.**

There is no program of systematic observations of the ETP species in the fishing grounds. Information on direct impact assessments and condition monitoring is limited. **SG 100 is not met.**

c	**Indirect effects**			
	Guide post		Indirect effects have been considered for the UoA and are thought to be **highly likely** to not create unacceptable impacts.	There is a **high degree of confidence** that there are no **significant detrimental indirect effects** of the UoA on ETP species.
	Met?		**Yes**	**No**
Rationale				

No significant indirect fishing impacts were identified that could threaten the ETP species. Some indirect effects would for example include the removal of the target species on the food source of ETP species in the locality. But the long history of the fishery does not give grounds to consider such an influence to be critical. Pollution from the small vessels in the UoAs is not likely to impact on ETP species. In summary, it is highly unlikely that indirect effects create unacceptable impacts. **SG 80 is met**.

The SG 100 guidepost is not met due to the lack of indirect impact assessments and status monitoring information for ETP species. **SG 100 is not met.**

References

- Morkūnas *et al*., 2020;
- RBKR, 2010;
- Safronova, 2018.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**RBF**
Information gap indicator	**More information sought** *Information for RBF on ETP species*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 2.3.2 – ETP species management strategy – All UoAs

PI 2.3.2		The UoA has in place precautionary management strategies designed to: - meet national and international requirements; - ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place (national and international requirements)			
	Guide post	There are **measures** in place that minimise the UoA-related mortality of ETP species, and are expected to be **highly likely to achieve** national and international requirements for the protection of ETP species.	There is a **strategy** in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be **highly likely to achieve** national and international requirements for the protection of ETP species.	There is a **comprehensive strategy** in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to **achieve above** national and international requirements for the protection of ETP species.
	Met?	**Yes**	**Yes**	**No**
Rationale				

MSC definitions:

*"**Measures**" are actions or tools in place that either explicitly manage impacts on the component or indirectly contribute to management of the component under assessment having been designed to manage impacts elsewhere.*

*A "**strategy**" represents a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome, and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts.*

*A "**comprehensive strategy**" (applicable only for ETP component) is a complete and tested strategy made up of linked monitoring, analyses, and management measures and responses.*

The current bycatch mitigation measures generally represent the measures applicable to ETP species - these are closed seasons and closed areas of the Curonian Lagoon. ETP species interactions are reportedly tracked by the fishermen themselves. In terms of whether this can be seen as a 'strategy' for ETP species (as defined above), elements appear to be present: there is a set of measures, monitoring of the impacts on UoAs (from government bodies controlling the fishery, for example, inspections) and monitoring of populations in general (by Russian scientists from AtlantNIRO). AtlantNIRO, in cooperation with the Client's companies, will be able to organize observation of ETP species, estimate their quantitative bycatch and mortality, as a result of which additional measures may be required. Given the scale and intensity of the fishery, and the lack of known interaction between the fishery and ETP species, these measures and an understanding of how they work are sufficient to consider this a strategy.

<u>ETP waterbirds</u>

Fishermen do not seek to catch water birds, as D. Safronova (2018) notes, cases of their hitting are rare.

Possibly, potential ETP species of ducks and geese do not fall into the gillnets, since their numbers are not large, in comparison, for example, with cormorants. The same results were obtained in a 2018-2020 study (Morkūnas *et al*., 2020). On this basis, we can conclude that the strategy ensures that the fishery does not have a strong impact on the status of the populations of the ETP birds – **SG 60 and SG 80 are met**.

Marine mammals are seals of the ETP species.

Fishermen do not report any cases of seals of these three species being caught in fixed gill nets in the Curonian Lagoon. On this basis, we can conclude that this strategy ensures that the fishery does not affect the status of their populations – **SG 60 and SG 80 are met**.

ETP fish – sea lamprey:

There is no information about sea lamprey captures by fixed gill nets in UoAs. Given that these species cannot be caught in set nets, especially the sea lamprey, it can be assumed that the strategy also works for the fish. **SG 60 and SG 80 are met.**

The team does not yet have sufficient information to conclude that there is a "comprehensive strategy" (as defined above) - therefore **SG 100 is not met**.

b	**Management strategy in place (alternative)**			
	Guide post	There are **measures** in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a **strategy** in place that is expected to ensure the UoA does not hinder the recovery of ETP species.	There is a **comprehensive strategy** in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species.
	Met?	**NA**	**NA**	**NA**
Rationale				

According to MSC FSv2.01 SA3.11.2, "the team shall evaluate either scoring issue (a) or scoring issue (b) on the ETP species management strategy". This SI is not scored. SIa is scored instead.

c	**Management strategy evaluation**			
	Guide post	The measures are **considered likely** to work, based on **plausible argument** (e.g., general experience, theory or comparison with similar fisheries/species).	There is an **objective basis for confidence** that the measures/strategy will work, based on **information** directly about the fishery and/or the species involved.	The strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a **quantitative analysis** supports **high confidence** that the strategy will work.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The lack of recorded interactions between these fisheries and the ETP species in the area is sufficient for an objective basis for confidence that a strategy to mitigate impacts of the fishery on ETP species is working.

The visit was attended by Konstantin Zgurovsky and Alexey Golenkevich (experts of the WWF Russia), Robertas Kubilius (Chief ecologist of the Nemunas Delta Regional Park, Republic of Lithuania), Antanas Kontautas (Head of Fishery Data collection programme in the Klaipeda University, Marine research Institute, Republic of Lithuania), Tatiana Golubkova (Head of the Center of Aquatic Bioresources of the Western Fishery Basin in the Atlantic branch of VNIRO, Russia), Sergey Shibaev and Konstantin Tylik (scientists from the Kaliningrad State Technical University, Russia), who do not consider the impact of gill nets to be the main source of death of ETP species. The team believes there is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and the species involved. **SG 60 and SG 80**.

There is no evidence of a quantitative analysis to demonstrate the strategy supports a high confidence that it will work. **SG 100 is not met**.

d	**Management strategy implementation**			
	Guide post		There is some **evidence** that the measures/strategy is being implemented successfully.	There is **clear evidence** that the strategy/comprehensive strategy is being implemented successfully and **is achieving its objective as set out in scoring issue (a) or (b).**
	Met?		**Yes**	**No**
Rationale				

Key elements of the structure applied to the types of ETP include the protection provided for by international requirements (SDB, HELCOM, CITES, IUCN, BirdLife International, Wetland International, etc.), which is more advisory in nature, the national legislation of the Russian Federation (RBR, 2020) and regional (Red Data Book of the Kaliningrad Region (RBKR, 2010) and the Red Data Book of the Baltic Region (1993)). At the national level, the lists of ETP species are revised at the federal and regional levels every 10 years, respectively, the Red Book of Russia and the Red Book of the Kaliningrad region are reissued.

Russia and the Kaliningrad Region have classified Special Protected Areas (PAs) for a number of aquatic birds. For example, in the Kaliningrad region there is the Curonian Spit State National Park, where many species of water birds are nesting, as well as several regional reserves on the territories of the Slavsky and Zelenogradsky municipal districts adjacent to the Curonian Lagoon.

The environmental legislation of the Russian Federation contains strict measures for the conservation of marine mammals and other ETP species, prohibits their capture, and in case of accidental captures, their immediate release from fishing gear in any form is required. Monitoring and reporting requirements also apply to marine mammals, other ETP species in accordance with the Fishing Rules (2020). Russia is a party to many agreements and conventions for the conservation of seabirds and other ETP species.

With regard to mitigation for bycatch reduction, ICES WGBYC reports collate and analyse information received from member parties on the implementation of bycatch mitigation measures and bycatch mitigation trials. For seabirds, studies have proposed a number of bycatch mitigation techniques that could be used to reduce the bycatch of certain species in certain fisheries (ICES, 2019).

The absence of a significant impact of the fishery on the ETP species was confirmed during the visit by these stakeholders: Konstantin Zgurovsky and Alexey Golenkevich (experts of the WWF Russia), Robertas Kubilius (Chief ecologist of the Nemunas Delta Regional Park, Republic of Lithuania), Antanas Kontautas (Head of Fishery Data collection programme in the Klaipeda University, Marine research Institute, Republic of Lithuania), Tatiana Golubkova (Head of the Center of Aquatic Bioresources of the Western Fishery Basin in the Atlantic branch of VNIRO, Russia), Sergey Shibaev and Konstantin Tylik (scientists from the Kaliningrad State Technical University, Russia).

The team sees this as evidence that the measure/strategy is being implemented successfully. **SG 80 is met**.

There are no specific programs designed to explicitly confirm that this strategy is achieving its objectives. **SG 100 is not met**.

e	**Review of alternative measures to minimise mortality of ETP species**			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.
	Met?	**Yes**	**Yes**	**No**
Rationale				

In the Baltic Sea, protected and endangered species are monitored through the Working Group on Bycatch of Protected Species (WGBYC) (ICES, 2019, 2020a, 2020b, 2021a). The WGBYC, which has been meeting regularly since 2009, reports and reviews the effectiveness and practicality of alternative measures to minimize different fisheries mortality of ETP species. Last time the Working Group on Marine Mammal Ecology met in 2021 to address new information on marine mammal ecology relevant to management (ICES, 2021b). Latest report of the Working Group on Bycatch of Protected Species published in 2020 (ICES, 2018, 2020c).

Good *et al*. (2020) reviewed NPOAs (National Plan of Action) to identify approaches taken to determine whether seabird bycatch is problematic, how bycatch minimisation and population objectives are set, and if thresholds are specified for managing impacts. Their aim was to recommend measures for improving consistency and effectiveness in future NPOAs and other management frameworks for seabirds, with relevance for other threatened marine vertebrates including sharks, turtles, pinnipeds, and cetaceans. They concluded that globally 16 NPOAs have been published, but few effectively linked seabird bycatch risk, objectives, and management.

There is a detailed review of the literature on the issue of reducing the impact of fishing gear on marine mammals by Hamilton, Baker (2019) "Technical mitigation to reduce marine mammal bycatch and entanglement in commercial fishing gear: lessons learnt and future directions". **SG 60 and SG 80 are met**.

There is no biennial review of alternative measures. **SG 100 is not met**.

References

- Fishing Rules, 2020;
- ICES, 2018, 2019; 2020a,b,c, 2021a,b;
- Good *et al*., 2020;
- Hamilton, Baker, 2019;
- Morkūnas *et al*., 2020;
- RBR, 2020;
- RBKR, 2010;
- Red Data Book of the Baltic Region, 1993;
- Safronova, 2018.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**60-79**
Information gap indicator	**More information sought** *More information is sought, that the measures / strategy is being implemented successfully and will work.* *More information on the seasonal use of different zones by the fishery, the timing of the closed season and the specific location and size of different closed areas, and information on review of alternative measures by the UoAs.*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 2.3.3 – ETP species information – All UoAs

<table>
<tr><th colspan="2">PI 2.3.3</th><th colspan="3">Relevant information is collected to support the management of UoA impacts on ETP species, including:
- Information for the development of the management strategy;
- Information to assess the effectiveness of the management strategy; and
- Information to determine the outcome status of ETP species</th></tr>
<tr><td colspan="2">Scoring Issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="3">a</td><td colspan="4">Information adequacy for assessment of impacts</td></tr>
<tr><td>Guide post</td><td>Qualitative information is adequate to estimate the UoA related mortality on ETP species.
OR
If RBF is used to score PI 2.3.1 for the UoA:
Qualitative information is adequate to estimate productivity and susceptibility attributes for ETP species.</td><td>Some quantitative information is adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species.
OR
If RBF is used to score PI 2.3.1 for the UoA:
Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.</td><td>Quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of ETP species.</td></tr>
<tr><td>Met?</td><td>Yes</td><td>Yes</td><td>No</td></tr>
<tr><td colspan="5">Rationale</td></tr>
</table>

At the stage of the ACDR, it was planned to use the RBF. But it turned out that there are no ETP species in the bycatch. Therefore, the Assessment Team refused to use the RBF for PI 2.3.1.

Three species of seals and harbour porpoise can be found in the Baltic Sea (Table 24). All of them have the status of the 1st category – endangered species of the Red Book of the Russian Federation (RBR, 2020). Perhaps because the salinity of the water in the Russian part of the Curonian Lagoon is extremely insignificant, marine mammals are almost never encountered here. There are many reports of seals living in the Bering Sea from the seaside of the Curonian Spit. We have not found scientific reports on their discovery in the Russian part of the Curonian Lagoon in the literature. During the site visit, the experts, Tatiana Golubkova (Head of the Center of Aquatic Bioresources of the Western Fishery Basin in the Atlantic branch of VNIRO, Russia), Sergey Shibaev and Konstantin Tylik (scientists from the Kaliningrad State Technical University, Russia), informed the Assessment Team that they had not seen any marine mammals in the Russian part of the Curonian Lagoon. Also, they and Konstantin Zgurovsky and Alexey Golenkevich (experts of the WWF Russia), Robertas Kubilius (Chief ecologist of the Nemunas Delta Regional Park, Republic of Lithuania), Antanas Kontautas (Head of Fishery Data collection programme in the Klaipeda University, Marine research Institute, Republic of Lithuania), inform the Assessment Team on little UoAs impact on ETP species. In 2018-2020, studies of the bycatch of waterfowl were carried out in the gillnet fishery in the Curonian Lagoon (Morkūnas *et al*., 2020). Cases of bird species entering the gillnets have been reported. ETP species were not found in the bycatch (See section 7.3.9.2). The sea lamprey, which is listed in the Red Book of the Kaliningrad region (RBKR, 2010), is not found in the catches of gillnets. It is considered that some quantitative information is adequate to assess the UoAs related mortality and impact and to determine whether the UoAs may be a threat to protection and recovery of the ETP species. **SG 60 and SG 80 are met**.

The data are not comprehensive enough to meet the 'high degree of certainty'. **SG 100 is not met**.

b	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage the impacts on ETP species.	Information is adequate to measure trends and support a **strategy** to manage impacts on ETP species.	Information is adequate to support a **comprehensive strategy** to manage impacts, minimise mortality and injury of ETP species, and evaluate with a **high degree of certainty** whether a strategy is achieving its objectives.
	Met?	**Yes**	**Yes**	**No**
Rationale				

There is information from observations by scientists, managers, and inspectors on the lack of impacts of the fishery on the ETP species (see SI 2.3.3.a). In addition, under Condition 6, information will be collected on all by-catch species, including ETP species. The data can be used to measure trends and support a comprehensive strategy to manage impacts of the fishery on all potential ETP species.

This information is adequate to support the management strategy for the ETP species. **SG 60 and SG 80 are met.**

Impacts, mortalities, and injuries are not explicitly quantified. **SG 100 is not met.**

References

- Morkūnas *et al*., 2020;
- RBR, 2020;
- RBKR, 2010;
- Red Data Book of the Baltic Region, 1993;
- Safronova, 2018.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**RBF**
Information gap indicator	**More information sought** *More Information on at-sea observations of ETP species is sought on the UoAs impact and management strategy.*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 2.4.1 – Habitats outcome – All UoAs

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates		
Scoring Issue		SG 60	SG 80	SG 100
a	Commonly encountered habitat status			
	Guide post	The UoA is **unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
	Met?	**Yes**	**Yes**	**No**
Rationale				

Curonian Lagoon is shallow and brackish water body (Golybkova, 2003). Fishing in the UoAs in the Curonian Lagoon is carried out with fixed gillnets in the sublittoral zone, at depths up to 5 m (Safronova, 2018). These areas are subject to active wave, especially during storms. In this regard, benthic communities are relatively poor, sessile vulnerable forms of megabenthos are practically absent, and the entire bottom biota, including epifauna, infauna, and bottom ichthyocenosis is well adapted to periodic hydrodynamic wave impact (Khlopnikov, 1994; Khlopnikov *et al.*, 1998; Golubkova, 2003). Gillnet locations are used repeatedly, and setting occurs on a daily basis, but the gear is fished statically and passively. Priester *et al*. (2021) consider set nets to be effective monitoring method for soft-substrate demersal fish communities marine protected area (MPA). Given their relatively low impact on the local ecosystem experimental trammel nets are a good alternative for areas where non-extractive methods are not effective. On the basis of the UoAs gears, the identified fishing area and habitats, the assessment team concludes that the UoAs are highly unlikely to reduce habitat structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. **SG 60 and SG 80 are met**.

There is no evidence that the UoAs are highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. **SG 100 is not met**.

b	**VME habitat status**			
	Guide post	The UoA is **unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				

According to section SA3.13.3.2 in MSC Fisheries Standard v2.01, a VME shall be defined as is done in paragraph 42 subparagraphs (i)-(v) of the FAO Guidelines.

According to Spiridonov *et al.* (2018), there are no VMEs officially recognized by Russian Federation in the inland marine waters, Territorial sea and EEZ, also in reviewed UoAs.

According to section GSA3.13.3.2 in MSC Fisheries Standard v2.01, when the FAO Guidelines are applied in shallow, inshore waters, the definition of VME could include other species groups and communities (e.g., seagrass beds, complex kelp- dominated habitats, biogenic reefs).

According to section SA3.13.4 in MSC Fisheries Standard v2.01, the team shall interpret “serious or irreversible harm” as reductions in habitat structure and function such that the habitat would be unable to recover at least 80% of its structure and function within 5-20 years if fishing on the habitat were to cease entirely.

HELCOM (2013) has produced a Red List of habitats, biotopes and biotope complexes from which the following can occur in the UoAs (see Table below):

Code	Description	HELCOM Classification
1110	Sandbanks (slightly covered by sea water all the time)	CR (Critically Endangered)
1130	Estuaries	CR (Critically Endangered)

Sandbanks (1110). There is no fishing in these places because it is too shallow. Estuaries (1130). There is no fishing in these places because the setting of fishing gears near river mouths is prohibited by the Fishing Rules (2020). Substrate dominated by seagrass. There is no fishing in these places because seagrass will clog fishing gear.

The Assessment Team considers this information as evidence that the UoAs are highly unlikely to reduce structure and function of the potential VME habitats to a point where there would be serious or irreversible harm. **SG 60, SG 80 and SG 100 are met**.

c	**Minor habitat status**			
	Guide post			There is **evidence** that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.
	Met?			**NA**
Rationale				

To the team’s knowledge, there are no minor habitats to consider. This SI is N/A.

References

- HELCOM, 2013;
- Golubkova, 2003;
- Khlopnikov , 1994;
- Khlopnikov *et al.*, 1998;
- Priester *et al.*, 2021;
- Safronova, 2018;
- Spiridonov *et al.*, 2018.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**>80**

Information gap indicator	**More information sought** *Information specific to the UoA on how the fishing gear is operated (but information gap only at SG100)*.

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**90**
Condition number (if relevant)	**NA**

PI 2.4.2 – Habitats management strategy – All UoAs

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a **partial strategy** in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a **strategy** in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	**Yes**	**Yes**	**No**
Rationale				

There are several international agreements and legislative directives such as the Baltic Sea Action Plan, the Marine Strategy Framework Directive, the Habitats Directive, and the Maritime Spatial Planning Directive that are devoted to, among other things, habitats conservation (e.g., Russian Federation adopted HELCOM in 2008). They are the basis for Russian Federation national fisheries legislation (Fishing Act, 2004). The fishing partial strategy is to use stationary passive fishing gears (fixed gill nets), which have a low impact on the habitat, even in comparison with natural climatic processes (e.g., storms). Measures are being taken to fighting against of lost and ghost fishing gears through Fishing Rules (2020). **SG 60 and SG 80 are met.**

There is no information that testing has been carried out on the effectiveness of this partial strategy. **SG 100 is not met.**

b	**Management strategy evaluation**			
	Guide post	The measures are **considered likely** to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some **objective basis for confidence** that the measures/partial strategy will work, based on **information directly about the UoA and/or habitats** involved.	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on **information directly about the UoA and/or habitats** involved.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The fishery is conducted with passive fishing gears (fixed gillnets). The specific features of the impact of the fixed gillnets on bottom communities are obvious, simple, and well predictable. According to HELCOM (2017), for hard and for soft bottom (sand) and for habitats formed by seagrass the most significant impact has accumulation of finer sediments (siltation). Fishing gears used in the UoAs have practically no effect on siltation. Also fixed gill nets are not significantly impacting on the bottom, giving high confidence that there are no significant impacts on habitats. Therefore, there is some objective basis for confidence that the measures / partial strategy will work, based on information directly about the UoAs and habitats involved. **SG 60 and SG 80 are met**.

The Assessment Team does not have any information on testing that supports high confidence that the partial strategy will work. **SG 100 is not met**.

c	**Management strategy implementation**			
	Guide post		There is **some quantitative evidence** that the measures/partial strategy is	There is **clear quantitative evidence** that the partial strategy/strategy is being

			being implemented successfully.	implemented successfully and is achieving its objective, as outlined in scoring issue (a).
	Met?		**Yes**	**No**
Rationale				

Scientists regularly monitor the condition of habitats in the Curonian Lagoon (AtlantNIRO, 2020a, 2020b). They note changes if they occur, for example, periods of eutrophication – "water bloom" and a possible subsequent decrease in oxygen in the water, which can be harmful to fish. Thus, there is some quantitative evidence that the partial strategy is being successfully implemented. **SG 80 is met**.

The assessment team is not aware of clear quantitative evidence that the strategy is being successfully implemented and is achieving its objective. **SG 100 is not met**.

d	**Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs**			
	Guide post	There is **qualitative evidence** that the UoA complies with its management requirements to protect VMEs.	There is **some quantitative evidence** that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	There is **clear quantitative evidence** that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	**NA**	**NA**	**NA**
Rationale				

Potential VMEs would be estuaries, sandbanks, reefs and macrophyte beds (see SI 2.4.1b). These are specifically avoided by fishers when setting gear and so no potential VMEs are relevant to any UoAs. As there are no interactions between the UoA and VMEs this SI is not relevant and not scored (**NA**).

References

- Fishing Act, 2004;
- Fisheries Rules, 2020;
- HELCOM, 2017.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	*More evidence needs to be obtained that fishing gear does not negatively impact on benthic communities and habitats.*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 2.4.3 – Habitats information – All UoAs

PI 2.4.3		**Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat**		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guide post	The types and distribution of the main habitats are **broadly understood**. **OR** **If CSA is used to score PI 2.4.1 for the UoA:** Qualitative information is adequate to estimate the types and distribution of the main habitats.	The nature, distribution and **vulnerability** of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA. **OR** **If CSA is used to score PI 2.4.1 for the UoA:** Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.	The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The fishery of fixed gillnets in the Curonian Lagoon has little impact on the habitats in comparison to active fishing gears. Biological, chemical and physical data provide evidence. Research institutes carry out multilateral research programs. Surveys provide baselines and have described habitat and ecosystem data at least since 1950s. Historical data include information about bottom sediments, benthos, phyto- and zooplankton, invertebrates, egg and ichthyoplankton, juveniles, adult fish, marine mammals and other species. Ecological studies about community structure and trophic relationships help evaluate related habitat stability and change. The distribution of benthic habitats and communities in UoAs are known (see Section 7.3.10). The overall habitat types are therefore well understood and monitored to evaluate status and trends. Therefore, the nature, distribution and vulnerability of the main habitats in the UoAs area are known at a level of detail relevant to the scale and intensity of the UoAs. **SG 60 and SG 80 are met.**

The assessment team is not aware of the mapping of biotopes in the fishing grounds. **SG 100 is not met.**

b	**Information adequacy for assessment of impacts**			
	Guide post	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear. OR **If CSA is used to score PI 2.4.1 for the UoA:** Qualitative information is adequate to estimate the consequence and spatial	Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear. OR **If CSA is used to score PI 2.4.1 for the UoA:** Some quantitative information	The physical impacts of the gear on all habitats have been quantified fully.

		attributes of the main habitats.	is available and is adequate to estimate the consequence and spatial attributes of the main habitats.	
	Met?	**Yes**	**Yes**	**No**
Rationale				

The types of biotopes in the fishing area are known, there is reliable information about the time and place of setting fishing gears. The impact of the fixed gillnets on bottom biotopes is known. It is insignificant and incomparably less than the impact of natural processes. Sufficient information is available to determine that fishing activities are not significantly affecting habitats. Fishermen in accordance with the Fishing Rules (2020) must report the loss of fishing gear to the WB TA of the FFA and take measures so lost fishing gear did not stay in the water. **SG 60 and SG 80 are met**.

There is no complete and detailed quantified information on the spatial distribution of biotopes, the state of biocenoses and the impact of fishing gears on them. **SG 100 is not met.**

c	**Monitoring**			
	Guide post		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in all habitat distributions over time are measured.
	Met?		**Yes**	**No**
Rationale				

Habitat risks of fishing can be assessed based on the number and location of fishing gears that are licensed and regulated by the government bodies. Fishermen are required to provide information on the fishing gear, the composition of the catch and the fishing area in which the catch was made. The fishery in the Curonian Lagoon is regularly visited by the state inspection, which monitors the impact of the fishery on the fishery area. In case of violations, the fisherman is fined. This is enough to detect threats to the habitat from fishing. **SG 80 is met**.

There is no evidence that changes in all habitat distributions over time are measured. **SG 100 is not met**.

References

- AtlantNIRO, 2020a, b;
- Fishing Rules, 2020.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	*More evidence needs to be obtained within site visit that fishing gear does not negatively impact benthic communities and habitats.*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 2.5.1 – Ecosystem outcome – All UoAs

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Ecosystem status			
	Guide post	The UoA is **unlikely** to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is **highly unlikely** to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	**Yes**	**Yes**	**No**
Rationale				

In the Curonian Lagoon and the Baltic Sea at whole, extensive ecosystem studies have been carried out over the past more than 3 decades. And studies of the community structure of the ecosystem: phyto- and zooplankton, forage benthos, AtlantNIRO and other research institutes have been conducting since the 1950s (Krylova, 1984; Rudinskaya, 1994; Osadchy, 2000; Golubkova, 2003; Telesh, 2006; Zolubas *et al.*, 2014, etc.). Therefore, the role of the target species – pike-perch and perch in the ecosystem of the Curonian Lagoon is well studied, as well as the main driving forces of the ecosystem dynamics.

Fishing in the Curonian Lagoon has a long history. And in recent decades, the stocks of target species and main species (bream, sabrefish, roach and white bream, some water birds) have been well studied, they are monitored and models are used to assess their stocks and establish TAC, reference points are determined, a fishing strategy based on the HCRs is applied (AtlantNIRO, 2020a), and the very removal of these species is regulated through the Fishing Rules (2020) and is controlled by government bodies.

The main impact of the fisheries on the ecosystem of the Curonian Lagoon is the removal of the target and main fish species. Their stocks are considered to be in good condition (as discussed in PI 1.1.1, 2.1.1 and 2.2.1 – for both UoAs), and the impact of the UoAs on other components of the ecosystem, such as ETP species and habitats, is considered minimal (See discussion of components in PIs 2.3 and 2.4), bearing in mind that passive fishing gear is used. Thus, the key ecosystem element considered here will be the trophic structure of the Curonian Lagoon and how it might be affected by the removal of the target species and the main species. The share of the target species caught is less than 20% of the total catch with gillnets (Table 23). But pike-perch are predators and their numbers (of fam. Scorpaenidae) are not very high, compared to Cyprinids, which are phyto- and benthophages and their stocks are higher. Compared to the fishery for smelt and ruffe in the Lagoon, as well as for herring in general in the Baltic Sea, the fishery in UoAs is insignificant, but it should be noted that predatory species regulate the abundance of other species and a decrease in their abundance can lead to an imbalance in the ecosystem at whole.

Comprehensive monitoring of environmental variables with high spatial resolution has been organized in the Baltic Sea. Intensive fishing of many species in some of its regions has already led to a decrease in the number of some species of fish – eel, pike, Baltic salmon and others. But it is known that eutrophication, chemical pollution, introduced species and climate change more significantly affect the ecosystem of the Baltic Sea than commercial fishery (Boedeker *et al*., 1998).

It is unlikely that the UoAs will disrupt key elements underlying the structure and function of an ecosystem to the point that it can cause serious or irreversible damage. **SG 60 and SG 80 are met**.

Despite of observation of fishery data, ecosystem structure, trophic relationships and other ecological aspects, there is no conclusive evidence that the UoA are highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. **SG 100 is not met**.

References

- AtlantNIRO, 2020a;
- Boedeker *et al*., 1998;
- Fishing Rules, 2020;
- Golubkova, 2003;
- Krylova, 1984;
- Osadchy, 2000;
- Rudinskaya, 1994;
- Telesh, 2006;
- Zolubas *et al.*, 2014.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 2.5.2 – Ecosystem management strategy – All UoAs

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place, if necessary which take into account the **potential impacts** of the UoA on key elements of the ecosystem.	There is a **partial strategy** in place, if necessary, which takes into account **available information and is expected to restrain impacts** of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a **strategy** that consists of a **plan**, in place which contains measures to **address all main impacts of the UoA** on the ecosystem, and at least some of these measures are in place.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The management of the fishery in the Russian part of the Curonian Lagoon in the Baltic Sea is associated with the achievement of a good ecological status in the Baltic Sea as a whole. Management measures specific to Russian fisheries for key ecosystem elements are set out in the Federal Laws: On Fishery and conservation of aquatic bioresources (Fishing Act, 2004), On Environmental Conservation (2002), On Wildlife (1995), On the Territorial waters… (1998), Fishing Rules (2020) and others. These measures are aimed at ensuring the sustainability of fisheries. There are several technical measures to minimize the bycatch of fish species, that can play an important role in ecosystem structure and function; there are closed areas and time periods for either all fisheries or some fisheries. The features of the gear (fixed gillnets – passive) should minimize the impact on benthic habitats. All these measures are applied as needed. **SG 60 is met.**

These measures combined also constitute a partial strategy that also includes monitoring and researching marine ecosystems on a global scale to study the role of species in these ecosystems. The strategy considers all the accumulated scientific information; keeps track of new data obtained as a result of annual surveys of AtlantNIRO (2020a, b). **SG 80 is met**.

There is no clear plan describing the strategy in general for all types of fisheries in the Russian part of the Curonian Lagoon, including in cooperation with the part of the lagoon related to the Republic of Lithuania, and there is no separated plan which could relate specifically to the management of the fixed gillnet fishery. **SG 100 is not met.**

b	**Management strategy evaluation**			
	Guide post	The **measures** are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar UoAs/ ecosystems).	There is **some objective basis for confidence** that the measures/ partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved.	**Testing** supports **high confidence** that the partial strategy/ strategy will work, based on information directly about the UoA and/or ecosystem involved.
	Met?	**Yes**	**Yes**	**No**
Rationale				

Ecosystem impacts are primarily controlled through specific measures implemented in the fishery by Fishing Rules (2020), Rules of Fisheries Regulations for TAC' species (Methodical recommendations…, 2018; AtlantNIRO, 2020a). Part of the scientific advice process, undertaken annually through Basin and regional Fisheries councils, is to revise the annual fisheries advice in an ecosystem-aware manner. Data for ecosystem studies is collected on a regular annual basis. The data on the main components of the ecosystem suggest that key ecosystem functions have not been critically disrupted by fishing over years. This provides some objective basis for confidence that the partial strategy will work. **SG 60 and SG 80 are met**.

The partial strategy described in scoring issue has not specifically been tested in relation to UoAs effects on the ecosystem. **SG 100 is not met**.

c	**Management strategy implementation**			
	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is **clear evidence** that the partial strategy/strategy is being **implemented successfully and is achieving its objective as set out in scoring issue (a).**
	Met?		**Yes**	**No**
Rationale				

The fishery is monitored, and scientific organizations make suggestions for improving. This is provided evidence that the UoAs implement all the requirements in terms of gear, bycatch, closed seasons and areas, etc. The ecosystem data available suggest that the key ecological function of the system has not been critically impaired over many years of fishing during which the data were collected. Therefore, some evidence suggests that the partial strategy is being implemented successfully. **SG 80 is met**.

There is no clear evidence that the implementation of all aspects of the strategy is successful and is achieving its objective. **SG 100 is not met**.

References

- AtlantNIRO, 2020a, b;
- Federal Law On Wildlife, 1995;
- Federal Law On the Territorial waters, 1998;
- Federal Law On the Environmental Conservation, 2002;
- Fishing Act, 2004;
- Fishing Rules, 2020;
- Methodical recommendations…, 2018.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 2.5.3 – Ecosystem information – All UoAs

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guide post	Information is adequate to **identify** the key elements of the ecosystem.	Information is adequate to **broadly understand** the key elements of the ecosystem.	
	Met?	**Yes**	**Yes**	
Rationale				

Information is adequate to identify and broadly understand the key elements of the ecosystem. Key elements of brackish water ecosystems of Baltic Sea have been good studied by fisheries science and the world scientific community, the results of these studies are regularly published and discussed. Ecosystem studies include the functions of the main elements of ecosystems in the Baltic Sea at whole (food supply, predators, competitors, etc.), species composition of communities, productivity patterns, and quantitative characteristics of biodiversity. In relation to the UoAs, the information available on the fixed gillnet fishery as a whole has been sufficient to identify the main ways that the fishery of the perch and pike-perch in the Curonian Lagoon interacts with the ecosystem (see Section 7.3.11). **SG 60 and SG 80 are met.**

b	**Investigation of UoA impacts**			
	Guide post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but **have not been investigated** in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and **some have been investigated in detail**.	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and **have been investigated in detail**.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The level of fish removals (both RAC and TAC species) is routinely monitored and evaluated by the AtlantNIRO. Quotas are set to subject to precautionary management levels to prevent over-exploitation of all main commercial species and monitored. Changes in the status of stock biomass can be monitored through time to understand the main impacts of the fishery on fish abundance. Over the past decades, a large amount of data has been accumulated on the structure, trophic relationships, and functions of Baltic Sea ecosystems including Curonian Lagoon, and the role of coastal fish in this structure (Krylova, 1984; Rudinskaya, 1994; Khlopnikov *et al*., 1998; Osadchy, 2000; Golubkova, 2003; Telesh, 2006; Zolubas *et al.*, 2014, etc.). **SG 60 and SG 80 are met.**

There is no strong evidence that main interactions between the UoAs and these ecosystem elements can be inferred from existing information and have been investigated in more detail. **SG 100 is not met.**

c	**Understanding of component functions**			
	Guide post		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the

			are **known**.	ecosystem are **understood**.
	Met?		**Yes**	**No**
Rationale				

Many studies have been carried out in ecosystem of Baltic Sea, and in the Curonian Lagoon in particular (Krylova, 1984; Rudinskaya, 1994; Khlopnikov *et al*., 1998; Osadchy, 2000; Golubkova, 2003; Telesh, 2006; Zolubas *et al.*, 2014, etc.). Therefore, target species, main primary and secondary and ETP species, sensitive habitats are identified, their role in the ecosystem (diets, relationships between predators and forage, etc.) are well known. A significant amount of long-term data has been accumulated from ecosystem surveys that provide adequate information on the impacts of fishing in the Units of Assessment on the components and elements of the ecosystems, which allows conclusions to be drawn about the possible major impacts on these ecosystems. **SG 80 is met.**

Additional information is required to achieve SG 100 because productivity and trophic models are needed for recent years. **SG 100 is not met.**

d	**Information relevance**			
	Guide post		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components **and elements** to allow the main consequences for the ecosystem to be inferred.
	Met?		**Yes**	**No**
Rationale				

The main primary and secondary species and ETP species are preliminary defined in the UoAs. Scientists have understanding of diets, life cycles, and habitat for these species. Moreover, in cases where diets and habitat overlap, there is consensus that there is enough food, in the form of zooplankton and benthos, to support healthy populations of these stocks. Scientists have a general understanding of factors affecting the ecosystem. We assume that adequate information is available on the impacts of the UoAs to allow some of the main consequences for the ecosystem to be inferred. **SG 80 is met**.

Information is not sufficient to evaluate fishery impacts on all ecosystem elements. **SG 100 is not met.**

e	**Monitoring**			
	Guide post		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
	Met?		**Yes**	**No**
Rationale				

Data continues to be collected by various research organizations, primarily AtlantNIRO. AtlantNIRO annually conducts studies of the fish biomass of most fish species in the Curonian Lagoon on the basis of three accounting surveys on a long-term grid of stations, carried out by a survey trawl, a trawl for catching juvenile fish, a ruffe seine, along the way, plankton and benthos are collected on a regular basis (Golubkova, 2003; Safronova, 2018; AtlantNIRO, 2020a, b). Consequently, **SG 80 is met**.

The team believes that there is a large amount of information about the Curonian Lagoon however, it is not sure if this information is sufficient to develop strategies to fully manage the impacts of the fishery on the Lagoon ecosystem, considering other external influences as well. **SG 100 is not met**.

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- AtlantNIRO, 2020a, b;
- Golubkova, 2003;
- Khlopnikov *et al*., 1998;
- Krylova, 1984;
- Osadchy, 2000;
- Rudinskaya, 1994;
- Safronova, 2018;
- Telesh, 2006;
- Zolubas *et al.*, 2014.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

7.3.14 Principle 2 references

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7.4 Principle 3

7.4.1 Principle 3 background

(Note – all hyperlinks provided in the following sections were accessed successfully in August 2021).

7.4.1.1 Governance and Policy

The Curonian Lagoon (in Russian: Куршский залив / in Lithuanian: Kuršių marios) is a Baltic Sea lagoon with an area of approximately 1,584 km^2. It is separated from the sea by the Curonian Spit. The lagoon is shared between the Russian Federation (Kaliningradskaya Oblast) and the Lithuanian Republic (Figure 41a). The Curonian Lagoon is divided into 3 parts:

1) the northern part (which belongs to Lithuania) where water exchange between the Baltic Sea and the lagoon is more active, in addition to the river runoff,

2) the intermediate part (belongs to Lithuania and Russia) where water is less transitory, and

3) the southern part (which belongs to Russia) where water is stagnant and characterized by fine sediment and poor water renewal (Zolubas *et al*., 2014). The border between the two countries divides the lagoon into a northern part belonging to Lithuania with approximately 413 km^2 and the southern part leaves the bigger area to Russia of about 1,171 km^2 (Zolubas *et al*., 2014).

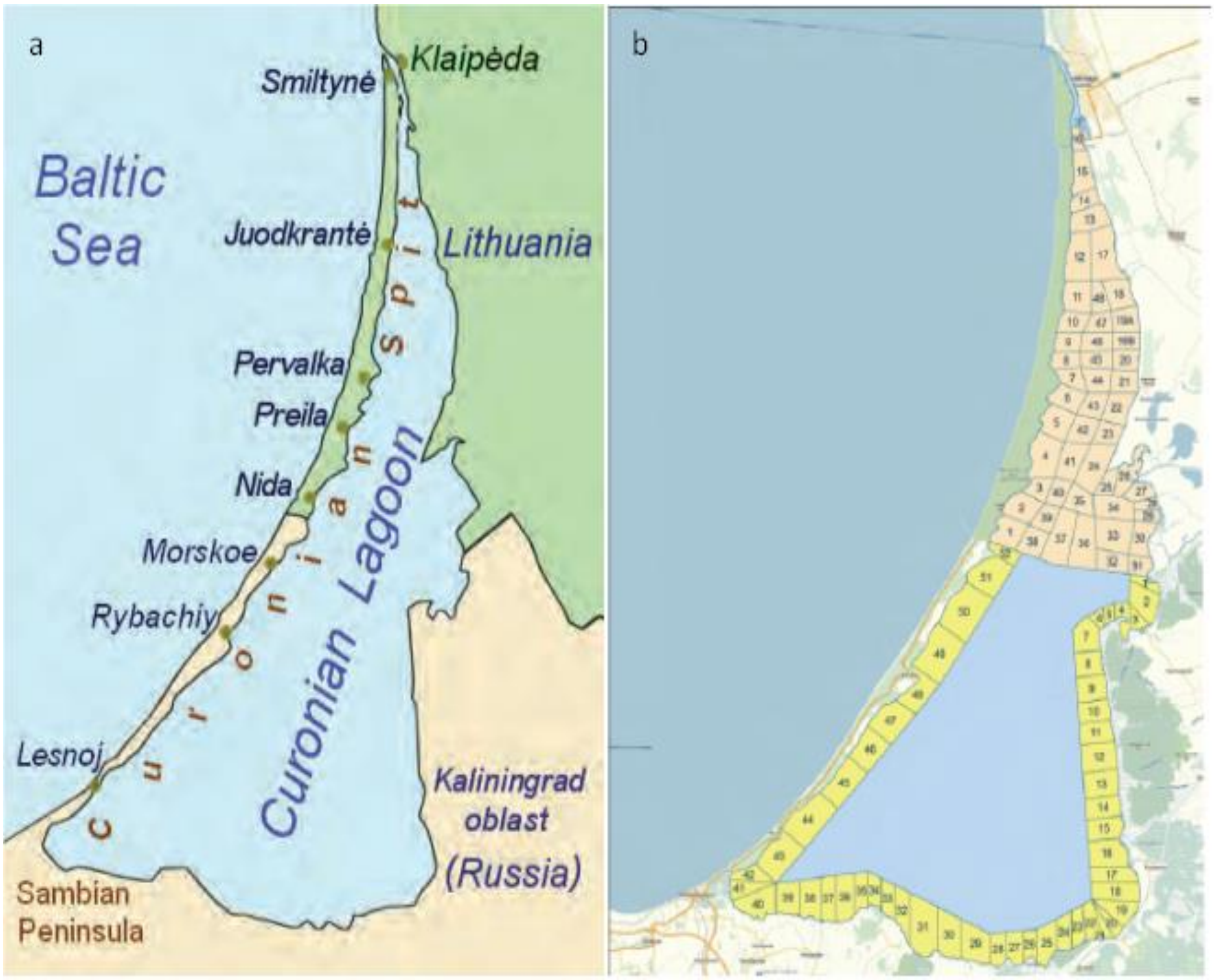

Figure 41 – Map of the Curonian Lagoon (**a**) and Fishing sites in the Lithuanian and Russian parts (**b**) (Source: Zolubas *et al*., 2014).

Since the middle of nineteens, fishing is not allowed, according to an agreement, for Russian fishermen on the Lithuanian side and vice versa (Zolubas *et al*., 2014). The fishery under assessment takes place only on the Russian side of the lagoon. There are 52 fishing sites on the Russian part and 31 fishing sites in the Lithuanian part of the Curonian Lagoon (Figure 41b).

The fishery is managed at national level in Russia and under the Russian–Lithuanian framework of agreements. Therefore the Russian's management system relating to fisheries should be considered, taking into account the details for fishery-specific management at transboundary level according to the binding agreements with Lithuania.

7.4.2 Legal and/or customary framework

7.4.2.1 National of Russian Federation

The Russian federation consists of various levels of autonomy with its centralized authority represented by the federal government in Moscow, where final decisions are made. In Russia, fisheries management has developed since the rupture of the former USSR. Similarly, the fisheries management system consists of different levels of authority for management and research, also with final decisions centralized in Moscow.

Russian fisheries management has a federal body and regional offices in Russia's eight fishery regions (basins): 1) the Far Eastern, 2) the Northern, 3) the Western, 4) the Black and the Azov Seas, and 5) the Baikal 6) the Volga-Caspian, 7) the East Siberian and 8) West Siberian (Source: http://fish.gov.ru/territorialnye-upravleniya).

The Federal Fisheries Agency (FFA or in Russian: Rosrybolovstvo / Росрыболовство) is by far the most important fisheries management body in Russia. By Presidential Decree No. 724 on 12 May 2008, the FFA replaced the pre-existing State Committee for Fisheries under the Ministry of Agriculture. The FFA has been directly submit to the Government, but due to some changes in the Russian Government structure (May 2012), the FFA is now subordinate to the Ministry of Agriculture. In other words, the FFA is an implementing authority of the decisions that are made by the Ministry of Agriculture (Source: http://fish.gov.ru/).

In the Russian management system there is no explicit environmental policy that refers directly to fisheries. A number of Federal laws and regulations are in place, instead of a specific policy, to protect the environment and fisheries resources.

The Federal Law "**On Fishery and Protection of Aquatic Biological Resources**" (2004) (Source: https://legalacts.ru/doc/federalnyi-zakon-ot-20122004-n-166-fz-o/), with reviewing and additional, entry in force from 14.06.2020, is the overarching framework for fishery regulation in Russia. The main goals and objectives for the fishery sector are not clearly defined in the regulatory documents. This law defines Total Allowable Catch (TAC) levels for fishery stocks as "*scientifically justified annual catch of aquatic biological resources of particular species in a fishing area*" (**Article 1.12**). It also states the protection and conservation of aquatic biological resources "*regulation of relationship in the field of fishery and conservation of aquatic biological resources is performed on the basis of perceiving them as a natural entity, protected as most important component of Nature, a natural resource, used by human being for human consumption and also a basis of performing economic and other activities, and, at the same time as a property right object*" (**Article 2.1**). The Law also argues "*priority of conservation and rational use of aquatic bio-resources over the use of bio-resources as property right objects*" (**Article 2.2**). Besides TAC setting for industrial fishery, all categories of fisheries are regulated by so-called Fishing Rules "Pravila rybolovstva / Правила рыболовства", which are set separately for several major areas or basins. These Fishing rules sets management measures to regulate the condition of fishery in particular areas and specify fishing closures, gear regulation, minimum allowable size of commercially caught specimens of particular species, and allowable bycatch of non-target species (**Articles 16.2** and **16.3** of Fishing Rules, 2014). The Law also gives a definition of a fishing unit area "rybolovnyy uchastok / Рыболовный участок" and sets general principles of their use (**Articles 18** of Federal Law). Compiling lists of fishing unit areas is delegated to regional authorities. The fishing rules for the Western fisheries basin (approved by order dated October 21, 2020 N 620) are found at (Source: https://docs.cntd.ru/document/573191354#6500IL).

Supporting pieces of primary legislation to the Federal Law (2004), include:

The Law of the Russian Federation "**On the Animal World**" **(1995)** (Source: https://www.ecolex.org/details/legislation/federal-law-of-the-russian-federation-on-wildlife-no-52-fz-of-1995-lex-faoc022375 – Federal Law of the Russian Federation on Wildlife, No. 52-FZ of 1995) stipulates that animal organisms inhabiting the territorial seas, the internal marine waters, the continental shelf and the EEZ of the Russian Federation, those migrating between two or more administrative regions, and those subject to international agreements, are federal property. Therefore, it is a responsibility of the federal institutions to manage, monitor and enforce marine fisheries. It also sets the general requirements for TAC setting to harvest the kinds of the Animal World are defined in this law. Also the law declares a conservation priority in case the fishery affects endangered species listed in the Red Data Book of the Russian federation.

Order of the State Committee for Ecology of the Russian Federation of December 19, 1997 No. 569 (as amended on April 28, 2011) "**On the approval of lists of objects of the animal world listed in the Red Book of the Russian Federation and excluded from the Red Book of the Russian Federation**" approves the lists of the Red Book lists (Source: http://base.garant.ru/2156180). Also states that the Biodiversity Conservation Directorate shall ensure the reproduction and distribution of these Lists to interested federal executive bodies, executive bodies of the constituent entities of the Russian Federation, regional environmental authorities, scientific and other organizations for management and enforcement.

The two Federal Laws "**On the Continental Shelf of the Russian Federation**" **(1995)** (Source: http://extwprlegs1.fao.org/docs/html/rus21902E.htm) and "**On the Exclusive Economic Zone of the Russian Federation**" EEZ **(1998)** (Source: https://www.ecolex.org/details/legislation/federal-law-no-191-fz-of-1998-on-the-exclusive-economic-zone-lex-faoc027457) set the principles of sovereign rights and jurisdiction of the Russian Federation over the aquatic biological resources found on the Continental Shelf and the EEZ of the Russian Federation, and provided general regulation for scientific research including the fishery research.

The Federal Law "**On Protection of the Environment**" **(2001)** (Source: https://rg.ru/2002/01/12/oxranasredy-dok.html) defines the legal basis for state policy in the field of environmental protection, ensuring a balanced solution of socio-economic tasks, maintaining a favourable environment, biological diversity and natural resources in order to meet the needs of present and future generations, strengthen the rule of law in the field of environmental protection and ecological safety. It has a number of articles related to fisheries impact on the environment. The (**Article 5**) defines the procedure of state control and monitoring in the field of environmental protection on objects of economic activities (e.g. fishing), including cross-border environmental pollution that have a negative impact on the environment within the territory of the Russian Federation. The (**Article 15**) defines how the development of federal programs in the field of environmental protection of the Russian Federation should be based on the proposals of citizens and public organizations. Legal entities and individual entrepreneurs engaged in economic and other activities (e.g. fishing) that have a negative impact on the environment are required to plan, develop and implement measures for environmental protection in the manner prescribed by law.

The fishing rules for the Western fisheries basin (approved by order dated October 21, 2020 N 620) are found at (Source: https://docs.cntd.ru/document/573191354#6500IL). Further federal laws can be found at the website of Zapadno-Baltiyskoe Territorial Administration of the Federal Fisheries Agency (Source: http://zbtu39.ru/federalnye-zakony/).

7.4.2.2 Lithuanian fisheries legal framework

On the other side of the Lagoon, the main legal framework for fisheries in Lithuania is the Lithuanian fisheries law 2000 June 27 No. VIII-1756 (Source: https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.104591/asr). The law regulates relations in the fishing, aquaculture, fish processing and market areas. The objectives of the law are to ensure sustainable exploitation of fish stocks, its conservation and replenishment, as well as to ensure fisheries control, taking into account the environmental and economic aspects, as well as fishermen's, fish farmers', processors' and consumers' views. The law is applicable to the land territory of the Republic of Lithuania, internal waters, territorial waters, the exclusive economic zone, as well as to the Lithuanian fishing vessels in the sea waters (Zolubas *et al*., 2014). The rights and obligations of the fisheries resources users are specified in the second section of the Law. While the fourth section is dedicated to inland fisheries, the commercial fishing in the sea is outlined in section 5 and amateur fishing in section 6. The control of the fishing activity is specified in section 10, which outlines for example the specification of the implementation of the Common Fisheries Policy (CFP) (article 32), the systems used to ensure fisheries control (article 34), and the procedure for inspection of the activities (article 37). The provisions of this law are in line with European Union legislation. Lithuania is a Member State of the European Union (EU) since 1st of May 2004, and its fisheries are therefore managed according to the principles and guidelines of the EU's CFP:

1- Regulation (EU) No 182/2011 of the European Parliament and of the Council Amending Regulation (EC) No 1380/2013 on the Common Fisheries Policy and amending Council Regulations (EC) No. 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585 / EC (Source: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013R1380-20140101&qid=1410936936979&from=LT).

2- Regulation (EU) No 182/2011 of the European Parliament and of the Council Amending Regulation (EC) No 1379/2013 on the common organization of the markets in fishery and aquaculture products 1184/2006 and (EC) No 1224/2009 and repealing Council Regulation (EC) No 1224/2009 104/2000 (Source: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013R1379-20140101&qid=1410937232568&from=LT).

3- Regulation (EU) No 182/2011 of the European Parliament and of the Council Amending Regulation (EU) No 508/2014 on the European Maritime and Fisheries Fund and repealing Council Regulations (EC) No. Regulation (EC) No 2328/2003 (EC) No 861/2006 1198/2006 and (EC) No Regulation (EC) No 791/2007 of the European Parliament and of the Council 1255/2011 (Source: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0508&qid=1410937461321&from=LT).

Moreover, the order of the Minister of Agriculture of the Republic of Lithuania No. 3D-620 "on the approval of the procedure for granting, transferring, suspending, revoking and allocating individual fishing opportunities in the Baltic

Sea" sets out the procedure for granting transferable fishing opportunities in the Baltic Sea (Source: https://zum.lrv.lt/lt/veiklos-sritys/zuvininkyste/zuvininkystes-politika-zp/teisine-baze).

In Curonian Lagoon, fishing quotas are regulated by the order of the director of the ministry of agriculture of the republic of Lithuania of 24 January 2017 no. amendment V1-8 "On the approval of quotas for fishing in the Curonian Lagoon" and the order no. amendment V1-24 "On the approval of quotas granted by auction in the Curonian Lagoon" (Source: http://zuv.lt/index.php?2699376909).

7.4.3 Rights and dispute resolution

In Russia, quota distribution for fish stocks that are shared with other countries, as well as for exclusively Russian stocks is a responsibility of the Ministry of Agriculture and the FFA. Since 2019, fishing rights are allocated for 15 years, while previously they were given for 10 years. This extension was adapted to ensure stability for the fishing fleet and stimulate companies to invest in renewing ageing vessels. The allocation of quotas (fishing rights) in 2008 for a 10-year period was based on the historic catch of each applicant (fishing company) while the allocation in 2019 was based on the actual possession of the fishing rights (shares of fishing quotas) for stocks regulated with TACs at the moment of reallocation (both initially allocated fishing rights and acquired fishing rights in the period from allocation in 2008 to 2019). For stocks that are not regulated with TAC but with a Recommended Catch the fishing rights are provided on an annual basis.

Currently, this system is still used to give fishing rights to companies or individuals with good credit history, i.e. those, with proven long-term commitment for sustainable fishing. Moreover, in order to reduce the marginal companies in the Russian fishing sector, a minimum threshold level was also introduced for different types of gears and categories of vessels. Basically, if a company was not able to reach its corresponding quota it would be obligated to merge with another company, with a quota, aiming at achieving their threshold level and therefore to maintain their fishing rights and access to the fishery. If not, the company would be obligated to auction off its fishing rights to other fishing companies.

The rights of fishing dependent communities are also explicitly stated in the Federal Fisheries law 2004 "*taking into account the interests of the people living in coastal areas, including the indigenous peoples of the North, Siberia and the Far East of the Russian Federation, according to which they must be given access to aquatic biological resources to guarantee the vital activity of the population*" (**Article 2.1**). More in details, (**Article 25**) ensures the traditional way of life and the implementation of traditional economic activities, including fishing, of the indigenous peoples of the North, Siberia and the Far East of the Russian Federation (Source: https://rg.ru/2004/12/23/rybolovstvo-dok.html). Other pieces of legislation that guarantee the rights of fishing for indigenous peoples include: Federal Law of April 30, 1999 N 82-FZ "On Guarantees of the Rights of Indigenous Minorities of the Russian Federation" (Source: http://docs.cntd.ru/document/901732262), and Decree of the Government of the Russian Federation of March 24, 2000 N 255 "On the Unified List of Indigenous Minorities of the Russian Federation" (Source: http://docs.cntd.ru/document/901757631). Currently, indigenous minorities dependent on fishing are absent in the Curonian Lagoon.

Disputes at the national level are solved at the court system. In Russia, a transparent court system mechanism is provided to avoid and resolve disputes and issues arising between the fishing companies and inspectors. According to the **Federal Law of May 2, 2006 No. FZ-59** “On the Procedure for Considering Appeals of Citizens of the Russian Federation,” citizens have the right to apply in person, as well as to submit individual and collective appeals to state bodies, local self-government bodies, and officials (Source: http://base.garant.ru/12146661/). The procedures for the reception and consideration of citizen’s proposals and the rules for submission of appeals are specified in the official website of the FFA (Source: http://fish.gov.ru/obrashcheniya-grazhdan/poryadok-priema-i-rassmotreniya-obrashchenij-grazhdan). The Zapadno-Baltiyskoye TA of the FFA (see section 7.4.4.1) provides the opportunity for citizen proposals and the submission of appeals in the Kaliningrad Region (Source: http://zbtu39.ru/napisat-obrashhenie/).

The court considers cases that can be regarded as serious violations (for example, overfishing or unauthorized bycatch). The results of any disputes in the court system can be consulted at the website of the Federal Arbitration Courts of the Russian Federation (Федеральные арбитражные суды Российской Федерации) (http://www.arbitr.ru) as well as for the territorial level at the website of Arbitration Court of Kaliningrad Region (Арбитражный суд Калининградской области) (https://kaliningrad.arbitr.ru/). In practice, most disputes are resolved through the management system, which includes extensive formal and informal opportunities for interaction between fishing companies and other stakeholders with the authorities (for example, to resolve disputes, disagreements and conflicts between users, as well as between users and authorities).

In Lithuania, fishing rights are granted only to companies that are registered in the list approved by the Fisheries Service (see section 7.4.4.2). The number of fishing companies on this list cannot increase (Zolubas *et al*., 2014). The only possibility for a new company to enter this list is that another company is deleted from the list (Zolubas *et al*., 2014). The elimination of a fishing company from this list occurs when this company did not fish for more than two years or upon request from the company itself. The Fisheries Service allocates fishing quotas and the number of allowable fishing gear for companies. A fishing company is deprived of quotas: if it was stopped because of infringement of fishing rules or law, if it did not pay for damage done on fish resources, if it did not provide data to administration according to the law requirements, or if it did not pay tax for fish resources restoration and protection. The company, which received the right to use a number of fishing gears and fishing quotas, can apply to the Ministry of Environment for a fishing permit (Zolubas *et al*., 2014).

Disputes at transboundary level, between Russia and Lithuania, related to fishery are addressed in the Joint Russian-Lithuanian Fisheries Commission (JRLFC).

7.4.4 Roles and responsibilities

7.4.4.1 **National**

The roles and responsibilities of the Russian fisheries management organizations are presented below (Figure 42).

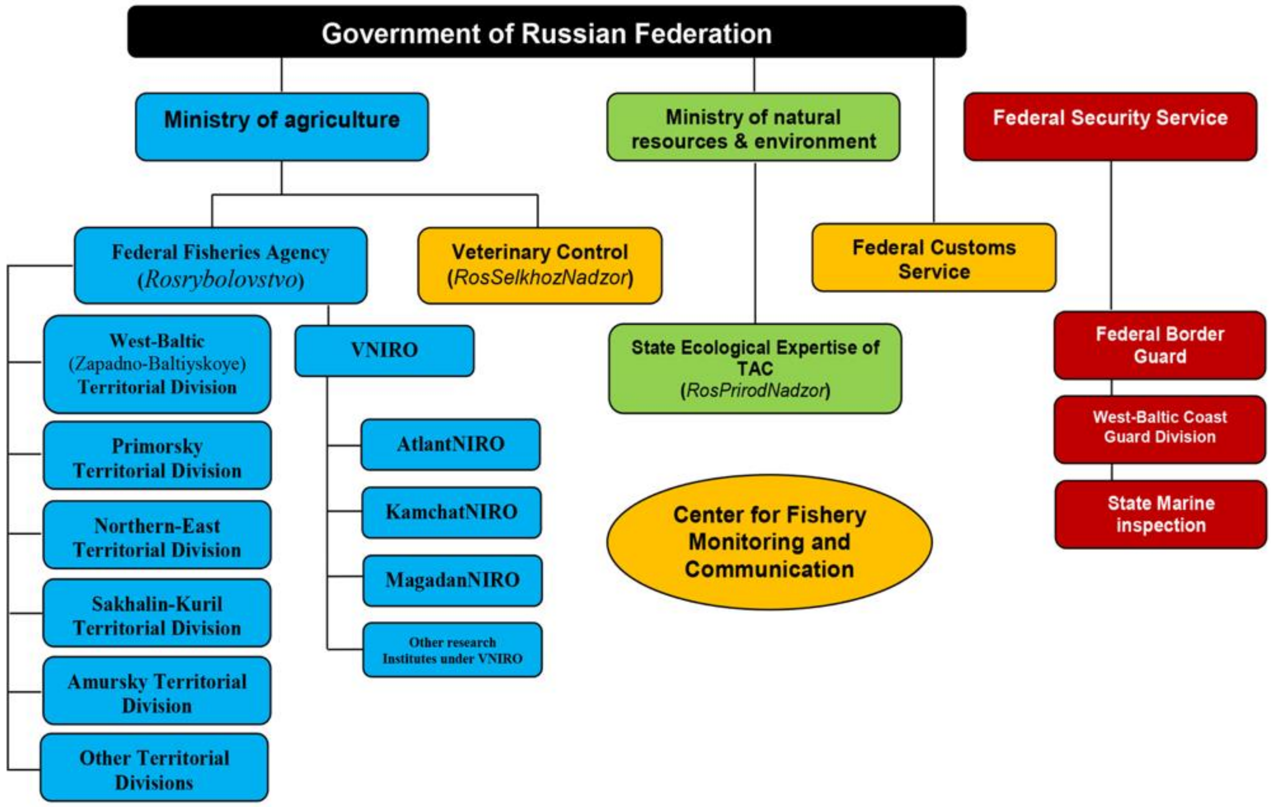

Figure 42 – Structure of the fishery management system in Russia.

The Ministry of Agriculture is responsible for developing policies on fisheries (Source: http://mcx.ru/), while the FFA act as its executive arm, in accordance with the Russian legislation, over the territory of Russia, the exclusive economic zone and continental shelf of Russia, as well as in those cases covered by Russia's international treaties, on the territory of foreign countries and open areas of the world's oceans. The FFA has regional branches which implement fishery regulations in its own region. The FFA maintains a central administration to ensure coordination of regional fishery management processes. Communication between regional branches and the FFA is an integrated process of continuous informal and formal procedures (Source: http://fish.gov.ru/).

By decrees and amendments, the main functions and roles of the FFA are:

- To develop laws, orders, and rules related to fishery management, all of which are issued by the Ministry of Agriculture;
- To manage the protection, rational use, study and reproduction of aquatic biological resources and their habitats;
- To perform fisheries control and enforcement functions;
- To promote scientific research and surveys of resources;
- To ensure that TACs (total allowable catches) and RCs (possible or recommended catches) are set for aquatic biological resources in Russian EEZ and internal waters;

- To deliver public services in the area of fisheries, conservation, sustainable use, study, preservation and reproduction of aquatic biological resources and their habitat;
- To arrange adequate observation and monitoring activities and manages the Centre for Fishery Monitoring and Communication (CFMC);
- To distribute TACs among various types of quota;
- To allocate quotas among fishing companies;
- To issue catch permits for companies and fishing vessels;
- To provide for safety and rescue operations on fishing grounds; and
- To coordinate activities related to ports and vessel maintenance.

In the Curonian Lagoon, the West Baltic Territorial Administration of the Federal Fisheries Agency (In Russian: Западно-Балтийское Территориальное управление Федерального агентства по рыболовству / Zapadno-Baltiyskoye Territorial'noye Upravleniye Federal'nogo Agentstva Po Rybolovstvu) (hereinafter Zapadno-Baltiyskoye TA) is the government branch subordinate to the Federal Fisheries Agency (Source: http://zbtu39.ru/). It exercises the FFA roles including fisheries management in Kaliningrad Region including Curonian Lagoon.

FSBI “Glavrybvod” Federal State Budgetary Institution “Main Basin Administration for Fisheries and the Conservation of Aquatic Biological Resources” (In Russian: ФГБУ "Главрыбвод" Федеральное государственное бюджетное учреждение «Главное бассейновое управление по рыболовству и сохранению водных биологических ресурсов») is the Institution for the conservation of aquatic biological resources that subordinates to FFA (Source: https://glavrybvod.ru/). It has 27 branches all around the Russian Federation (Source: https://glavrybvod.ru/filialy/). The Kaliningrad branch of FSBI Glavrybvod (In Russian: Калининградский филиал ФГБУ "Главрыбвод") is the branch subordinates to the Zapadno-Baltiyskoye TA which includes the Kaliningrad oblast (region) with Curonian Lagoon under its zone of activities. The objectives and main activities of the branch are:

- The conservation of aquatic biological resources in accordance with the legislation of the Russian Federation through the implementation on the basis of scientific data of measures for the study, reproduction, rational use of aquatic biological resources and their environment.
- Ensuring state accounting and state monitoring of aquatic biological resources.
- Implementation of measures to restore aquatic biological resources and their habitats disturbed as a result of natural disasters and for other reasons.
- Participation in the implementation of international treaties and agreements of the Russian Federation in the field of fisheries and fisheries.

To fulfil its statutory goals in the established field of activity, the Federal State Budgetary Institution in accordance with the legislation of the Russian Federation carries out the following main activities:

- Implementation of state work on the state monitoring of aquatic biological resources.
- Implementation of government work on the artificial reproduction of aquatic biological resources.
- Consideration of materials and the issuance of conclusions on the assessment of the impact on aquatic biological resources and their habitat.
- Implementation of state work on fishery reclamation of water bodies.
- Implementation of state work on the acclimatization of aquatic biological resources.

The Federal Security Service of the Russian Federation (hereinafter FSB) (In Russian: федеральной службы безопасности) through its Border Guard Department of the FSB of Russia in the Western Arctic area (In Russian: Пограничная служба ФСБ России) is a control and enforcement body responsible for, within the limits of its authority and among other functions, the protection and safeguard of the border territory, the exclusive economic zone and the continental shelf of the Russian Federation, as well as state control in the field of protection of marine biological resources regarding transboundary fish species and highly migratory fish species in the open sea, in accordance with the existing treaties of the Russian Federation (Source: http://www.fsb.ru/ and http://ps.fsb.ru/).

Federal Service for Veterinary and Phytosanitary Surveillance (In Russian: Rosselkhoznadzor / Россельхознадзор) submits to the Ministry of Agriculture of the Russian Federation (Source: http://www.fsvps.ru/). It is the federal organ of executive power, carrying out functions on control and supervision in the field of veterinary science. It establishes and lifts phyto-sanitary quarantine zones, controls the use of pesticides and agrochemicals, maintains soil fertility. It is also responsible for protection, reproduction and use of animal resources and aquatic biological resources, and it also carries out the functions on protecting the population from animal infectious diseases.

The Federal Service for Supervision of Nature Management (In Russian: Rosprirodnadzor / Росприроднадзор) is a federal government body whose main responsibilities are to ensure rational, uninterrupted and environmentally safe use. It monitors and battles violations and illegal actions causing negative effects on the environment (Source: http://rpn.gov.ru/).

Furthermore, the All-Russian Research Institute of Fisheries and Oceanography (In Russian: Всероссийский научно-исследовательский институт рыбного хозяйства и океанографии) (VNIRO/ВНИРО) is the leading research institute of the fisheries industry that coordinates implementation of fishery research plans and programs ensuring the efficient operation of all fishery research organization in the Russian Federation (Source: http://www.vniro.ru/ru/). The Atlantic branch of the Federal State Budget Scientific Institution "Russian Federal Research Institute of Fisheries and oceanography" (AtlantNIRO) (In Russian: Атлантический филиал федерального государственного бюджетного научного учреждения «Всероссийский научно-исследовательский институт рыбного хозяйства и океанографии» (АтлантНИРО)) is the branch of VNIRO scientific institution responsible for fisheries research and management studies in the Baltic Sea including Curonian Lagoon (Source: https://atlantniro.ru/).

Kaliningrad Union of Fishing Collective Farms (in Russian: Калининградский областной Союз рыболовецких колхозов) is an association of fishermen in Kaliningrad responsible for representing their interests on the federal and regional level (Source: https://www.rucompany.ru/company.php?id_company=133). It was formed on July 21, 1947 by a resolution of the USSR council of ministers. Its main goal is to defend fishermen rights and interests, resolve disputes and conflicts, organize legal, technological, methodological and other support for their enterprises.

7.4.4.2 Lithuanian fisheries management

The fisheries law stipulates the institutions that execute state fisheries regulations in Republic of Lithuania. The Ministry of Agriculture is responsible for the Lithuanian fisheries management which organises, coordinates and controls its implementation, it manages the state fisheries, and adopts the CFP. In addition, both the Ministry of agriculture and the Ministry of Environment organise, coordinate and control the conservation of fish resources in inland waters (Zolubas *et al*., 2014).

The Fisheries Service under the Ministry of Agriculture (hereinafter referred to as the Fisheries Service), is the main governmental body responsible for fisheries management (Figure 43) (Source: http://zuv.lt/). It has 7 state aquaculture units, prepares annual state fish stocking plans in accordance with scientific recommendations and presents them to the Ministry of Environment for evaluation. Afterwards, the plan is harmonized between the institutions and the Minister of Agriculture for approval (Zolubas *et al*., 2014).

The Fisheries Service is the authority responsible for:

- Acceptance of preliminary notifications regarding the planned arrival of third country fishing vessels to Klaipeda State Seaport;
- Inspection of landing and transhipment operations of third country fishing vessels in Klaipeda State Seaport;
- Inspection of landing and transhipment operations of ships of the European Union Member States in Klaipeda State Seaport in accordance with Regulation (EU) No. 640/2010;
- Preparation of ICCAT bluefin tuna catch document forms in accordance with Regulation (EU) No. 2371/2002 640/2010 for fishing vessels flying the flag of the Republic of Lithuania;
- Approval of catch certificates, statistical documents, catch documents and catch documents issued for export to third countries of fishery products caught by fishing vessels flying the flag of the Republic of Lithuania, as well as their annexes and copies and submission of copies of these documents to the European Commission and other interested institutions and organizations;
- Granting of the status of approved economic operator;
- Coordination of the collection and inspection of information on the activities of national entities engaged in or supporting illegal, unreported and unregulated fishing and reporting to the European Commission;

The Data Collection Program (DCP) is implemented by the Ministry of Agriculture of the Republic of Lithuania together with the Fisheries Service (Source: http://zuv.lt/), Klaipėda University and SE Agricultural Information and Rural Business Center (hereinafter referred to as ŽUIKVC) (Source: https://www.vic.lt/). The Fisheries Service, Klaipėda University and ŽUIKVC are responsible for the implementation of the DCP functions assigned to them, i.e. collection and processing of primary data, checking the quality and completeness of the collected and aggregated data transmitted from them to the ministry's DCP coordinator (Source: https://zum.lrv.lt/lt/veiklos-sritys/zuvininkyste/zuvininkystes-politika-zp/duomenu-rinkimo-programa-drp).

The Ministry of Agriculture acts as the DCP coordinator at the national level, i.e. responsible for coordinating the preparation of the DCP annual work plans, coordinating the scientific and technical aspects of the DCP, liaising, monitoring and administering financial flows, and exchanging data with the European Commission.

The Fisheries Service collects and manages recreational fishing data on the annual catches and weights or lengths of catches of Baltic fish species (only cod, salmon, sea trout and eels) and the number of fish released in the Baltic Sea and Lithuanian inland waters, as well as incidental fishing. Also, data on incidental bycatches of birds, mammals, reptiles and species protected by Union legislation and international that recorded during scientific observation fishing vessels (if any) or recorded by fishermen themselves in logbooks; and data to assess the activities of Union fishing vessels in European Union and non-Union waters.

ŽUIKVC collects and processes economic and social data.

Klaipeda University collects and manages biological data of the fisheries sector from commercial fishing, data on variables in various fields, data on the impact of the fisheries sector on the marine ecosystem, conducts research on fish stocks and other scientific research at sea.

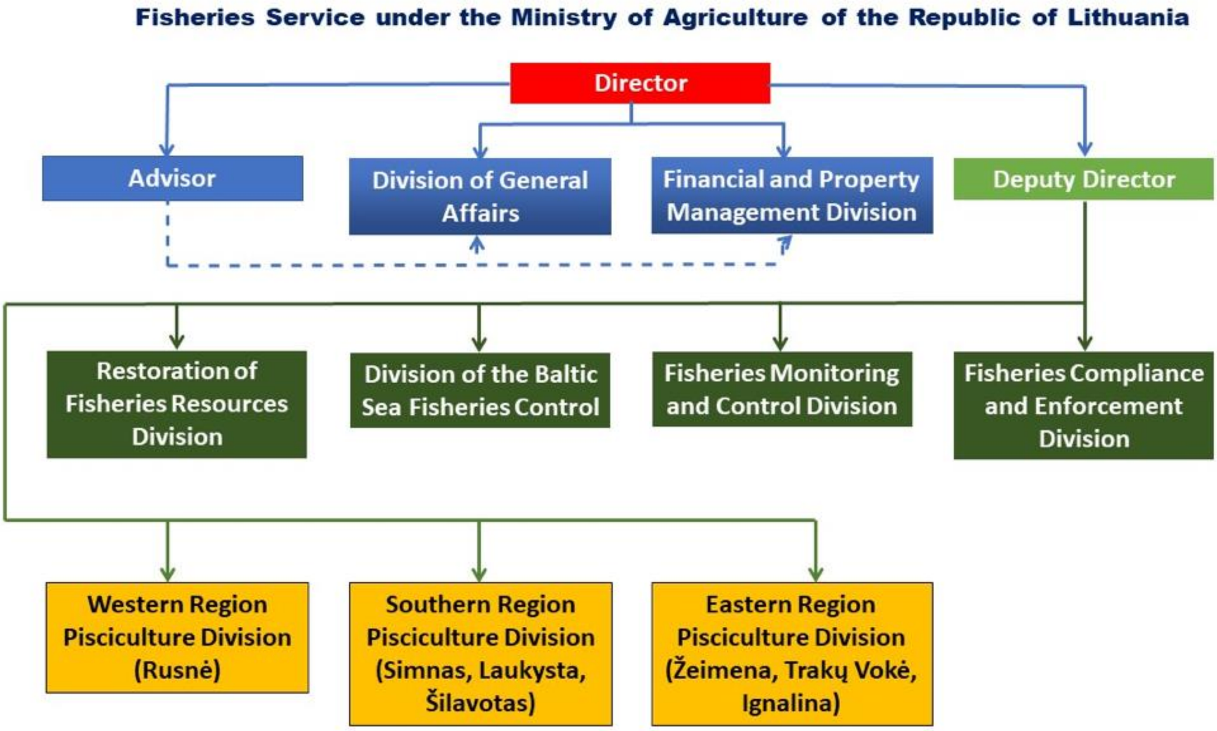

Figure 43 – Structure of the Fisheries Service under the Ministry of Agriculture of the Republic of Lithuania (Source: http://zuv.lt/).

7.4.4.3 **International and transboundary fishery governance**

The Joint Russian-Lithuanian Fisheries Commission (JRLFC) was created under the agreement of 29 June 1999 between the governments of the Russian Federation and the Republic of Lithuania on cooperation in the field of fisheries (Source: http://base.garant.ru/2562006/). In 2009, the agreement between the government of the Russian Federation and the European Community replaced the previous agreement between Russia and Lithuania, including all Baltic countries under the EU (Source: http://docs.cntd.ru/document/902182268). The JRLFC carries out its work in accordance with Article 6 of the agreement between the government of the Russian Federation and the government of the Republic of Lithuania on cooperation in the field of fisheries. The JRLFC has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g. results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year.

7.4.5 Consultation and participation mechanisms

Generally, all new federal regulations in Russia have to go through public consultations. The public are given 15–30 days to provide their comments on the draft proposal of any new regulation through the Federal portal for draft regulatory legal acts https://regulation.gov.ru, which is administered by the Ministry of Economic Development (In Russian: Министерство экономического развития Российской Федерации). Different governmental bodies, fishing sector, industry organizations and research institutions are involved in the management of Russian fisheries. The FFA supports the right for public participation in the fishery management process which is set out in the Federal Law on Fisheries "participation of citizens and public associations in resolving issues related to fishing and the preservation of aquatic biological resources, according to which citizens of the Russian Federation and public associations have the right to participate in the preparation of decisions, …" (Article 2.5) (Source: https://rg.ru/2004/12/23/rybolovstvo-dok.html).

The main arena for the interaction between stakeholders is the advisory bodies, the so-called councils including: Public Council (In Russian: Общественный совет), Fisheries Council (In Russian: Рыбохозяйственный совет) and Scientific-Fisheries Council (In Russian: Научно-промысловые советы). There are three levels of participation in the fishery management process: the federal level, the basin level, and the regional level. Basin and regional level fishery councils have existed since Soviet times, while in 2004 the Federal Fisheries Act made their existence mandatory for all basins and regions located on their territory. In 2008, the rules and procedures for Basin Scientific and Fishery Councils in the Russian Federation were approved.

The Public Council (Общественный совет) is a permanent advisory body of public control. Public Councils are formed in accordance with Federal Law of July 21, 2014 No. 212-FZ "On the Basics of Public Control in the Russian Federation". The purpose of the Public Council is to exercise public control over the activities of the government, including consideration of draft socially significant normative legal acts, participation in monitoring the quality of public services, implementation of control and oversight functions, the progress of anti-corruption and personnel work, evaluating the effectiveness of public procurement, reviewing annual plans activities and reports on their implementation, as well as other issues provided by applicable law. Meetings of the Public Council are held at least 1 time per month.

The Fisheries Council (Рыбохозяйственный совет) is a consultative and advisory body for local ministry / government, which pay attention and try to find solutions for small narrow problems and coordination on local level (Source: http://base.garant.ru/9891762/5ac206a89ea76855804609cd950fcaf7/). It depends on the development of fishing in a particular region. The composition of the fisheries council in Kaliningrad region can be found at (Source: http://base.garant.ru/9766846/f7ee959fd36b5699076b35abf4f52c5c/).

The Scientific-Fisheries Council (Научно-промысловые советы) is an advisory interregional body found on a basin level, in order to prepare proposals for the conservation of aquatic biological resources, including proposals for the allocation of quotas resources between regions, different type of fisheries, problems with legislations etc. Also to ensure the interaction of the regional governments in solving problems related to fisheries, taking into account public opinion, informing people and get their recommendations. The Council is working under the order of the Ministry of Agriculture of the Russian Federation of March 20, 2017 No. 135 "On approval of the Procedure for the Activities of Basin Scientific and Commercial Councils" (Source: http://publication.pravo.gov.ru/Document/View/0001201705180008). The Council consists of representatives of federal and regional executive bodies, control authorities, scientific organizations, public organizations and enterprises (not only fisheries). A prerequisite is the presence of representatives of all stakeholders included in the fisheries basin. Meetings of the Council are held at least twice per year. The protocols of the meetings of the Baltic Scientific-Fisheries Council of the Western basin can be found in http://fish.gov.ru/otraslevaya-deyatelnost/organizatsiya-rybolovstva/protokoly-komissij-i-nauchno-promyslovykh-sovetov. For example, during the meetings of the Baltic Scientific-Fisheries Council of the Western fisheries basin held at Kaliningrad in 28th – 29th of November 2019, the members of the council discussed the following issues: 1) overview of the state of stocks of aquatic biological resources of the Baltic Sea, the Curonian and Vistula (Kaliningrad) bays (lagoons) and their catch forecast for 2020; 2) the possibility of adjusting the volumes of production (catch) of certain species in the Baltic Sea, Curonian and Vistula (Kaliningrad) bays for 2020; 3) the results of the development of quotas for the extraction (catch) of aquatic biological resources in the Baltic Sea, the Curonian and Vistula (Kaliningrad) bays for the previous year of 2019; 4) on the amendments to the Fisheries Rules for the Western Fisheries Basin; 5) on the prohibition of the extraction (catch) of aquatic biological resources in the Curonian and Vistula (Kaliningrad) bays from June 01 to August 31 for fixed nets with a mesh size of 40 mm; 6) on the resumption of fishing for Atlantic salmon in the Baltic Sea.

In addition, public hearings are organized by the Zapadno-Baltiyskoye TA of the FFA (Source: http://zbtu39.ru/publichnye-meropriyatiya/). For example, the meeting held at Kaliningrad in 16th of April 2020, was organised by Zapadno-Baltiyskoye TA together with AtlantNIRO to discuss the results of "Materials of the total allowable catch in the area of harvesting (catch) of aquatic biological resources in the internal sea waters of the Russian Federation, in the territorial sea of the Russian Federation, on the continental shelf of the Russian Federation, in the exclusive economic zone of the Russian Federation and the Caspian Sea for 2021 (with environmental impact assessment). Fishes of the seas of the European part of Russia" (Source: http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os.pdf and http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os-shprot-scan.pdf). Many important management issues were discussed such as: the status of the stocks in the region including the results of assessments by neighbouring countries in Vistula bay (including Curonian Lagoon) Poland and Lithuania, and the coordination with these neighbouring countries.

Moreover, in the TAC and recommended catch setting process, the branches of the VNIRO (AtlantNIRO in case of Curonian Lagoon), within their area of responsibility, annually develop materials for the TAC or recommended catch for the next year based on their monitoring data. By June of each year, materials on the justification of the TAC or recommended catch are considered at a meeting of the Scientific Council of the VNIRO affiliates, which is responsible for organizing the relevant work and therefore these materials are submitted along with an extract from the minutes of the meeting to the Central Office of the VNIRO in Moscow. By August, the central office of the VNIRO examines the materials of the recommended catch received from the branches and, if any errors, incompleteness, inaccuracy, or non-compliance with the design requirements are detected, it sends comments and suggestions to the branch.

In this role, the central office of the VNIRO is entitled to request the information used in the development of the TAC or recommended catch materials available to the branch and therefore this branch should send the requested additional information, within 5 working days. By 10th October, VNIRO shall consider the materials of the recommended catch at an additional meeting of the Scientific Council.

By October 20th, based on the decision of the Scientific Council, the central office of VNIRO prepares a draft of the recommended catch volumes and sends it with an extract from the minutes of the additional meeting to the Industry Council for Fishery Forecasting at FFA (In Russian: Отраслевой совет по промысловому прогнозированию) for their consideration. The review of the draft by this council should be ready before November 1st to be submitted to the FFA by November 20th. The final quotas for the extraction (catch) of aquatic biological resources in inland water bodies are distributed by the executive authorities.

In Lithuania, the Fisheries Council was established in 2011 by the "order concerning the establishment of a fisheries council and the adoption of fisheries council regulations. 2011 September 6 No. 3D-672 / D1-678" (Source: https://www.e-tar.lt/portal/lt/legalAct/TAR.98B4B1E88272/asr). The task of the council is specified in the second section of the order as "to advise the state regulators of the fisheries sector on the development of fisheries policy and strategy, ensuring sustainable fishing, conservation and restoration of fish stocks, fish processing, development of fisheries products market and fisheries science, economic stability of fishermen, fishermen, fish farmers, processors and consumers, protection of their interests and other issues". The minutes and protocols of the Fisheries Council can be found at https://zum.lrv.lt/lt/veiklos-sritys/zuvininkyste/projektai-tyrimai-susitikimai/susitikimai/zuvininkystes-taryba.

At transboundary level, the JRLFC sessions are attended by representatives of fisheries management organizations of both the Russian Federation and the Republic of Lithuania. Also, during the meetings of the working groups, discussions are held on assessing the status of stocks, TACs and national quotas for types of aquatic biological resources regulated on a bilateral basis in the Curonian Lagoon (bream, pike perch and European smelt) for the next year for their subsequent presentation at the next session of the JRLFC’s annual meeting.

The two parties also exchange information on the results of work on the artificial reproduction of aquatic biological resources in the Kaliningrad region and the Republic of Lithuania. Also to consider proposals for the exchange of specialists in the field of control and regulation of fisheries, as well as the reproduction of aquatic biological resources and aquaculture between organizations of Russia and Lithuania.

7.4.6 Long term objectives

The long-term objective of fisheries management system in Russia is stated in the **Federal law “On Fishery and Protection of Aquatic Biological Resources” (2004)** (Source: https://rg.ru/2004/12/23/rybolovstvo-dok.html) as: “Conservation and maintenance of aquatic biological resources or their recovery to the levels at which maximum sustainable extraction (catch) of aquatic biological resources and their biological diversity can be ensured, through the implementation of measures on the basis of scientific data for the study, protection, reproduction, rational use of water biological resources and protection of their habitat” (**Article 1.7**). Moreover “The priority of conservation of aquatic biological resources and their rational use before their use as an object of ownership and other rights, according to which possession, use and disposal of aquatic biological resources are carried out by the owners freely, if this does not damage the environment and the state of aquatic biological resources” (**Article 2.2**). There is a similarity between the ‘Protection and rational use’ mentioned in these articles and the sustainability concept. It also put emphasis on the long-term and sustainable use of the biological resource, the priority of their conservation, based on scientific research and for socio-economic purposes. It is noteworthy that the priority of conservation of aquatic biological resources based on the scientific data and knowledge bears resemblance to the requirements of the precautionary despite that it is not mentioned explicitly in the Federal Fisheries Act. Moreover, the Russian federation has signed on a number of international agreements which adopt the precautionary approach, including the 1995 UN Straddling Stocks Agreement.

A new long-term strategy for the development of the Russian fisheries complex until 2030 (In Russian: Стратегия развития рыбохозяйственного комплекса до 2030 года) was presented for the first time in September 2017 and recently approved in the 26th of November 2019 by the Decree No. 2798-r “On approval of the development strategy of the fishery complex of the Russian Federation for the period until 2030 and an action plan for its implementation”. The strategy includes five large-scale integrated programs, the implementation of which will require over 600 billion rubles in investments (Source: http://fish.gov.ru/files/documents/files/proekt-strategiya-2030.pdf; http://fish.gov.ru/files/documents/press-centr/vystavki/mrf2017/p_6-1.pdf). The strategy defines priorities, objectives and targets aimed at ensuring the dynamic development of the fisheries sector, updating production assets, avoiding the export orientation of raw materials by stimulating the production of products with a high share of added value, creating favourable conditions for doing business and attracting investments in the industry.

The expected outcomes, according to the authors, of the strategy are: doubling the annual contribution of the fishery complex to Russia's GDP, with an average annual growth rate of at least 5 percent, an increase in the production of aquatic biological resources from 4.7 million t to 5.5 million t, an increase in aquaculture production from 180,000 t to 700,000 t, an update of at least half the capacity of fishing fleet vessels, a gradual increase in the proportion of products with high added value in total production - up to 40 percent, the creation of 25,000 new jobs positions.

One of the main tools of the strategy, capable of giving the greatest economic effect in the industry, is the non-waste processing of fish, which today accounts for 30 percent of the total fish production. According to the new strategy, in order to obtain fishing quotas, companies should invest in the construction of fishing vessels and the development of deep processing, which allows them to export products with high added value, rather than cheap raw materials.

The strategy is planned to be implemented in two stages: the first - until 31st of December 2025, and the second – from 1st of January 2026 to 31st of December 2030.

In Lithuania, the overarching objectives are based on the CFP of the EU. The CFP is the rules for the management of European fishing fleets and the conservation of fish stocks. Its purpose is to manage shared resources, give all European fishing fleets equal access to EU waters and fisheries, and allow fishermen to compete fairly. The objectives of the CFP are:

- To ensure that fisheries and aquaculture are environmentally, economically and socially sustainable and that EU citizens are provided with healthy food.
- To promote a dynamic fishing industry and ensure a fair standard of living for fishing communities.
- To ensure that fishing opportunities in various ways do not threaten the recovery of fish populations.

At present, the impact of fishing on the vulnerable marine environment is not fully understood. The Common Fisheries Policy has therefore adopted the precautionary principle, which takes into account the impact of human activities on all components of the ecosystem. The aim is to make fleets more selective in their fishing activities and to gradually eliminate the practice of discarding unwanted fish. The reform also changes the way the CFP is managed, giving EU countries more control at national and regional level.

7.4.7 Fisheries-Specific Management

According to the agreement between the government of the Russian Federation and the European Community on cooperation in the field of fisheries and the conservation of living marine resources in the Baltic Sea, including Curonian Lagoon, the overarching management objectives (Article 4) of this agreement are: 1) to ensure close cooperation between the Parties on the basis of the principles of equality and mutual benefit in order to preserve, sustainably exploit any transboundary stocks, as well as their associated and dependent stocks in the Baltic Sea; 2) to ensure that the operation of transboundary stocks, as well as associated and dependent stocks in the Baltic Sea, ensures the sustainability of economic, environmental and social conditions; 3) to cooperate on the most reliable scientific data and relevant recommendations, apply a precaution approach to fishery management and agree to develop an ecosystem approach to fishery management.

The specific short-term (annual) objectives including effort restrictions (e.g. number of fishing permits, gear's technical characteristics, etc.) of the perch and pike-perch fishery in Curonian Lagoon are specified in the annual protocols of the JRLFC as well as in the fishing rules for the Western fishery basin (Source: https://docs.cntd.ru/document/573191354#6500IL). These objectives try to maintain the main target species within sustainable levels and therefore are consistent with the MSC Principles 1. During the 22nd session of the JRLFC, which was held on November 5-6th via videoconferencing, the two parties presented the results of stock assessments, ichthyological studies for different species and inspection activities conducted during the year in Curonian Lagoon. The two parties also agreed on the bilateral cooperation in the field of fisheries research, TACs, national quotas for European bream, pike perch and smelt in the Curonian Lagoon for the following year.

The objectives of the fishery are also consistent with the MSC Principles 2 and are explicitly stated in the fishing rules for the Western fishery basin (approved by order dated October 21, 2020 No. 620) (Source: https://docs.cntd.ru/document/573191354#6500IL). These rules are clearly specified and understood that were set to reduce the impact of the fishery on the associated primary and secondary species as well as ETP species and habitats. For example, Article 16.2. prohibits the extraction (catch) of aquatic biological resources in specific periods for each species. Also, Article 16.4. specifies the gear types and methods of extraction (catch) that are prohibited as well as the specifications and measures (e.g. mesh sizes) of these gears. Moreover, Article 16.5. specifies the mesh size of the fishing gears, and Article 16.6 the Minimum Landing Sizes (MLS) of harvested (caught) aquatic biological resources (Table 55).

Table 55 – Minimum Landing Size (MLS) of harvested (caught) aquatic biological resources in Curonian Lagoon according to the fishing rules for the Western fishery basin. Source: Fishing rules for the Western fishery basin, article 16.6.1.

Name of aquatic biological resources	**MLS, cm**	
	***l**	****L**
River eel (in Russian: Угорь речной)	-	45
Pike-perch (in Russian: Судак)	40	46
Bream (in Russian: Лещ)	29th	35
Pike, burbot, asp (in Russian: Щука, налим, жерех)	45	50
Roach, freshwater perch (in Russian: Плотва, окунь пресноводный)	15	18
Sabrefish (in Russian: Чехонь)	28	32
Freshwater Catfish (in Russian: Сом пресноводный)	70	75
Vimba bream (raw) (in Russian: Рыбец (сырть))	24	28
Whitefish (in Russian: Сиг)	32	36
Baltic herring (herring) (in Russian: Сельдь балтийская (салака))	13	15

*****l – the length of the fish is determined by measuring from the top of the snout (with a closed mouth) to the base of the middle rays of the caudal fin.

******L – the length of the fish is determined by measuring from the top of the snout (with a closed mouth) to the end of the longest ray of the caudal fin, with a minimum angle of divergence of the upper and lower tail fin blades.

7.4.8 Monitoring, Control and Surveillance

7.4.8.1 Monitoring, Control and Surveillance (MCS) Implementation

As mentioned at the beginning of P3 section, Russian fishers, including the client, are allowed to fish only in the Russian part of the lagoon, so the Monitoring, Control and Surveillance (MCS) requirements under the Lithuanian legislation are not applicable to the Russian fishers. Therefore, this section describes the MCS on the Russian side only.

Monitoring, Control and Surveillance (MCS) is done both at the Federal and regional levels by the FFA and its branches in collaboration with regional organizations.

The FFA registers and reviews the amount of fish that each vessel and company (in Russia: quotas are allocated to companies, not to vessels) caught at any time, based on daily reports (logbooks) and reports accumulated every 15 days of all fishing vessels. A fishing journal is necessary to monitor the activities of fishing fleet vessels, including for accounting for the volumes of catch of aquatic biological resources and marine fish processing.

Enforcement and inspections are conducted by the inspectors of the fish protection department of the Zapadno-Baltiyskoye TA FFA (In Russian: Инспекторы рыбоохраны Западно-Балтийского ТУ ФАР) (Source: http://zbtu39.ru/). They carry out powers of state control and supervision in the field of fishery and conservation of aquatic biological resources, protection of aquatic biological resources and their habitats on the territory of the Kaliningrad region including Curonian Lagoon. The inspection plan for 2020 as well as for previous years can be found at the website of the Zapadno-Baltiyskoye TA FFA (Source: http://zbtu39.ru/plan-proverok-2/).

In 2020, enforcement and inspections have been reinforced by more equipment as part of the renewal of the vehicle fleet and special equipment. The Zapadno-Baltiyskoye TA FFA received eight "UAZ Patriot" vehicles, seven "RusBot 55" boats and five "Bigbot 360 PVC" boats (Source: http://fish.gov.ru/territorialnye-upravleniya/zapadno-baltijskoe/31134-inspektoram-otdelov-rybookhrany-zapadno-baltijskogo-terupravleniya-vruchili-klyuchi-ot-novykh-katerov). The boats are fully equipped with modern navigation equipment and radios; and seven trailers were purchased for their transportation to the reservoirs. In addition, radios were purchased for the inspectors, including 6 marine, echo sounders and 17 chest video recorders for the inspectors to record offenses. In autumn, the Zapadno-Baltiyskoye TA FFA will receive two high-speed boats "KS 701 M" and "KS-TRIM 760R". They are equipped with water jet propellers, allowing the vessel to be used in shallow water, in a polluted fairway, as well as in other hard-to-reach places where there are no equipped berthing facilities.

In addition, quality / health inspections of landed fishery products before transferring them to domestic or export markets are the responsibility of the Ministry of Agriculture which coordinates the work of the Federal Service for Sanitary and Veterinary Inspection (Rosselkhoznadzor).

7.4.8.2 Sanctions

Both the "Code of the Russian Federation on Administrative Offenses" 30.12.2001 No. 195-FZ and the "The Criminal Code of the Russian Federation" 13.06.1996 No. 63-FZ define the sanctions for violating the rules regulating fishing in the Russian Federation. **Table 56** shows the sanctions corresponding to each type of violation according to fishing regulations or rules.

Table 56 – The sanctions corresponding to each type of violation according to fishing regulations or rules.

Type of violation/offences	Corresponding sanction/fine
"Code of the Russian Federation on Administrative Offenses" 30.12.2001 No. 195-FZ	
Article 8.16 (2). Failure to comply with the rules for maintaining ship documents	Administrative penalty - from 5 to 10 thousand rubles.
Article 8.17 (2). Violation of regulatory requirements or conditions of activity in inland sea waters, in the territorial sea, on the continental shelf, in the exclusive economic zone of the Russian Federation or in the open sea	Administrative penalty: - for citizens from ½ to 1 of the costs of biological resources, with or without confiscation of a vessel and fishing gear; - for executives from 1 to 1.5 of the costs of biological resources, with or without confiscation of a vessel and fishing gear; - for enterprises from 2 to 3 of the costs of biological resources, with or without confiscation of a vessel and fishing gear;
Article 8.37 (2). Violation of hunting rules, rules governing fishing and other uses of wildlife	Administrative penalty: - for citizens from 1 to 5 thousands rubles, with or without confiscation of a vessel and fishing gear; - for executives from 20 to 30 thousands rubles, with or without confiscation of a vessel and fishing gear; - for enterprises from 100 to 200 thousands rubles, with or without confiscation of a vessel and fishing gear.
Article 8.38. Violation of the rules for the protection of aquatic biological resources	Administrative penalty: - for citizens from 2 to 3 thousands rubles; - for executives from 10 to 15 thousands rubles; - for entrepreneurs from 10 to 15 thousands rubles or ban for activity up to 90 days; - for enterprises from 100 to 200 thousands rubles or ban for activity up to 90 days;
Article 8.39. Violation of the rules for the protection and use of natural resources in specially protected natural territories	Administrative penalty: - for citizens from 3 to 4 thousands rubles, with or without confiscation of a vessel and fishing gear and illegal productions; - for executives from 15 to 20 thousands rubles, with or without confiscation of a vessel and fishing gear and illegal productions; - for enterprises from 300 to 500 thousands rubles, with or without confiscation of a vessel and fishing gear and illegal productions.
"The Criminal Code of the Russian Federation" 13.06.1996 No. 63-FZ	
Article 256. Illegal fishery (catch) of aquatic biological resources	(1) Penalty for illegal fishery from 300 to 500 thousands rubles, or salary (income) for 2-3 years, or obligatory work up to 480 hours, or correctional work up to 2 years, or prison up to 2 years.
	(3) If illegal fishery committed by a person using his official position or by a group of persons in a preliminary conspiracy or by

	an organized group or persons who have caused particularly serious damage are punishable by penalty from 500 to 1000 thousands rubles, or salary (income) for 3-5 years, or prison 2-5 years with the deprivation of the right to occupy certain positions or engage in certain activities for a period of up to 3 years or without it.
Article 257. Violation of the rules for the protection of aquatic biological resources	Penalty up to 200 thousands rubles, or salary (income) 18 moths, or deprivation of the right to occupy certain positions or engage in certain activities for a period of up to 3 years, or obligatory work up to 480 hours, or correctional work up to 2 years.

7.4.8.3 Compliance

A compliance summary was requested and the following information was provided to the assessment team (**Table 57**).

Table 57 – Summary of compliance information and number of fisheries inspections undertaken on board the vessel on Curonian Lagoon (2012-2018). No data was provided by the client for 2019-2021.

	2012	2013	2014	2015	2016	2017	2018
Number of inspections of fishing companies (vessels) were carried out (including at sea and on shore)	196	215	194	158	456	638	744
Identified violations	35	39	42	46	54	61	48
Non-compliance rate % (Identified violations / Number of inspections)	17.86	18.14	21.65	29.11	11.84	9.56	6.45

News about violations and cases detained by the inspectors of the fish protection department of the Zapadno-Baltiyskoye TA FFA can be found at (Source: http://fish.gov.ru/territorialnye-upravleniya/zapadno-baltijskoe; http://kgzt.ru/rosrybolovstvo; and http://fish.gov.ru/territorialnye-upravleniya/zapadno-baltijskoe/31115-inspektory-zapadno-baltijskogo-terupravleniya-za-nedelyu-proveli-21-rejd-i-oshtrafovali-narushitelej-na-56-tys-rublej).

7.4.9 Monitoring and Evaluation

The fishery has mechanisms to internally evaluate and review key parts of the management system on a regular basis. In Russia the management authorities (e.g. the FFA) receive feedback from the interested stakeholders including NGOs through the different councils found at federal, basin and regional levels (see section 7.4.5). Moreover, the FFA reviews the performance of its regional offices regularly. In this matter, the recommendations of the Regional Fisheries Council are taken into account in the FFA regional office's feedback to the federal office. In the TAC-setting process, the scientific advice from AtlantNIRO is peer reviewed by the VNIRO, and then forwarded to FFA and the federal natural resources monitoring agency Rosprirodnadzor for comments.

The fishery-specific management system is also subject to external review. Despite that the management system itself is not reviewed by the JRLFC, many key parts and issues of the management undergo a detailed annual review during the JRLFC's annual meeting, such as catch, stock status, MCS system, compliance, as well as the environmental aspects of the fishery (see section 7.4.7). Also, the State Ecological Expertise in Russia, which is under the Federal Service, in contrast to the FFA which is under the Ministry of Agriculture, is responsible for the Supervision of Natural Resources, and review of the Russian management system.

7.4.10 Principle 3 Performance Indicator scores and rationales – for all UoAs

PI 3.1.1 – Legal and/or customary framework

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: - Is capable of delivering sustainability in the UoA(s); - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework		
Scoring Issue		SG 60	SG 80	SG 100
a	Compatibility of laws or standards with effective management			
	Guide post	There is an effective national legal system **and a framework for cooperation** with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and **organised and effective cooperation** with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and **binding procedures governing cooperation with other parties** which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The fishery is managed at national level in Russia and under the Russian–Lithuanian framework of agreements. Therefore the Russian's management system relating to fisheries should be considered, taking into account the details for fishery-specific management at transboundary level according to the binding agreements with Lithuania.

The fisheries management system in Russia has a well-developed legal system which has all the necessary tiers for effective management based on binding procedures dictated in administrative legislation, ordinances and decrees. The main legal framework governing fisheries in Russia is the Federal Law "On Fishery and Protection of Aquatic Biological Resources" which was signed in 2004, revised in 2007 and updated in 2014. Russia also signed up to international fisheries laws and conventions, such as the 1982 Convention on the Law of the Sea and the 1995 Agreement on Straddling Stocks.

On the other side of the lagoon, the main legal framework for fisheries in Lithuania is the Lithuanian fisheries law 2000 June 27 No. VIII-1756 (Source: https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.104591/asr). The law regulates relations in the fishing, aquaculture, fish processing and market areas. The objectives of the law are to ensure sustainable exploitation of fish stocks, its conservation and replenishment, as well as to ensure fisheries control, taking into account the environmental and economic aspects, as well as fishermen's, fish farmers', processors' and consumers' views. The provisions of this law are in line with European Union legislation. Lithuania is a Member State of the European Union (EU) since 1st of May 2004, and its fisheries are therefore managed according to the principles and guidelines of the EU's Common Fisheries Policy (CFP) (see section 7.3.16.2). Effective cooperation among local agencies in Lithuania is observed to maintain stocks at sustainable levels and to reduce the fishery impact on the ecosystem. For instance, the Data Collection Program (DCP) is implemented by the Ministry of Agriculture together with the Fisheries Service, Klaipėda University and ŽUIKVC. The roles of each organisation in the DCP are specified in section 7.4.4.2.

At transboundary level, the agreement between the governments of the Russian Federation and the Republic of Lithuania on cooperation in the field of fisheries was signed on 29 June 1999 (Source: http://base.garant.ru/2562006/). In 2009, the agreement between the government of the Russian Federation and the European Community replaced the previous agreement between Russia and Lithuania, including all Baltic countries under the EU (Source: http://docs.cntd.ru/document/902182268).

The agreement of cooperation in scientific activities and management of stocks is signed by the two countries and therefore **SG60 is met**. This agreement includes effective meetings between managers and scientists of both countries which are held every year in the Joint Russian-Lithuanian Fisheries Commission (JRLFC) to deliver management outcomes consistent with MSC Principles 1 and 2, therefore **SG 80 is met**. However, taking into account that the binding procedure governing cooperation between Russia and Lithuania on the Curonian lagoon doesn't seem to be effective in some cases including the discrepancy in the use of different stock assessment methodologies and the disagreement about the status of some stocks between the two countries (please see P1), therefore this scoring issue **doesn't meet SG 100**.

b	Resolution of disputes			
	Guide post	The management system incorporates or is subject by law to a **mechanism** for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes which is **considered to be effective** in dealing with most issues and that is appropriate to the context of the UoA.	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes that is appropriate to the context of the fishery and has been **tested and proven to be effective**.
	Met?	**Yes**	**Yes**	**No**
Rationale				

Disputes at the national level are solved at the court system. In Russia, a transparent court system mechanism is provided to avoid and resolve disputes and issues arising between the fishing companies and inspectors. According to the **Federal Law of May 2, 2006 No. ФЗ(FZ)-59** "On the Procedure for Considering Appeals of Citizens of the Russian Federation," citizens have the right to apply in person, as well as to submit individual and collective appeals to state bodies, local self-government bodies, and officials (Source: http://base.garant.ru/12146661/). The procedure for the reception and consideration of citizen's proposals and the rules for submission of appeals are specified in the official website of the FFA (Source: http://fish.gov.ru/obrashcheniya-grazhdan/poryadok-priema-i-rassmotreniya-obrashchenij-grazhdan). The Zapadno-Baltiyskoye TA of FFA (see section 7.4.4.1) provides the opportunity (in person, in a written or electronic form) for citizen proposals and the submission of appeals in the Kaliningrad region (Source: http://zbtu39.ru/napisat-obrashhenie/). The Zapadno-Baltiyskoye TA reviews all received appeals, complaints or recommendations of citizens and fishing users and then accepts and responds to all relevant and complete appeals and recommendations by the same means (in person, written letters, emails). For transparency, many Territorial Administrations in Russia publish the annual results of the received appeals (e.g., how many appeals received, accepted, and the way it was responded). In case any appellant does not agree with the received answer he can take his case to the court system.

The court considers cases that can be regarded as serious violations (for example, overfishing or unauthorized bycatch). The results of any disputes in the court system can be consulted at the website of the Federal Arbitration Courts of the Russian Federation (Федеральные арбитражные суды Российской Федерации) (http://www.arbitr.ru) as well as for the territorial level at the website of Arbitration Court of Kaliningrad Region (Арбитражный суд Калининградской области) (https://kaliningrad.arbitr.ru/). In practice, most disputes are resolved through the management system, which includes extensive formal and informal opportunities for interaction between fishing companies and other stakeholders with the authorities, (for example, to resolve disputes, disagreements and conflicts between users, as well as between users and authorities).

Disputes at transboundary level, between Russia and Lithuania, related to fishery are addressed in the Joint Russian-Lithuanian Fisheries Commission (JRLFC).

However, it remains unclear whether the mechanism is proven to be effective under a full spectrum of tests. Therefore, **SG 60** and **SG 80 are met, but not SG 100**.

c	Respect for rights			
	Guide post	The management system has a mechanism to **generally respect** the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a	The management system has a mechanism to **observe** the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the	The management system has a mechanism to **formally commit** to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a

		manner consistent with the objectives of MSC Principles 1 and 2.	objectives of MSC Principles 1 and 2.	manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	**Yes**	**Yes**	**Yes**

Rationale

The rights of fishing dependent communities are explicitly stated in the Federal Fisheries law 2004 "*taking into account the interests of the people living in coastal areas, including the indigenous peoples of the North, Siberia and the Far East of the Russian Federation, according to which they must be given access to aquatic biological resources to guarantee the vital activity of the population*" (**Article 2.1**). More in details, (**Article 25**) ensures the traditional way of life and the implementation of traditional economic activities, including fishing, of the indigenous peoples of the North, Siberia and the Far East of the Russian Federation. Other pieces of legislation that guarantee the rights of fishing for indigenous peoples include: Federal Law of April 30, 1999 No. 82-FZ "On Guarantees of the Rights of Indigenous Minorities of the Russian Federation" and Decree of the Government of the Russian Federation of March 24, 2000 No. 255 "On the Unified List of Indigenous Minorities of the Russian Federation". The Russian Association of Indigenous Peoples of the North (RAIPON) (In Russian: Ассоциация коренных, малочисленных народов Севера, Сибири и Дальнего Востока Российской Федерации (АКМНССиДВ) is the Russian national umbrella organisation representing 41 indigenous small-numbered peoples of the North, Siberia and the Far East. Currently, indigenous minorities dependent on fishing are absent in Curonian Lagoon.

In Lithuania, the rights and obligations of the fisheries resources users are specified in the second section of the Lithuanian fisheries law. Fishing rights are granted only to companies that are registered in the list approved by the Fisheries Service (see section 7.4.4.2). The number of fishing companies on this list cannot increase (Zolubas *et al*., 2014). The only possibility for a new company to enter this list is that another company is deleted from the list (Zolubas *et al*., 2014). The elimination of a fishing company from this list occurs when this company did not fish for more than two years or upon request from the company itself. The Fisheries Service allocates fishing quotas and the number of allowable fishing gear for companies. Furthermore, as mentioned before, Lituanian fisheries are managed by the CFP which also contains a formal commitment to observe the legal and customary rights of people dependent on fishing "*In view of the precarious economic state of the fishing industry and the dependence of certain coastal communities on fishing, it is necessary to ensure the relative stability of fishing activities by allocating fishing opportunities among Member States, based on a predictable share of the stocks for each Member State*" (Article 35).

The management system has mechanisms to respect the legal rights of fishing dependent communities. Such mechanisms (e.g. quotas allocation) are consistent with the objectives of MSC Principles 1 and 2 therefore **SG 60 is met**. Such rights are observed by the management system (e.g. through quotes), thus **SG 80 is met**. There are mechanisms (e.g. special quotas) established by law to formally commit to the rights of fishing dependent communities (e.g. Indigenous Peoples) for subsistence and livelihood, although that there is no such communities in Curonian Lagoon, therefore **SG100 is met**.

References

- Federal Law of the Russian Federation of December 20, 2004 No. 166-ФЗ “On Fishery and Protection of Aquatic Biological Resources” (In Russian: Федеральный закон Российской Федерации от 20 декабря 2004 г. N 166-ФЗ О рыболовстве и сохранении водных биологических ресурсов) (Source: https://rg.ru/2004/12/23/rybolovstvo-dok.html).
- The agreement between the governments of the Russian Federation and the Republic of Lithuania on cooperation in the field of fisheries signed on 29 June 1999 (Source: http://base.garant.ru/2562006/).
- The agreement between the government of the Russian Federation and the European Community, including all Baltic countries under the EU (Source: http://docs.cntd.ru/document/902182268).
- The website of the Federal Arbitration Courts of the Russian Federation (Федеральные арбитражные суды Российской Федерации) (http://www.arbitr.ru).
- The website of Arbitration Court of Kaliningrad Region (Арбитражный суд Калининградской области) (https://kaliningrad.arbitr.ru/).
- Federal Law of May 2, 2006 N 59-ФЗ "On the Procedure for Considering Appeals of Citizens of the Russian Federation" (In Russian: Федеральный закон от 2 мая 2006 г. No. 59-ФЗ "О порядке рассмотрения обращений граждан Российской Федерации").
- Procedure for the reception and consideration of citizens (In Russian: Порядок приема и рассмотрения обращений граждан) (Source: http://fish.gov.ru/obrashcheniya-grazhdan/poryadok-priema-i-rassmotreniya-obrashchenij-grazhdan).
- The submission of appeals in the Kaliningrad region (Source: http://zbtu39.ru/napisat-obrashhenie/).

- Federal Law of 30.04.1999 No. 82-FZ. “On guarantees of the rights of the indigenous peoples of the Russian Federation (as amended on February 6, 2020) (In Russian: О гарантиях прав коренных малочисленных народов Российской Федерации (с изменениями на 6 февраля 2020 года)) (Source: http://docs.cntd.ru/document/901732262).
- Decree of the Government of the Russian Federation of March 24, 2000 No. 255 "On the Unified List of Indigenous Minorities of the Russian Federation" (as amended on May 26, 2020) (In Russian: О Едином перечне коренных малочисленных народов Российской Федерации (с изменениями на 26 мая 2020 года)) (Source: http://docs.cntd.ru/document/901757631).
- Russian Association of Indigenous Peoples of the North (RAIPON) (In Russian: Ассоциация коренных, малочисленных народов Севера, Сибири и Дальнего Востока Российской Федерации (АКМНССиДВ) (Source: http://www.raipon.info).
- Zolubas *et al*., 2014.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**85**
Condition number (if relevant)	**NA**

PI 3.1.2 – Consultation, roles and responsibilities

<table>
<tr><th colspan="2">PI 3.1.2</th><th colspan="3">The management system has effective consultation processes that are open to interested and affected parties
The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</th></tr>
<tr><td colspan="2">Scoring Issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="3">a</td><td colspan="4">Roles and responsibilities</td></tr>
<tr><td>Guide post</td><td>Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood.</td><td>Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.</td><td>Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.</td></tr>
<tr><td>Met?</td><td>Yes</td><td>Yes</td><td>Yes</td></tr>
<tr><td colspan="5">Rationale</td></tr>
<tr><td colspan="5">Rationale</td></tr>
</table>

The Russian management system clearly defines the main organizations and stakeholders involved in the management process. The functions, roles and responsibilities specific to each organization are well defined. The fisheries management system is organized and coordinated through the Federal Fisheries Agency (FFA or Rosrybolovstvo), which reports to the Ministry of Agriculture as the fisheries enforcement agency. The rest of functions, roles and responsibilities of organisations involved in the management are described in (section 7.4.4.1).

Similarly, the main management organizations in Lithuania and their roles are clearly defined. The Ministry of Agriculture is responsible for the Lithuanian fisheries management which organises, coordinates and controls its implementation, it manages the state fisheries, and adopts the CFP. In addition, both the Ministry of agriculture and the Ministry of Environment organise, coordinate and control the conservation of fish resources in inland waters (Zolubas *et al*., 2014). The rest of functions, roles and responsibilities of organisations involved in the management are described in (section 7.4.4.2).

At the transboundary level, the Joint Russian-Lithuanian Fisheries Commission (JRLFC) was created to maintain the cooperation between both countries in the field of fisheries. The JRLFC has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon, the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk.

Bearing in mind that the functions, roles and responsibilities of the main management organisations are explicitly defined and integrated into the national institutional framework, as well as at transboundary level, and is well-understood, therefore **SG60** and **SG 80 are met**. This was verified during the site visit as the consulted stakeholders as well as the client demonstrated a well understanding of different management organisations for "all" areas of responsibility, so **SG 100 is also met**.

<table>
<tr><td rowspan="2">b</td><td colspan="4">Consultation processes</td></tr>
<tr><td>Guide post</td><td>The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.</td><td>The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the</td><td>The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains</td></tr>
</table>

			information obtained.	**how it is used or not used.**
	Met?	**Yes**	**Yes**	**No**
Rationale				

Generally, all new federal regulations in Russia have to go through public consultations. The public are given 15–30 days to provide their comments on the draft proposal of any new regulation through the website (https://regulation.gov.ru) which is administered by the Ministry of Economic Development. Different governmental bodies, fishing sector, industry organizations and research institutions are involved in the management of Russian fisheries. The FFA supports the right for public participation in the fishery management process which is set out in the Federal Law on Fisheries “participation of citizens and public associations in resolving issues related to fishing and the preservation of aquatic biological resources, according to which citizens of the Russian Federation and public associations have the right to participate in the preparation of decisions, …” (Article 2.5).

The main arena for the interaction between stakeholders is the advisory bodies, the so-called councils including: Public Council (In Russian: Общественный совет), Fisheries Council (In Russian: Рыбохозяйственный совет) and Scientific-Fisheries Council (In Russian: Научно-промысловые советы). There are three levels of participation in the fishery management process: the federal level, the basin level, and the regional level. Basin and regional level fishery councils have existed since Soviet times, while in 2004 the Federal Fisheries Act made their existence mandatory for all basins and regions located on their territory. In 2008, the rules and procedures for Basin Scientific and Fishery Councils in the Russian Federation were approved.

For example, during the meetings of the Baltic Scientific-Fisheries Council of the Western fisheries basin held at Kaliningrad in 28th – 29th of November 2019, the members of the council discussed the following issues: 1) overview of the state of stocks of aquatic biological resources of the Baltic Sea, the Curonian and Vistula (Kaliningrad) bays and their catch forecast for 2020; 2) the possibility of adjusting the volumes of production (catch) of certain species in the Baltic Sea, Curonian and Vistula (Kaliningrad) bays for 2020; 3) the results of the development of quotas for the extraction (catch) of aquatic biological resources in the Baltic Sea, the Curonian and Vistula (Kaliningrad) bays for the previous year of 2019; 4) on the amendments to the Fisheries Rules for the Western Fisheries Basin; 5) on the prohibition of the extraction (catch) of aquatic biological resources in the Curonian and Vistula (Kaliningrad) bays from June 01 to August 31 for fixed nets with a mesh size of 40 mm; 6) on the resumption of fishing for Atlantic salmon in the Baltic Sea.

In addition, public hearings are organized by the Zapadno-Baltiyskoye TA of the FFA (Source: http://zbtu39.ru/publichnye-meropriyatiya/). For example, the meeting held at Kaliningrad in 16th of April 2020, was organised by Zapadno-Baltiyskoye TA together with AtlantNIRO to discuss the results of "Materials of the total allowable catch in the area of harvesting (catch) of aquatic biological resources in the internal sea waters of the Russian Federation, in the territorial sea of the Russian Federation, on the continental shelf of the Russian Federation, in the exclusive economic zone of the Russian Federation and the Caspian Sea for 2021 (with environmental impact assessment). Fishes of the seas of the European part of Russia" (Source: http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os.pdf and http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os-shprot-scan.pdf). Many important management issues were discussed such as: the status of the stocks in the region including the results of assessments by neighbouring countries in Vistula bay (including Curonian Lagoon) Poland and Lithuania, and the coordination with these neighbouring countries.

At transboundary level, the JRLFC sessions are attended by representatives of fisheries management organizations of both the Russian Federation and the Republic of Lithuania. Also, during the meetings of the working groups, discussions are held on assessing the status of stocks, TACs and national quotas for types of aquatic biological resources regulated on a bilateral basis in the Curonian Lagoon (bream, pike perch and European smelt) for the next year for their subsequent presentation at the next session of the JRLFC´s annual meeting.

The two parties also exchange information on the results of work on the artificial reproduction of aquatic biological resources in the Kaliningrad region and the Republic of Lithuania. Also to consider proposals for the exchange of specialists in the field of control and regulation of fisheries, as well as the reproduction of aquatic biological resources and aquaculture between organizations of Russia and Lithuania.

The management system takes into account the information obtained by continually adapting policies according to the stakeholders and the opinion of the user groups. This is clear as the management system regularly seeks and accepts relevant information from different stakeholders through the organisation of regular meetings by different fisheries councils at different levels (e.g., Federal, basin, and local) in Russia as well as annual meetings of the JRLFC at transboundary level, and therefore **the SG 60 and SG 80 are met**. However, there is no written evidence that the management system has consistently explained how it uses / did not use the information gathered through its consultation processes, and therefore **SG 100 is not met**.

	Participation			
c	Guide post		The consultation process **provides opportunity** for all interested and affected parties to be involved.	The consultation process provides **opportunity and encouragement** for all interested and affected parties to be involved, and **facilitates** their effective engagement.
	Met?		**Yes**	**No**
Rationale				

As previously explained, the Russian management system gives the opportunity and encourages all stakeholders to participate in the management process. The team was able to verify that stakeholders are provided opportunities to participate in the management process through the protocols of the meetings of the Baltic Scientific-Fisheries Council of the Western fisheries basin and of public hearings that are organized by the Zapadno-Baltiyskoye TA of the FFA. Therefore **SG 80 is met**.

Although the system offers the opportunity to participate, it cannot be demonstrated with certainty that all interested and concerned parties have been involved, and it cannot be demonstrated conclusively that this process facilitated their effective participation. As such, **SG 100 cannot be fully justified and is not met**.

References

- Federal Law of the Russian Federation of December 20, 2004 N 166-ФЗ "On Fishery and Protection of Aquatic Biological Resources" (In Russian: Федеральный закон Российской Федерации от 20 декабря 2004 г. No. 166-ФЗ О рыболовстве и сохранении водных биологических ресурсов) (Source: https://rg.ru/2004/12/23/rybolovstvo-dok.html).
- Protocols of meetings of public hearings are organized by the Zapadno-Baltiyskoye TA of the FFA (Source: http://zbtu39.ru/publichnye-meropriyatiya/, http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os.pdf and http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os-shprot-scan.pdf).
- Zolubas, T., Kontautas, A., Shibaev, S. 2014. Fisheries management in the Curonian Lagoon. In: Stybel, N. & Skor, M. (eds.). Fisheries management in coastal waters of the Baltic Sea - AQUAFIMA results of the Szczecin Lagoon, Vistula Lagoon, Curonian Lagoon and Gulf of Riga. Coastline Reports (22), pp. 47-69. EUCC - The Coastal Union Germany, Rostock, 2014.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	**More information sought to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**85**
Condition number (if relevant)	**NA**

PI 3.1.3 – Long term objectives

<table>
<tr><th colspan="2">PI 3.1.3</th><th colspan="3">The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Fisheries Standard, and incorporates the precautionary approach</th></tr>
<tr><td colspan="2">Scoring Issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="3">a</td><td colspan="4">Objectives</td></tr>
<tr><td>Guide post</td><td>Long-term objectives to guide decision-making, consistent with the MSC Fisheries Standard and the precautionary approach, are implicit within management policy.</td><td>Clear long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach are explicit within management policy.</td><td>Clear long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach, are explicit within and required by management policy.</td></tr>
<tr><td>Met?</td><td>Yes</td><td>Yes</td><td>No</td></tr>
<tr><td colspan="5">Rationale</td></tr>
</table>

The long-term objective of fisheries management system in Russia is stated in the **Federal law "On Fishery and Protection of Aquatic Biological Resources" (2004)** as: "Conservation and maintenance of aquatic biological resources or their recovery to the levels at which maximum sustainable extraction (catch) of aquatic biological resources and their biological diversity can be ensured, through the implementation of measures on the basis of scientific data for the study, protection, reproduction, rational use of water biological resources and protection of their habitat" (**Article 1.7**). Moreover "The priority of conservation of aquatic biological resources and their rational use before their use as an object of ownership and other rights, according to which possession, use and disposal of aquatic biological resources are carried out by the owners freely, if this does not damage the environment and the state of aquatic biological resources" (**Article 2.2**).

There is a similarity between the 'Protection and rational use' mentioned in these articles and the sustainability concept. It also put emphasis on the long-term and sustainable use of the biological resource, the priority of their conservation, based on scientific research and for socio-economic purposes. It is noteworthy that the priority of conservation of aquatic biological resources based on the scientific data and knowledge bears resemblance to the requirements of the precautionary despite that it is not mentioned explicitly in the Federal Fisheries Act. Moreover, the Russian federation has signed on a number of international agreements which adopt the precautionary approach, including the 1995 UN Straddling Stocks Agreement.

The long-term strategy for the development of the Russian fisheries complex until 2030 (In Russian: Стратегия развития рыбохозяйственного комплекса до 2030 года) defines priorities, objectives and targets aimed at ensuring the dynamic development of the fisheries sector, updating production assets, avoiding the export orientation of raw materials by stimulating the production of products with a high share of added value, creating favourable conditions for doing business and attracting investments in the industry.

In Lithuania, the overarching objectives are based on the CFP of the EU. The CFP is the rules for the management of European fishing fleets and the conservation of fish stocks. Its purpose is to manage shared resources, give all European fishing fleets equal access to EU waters and fisheries, and allow fishermen to compete fairly. The objectives of the CFP are:

- To ensure that fisheries and aquaculture are environmentally, economically and socially sustainable and that EU citizens are provided with healthy food.
- To promote a dynamic fishing industry and ensure a fair standard of living for fishing communities.
- To ensure that fishing opportunities in various ways do not threaten the recovery of fish populations.

At present, the impact of fishing on the vulnerable marine environment is not fully understood. The Common Fisheries Policy has therefore adopted the precautionary principle, which takes into account the impact of human activities on all components of the ecosystem. The aim is to make fleets more selective in their fishing activities and to gradually eliminate the practice of discarding unwanted fish. The reform also changes the way the CFP is managed, giving EU countries more control at national and regional level.

Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within management policy of Russia, and therefore the **SG60** and **SG 80 are met**. However, such objectives are not required by management policy and hence **SG 100 is not met**.

References

- Federal Law of the Russian Federation of December 20, 2004 No. 166-ФЗ “On Fishery and Protection of Aquatic Biological Resources” (In Russian: Федеральный закон Российской Федерации от 20 декабря 2004 г. No. 166-ФЗ О рыболовстве и сохранении водных биологических ресурсов) (Source: https://rg.ru/2004/12/23/rybolovstvo-dok.html).
- Long-term strategy for the development of the Russian fisheries complex until 2030 (In Russian: Стратегия развития рыбохозяйственного комплекса до 2030 года) (Source: http://fish.gov.ru/files/documents/files/proekt-strategiya-2030.pdf).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 3.2.1 – Fishery-specific objectives

PI 3.2.1		The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2		
Scoring Issue		SG 60	SG 80	SG 100
a	Objectives			
	Guide post	**Objectives**, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **implicit** within the fishery-specific management system.	**Short and long-term objectives**, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **explicit** within the fishery-specific management system.	**Well defined and measurable short and long-term objectives**, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **explicit** within the fishery-specific management system.
	Met?	**Yes**	**Yes**	**Partial**
Rationale				

The specific long-term objectives for the fishery are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, such as ensuring the sustainability of stocks, environmental and social conditions, and are explicit in the legal framework. For example, according to the agreement between the government of the Russian Federation and the European Community on cooperation in the field of fisheries and the conservation of living marine resources in the Baltic Sea, including Curonian Lagoon, the overarching management objectives (Article 4) of this agreement are: 1) to ensure close cooperation between the Parties on the basis of the principles of equality and mutual benefit in order to preserve, sustainably exploit any transboundary stocks, as well as their associated and dependent stocks in the Baltic Sea; 2) to ensure that the operation of transboundary stocks, as well as associated and dependent stocks in the Baltic Sea, ensures the sustainability of economic, environmental and social conditions; 3) to cooperate on the most reliable scientific data and relevant recommendations, apply a precaution approach to fishery management and agree to develop an ecosystem approach to fishery management.

Further long-term objectives are reflected in management laws including a number of regulations that address the environmental impact of fishing activities. For example, in the Law "On Protection of the Environment" (2001), article 3 specifies that "The economic and other activities of state authorities of the Russian Federation, state authorities of the constituent entities of the Russian Federation, local governments, legal entities and individuals that have an impact on the environment should be carried out on the basis of the following principles, among them:

• scientifically substantiated combination of ecological, economic and social interests of a person, society and the state in order to ensure sustainable development and a favorable environment;

• protection, reproduction and rational use of natural resources as necessary conditions for ensuring a favorable environment and ecological safety;

• presumption of ecological danger of the planned economic and other activities;

• the obligation to assess the impact on the environment when making decisions on the implementation of economic and other activities;

• conservation of biodiversity.

The specific short-term (annual) objectives including effort restrictions (e.g. number of fishing permits, gear's technical characteristics, etc.) of the perch and pike-perch fishery in Curonian Lagoon are specified in the annual protocols of the JRLFC as well as in the fishing rules for the Western fishery basin. These objectives try to maintain the main target species within sustainable levels and therefore are consistent with the MSC Principles 1. According to the 22nd session of the JRLFC, which was held on of November 5-6th via videoconferencing, the two parties presented the results of stock assessments, ichthyological studies for different species and inspection activities conducted during the year in Curonian Lagoon and noted the similarity in assessing the status of stocks of the main types of aquatic biological resources of the Lagoon. The two parties also agreed on the bilateral cooperation in the field of fisheries research, TACs, national quotas for European bream, pike perch and smelt in the Curonian Lagoon for the following year.

The objectives of the fishery are also consistent with the MSC Principles 2 and are explicitly stated in the fishing rules for the Western fishery basin (approved by order dated October 21, 2020 No. 620) (Source: https://docs.cntd.ru/document/573191354#6500IL). These rules are clearly specified and understood that were set to reduce the impact of the fishery on the associated primary and secondary species as well as ETP species and habitats. For example, Article 16.2. prohibits the extraction (catch) of aquatic biological resources in specific periods for each species. Also, Article 16.4. specifies the gear types and methods of extraction (catch) that are prohibited as well as the specifications and measures (e.g. mesh sizes) of these gears. Moreover, Article 16.5. specifies the mesh size of the fishing gears, and Article 16.6. the Minimum Landing Sizes (MLS) of harvested (caught) aquatic biological resources (Table 55).

Overall, information mentioned above indicates that short and long-term objectives are explicit within the fishery-specific management system, and are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2 (see sections P1 and P2), therefore the **SG 60** and **SG 80 are met**. However, while the short-term objectives are considered explicit, well defined and measurable (e.g., status of stock through stock assessments), the long-term objectives are not; therefore, **SG 100 is only partially met**.

References

- On the approval of the fishing rules for the Western fisheries basin (approved by order dated October 21, 2020 No. 620) (In Russian: Об утверждении правил рыболовства для Западного рыбохозяйственного бассейна (утверждена приказом от 21 октября 2020 г. No. 620)) (Source: https://docs.cntd.ru/document/573191354#6500IL).
- Protocol of the 18th session of the JRLFC, held in 21st of November at Kaliningrad.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**90**
Condition number (if relevant)	**NA**

PI 3.2.2 – Decision-making processes

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery		
Scoring Issue		SG 60	SG 80	SG 100
a	Decision-making processes			
	Guide post	There are **some** decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are **established** decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	**Yes**	**Yes**	
Rationale				

The decision-making process of the fisheries management system is clear and based on scientific data as well as on comprehensive consultation at regional and national levels as explained in the previous sections. This process results in measures and strategies to achieve the fishery-specific objectives. For example, at regional and Federal levels, the TAC-setting process includes all available information to be evaluated and reviewed by the AtlantNIRO and VNIRO, followed by the State Ecological Expertise in Moscow and FFA (see section 7.4.5). Also at transboundary level, the decision-making process within the JRLFC is clear and results in TACs and national quotas for types of aquatic biological resources regulated on a bilateral basis in the Curonian Lagoon (bream, pike perch and European smelt) based on scientific data (e.g. the stock assessments) presented by both countries.

Overall, there are established decision-making processes (e.g., the TAC setting process) that are codified in the Russian legal framework and the cooperation agreements between Russia and Lithuania and are recognised by stakeholders in the fishery as they expressed during the meetings of the site visit, therefore the **SG 60** and **SG 80 is met**.

b	Responsiveness of decision-making processes			
	Guide post	Decision-making processes respond to **serious issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to **serious and other important issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to **all issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The decision-making process is based on updated scientific data (e.g. catch statistics, monitoring and survey results) and stakeholder's consultation at least on an annual basis. The decision-making process responds to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner. For example, the organised meetings of fisheries councils provide up to date recommendations for the management authorities which later are reflected in the TAC and Recommended catch as well as the new fishing rules. Similarly, meetings of the working groups of the JRLFC provide forum for discussion between the two countries to provide the position of each country and up to date data for their presentation during the annual meeting of the JRLFC.

The decision-making processes respond to serious and other important issues based on scientific data (e.g. the stock assessments), regular recommendations and scientific inputs from the scientific institutions and fisheries councils at different levels (e.g. federal, basin, and local) and after the consultation with the Estonian side at transboundary levels through the JRLFC at least annually. Such decisions are considered transparent, especially for the fishery stakeholders, as it can be consulted from the minutes of fisheries council meetings, the annual protocols of the JRLFC as well as the final regulations applied in the fishing rules for the Western fishery basin, therefore **SG 60** and **SG 80 are met**. However, Zolubas *et al*. (2014) highlighted the high level of centralization of fishery management in Moscow and poor management opportunity for regional authority, which prevents the conclusion that the local management responds to "all" issues in a timely and adaptive manner **as is required for SG 100**.

c	Use of precautionary approach			
	Guide post		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		**No**	
Rationale				

As previously stated, the decision making is based on the most updated scientific data and available information (for example, catches are checked daily in addition to the scientific surveys conducted by AtlantNIRO and therefore provide the best information available on fishing mortality). On the other hand, Lithuanian fisheries are managed based on the Common Fisheries Policy of the EU that adopts the precautionary principle, which takes into account the impact of human activities on all components of the ecosystem. The aim is to make fleets more selective in their fishing activities and to gradually eliminate the practice of discarding unwanted fish.

However, information on fishing removals from the stocks other than official catch statistics is very scarce. According to the limited literature data (e.g. Gushchin et al. 2019; and Gushchin and Shavrina 2018), on the level of recreational and IUU fishing, there is a high contribution of recreational and IUU harvest to total catch. This does not allow to consider the management as precautionary and therefore the **SG 80 is not met**.

d	Accountability and transparency of management system and decision-making process			
	Guide post	Some information on the fishery's performance and management action is generally available on request to stakeholders.	**Information on the fishery's performance and management action is available on request**, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders **provides comprehensive information on the fishery's performance and management actions** and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	Met?	**Yes**	**No**	**No**
Rationale				

Some information regarding the performance of the fishery and its management is available for interested stakeholders. The websites of the FFA and Zapadno-Baltiyskoye TA provide some information on the fishery's performance and management action (e.g. some protocols of the meetings of some of the Fisheries Councils). Further information on fishery management performance (including compliance) and management action is generally available upon the request of interested parties. This has been clear as the agencies involved in fisheries management responded by providing some of the information requested by the Assessment Team for this report. Thus, the **SG 60 is met**.

However, given the lack of important information such as the state of stocks of target species, methods for assessing the state of their populations, fishing regulation measures and other aspects of Principle 1 for the Lithuanian side of the lagoon, therefore, **SG 80 and SG 100 are not met**.

e	Approach to disputes			
	Guide post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				

Both the management system and the fishing sector try to resolve disputes and issues arising regarding the compliance to avoid judicial trials. Thanks to the well-established consultation system, most cases are solved either directly between user groups and the government or by consultation with user groups through fisheries councils (see Section 7.4.5). Internal fisheries offenses are processed by the enforcement agencies, and fishermen and ship-owners have the opportunity to take their case to the court system instead of accepting a fine. The fishery inspectorate has the power to issue administrative penalties for minor infringements. Only the most serious cases go to prosecution by the fishery inspectorate and may transfer to the judicial system. When occasionally the dispute is taken to court by fishing companies, the management authority complies with the judicial decision in a timely manner. At transboundary level, disputes between Russia and Republic of Lithuania can be resolved at the annual meetings of the JRLFC or in its Permanent Committee or working groups.

Since the management system acts proactively to avoid legal disputes and rapidly implements judicial decisions, information indicates that **the fishery meets SG 60, SG 80 and SG 100**.

References

- Gushchin and Shavrina 2018.
- Gushchin et al. 2019.
- On the approval of the fishing rules for the Western fisheries basin (approved by order dated October 21, 2020 No. 620) (In Russian: Об утверждении правил рыболовства для Западного рыбохозяйственного бассейна (утверждена приказом от 21 октября 2020 г. No. 620)) (Source: https://docs.cntd.ru/document/573191354#6500IL).
- Protocols of meetings of public hearings are organized by the Zapadno-Baltiyskoye TA of the FFA (Source: http://zbtu39.ru/publichnye-meropriyatiya/, http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os.pdf and http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os-shprot-scan.pdf).
- Procedure for the reception and consideration of citizens (In Russian: Порядок приема и рассмотрения обращений граждан) (Source: http://fish.gov.ru/obrashcheniya-grazhdan/poryadok-priema-i-rassmotreniya-obrashchenij-grazhdan).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	**More information sought to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**75**
Condition number (if relevant)	**7**

PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with		
Scoring Issue		SG 60	SG 80	SG 100
a	MCS implementation			
	Guide post	Monitoring, control and surveillance **mechanisms** exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance **system** has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A **comprehensive** monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	**Yes**	**No**	**No**
Rationale				

Monitoring, Control and Surveillance (MCS) is done both at the Federal and regional levels by the FFA and its branches in collaboration with regional organizations.

The FFA registers and reviews the amount of fish that each vessel and company (in Russia: quotas are allocated to companies, not to vessels) caught at any time, based on daily reports (logbooks) and reports accumulated every 15 days of all fishing vessels. A fishing journal is necessary to monitor the activities of fishing fleet vessels, including for accounting for the volumes of catch of aquatic biological resources and marine fish processing.

Enforcement and inspections are conducted by the inspectors of the fish protection department of the Zapadno-Baltiyskoye TA FFA (In Russian: Инспекторы рыбоохраны Западно-Балтийского ТУ ФАР) (Source: http://zbtu39.ru/). They carry out powers of state control and supervision in the field of fishery and conservation of aquatic biological resources, protection of aquatic biological resources and their habitats on the territory of the Kaliningrad region including Curonian Lagoon. The inspection plan for 2020 as well as for previous years can be found at the website of the Zapadno-Baltiyskoye TA (Source: http://zbtu39.ru/plan-proverok-2/).

In 2020, enforcement and inspections have been reinforced by more equipment as part of the renewal of the vehicle fleet and special equipment. The Zapadno-Baltiyskoye TA received eight "UAZ Patriot" vehicles, seven "RusBot 55" boats and five "Bigbot 360 PVC" boats (Source: http://fish.gov.ru/territorialnye-upravleniya/zapadno-baltijskoe/31134-inspektoram-otdelov-rybookhrany-zapadno-baltijskogo-terupravleniya-vruchili-klyuchi-ot-novykh-katerov). The boats are fully equipped with modern navigation equipment and radios; and seven trailers were purchased for their transportation to the reservoirs. In addition, radios were purchased for the inspectors, including 6 marine, echo sounders and 17 chest video recorders for the inspectors to record offenses. In autumn, the Zapadno-Baltiyskoye TA will receive two high-speed boats "KS 701 M" and "KS-TRIM 760R". They are equipped with water jet propellers, allowing the vessel to be used in shallow water, in a polluted fairway, as well as in other hard-to-reach places where there are no equipped berthing facilities.

In addition, quality / health inspections of landed fishery products before transferring them to domestic or export markets are the responsibility of the Ministry of Agriculture which coordinates the work of the Federal Service for Sanitary and Veterinary Inspection (Rosselkhoznadzor).

A monitoring, control and surveillance system has been implemented in the fishery and there is a reasonable expectation that they are effective, which is reflected in the numbers of violations according to the official information on compliance and infringements (see section 7.4.8.3), therefore **SG 60 is met**. However, the limited literature data (e.g. Gushchin et al. 2019; and Gushchin and Shavrina 2018) shows that IUU fishing is high and comprises about ±20% of the officially reported harvest. This means that the MCS system does not show to be able to enforce relevant management measures, therefore **SG 80 and SG 100 are not met**.

b	Sanctions			
	Guide post	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, **are consistently applied** and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and **demonstrably** provide effective deterrence.
	Met?	**Yes**	**Yes**	**No**
Rationale				

Sanctions are provided to address non-compliance within the fisheries management system in Russia. In the fishery, the authority draws extensively on administrative fines and sends only unsolved cases to the judicial system. Both the "code of the Russian Federation on Administrative Offenses" 30.12.2001 No. 195-FZ and the "The Criminal Code of the Russian Federation" 13.06.1996 No. 63-FZ define the sanctions for violating the rules regulating fishing in the Russian Federation (see **Table 56**).

According to the provided statistics (see section 7.4.8.3) as well as the news on the FFA website, there is evidence that sanctions to deal with non-compliance exist, and are consistently applied; therefore **SG 60 is met**, and thought by the consulted stakeholders to provide effective deterrence; therefore **SG 80 is met.**

However, taking into account the limited literature data (e.g. Gushchin et al. 2019; and Gushchin and Shavrina 2018) about the IUU in the fishery, it cannot be concluded that sanctions provide effective deterrence, therefore **SG 100 is not met**.

c	Compliance			
	Guide post	Fishers are **generally thought** to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	**Some evidence exists** to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a **high degree of confidence** that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	**Yes**	**Yes**	**No**
Rationale				

According to the compliance statistics made available to the Assessment Team (see section 7.4.8.3), compliance in the fishery is high, and that no serious infringements have been documented. Statistics show that the inspection activity has increased from an average of 200 inspections per year in 2012, 2013, 2014, and 2015 to more than triple with almost 750 inspections in 2018 (**Table 57**). At the same time, despite the increasing trend of inspections, the detected violations were slightly increasing about 4 to 5 violations per year until 2018 (**Table 57**). Such a slight increase in detected violation is normal taking into account the considerable increase in inspection activities. Thanks to this increasing trend of inspections the non-compliances rate has decreased to less than 10% in the last two years.

News about violations and cases detained by the inspectors of the fish protection department of the Zapadno-Baltiyskoye TA can be found at (Source: http://fish.gov.ru/territorialnye-upravleniya/zapadno-baltijskoe ; http://kgzt.ru/rosrybolovstvo; and http://fish.gov.ru/territorialnye-upravleniya/zapadno-baltijskoe/31115-inspektory-zapadno-baltijskogo-terupravleniya-za-nedelyu-proveli-21-rejd-i-oshtrafovali-narushitelej-na-56-tys-rublej).

Such information is considered enough evidence to demonstrate that fishers comply with the management system and therefore the **SG 60** and **SG 80 are met**. However, taking into account that the team doesn't have any independent information on inspections and infringements (e.g. scientific paper) or information about the magnitude of the IUU in previous years, it cannot be concluded with high degree of confidence that fishers comply with the management system, therefore **SG 100 is not met**.

d	Systematic non-compliance			
	Guide post		There is no evidence of systematic non-compliance.	

	Met?		Yes	

Rationale

There is no evidence of systematic non-compliance in the fishery, which is reflected in the compliance statistics made available to the Assessment Team (see section 7.4.8.3). The Assessment Team did not find any information indicating that this is not the case.

Therefore, information indicates that the **SG 80 is met**.

References

- "Code of the Russian Federation on Administrative Offenses" dated 30.12.2001 No. 195-FZ (as amended on 31.07.2020) (as amended and supplemented, entered into force on 11.08.2020) (In Russian: "Кодекс Российской Федерации об административных правонарушениях" от 30.12.2001 No. 195-ФЗ (ред. от 31.07.2020) (с изм. и доп., вступ. в силу с 11.08.2020)) (Source: http://www.consultant.ru/document/cons_doc_LAW_34661/).
- Gushchin et al. 2019.
- Gushchin and Shavrina 2018.
- "The Criminal Code of the Russian Federation" dated 13.06.1996 No. 63-FZ (as amended on 31.07.2020) (In Russian: "Уголовный кодекс Российской Федерации" от 13.06.1996 No. 63-ФЗ (ред. от 31.07.2020)) (Source: http://www.consultant.ru/document/cons_doc_LAW_10699/ ; https://www.wipo.int/edocs/lexdocs/laws/en/ru/ru080en.pdf).
- News about violations and cases detained by the inspectors of the fish protection department of the Zapadno-Baltiyskoye TA can be found at (Source: http://fish.gov.ru/territorialnye-upravleniya/zapadno-baltijskoe ; http://kgzt.ru/rosrybolovstvo; and http://fish.gov.ru/territorialnye-upravleniya/zapadno-baltijskoe/31115-inspektory-zapadno-baltijskogo-terupravleniya-za-nedelyu-proveli-21-rejd-i-oshtrafovali-narushitelej-na-56-tys-rublej).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**75**
Condition number (if relevant)	**8**

PI 3.2.4 – Monitoring and management performance evaluation

<table>
<tr><th colspan="2">PI 3.2.4</th><th colspan="3">There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives
There is effective and timely review of the fishery-specific management system</th></tr>
<tr><td colspan="2">Scoring Issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="3">a</td><td colspan="4">Evaluation coverage</td></tr>
<tr><td>Guide post</td><td>There are mechanisms in place to evaluate some parts of the fishery-specific management system.</td><td>There are mechanisms in place to evaluate key parts of the fishery-specific management system.</td><td>There are mechanisms in place to evaluate all parts of the fishery-specific management system.</td></tr>
<tr><td>Met?</td><td>Yes</td><td>Yes</td><td>No</td></tr>
<tr><td colspan="5">Rationale</td></tr>
</table>

The fishery has mechanisms to internally evaluate and review key parts of the management system on a regular basis. In Russia, the management authorities (e.g. the FFA) receive feedback from the interested stakeholders including NGOs through the different councils found at federal, basin and regional levels (see section 7.4.5). Moreover, the FFA reviews the performance of its regional offices regularly. In this matter, the recommendations of the Regional Fisheries Council are taken into account in the FFA regional office's feedback to the federal office. In the TAC-setting process, the scientific advice from AtlantNIRO is peer reviewed by the VNIRO, and then forwarded to FFA and the federal natural resources monitoring agency Rosprirodnadzor for comments (see section 7.4.5).

The fishery-specific management system is also subject to external review. Despite that the management system itself is not reviewed by the JRLFC, many key parts and issues of the management undergo a detailed annual review during the JRLFC's annual meeting, such as catch, stock status, MCS system, compliance, as well as the environmental aspects of the fishery (see section 7.4.7). Also, the State Ecological Expertise in Russia, which is under the Federal Service, in contrast to the FFA which is under the Ministry of Agriculture, is responsible for the Supervision of Natural Resources, and review of the Russian management system.

This SI tries to assess the extent of the review and evaluation mechanisms and its coverage to the parts of the fishery-specific management system. Information indicates that the **SG 60** and **SG 80 are met** but it is not clear that "all" parts of the fishery-specific management system are reviewed by these mechanisms, therefore **SG 100 is not met**.

<table>
<tr><td rowspan="3">b</td><td colspan="4">Internal and/or external review</td></tr>
<tr><td>Guide post</td><td>The fishery-specific management system is subject to occasional internal review.</td><td>The fishery-specific management system is subject to regular internal and occasional external review.</td><td>The fishery-specific management system is subject to regular internal and external review.</td></tr>
<tr><td>Met?</td><td>Yes</td><td>Yes</td><td>Yes</td></tr>
<tr><td colspan="5">Rationale</td></tr>
</table>

The fishery has mechanisms to evaluate and review key parts of the management system on a regular basis as explained above in PI 3.2.4 SIa. Internal reviews include the received feedback from the interested stakeholders such as NGOs through the different councils found at federal, basin and regional levels, which organise regular meetings (e.g. in most cases quarterly) as well as the FFA reviews over the performance of its regional offices. Also, the TAC-setting process includes the scientific reviews by AtlantNIRO, VNIRO, FFA and the federal natural resources monitoring agency Rosprirodnadzor. In addition to the annual reviews by the JRLFC, the annual reviews of the State Ecological Expertise in Russia are totally external to the management system.

This SI tries to assess the frequency and regularity of the internal and external evaluation mechanisms of the parts of the fishery-specific management system. Information indicates that the fishery-specific management system is subject to regular internal (e.g., in most cases quarterly – scientific reviews by AtlantNIRO, VNIRO, FFA, and fisheries councils) and regular annual external reviews (e.g., annual reviews – by the JRLFC and by the State Ecological Expertise in Russia) and therefore **SG 60**, **SG 80** and **SG 100 are met**.

References

- On the approval of the fishing rules for the Western fisheries basin (approved by order dated October 21, 2020 No. 620) (In Russian: Об утверждении правил рыболовства для Западного рыбохозяйственного бассейна (утверждена приказом от 21 октября 2020 г. No. 620)) (Source: https://docs.cntd.ru/document/573191354#6500IL).
- Protocols of meetings of public hearings are organized by the Zapadno-Baltiyskoye TA of the FFA (Source: http://zbtu39.ru/publichnye-meropriyatiya/, http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os.pdf and http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os-shprot-scan.pdf).
- Federal Law of November 23, 1995 No. 174-ФЗ “On Environmental Expertise” (as amended on December 17, 2009) (In Russian: Федеральный закон от 23.11.1995 № 174-ФЗ «Об экологической экспертизе» (в ред. от 17.12.2009)) (source: http://www.consultant.ru/document/cons_doc_LAW_8515).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report stage

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**90**
Condition number (if relevant)	**NA**

7.4.11 Principle 3 references

Agreement between the governments of the Russian Federation and the Republic of Lithuania on cooperation in the field of fisheries of 29 June 1999 (Source: http://base.garant.ru/2562006/).

Agreement between the Government of the Russian Federation and the European Community on cooperation in the field of fisheries and the conservation of living marine resources in the Baltic Sea (Source: http://docs.cntd.ru/document/902182268).

All-Russian Research Institute of Fisheries and Oceanography (In Russian: Всероссийский научно-исследовательский институт рыбного хозяйства и океанографии) (VNIRO/ВНИРО) (Source: http://www.vniro.ru/ru/).

Arbitration Court of Kaliningrad Region (Арбитражный суд Калининградской области) (https://kaliningrad.arbitr.ru/).

Atlantic branch of the Federal State Budget Scientific Institution “Russian Federal Research Institute of Fisheries and oceanography” (AtlantNIRO) (In Russian: Атлантический филиал федерального государственного бюджетного научного учреждения «Всероссийский научно-исследовательский институт рыбного хозяйства и океанографии» (АтлантНИРО)) (Source: https://atlantniro.ru/).

"Code of the Russian Federation on Administrative Offenses" dated 30.12.2001 No. 195-FZ (as amended on 31.07.2020) (as amended and supplemented, entered into force on 11.08.2020) (In Russian: "Кодекс Российской Федерации об административных правонарушениях" от 30.12.2001 No. 195-ФЗ (ред. от 31.07.2020) (с изм. и доп., вступ. в силу с 11.08.2020)) (Source: http://www.consultant.ru/document/cons_doc_LAW_34661/).

"Criminal Code of the Russian Federation" dated 13.06.1996 No. 63-FZ (as amended on 31.07.2020) (In Russian: "Уголовный кодекс Российской Федерации" от 13.06.1996 No. 63-ФЗ (ред. от 31.07.2020)) (Source: http://www.consultant.ru/document/cons_doc_LAW_10699/ ; https://www.wipo.int/edocs/lexdocs/laws/en/ru/ru080en.pdf).

Composition of the fisheries council in Kaliningrad region (Source: http://base.garant.ru/9766846/f7ee959fd36b5699076b35abf4f52c5c/).

Federal Law “On Fishery and Protection of Aquatic Biological Resources” (2004) (Source: https://rg.ru/2004/12/23/rybolovstvo-dok.html).

Federal Law “On the Continental Shelf of the Russian Federation” (1995) (Source: http://extwprlegs1.fao.org/docs/html/rus21902E.htm).

Federal Law “On the Exclusive Economic Zone of the Russian Federation” EEZ (1998) (Source: https://www.ecolex.org/details/legislation/federal-law-no-191-fz-of-1998-on-the-exclusive-economic-zone-lex-faoc027457).

Federal Law “On Protection of the Environment” (2001) (Source: https://rg.ru/2002/01/12/oxranasredy-dok.html).

Federal Law of May 2, 2006 No. ФЗ-59 “On the Procedure for Considering Appeals of Citizens of the Russian Federation” (Source: http://base.garant.ru/12146661/).

Federal Arbitration Courts of the Russian Federation (In Russian: Федеральные арбитражные суды Российской Федерации) (http://www.arbitr.ru).

Federal Security Service of the Russian Federation (hereinafter FSB) (In Russian: федеральной службы безопасности) (Source: http://www.fsb.ru/ and http://ps.fsb.ru/).

Federal Service for Veterinary and Phytosanitary Surveillance (In Russian: Rosselkhoznadzor / Россельхознадзор) submits to the Ministry of Agriculture of the Russian Federation (Source: http://www.fsvps.ru/).

Federal Service for Supervision of Nature Management (In Russian: Rosprirodnadzor / Росприроднадзор) (Source: http://rpn.gov.ru/).

Federal portal for draft regulatory legal acts (In Russian: ФЕДЕРАЛЬНЫЙ ПОРТАЛ ПРОЕКТОВ НОРМАТИВНЫХ ПРАВОВЫХ АКТОВ) (Source: https://regulation.gov.ru).

Fisheries Service under the Ministry of Agriculture (Source: http://zuv.lt/).

Fishing rules for the Western fisheries basin (approved by order dated October 21, 2020 No. 620) are found at (Source: https://docs.cntd.ru/document/573191354#6500IL).

FSBI “Glavrybvod” Federal State Budgetary Institution “Main Basin Administration for Fisheries and the Conservation of Aquatic Biological Resources” (In Russian: ФГБУ "Главрыбвод" Федеральное государственное бюджетное учреждение «Главное бассейновое управление по рыболовству и сохранению водных биологических ресурсов») (Source: https://glavrybvod.ru/).

Gushchin A. V., Shavrina I. A. 2018. Sovremennoe sostoyanie promyslovoi ikhtiofauny yuzhnoi chasti Baltiiskogo morya kak sledstvie antropogennogo vozdeistviya. Soobshchenie 2. Kurshskii zaliv [Modern state of commercial ichthyofauna from the estuaries of the southern part of the Baltic Sea as the result of anthropogenic infl uence. Communication 2. The Curonian Lagoon]. Regional'naya ekologiya [Regional Ecology], no. 2(52). P. 54–64. DOI: 10.30694/1026-5600-2018-2-54-64 [Гущин А. В., Шаврина И. А. 2018. Современное состояние промысловой ихтиофауны южной части Балтийского моря как следствие антропогенного воздействия. Сообщение 2. Куршский залив // Региональная экология, No 2(52). С. 54–64. DOI: 10.30694/1026-5600-2018-2-54-64]

Gushchin A. V., Tvergokhleb O.A., Shavrina I. A. 2019. Fishery as an anthropogenic factor forming the commercial ifish fauna of the Curonian Lagoon // In: "Problems of explore and conservation natural and cultural heritage of the national park «Kurshskaya kosa»". Collection of scientific articles. Vol. 15 / Compiler I. Zhukovskaya. Published by IK BFU, Kaliningrad, Russian Federation, 2019. - Pp. 45-55 [In Russian]. Source: https://www.researchgate.net/publication/338802660_Rybolovstvo_kak_antropogennyj_faktor_formiruusij_promyslovuu_ihtiofaunu_Kursskogo_zaliva. Downloaded on 29.07.2020.

Inspection plan for 2020 as well as for previous years can be found at the website of the Zapadno-Baltiyskoye TA (Source: http://zbtu39.ru/plan-proverok-2/).

Kaliningrad Union of Fishing Collective Farms (in Russian: Калининградский областной Союз рыболовецких колхозов) (Source: https://www.rucompany.ru/company.php?id_company=133).

Law of the Russian Federation “On the Animal World” (1995) (Source: https://www.ecolex.org/details/legislation/federal-law-of-the-russian-federation-on-wildlife-no-52-fz-of-1995-lex-faoc022375).

Lithuanian fisheries law 2000 June 27 No. VIII-1756 (Source: https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.104591/asr).

Meetings of the Public Council (Source: http://www.fish.gov.ru/territorialnye-upravleniya/15-otkrytoe-agentstvo/obshchestvennyj-sovet-pri-rosrybolovstve).

Ministry of Agriculture (Source: http://fish.gov.ru/).

Minutes and protocols of the Fisheries Council (Source: https://zum.lrv.lt/lt/veiklos-sritys/zuvininkyste/projektai-tyrimai-susitikimai/susitikimai/zuvininkystes-taryba).

New long-term strategy for the development of the Russian fisheries complex until 2030 (In Russian: Стратегия развития рыбохозяйственного комплекса до 2030 года) (Source: http://fish.gov.ru/files/documents/files/proekt-strategiya-2030.pdf; http://fish.gov.ru/files/documents/press-centr/vystavki/mrf2017/p_6-1.pdf).

News about violations and cases detained by the inspectors of the fish protection department of the Zapadno-Baltiyskoye TA can be found at (Source: http://fish.gov.ru/territorialnye-upravleniya/zapadno-baltijskoe and http://kgzt.ru/rosrybolovstvo).

Order of the State Committee for Ecology of the Russian Federation of December 19, 1997 No. 569 (as amended on April 28, 2011) "On the approval of lists of objects of the animal world listed in the Red Book of the Russian Federation and excluded from the Red Book of the Russian Federation" approves the lists of the Red Book lists (Source: http://base.garant.ru/2156180).

Order of the Minister of Agriculture of the Republic of Lithuania No. 3D-620 "on the approval of the procedure for granting, transferring, suspending, suspending, revoking and allocating individual fishing opportunities in the Baltic Sea" (Source: https://zum.lrv.lt/lt/veiklos-sritys/zuvininkyste/zuvininkystes-politika-zp/teisine-baze).

Order of the director of the ministry of agriculture of the republic of Lithuania of 24 January 2017 no. amendment V1-8 "On the approval of quotas for fishing in the Curonian Lagoon" and the order no. amendment V1-24 "On the approval of quotas granted by auction in the Curonian Lagoon" (Source: http://zuv.lt/index.php?2699376909).

Order of the Ministry of Agriculture of the Russian Federation of March 20, 2017 No. 135 "On approval of the Procedure for the Activities of Basin Scientific and Commercial Councils" (Source: http://publication.pravo.gov.ru/Document/View/0001201705180008).

Order concerning the establishment of a fisheries council and the adoption of fisheries council regulations. 2011 September 6 No. 3D-672 / D1-678 (Source: https://www.e-tar.lt/portal/lt/legalAct/TAR.98B4B1E88272/asr).

Procedure for the reception and consideration of citizen's proposals and the rules for submission of appeals are specified in the official website of the FFA (Source: http://fish.gov.ru/obrashcheniya-grazhdan/poryadok-priema-i-rassmotreniya-obrashchenij-grazhdan).

Protocols of the meetings of the Baltic Scientific-Fisheries Council of the Western basin (Source: http://fish.gov.ru/otraslevaya-deyatelnost/organizatsiya-rybolovstva/protokoly-komissij-i-nauchno-promyslovykh-sovetov).

Protocols of the meetings of public hearings are organized by the Zapadno-Baltiyskoye TA of the FFA (Source: http://zbtu39.ru/publichnye-meropriyatiya/).

Protocols of the meeting held at Kaliningrad in 16th of April 2020, was organised by Zapadno-Baltiyskoye TA together with AtlantNIRO (Source: http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os.pdf and http://zbtu39.ru/wp-content/uploads/2020/04/protokol-os-shprot-scan.pdf).

Public Council at the Federal Fisheries Agency (In Russian: Общественный совет при Федеральном агентстве по рыболовству) (Source: http://fish.gov.ru//otkrytoe-agentstvo/obshchestvennyj-sovet-pri-rosrybolovstve).

Regulation (EU) No 182/2011 of the European Parliament and of the Council Amending Regulation (EC) No 1380/2013 on the Common Fisheries Policy and amending Council Regulations (EC) No. 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585 / EC (Source: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013R1380-20140101&qid=1410936936979&from=LT).

Regulation (EU) No 182/2011 of the European Parliament and of the Council Amending Regulation (EC) No. 1379/2013 on the common organization of the markets in fishery and aquaculture products 1184/2006 and (EC) No. 1224/2009 and repealing Council Regulation (EC) No. 1224/2009 104/2000 (Source: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013R1379-20140101&qid=1410937232568&from=LT).

Regulation (EU) No 182/2011 of the European Parliament and of the Council Amending Regulation (EU) No. 508/2014 on the European Maritime and Fisheries Fund and repealing Council Regulations (EC) No. Regulation (EC) No. 2328/2003 (EC) No 861/2006 1198/2006 and (EC) No Regulation (EC) No. 791/2007 of the European Parliament and of the Council 1255/2011 (Source: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0508&qid=1410937461321&from=LT).

SE Agricultural Information and Rural Business Center (hereinafter referred to as ŽUIKVC) (Source: https://www.vic.lt/).

West Baltic (Zapadno-Baltyiskoe) Territorial Administration of the Federal Fisheries Agency (In Russian: Западно-Балтийское Территориальное Управление Федерального Агентства По Рыболовству / Zapadno-Baltiyskoye Territorial'noye Upravleniye Federal'nogo Agentstva Po Rybolovstvu) (hereinafter Zapadno-Baltiyskoye TA) (Source: http://zbtu39.ru/).

Zolubas T., Kontautas A., Shibaev S. 2014. Fisheries management in the Curonian Lagoon. In: Stybel, N. & Skor, M. (eds.). Fisheries management in coastal waters of the Baltic Sea - AQUAFIMA results of the Szczecin Lagoon, Vistula Lagoon, Curonian Lagoon and Gulf of Riga. Coastline Reports (22), pp. 47-69. EUCC - The Coastal Union Germany, Rostock, 2014.

8 Appendices

8.1 Assessment information

8.1.1 Previous assessments

The Curonian Lagoon Perch and Pike-perch fishery has not been subjected to a previous MSC assessment.

8.1.2 Small-scale fisheries

The Curonian Lagoon Perch and Pike-perch is a small-scale fishery (Table 58).

Table 58 – Small-scale fisheries

Unit of Assessment (UoA)	Percentage of vessels with length <15m	Percentage of fishing activity completed within 12 nautical miles of shore
1 – Perch (*Perca fluviatilis*) caught by Client vessels in the Curonian Lagoon.	100%	100%
2 – Pike-perch (*Sander lucioperca*) caught by Client vessels in the Curonian Lagoon.	100%	100%

8.2 Evaluation processes and techniques

8.2.1 Site visits

Table 59 – List of site visit participants

Name	Affiliation
Andrey Vinnikov	UCSL, observer (teleconference)
Alexey Khoruzhiy	UCSL, observer (teleconference)
Geir Hønneland	UCSL assessment team. Team Leader (TL), PhD, (teleconference)
Petr Vasilets	UCSL assessment team. Expert on Principle 1 and 2, PhD, (teleconference)
Mohamed Samy-Kamal	UCSL assessment team. Expert on Principle 3, PhD, (teleconference)
Tatiana Fokina	Vostochny Alliance Co., Ltd., Translator, (teleconference)
Vladimir Lozhkin	Representative of Client group (APC FCF imeni Matrosova and Zalivino LLC), Russia, Kaliningrad
Tatiana Peschkova	Representative of Client group (P&G International Trading GmbH), (teleconference)
Konstantin Zgurovsky	WWF Russia, Moscow office (non-staff), Senior advisor, PhD, (teleconference)
Alexey Golenkevich	WWF Russia Barents office (Murmansk - St-Petersburg), (teleconference)
Tatiana Golubkova	Atlantic branch of VNIRO (AtlantNIRO) (Russia), Head of the Centre of Aquatic Bioresources of the Western Fishery Basin, PhD, (teleconference)
Sergey Shibaev	Kaliningrad State Technical University (KSTU) (Russia), Head of the Department of Ichthyology and Ecology, Doctor of Biological Sciences, (teleconference)
Konstantin Tylik	Kaliningrad State Technical University (KSTU) (Russia), Dean of the Faculty of Bioresources and Nature Management, PhD, (teleconference)
Leonid Azarov	West-Baltic (Zapadno-Baltiyskoe) Territorial Administration of Federal Fisheries Agency (WB TA FFA), (Russia), Senior inspector, (teleconference)
Robertas Kubilius	Nemunas Delta Regional Park (Lithuania), Chief ecologist, (teleconference)
Antanas Kontautas	Klaipeda University, Marine research Institute, (Lithuania), Head of Fishery Data collection programme, (teleconference)
Dmitry Inyashkin	Zalivino LLC, Head of Fisheries, (Russia), (teleconference)

Table 60 – Summary of the agenda for the site visit (14 – 17 December 2021).

Date	Moscow time	Subjects covered	Participants
December 14	**10:00 - 12:00**	**Opening Meeting** - Introductions - MSC Process - Confidentiality - Site visit plan - Discussion of questions and previous Scoring of assessment	Team: Geir Hønneland, Petr Vasilets, Mohamed Samy-Kamal Client: Tatiana Peschkova, Vladimir Lozhkin CAB: Andrey Vinnikov, Alexey Khoruzhiy Translator: Tatiana Fokina
December 14	**12:00 - 13:30**	- Introductions - MSC Process - Confidentiality - Questions from team on P1-P3 - Questions related to the RBF	Team: Geir Hønneland, Petr Vasilets, Mohamed Samy-Kamal CAB: Alexey Khoruzhiy Translator: Tatiana Fokina WWF: Konstantin Zgurovsky, Alexey Golenkevich
December 15	**10:00 - 13:00**	- Introductions - MSC Process - Confidentiality - P1-P3 questions - Review on observer activities - Questions related to the RBF	Team: Geir Hønneland, Petr Vasilets, Mohamed Samy-Kamal CAB: Alexey Khoruzhiy Translator: Tatiana Fokina AtlantNIRO: Tatiana Golubkova KSTU: Sergey Shibaev, Konstantin Tylik
December 16	**10:00 - 13:00**	- Introductions - MSC Process - Confidentiality - P1-P3 questions - Questions related to the RBF	Team: Geir Hønneland, Petr Vasilets, Mohamed Samy-Kamal CAB: Alexey Khoruzhiy Translator: Tatiana Fokina Nemunas Delta Regional Park: Robertas Kubilius Klaipeda University: Antanas Kontautas
December 17	**10:00 - 11:00**	- Introductions - MSC Process - Confidentiality P3 questions	Team: Geir Hønneland, Petr Vasilets, Mohamed Samy-Kamal CAB: Andrey Vinnikov, Alexey Khoruzhiy Translator: Tatiana Fokina WB TA FFA: Leonid Azarov
December 17	**11:00 - 13:00**	- Introductions - MSC Process - Confidentiality - P1-P3 questions - Questions related to the RBF	Team: Geir Hønneland, Petr Vasilets, Mohamed Samy-Kamal CAB: Andrey Vinnikov, Alexey Khoruzhiy Translator: Tatiana Fokina Zalivino LLC: Dmitry Inyashkin
December 17	**13:00 - 14:00**	**Closing Meeting** - Introductions - MSC Process - Confidentiality - Discussion on questions of Summary outcome, Update on timeline	Team: Geir Hønneland, Petr Vasilets, Mohamed Samy-Kamal Client: Tatiana Peschkova, Vladimir Lozhkin CAB: Andrey Vinnikov, Alexey Khoruzhiy Translator: Tatiana Fokina

8.2.2 Stakeholder participation

UCSL (the CAB) posted the ACDR on the MSC website on 15 September 2021 and invited public comment. By 14 December 2021, the CAB had received no comments. The CAB together with the Client prepared a site visit and invited relevant scientists, managers, and NGO representatives to participate. The team met with a broad spectrum of stakeholders, who have overseen the fishery for a long time. The team invited any written comments but received none. During the site visit (14 – 17 December 2021) and subsequent communication, the Client facilitated contacts and promptly gathered relevant information from stakeholders. See Table 60 to review stakeholders participating in the assessment process and site visit schedule.

8.2.3 Evaluation techniques

The stakeholder list was updated and expanded with assistance from the client. An allocated timeslot for meetings with stakeholders was provided at the site visit. In preparation for the site visit, the team requested personnel, with experience across all the principles, make themselves available for questions from the assessment team.

The client submitted a comprehensive checklist with links to relevant documents. Information continued to be collected during the site visit. Scoring was discussed by the assessment team during the site visit and the team agreed on a score (a consensus approach). Scoring was formally completed during the final preparation of the client draft report following some adjustments that had to be made because of stakeholder input.

According to MSC FCP v2.2 (7.17.2), the team discussed evidence together, weighed up the balance of evidence and used our judgement to agree a final score.

In accordance with FCP v2.2 7.7.3.2, Table 3 was used to determine whether a scoring element may or may not be data deficient. Biologically based limits for secondary species are not available and thus the Risk Based Framework (RBF) was used to assess the target species (perch) and main secondary species using the CA and PSA methodology (see Section 8.8). An RBF workshop to assess main secondary species outcome was held during the site visit. Participants were provided with a presentation to explain the process and discussions were held based on the productivity values with targeted stakeholder input on the susceptibility indicators. Stakeholders were informed of the RBF workshop when the fishery was announced.

In the RBF process during the site visit were involved these persons:

N	Name	Affiliation
1	Vladimir Lozhkin	Representative of Client group (APC FCF imeni Matrosova and Zalivino LLC), Russia, Kaliningrad
2	Konstantin Zgurovsky	WWF Russia, Moscow office (non-staff), Senior advisor, PhD, (teleconference)
3	Alexey Golenkevich	WWF Russia Barents office (Murmansk - St-Petersburg), (teleconference)
4	Tatiana Golubkova	Atlantic branch of VNIRO (AtlantNIRO) (Russia), Head of the Centre of Aquatic Bioresources of the Western Fishery Basin, PhD, (teleconference)
5	Sergey Shibaev	Kaliningrad State Technical University (KSTU) (Russia), Head of the Department of Ichthyology and Ecology, Doctor of Biological Sciences, (teleconference)
6	Konstantin Tylik	Kaliningrad State Technical University (KSTU) (Russia), Dean of the Faculty of Bioresources and Nature Management, PhD, (teleconference)
7	Robertas Kubilius	Nemunas Delta Regional Park (Lithuania), Chief ecologist, (teleconference)
8	Antanas Kontautas	Klaipeda University, Marine research Institute, (Lithuania), Head of Fishery Data collection programme, (teleconference)
9	Dmitry Inyashkin	Zalivino LLC, Head of Fisheries, (Russia), (teleconference)

The final MSC score for perch in PI 1.1.1 is **83** (see Table 91).

The final MSC score for PI 2.2.1 is **80** (see Table 92).

8.3 Peer Review reports

PR A: General Comments

Question	Yes/No	Peer Reviewer Justification (as given at initial Peer Review stage). Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)
Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	Yes for Principle 1. The scoring was done in a precautionary manner, a sound rationale has been used and the conclusions are supported by appropriate evidence Partially for Principle 2. There are issues both with rationale and evidence (particularly related to weak evidence and implicit assumptions) that need attention because they will have scoring implications. A material score reduction is expected for PI2.1.2, a non-material score reduction is expected for 2.1.3 and a score increase is expected for 2.3.1 Yes for Principle 3. The assessment team has taken into consideration that PIs 3.1.1 – 3.1.3 can be harmonized consistent with other lake fisheries in Russia. Harmonized scores for Principle 3 are provided in Table 82.	Thank you for your comments. We have responded below.
Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.2, 7.18.1 and sub-clauses]	Yes	A material score reduction is expected for PI2.1.2 which would give rise to an additional condition Annual milestones for Conditions 1, 2 and 3 are appropriate to achieve the SG80 outcome within the specified timeframe	Thank you for your comments. We added a condition for PI2.1.2.

Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	NA		Thank you for your comment. No response needed.
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 20-21: Table 2 – Unit(s) of Assessment (UoA) mentions Perch as UoA1 and Pike-perch as UoA2, while troughout the remainder of the report Pike-perch is referred as UoA1 and perch as UoA2. Please correct	Thank you for your comment. We corrected the table.
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 40 and 46: "Major sources of uncertainty in the estimate of stock biomass and abundance are variations associated with the annual research surveys, the uncertainty in predicting annual recruitment, and volume of recreational and illegal catches. They are taking into account through the setting of highly precautionary TAC" - please can you elaborate what kind of variations are associated with the annual research surveys	Thank you for your comment. In our opinion, the following types of variations can be associated with annual research surveys: variations in trawl operation (affecting catchability), variations in the distribution of fish in time and space.
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Please change reference "Materials ..., 2020a" throughout the text to "Materials, 2020a"	Thank you for your comment. We corrected the text.

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 94: Table 42 White bream catch in UoC - add units (tonnes)	Thank you for your comment. We corrected the text.
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 96: 7.3.7.2.3 Eurasian otter - change 2nd paragraph "Eurasian beaver is Least Concern (LC) species" to "Eurasian otter is Near Threathened (NT) species."	Thank you for your comment. We corrected the text.
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 102: 1st paragraph, please change "Common Goldeneye" to "Great Cormorant". Conversely change "Common Goldeneye" to "Great Crested Grebe" (p. 103), "Greater Scaup" (p. 104), "Red-throated Loon" (p. 106), "Smew" (p. 107)	Thank you for your comment. We corrected the text.
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 100, 102, 103, 104/105, 106 and 108 please review and revise two paragraphs each under Justification European regional assessment: Least Concern (LC) EU28 regional assessment: Least Concern (LC). The paragraphs appear copied and pasted several times without changing the details in relation to the correct species for each section	Thank you for your comment. We corrected the text.

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 110: Table 45 last column - please correct Average commercial length, cm to 37	Thank you for your comment. We corrected the text.
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 115: 7.3.9.1.2 Baltic ringed seal The [...???] for Baltic ringed seal in the Baltic region does not meet any of the IUCN criteria for Threatened categories, and is listed as Least Concern - this seems contradictory to what is mentioned in the paragraph above? (last sentence} - "It occurs rarely in the Baltic Sea off the coast of the Kaliningrad region, but relatively regularly" this sentence seems somewhat contradictory too - please reword	Thank you for your comment. We corrected the text.

PR A: PI Comments

PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Performance Indicator (PI)	Has all available relevant information been used to score this PI?	Does the information and/or rationale used to score this PI support the given score?	Will the condition(s) raised improve the fishery's performance to the SG80 level?	Peer reviewers (PRs) should provide support for their answers in the left three columns by referring to specific scoring issues and/or scoring elements, and any relevant documentation as appropriate. Additional rows should be inserted for any PIs where two or more discrete comments are raised, e.g. for different scoring issues, allowing CABs to give a different answer in each case. Paragraph breaks may also be made within cells using the Alt-return key combination. Detailed justifications are only required where answers given are one of the 'No' options. In other (Yes) cases, either confirm 'scoring agreed' or identify any places where weak rationales could be strengthened (without any implications for the scores).	CABs should summarise their response to the Peer Reviewer comments in the CAB Response Code column and provide justification for their response in this column. Where multiple comments are raised by Peer Reviewers with more than one row for a single PI, the CAB response should relate to each of the specific issues raised in each row. CAB responses should include details of where different changes have been made in the report (which section #, table etc).	See codes page for response options
1.1.1	Yes	No (change to rationale expected, not to scoring)	NA	SI a: As two Lithuanian experts present at the site visit expressed doubts that the pike-perch stock in Curonian lagoon exceeds the Blim, some clarification in regard to the reason for their doubt would be expected. Has any information (qualitative or quantitative) been provided that may justify their doubt?	Thank you for your comment. We added the information in the rationale. "They also reported that they have information about the occurrence and biological characteristics of pike-perch only in the Lithuanian part of the Curonian Lagoon. And that changes in these indicators may be due to changes in water salinity in the Lithuanian part of the lagoon, which is located closer to the sea." Taking into account the differences between the Russian and Lithuanian assessments, we did score reduction to < 80.	Accepted (material score reduction to <80)

1.1.1	Yes	Yes	NA	SI b agreed: the commercial stock biomass reference point (Bpa = 1.4 * Blim = 554 tons) used as target reference point supporting the HCR is of a precautionary nature. It does not ascertain that stock biomass has been fluctuating around a level consistent with MSY or above.	Thank you for your comment. We added a new information in the rationale about Lithuanian assessment of pike-perch (Andrašūnas et al., 2022). Taking into account the differences between the Russian and Lithuanian assessments, we did score reduction to < 80.	Accepted (material score reduction to <80)
1.1.1	Yes	Yes	NA	RBF was used because no stock status reference points are available: MSC Fisheries Certification Process v2.2, 7.17.5.2 was followed	Thank you for your comment. No response needed.	NA (No response needed)
1.1.2	NA (PI not scored)	NA (PI not scored)	NA		Since we reduced the score for UoA1 to <80 in PI1.1.1, we estimated this PI.	Accepted (score increased)
1.1.2	NA (PI not scored)	NA (PI not scored)	NA		Thank you for your comment. No response needed.	NA (No response needed)
1.2.1	Yes	Yes	Yes	Scoring agreed for all SIs. SI f fails to meet SG80 and triggers Condition 1: gillnets of small mesh size (presumably those used in UoA2, perch) could potentially take considerable amounts of juvenile pike-perch.	Thank you for your comment. Gillnets with mesh size 70 mm are used in the UoA1. There is no unwanted bycatch of pike-perch juveniles in UoA1. Gillnets with mesh size 40 mm are used in the UoA2. And there is unwanted bycatch of pike-perch juveniles. In the UoA2, pike-perch is a main primary species. Therefore, we moved the condition from SI1.2.1f (UoA1) in SI2.1.2e (UoA2).	Accepted (score increased)
1.2.1	Yes	Yes	NA		Thank you. We increased score for Sid (both UoAs) based on recommendations of the peer-reviewer C.	Accepted (score increased)

1.2.2	Yes	Yes	NA		Thank you for your comment. No response needed.	NA (No response needed)
1.2.2	Yes	Yes	Yes	Scoring agreed for all SIs. SI a fails to meet SG80 and triggers Condition 2 - Please correct typo 'pike-perch' to 'perch' in the last paragraph on Page 59	Thank you for your comment. We corrected the typo. We moved Condition 2 from SIa (UoA2) to SIb (both UoAs) to 'harmonise' with other perch and pike-perch fishery assessment in Russia.	Accepted (material score reduction to <80)
1.2.3	Yes	Yes	NA		Thank you. As recommended by peer-reviewers B and C, we have added a condition in SI1.2.3c (both UoAs)	Accepted (material score reduction to <80)
1.2.3	Yes	Yes	NA		Thank you. As recommended by peer-reviewers B and C, we have added a condition for SI1.2.3c (both UoAs)	Accepted (material score reduction to <80)
1.2.4	Yes	Yes	NA		Thank you. As recommended by peer-reviewers B and C, we have added a condition for SI1.2.3c (UoA 1)	Accepted (material score reduction to <80)
1.2.4	Yes	Yes	NA	Table PF1 of MSC Fisheries Certification Process v.2.2 was followed - because RBF is used to score PI 1.1.1 a default score of 80 is awarded to PI 1.2.4.	Thank you for your comment. No response needed.	NA (No response needed)
2.1.1	Yes	Yes	NA		Thank you for your comment. No response needed.	NA (No response needed)

2.1.1	No (change to rationale expected, not to scoring)	No (change to rationale expected, not to scoring)	NA	The rationale under SI a mentions that in the Russian part of the Curonian Lagoon bream fishing is carried out mainly with large-mesh fixed gill nets with a mesh size of 70 mm - this reviewer did not note any information presented about the proportion of bream being retained by mesh size 40 mm of the UoA2 (perch)	Thank you for your comments. We edited the rationale. And we addressed (set a condition) this issue about bycatch of bream and pike-perch that is less than the minimum landing size in PI2.1.2e .	Accepted (no score change, change to rationale)
2.1.2	Yes	Yes	NA		Thank you for your comment. No response needed.	NA (No response needed)
2.1.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	SI a: The rationale refers to measures in place to limit non-target catch of the UoAs – minimum mesh size. As mentioned under PI 2.1.1, is any non-target smaller-sized bream retained by UoA2 (perch)? "some restrictions on discards" - in my view it could be better explained what the restrictions on discards are.	Thank you for your comments. We edited the rationale. And we addressed (set a condition) this issue about bycatch of bream and pike-perch that is less than the minimum landing size in PI2.1.2e .	Accepted (no score change, change to rationale)

2.1.2	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	SI e: At ACDR stage it was noted that confirmation is needed if there is unwanted catch of any primary species and if so whether there is review of measures to reduce it. The assessors appear to consider SG 80 is met based on anecdotal information from federal government stakeholders, that regular fishery council meetings provide evidence that potential measures to minimise UoA-related mortality of unwanted catch of main primary species are kept under review. However, the draft scoring was ranged at 60-79. SI a, b and c all meet SG 80, it would depend on SI e whether, overall, PI 2.1.2 scores 80 or 75. In the latter case the PI outcome should raise a condition.	Thank you for your comment. Gillnets with mesh size 40 mm are used in the UoA2. And there is unwanted bycatch of pike-perch and bream juveniles. It will be useful to get more information about this issue. Therefore, we move the condition from SI1.2.1f (UoA1) in SI2.1.2e (UoA2).	Accepted (material score reduction to <80)
2.1.3	Yes	Yes	NA		Thank you for your comment. No response needed.	NA (No response needed)
2.1.3	No (non-material score reduction expected)	No (non-material score reduction expected)	NA	It is not clear if quantitative information is available and adequate to assess with a high degree of certainty that UoA2 (perch) mesh size 4 cm will not have a possible impact on stock size structure of bream. At least, such information is not explicitly presented or referred to by the	Thank you for your comment. We edited the rationale and reduced the score.	Accepted (non-material score reduction)

				assessment team.		
2.2.1	NA (PI not scored)	NA (PI not scored)	NA	RBF used. The assessment team has chosen to score only main species (roach and white bream) when evaluating PI 2.1.1 and 2.2.1, as set out in FCP v2.2 Annex PF4.1.4	Thank you for your comment. No response needed.	NA (No response needed)
2.2.2	Yes	Yes	NA		Thank you for your comment. No response needed.	NA (No response needed)
2.2.3	Yes	Yes	Yes	Scoring agreed for all SIs. SI c fails to meet SG80 and triggers Condition 3	Thank you for your comment. No response needed.	NA (No response needed)
2.3.1	No (change to rationale expected, not to scoring)	No (change to rationale expected, not to scoring)	NA	SI a Rationale "The assessment team is not aware of any national and/or international requirements set limits for ETP species which may be encountered by the fishery under assessment" seems implausible, given that Russian legislation provides for the protection of ETP species included in the Red Book of the Russian Federation. According to Morkūnas et al. (2020), Tarzia et al. (2017), Red Book of the Kaliningrad Region (RBKR, 2010) and inaturalist.org, six water-related bird species that live	Thank you for your comment. As you rightly pointed out, there are laws on protected species in Russian legislation. However, it has no set any particular "limits". Therefore, we do not need to score the SIa, based on the MSC interpretation https://mscportal.force.com/interpret/s/article/ETP-limits-and-use-of-Potential-Biological-Removal-PI-2-3-1-1527262007440	Accepted (no score change, additional evidence presented)

				in the Kaliningrad region can be classified as ETP species, and sea lamprey occurs, which is listed in the Red Book of the Kaliningrad region. As ETP species were not found in the bycatch of the UoA, and bearing in mind that passive fishing gear is used, it seems more logical to conclude that SI a meets at least SG 80 (the combined effects of the MSC UoAs on the population /stock are known and highly likely to be within these limits)		
2.3.1	No (score increase expected)	No (score increase expected)	NA	SI b Conversely, as there are no ETP species in the bycatch, and thus no known direct effects of the UoA, it could be argued that there is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species, implying SG 100 is met	Thank you for your comment. Based on a precautionary approach, we have decided to limit the SIb to 80 for now.	Accepted (no score change, additional evidence presented)

2.3.2	No (change to rationale expected, not to scoring)	Yes	NA	SI a is not scored "as there are no requirements for protection and rebuilding provided through national/ international ETP legislation of relevant ETPs (relevant to this fishery under assessment)". As in PI 2.3.1, Russian legislation provides for the protection of ETP species included in the Red Book of the Russian Federation. The low occurrence of ETP species in the fishing area provides a high likelihood that the effects of fishing are within national and international requirements for the protection of ETP species (rationale to PI 2.3.1 SI b). This implies that there are national and international requirements for the protection of ETP species, but the low occurrence of ETP species in the fishing area provides a high likelihood that the effects of fishing are within national and international requirements for the protection of ETP species. This in turn would imly that therefore there are no measures or strategy in place for managing the UoA's impact on ETP species (including measures to minimise mortality)	Thank you for your comment. We've edited the rationale to reflect your suggestions.	Accepted (no score change, change to rationale)

2.3.3	Yes	Yes	NA	Scoring agreed. With regard to the rationale I am not convinced that low salinity in the Russian part of the Curonian Lagoon is a major reason why marine mammals are almost never encountered there	Thank you for your comment. We edited the rationale.	Accepted (no score change, change to rationale)
2.4.1	Yes	Yes	NA		Thank you for your comment. No response needed.	NA (No response needed)
2.4.2	Yes	Yes	NA	SI b - some reformulating is suggested in the rationale (Page 153): "The fishery is conducted with passive fishing gears (fixed gillnets). The specific features of the impact of the fixed gillnets on bottom communities are obvious, simple, and well predictable. According to HELCOM (2017), for hard and for soft bottom (sand) and for habitats formed by seagrass the most significant impact has accumulation of finer sediments (siltation). Fishing gears used in the UoAs have practically no effect on siltation. Also fixed gill nets are not significantly impacting on the bottom, giving high confidence that there are no significant impacts on habitats. Therefore, there is some objective basis for confidence that the measures / partial strategy	Thank you for your comment. We've edited the rationale to reflect your suggestions.	Accepted (no score change, change to rationale)

				will work, based on information directly about the UoAs and habitats involved. SG 60 and SG 80 are met.		
2.4.2	Yes	Yes	NA	SI d - Rationale (Page 154): Some reformulating is suggested: "Potential VMEs would be estuaries, sandbanks, reefs and macrophyte beds (see SI 2.4.1b). These are specifically avoided by fishers when setting gear and so no potential VMEs are relevant to any UoAs. As there are no interactions between the UoA and VMEs this SI is not relevant and not scored (NA)	Thank you for your comment. We've edited the rationale to reflect your suggestions.	Accepted (no score change, change to rationale)
2.4.3	Yes	Yes	NA	SI a (Page 155): Rationale - 1st sentence please reformulate to "The fishery of fixed gillnets in the Curonian Lagoon has little impact on the habitats in comparison to active fishing gears.	Thank you for your comment. We've edited the rationale to reflect your suggestions.	Accepted (no score change, change to rationale)

2.4.3	Yes	Yes	NA	SI a (Page 155): The rationale that "There are not a potential VMEs in the Curonian Lagoon because the sediments are presented silt-mud and sand", in my view is not solid. These habitats could be a substrate for seagrasses, and therefore do not necessarily exclude potential VMEs.	Thank you for your comment. We have removed this sentence from the rationale.	Accepted (no score change, change to rationale)
2.4.3	Yes	Yes	NA	SI b: Agreed with scoring and rationale	Thank you for your comment. No response needed.	NA (No response needed)
2.4.3	Yes	Yes	NA	SI c: To be consistent with the rationale Guidepost "Changes in all habitat distributions over time are measured" should be "No" because there is no evidence that changes in all habitat distributions over time are measured. SG 100 is not met.	Thank you for your comment. We have edited the rationale.	Accepted (no score change, change to rationale)
2.5.1	Yes	Yes	NA		Thank you for your comment. No response needed.	NA (No response needed)
2.5.2	Yes	Yes	NA	SI c: (Page 160): Please reformulate rationale to "There is no clear evidence that the implementation of all aspects of the strategy is successful and is achieving its objective. SG 100 is not met."	Thank you for your comment. We have edited the rationale.	Accepted (no score change, change to rationale)

2.5.3	Yes	Yes	NA	Page 162: Rationale to SI c: suggest to reformulate to "Additional information is required to achieve SG 100 because productivity and trophic models are needed for recent years. SG 100 is not met."	Thank you for your comment. We have edited the rationale.	Accepted (no score change, change to rationale)
3.1.1	Yes	Yes	NA	The assessment team has taken into consideration that PIs 3.1.1 – 3.1.3 can be harmonized consistent with other lake fisheries in Russia. Harmonized scores for Principle 3 are provided in Table 82.	Thank you. No response needed.	NA (No response needed)
3.1.2	Yes	Yes	NA	The assessment team has taken into consideration that PIs 3.1.1 – 3.1.3 can be harmonized consistent with other lake fisheries in Russia. Harmonized scores for Principle 3 are provided in Table 82.	Thank you. No response needed.	NA (No response needed)
3.1.3	Yes	Yes	NA	The assessment team has taken into consideration that PIs 3.1.1 – 3.1.3 can be harmonized consistent with other lake fisheries in Russia. Harmonized scores for Principle 3 are provided in Table 82.	Thank you. No response needed.	NA (No response needed)
3.2.1	Yes	Yes	NA		Thank you. No response needed.	NA (No response needed)
3.2.2	Yes	Yes	NA		Thank you. No response needed.	NA (No response needed)

3.2.3	Yes	Yes	NA		Thank you. No response needed.	NA (No response needed)
3.2.4	Yes	Yes	NA		Thank you. No response needed.	NA (No response needed)

PR A: RBF Comments

PI	RBF Scoring	RBF Information	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
1.1.1 (RBF)	NA (PI not scored using the RBF)	NA (PI not scored using the RBF)			NA (No response needed)
1.1.1 (RBF)	Yes	Yes	With reference to MSC Fisheries Certification Process v2.2, 7.17.5.2, the Assessment Team applied the exception to include the worksheet score without rounding up or down. The score was automated from the RBF worksheet.	Thank you for your comment. No response needed.	NA (No response needed)
2.1.1 (RBF)	NA (PI not scored using the RBF)	NA (PI not scored using the RBF)			NA (No response needed)
2.2.1 (RBF)	No (change to rationale expected, not to scoring)	No (change to rationale expected, not to scoring)	"Yes" for roach and white bream as the percentage in the Client catches is higher than 5% for each, but I wonder why the assessors designated birds as main secondary species (Table 52, page 124). Is the percentage of birds combined in the Client catches higher than 5%? It seems far-fetched to me to use the RBF for the birds assesment, particularly because some PSA attributes do not make much sense when used on birds, for example fecundity (<100 eggs per year, which arguably would include almost any existing bird species) and reproductive strategy (demersal egg layer, which is out of context because arguably birds do not lay eggs under water). Also, it is noted that the assessment team	Thank you for your comment. According to MSC FS v2.01 (SA3.7.1.2), "… For species that are defined as 'out of scope' (amphibians, reptiles, birds, mammals) that are not classified as ETP, all species impacted by the UoA shall be considered 'main'." This is why we designated birds as main secondary species. We have no information that the RBF cannot be used on birds. We have tried to consider birds as a group of species. And we set scores (for all these birds) as for the most vulnerable species in the group. Taking into account peer-reviewers comments, we rewrote the text of the justifications for each species separately.	Accepted (no score change, additional evidence presented)

			assigned average maximum size 100-300 cm to all birds included in the PSA, while ducks such as Common Goldeneye on average barely reach a maximum size of 50 cm.		
2.3.1 (RBF)	NA (PI not scored using the RBF)	NA (PI not scored using the RBF)	The Assessment Team refused to use the RBF for PI 2.3.1 because there were no ETP species encountered in the bycatch.	Thank you for your comment. No response needed.	NA (No response needed)
2.4.1 (RBF)	NA (PI not scored using the RBF)	NA (PI not scored using the RBF)			NA (No response needed)
2.5.1 (RBF)	NA (PI not scored using the RBF)	NA (PI not scored using the RBF)			NA (No response needed)

PR A: Follow-up PI Comments

UoA stock	UoA gear	PR (A/B/C)	PI	PR Comment Code	Peer Reviewer Justification (as given at Public Comment Draft Report (PCDR) stage)	CAB response to Peer Reviewer's comments (as included in the Final Draft Report)	CAB Response Code
Curonian lagoon perch and pike-perch	Gillnets	PR A	2.2.1	No (change to rationale expected, not to scoring)	Initial PR comment (in the RBF Comments page): "Yes" for roach and white bream as the percentage in the Client catches is higher than 5% for each, but I wonder why the assessors designated birds as main secondary species (Table 52, page 124). Is the percentage of birds combined in the Client catches higher than 5%?" CAB response: According to MSC FS v2.01 (SA3.7.1.2), "… For species that are defined as 'out of scope' (amphibians, reptiles, birds, mammals) that are not classified as ETP, all species impacted by the UoA shall be considered 'main'." This is why we designated birds as main secondary species. The argument is partially valid. The PR recognizes / considers that the reasoning in MSC FS v2.01 (SA3.7.1.2) is somewhat ambiguous. While according to SA3.4.2.1 "The catch of a species by the UoA comprises 5% or more by weight of the total catch of all species by the UoA", according to GSA3.7.1Out of scope species (birds, reptiles, amphibians, mammals) are always considered a main species regardless of their total catch volume, but the requirements in SA3.4.3 shall also apply here: "In the case where individuals are released alive they shall not contribute to the definition of 'main'."	Thank you for your comment. The catch of each bird species is much less than 2% by weight of the total catch of all UoA species. But according to MSC FS v2.01 (SA3.7.1.2) we have to classify them as main secondary species. Not all birds were released from gillnets alive. There have been rare cases of birds dying in gillnets. Therefore, the team decided to include the birds in the main secondary category.	Accepted (no score change, additional evidence presented)

Curonian lagoon perch and pike-perch	Gillnets	PR A	2.2.1	Yes	Initial PR comment: "It seems far-fetched to me to use the RBF for the birds assesment, particularly because some PSA attributes do not make much sense when used on birds" CAB response "We have no information that the RBF cannot be used on birds." While the argument is valid, as nowhere (as far as the PR is aware) it is described that the RBF cannot be used on birds, it seems to this PR somewhat pointless to invest time and resources on this in a workshop conducted with stakeholders at the site visit, given the evidently very low numbers of birds caught in this fishery. In my view, SA3.4.3 "In the case where individuals are released alive they shall not contribute to the definition of 'main' provides sufficient rationale not to include birds in the RBF.	Thank you for your comment. No response needed.	NA (No response needed)

PR B: General Comments

Question	Yes/No	**Peer Reviewer Justification (as given at initial Peer Review stage).** Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	**CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)**
Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	No	The fundamental problem with the incorrect evaluation of all Performance Indicators of Principle 1 and part of the Performance Indicators of Principle 2 lies in the erroneous definition of Units of Assessment. For Principle 1, the consideration of perch and pike-perch stocks should be carried out for the entire Curonian Lagoon, not only for Russian part. Since fishing gear for catching the target species of this certification have different mesh sizes (gill nets of 36-40 mm for perch and gill nets of 70 mm and above for pike-perch), Units of Assessment have/may have different influence on the components of Principle 2 - Primary , Secondary and ETP species and must be analyzed separately for the two UoAs.	Thank you for the comment. We have modified the report in accordance with your recommendations.
Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.2, 7.18.1 and sub-clauses]	Yes	Yes, partly. Fulfillment of some of the conditions will require significant effort and time reserve from the client and organizations partnering with the client, so there is no certainty that Conditions 1 and 2 can be fully met by the time of the 3rd Surveillance audit.	Thank you for the comment. We have extended the period for fulfilling the conditions by one year.
Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	NA	Perch and pike-perch fisheries are not enhanced fisheries in the Curonian Lagoon.	Thank you. No response needed.

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 21, Table 2. UoA 1 (*Perch*), should be **pike-perch**. Stock - *Territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic sea*, should be **- the Curonian Lagoon of the Baltic sea;** Fishing gear type(s) - *Nets fishing using with: fixed frame gillnets, fixed bottom gillnets*; should be **- fixed frame gillnets, fixed bottom gillnets with mesh size of of 70 mm and higher**. UoA 2 (*Pike-perch*), should be **perch**. Stock - *Territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic sea*, should be **- the Curonian Lagoon of the Baltic sea**; Fishing gear type(s) - *Nets fishing using with: fixed frame gillnets, fixed bottom gillnets*; should be **- fixed frame gillnets, fixed bottom gillnets with mesh size of of 36-40 mm.** In the report, it is necessary to provide pictures of the types of fishing gear used - gill nets of various designs.	Thank you for the comment. We have modified the report in accordance with your recommendations. We added picture of set gillnet (see section Additional information)
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 36. "*Pike-perch commercial catches in the UoA in in 2019 were from 4-13-year-olds individuals, 6–8-year-olds dominated (70.5% of the abundance). The main biological characteristics in 2020 were within the range of average long-term fluctuations: the average length of the fish was 46 cm, the average weight was 1492 g, and the average age was 7.3 years (Tables 9 and 10)*". If the average length of the fish in commercial catch of pike-perch was 46 cm, this means that fisheries systematically do not comply with fishing rules, since a minimum allowable size has been introduced for pike-perch, corresponding to 46 cm. It turns out that fishermen take fish both - larger than MLS and smaller than this value.	Thank you for the comment. 1) Table 9 provides information on the “Commercial size” of pike-perch. The minimum allowable commercial size of pike-perch = 40 cm (or 46 cm of total length). 2) The data also contains information on the catch of the pike-perch in the perch fishery (UoA2, gillnets with mesh 36-40 mm). We have set a condition in PI 2.1.2, to develop measures to reduce the by-catch of juvenile pike-perch to the legal 10% by numbers.

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 38. *Figure 13 – Harvest Control Rule (HCR), reference points, and the commercial stock of pike-perch in 1989-2021* *Legend: X-axis – commercial stock, t; Y-axis – fishing mortality. (Source: Materials …, 2020a).* It seems that **Harvest Control Rule (HCR)** is superfluous in a Figure legend. Page 39. "*The obtained predicted values of the biomass of the commercial stock and the Total allowable catch of zander*..." ...of **pike-perch**? Page 39. "...*The predicted biomass of the species (905 tons) for 2021 is within the 95% confidence interval (Table 15)...*" It's not quite clear what does it mean, taking into accaunt that the name of the Table 15 is "*Predicted values of the commercial stock of pike-perch in the Curonian Lagoon and their 95% confidence interval*". Page 44. "*Table 17 – Biological characteristics of perch from commercial catches in the Curonian Lagoon in 2010-2019*" Should be **2011-2020**.	Thank you for the comment. We have modified the report.

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Conflicting information: Page 44. "*But insufficient completeness of available information on freshwater perch in the Curonian Lagoon, namely the lack of data on catch per effort, excludes the possibility of using exploited stock models*". AND Page 46. "*The harvest strategy for perch in the Russian part of the Curonian Lagoon includes a precautionary annual RC (Table 18) based on estimates of the biological indicators of the commercial stock: biomass, age, mass, size (Table 17), and Catches Per Unit Effort (CPUE) (Figure 24)*".	Thank you for the comment. We have modified the report.
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 45. Figures 21-23. It is necessary to give the designations of the axes in English. Page 46. It is necessary to explain the reasons of the overshooting of quotas for perch in years 2012, 2017, 2019, 2020. Page 47. "*RV*" should be replaced by **RC.**	Thank you for the comment. We have modified the report in accordance with your recommendations. Overfishing of RC for perch in 2012, 2017, 2019, 2020 is connected with the management of perch in RC mode. In this mode, all fishermen catch the perch on account of the total quota (Olympic system). When 90% of the RC are caught, an order is issued to stop fishing. But due to the inertia of the system, overfishing is possible. In addition, if the perch stock is in good condition, AtlantNIRO can justify an addition to the RC.

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 48. "*There is no information on subpopulations of pike-perch and perch within the Curonian Lagoon or conditions favourable to subpopulations, therefore it is assumed that there is one population for each species".* Are there any information available about perch and pike-perch spawning/feeding migrations patterns within the Curonian Lagoon or between the Lagoon and the Baltic Sea? How these data are taken into account in stock assessment and fishery regulation at Russian-Lithuanian level of fishery management?	Thank you for your comment. Information on the pike-perch spawning migrations is given in section 7.2.1.1.4. (Spawning), on the feeding migrations – in section 7.2.1.1.6 (Feeding). We do not have information on spawning/feeding migrations patterns for perch. We do not have information how these data are taken into account in stock assessment and fishery regulation at Russian-Lithuanian level of fishery management.
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 73. Despite the fact that ruff and smelt occupy a significant share in the commercial catch in the Curonian Lagoon (smelt is one of the three species for which the TAC is established at the level of the JRLFC), these species are excluded from consideration under Principle 2. It is necessary to explain why they are not included into the analysis.	Thank you for the comment. We do not consider these species because they are not found in the catches of the fishing gear used (gillnets, mesh 40-70 mm)(see Table 22, first column). Based on the information received at the site visit, specialized fishing for smelt is carried out with special small-mesh traps during its spawning run in the spring.

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Page 180. Table 55. Species names: *Zander*, should be - **pike-perch** *Chekhon*, should be - **sabrefish** *Fisherman (raw)*, should be **vimba bream**.	Thank you for the comment. The species names have been corrected.

PR B: PI Comments

PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
1.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	The MSC standard says that the Principle 1 considers stock status of the entire target stock - not just where the UoA's activities occur. Taking into account that the Curonian Lagoon is a transboundary water body, for an adequate assessment of all Performance Indicators of Principle 1, it is necessary to provide justifications related not only to the UoAs of the Russian part of the Lagoon, but also to the Lithuanian part. In this version of the report, there is no information on the stock status of the target species in Lithuanian waters, although it is known that "*The Joint Russian-Lithuanian Fisheries Commission (JRLFC) has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g. results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year*" (see Section 7.2.1.1). Thus, a significant expansion and revision of justifications/scores for all SIs of this PI are needed.	Thank you for the comment. We added a new information in the rationale about Lithuanian assessment of pike-perch (Andrašūnas et al., 2022). Taking into account the differences between the Russian and Lithuanian assessments, we did score reduction to < 80.	Accepted (material score reduction to <80)

1.1.2	NA	NA	NA	NA	Since we reduced the score to <80, we estimated this PI.	Accepted (score increased)
1.2.1	No (scoring implications unknown)	No (scoring implications unknown)	Yes	Again, the Curonian Lagoon is a transboundary water body, for an adequate assessment of all Performance Indicators of Principle 1, it is necessary to provide justifications related not only to the UoAs of the Russian part of the Lagoon, but also to the Lithuanian part. In this version of the report, there is no information on the stock status of the target species and harvest strategy in Lithuanian waters, although it is known that "*The Joint Russian-Lithuanian Fisheries Commission (JRLFC) has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g. results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year*" (see Section 7.2.1.1). Thus, a significant expansion and revision of justifications/scores for all SIs of this PI are needed. Condition 1 seems reasonable.	Thank you for your comments. We added an information about the harvest strategy in the Lithuanian part of the Curonian lagoon. Also we added information on the size structure of pike-perch in gillnet catches in the UoA 1 (mesh 70 mm). There does not appear to be unwanted catch of the pike-perch in the UoA 1 and therefore the SIf is not scored. Therefore, we moved this Condition in SI2.1.2e (UoA2). We have also reduced score and added Conditions based on your recommendations for SI1.2.2b, 1.2.3c, 1.2.4c. We increased score for SId (both UoAs) based on recommendations of the peer-reviewer C.	Accepted (score increased)

1.2.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	Again, the Curonian Lagoon is a transboundary water body, for an adequate assessment of all Performance Indicators of Principle 1, it is necessary to provide justifications related not only to the UoAs of the Russian part of the Lagoon, but also to the Lithuanian part. In this version of the report, there is no information on the stock status of the target species, harvest strategy, harvest control rules and tools in Lithuanian waters, although it is known that "*The Joint Russian-Lithuanian Fisheries Commission (JRLFC) has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g. results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year*" (see Section 7.2.1.1). Thus, a significant expansion and revision of justifications/scores for all SIs of this PI are needed.	Thank you for your comments. We have added an information about the Lithuanian part of the pike-perch stock in the Curonian lagoon to the report.	Accepted (material score reduction to <80)

1.2.2	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	SI(b): The main uncertainties that should be analyzed in connection with the HCR include the consistency of the elements of the HCR at the level of Russian-Lithuanian scientific and fishery management cooperation in the Curonian Lagoon; accounting of probable migrations of target species both within the Curonian Lagoon basin and between the Lagoon and the Baltic Sea; taking into account the level of mortality associated with the discarding, particulaly juvenile perch and pike-perch; better accounting for the level of catch by poachers and recreational fishermen. For example, the rationale states:"*An expert assessment of illegal catches is also carried out. In total, recreational and illegal catches in Curonian Lagoon reach 20% of commercial catch (Gushchin, Shavrina, 2018)* ". However, neither the methods of making these calculations and further accounting in the stock assessment, nor the amount of non-commercial catch separately for pike-perch and perch are known. Thus, it is difficult to agree with the opinion of the team that the HCRs are likely to be robust to the main uncertainties.	Thank you for your comments. We have added an information about the Lithuanian part of the pike-perch stock in the Curonian lagoon to the report. We reduced the score for SIb and set a Condition according to your recommendation.	Accepted (material score reduction to <80)

1.2.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	Again, the Curonian Lagoon is a transboundary water body, for an adequate assessment of all Performance Indicators of Principle 1, it is necessary to provide justifications related not only to the UoAs of the Russian part of the Lagoon, but also to the Lithuanian part. In this version of the report, there is no information on the stock status of the target species, harvest strategy, harvest control rules and tools in Lithuanian waters, although it is known that "*The Joint Russian-Lithuanian Fisheries Commission (JRLFC) has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g. results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year*" (see Section 7.2.1.1). Thus, a significant expansion and revision of justifications/scores for all SIs of this PI are needed.	Thank you for your comments. We have added an information about the Lithuanian part of the pike-perch stock in the Curonian lagoon to the report.	Accepted (material score reduction to <80)

1.2.3	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	SI(c): The rationale states: "*Recreational catches in Curonian Lagoon are not directly recorded, but there is expert assessment of their volume. An expert assessment of illegal catches is also carried out. In total, recreational, and illegal catches in Curonian Lagoon reach 20% of commercial catch (Gushchin, Shavrina, 2018) and they are taken into account by a precautionary TAC and RC.*" However, neither the methods of making these calculations and further accounting in the stock assessment and TAC (RC) establishing, nor the amount of non-commercial catch separately for pike-perch and perch are known. If so, it is difficult to argue that there is good information on all other fishery removals from the stock.	Thank you for your comments. We have added an information about the Lithuanian part of the pike-perch stock in the Curonian lagoon to the report. We reduced the score for SIc and set a Condition according to your recommendation.	Accepted (material score reduction to <80)
1.2.4	No (scoring implications unknown)	No (scoring implications unknown)	NA	Again, the Curonian Lagoon is a transboundary water body, for an adequate assessment of all Performance Indicators of Principle 1, it is necessary to provide justifications related not only to the UoAs of the Russian part of the Lagoon, but also to the Lithuanian part. In this version of the report, there is no information on the stock status and metods of stock status calculatons used in Lithuanian waters, although it is known that "*The Joint Russian-Lithuanian Fisheries Commission (JRLFC) has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g.*	Thank you for your comments. We have added an information about the Lithuanian part of the pike-perch stock in the Curonian lagoon to the report.	Accepted (material score reduction to <80)

				results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year" (see Section 7.2.1.1). Thus, a significant expansion and revision of justifications/scores for all SIs of this PI are needed.		

1.2.4	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	SI(c): The rationale states: "*The assessment identifies major sources of uncertainty: variations associated with the annual research surveys, the uncertainty in predicting annual recruitment, volume of recreational and illegal catch. Recreational catches in Curonian Lagoon are not directly recorded, but there is expert assessment of their volume. An expert assessment of illegal catches is also carried out. In total, recreational and illegal catches in Curonian Lagoon can reach 20% of commercial catch (Gushchin, Shavrina, 2018). SG 60 is met.* *Uncertainties in the assessment are taking into account through the setting of highly precautionary TAC which is lower than those required under the HCR. SG 80 is met*". However, neither the methods of making these calculations and further accounting in the stock assessment and TAC (RC) establishing, nor the amount of non-commercial catch separately for pike-perch and perch are known. In addition, the magnitude of mortality from discarding of undersized pike-perch is unknown. If so, it is difficult to argue that the assessment takes uncertainty into account.	Thank you for your comments. We have added an information about the Lithuanian part of the pike-perch stock in the Curonian lagoon to the report. We reduced the score for SIc and set a Condition according to your recommendation.	Accepted (material score reduction to <80)

1.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	The MSC standard says that the Principle 1 considers stock status of the entire target stock - not just where the UoA's activities occur. Taking into account that the Curonian Lagoon is a transboundary water body, for an adequate assessment of all Performance Indicators of Principle 1, it is necessary to provide justifications related not only to the UoAs of the Russian part of the Lagoon, but also to the Lithuanian part. In this version of the report, there is no information on the stock status of the target species in Lithuanian waters, although it is known that "*The Joint Russian-Lithuanian Fisheries Commission (JRLFC) has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g. results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year*" (see Section 7.2.1.1). Thus, a significant expansion and revision of justifications/scores for all SIs of this PI are needed.	Thank you for the comment. We added an information about Lithuanian assessment of pike (Andrašūnas et al., 2022).	Accepted (no score change, change to rationale)
1.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	There is no certainty that the use of RBF for perch is quite correct (see detailed commentary in the RBF section).	Thank you for the comment. We have responded to your commentary in the RBF section.	Accepted (no score change, change to rationale)

1.1.2	NA	NA	NA	NA		NA (No response needed)
1.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Again, the Curonian Lagoon is a transboundary water body, for an adequate assessment of all Performance Indicators of Principle 1, it is necessary to provide justifications related not only to the UoAs of the Russian part of the Lagoon, but also to the Lithuanian part. In this version of the report, there is no information on the stock status of the target species and harvest strategy in Lithuanian waters, although it is known that "*The Joint Russian-Lithuanian Fisheries Commission (JRLFC) has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g. results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year*" (see Section 7.2.1.1). Thus, a significant expansion and revision of justifications/scores for all SIs of this PI are needed.	Thank you for the comment. We added an information about Lithuanian assessment of perch (Andrašūnas et al., 2022). We increased score for Sid based on recommendations of the peer-reviewer C.	Accepted (score increased)

1.2.1	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	SI(f): The justification says: "*The legal mesh size for gillnets in perch fishery is 36 mm. But fishers use larger net sizes. Mesh sizes used (40 mm) mean that catches of undersized fish (less than 18 cm TL) are very rare in the gillnet catches*". Justifications for scoring, as well as the narrative part of the report, do not contain information about the size and age indicators of perch in gill nets with different mesh sizes from commercial catches or from scientific catches. Without these data, it is impossible to adequately estimate the frequency of perch below MLS being entangled in fishing gear. In addition, there is no data on the survival of undersized perch, which fishermen, according to the Fishing rules, must return to the water after being untangled from the nets. Changing fishing grounds in cases of large juvenile perch by-catch and using large mesh size nets can be considered as measures to minimize UoA-related mortality of unwanted catch of the target stock, however there is no evidence of regular review of their potential effectiveness and practicality. Thus, for perch, a condition similar to the condition for pike perch for SI(f) should be raised.	Thank you for your comments. We added information on the size structure of perch in the gillnet catches in the UoA 2 (mesh 36-40 mm). There does not appear to be unwanted catch of the perch in the UoA and therefore this scoring issue is not scored.	Accepted (no score change, additional evidence presented)

1.2.2	No (scoring implications unknown)	No (scoring implications unknown)	Yes	Again, the Curonian Lagoon is a transboundary water body, for an adequate assessment of all Performance Indicators of Principle 1, it is necessary to provide justifications related not only to the UoAs of the Russian part of the Lagoon, but also to the Lithuanian part. In this version of the report, there is no information on the stock status of the target species, harvest strategy, harvest control rules and tools in Lithuanian waters, although it is known that "*The Joint Russian-Lithuanian Fisheries Commission (JRLFC) has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g. results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year*" (see Section 7.2.1.1). Thus, a significant expansion and revision of justifications/scores for all SIs of this PI are needed. Conidion 2 seems reasonable, although the statement of justification could be extended.	Thank you for your comments. We have added an information about the Lithuanian part of the perch stock in the Curonian lagoon to the report. We moved Condition 2 from SIa (UoA2) to SIb (both UoAs) to 'harmonise' with other perch and pike-perch fishery assessment in Russia.	Accepted (material score reduction to <80)

1.2.2	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	SI(b): The main uncertainties that should be analyzed in connection with the HCR include the consistency of the elements of the HCR at the level of Russian-Lithuanian scientific and fishery management cooperation in the Curonian Lagoon; accounting of probable migrations of target species both within the Curonian Lagoon basin and between the Lagoon and the Baltic Sea; taking into account the level of mortality associated with the discarding, particulaly juvenile perch and pike-perch; better accounting for the level of catch by poachers and recreational fishermen. For example, the rationale states:"*An expert assessment of illegal catches is also carried out. In total, recreational and illegal catches in Curonian Lagoon reach 20% of commercial catch (Gushchin, Shavrina, 2018)* ". However, neither the methods of making these calculations and further accounting in the stock assessment, nor the amount of non-commercial catch separately for pike-perch and perch are known. Thus, it is difficult to agree with the opinion of the team that the HCRs are likely to be robust to the main uncertainties.	Thank you for your comments. We have added an information about the Lithuanian part of the perch stock in the Curonian lagoon to the report. We reduced the score for SIb and set a Condition according to your recommendation.	Accepted (material score reduction to <80)

1.2.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	Again, the Curonian Lagoon is a transboundary water body, for an adequate assessment of all Performance Indicators of Principle 1, it is necessary to provide justifications related not only to the UoAs of the Russian part of the Lagoon, but also to the Lithuanian part. In this version of the report, there is no information on the stock status of the target species, harvest strategy, harvest control rules and tools in Lithuanian waters, although it is known that "*The Joint Russian-Lithuanian Fisheries Commission (JRLFC) has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g. results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year*" (see Section 7.2.1.1). Thus, a significant expansion and revision of justifications/scores for all SIs of this PI are needed.	Thank you for your comments. We have added an information about the Lithuanian part of the perch stock in the Curonian lagoon to the report.	Accepted (material score reduction to <80)

1.2.3	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	SI(c): The rationale states: "*Recreational catches in Curonian Lagoon are not directly recorded, but there is expert assessment of their volume. An expert assessment of illegal catches is also carried out. In total, recreational, and illegal catches in Curonian Lagoon reach 20% of commercial catch (Gushchin, Shavrina, 2018) and they are taken into account by a precautionary TAC and RC.*" However, neither the methods of making these calculations and further accounting in the stock assessment and TAC (RC) establishing, nor the amount of non-commercial catch separately for pike-perch and perch are known. If so, it is difficult to argue that there is good information on all other fishery removals from the stock.	Thank you for your comments. We have added an information about the Lithuanian part of the perch stock in the Curonian lagoon to the report. We reduced the score for SIc and set a Condition according to your recommendation.	Accepted (material score reduction to <80)
1.2.4	No (scoring implications unknown)	No (scoring implications unknown)	NA	Again, the Curonian Lagoon is a transboundary water body, for an adequate assessment of all Performance Indicators of Principle 1, it is necessary to provide justifications related not only to the UoAs of the Russian part of the Lagoon, but also to the Lithuanian part. In this version of the report, there is no information on the stock status and metods of stock status calculatons used in Lithuanian waters, although it is known that "*The Joint Russian-Lithuanian Fisheries Commission (JRLFC) has different working groups, such as: the working group on the assessment of the status of aquatic biological resources of the Curonian Lagoon; the working group on the reproduction of aquatic biological resources of the Curonian Lagoon and Lake Vishtynetsk; and the working group on fisheries regulation in the Curonian Lagoon and Lake Vishtynetsk. During the meetings of these working groups and during the annual meeting of the JRLFC, the two parties exchange information on all aspects (e.g.*	Thank you for your comments. The default score of 80 was set to PI1.2.4 because RBF is used for PI 1.1.1. (see Table PF1 in MSC FSP v2.2). We have also added additional information about the Lithuanian part of the perch stock in the Curonian lagoon to the report.	Accepted (no score change, additional evidence presented)

				results of stock assessments, inspection activities etc.) of the fisheries management in Curonian Lagoon and take management decisions for the next year" (see Section 7.2.1.1). Thus, a significant expansion and revision of justifications/scores for all SIs of this PI are needed.		
1.2.4	No (scoring implications unknown)	No (scoring implications unknown)	NA	In the case of using RBF, PI1.2.4 gets a score of 80 by default. But there is no certainty that the use of RBF for perch is quite correct (see detailed commentary in the RBF section).	Thank you for the comment. We have responded to your commentary in the RBF section.	Accepted (no score change, additional evidence presented)

2.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	It is known that gillnets with mesh sizes less than 70 mm cannot be used in pike-perch fishery in Curonian Lagoon (see page 40 for reference). At the same time the mesh size for catching perch cannot be less than 36 mm and exceed 40 mm. Thus, the gear of UoAs 1 (pike-perch) and UoAs 2 (perch) has different mesh sizes with different catchability capacities. If it is so, the influence of two UoAs at the components of Principle 2 - Primary , Secondary and ETP species is different and must be analyzed separately for the two UoAs. Without implementation of this approach it is impossible to assess correctly environmental impact of the UoAs. When analyzing UoA 1 (pike-perch), perch should be considered among others as a primery or secondary species and vice versa - when analyzing UoA 2 (perch), pike-perch should be evaluated as a primery or secondary species. Thus, a significant revision of justifications/scores for all SIs related to PIs 2.1.1 - 2.1.3, 2.2.1 - 2.2.3, 2.3.1 - 2.3.3 are needed.	Thank you for your comments. We have edited the rationale according to your recommendations. We have edited the text according to your recommendations. When scoring, we focused on the fishing gear that has the greatest impact.	Accepted (no score change, change to rationale)
2.1.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	See the comment for the PI 2.1.1	Thank you for your comments. We have edited the rationale according to your recommendations. We have edited the text according to your recommendations. When scoring, we focused on the fishing gear that has the greatest impact.	Accepted (no score change, change to rationale)
2.1.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	See the comment for the PI 2.1.1	Thank you for your comment. We edited the rationale and reduced the score.	Accepted (non-material score reduction)

2.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	See the comment for the PI 2.1.1	Thank you for your comments. We have edited the rationale according to your recommendations. We have edited the text according to your recommendations. When scoring, we focused on the fishing gear that has the greatest impact.	Accepted (no score change, change to rationale)
2.2.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	See the comment for the PI 2.1.1	Thank you for your comments. We have edited the rationale according to your recommendations. We have edited the text according to your recommendations. When scoring, we focused on the fishing gear that has the greatest impact.	Accepted (no score change, change to rationale)
2.2.3	No (scoring implications unknown)	No (scoring implications unknown)	Yes	See the comment for the PI 2.1.1 Condition 3 seems reasonable. However, for different UoAs, an independent assessment needs to be made.	Thank you for your comments. We have edited the rationale according to your recommendations. We have edited the text according to your recommendations. When scoring, we focused on the fishing gear that has the greatest impact.	Accepted (no score change, change to rationale)
2.3.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	See the comment for the PI 2.1.1 According to the Subparagraph 16.3. of the Fishery rules for Kaliningrad region, Atlantic salmon (salmon) is the species of aquatic biological resources prohibited for harvesting (catch) in Curonian Lagoon. Is this a protected species? Does it belong to the ETP species?	Thank you for your comments. We have edited the rationale according to your recommendations. We have edited the text according to your recommendations. When scoring, we focused on the fishing gear that has the greatest impact. According to the Fishing Rules (2020), the salmon is an object of recreational fishing in the Kaliningrad region. Possible daily catch - two fish (Table 32.1).	Accepted (no score change, change to rationale)
2.3.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	See the comment for the PI 2.1.1	Thank you for your comments. We have edited the rationale according to your recommendations. We have edited the text according to your recommendations. When scoring, we focused on the fishing gear that has the greatest impact.	Accepted (no score change, change to rationale)

2.3.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	See the comment for the PI 2.1.1	Thank you for your comments. We have edited the rationale according to your recommendations. We have edited the text according to your recommendations. When scoring, we focused on the fishing gear that has the greatest impact.	Accepted (no score change, change to rationale)
2.4.1	No (score increase expected)	No (score increase expected)	NA	SI(b): If there is no fishing in Estuaries and Sandbanks from HELCOM (2013) Red List of habitats, biotopes and biotope complexes, which could potentially interact with UoAs of perch and pike-perch, why the SG is not 100? From the other hand, if "*According to Spiridonov et al. (2018), there are no VMEs officially recognized by Russian Federation in the inland marine waters, Territorial sea and EEZ, also in reviewed UoAs*", then this SI shouldn't be scored.	Thank you for your comments. We have changed the rationale and increased the score as you suggested.	Accepted (score increased)
2.4.2	Yes	Yes	NA	Scoring agreed	Thank you. No response needed.	NA (No response needed)
2.4.3	Yes	Yes	NA	Scoring agreed	Thank you. No response needed.	NA (No response needed)
2.5.1	Yes	Yes	NA	Scoring agreed	Thank you. No response needed.	NA (No response needed)
2.5.2	Yes	Yes	NA	Scoring agreed	Thank you. No response needed.	NA (No response needed)
2.5.3	Yes	Yes	NA	Scoring agreed	Thank you. No response needed.	NA (No response needed)
3.1.1	Yes	Yes	NA	Scoring agreed	Thank you. No response needed.	NA (No response needed)

3.1.2	Yes	Yes	NA	Scoring agreed	Thank you. No response needed.	NA (No response needed)
3.1.3	Yes	Yes	NA	Scoring agreed	Thank you. No response needed.	NA (No response needed)
3.2.1	Yes	Yes	NA	Scoring agreed	Thank you. No response needed.	NA (No response needed)
3.2.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	SI (d): It is stated in justification: "*Further information on fishery management performance (including compliance) and management action is generally available upon the request of interested parties. This has been clear as the agencies involved in fisheries management responded by providing some of the information requested by the Assessment Team for this report*". Given the lack of coverage in the report of information on the state of stocks of target species, methods for assessing the state of their populations, fishing regulation measures and other aspects of Principle 1 for the Lithuanian part of the Curonian Lagoon, the question arises about the availability of this information for the assessment team. If the experts were unable to obtain and analyze the relevant data upon request, a condition should be set here.	Thank you for the comment. The score of SId has been decreased to SG60 and a condition was set here.	Accepted (material score reduction to <80)
3.2.3	Yes	Yes	NA	Scoring agreed	Thank you. No response needed.	NA (No response needed)
3.2.4	No (score increase expected)	No (score increase expected)	NA	If consider the JRLFC as the external entity which annually fulfilled review of the fishery-specific management system at international level (that is correct to my opinion), then the SG100 should be awarded.	Thank you for the comment. The score of SIb has been increased to SG100.	Accepted (score increased)

PR B: RBF Comments

PI	RBF Scoring	RBF Information	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Res-ponse Code
1.1.1 (RBF)	No	No	The attribute "areal overlap" of the susceptibility in Productivity Susceptibility Analysis (PSA) for perch should be evaluated for the whole Curonian Lagoon, not just for Russian part of the Lagoon. According to the assessment team conclusion, perch received an MSC derived RBF score of 83 (Table 78). However, there is no certainty that the use of Consequence Analysis was quite correct. In relation to the Consequence Analysis (CA) the MSC standard says that: "*The team should score 80 where available information shows changes in the population subcomponent (Population size, Reproductive capacity, Age/Size/Sex structure, Geographic range) that can be reasonably attributable to the fishing activity, but these are of such a low magnitude that the impact of the fishery is considered to be minimal on the population size and dynamics.* *The team should score 60 where available information shows changes to the population subcomponent attributed to the fishing activity and these changes are of such magnitude that they cannot be considered as minimal.*" The team chose Reproductive capacity as the most vulnerable subcomponent and scored it as 80. At the same time the team scored SI(a) of the PI 1.2.2 at SG60 with formulation "There is no well-defined HCRs that ensure that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around a target level consistent with MSY". In fact it means that population size could fluctuate considerably because of the influence of the fishery. High fishery pressure on the population size of perch is suggested by the significant volume of quota uptake which in some years can exceed 100% (see Table 18). Thus, due to precautionary nature of RBF, the Population size should be chosen as the most vulnerable component of the CA and estimated as 60.	Thank you for your comments. We agree that "areal overlap" of the susceptibility in Productivity Susceptibility Analysis (PSA) for perch should be evaluated for the whole Curonian Lagoon. We made corrections. During the site visit, the scientists agreed that for perch stock "Reproductive capacity" is the most vulnerable subcomponent and that it score = 80. According to Andrašūnas et al. (2022), the size of the perch population in the Curonian lagoon has been steadily increasing since 2000. We have edited rationale and set score for PI1.2.2a = 80.	Accepted (no score change, additional evidence presented)
2.1.1 (RBF)	NA	NA	NA	-	NA (No response needed)

2.2.1 (RBF)	No	No	Since the Units of Assessments with gill nets of different mesh sizes have/may have different influence on the components of Principle 2 - Primary , Secondary and ETP species the analyse should be done separately for the two UoAs (unless proven otherwise).	Thank you for your comments. We have edited the rationale.	Accepted (no score change, change to rationale)
2.3.1 (RBF)	No	No	Since the Units of Assessments with gill nets of different mesh sizes have/may have different influence on the components of Principle 2 - Primary , Secondary and ETP species the analyse should be done separately for the two UoAs (unless proven otherwise). It is hard to believe that all 7 analyzed birds of different famalies had identical biological attributes, in particular, they lived for more than 25 years, had a maximum size of 100-300 cm and used "Demersal egg layer" in their reproductive strategy (see Tables 43, 71-77, 79).	Thank you for your comments. In the analysis, we chose the most harmful fishing gear. We try to considered birds as a group of species. And we set the maximum risk score for each attribute. Taking into account your comment, we rewrote the text of the justifications for each species.	Accepted (no score change, change to rationale)
2.4.1 (RBF)	NA	NA	NA	-	NA (No response needed)
2.5.1 (RBF)	NA	NA	NA	-	NA (No response needed)

PR B: Follow-up General Comments

Question	Peer Reviewer comments at Public Comment Draft Report stage Insert additional rows for each clearly distinct issue raised.	CAB response to Peer Reviewer's Public Comment Draft Report stage comments (as included in Final Draft Report)
See above	Report section 7.12 "Additional Information" contains the following: ' *The significance of Rusne division lies in the breeding of pike-perch, Eruropean wels, and burbot, as well as stocking the lower River Nemunas and the Curonian Lagoon with the fish*'. If the population of pike-perch in the Curonian Lagoon basin is supported by artificial breeding, the fishery should be assessed as enhanced fishery.	Thank you for your comment. In the documents on the release of juvenile fish into Lithuanian water bodies, there is no data on the release of pike-perch into the Curonian Lagoon or the Neman River (https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/747e8c4081e011eb9fc9c3970976dfa1?jfwid=)

PR B: Follow-up PI Comments

UoA stock	UoA gear	PR (A/B/C)	PI	PR Comm-ent Code	Peer Reviewer Justification (as given at Public Comment Draft Report (PCDR) stage)	CAB response to Peer Reviewer's comments (as included in the Final Draft Report)	CAB Res-ponse Code
Pike-perch	Gill nets	PR B	1.1.1	No (material score reduction expected to <80)	SI (a). The state of pike-perch stock in relation to PRI is in good conditions in the Russian part of the Curonian Lagoon and unfavorable in the Lithuanian part of the Lagoon. As a reason, it is assumed that the state of pike-perch in the Lithuanian part of the bay may be affected by the high salinity of the water in the area located closer to the salty Baltic Sea. But the rationale does not say anything about the mechanism of influence of this and other natural factors on the population, as well as about possible anthropogenic causes that determine the decline in the stock (for example, overfishing of pike-perch stocks, as evidenced by the Lithuanian stock assessment data in relation to the MSY, Andrašūnas et al. 2022). The updated report contains new data on migration patterns, in particular that only a small part of the pikeperch population may come to feed in the Baltic Sea, but there is no information on migrations and seasonal concentrations within the Curonian Lagoon. In theory, these and other issues related to the state of the stock of target species should be discussed at the Joint Russian-Lithuanian Fishing Commission, but although the report declares its work, it does not provide evidence of its effectiveness. In particular, as an illustration of weak	Thank you for your comment. Even according to the information of Lithuanian scientists, after 2000 the stock of pike-perch did not fall below 75%Bmsy (Figure 45,A)(Andrašūnas et al., 2022). According to MSC FSv2.01, GSA2.2.3.1, "for stocks with average productivity, where BMSY is not analytically determined but assumed to be 40%B0 and a management trigger reference point is set greater than 40%B0 for precautionary reasons, the default PRI should still be set at 20%B0=1⁄2BMSY unless it is analytically determined". We agree with the reviewer that the issues related to the state of the stock of target species should be discussed at the Joint Russian-Lithuanian Fishing Commission. And we specified it in the condition 1 (see the Milestones).	Not accepted (no change)

					cooperation within the framework of international commission, the rationale for SI 1.1.2 (a) states: "It is necessary to reach an agreement between Lithuania and Russia on the status of pike-perch stocks in the Curonian Lagoon as a whole". Given the multiple uncertainties mentioned above and guided by the precautionary approach, it is impossible to agree with the statement that it is highly likely that the stock of pike-perch is sbove the PRI.		
Pike-perch	Gill nets	PR B	1.1.2				NA (No response needed)
Pike-perch	Gill nets	PR B	1.2.1	No (material score reduction expected to <80)	There are many uncertainties related to the stock structure and stock status of pike-perch in transboundary water body that should be discussed at the Joint Russian-Lithuanian Fishing Commission, but the report does not provide evidence of its effective work. In particular, the rationale for SI 1.1.2 (a) states: "It is necessary to reach an agreement between Lithuania and Russia on the status of pike-perch stocks in the Curonian Lagoon as a whole". Given the inconsistency of data on the state of the pike-perch stock in Russian and Lithuanian waters, as well as large volumes of IUU and recreational catches that are comparative with the commercial harvest by volume (e.g. Gushchin et	Thank you for your comment. According to Gushchin et al. (2018), "in total, recreational and illegal catches in Curonian Lagoon can reach 20% of commercial catches". This is five times less than the commercial catch. In addition, unreported catch is included in the natural mortality rate when assessing the stock. The team set condition 2 for both UoAs (pike-perch and perch), according to which, "The Client should design a monitoring program to identify uncertainties related to fish mortalities in the Curonian Lagoon. It should consider the amounts of recreational and IUU fishing, and significant sources of non-fishing mortality".	Not accepted (no change)

					al. 2019), it is difficult to agree with the statement that harvest strategy is well developed and implemented, and to score the SIs (a, b) at SG80 and SI (e) at SG100.		
Pike-perch	Gill nets	PR B	1.2.2	No (change to rationale expected, not to scoring)	SI (b) For the condition set for this SI, among the uncertainties to be studied mentioned in the report (recreational and IUU fishing), it is also necessary to analyze the population structure of pike-perch in the waters of the Curonian Lagoon and at the exit from it into the Baltic Sea, the formation of feeding and pre-spawning aggregations, migration routes etc. and correlate all this with the management of pike-perch fishing in the Russian and Lithuanian parts of the bay.	Thank you for your comment. We've added the changes you suggested to the "Recommendations".	Accepted (no score change, change to rationale)

Perch	Gill nets	PR B	1.2.1	No (non-material score reduction expected)	The good state of the perch population in the Curonian Lagoon, apparently, is associated not so much with a well-organized harvest strategy, but with the peculiarities of the biology of this species: ubiquitous distribution in the bay, low demands on spawning conditions, lower market demand (compared to pike-perch) . It is hard to expect that the harvest strategy for perch will be much different from the harvest strategy for pike-perch, which, in my opinion, received undeservedly high scores (see the corresponding comment for pike-perch). Indirectly, the imperfection of the harvest strategy for perch and pike-perch at the international level of co-operation is indicated by the substantiation of the condition for the PI 3.2.2. SI(e): "given the lack of important information such as the state of stocks of target species, methods for assessing the state of their populations, fishing regulation measures and other aspects of Principle 1 for the Lithuanian side of the lagoon, therefore, SG 80 and SG 100 are not met". The use of a precautionary approach in fisheries management is also questionable, since the wording of the rationale for the condition for the IP 3.2.2. SI(c) states: "According to the limited literature data (e.g. Gushchin et al. 2019; and Gushchin and Shavrina 2018), on the level of recreational and IUU fishing, there is a high contribution of recreational and IUU harvest to total catch. This does not	Thank you for your comment. In the Russian part of the Curonian Lagoon, the perch fishing strategy is essentially the same as in the Irikla reservoir, where for SI 1.2.1d SG100 is met (https://fisheries.msc.org/en/fisheries/irikla-reservoir-perch-and-pikeperch-fishery/). Fishery in Lithuania is regulated according to EU laws. The stock of perch is estimated by both countries to be in good condition. The team set 8 conditions for different aspects of the fishery. We hope that the fulfillment of these conditions will improve the state of the fishery.	Not accepted (no change)

					allow to consider the management as precautionary and therefore the SG 80 is not met". In this regard, it is not possible to assess PI 1.2.1 SI (d) "The harvest strategy is periodically reviewed and improved as necessary" with a score of SG100, as it is done by the Assessment team.		

PR C: General Comments

Question	Yes/No	**Peer Reviewer Justification (as given at initial Peer Review stage).** Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	**CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)**
Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	No	The team performed a large work, but the report has serious issues with consistency with the MSC standard, and with information presented for scoring. First, in the description of UoAs, the team defines the stock (more correctly, the stock's geographic range) as "Territorial waters of the Russian Federation in the Curonian Lagoon of the Baltic sea" for both target species. However, the populations of both target species, perch and pikeperch occupy the entire lagoon including its Lithuanian part. It means that the UoA is described incorrectly. It has many consequences for the entire assessment even despite all TACs and PCs are established by the joint Russian-Lithuanian Fishery Commission, which is operating based on correct understanding of the stocks which distribution range covers the entire lagoon. Lack of information from Lithuanian side strongly affects scoring of all three principles. Second, Information on fishing removals from the stocks other than official catch statistics is very scarce. The report reads that this issue is addressed by the fact that TAC is set up based on the lower 95% confidence level of the estimate of the commercial stock biomass. I tried to verify this using literature data (very limited) on level of recreational and IUU fishing and data provided in the report and found that contribution of recreational and IUU harvest comprise 46% of total catch (details of calculations are provided in the bottom line of General comments section). This is a lot and does not allow to consider the management to precautionary. Third, population structuring of target and other fish species is unclear, in particularly, the connectivity of the lagoon populations with the open sea population.	Thank you for the comments. We agree with you on the need to consider the stocks in the entire Curonian lagoon. We have rewritten the report in accordance with your comments. We added more information on structure of perch and pike-perch. Our view of your recreational and poached fish catch calculations is presented below. We apologise for the poor English. We try our best to make a good report.

		No literature data is provided on that. Also, it is unclear level of fish population structuring within the lagoon. The report reads that such structuring is absent, but no research data on that are provided. As a whole, the report is difficult to read, and English is often poor.	
Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.2, 7.18.1 and sub-clauses]	Yes	-	Thank you. No response needed.

Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	NA	-	Thank you. No response needed.
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Below are my calculations of contribution of recreational and illegal fishing into total fishing removals of the Curonian lagoon. According to Guschin et al. (2019, Table 2), for years 2014-2018 mt (the same data are cited in Guschin and Shavrina 2018), recreational catch and illegal catch are on the same level, 500-800 mt, i.e. average = 650 mt each. The average total catch for 2014-2018 is 2779 mt, i.e. share of recreational catch is 23%, i.e. both types of fishing removals together account for 46% of official catch. The TAC in 2020 and 2021 is 260 mt (Table 11). As the actual removal exceeds reported for 46%, it must be anticipated that actual removal is 380 mt. Given that F is 0.29, this figure corresponds to commercial stock biomass 1309 mt. According to AtlantNIRO assessments, the upper level of commercial stock biomass at 95% confidence, are 1219 mt and 1378 mt in 2020 and 2021 respectively (Table 15), I.e. the obtained figure (1255 mt) may even exceed AtlantNIRO (in 2020) and or almost equal to estimate of 2021. Under these conditions, one cannot say that this is precautionary estimate as given the available information, this harvest strategy with high probability will lead to actual catch higher than TAC (even its 95% confidence estimate). One also need to keep in mind that the illegal and recreational removal estimates for pikeperch are assumed the same as for other species, which is probably not correct as pikeperch is highly demanded by market. Moreover, I did not considered the uncertainty of estimate of recreational catch (from 500 to 800 mt) which even increases the total uncertainty of the estimate. These calculations relate also in much extent to perch and other fish species harvested because they are based on genetic estimates related to all fish species.	Thank you for the comments. As for your calculations of contribution of recreational and illegal fishing into total fishing removals of the Curonian lagoon. As we understand, you are referring to this phrase from Gushchin et al. (2019). "**В Калининградской области** очень популярно любительское и спортивное рыболовство. Возможный вылов рыбы рыбаками-любителями составляет 500—800 т/год **в двух заливах".** It looks like you did not quite correctly translate from Russian in English this sentence. The authors is talking about the total recreational **catch (500—800 mt) in two bays** of the Kaliningrad region: the **Vistula lagoon and the Curonian lagoon**. And it is very likely that the catch in the Vistula lagoon is higher, because the large city of Kaliningrad is located on its shore. Half of the population of the Kaliningrad region lives in the city of Kaliningrad. The Russian coast of the Curonian lagoon is much less populated. During the site visit, we asked VNIRO scientists about the catches of recreational fishermen and poachers. They said that such a catch is not a big problem for assessing the stock of pike-perch and other fish. When evaluating the stocks of perch and pike-perch, catches by amateurs and poachers are taken into account as part of natural mortality. The annual trawl survey shows the actual status of the stock taking into account the catch by recreational fishermen and poachers. And according to the biological indicators (age and length composition, biomass index), the pike-perch and perch stocks in Curonian lagoon are in a stable state. Taking into account your comments, we lowered the score and added condition in order to obtain reliable information about the catch of all fish species (including recreational

			fishery and poachers) in the Curonian lagoon.

PR C: PI Comments

PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
1.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	SIa: In the rationale, please keep in mind that terms “likely”, “highly likely” or “high degree of certainty”, have precise numeric values described in MSC FCR (2014). Please make explicit assessment against these values. The rationale for SG 80 SG 100 for pikeperch are not relevant at all because do not contain numeric values.	Thank you for your comments. We edited the rationale and added the link to Table 15. From the table you can see that the lower limit of the 95% confidence interval for B2020 is greater than Blim.	Accepted (no score change, change to rationale)
1.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sia: The figure 13, which is refeed to, is not indicative. Please use the more explicit figure.	Thank you for your comments. We have added the link to Table 14. There are annual numbers on the pike-perch stock biomass in the table.	Accepted (no score change, change to rationale)
1.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sib: In the rationale, please keep in mind, that terms “fluctuating around” and “a high degree of certainty”, have precise numeric values described in MSC FCR (2014). Please make explicit assessment against these values. The rationale for SG is not relevant at all because doe not contain numeric data.	Thank you for the comment. We added a new information in the rationale about Lithuanian assessment of pike-perch (Andrašūnas et	Accepted (material score reduction to <80)

					al., 2022). Taking into account the differences between the Russian and Lithuanian assessments, we did score reduction for pike-perch to < 80 and set a Condition.	
1.1.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	Harvest strategy of the Lithuanian side should be addressed	Thank you for your comment. Since we reduced the score for PI1.1.1 (UoA 1) to <80, we assessed this PI. Harvest strategy of the Lithuanian side is addressed.	Accepted (score increased)
1.2.1	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	Sia. Given my second comment (see General comments), it is difficult to agree that precautionary approach is practiced in this fishery and that criteria of SG 80 is met to both target species. It may be even worse with perch as because management of RC species is not so strict as management of TAC, and overshoot of RC is possible. It is observed it in last two years. Officially reported catch exceeds RC 7% in 2020 and 21% in 2021 (Table 18). Adding 46% for recreational and illegal catches, it means exceeding RC for 53 and 68% respectively. This is really a lot.	Thank you for your comment. The team think, that your assessment (46% for recreational and illegal catches) is not quite correct (see the team answer in General section). During the site visit, we asked VNIRO scientists about the catches of recreational fishermen and poachers. They	Accepted (no score change, additional evidence presented)

					said that such a catch is not a problem for assessing the stocks of pike-perch and other fish. The annual trawl survey shows the actual status of the stock taking into account the catch by recreational fishermen and poachers. According to research by Andrašūnas et al. (2022), perch stock in Curonian lagoon is in good condition. In order to fulfil your recommendations regarding the accounting of catch by amateur fishermen and poachers, we have reduced the score and set a condition for three SIs (1.2.2b, 1.2.3c and 1.2.4c).	

1.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sib. "...this is confirmed by calculations with using of a SVPA model (Table 13)". How do these estimates take into account illegal and recreational catch? It is written that they are accounted for (p. 39), but why in this case fishing forecast is about the same as actual catch (see comments on 1.2.1), i.e. no precautionary approach is taken?	During the site visit, we asked VNIRO scientists about the catches of recreational fishermen and poachers. They said that such catches is not a problem for assessing the stocks of pike-perch and other fish. The annual trawl survey shows the actual status of the stock taking into account the catches of recreational fishermen and poachers (unreported catch is included in natural mortality).	Accepted (no score change, additional evidence presented)
1.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sic. More information is needed. Please describe in more details a role of different organizations. This information is not sufficient for the rationale.	Thank you for your comment. We edited the rationale and the background text.	Accepted (no score change, change to rationale)
1.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sid. Please explain why State Ecological Expertise of TAC does not provide such a review. It is unclear why management plan is necessary for such a review.	Thank you for your comment. We edited the rationale.	Accepted (score increased)

1.2.1	Yes	Yes	Yes	Sif	Thank you for your comments. We added information on the size structure of target species in the gillnet catches: pike-perch in UoA 1 (mesh 70 mm) and perch in the UoA 2 (mesh 36-40 mm). There does not appear to be unwanted catch of the poke-perch in the UoA 1 and perch in the UoA2 and therefore this scoring issue is not scored.	Accepted (no score change, change to rationale)
1.2.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	Harvest control rules and tools in Lithuania shoud be addressed	Thank you for your comment. We edited the rationale.	Accepted (no score change, change to rationale)
1.2.2	Yes	Yes	Yes	Sia	Thank you for your comment. We have removed this Condition to SIb.	Accepted (no score change, change to rationale)

1.2.2	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	Sib: "In total, recreational and illegal catches in Curonian Lagoon reach 20% of commercial catch (Gushchin, Shavrina, 2018)". It is not correct. According to Gushchin and Shavrina 2018 and Gushchin et al., 2019), both recreational catch and illegal catch are on the same level, and, according to my calculations based on author's estimated in the text (500-800 mt i.e. average = 650), and average catch for 2014-2018 (2779 mt), their share is 23%, i.e. both types of fishing removals together account for 46% of official catch (see general comments for mere details).	Thank you for your comment. The authors (Gushchin, Shavrina, 2018) is talking about the total recreational catch (500—800 mt) in two bays of the Kaliningrad region: the Vistula lagoon and the Curonian lagoon. And it is very likely that the catch in the Vistula lagoon is higher, because the large Kaliningrad city is located on its shore. Half of the population of the Kaliningrad region lives in the city of Kaliningrad. The Russian coast of the Curonian lagoon is much less populated. However, we have taken your concerns into account. We reduced the score and set a condition on this SIb.	Accepted (material score reduction to <80)

1.2.2	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	Sic: "There is some evidence that the management tools for the fishery in Curonian Lagoon are effective in controlling exploitation rate of pike-perch and perch. The SG 60 is met.". It is not a rationale but just a replicate of the guidepost. Which evidences? Please describe.	Thank you for your comment. We edited the rationale.	Accepted (no score change, change to rationale)
1.2.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	The situation in the Lithuanian side should be addressed	Thank you for your comment. We edited the rationale.	Accepted (no score change, change to rationale)
1.2.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sib: "Therefore, stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the HCR, and at least one indicator are available and monitored with sufficient frequency to support the HCR". Recreation and illegal fishing represent a major part of fishing removals. From cited sources I see only one estimate of their value (made not later than in 2010). You say here about regular monitoring of fishing removals. Please provide more data to prove such regularity. Otherwise, SG 80 is not met.	According to GSA2.6.1(MSC FS v2.01), for PI1.2.3 "Scoring issue (b) relates to fishery removals specifically by those vessels covered under the unit of assessment which need to be regularly monitored". The issue with IUU and recreational fishery we have scored in SIc. We reduced the score and set a Condition for the SIc.	Accepted (no score change, additional evidence presented)

1.2.3	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	SIc: I did not find expert assessments of illegal catch. The only indication cited in the report is that it is similar to recreation catch by volume. I cannot say that it is expert assessment. Thus, it cannot be called a good information meaning that SG80 is not met.	Thank you for your comment. We changed the rationale, reduced the score and set a condition for this SIc.	Accepted (material score reduction to <80)
1.2.4	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sia: "There are precautionary annual TACs". It is not precautionary, see General commenrts	Thank you for your comments. Pike-perch: We answered you in the General section and in the next line. Perch: The default score of 80 was set to PI1.2.4 because RBF is used for PI 1.1.1. (see Table PF1 in MSC FSP v2.2).	Accepted (no score change, additional evidence presented)
1.2.4	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sia: "The abundance and biomass of the commercial pike-perch stock are estimated using a Separable Virtual Population Analysis (SVPA)". Please explain how illegal and recreational removals are incorporated in this model.	Thank you for your comments. During the site visit, we asked VNIRO scientists about the catches of recreational fishermen and poachers. They said that catches by amateurs and poachers are taken into account as part of natural mortality. The annual trawl survey shows the actual status of	Accepted (no score change, additional evidence presented)

					the stock taking into account the catch by recreational fishermen and poachers. And according to the biological indicators (age and length composition, biomass index), the pike-perch stock in Curonian lagoon are in a stable state. In order to fulfil your recommendations regarding the accounting of catch by amateur fishermen and poachers, we have reduced the score and set a condition for three SIs (1.2.2b, 1.2.3c and 1.2.4c).	
1.2.4	No (material score reduction expected to <60)	No (material score reduction expected to <60)	NA	SIc: Assessment of illegal and recreation catch is very poor. Sum of recreation and illegal catch is much higher than 20% (see General comments). I do not think that the the SG 80 is met, meeting of SG 60 is also problematic.	Thank you for your comments. Pike-perch: We changed the rationale, reduced the score and set a condition for this SIc. Perch: The default score of 80 was set to	Accepted (material score reduction to <80)

					PI1.2.4 because RBF is used for PI 1.1.1. (see Table PF1 in MSC FSP v2.2).	
2.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	No information about population structure of primary fish species is provided. In particularly, it is unclear in what extent they are connected to the popiulations of the Baltic Sea. This information may affect analysis of their stock status.	Management for bream and sabrefish fishery in the Curonian Lagoon is based on the assumption that these are separate stocks and the exchange of fish with other stocks in the Baltic Sea is negligible.	Accepted (no score change, additional evidence presented)
2.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sia: "...the stock of bream has become relatively stable, and its dynamics in the modern period is determined mainly by natural environmental factors". It is only possible if percentage of taking TAC is very small. This is not the case here.	Thank you for your comment. We edited the rationale.	Accepted (no score change, change to rationale)
2.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sia: "Also, a precautionary biomass reference was used – Bpa, a boundary reference point for fishing intensity – the fishing mortality rate Flim and the precautionary value of the fishing mortality rate Fpa (Table 53)". The comments on contribution of recreational and illegal catch on target species are applicable to this case as well. It means that the reference points are not precautionary indeed.	Thank you for your comment. We appreciate your opinion.	Accepted (no score change, change to rationale)

2.1.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sie: "...anecdotally, according to federal government stakeholders, these regular fishery council meetings provide evidence that potential measures are kept under review". I do not think that "anecdotally provided evidences" can be considered as proofs of a regular review required for this guidepost. Thus SG 80 is not met.	Thank you for your comment. We edited the rationale. There are no unwanted catches of primary species in UoA1. We reduced score and set a condition in UoA2.	Accepted (material score reduction to <80)
2.1.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	2.1.3c. The report does not provide sufficient information on recreation and illegal removals of primary species. I understand they are similar with what is described in General commentrs, i.e. are very large. The management strategy which even does not consider these major removal cannon considered not to meet not only SG 80, SG 100, but its meeting SG 60 is also can be problematic. Moreover, all provided information is only related to Russian part of the Curonian lagoon, which only represents information on the part of the populations of exploited species. The entire population must be characterized.	Thank you for your comments. According to MSC FS v2.01, "While the impact of other IUU fishing on P2 components should be documented where known, unlike in P1, it need not be introduced into the assessment of the specific impact of the UoA (or cumulative UoAs)." Recreational fishing and Lithuanian commercial fishery are also not components of the UoAs. And we have added conditions in PI1.2.2, 1.2.3 and 1.2.4 to assess	Accepted (non-material score reduction)

					the scale of recreational and IUU fishing in the Curonian Lagoon. We edited the rationale and reduced the score for UoA2 to account for bycatch of juvenile bream and pike-perch with small-meshed (40 mm) gillnets.	
2.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	No information about population structure of secondary fish species is provided. In particularly, it is unclear in what extent they are connected to the popiulations of the Baltic Sea. This information may affect analysis of their stock status.	Management for roach and white bream fishery in the Curonian Lagoon is based on the assumption that these are separate stocks and the exchange of fish with other stocks in the Baltic Sea is negligible.	Accepted (no score change, additional evidence presented)
2.2.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	SIa. I would agree that there are measures in the Russian part of the lagoon, but I am not agree that there is a partial strategy as it does not take into account major removals from the stock associated with recreational and illegal fisheries which are really sizable (see General comments).	Thank you for your comments. According to MSC FS v2.01, "While the impact of other IUU fishing on P2 components should be documented where known, unlike in P1, it	Accepted (no score change, additional evidence presented)

					need not be introduced into the assessment of the specific impact of the UoA (or cumulative UoAs)." Recreational fishing and Lithuanian commercial fishery are also not components of the UoAs. And we have added conditions in PI1.2.2, 1.2.3 and 1.2.4 to assess the scale of recreational and IUU fishing in the Curonian Lagoon.	
2.2.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	SIa. Information on recreational and illegal removals is lacking. Probably, these are major removals and thus SG 80 cannot be met.	Thank you for your comments. According to MSC FS v2.01, "While the impact of other IUU fishing on P2 components should be documented where known, unlike in P1, it need not be introduced into the assessment of the specific impact of the UoA (or cumulative	Accepted (no score change, additional evidence presented)

					UoAs)." Recreational fishing and Lithuanian commercial fishery are also not components of the UoAs. And we have added conditions in PI1.2.2, 1.2.3 and 1.2.4 to assess the scale of recreational and IUU fishing in the Curonian Lagoon.	
2.2.3	Yes	Yes	Yes	Sic	Thank you. No response needed.	NA (No response needed)
2.3.1	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)
2.3.2	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)

2.3.3	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)
2.4.1	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)
2.4.2	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)
2.4.3	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)
2.5.1	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)
2.5.2	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)

2.5.3	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)
3.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sia, c: Information on the Lithuanian side is insufficient	Thank you for the comment. More information on the Lithuanian side was provided.	Accepted (no score change, change to rationale)
3.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sib: It is unclear how the local knowledge is accepted	Thank you for the comment. The Zapadno-Baltiyskoye TA of FFA provides the opportunity (in person, in a written or electronic form) for citizen proposals and the submission of appeals in the Kaliningrad region (http://zbtu39.ru/napisat-obrashhenie/). The Zapadno-Baltiyskoye TA reviews all received appeals, complaints or recommendations of citizens and fishing users and then accepts and	Accepted (no score change, change to rationale)

					responds to all relevant and complete appeals and recommendations by the same means (in person, written letters, emails).	
3.1.2	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)
3.1.3	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)
3.2.1	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)
3.2.2	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	Sic: My analysis in relation to principle 1 (see General comments), based on information provided for this fishery, does not show that the management is precautionary, so I cannot agree that the SG 80 is met.	Thank you for the comment. The score of SIc has been modified to SG80 is not met, and a condition was set here.	Accepted (material score reduction to <80)

3.2.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sia: Results of scoring this issue (SG 80 is met) means that the team is satisfied effectiveness of the monitoring, control and surveillance system of the fishery which demonstrated an ability to enforce relevant management measures. At the same time, the available information shows that IUU fishing is really high and comprises some 23% of the officially reported harvest. This means that the system does not show to be able to enforce relevant management measures etc., and SG 80 is not met.	Thank you for the comment. The score of SIa has been decreased to SG60 and a condition was set here.	Accepted (material score reduction to <80)
3.2.4	Yes	Yes	NA	-	Thank you. No response needed.	NA (No response needed)

PR C: RBF Comments

PI	RBF Scoring	RBF Information	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Res-ponse Code
1.1.1 (RBF)	No (scoring implications unknown)	No (scoring implications unknown)	The report reads how RBF assessment has been done: "An RBF workshop to assess main secondary species outcome was held during the site visit. Participants were provided with a presentation to explain the process and discussions were held based on the productivity values with targeted stakeholder input on the susceptibility indicators. Stakeholders were informed of the RBF workshop when the fishery was announced". I consider that insufficient information was provided on procedd of RBF assessemtn as no infromation in involved persons and their number was provided. The report does not provide references on productivity attributes. Susceptibility attributes are referred satisfactory	Thank you for the comments. In RBF workshop was involved 9 people with scientific training or fishery experience who participated in the site visit. We have added the names in section 8.2.3. We have provided the references on all attributes.	Accepted (no score change, additional evidence presented)
2.1.1 (RBF)	No (scoring implications unknown)	No (scoring implications unknown)	I consider that insufficient information was provided on procedd of RBF assessemtn as no infromation in involved persons and their number was provided (see comments on 1.1.1). For roach, productivity attributes are partly referred, but not all. For white bream, most of productivity attributes were reffered, but not all. For fish species susceptibility attirbutes are referred satisfactory. Bird species: Common Goldeneye: Productivity - insufficiently, susceptibility - insufficiently; Goosander: Productivity - insufficiently, susceptibility - insufficiently; Great Cormorant: Productivity - insufficiently, susceptibility - insufficiently; Great Crested Grebe: Productivity - insufficiently, susceptibility - insufficiently; Greater scaup: Productivity - insufficiently, susceptibility - insufficiently; Red-throated Loon: Productivity - insufficiently, susceptibility - insufficiently; Smew: Productivity - insufficiently, susceptibility - insufficiently.	Thank you for the comments. In RBF workshop was involved 9 people with scientific training or fishery experience who participated in the site visit. We have added the names in section 8.2.3. We have provided the references on all attributes.	Accepted (no score change, additional evidence presented)

PR C: Follow-up PI Comments

UoA stock	UoA gear	PI	PR Comment Code	Peer Reviewer Justification (as given at Public Comment Draft Report (PCDR) stage)	CAB response to Peer Reviewer's comments (as included in the Final Draft Report)	CAB Response Code
Pike-perch and perch	Gillnets	1.1.1	Yes			NA (No response needed)
Pike-perch	Gillnets	1.1.2	No (scoring implications unknown)	Sia. It is unclear from the rationale where the rebuilding plan is described, i.e. who exactly did specify the rebuilding timeframe.	According to condition 1, in the first year, Lithuanian and Russian scientists must agree and clarify the status of the pike-perch stock in the Curonian Lagoon. If both countries acknowledge that the stock is below Btr, then a stock recovery strategy (rebuilding plan) needs to be agreed upon. If the countries do not agree on the status of the stock, certification of pike-perch should be suspended. The rebuilding timeframe was specified by the P1 expert according the information about the time of one generation of pike-perch (https://www.fishbase.in/summary/Sander-lucioperca.html).	Accepted (no score change, additional evidence presented)
Pike-perch and perch	Gillnets	1.2.1	Yes			NA (No response needed)
Pike-perch and perch	Gillnets	1.2.2	Yes	Sib: Thanks for your explanation regarding illegal removals. Indeed, I did not notice phrase "in two bays" in Guschin and Shavrina (2018) and thus overestimated the percentage of illegal catch in the total one. At the same time, the key statement of Guschin and Shavrina is that illegal removals are comparable to commercial catches is still relevant. I am ok with your decision for the score reduction for this PI.	Thank you for your comment. No response needed.	NA (No response needed)

Pike-perch and perch	Gillnets	1.2.3	Yes	Sic: The phrase "An expert assessment of illegal catches is carried out" reads that there are regular expert assessments. In fact, however, there is only one estimate was provided in publications of the late 2010s, so I would change the wording to more relevant one. I would avoid saying that "In total, recreational and illegal catches in Curonian Lagoon can reach 20% of commercial catches (Gushchin et al., 2018)" because, as far as I understand, 20% is author's estimate based of data published in Guschchin et al, 2018), and this estimate involves a number of assumptions and uncertanities. At the same time, I am ok with setting a special condition on this PI. Regarding the rationale for the Condition 3, I would comment that the Client should not limit itself by interacting only with AtlantNIRO as fisheries research institutes may not always have the relevant expertise, but keep in mind other organisations as well.	Thank you for your comment. We agree with you. Whenever possible, the Client should involve not only the AtlantNIRO, but also other organizations in research. The Client Action Plan additionally mentions the Kaliningrad State Technical University. There is another assessment of recreational fishery in the Kaliningrad region (including the Curonian Lagoon) (Sporrong, 2017). Please see the section 8.12.1 "Recreational fishery".	Accepted (no score change, additional evidence presented)
Pike-perch and perch	Gillnets	1.2.4	Yes			NA (No response needed)
Pike-perch and perch	Gillnets	2.1.1	No (scoring implications unknown)	My question was about the basis of the conclusion about negligible exchange between the lagoon and the open sea. I did not find such information. The authors write that "additional evidence presented" regarding the population structure of main primary species, but I did not find it. Please specify what information has been presented on this subject.	Thank you for your comment. The team does not have information on population structure of primary fish species. Phrase "additional evidence presented" refers to the sentence "Management for bream and sabrefish fishery in the Curonian Lagoon is based on the assumption that these are separate stocks and the exchange of fish with other stocks in the Baltic Sea is negligible".	Accepted (no score change, additional evidence presented)
Pike-perch and perch	Gillnets	2.1.2	Yes			NA (No response needed)

Pike-perch and perch	Gillnets	2.1.3	No (material score reduction expected to <80)	Thanks to authors for explantations and scoring reconsideration. Before the cited phrase, MSC FS v2.01 reads: "The requirement for compliance with national and international laws combined with the requirement that the UoA should not be causing serious and irreversible harm in P2 means that the UoA should also be free from IUU fishing for P2 species". In the report, I do not find evidences that this fishery is free of IUU fishing, and even vice versa, that IUU fishing is significant and practically is not assessed. I do not see how to obtain this information without setting up a special condition.	Thank you for your comment. According to MSC FS v2.01, Box GSA2, - "While the impact of other IUU fishing on P2 components should be documented where known, unlike in P1, it need not be introduced into the assessment of the specific impact of the UoA".	Not accepted (no change)
Pike-perch and perch	Gillnets	2.2.1	No (scoring implications unknown)	My question was about the basis of the conclusion about negligible exchange between the lagoon. I did not find such information. The authors write that "additional evidence presented" regarding the population structure of main primary species, but I did not find it. Please specify what information has been presented on this subject.	Thank you for your comment. We think you mean "secondary fish species". The team does not have information on population structure of secondary fish species and the exchange between the lagoon and marine waters. Phrase "additional evidence presented" refers to the sentence "Management for roach and white bream fishery in the Curonian Lagoon is based on the assumption that these are separate stocks and the exchange of fish with other stocks in the Baltic Sea is negligible".	Accepted (no score change, additional evidence presented)
Pike-perch and perch	Gillnets	2.2.2	Yes			NA (No response needed)
Pike-perch and perch	Gillnets	2.2.3	No (material score reduction expected to <80)	Thanks to authors for explantations and scoring reconsideration. Before the cited phrase, MSC FS v2.01 reads: "The requirement for compliance with national and international laws combined with the requirement that the UoA should not be causing serious and irreversible harm in P2 means that the UoA should also be free from IUU fishing for P2 species". In the report, I do not find evidences that this	Thank you for your comment. According to MSC FS v2.01, Box GSA2, - "While the impact of other IUU fishing on P2 components should be documented where known, unlike in P1, it need not be introduced into the assessment of the specific impact of the UoA".	Not accepted (no change)

				fishery is free of IUU fishing, and even vice versa, that IUU fishing is significant and practically is not assessed. I do not see how to obtain this information without setting up a special condition.		

8.4 Stakeholder input

The Client provided numerous scientific reports to the assessment team for provide information for the ACDR and supplement the site visit. The CAB received no written comments from stakeholders regarding the ACDR. The assessment team received no verbal comments during the site visit likely to cause a material difference to the outcome of the assessment.

UCSL received and addressed MSC comments to the PCDR as part of a technical oversight review. These comments and relevant responses are given in the table below.

MainID	SubID	Page Reference	Grade	Requirement Version	Oversight Description	Pi	CAB Comment
24349	32420	27, 294-295	Guidance	FCP-7.18.1.4 v2.2	The deadlines noted for Principle 3 conditions (Conditions 6 and 7) in the Summary of Conditions table (Table 5) appear to be different from those in the conditions tables, Table 67 (for Condition 7) and Table 68 (for Condition 8).		Thank you for the comment. This has now been corrected in Table 5 – Summary of conditions.
24349	32431	17	Guidance	FCP-7.18.1 v2.2	In the Executive Summary, it is stated that three conditions were raised, however, it is clear from the report that eight conditions were raised.		Thank you for the comment. This has now been corrected.
24349	32441	314	Guidance	FCP-PF4.1.2 v2.2	Although links to Section 6.2.1.2 are provided in the rationales, for clarification, relevant references need to be included in the PSA.		Thank you for the comment. We included relevent references in the PSA tables.
24349	32442	317-323	Guidance	FCP-PF4.1.2 v2.2	References are not provided in the rationales for all elements for all attributes. For clarification, relevant references to justify the scoresneed to be included.		Thank you for the comment. We included relevent references in the rationales.
24349	32443	326	Guidance	FCP-PF4.3.2 v2.2	The productivity scores in the worksheet differ from those provided on pg 317-323.		Thank you for the comment. We have made corrections.

24349	32439	313	Guidance	FCP-PF3.3.2 v2.2	A link to Table 17 showing trend data is provided in the rationale. The full reference for Table 17 is not included in the report. The full reference needs to be included and the relevant in-text references need to detailed in the Consequence Analysis.		Thank you for the comment. Please see "Principle 1 References" (page 73) Correction. 2021. Correction of materials justifying the possible volumes of harvest (catch) of perch in 2021 in the Curonian bay of the Baltic Sea for 2021. - Kaliningrad: AtlantNIRO. 2021. - 4 p.
24349	32461	28	Minor	FCP-7.9.1.1 v2.2	As per FCP 7.9.1.1 and Reporting Template Section 6.2, the CAB shall describe the tracking, tracing and segregation systems in place within the fishery, and how these systems will allow any product sold as MSC certified to be traced back to the UoC. The report states that there are "strict internal procedures on board the vessels" that ensure that risk of substitution is minimised, but these procedures have not been described.		Thank you for the comment. This has now been specified in the text.

24349	32462	28	Minor	FCP-7.8.1 v2.2	As per FCP 7.8.1 The CAB shall nominate a date from which product from a certified fishery is eligible to be sold as MSC certified or bear the MSC ecolabel (the eligibility date), and Reporting Template section 6.1, the CAB shall include the determined eligibility date and the justification for selecting this date, including consideration of whether the traceability and segregation systems in the fishery are appropriately implemented. The eligibility date determined by the CAB in this PCDR is noted to be publication date of the PCDR "if desired by the client." It is unclear if this "desired" eligibility date has been confirmed, when the ultimate eligibility date would be confirmed, and what risk would be brought to the fishery if this date is changed. It is also unclear if the fishery's traceability system is appropriately implemented on the eligibility date to handle under assessment product. As per the Reporting Template section 6.1, please confirm the ultimate eligibility date, status of the fishery traceability system being implemented, and justification for selecting this date.		Thank you for noticing this. The publication date of the PCDR has now been confirmed as the eligibility data for the fishery. The required traceability systems are in place as per this date.

24349	32463	29	Minor	FCP-7.9.1.3 v2.2	As per FCP 7.9.1.3, the CAB shall document and identify any areas of risk for the integrity of certified products and how they are managed and mitigated. Table 6 details the risk of non-UoC bycatch being handled at the same time and not sorted by species until at processing. It is unclear what traceability and segregation systems are in place to ensure UoC products are not mixed with non-UoC, and that product sold as certified can be traced back to the UoC.		Sorry for such confusion, in fact, all fish are sorted out by target and non-target bycatch species aboard and then when it is landed, CoC commences.

24349	32464	30	Minor	FCP-7.9.1.5 v2.2	As per FCP 7.9.1.5, the CAB shall identify the point of intended change of ownership of product and from which subsequent Chain of Custody certification is required. The report has been inconsistent on where change of ownership of product takes place. Section 5.2 states two routes of change of ownership - at a transport vessel or at port (Paragraph 4); Later, Paragraph 5 describes that there is only one point of ownership change but describes two points - the pier on which product is offloaded, and the factory in which product is consequently processed. Report states that no transhipment takes place within the fishery (Table 6), but states that the first change of ownership can take place from the fishing vessels landing catch as well as from "transport ships" (Section 5.3). It is unclear what these transport ships are or how they come into owning caught product without changing hands at sea. The report has also not determined the point from which CoC is required, and how the transport step following unloading and before processor would be considered to ensure traceability back to the Unit of Certification.			Thank you for noticing this. This has now been corrected. Transport vessels are not used in the fishery. CoC is required from the point where the fish is landed.

24349	32465	30	Minor	FCP-7.9.2.1 v2.2	As per FCP 7.9.2.1, the CAB shall document which parties and categories of parties are eligible to use the fishery certificate and the point at which Chain of Custody is needed. The report does not confirm which parties are eligible to use the fishery certificate. There are two fishing enterprises named within the client group, but a third party, P&G International Trading GmbH, is named as a possible third member of the client group. The relationship between this company and the fishing companies is unclear, as initial change of ownership has been stated to occur upon landing at processing factories in Kaliningrad.		Actually, P&G International Trading GmbH is one of the client group members and also holder of MSC certificate as mentioned in the UoA description above. Besides, all Russian fishing companies operating on the same geographic area and uses the same fishing gear are considered to be eligible fishers who are able to use this fishery certificate through the certificate sharing agreement.
24349	32475	47, 53-54	Minor	FCP-7.7.3 v2.2	Information on a Lithuanian stock assessment of European perch is included in Section 7.12 and the assessment is referred to in the rationales of PI 1.1.1. It is, however, not clear why this stock assessment was not considered when triggering the RBF for PI 1.1.1. This needs to be clarified.	1.1.1	Thank you for the comment. At the time of the triggering the RBF, the team had no information about the Lithuanian assessment. This information was received later.
24349	32434	216	Minor	FCP-PF2.3.4 v2.2	There is no description of how stakeholder input was used to score target species outcome using the CA. This information needs to be included.	1.1.1	Thank you for the comment. We included this information in RBF section of the report.

24349	32449	56	Major	FCP-7.17.9.2 v2.2	PI 1.1.2: The rationale does not include any indication that there is a rebuilding strategy in place, it is therefore unclear how the team have determined that SG60 and SG100 are met.	1.1.2	The main part of the pike-perch stock lives in the Russian part of the Curonian Lagoon. Russian scientists believe that the state of the pike-perch stock is good. Lithuanian scientists who participated in the site visit believe that the stock of pike-perch in the Lithuanian part of the Curonian Lagoon is below optimal. But they do not rule out that this may be due to an increase in salinity in the Lithuanian part of the Lagoon. According to condition 1, in the first year, Lithuanian and Russian scientists must agree and clarify the status of the pike-perch stock in the Curonian Lagoon. If both countries acknowledge that the stock is below Btr, then a stock recovery strategy (rebuilding plan) needs to be agreed upon. If the countries do not agree on the status of the stock, certification of pike-perch should be suspended. The rebuilding timeframe was specified by the P1 expert according the information about the time of one generation of pike-perch (https://www.fishbase.in/summary/Sander-lucioperca.html). It is highly likely based on previous performance, that it will be able to rebuild the stock within the specified timeframe, if it is really necessary.

24349	32432	216	Minor	FCP-PF2.1.1h v2.2	For PI 2.2.1, the RBF was used on several main secondary species not initially included in the announcement. Clarification on why this is the case and why an additional RBF announcement was not submitted is needed.	2.2.1	Yes, sorry for that omission. Initially, the RBF announcement was submitted when Blanka Lederer was P2 expert. However, prior the site visit, there was a change in team's composion and new P2 expert (Petr Vasilets) nominated, who based on ACDR decided to add new additional main secondary species (Roach and White bream) which RBF applied to.
24349	32433	216	Guidance	FCP-PF2.1.1g v2.2	It was initially announced that the RBF was triggered for PI 2.3.1. In the report, the RBF was, however, not used for PI 2.3.1. It is unclear why this is the case, further clarification is needed.	2.3.1	Thank you for the comment. The team have received information that there were no ETP species in the bycatch.

24349	32445	148-149	Minor	FCP-7.17.9.2 v2.2	PI 2.3.1.b: It is unclear from the rationale how the team have determined the direct effects of the UoA are highly likely to not hinder recovery of ETP species given the stated absence of specific data on fishery-ETP interactions.	2.3.1	Thank you for the comment. There is information from scientists and fishermen who participated in the site visit that marine mammals do not inhabit the Russian part of the Curonian Lagoon. Started in 2017 and finishing in 2020, the project “Untangling the net: tackling bird bycatch in Baltic gillnet fisheries” had among its objectives evaluation of bycatch of bird species in the Curonian Lagoon, involving simultaneous data collection in both the Lithuanian and Russian parts of the lagoon (Morkūnas et al., 2020). Studies have shown that when fishing with gillnets in the Curonian Lagoon there is a by-catch of waterfowl. This happens with those species that have a significant population. They are discussed in PI 2.2.1. There were no the ETP bird species among the captured species. Thus, the team believes that the "absence of specific data on fishery-ETP interactions" is due to the low frequency of these kinds of interactions.

24349	32435	150, 151	Major	FCP-7.17.9.2 v2.2	PI 2.3.2.a: It is unclear from the rationale whether there is a strategy in place for managing the UoAs impact on ETP species. SG80 for PI 2.3.2 (a) requires that a strategy is in place, however the rationale only states that a partial strategy is in place for each scoring element but still concludes that SG80 is met. It is unclear from the description provided in the rationale how this would consistute a strategy.	2.3.2	Thank you for the comment. We have changed the rationales.
24349	32436	151	Major	FCP-7.17.9.2 v2.2	PI 2.3.2.c and d: Insufficient information is presented in these rationales to justify the scores, in particular it is unclear what information on ETP species is collected and considered here. For example for scoring issue c it is unclear from the rationales how the team have concluded that measures are considered likely to work based on plausible argument or whether there is an objective basis for confidence that the measures or strategy will work based on information directly about the fishery and species involved. Similarly, for scoring issue d it is unclear from the rationale what evidence there is that the measures/strategy are being implemented successfully, the rationale describes a number of the measures in place, however does not detail what evidence there is that these are successfully implemented.	2.3.2	Thank you for the comment. The rationale for SI2.3.2c is harmonized with previously certified fishery "Irikla Reservoir Perch and Pikeperch Gillnet Fishery PCR" (https://fisheries.msc.org/en/fisheries/irikla-reservoir-perch-and-pikeperch-fishery/) We have changed the rationale for SI2.3.2d.

24349	32440	154	Major	FCP-7.17.9.2 v2.2	PI 2.3.3.a and b: It is unclear from the rationale what information is available on ETP species and how this information is considered adequate to assess the UoA related mortality and impacts as per the SG80 guidepost afor scoring issue a, or how information is adequate to measure trends and support a strategy for scoring issue b. For example, in scoring issue a the rationale states that the "experts informed the assessment team they have not seen any marine mammals in the Russian part of the lagoon" and that "they inform the assessment team on little UoAs impact on ETP species", however the team do not describe which experts this information came from or what evidence base they presented to support these conclusions. In scoring issue b, no information is provided on what observations are available from scientists, managers and inspectors to support a management strategy for ETP species.	2.3.3	Thank you for the comment. We have changed the rationale.

24349	32474	191-192	Major	FCP-7.17.9.2 v2.2	PI 3.1.1.a: It is unclear from the rationale how the team have determined that the binding procedure governing cooperation between Russia and Lithuania on the Curonian lagoon is effective. The rationale for PI1.1.1.a states, "Russian fish managers think that pike-perch stock in Russian part of the Curonian Lagoon is above Btr (Materials, 2020a, 2020b, 2022). Lithuanian fish managers think that pike-perch stock in the Curonian Lagoon is below Bmsy (Andrašūnas et al., 2022). In connection with these disagreements PI1.1.1b SG80 is not met for pike-perch. The condition is set. It is necessary to reach an agreement between Lithuania and Russia on the status of pike-perch stocks in the Curonian Lagoon as a whole". This disagreement appears to contradict an SG100 score for 3.1.1.a.	3.1.1	Thanks. The rational has been clarified and score has been reduced to SG80.
24349	32421	192	Minor	FCP-7.17.9.2 v2.2	PI 3.1.1.b: It is unclear from the rationale whether there is a transparent mechanism for the resolution of legal disputes. For instance, it is unclear how the appeals, complaints, or recommendations received by the Zapadno-Baltiyskoye TA are received and responded to in a transparent manner.	3.1.1	Thanks. The rational has been clarified.

24349	32430	Throughout PCDR	Major	FCP-7.17.9.1 v2.2	Throughout PCDR, including the P1, P2 and P3 reference lists and within rationales/PI reference lists for PI 1.2.1, 1.2.3, 1.2.4, 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3, 3.2.4: MSC were unable to open a large number of hyperlinks throughout the report, including hyperlinks provided as important parts of rationales and within reference lists. There were also some references, i.e. Ložys (2021) in PI1.2.4 that were not available in reference lists. These links and references are critical to many of the rationales and the CAB should ensure that all links provided work within the Final Report as per FCP v2.2 4.4.1.1.	3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.4, 1.2.1, 1.2.3, 1.2.4	The assessment team was able to open, read, and check each hyperlink provided throughout the report at the time of writing the report. It doesn't make sense that the team will insert unworking links. Unfortunately, many hyperlinks from Russian management organisations, normally used in MSC report, are continuously changing (you can check previous MSC reports in Russia). This will be continuously happening after publishing the PCR. In our opinion, it is useless that the team makes such an effort to update all these links taking into account that most of them will change again within a few months and that the content is in Russian language.
24349	32422	195-196	Minor	FCP-7.17.9.2 v2.2	PI 3.1.2.b: It is unclear from the rationale how regularly the management system seeks and accepts relevant information.	3.1.2	Thanks. The rational has been clarified.
24349	32423	200	Minor	FCP-7.17.9.2 v2.2	PI 3.2.1.a: It is unclear from the rationale whether long-term objectives are explicit within the fishery specific management system, which is required to meet SG80.	3.2.1	Thanks. The rational has been clarified.

24349	32424	202	Minor	FCP-7.17.9.2 v2.2	PI 3.2.2.a: It is unclear from the rationale how established the decision-making process is. Please refer to GSA4.8 for what is meant by 'established.'	3.2.2	Thanks. The rational has been clarified.
24349	32425	202	Minor	FCP-7.17.9.2 v2.2	PI 3.2.2.b: It is unclear from the rationale whether decision-making processes respond in a transparent manner.	3.2.2	Thanks. The rational has been clarified.
24349	32426	205	Minor	FCP-7.17.9.2 v2.2	PI 3.2.3.a: It is unclear from the last paragraph of the rationale whether SG60 or SG80 are met. The first sentence states that the MCS system shows an ability to enforce relevant management measures, strategies, and or rules, therefore SG60 is met." However, those are the guideposts for SG80. The last sentence of the paragraph states, "…the MCS system does not show to be able to enforce relevant management measures, therefore SG80 and SG100 are not met." The two sentences appear to contradict each other.	3.2.3	Thanks. The rational has been clarified.
24349	32427	206	Minor	FCP-7.17.9.2 v2.2	PI 3.2.3.b: It is unclear from the rationale whether sanctions are thought to provide effective deterrence, which is required to meet SG80. The rationale for meeting SG80 does not mention this, and the rationale for not meeting SG100 states, "it cannot be concluded that sanctions provide effective deterrence."	3.2.3	Thanks. The rational has been clarified.
24349	32428	208	Minor	FCP-7.17.9.2 v2.2	PI 3.2.4.b: It is unclear from the rationale how regular the internal and external reviews are.	3.2.4	Thanks. The rational has been clarified.

8.5 Conditions

Condition 1

Table 61 – Condition 1 UoA1 (pike-perch)

Performance Indicator	1.1.1 – Stock status (UoA 1)
Score	70 SIb: "Stock status in relation to achievement of Maximum Sustainable Yield (MSY)" does not receive a score of 80.
Justification	SIb: **Pike-perch** *Lithuanian stock assessment.* According to Andrašūnas et al. (2022), B/Bmsy < 0.8 for pike-perch in the Curonian Lagoon from 2000 (Figure 45 A). *Russian stock assessment.* There is the precautionary commercial stock biomass reference point B_{pa} = 1.4 * B_{lim} = 554 tons, that is used as target reference point for HCR. It was below the B_{pa} only 4 out of 30 past years (13% of cases), in 1992-1995 (Figure 13). Since 1996, the biomass estimates were higher than B_{pa}. In 2021 B_{2021} = 905 t; 905/B_{pa} = 1.63. Taking into account the differences between the Russian and Lithuanian assessments, the team cannot state that the pike-perch stock in the Curonian Lagoon is at or fluctuating around a level consistent with MSY. **SG 80 and SG 100 are not met**.
Condition	Demonstrate within eight years that the pike-perch stock in the Curonian Lagoon is at or fluctuating around a level consistent with MSY.
Condition deadline	8 years after the initial certification.
Exceptional circumstances (Yes)	*Check the box if exceptional circumstances apply and condition deadline is longer than the period of certification (FCP v2.2 7.18.1.6). Provide a justification.* For pike-perch, the time of one generation is 8.2 year[4]. The rebuilding timeframe is specified, which does not exceed one generation time for the pike-perch (8 years).
Milestones	Surveillance 1: The Client must prepare a report describing the results of negotiations between Lithuania and Russia on the status of the pike-perch stock in the Curonian Lagoon. No change expected in the score. Surveillance 2: The Client must prepare a report describing the results of negotiations between Lithuania and Russia on the status of the pike-perch stock in the Curonian Lagoon. If both countries acknowledge that the stock is below Btr, then a stock recovery strategy needs to be agreed upon. Surveillance 3-7: The Client must prepare an annual report on the pike-perch stock status. There should be evidence that the stock is recovering. Surveillance 8: The client must demonstrate that the condition has been met, at which time the fishery will rescore at least 80.
Verification with other entities	The Client will work with AtlantNIRO and other stakeholders.

[4] https://www.fishbase.in/summary/Sander-lucioperca.html

Condition 2

Table 62 – Condition 2 (UoA1 & UoA2)

Performance Indicator	1.2.2 – Harvest control rules and tools (UoA1 & UoA2)
Score	75 SIb: "HCRs robustness to uncertainty" does not receive a score of 80.
Justification	SIb: There are uncertainties in estimating of stock biomass based on annual surveys because of variations in catchability of fish. Also there are uncertainties associated with recreational fishery and illegal catches. It is not clear that the HCRs are likely to be robust to the uncertainties related with levels of mortality associated with recreational and IUU fisheries. **SG 80 and SG 100 are not met for both UoAs**.
Condition	Within four years HCRs are likely to be robust to the main uncertainties.
Condition deadline	4th Surveillance audit
Exceptional circumstances ☐	Check the box if exceptional circumstances apply and condition deadline is longer than the period of certification (FCP v2.2 7.18.1.6). Provide a justification.
Milestones	*Surveillance 1*: The Client should design a monitoring program to identify uncertainties related to fish mortalities in the Curonian Lagoon. It should consider the amounts of recreational and IUU fishing, and significant sources of non-fishing mortality. Prepare Year 1 Report with monitoring strategy. No change expected in the score. *Surveillance 2*: The Client should implement a monitoring program to determine the sources and amounts of fish mortality based on Year 1 monitoring strategy. Prepare Year 2 Report with a summary of monitoring results. No change expected in the score. *Surveillance 3*: The Client continues the monitoring program in Year 3. The Client should meet fishery managers to review data and discuss possible changes to HCRs, if necessary. Prepare Year 3 Report with evidence of manager meetings in the form of meeting minutes, presentations, draft rules, or other records to demonstrate management consideration of uncertainties in HCRs. No change expected in the score. *Surveillance 4*: The Client should provide evidence that HCRs are robust to sources of uncertainty, including those from recreational and IUU fishing, and any significant sources of natural mortality. Managers should adjust HCRs, if appropriate. Condition expected to be fully met with an expected score of 80.
Verification with other entities	The Client will work with AtlantNIRO and other stakeholders.

Condition 3

Table 63 – Condition 3, (UoA1 & UoA2)

Performance Indicator	1.2.3 – Information and monitoring (UoA1 & UoA2)
Score	75 SIc: "Comprehensiveness of information" does not receive a score of 80.
Justification	Information on removals from the stock by other commercial fisheries is regularly provided to the Fisheries Administrations in Lithuania and Russia. Recreational catches in the Curonian Lagoon are not directly recorded. An expert assessment of illegal

	catches is carried out. According to Gushchin & Shavrina (2018), in total, recreational, and illegal catches in Curonian Lagoon reach 20% of commercial catch. However, more information is needed to better understand the impact of recreational and IUU fisheries on the stocks of target species. **SG 80 is not met for both UoAs**.
Condition	Within four years there should be good information on all fishery removals from the stock.
Condition deadline	4th Surveillance audit
Exceptional circumstances ☐	Check the box if exceptional circumstances apply and condition deadline is longer than the period of certification (FCP v2.2 7.18.1.6). Provide a justification.
Milestones	Surveillance 1: The Client should design a monitoring program to all other fishery removals from perch and pike-perch stocks, including through IUU and recreational fishing. Prepare Year 1 report describing monitoring program. No change expected in the score. Surveillance 2: The Client should implement the monitoring program defined in Year 1. Prepare a Year 2 report to present monitoring data. No change expected in the score. Surveillance 3: The Client should continue monitoring activities started in Year 2. Also, the Client should review results with fishermen and fishery managers and discuss possible data gaps and/or changes to HCRs. Prepare Year 3 Report with evidence of discussions in the form of meeting minutes, draft rules, presentations, or other records to demonstrate consideration of monitoring results. No change expected in the score. Surveillance 4: The Client should prepare Year 4 Report providing comprehensive information about all fishery removals from the stock, including recreational and IUU fishing. Condition expected to be fully met with an expected score of 80.
Verification with other entities	The Client will work with AtlantNIRO to conduct research and monitoring to support the Client Action Plan. The UCSL United Certification Systems Limited consulted with AtlantNIRO to verify their commitment and to ensure that the Client Action Plan (CAP) is reasonable and attainable within the specified timeframe.

Condition 4

Table 64 – Condition 4 (UoA1)

Performance Indicator	1.2.4 – Assessment of stock status (UoA1)
Score	75 SIc: " Uncertainty in the assessment " does not receive a score of 80.
Justification	**Pike-perch (UoA1)** In Lithuania and Russia, the assessment identifies major sources of uncertainty: variations associated with the annual research surveys and the uncertainty in predicting annual recruitment. Recreational catches in Curonian Lagoon are not directly recorded, but there is expert assessment of their volume. An expert assessment of illegal catches is also carried out. According to Gushchin and Shavrina (2018), recreational and illegal catches in Curonian Lagoon can reach 20% of commercial catch. The information is annually discussed on the Joint Russian-Lithuanian Fisheries Commission. **SG 60 is met**. It is clear that the assessment identifies major sources of uncertainties. But it is not clear how uncertainties about IUU and recreational fishing volumes are accounted for. **SG 80 and SG 100 are not met**.

Condition	Within four years, the stock assessment should take uncertainty into account.
Condition deadline	4th Surveillance audit
Exceptional circumstances ☐	Check the box if exceptional circumstances apply and condition deadline is longer than the period of certification (FCP v2.2 7.18.1.6). Provide a justification.
Milestones	Surveillance 1: The Client should review key information gaps in pick-perch stock assessment data and consider the uncertainties related to recreational and IUU fishing, catches by gear other than gillnets, and significant sources of non-fishing mortality. Prepare Year 1 Report with analysis of key information gaps. No change in score expected. Surveillance 2: The Client should define key uncertainties and recommend possible methods to account for them in stock assessment analysis. Prepare Year 2 report describing possible modifications to the TAC determination procedure. No change in score expected. Surveillance 3: The Client should review monitoring data and discuss possible changes to stock assessment methods (TAC determination procedure) with fishery managers. Prepare Year 3 report providing evidence of discussions in the form of meeting minutes, draft rules, or other records to demonstrate consideration of new data and possible methods. No change expected in the score. Surveillance 4: The Client should demonstrate improved or considered stock assessment methods (TAC determination procedure) and data to account for key uncertainties; including those involving recreational, IUU and other non UoA fishery removals and any significant mortalities from non-fishery impacts. Condition expected to be fully met with a score of 80.
Verification with other entities	The Client will work with AtlantNIRO to conduct research and monitoring to support the Client Action Plan. The UCSL United Certification Systems Limited consulted with AtlantNIRO to verify their commitment and to ensure that the Client Action Plan (CAP) is reasonable and attainable within the specified timeframe.

Condition 5

Table 65 – Condition 5 (UoA2)

Performance Indicator	2.1.2 – Primary species management strategy (UoA2)
Score	75 SIe "Review of alternative measures" does not receive a score of 80.
Justification	SIe: **UoA 2 (Perch)** Fishing gear - gillnets with mesh 40 mm. Pike-perch and bream matures later and grows faster than perch, so gillnets of small mesh size could potentially take considerable amounts of pike-perch and bream juveniles. According to the Fishing Rules (2020) and the internal instruction of the Client, when fishing with small-meshed gillnets, the by-catch of juveniles is not allowed more than 10% of the total number of all fish species. If the catch of immature fish is exceeded, the captain (foreman) must record the catch in the fishing log and change the fishing place. The surplus juvenile fish should be immediately released into the natural habitat with the least damage. The alternative measures are potential topics at regular fishery council meetings, where management authorities receive feedback on management practices from the industry and other interested stakeholders. **SG 60 is met.** While there are several possible measures to minimize UoA 2-related mortality of unwanted catch, there is no evidence of a regular review of the potential effectiveness and practicality of alternative measures to minimize mortality of unwanted catch of the pike-perch and bream juveniles when fishing with small-meshed gillnets in the Curonian Lagoon and that

	they are implemented as appropriate. **SG 80 and SG 100 are not met**.
Condition	Demonstrate within four years that there is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.
Condition deadline	4th Surveillance audit.
Exceptional circumstances ☐	*Check the box if exceptional circumstances apply and condition deadline is longer than the period of certification (FCP v2.2 7.18.1.6). Provide a justification.*
Milestones	Surveillance 1: The client must present evidence that a plan is in place to address this condition. Surveillance 1: The client must present a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species. Surveillance 3: The client should prepare a report about implemented alternative measures to minimise UoA-related mortality of unwanted catch of main primary species. Surveillance 4: The client should demonstrate that the condition has been met. The fishery will rescore at least 80.
Verification with other entities	The Client will work with AtlantNIRO, academic consultants and other stakeholders.

Condition 6

Table 66 – Condition 6 (UoA1 & UoA2)

Performance Indicator	PI 2.2.3 – Secondary species information (UoA1 & UoA2)
Score	70 SIc "Information adequacy for management strategy" does not receive a score of 80.
Justification	SI c: The information described in SI 2.2.3A is adequate to support measures to manage main secondary species. **SG 60 is met**. The team needs more data on bycatch structure in the UoAs and gillnet interactions with mammals and seabirds for decide if the information is adequate to support a partial strategy to manage main secondary species. **SG 80 and SG 100 are not met**.
Condition	Within four years, obtain quantitative information to assess the impact of UoAs on secondary species: species bycatch in fishery and gillnet interactions with mammals and seabirds.
Condition deadline	4th Annual Surveillance.
Exceptional circumstances ☐	*Check the box if exceptional circumstances apply and condition deadline is longer than the period of certification (FCP v2.2 7.18.1.6). Provide a justification.*
Milestones	Surveillance 1: The client must present evidence that a plan is in place to address this condition (prepare Year 1 report). No change expected in the score. Surveillance 2: The client must present evidence that the plan has been implemented (prepare Year 2 report). No change expected in the score. Surveillance 3: The client should prepare a report to present data about real bycatch structure in the UoAs and gillnet interactions with mammals and seabirds. Surveillance 4: The client must demonstrate that the condition has been met (prepare Year

	4 report), at which time the fishery will rescore at least 80.
Verification with other entities	The Client will work with AtlantNIRO, academic consultants and other stakeholders.

Condition 7

Table 67 – Condition 7 (UoA1 & UoA2)

Performance Indicator	3.2.2 SIc and SId
Score	*75*
Justification	SIc - information on fishing removals from the stocks other than official catch statistics is very scarce. According to the limited literature data (e.g. Gushchin et al. 2019; and Gushchin and Shavrina 2018), on the level of recreational and IUU fishing, there is a high contribution of recreational and IUU harvest to total catch. This does not allow to consider the management as precautionary and therefore the **SG 80 is not met**. SId - Given the lack of important information such as the state of stocks of target species, methods for assessing the state of their populations, fishing regulation measures and other aspects of Principle 1 for the Lithuanian side of the lagoon, therefore, **SG 80 is not met**.
Condition	To demonstrate that the management system uses the precautionary approach and the best available evidence for the practical management of all species. Also, to demonstrate that the information on the fishery's performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
Condition deadline	3rd Annual Surveillance
Exceptional circumstances ☐	Check the box if exceptional circumstances apply and condition deadline is longer than the period of certification (FCP v2.2 7.18.1.6). Provide a justification.
Milestones	By the first annual surveillance, the client must present evidence that a plan is in place to address this condition. This may include a review of the effectiveness of the TAC to take into consideration fishing mortality by IUU and/or an evaluation of how any risk factors that could lead to overfishing would be managed in a precautionary way. Also, the client must consider mechanisms to share public information about fishery performance and provide transparent explanations of how it is used to make fishery decisions. Evidence of considerations will include minutes of meetings, presentations, reports, or actual implementation of information sharing mechanisms. By the second annual surveillances, the client must present an evidence that the plan is being implemented and provide an update on progress towards meeting the Condition. Also, the client must implement mechanisms to publicly share information about fishery performance, such as through a web-site for the Joint Russian-Lithuanian Fisheries Commission. By the third annual surveillance, the client must demonstrate that the condition has been met. The fishery will rescore at least 80.
Verification with other entities	The Client will work with AtlantNIRO and other stakeholders.

Condition 8

Table 68 – Condition 8 (UoA1 & UoA2)

Performance Indicator	3.2.3 SIa
Score	*75*
Justification	The limited literature data (e.g. Gushchin et al. 2019; and Gushchin and Shavrina 2018) shows that IUU fishing is high and comprises about ±20% of the officially reported harvest. This means that the MCS system does not show to be able to enforce relevant management measures, therefore **SG 80 is not met**.
Condition	Demonstrate that a monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.
Condition deadline	3rd Annual Surveillance
Exceptional circumstances ☐	Check the box if exceptional circumstances apply and condition deadline is longer than the period of certification (FCP v2.2 7.18.1.6). Provide a justification.
Milestones	By the first annual surveillance, the client must present evidence that a plan is in place to address this condition. By the second annual surveillance, the client must present evidence that the plan has been implemented. By the third annual surveillance, the client should demonstrate that the condition has been met. The fishery will rescore at least 80.
Verification with other entities	The Client will work with AtlantNIRO and other stakeholders.

8.6 Client Action Plan

The following tables 69-76 present the Client Action Plan (CAP) for the **eight Conditions** set against the Curonian Lagoon Perch and Pike-perch fishery.

Table 69 – Client Action Plan. Condition 1 (UoA1 - pike-perch).

PI 1.1.1 – Stock status. **The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing.** **PI 1.1.1 SI b) – Stock status in relation to achievement of Maximum Sustainable Yield (MSY).** **Score – 70** **Condition 1 – Demonstrate within eight years that the pike-perch stock in the Curonian Lagoon is at or fluctuating around a level consistent with MSY.** **Condition deadline – 8 years after the initial certification (2030).** **Summary:**			
As a result of meeting Condition 1 within the 8 years after the initial certification (in 2030), the P&G International Trading GmbH (Client) demonstrates evidences that the stock of pike-perch is recovering.			
Milestone	Action	Roles & Responsibilities	Outputs
Year 1 (2023). The Client must prepare a report describing the results of negotiations between Lithuania and Russia on the status of the pike-perch stock in the Curonian Lagoon. No change expected in the score. Resulting score: 70.	To the first surveillance audit (1SA) the Client – Procter & Gamble International Trading GmbH (hereinafter – Client or P&G International Trading GmbH) as a result of discussion and cooperation with scientists from the Atlantic Branch of FGBNU "VNIRO" (hereinafter – AtlantNIRO) and the Kaliningrad State Technical University (hereinafter – KSTU) draws up the Plan for preparing a report describing the results of negotiations between Lithuania and Russia on the status of the pike-perch stock in the Curonian Lagoon.	P&G International Trading GmbH AtlantNIRO KSTU	The Client developed and submitted to the assessment team of experts the Plan for the implementation of Condition 1. AtlantNIRO and KSTU, based on this Plan, prepare **Year 1 Report** which is describing the results of negotiations between Lithuania and Russia on the status of the pike-perch stock in the Curonian Lagoon. The implementation of this Plan is aimed at achieving Condition 1.
Year 2 (2024). The Client must prepare a report describing the results of negotiations between Lithuania and Russia on the status of the pike-perch stock in the Curonian Lagoon. If both countries acknowledge that the stock is below *Btr*, then a stock recovery strategy needs to be agreed upon.	To the second Surveillance Audit (2SA), the Client submits to the team of experts the **Year 2 report** on the achievement of Condition 1, based on scientific reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the assessment team of experts the **Year 2 report** on the achievement of Condition 1, based on scientific reports received from AtlantNIRO and KSTU. The Client prepares a **Year 2 report** describing the results of negotiations

Resulting score: 70.			between Lithuania and Russia on the status of the pike-perch stock in the Curonian Lagoon. If both countries acknowledge that the stock is below *Btr*, then a stock recovery strategy needs to be agreed upon.
3-7 years (2025-2029). The Client must prepare an annual reports on the pike-perch stock status. There should be evidence that the stock is recovering. Resulting score: 70.	To the Surveillance Audits (2025-2029), the Client submits to the team of experts the annual **Years 3-7 Reports** on the pike-perch stock status based on scientific reports received from AtlantNIRO and KSTU. There should be evidence that the stock of pike-perch is recovering.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the assessment team of experts the annual **Years 3-7 Reports** on the pike-perch stock status based on scientific reports received from AtlantNIRO and KSTU. There are evidences that the stock of pike-perch is recovering.
8 year (8 years after the initial certification - 2030). The client must demonstrate that the condition has been met, at which time the fishery will rescore at least 80. Resulting score: at least 80.	To the **8 year** (8 years after the initial certification – 2030), the Client submits to the team of experts the **Year 8 Report** on the achievement of Condition 1, based on scientific reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the team of experts the **Year 8 Report** on the achievement of Condition 1, based on scientific reports received from AtlantNIRO and KSTU. The Client demonstrates that the Condition 1 has been met, and there is evidence that the stock of pike-perch is recovering.

Table 70 – Client Action Plan. Condition 2 (UoA1 & UoA2).

PI 1.2.2 – Harvest control rules and tools (UoA1 & UoA2). **There are well defined and effective harvest control rules (HCRs) in place.** **PI 1.2.2 b) – HCRs robustness to uncertainty.** **Score – 75** **Condition 2 – Within four years HCRs are likely to be robust to the main uncertainties.** **Condition deadline – 4th Annual Surveillance (2026).** **Summary:**
As a result of meeting Condition 2 to the 4th Surveillance Audit, the P&G International Trading GmbH (Client) demonstrates that the Monitoring Program is being implemented and provided an update on progress towards meeting the Condition 2. The Client demonstrates in the Year 4 Report the comprehensive evidence that HCRs are robust to sources of uncertainty, including those from recreational and IUU fishing, and any significant sources of

natural mortality. Managers adjust HCRs, if appropriate.			
Milestone	Action	Roles & Responsibilities	Outputs
1 year (2023). The Client should design a monitoring program to identify uncertainties related to fish mortalities in the Curonian Lagoon. It should consider the amounts of recreational and IUU fishing, and significant sources of non-fishing mortality. Prepare Year 1 Report with monitoring strategy. No change expected in the score. Resulting score: 75.	To the first surveillance audit (1SA) the Client – Procter & Gamble International Trading GmbH (hereinafter – Client or P&G International Trading GmbH) as a result of discussion and cooperation with scientists from the Atlantic Branch of FGBNU "VNIRO" (hereinafter – AtlantNIRO) and the Kaliningrad State Technical University (hereinafter – KSTU) draws up the Monitoring Program to identify uncertainties related to fish mortalities in the Curonian Lagoon. It should consider the amounts of recreational and IUU fishing, and significant sources of non-fishing mortality. The Client prepares **Year 1 Report** with monitoring strategy.	P&G International Trading GmbH AtlantNIRO KSTU	The Client developed and submitted to the assessment team of experts the Monitoring Program for the implementation of Condition 2. AtlantNIRO and KSTU, based on this Monitoring Program, prepare **Year 1 Report** to identify uncertainties related to fish mortalities in the Curonian Lagoon. It should consider the amounts of recreational and IUU fishing, and significant sources of non-fishing mortality. The Client prepares **Year 1 Report** with monitoring strategy. The implementation of the Monitoring Program is aimed at achieving Condition 2.
2 year (2024). The Client should implement a monitoring program to determine the sources and amounts of fish mortality based on Year 1 monitoring strategy. Prepare Year 2 Report with a summary of monitoring results. No change expected in the score. Resulting score: 75.	To the second Surveillance Audit (2SA), the Client submits to the team of experts the **Year 2 Report** on the achievement of Condition 2, based on scientific reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the assessment team of experts the **Year 2 Report** on the achievement of Condition 2, based on scientific reports received from AtlantNIRO and KSTU. The Client implements the Monitoring Program to determine the sources and amounts of fish mortality based on Year 1 monitoring strategy. Prepared a **Year 2 Report** presents a summary of monitoring results.
3 year (2025). The Client continues the monitoring program in Year 3. The Client should meet	To the third Surveillance Audit (3SA), the Client submits to the team of experts the **Year 3 Report** on the achievement of Condition 2, based on scientific reports received from	P&G International Trading GmbH AtlantNIRO	The Client prepared for the assessment team of experts the **Year 3 Report** on the

fishery managers to review data and discuss possible changes to HCRs, if necessary. Prepare Year 3 Report with evidence of manager meetings in the form of meeting minutes, presentations, draft rules, or other records to demonstrate management consideration of uncertainties in HCRs. No change expected in the score. Resulting score: 75.	AtlantNIRO and KSTU.	KSTU	achievement of Condition 2, based on scientific reports received from AtlantNIRO and KSTU. The Client continues the Monitoring Program in Year 3. The Client meets fishery managers to review data and discuss possible changes to HCRs, if necessary. The **Year 3 Report** prepares with evidence of manager meetings in the form of meeting minutes, presentations, draft rules, or other records to demonstrate management consideration of uncertainties in HCRs.
4 year (2026). The Client should provide evidence that HCRs are robust to sources of uncertainty, including those from recreational and IUU fishing, and any significant sources of natural mortality. Managers should adjust HCRs, if appropriate. Condition expected to be fully met with an expected score of 80. Resulting score: at least 80.	To the fourth Surveillance Audit (4SA), the Client submits to the team of experts the **Year 4 Report** on the achievement of Condition 2, based on scientific reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the team of experts the **Year 4 Report** on the achievement of Condition 3, based on scientific reports received from AtlantNIRO and KSTU. This **Year 4 Report** is providing evidence that HCRs are robust to sources of uncertainty, including those from recreational and IUU fishing, and any significant sources of natural mortality. Managers adjust HCRs, if appropriate.

Table 71 – Client Action Plan. Condition 3 (UoA1 & UoA2).

PI 1.2.3 – Information and monitoring (UoA1 & UoA2).

Relevant information is collected to support the harvest strategy.

PI 1.2.3 SI c) – Comprehensiveness of information.

Score – 75

Condition 3 – Within four years there should be good information on all fishery removals from the stock.

Condition deadline – 4th Annual Surveillance (2026).

Summary:

As a result of meeting Condition 3 to the 4th Surveillance Audit, the P&G International Trading GmbH (Client) demonstrates that the Monitoring Program is being implemented and provided an update on progress towards meeting the Condition 3. The Client demonstrates in the Year 4 Report the comprehensive information about all fishery removals from the stock, including recreational and IUU fishing.

Milestone	Action	Roles & Responsibilities	Outputs
1 year (2023). The Client should design a monitoring program to all other fishery removals from perch and pike-perch stocks, including through IUU and recreational fishing. Prepare Year 1 report describing monitoring program. No change expected in the score. Resulting score: 75.	To the first surveillance audit (1SA) the Client – Procter & Gamble International Trading GmbH (hereinafter – Client or P&G International Trading GmbH) as a result of discussion and cooperation with scientists from the Atlantic Branch of FGBNU "VNIRO" (hereinafter – AtlantNIRO) and the Kaliningrad State Technical University (hereinafter – KSTU) draws up the Monitoring Program to all other fishery removals from perch and pike-perch stocks, including through IUU and recreational fishing. The Client prepares Year 1 Report with analysis of key information gaps.	P&G International Trading GmbH AtlantNIRO KSTU	The Client developed and submitted to the assessment team of experts the Monitoring Program for the implementation of Condition 3. AtlantNIRO and KSTU, based on this Monitoring Program, prepare Year 1 Report to all other fishery removals from perch and pike-perch stocks, including through IUU and recreational fishing. The Client prepares Year 1 Report with analysis of key information gaps. The implementation of the Monitoring Program is aimed at achieving Condition 3.
2 year (2024). The Client should implement the monitoring program defined in Year 1. Prepare a Year 2 report to present monitoring data. No change expected in the score. Resulting score: 75.	To the second Surveillance Audit (2SA), the Client submits to the team of experts the **Year 2 report** on the achievement of Condition 3, based on scientific reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the assessment team of experts the **Year 2 report** on the achievement of Condition 3, based on scientific reports received from AtlantNIRO and KSTU. The Client implements the monitoring program defined in Year 1. Prepared a Year 2 report presents the monitoring data.
3 year (2025). The Client should continue monitoring activities started in Year 2. Also, the Client should review results with fishermen and fishery managers and discuss possible data gaps and/or changes to	To the third Surveillance Audit (3SA), the Client submits to the team of experts the **Year 3 Report** on the achievement of Condition 3, based on scientific reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the assessment team of experts the **Year 3 Report** on the achievement of Condition 3, based on scientific reports received from AtlantNIRO and KSTU.

HCRs. Prepare Year 3 Report with evidence of discussions in the form of meeting minutes, draft rules, presentations, or other records to demonstrate consideration of monitoring results. No change expected in the score. Resulting score: 75.			The Client continues monitoring activities started in Year 2. Also, the Client reviews results with fishermen and fishery managers and discuss possible data gaps and/or changes to HCRs. The **Year 3 Report** were prepared with evidence of discussions in the form of meeting minutes, draft rules, presentations, or other records to demonstrate consideration of monitoring results.
4 year (2026). The Client should prepare Year 4 Report providing comprehensive information about all fishery removals from the stock, including recreational and IUU fishing. Condition expected to be fully met with an expected score of 80. Resulting score: at least 80.	To the fourth Surveillance Audit (4SA), the Client submits to the team of experts the **Year 4 Report** on the achievement of Condition 3, based on scientific reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the team of experts the **Year 4 Report** on the achievement of Condition 3, based on scientific reports received from AtlantNIRO and KSTU. This **Year 4 Report** is providing comprehensive information about all fishery removals from the stock, including recreational and IUU fishing.

Table 72 – Client Action Plan. Condition 4 (UoA1).

PI 1.2.4 – Assessment of stock status (UoA1).

There is an adequate assessment of the stock status.

PI 1.2.4 SI c) – Uncertainty in the assessment.

Score – 75

Condition 4 – Within four years, the stock assessment should take uncertainty into account.

Condition deadline – 4th Annual Surveillance (2026).

Summary:

As a result of meeting Condition 4 to the 4th Surveillance Audit, the P&G International Trading GmbH (Client) demonstrates that the Work Plan is being implemented and provided an update on progress towards meeting the Condition 4. The Client demonstrates improved or considered stock assessment methods (TAC determination procedure) and data to account for key uncertainties; including those involving recreational, IUU and other non UoA fishery removals and any significant mortalities from non-fishery impacts.

Milestone	Action	Roles & Responsibilities	Outputs

1 year (2023). The Client should review key information gaps in pike-perch stock assessment data and consider the uncertainties related to recreational and IUU fishing, catches by gear other than gillnets, and significant sources of non-fishing mortality. Prepare Year 1 Report with analysis of key information gaps. No change in score expected. Resulting score: 75.	To the first surveillance audit (1SA) the Client – Procter & Gamble International Trading GmbH (hereinafter – Client or P&G International Trading GmbH) as a result of discussion and cooperation with scientists from the Atlantic Branch of FGBNU "VNIRO" (hereinafter – AtlantNIRO) and the Kaliningrad State Technical University (hereinafter – KSTU) draws up the Work Plan for the implementation of Condition 4 and prepares Year 1 Report with analysis of key information gaps.	P&G International Trading GmbH AtlantNIRO KSTU	The Client developed and submitted to the assessment team of experts the Work Plan for the implementation of Condition 4. AtlantNIRO and KSTU, based on this Work Plan, prepare Year 1 Report with analysis of key information gaps. These gaps include key information gaps in pike-perch stock assessment data and consider the uncertainties related to recreational and IUU fishing, catches by gear other than gillnets, and significant sources of non-fishing mortality. The implementation of the Work Plan is aimed at achieving Condition 4.
2 year (2024). The Client should define key uncertainties and recommend possible methods to account for them in stock assessment analysis. Prepare Year 2 report describing possible modifications to the TAC determination procedure. No change in score expected. Resulting score: 75.	To the second Surveillance Audit (2SA), the Client submits to the team of experts the **first interim report** on the achievement of Condition 4, based on scientific reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the assessment team of experts the **first interim report** (Year 2 report) on the achievement of Condition 4, based on scientific reports received from AtlantNIRO and KSTU. The Client defines key uncertainties and recommends possible methods to account for them in stock assessment analysis. The **first interim report** is describing possible modifications to the TAC determination procedure.
3 year (2025). The Client should review monitoring data and discuss possible changes to stock assessment methods (TAC determination procedure) with fishery managers. Prepare Year 3 report providing evidence of discussions in the form of meeting minutes, draft rules, or other records to demonstrate	To the third Surveillance Audit (3SA), the Client submits to the team of experts the **second interim report** on the achievement of Condition 4, based on scientific reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the assessment team of experts the **second interim report** (Year 3 report) on the achievement of Condition 4, based on scientific reports received from AtlantNIRO and KSTU. The Client reviews monitoring data and discusses possible changes to stock assessment methods

consideration of new data and possible methods. No change expected in the score. Resulting score: 75.			(TAC determination procedure) with fishery managers. Prepared the **second interim report** is providing evidence of discussions in the form of meeting minutes, draft rules, or other records to demonstrate consideration of new data and possible methods.
4 year (2026). The Client should demonstrate improved or considered stock assessment methods (TAC determination procedure) and data to account for key uncertainties; including those involving recreational, IUU and other non UoA fishery removals and any significant mortalities from non-fishery impacts. Condition expected to be fully met with a score of 80. Resulting score: at least 80.	To the fourth Surveillance Audit (4SA), the Client submits to the team of experts the **final report** on the achievement of Condition 5, based on scientific reports received from AtlantNIRO and KSTU. Based on the **final report** the Client confirmed that the the Work Plan was implemented. Also the Client demonstrates improved or considered stock assessment methods (TAC determination procedure) and data to account for key uncertainties; including those involving recreational, IUU and other non UoA fishery removals and any significant mortalities from non-fishery impacts.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the team of experts the **final report** on the achievement of Condition 4, based on scientific reports received from AtlantNIRO and KSTU. This **final report** confirms that the Work Plan was implemented. The Client demonstrates improved or considered stock assessment methods (TAC determination procedure) and data to account for key uncertainties; including those involving recreational, IUU and other non UoA fishery removals and any significant mortalities from non-fishery impacts.

Table 73 – Client Action Plan. Condition 5 (UoA2).

PI 2.1.2 – Primary species management strategy (UoA2). **There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.** **PI 2.1.2 SI e) – Review of alternative measures.** **Score – 75** **Condition 5 – Demonstrate within four years that there is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.** **Condition deadline – 4th Annual Surveillance (2026).** **Summary:**
As a result of meeting Condition 5 to the 4th Surveillance Audit, the P&G International Trading GmbH (Client) demonstrates that the Work Plan is being implemented and provided an update on progress towards meeting the Condition 5. Evidence has been provided by the Client that Work Plan was implemented and data about real bycatch structure of main primary species in UoA2 were collected. Potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as

appropriate. The Client acknowledges that Condition 5 is properly implemented and will be implemented upon further renewal of the MSC Certificate.			
Milestone	Action	Roles & Responsibilities	Outputs
1 year (2023). The client must present evidence that a plan is in place to address this condition. Resulting score: 75.	To the first surveillance audit (1SA) the Client – Procter & Gamble International Trading GmbH (hereinafter – Client or P&G International Trading GmbH) as a result of discussion and cooperation with scientists from the Atlantic Branch of FGBNU "VNIRO" (hereinafter – AtlantNIRO), the Kaliningrad State Technical University (hereinafter – KSTU) and Atlantic branch of Shirshov Institute of Oceanology of Russian Academy of Sciences, Kaliningrad (hereinafter – Atlantic branch of IO RAS) draws up the Work Plan for the implementation of Condition 5.	P&G International Trading GmbH AtlantNIRO KSTU Atlantic branch of IO RAS	The Client developed and submitted to the assessment team of experts the Work Plan for the implementation of Condition 5. AtlantNIRO, KSTU and Atlantic branch of IO RAS, based on this Work Plan, will plan to collect information on bycatch of main primary species in UoA2 and prepare a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate. The implementation of the Work Plan is aimed at achieving Condition 5.
2 year (2024). The client must present a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species. Resulting score: 75.	To the second Surveillance Audit (2SA), the Client submits to the team of experts the **first interim report** on the achievement of Condition 6, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS. The **first interim report** confirms that research institutes perform regular monitoring on Client vessels operating in the UoA2, the Work Plan is implemented and data about of main primary species bycatch in UoA2 is collected.	P&G International Trading GmbH AtlantNIRO KSTU Atlantic branch of IO RAS	The Client prepared for the assessment team of experts the **first interim report** on the achievement of Condition 5, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS.
3 year (2025). The client should prepare a report about implemented alternative measures to minimise UoA-related mortality of unwanted catch of main primary species. Resulting score: 75.	To the third Surveillance Audit (3SA) the Client submits to the team of experts the **second interim report** on the achievement of Condition 5, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS. An assessment team of experts reviews and discusses the results of this **second interim report**. The **second interim report** confirms that research institutes perform regular monitoring on Client vessels operating in the UoA2, the Work Plan is implemented and data about real bycatch structure of main primary species in the UoA2 is collected.	P&G International Trading GmbH AtlantNIRO KSTU Atlantic branch of IO RAS	The Client prepared for the assessment team of experts the **second interim report** on the achievement of Condition 5, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS.

	The information provided by the Client and scientific institutions on main primary species and their bycatch is relevant and sufficient.		
4 year (2026). The client should demonstrate that the condition has been met. The fishery will rescore at least 80. Resulting score: at least 80.	To the fourth Surveillance Audit (4SA), the Client submits to the team of experts the **final report** on the achievement of Condition 5, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS. Based on the **final report** the Client confirmed that the the Work Plan was implemented and data about real bycatch structure of main primary species in UoA2 were collected. Potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	P&G International Trading GmbH AtlantNIRO KSTU Atlantic branch of IO RAS	The Client prepared for the team of experts the **final report** on the achievement of Condition 5, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS. This **final report** confirms that the Work Plan was implemented and data about real bycatch structure of main primary species in UoA2 were collected. Potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate. The Client acknowledges that Condition 5 is properly implemented and will be implemented upon further renewal of the MSC Certificate.

Table 74 – Client Action Plan. Condition 6 (UoA1 & UoA2).

PI 2.2.3 – Secondary species information. **Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.** **PI 2.2.3 SI c) – Information adequacy for management strategy.** **Score – 70** **Condition 6 – Within four years, obtain quantitative information to assess the impact of UoAs on secondary species: species bycatch in fishery and gillnet interactions with mammals and seabirds.** **Condition deadline – 4th Annual Surveillance (2026).** **Summary:**
As a result of meeting Condition 6 to the 4th Surveillance Audit, the P&G International Trading GmbH (Client) demonstrates that the Work Plan is being implemented and provided an update on progress towards meeting the Condition 6. Evidence has been provided by the Client that Work Plan was implemented and data about real bycatch structure in the UoAs and gillnet interactions with mammals and seabirds was collected. The Client acknowledges that Condition 6 is properly implemented and will be implemented upon further renewal of the MSC Certificate.

Milestone	Action	Roles & Responsibilities	Outputs
1 year (2023). The client must present evidence that a plan is in place to address this condition (prepare Year 1 report). No change expected in the score. Resulting score: 70.	To the first surveillance audit (1SA) the Client – Procter & Gamble International Trading GmbH (hereinafter – Client or P&G International Trading GmbH) as a result of discussion and cooperation with scientists from the Atlantic Branch of FGBNU "VNIRO" (hereinafter – AtlantNIRO), the Kaliningrad State Technical University (hereinafter – KSTU) and Atlantic branch of Shirshov Institute of Oceanology of Russian Academy of Sciences, Kaliningrad (hereinafter – Atlantic branch of IO RAS) draws up the Work Plan for the implementation of Condition 6.	P&G International Trading GmbH AtlantNIRO KSTU Atlantic branch of IO RAS	The Client developed and submitted to the assessment team of experts the Work Plan for the implementation of Condition 6. AtlantNIRO, KSTU and Atlantic branch of IO RAS, based on this Work Plan, will plan to collect information on bycatch of all secondary species in the fishery of pike-perch and perch in the Curonian Lagoon and on interactions gill nets with marine mammals and seabirds to assess the impact on UoA1 and UoA 2. The implementation of the Plan is aimed at achieving Condition 6.
2 year (2024). The client must present evidence that the plan has been implemented (prepare Year 2 report). No change expected in the score. Resulting score: 70.	To the second Surveillance Audit (2SA), the Client submits to the team of experts the **first interim report** on the achievement of Condition 6, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS. The **first interim report** confirms that research institutes perform regular monitoring on Client vessels operating in the UoAs, the Work Plan is implemented and data about real bycatch structure in the UoAs and gillnet interactions with mammals and seabirds is collected.	P&G International Trading GmbH AtlantNIRO KSTU Atlantic branch of IO RAS	The Client prepared for the assessment team of experts the **first interim report** on the achievement of Condition 6, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS.
3 year (2025). The client should prepare a report to present data about real bycatch structure in the UoAs and gillnet interactions with mammals and seabirds. Resulting score: 70.	To the third Surveillance Audit (3SA) the Client submits to the team of experts the **second interim report** on the achievement of Condition 6, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS. An assessment team of experts reviews and discusses the results of this **second interim report**. The **second interim report** confirms that research institutes perform regular monitoring on Client vessels operating in the UoAs, the Work Plan is implemented and data about real bycatch structure in the UoAs and gillnet interactions with mammals and seabirds is collected. The information provided by the Client and scientific institutions on secondary species and their unwanted catch is relevant and sufficient.	P&G International Trading GmbH AtlantNIRO KSTU Atlantic branch of IO RAS	The Client prepared for the assessment team of experts the **second interim report** on the achievement of Condition 6, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS.

4 year (2026). The client must demonstrate that the condition has been met (prepare Year 4 report), at which time the fishery will rescore at least 80. Resulting score: at least 80.	To the fourth Surveillance Audit (4SA), the Client submits to the team of experts the **final report** on the achievement of Condition 6, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS. Based on the **final report** the Client confirmed that the the Work Plan was implemented and data about real bycatch structure in the UoAs and gillnet interactions with mammals and seabirds was collected.	P&G International Trading GmbH AtlantNIRO KSTU Atlantic branch of IO RAS	The Client prepared for the team of experts the **final report** on the achievement of Condition 6, based on scientific reports received from AtlantNIRO, KSTU and Atlantic branch of IO RAS. This **final report** confirms that the Work Plan was implemented and data about real bycatch structure in the UoAs and gillnet interactions with mammals and seabirds was collected. The Client acknowledges that Condition 6 is properly implemented and will be implemented upon further renewal of the MSC Certificate.

Table 75 – Client Action Plan. Condition 7 (UoA1 & UoA2).

PI 3.2.2 – Decision-making processes (All UoAs). **The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.** **PI 3.2.2 SI c) – Use of precautionary approach.** **PI 3.2.2 SI d) – Accountability and transparency of management system and decision-making process.** **Condition 7 – To demonstrate that the management system uses the precautionary approach and the best available evidence for the practical management of all species.** **Also, to demonstrate that the information on the fishery's performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.** **Score – 75** **Condition deadline – 3th Annual Surveillance (2025).** **Summary:**
As a result of meeting Condition 7 to the 3th Surveillance Audit, the P&G International Trading GmbH (Client) demonstrates that the Work Plan is being implemented and provided an update on progress towards meeting the Condition 7. Also the Client implements mechanisms to publicly share information about fishery performance, such as through a web-site for the Joint Russian-Lithuanian Fisheries Commission. The Client presents a review of the effectiveness of the TAC to take into consideration fishing mortality by IUU and/or an evaluation of how any risk factors that could lead to overfishing would be managed in a precautionary way ((with rationale for applying the precautionary approach for all commercial species). Also the Client considers mechanisms to share public information about fishery performance and provide transparent explanations of how it is used to make fishery decisions. Evidence of considerations will include minutes of meetings, presentations, reports, or actual implementation of information sharing mechanisms. It must be confirmed by the assessment team that Condition 7 is properly implemented and will be implemented upon further continuation of the validity of the MSC certificate.

Milestone	Action	Roles & Responsibilities	Outputs
1 year (2023). By the first annual surveillance, the client must present evidence that a plan is in place to address this condition. This may include a review of the effectiveness of the TAC to take into consideration fishing mortality by IUU and/or an evaluation of how any risk factors that could lead to overfishing would be managed in a precautionary way. Also, the client must consider mechanisms to share public information about fishery performance and provide transparent explanations of how it is used to make fishery decisions. Evidence of considerations will include minutes of meetings, presentations, reports, or actual implementation of information sharing mechanisms. Resulting score: 75.	To the first surveillance audit (1SA) the Client – Procter & Gamble International Trading GmbH (hereinafter – Client or P&G International Trading GmbH) as a result of discussion and cooperation with scientists from the Atlantic Branch of FGBNU "VNIRO" (hereinafter – AtlantNIRO) and the Kaliningrad State Technical University (hereinafter – KSTU) draws up the Work Plan for the implementation of Condition 7. This Work Plan additionally includes a review of the effectiveness of the TAC to take into consideration fishing mortality by IUU and/or an evaluation of how any risk factors that could lead to overfishing would be managed in a precautionary way ((with rationale for applying the precautionary approach for all commercial species). Also additionally the Client considers mechanisms to share public information about fishery performance and provide transparent explanations of how it is used to make fishery decisions. Evidence of considerations will include minutes of meetings, presentations, reports, or actual implementation of information sharing mechanisms.	P&G International Trading GmbH AtlantNIRO KSTU	The Client developed and submitted to the assessment team of experts the Work Plan for the implementation of Condition 7. AtlantNIRO and KSTU participate in preparation of this Work Plan. This Work Plan additionally includes a review of the effectiveness of the TAC to take into consideration fishing mortality by IUU and/or an evaluation of how any risk factors that could lead to overfishing would be managed in a precautionary way ((with rationale for applying the precautionary approach for all commercial species). Also additionally the Client in cooperation with AtlantNIRO and KSTU considers mechanisms to share public information about fishery performance and provide transparent explanations of how it is used to make fishery decisions. Evidence of considerations will include minutes of meetings, presentations, reports, or actual implementation of information sharing mechanisms.
2 year (2024). By the second annual surveillance, the client must present an evidence that the plan is being implemented and provide an update on progress towards meeting the Condition. Also, the client must implement mechanisms to publicly share information about fishery performance, such as through a web-site for the Joint Russian-Lithuanian Fisheries Commission.	To the second Surveillance Audit (2SA), the Client submits to the assessment team of experts the **interim report** on the achievement of Condition 7, based on analytic reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the assessment team the **interim report** on the achievement of Condition 7, based on analytic reports received from AtlantNIRO and KSTU. This **interim report** demonstrates an evidence that the Work Plan is being implemented and provide an update on progress towards meeting the Condition. Also the Client implements mechanisms

Resulting score: 75.			to publicly share information about fishery performance, such as through a web-site for the Joint Russian-Lithuanian Fisheries Commission.
3 year (2025). By the third annual surveillance, the client must demonstrate that the condition has been met. The fishery will rescore at least 80. Resulting score: at least 80.	To the third Surveillance Audit (3SA) the Client submits to the assessment team of experts the **final report** on the achievement of Condition 7, based on analytic reports received from AtlantNIRO and KSTU.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the team of experts the **final report** on the achievement of Condition 7, based on analytic reports received from AtlantNIRO and KSTU. The Client demonstrates in the **final report** that the Work Plan is being implemented and provided an update on progress towards meeting the Condition 7. Also the Client implements mechanisms to publicly share information about fishery performance, such as through a web-site for the Joint Russian-Lithuanian Fisheries Commission. The Client presents a review of the effectiveness of the TAC to take into consideration fishing mortality by IUU and/or an evaluation of how any risk factors that could lead to overfishing would be managed in a precautionary way ((with rationale for applying the precautionary approach for all commercial species). Also the Client considers mechanisms to share public information about fishery performance and provide transparent explanations of how it is used to make fishery decisions. Evidence of considerations will include minutes of meetings, presentations, reports, or actual implementation of information sharing mechanisms. Condition 7 is

			implemented properly and will be implemented with further continuation of the MSC certificate.

Table 76 – Client Action Plan. Condition 8 (UoA1 & UoA2).

PI 3.2.3 – Compliance and enforcement (All UoAs).

Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.

PI 3.2.3 a) – MCS (Monitoring, control and surveillance mechanisms) implementation.

Condition 8 – Demonstrate that a monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.

Score – 75

Condition deadline – 3th Annual Surveillance (2025).

Summary:

As a result of meeting Condition 8 to the 3th Surveillance Audit, the P&G International Trading GmbH (Client) demonstrates that a monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules, including minimizing IUU fishing. It must be confirmed by the assessment team that Condition 8 is properly implemented and will be implemented upon further continuation of the validity of the MSC certificate.

Milestone	Action	Roles & Responsibilities	Outputs
1 year (2023). By the first annual surveillance, the client must present evidence that a plan is in place to address this condition. Resulting score: 75.	To the first surveillance audit (1SA) the Client – Procter & Gamble International Trading GmbH (hereinafter – Client or P&G International Trading GmbH) as a result of discussion and cooperation with scientists from the Atlantic Branch of FGBNU "VNIRO" (hereinafter – AtlantNIRO) and the Kaliningrad State Technical University (hereinafter – KSTU) draws up the Work Plan for the implementation of Condition 8.	P&G International Trading GmbH AtlantNIRO KSTU	The Client developed and submitted to the assessment team of experts the Work Plan for the implementation of Condition 8. AtlantNIRO and KSTU, based on this Work Plan, show the development of a strategy to confirm that fishery in the Curonian Lagoon has monitoring, control and surveillance mechanisms in place that are an ability to enforce relevant management measures, strategies and/or rules, including minimizing IUU fishing.
2 year (2024). By the second annual surveillance, the client must present evidence that the plan has been implemented.	To the second Surveillance Audit (2SA), the Client submits to the assessment team of experts the **interim report** on the achievement of Condition 8, based on analytic reports received from AtlantNIRO and KSTU which demonstrate that a monitoring, control	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the assessment team the **interim report** on the achievement of Condition 8, based on analytic reports received from

Resulting score: 75.	and surveillance system has been implemented in the fishery.		AtlantNIRO and KSTU which demonstrate that a monitoring, control and surveillance system has been implemented in the fishery.
3 year (2025). By the third annual surveillance, the client should demonstrate that the condition has been met. The fishery will rescore at least 80. Resulting score: at least 80.	To the third Surveillance Audit (3SA) the Client submits to the assessment team of experts the **final report** on the achievement of Condition 8, based on analytic reports received from AtlantNIRO and KSTU. The Client confirmed that a monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules, including minimizing IUU fishing.	P&G International Trading GmbH AtlantNIRO KSTU	The Client prepared for the team of experts the **final report** on the achievement of Condition 8, based on analytic reports received from AtlantNIRO and KSTU which demonstrate that a monitoring, control and surveillance system has been implemented in the fishery. This **final report** confirms that a monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules, including minimizing IUU fishing. Condition 8 is implemented properly and will be implemented with further continuation of the MSC certificate.

- **Letters of support**

From ATLANTNIRO

ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО РЫБОЛОВСТВУ
Федеральное государственное бюджетное научное учреждение
«ВСЕРОССИЙСКИЙ НАУЧНО-ИССЛЕДОВАТЕЛЬСКИЙ ИНСТИТУТ РЫБНОГО ХОЗЯЙСТВА И ОКЕАНОГРАФИИ»
«АтлантНИРО»
Почтовый адрес - ул. Д. Донского, зд. 5, г. Калининград, 236022, Россия
Место осуществления деятельности -236022, РОССИЯ, Калининградская обл., г Калининград,
ул. Д. Донского: зд. 5, помещения «АтлантНИРО»;
Тел. +7 (4012) 212950, 925306, факс: +7 (4012) 219997, e-mail: icenter@atlantniro.ru

Исх. № 02-08/63
от «02» 08 2022г.

Руководителю компании
«P&G International Trading GmbH»
Т.Г. Пешковой

Уважаемая Татьяна Геннадиевна

«АтлантНИРО» рассмотрел план действий клиента (P&G International Trading GmbH), направленный на удовлетворение требований оценочной команды экспертов UCSL по выполнению выдвинутого ими Условия при предварительной сертификации промысла судака и окуня в Куршском Заливе по стандартам Морского Попечительского Совета (MSC).

Настоящим письмом Калининградский филиал согласовывает указанный план и подтверждает свою готовность принять участие в проведении научных исследований, предусмотренных планом.

Руководитель филиала К.В. Бандурин

Васильев Алексей Геннадьевич
заместитель руководителя
(4012) 93-55-09
vasiliev@atlantniro.ru

English translation is below:

To Company manager
P&G International Trading GmbH
T.G. Peshkova

Dear Tatyana Gennadievna,

ATLANTNIRO has reviewed your Client Action Plan to meet the requirements set by the assessment team of UCSL experts to then fulfill the conditions during the certification of perch and pikeperch fishery in the Curonian Lagoon against the MSC standards.

By this letter, the Kaliningrad branch approves this plan and confirms its readiness to take part in the scientific research in accordance with the plan.

Head of the branch K. V. Bandurin

From KSTU

Федеральное агентство по рыболовству
Федеральное государственное бюджетное образовательное учреждение
высшего образования
«Калининградский государственный технический университет»
(ФГБОУ ВО «КГТУ»)

Советский проспект, 1, г. Калининград, 236022
Телефон: (4012) 99-59-01; Факс: (4012) 99-53-46; e-mail: rector@klgtu.ru; http:// www.klgtu.ru
ОКПО 00471544; ОГРН 1023900592561; ИНН/ КПП 3904014891/390601001

На №1__от__02.08_____.2022_

Уважаемые господа!

На ваш запрос сообщаем, что Калининградский государственный технический университет поддерживает План действий (Client Action Plan) по международной экологической сертификации промысла судака и окуня в Куршском заливе.

КГТУ имеем большой опыт и готов принять участие в реализации Плана в части выполнения исследований по мониторингу любительского рыболовства в Куршском заливе. Объем, стоимость и сроки работ могут быть согласованы дополнительно.

Ректор университета В.А. Волкогон

Исп. С.В. Шибаев
т. 99-59-32, +79062194901
shibaev@klgtu.ru

English translation is below:

Federal Agency for Fishery
Federal State Educational Institution of Higher Education
«Kaliningrad State Technical University»
(FSEI HE «KSTU»)

Sovetskiy prospekt, 1, Kaliningrad, 236022, Russia
Tel: (4012) 99-59-01; Fax: (4012) 99-53-46; e-mail: rector@klgtu.ru; http:// www.klgtu.ru

To №_1_ dated__02.08_____.2022_

Dear Sir or Madam!

In response to your request, please be informed that Kaliningrad State Technical University supports Client Action Plan for international environmental certification of zander and perch fishing in the Curonian Lagoon.

KSTU has great experience and is ready to take part in the implementation of the Plan in terms of research on monitoring recreational fishing in the Curonian Lagoon. The volume, cost and terms of work are agreed upon additionally.

Yours faithfully.

KSTU rector Vladimir Volkogon

8.7 Surveillance

Table 77 – Fishery surveillance program				
Surveillance level	Year 1	Year 2	Year 3	Year 4
Level 6 (default)	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & re-certification site visit

Table 78 – Timing of surveillance audit			
Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
1	2023	TBD 2023	Around the anniversary date for the fishery.

Table 79 – Surveillance level justification			
Year	Surveillance activity	Number of auditors	Rationale
1	On-site audit	2 auditors	From client action plan it can be deduced that information needed to verify progress towards conditions will require on site visits to review progress toward milestones and consult with the fishery client and representative of the management system who provide collaboration in meeting conditions.
2	On-site audit	2 auditors	
3	On-site audit	2 auditors	
4	On-site surveillance audit & re-certification site visit	2 auditors	

8.8 Risk-Based Framework outputs

In accordance with FCP v2.2 7.7.3.2, Table 3 was used to determine whether a scoring element may or may not be data deficient. Biologically based limits for secondary species are not available and thus the Risk Based Framework (RBF) was used to assess the target species (perch) and main secondary species using the CA and PSA methodology (see Section 8.8). An RBF workshop to assess main secondary species outcome was held during the site visit. Participants were provided with a presentation to explain the process and discussions were held based on the productivity values with targeted stakeholder input on the susceptibility indicators. Stakeholders were informed of the RBF workshop when the fishery was announced.

In the RBF process during the site visit were involved these persons:

N	Name	Affiliation
1	Vladimir Lozhkin	Representative of Client group (APC FCF imeni Matrosova and Zalivino LLC), Russia, Kaliningrad
2	Konstantin Zgurovsky	WWF Russia, Moscow office (non-staff), Senior advisor, PhD, (teleconference)
3	Alexey Golenkevich	WWF Russia Barents office (Murmansk - St-Petersburg), (teleconference)
4	Tatiana Golubkova	Atlantic branch of VNIRO (AtlantNIRO) (Russia), Head of the Centre of Aquatic Bioresources of the Western Fishery Basin, PhD, (teleconference)
5	Sergey Shibaev	Kaliningrad State Technical University (KSTU) (Russia), Head of the Department of Ichthyology and Ecology, Doctor of Biological Sciences, (teleconference)
6	Konstantin Tylik	Kaliningrad State Technical University (KSTU) (Russia), Dean of the Faculty of Bioresources and Nature Management, PhD, (teleconference)
7	Robertas Kubilius	Nemunas Delta Regional Park (Lithuania), Chief ecologist, (teleconference)
8	Antanas Kontautas	Klaipeda University, Marine research Institute, (Lithuania), Head of Fishery Data collection programme, (teleconference)
9	Dmitry Inyashkin	Zalivino LLC, Head of Fisheries, (Russia), (teleconference)

The final MSC score for perch in PI 1.1.1 is **83** (see Table 91).

The final MSC score for PI 2.2.1 is **80** (see Table 92).

8.8.1 Consequence Analysis (CA)

Table 80 – CA scoring template			
	Scoring element	Consequence subcomponents	Consequence score
Principle 1: Stock status outcome	Perch (*Perca fluviatilis*)	Population size	-
		Reproductive capacity	80
		Age/size/sex structure	-
		Geographic range	-
Rationale for most vulnerable subcomponent	Since there is a direct relationship between perch length and fecundity, the most vulnerable subcomponent is the Reproductive capacity.		
Rationale for consequence score	Standard length (SL) of perch from commercial catches reduced to 22 cm. The average SL for this period was 24 cm (Table 17). Fish at the age of 4.5 years have an average SL of 21 cm. Almost all of them are sexually mature. Therefore such a change will have minimal impact on population dynamics.		

8.8.2 Productivity Susceptibility Analysis (PSA)

PSA productivity attributes and scores (MSC FCP v.2.2, Table PF4)

Productivity attribute	High productivity (Low risk, score = 1)	Medium productivity (medium risk, score = 2)	Low productivity (high risk, score = 3)
Average age at maturity	<5 years	5-15 years	>15 years
Average maximum age	<10 years	10-25 years	>25 years
Fecundity	>20,000 eggs per year	100-20,000 eggs per year	<100 eggs per year
Average maximum size (not to be used when scoring invertebrate species)	<100 cm	100-300 cm	>300 cm
Average size at maturity (not to be used when scoring invertebrate species)	<40 cm	40-200 cm	>200 cm
Reproductive strategy	Broadcast spawner	Demersal egg layer	Live bearer
Trophic Level	<2.75	2.75-3.25	>3.25

PSA susceptibility attributes and scores (MSC FCP v.2.2, Table PF5)

Susceptibility attribute	Low susceptibility (Low risk, score = 1)	Medium susceptibility (medium risk, score = 2)	High susceptibility (high risk, score = 3)
Areal overlap (availability): Overlap of the fishing effort with a species concentration of the stock	<10% overlap	10-30% overlap	>30% overlap
Encounterability: The position of the stock/species within the water column relative to the fishing gear, and the position of the stock/species within the habitat relative to the position of the gear	Low overlap with fishing gear (low encounterability).	Medium overlap with fishing gear.	High overlap with fishing gear (high encounterability). Default score for target species (Principle 1).
Selectivity of gear type: Potential of the gear to retain species	**a:** Individuals < size at maturity are rarely caught. **b:** Individuals < size at maturity can escape or avoid gear.	**a:** Individuals < size at maturity are regularly caught. **b:** Individuals < half the size at maturity can escape or avoid gear.	**a:** Individuals < size at maturity are frequently caught. **b:** Individuals < half the size at maturity are retained by gear.
Post-capture mortality (PCM): The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival	Evidence of majority released post-capture and survival.	Evidence of some released post-capture and survival.	Retained species or majority dead when released. Default score for retained species (Principle 1 or Principle 2).

8.8.2.1 Perch

Table 81 – PSA productivity and susceptibility attributes and scores (Perch)		
Performance Indicator	1.1.1	
Productivity		
Scoring element (species)	Perch (*Perca fluviatilis*)	
Attribute	Rationale	Score
Average age at maturity	Perch becomes sexually mature starting at 2 years of age (see Section 7.2.1.2.4)	**1**
Average maximum age	In the Curonian Lagoon, perch lives up to 11 years. (see Section 7.2.1.2.2)	**2**
Fecundity	The range of values of absolute individual fecundity of perch in age 2-6 years was 19–250 thousand eggs, on average 39.0 ± 2.20 thousand eggs (see Section 7.2.1.2.4)	**1**
Average maximum size Not scored for invertebrates	In Curonian Lagoon average maximum size is 35cm (see Section 7.2.1.1.2)	**1**
Average size at maturity Not scored for invertebrates	20 cm (see Section 7.2.1.2.4)	**1**
Reproductive strategy	Demersal egg layer (see Section 7.2.1.2.4)	**2**
Trophic level	4.4 (see Section 7.2.1.2.5)	**3**
Productivity score		**1.57**
Susceptibility		
Attribute	Rationale	Score
Areal Overlap	**10-30% overlap**. Perch is present throughout the Curonian Lagoon. Spatial data on perch catches in the Lithuanian part are shown in Figure 46. Gillnet setting sites in the Russian part are shown in Figure 11. The surface area of the Curonian Lagoon is 1619 square kilometres. According to the participants of the RBF, no more than 30% of the area of the Curonian Lagoon is fished with fishing gear at the same time.	**2**
Encounterability	Default score for target species (Principle 1) (MSC FCP v2.2, Table PF5). High overlap with fishing gear (high encounterability)	**3**
Selectivity of gear type	According Andreev (1955), the relationship between the gill net mesh size and the optimal length of the fish can be expressed by the formula **a = K L**, where K is an empirical coefficient, which is 0.15,	**2**

	a - mesh size, and **L** – total length of fish. From this we can calculate that mesh size **40mm** is optimal for catch the fish with length 26.7 cm. The average size at maturity = 20 cm. Gillnets with a mesh of **70 mm** will have even less selectivity.	
Post capture mortality	Species is retained so there is no release or survivorship (MSC FCP v2.2, Table PF5)	**3**
Susceptibility score		**1.88**
Overall PSA score		**2.45**
MSC PSA-derived score		**86**

8.8.2.2 Roach

Table 82 – PSA productivity and susceptibility attributes and scores (Roach)		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Roach, (*Rutilus rutilus*)	
Attribute	Rationale	Score
Average age at maturity	2.5 years (https://www.fishbase.se/summary/Rutilus-rutilus.html)	**1**
Average maximum age	13 years (Table 41)	**2**
Fecundity	Lakes along the Baltic coast, 16,400 to 47,000 eggs per year (https://www.fishbase.se/summary/Rutilus-rutilus.html)	**2**
Average maximum size Not scored for invertebrates	50 cm (http://www.seaaroundus.org/data/#/taxa/600272)	**1**
Average size at maturity Not scored for invertebrates	15 cm (https://www.fishbase.se/summary/Rutilus-rutilus.html)	**1**
Reproductive strategy	Demersal egg layer (https://www.fishbase.se/summary/Rutilus-rutilus.html)	**2**
Trophic level	2.96 (http://www.seaaroundus.org/data/#/taxa/600272)	**2**
Productivity score		**1.57**
Susceptibility		
Attribute	Rationale	Score
Areal Overlap	**10-30% overlap**. Roach is present throughout the Curonian Lagoon, but the fishery occurs in certain allowed parcels. Specifically, the parcels, allocated to UoA covers a 1% of the total area of the Russian part the Curonian Lagoon. The client also is using gill nets to fish in deep water areas that make up less than 20% of the lagoon (Figure 11).	**2**
Encounterability	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Selectivity of gear type	According Andreev (1955), the relationship between the gill net mesh size and the optimal length of the fish can be expressed by the formula **a = K L**, where K is an empirical coefficient, which is 0.15, **a** - mesh size, and **L** – total length of fish. From this we can calculate that mesh size **40mm** is optimal for catch the fish with length 26.7 cm. The average size at maturity = 15 cm. Gillnets with a mesh of **70 mm** will have even less selectivity.	**2**
Post capture mortality	Species is retained so there is no release or survivorship (MSC FCP v2.2, Table PF5)	**3**

Susceptibility score			**1.88**
Overall PSA score		**2.45**	
MSC PSA-derived score		**87**	

8.8.2.3 White bream

Table 83 – PSA productivity and susceptibility attributes and scores (White bream)		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	White bream, (*Blicca bjoerkna*)	
Attribute	Rationale	Score
Average age at maturity	3.5 years (https://www.fishbase.se/summary/Blicca-bjoerkna.html)	**1**
Average maximum age	Lives more than 10 years. (Freyhof, 2010b) (10-25 years)	**2**
Fecundity	17,000 - 100,000 eggs per year (https://www.fishbase.se/summary/Blicca-bjoerkna.html)	**2**
Average maximum size Not scored for invertebrates	46 cm (https://www.fishbase.se/summary/Blicca-bjoerkna.html)	**1**
Average size at maturity Not scored for invertebrates	14 cm (https://www.fishbase.se/summary/Blicca-bjoerkna.html)	**1**
Reproductive strategy	Demersal egg layer (https://www.fishbase.se/summary/Blicca-bjoerkna.html)	**2**
Trophic level	3.2 (https://www.fishbase.se/summary/Blicca-bjoerkna.html)	**2**
Productivity score		**1.57**
Susceptibility		
Attribute	Rationale	Score
Areal Overlap	**10-30% overlap**. White bream is present throughout the Curonian Lagoon, but the fishery occurs in certain allowed parcels. Specifically, the parcels, allocated to UoA covers a 1% of the total area of the Russian part the Curonian Lagoon. The client also is using gill nets to fish in deep water areas that make up less than 20% of the lagoon (Figure 11).	**2**
Encounterability	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Selectivity of gear type	According Andreev (1955), the relationship between the gill net mesh size and the optimal length of the	**2**

		fish can be expressed by the formula **a = K L**, where K is an empirical coefficient, which is 0.15, **a** - mesh size, and **L** – total length of fish. From this we can calculate that mesh size **40mm** is optimal for catch the fish with length 26.7 cm. The average size at maturity = 14 cm. Gillnets with a mesh of **70 mm** will have even less selectivity.	
Post capture mortality		Species is retained so there is no release or survivorship (MSC FCP v2.2, Table PF5)	**3**
Susceptibility score			**1.88**
Overall PSA score		**2.45**	
MSC PSA-derived score		**87**	

8.8.2.4 Common Goldeneye

Table 84 – PSA productivity and susceptibility attributes and scores (Common Goldeneye)		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Common Goldeneye, *Bucephala clangula*	
Attribute	Rationale	Score
Average age at maturity	According to Dementiev and Gladkov (1953), most birds become sexually mature at 2 years of age. (<5 years)	**1**
Average maximum age	Maximum longevity = 20.9 years (AnAge, 2022a) (10-25 years)	**2**
Fecundity	According to Gooders and Boyer (1997), fecundity is 8-11 eggs per year (AnAge, 2022a). (<100 eggs per year)	**3**
Average maximum size Not scored for invertebrates	According to Gooders and Boyer (1997), body size = 42-50 cm, wing size = 186-231 mm. (<100 cm)	**1**
Average size at maturity Not scored for invertebrates	According to Gooders and Boyer (1997), body size = 42-50 cm, wing size = 186-231 mm. (40-200 cm)	**2**
Reproductive strategy	According to Pöysä and Pöysä (2002), the birds nest in cavities in large trees. (Demersal egg layer)	**2**
Trophic level	Common goldeneyes are diving birds that forage underwater. Year-round, about 32% of their prey is crustaceans, 28% is aquatic insects and 10% is molluscs (Cottam,1939). Based on a precautionary approach, we took the maximum value of the Trophic level (>3.25)	**3**
Productivity score		**2.00**
Susceptibility		
Attribute	Rationale	Score

Areal Overlap	UoA area is <10% of species areal (BirdLife International, 2021a)	**1**
Encounterability	For 4 years of observations (2017-2020), 12 birds were recorded that fell into the gillnets (Morkūnas et al., 2020). Low overlap with fishing gear (low encounterability)	**1**
Selectivity of gear type	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Post capture mortality	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Susceptibility score		**1.20**
Overall PSA score		**2.33**
MSC PSA-derived score		**90**

8.8.2.5 Goosander

Table 85 – PSA productivity and susceptibility attributes and scores (Goosander)		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Goosander, *Mergus merganser*	
Attribute	Rationale	Score
Average age at maturity	730 days (AnAge, 2022b). (<5 years)	**1**
Average maximum age	Maximum longevity = 20.9 years (wild) (AnAge, 2022b). (10-25 years)	**2**
Fecundity	Clutch size = 10, Clutches per year = 1 (AnAge, 2022b). (<100 eggs per year)	**3**
Average maximum size Not scored for invertebrates	Length 54 to 71 cm, wingspan 86 cm (< 100 cm)	**1**
Average size at maturity Not scored for invertebrates	Length 54 to 71 cm, wingspan 86 cm (40-200 cm)	**2**
Reproductive strategy	Lay eggs in a nest (AnAge, 2022b). (Demersal egg layer)	**2**
Trophic level	>3.25 (Due to the precautionary approach, we took the maximum possible value)	**3**
Productivity score		**2.00**
Susceptibility		
Attribute	Rationale	Score

Areal Overlap	UoA area is <10% of species areal (BirdLife International, 2021b)	**1**
Encounterability	For 4 years of observations (2017-2020), 13 birds were recorded that fell into the gillnets (Morkūnas et al., 2020). Low overlap with fishing gear (low encounterability)	**1**
Selectivity of gear type	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Post capture mortality	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Susceptibility score		**1.20**
Overall PSA score		**2.33**
MSC PSA-derived score		**90**

8.8.2.6 Great Cormorant

Table 86 – PSA productivity and susceptibility attributes and scores (Great Cormorant)		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Great Cormorant, *Phalacrocorax carbo*	
Attribute	Rationale	Score
Average age at maturity	5-15 years. Generation length – 8.8 years (BirdLife International, 2021c)	**2**
Average maximum age	Maximum longevity = 32.1 years (AnAge, 2022c). (>25 years)	**3**
Fecundity	Clutch size = 4, Clutches per year = 1 (AnAge, 2022c). <100 eggs per year	**3**
Average maximum size Not scored for invertebrates	Length 84 to 90 cm, wingspan 130 to 160 cm (100-300 cm)	**2**
Average size at maturity Not scored for invertebrates	Length 84 to 90 cm, wingspan 130 to 160 cm (40-200 cm)	**2**
Reproductive strategy	Lay eggs in a nest (AnAge, 2022c). (Demersal egg layer)	**2**
Trophic level	>3.25 (Due to the precautionary approach, we took the maximum possible value)	**3**
Productivity score		**2.43**
Susceptibility		
Attribute	Rationale	Score

Areal Overlap	UoA area is <10% of species areal (BirdLife International, 2021c)	**1**
Encounterability	For 4 years of observations (2017-2020), 189 birds were recorded that fell into the gillnets (Morkūnas et al., 2020). Low overlap with fishing gear (low encounterability)	**1**
Selectivity of gear type	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Post capture mortality	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Susceptibility score		**1.20**
Overall PSA score		**2.71**
MSC PSA-derived score		**81**

8.8.2.7 Great Crested Grebe

Table 87 – PSA productivity and susceptibility attributes and scores (Great Crested Grebe)		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Great Crested Grebe, *Podiceps cristatus*	
Attribute	Rationale	Score
Average age at maturity	Female and male sexual maturity 730 days (AnAge, 2022d) (<5 years)	**1**
Average maximum age	Maximum longevity = 19.2 years (wild) (AnAge, 2022d). (10-25 years)	**2**
Fecundity	Clutch size = 3-6 eggs, Clutches per year = 1 (Rajchard et al., 2020). (<100 eggs per year)	**3**
Average maximum size Not scored for invertebrates	Length 46 to 61 cm, wingspan 59 to 73 cm (<100 cm)	**1**
Average size at maturity Not scored for invertebrates	Length 46 to 61 cm, wingspan 59 to 73 cm (40-200 cm)	**2**
Reproductive strategy	Lay eggs in a nest (AnAge, 2022d). Demersal egg layer	**2**
Trophic level	>3.25 (Due to the precautionary approach, we took the maximum possible value)	**3**
Productivity score		**2.00**
Susceptibility		
Attribute	Rationale	Score

Areal Overlap	UoA area is <10% of species areal (BirdLife International, 2021d)	**1**
Encounterability	For 4 years of observations (2017-2020), 40 birds were recorded that fell into the gillnets (Morkūnas et al., 2020). Low overlap with fishing gear (low encounterability)	**1**
Selectivity of gear type	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Post capture mortality	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Susceptibility score		**1.20**
Overall PSA score		**2.33**
MSC PSA-derived score		**90**

8.8.2.8 Greater scaup

Table 88 – PSA productivity and susceptibility attributes and scores (Greater scaup)		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Greater scaup, *Aythya marila*	
Attribute	Rationale	Score
Average age at maturity	365 days (AnAge, 2022e). (<5 years)	**1**
Average maximum age	Maximum longevity = 22.1 years (wild) (AnAge, 2022e). (10-25 years)	**2**
Fecundity	Clutch size = 9, Clutches per year = 1 (AnAge, 2022e). (<100 eggs per year)	**3**
Average maximum size Not scored for invertebrates	The maximum wingspan 84 cm (<100 cm)	**1**
Average size at maturity Not scored for invertebrates	A medium sized diving duck, length 40-51 cm, weight 700-1372 g, wingspan 72-84 cm (40-200 cm)	**2**
Reproductive strategy	Lay eggs in a nest (AnAge, 2022e). (Demersal egg layer)	**2**
Trophic level	>3.25 (Due to the precautionary approach, we took the maximum possible value)	**3**
Productivity score		**2.00**
Susceptibility		
Attribute	Rationale	Score

Areal Overlap	UoA area is <10% of species areal (BirdLife International, 2021e)	**1**
Encounterability	For 4 years of observations (2017-2020), 10 birds were recorded that fell into the gillnets (Morkūnas et al., 2020). Low overlap with fishing gear (low encounterability)	**1**
Selectivity of gear type	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Post capture mortality	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Susceptibility score		**1.20**
Overall PSA score		**2.33**
MSC PSA-derived score		**90**

8.8.2.9 Red-throated Loon

Table 89 – PSA productivity and susceptibility attributes and scores (Red-throated Loon)		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Red-throated Loon, *Gavia stellata*	
Attribute	Rationale	Score
Average age at maturity	1095 days (AnAge, 2022f). (<5 years)	**1**
Average maximum age	Maximum longevity = 24 years (wild) (AnAge, 2022f). (10-25 years)	**2**
Fecundity	Clutch size = 2, Clutches per year = 1 (AnAge, 2022f). (<100 eggs per year)	**3**
Average maximum size Not scored for invertebrates	70 cm (<100 cm)	**1**
Average size at maturity Not scored for invertebrates	The red-throated diver is the smallest and most slender of the four species of divers in the world. It is 53–69 cm in length and weighs 1400–1900 g. (40-200 cm)	**2**
Reproductive strategy	Lay eggs in a nest (AnAge, 2022f). (Demersal egg layer)	**2**
Trophic level	>3.25 (Due to the precautionary approach, we took the maximum possible value)	**3**
Productivity score		**2.00**
Susceptibility		
Attribute	Rationale	Score

Areal Overlap	UoA area is <10% of species areal (BirdLife International, 2021f)	**1**
Encounterability	For 4 years of observations (2017-2020), 8 birds were recorded that fell into the gillnets (Morkūnas et al., 2020). Low overlap with fishing gear (low encounterability)	**1**
Selectivity of gear type	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Post capture mortality	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Susceptibility score		**1.20**
Overall PSA score		**2.33**
MSC PSA-derived score		**90**

8.8.2.10 Smew

Table 90 – PSA productivity and susceptibility attributes and scores (Smew)		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Smew, *Mergellus albellus*	
Attribute	Rationale	Score
Average age at maturity	727 days (AnAge, 2022g). (<5 years)	**1**
Average maximum age	Maximum longevity = 10 years (AnAge, 2022g). (10-25 years)	**2**
Fecundity	6-8 eggs (<100 eggs per year)	**3**
Average maximum size Not scored for invertebrates	Wingspan for males are about 60 cm (<100 cm)	**1**
Average size at maturity Not scored for invertebrates	The body length averages 40 cm (40-200 cm)	**2**
Reproductive strategy	Lay eggs in a nest (Demersal egg layer)	**2**
Trophic level	>3.25 (Due to the precautionary approach, we took the maximum possible value)	**3**
Productivity score		**2.33**
Susceptibility		
Attribute	Rationale	Score

Areal Overlap	UoAs area is <10% of species areal (BirdLife International, 2021g)	**1**
Encounterability	For 4 years of observations (2017-2020), 8 birds were recorded that fell into the gillnets (Morkūnas et al., 2020). Low overlap with fishing gear (low encounterability)	**1**
Selectivity of gear type	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Post capture mortality	High (Due to the precautionary approach, we took the maximum possible value)	**3**
Susceptibility score		**1.20**
Overall PSA score		**2.33**
MSC PSA-derived score		**90**

8.8.3 RBF references

AnAge (2022a) Database of Animal Ageing and Longevity. Bucephala clangula. https://genomics.senescence.info/species/entry.php?species=Bucephala_clangula
AnAge (2022b) Database of Animal Ageing and Longevity. Mergus merganser. https://genomics.senescence.info/species/entry.php?species=Mergus_merganser
AnAge (2022c) Database of Animal Ageing and Longevity. Phalacrocorax carbo. https://genomics.senescence.info/species/entry.php?species=Phalacrocorax_carbo
AnAge (2022d) Database of Animal Ageing and Longevity. Podiceps cristatus. https://genomics.senescence.info/species/entry.php?species=Podiceps_cristatus
AnAge (2022e) Database of Animal Ageing and Longevity. Aythya marila. https://genomics.senescence.info/species/entry.php?species=Aythya_marila
AnAge (2022f) Database of Animal Ageing and Longevity. Gavia stellata. https://genomics.senescence.info/species/entry.php?species=Gavia_stellata
AnAge (2022g) Database of Animal Ageing and Longevity. Mergellus albellus. https://genomics.senescence.info/species/entry.php?species=Mergellus_albellus
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8.8.4 MSC score based on the results of RBF

Table 91 – PI 1.1.1 score for perch *(Perca fluviatilis)* based on the results of RBF.

Scoring element	First of each scoring element	Family name	Scientific name	Common name	Species type	Fishery descriptor
1	First	Percidae	*Perca fluviatilis*	Perch	Vertebrate	Gillnets

Productivity Scores [1-3]									Susceptibility Scores [1-3]				
Average age at maturity	Average max age	Fecundity	Average max size	Average size at Maturity	Reproductive strategy	Trophic level	Density Dependance	Total Productivity (average)	Availability	Encounterability	Selectivity	Post-capture mortality	Total (multiplicative)
1	2	1	1	1	2	3		1.57	2	3	2	3	1.88

	Cumulative only								
PSA Score	Catch (tons)	Weighting	Weighted Total	Weighted PSA Score	MSC PSA-derived score	Risk Category Name	MSC scoring guidepost	Consequence Score (CA)	Final MSC score (per scoring element)
2.45					86	Low	≥80	80	83

MSC score	83
Status	Unconditional Pass

Table 92 – PI 2.2.1 score based on the results of RBF.

Beginning of the table. (Only main species scored? Yes)

Scoring element	First of each scoring element	Family name	Scientific name	Common name	Species type	Fishery descriptor
1	First	Cyprinidae	*Rutilus rutilus*	Roach	Vertebrate	Gillnets
2	First	Cyprinidae	*Blicca bjoerkna*	White bream	Vertebrate	Gillnets
3	First	Anatidae	*Bucephala clangula*	Common goldeneye	Vertebrate	Gillnets
4	First	Anatidae	*Mergus merganser*	Goosander	Vertebrate	Gillnets
5	First	Anatidae	*Aythya marila*	Greater scaup	Vertebrate	Gillnets
6	First	Gaviidae	*Gavia stellata*	Red-throated Loon	Vertebrate	Gillnets
7	First	Phalacrocoracidae	*Phalacrocorax carbo*	Great cormorant	Vertebrate	Gillnets
8	First	Podicipedidae	*Podiceps cristatus*	Great crested grebe	Vertebrate	Gillnets
9	First	Anatidae	*Mergellus albellus*	Smew	Vertebrate	Gillnets

Table continuation. Productivity Scores [1-3]

Scoring element	Average age at maturity	Average max age	Fecundity	Average max size	Average size at Maturity	Reproductive strategy	Trophic level	Total Productivity (average)
1	1	2	2	1	1	2	2	1.57
2	1	2	2	1	1	2	2	1.57
3	1	2	3	1	2	2	3	2.00
4	1	2	3	1	2	2	3	2.00
5	1	2	3	1	2	2	3	2.00
6	1	2	3	1	2	2	3	2.00
7	2	3	3	2	2	2	3	2.43
8	1	2	3	1	2	2	3	2.00
9	1	2	3	1	2	2	3	2.00

Table continuation. Susceptibility Scores [1-3]

Scoring element	Availability	Encounterability	Selectivity	Post-capture mortality	Total (multiplicative)	PSA Score
1	2	3	2	3	1.88	2.45
2	2	3	2	3	1.88	2.45
3	1	1	3	3	1.20	2.33
4	1	1	3	3	1.20	2.33

5	1	1	3	3	1.20	2.33
6	1	1	3	3	1.20	2.33
7	1	1	3	3	1.20	2.71
8	1	1	3	3	1.20	2.33
9	1	1	3	3	1.20	2.33

The end of the table. Results

Scoring element	MSC PSA-derived score	Risk Category Name	MSC scoring guidepost
1	87	Low	≥80
2	87	Low	≥80
3	90	Low	≥80
4	90	Low	≥80
5	90	Low	≥80
6	90	Low	≥80
7	81	Low	≥80
8	90	Low	≥80
9	90	Low	≥80
MSC score		**80**	
Status		**Unconditional Pass**	

8.9 Harmonised fishery assessments

In considering nearby fisheries for harmonisation, the team reviewed MSC guidance including:

PB1.3.1 Teams assessing overlapping UoAs shall ensure consistency of outcomes so as not to undermine the integrity of MSC fishery assessments.

PB1.3.2 Teams shall prepare for harmonisation with overlapping UoAs no later than the site visit.

PB1.3.3.2 Teams shall ensure that conclusions are consistent between the 2 (or more) fishery assessments, with respect to evaluation, scoring and conditions.

GPB1.1. The MSC-MSCI Vocabulary defines overlapping fisheries as, "2 or more fisheries which require assessment of some, or all, of the same aspects of MSC Principles 1, 2 and/or 3 within their respective units of certification". This definition is also relevant for the Unit of Assessment (UoA). Harmonisation is not necessary in assessments of fisheries that use similar gears or management approaches but operate in clearly different geographic areas.

In this regard, it should be noted that the P1 PIs assessing perch and pike-perch at first in the Curonian Lagoon and in the Baltic Sea as a whole as target stocks require harmonisation specifically with all other fisheries targeting the stocks of these species (or of others fisheries of perch and pike-perch in the inland freshwaters). Similarly, the P3 PIs assessing the governance and policy elements of P3 (PI 3.1.1 – PI 3.1.3) require harmonisation with other relevant fisheries operating in the Curonian Lagoon in the its part of the Republic of Lithuania and other areas of the Baltic Sea, while the P3 PIs assessing the fishery specific management system require harmonisation only with other fisheries that target perch and pike-perch fisheries in the Curonian Lagoon.

P2 is focussed on the impact of the UoA, only, and so does not generally require harmonisation, although UoAs may need to consider the cumulative impact of other overlapping UoAs in scoring outcome for primary, secondary and ETP species, and the management of habitat impacts (in P2, usually only at SG100, however). Consideration of cumulative impacts, where necessary, is given within the P2 assessment.

Based on this MSC guidance, the team identifies seven probably fisheries to consider for harmonisation; see Table 93.

Table 93 – List overlapping fisheries

Fishery name	Certification status and date	Performance Indicators to harmonise
Bratsk Reservoir perch https://fisheries.msc.org/en/fisheries/bratsk-reservoir-perch/@@view	Certified May 2016	PIs 3.1.1 – 3.1.3 (Governance and Policy)
Lake Peipus perch and pike-perch https://fisheries.msc.org/en/fisheries/lake-peipus-perch-and-pike-perch/@@view	Certified Oct 2017	PIs 3.1.1 – 3.1.3 (Governance and Policy)
Irikla Reservoir perch and pike-perch fishery https://fisheries.msc.org/en/fisheries/irikla-reservoir-perch-and-pikeperch-fishery/@@view	Certified Apr. 2016	PIs 3.1.1 – 3.1.3 (Governance and Policy)
Russian Lake Peipus perch and pike-perch https://fisheries.msc.org/en/fisheries/russian-lake-peipus-perch-and-pike-perch/@@view	Certified Apr. 2019	PIs 3.1.1 – 3.1.3 (Governance and Policy)
Russian and Estonian Lake Peipus perch and pike-perch https://fisheries.msc.org/en/fisheries/russian-and-estonian-lake-peipus-perch-and-pike-perch/@@view	Certified Jan. 2020	NA
Lake Hjälmaren pikeperch fish-trap and gillnet https://fisheries.msc.org/en/fisheries/lake-hjalmaren-	Certified Jan. 2019	NA

pikeperch-fish-trap-and-gillnet/@@view		
SIC Lake Mälaren and Lake Vänern pikeperch https://fisheries.msc.org/en/fisheries/sic-lake-malaren-and-lake-vanern-pikeperch/@@view	Certified Jul. 2017	NA

Table 94 – Evaluating overlapping fisheries (to be determined)

Supporting information	
Describe any background or supporting information relevant to the harmonisation activities, processes and outcomes.	
Only the other Russian lake fisheries have PIs in common with the fishery under assessment.	
Was either FCP v2.1 Annex PB1.3.3.4 or PB1.3.4.5 applied when harmonising?	No
Date of harmonisation meeting	NA
If applicable, describe the meeting outcome	
e.g. Agreement found among teams or lowest score adopted.	

Table 95 – Harmonized scores for Principle 3

Performance Indicator (PI)	Russian Lake Peipus perch and pike-perch (PCR, 2019)	Bratsk Reservoir perch (Re-assessment, PCR, 2021)	Irikla Reservoir perch and pikeperch fishery (Re-assessment PCR, 2021)	Lake Chany perch and pike-perch (CPRDR 2022)	**Curonian Lagoon perch and pike-perch** (PCDR, 2022)
PI 3.1.1	95	95	100	95	85
PI 3.1.2	85	80	85	85	85
PI 3.1.3	80	80	80	80	80
Harmonized score		Scoring difference			

Table 96 – Rationale for scoring differences

If applicable, explain and justify any difference in scoring and rationale for the relevant Performance Indicators (FCP v2.2 Annex PB1.3.6)
Most P3 CPRDR scores are consistent with other inland lake fisheries in the Russia. No significant differences were identified between relevant fisheries for the scores of the Governance and Policy PIs (PI 3.1.1. – 3.1.3) because all relevant fisheries are scored at ≥80. Such small differences arise primarily due to the transboundary nature of Curonian lagoon.

8.10 Objection Procedure

The assessment team received no objections during the Objection procedure.

8.11 UoA company and vessel list

Table 97 – List of vessels in the UoAs (September, 2022)

Company (English translation)	Vessel Name (In Russian)		Vessel Name (English translation)	IMO Number	Call Sign	Reg. Number
СПК «РК «имени Матросова» (Agricultural Production Cooperative Fishing Collective Farm named after Matrosova)	1	МРБ (малый рыболовный бот)	MRB (minor fishing boat)	-	-	KD-0109
	2	МРБ (малый рыболовный бот)	MRB (minor fishing boat)	-	-	KD-0112
	3	МРБ (малый рыболовный бот)	MRB (minor fishing boat)	-	-	KD-0111
	4	МРБ (малый рыболовный бот)	MRB (minor fishing boat)	-	-	KD-0110
ООО «Заливино» (Zalivino LLC)	5	МТБ (малый транспортный бот)	MTB (minor transport boat)	-	-	KD-0260

8.12 Additional information

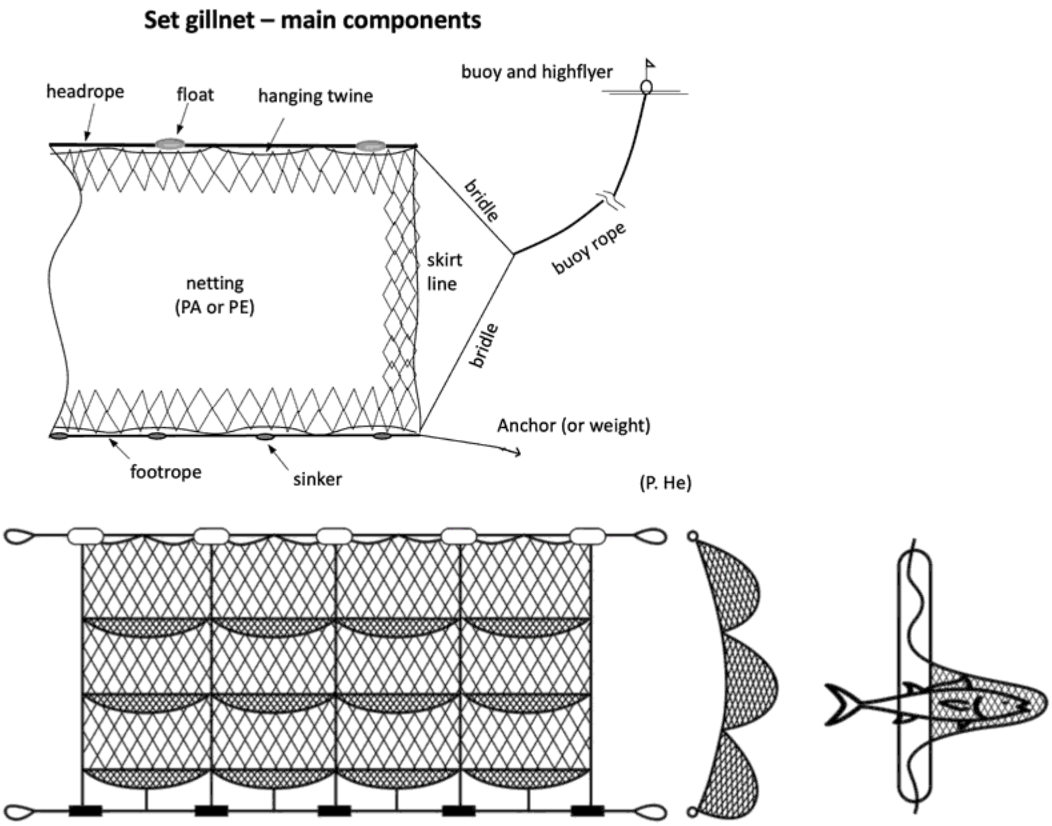

Figure 44 – Top - fixed (set) gillnet[5]; bottom - frame (trammel) gillnet[6]

Resident and migratory pike-perch in Curonian Lagoon

Migratory behaviour of pike-perch was studied using otolith microchemical analysis which suggested, that the majority of the population resides in the Curonian Lagoon, while a small proportion of the population migrates between the lagoon and the Baltic Sea spending on average (± SD) 25% ± 14% of their lifetime in brackish waters (Ložys et al., 2017). Lithuanian fisheries data show an increase in the annual pike-perch catch to 100 t in the Curonian Lagoon and a simultaneous decline in the Baltic Sea catch from 48 t to 1.5 t since 2002. According to Lesutienė et al. (2018), non-migratory pikeperch collected from the Curonian Lagoon had negative δ^{34}S ratios (–1.84‰ to –0.17‰), whereas migrating individuals exhibited higher and more variable δ^{34}S values (4.4‰ to 18.5‰).

REPUBLIC OF LITHUANIA LAW ON FISHERIES

27 June 2000 No VIII-1756

(As last amended on 29 June 2016 No XII-2532)

Vilnius

...

Article 6. Regulation of fishing activity

1. Regulatory measures for fishing activity shall be established and applied on the basis of fisheries research data and in order to ensure opportunities for the natural recovery of fish stocks, to maintain the optimal productivity of marine and inland water bodies and to avoid negative alterations to aquatic ecosystems.

[5] https://www.fao.org/fishery/en/geartype/219/en

[6] https://petrokanat.ru/tech-spec/rybolovnye-seti/ramovye-sety-sekrety-proizvodstva/

2. Regulatory measures for fishing activity may be as follows:

1) fixing fishing opportunities or fishing limits for certain species;

2) fixing the allowed fishing gear, its number and fishing methods;

3) restricting fishing capacity in relevant geographical fishing areas;

4) fixing the minimum amount of catch;

5) prohibiting or restricting fishing activity at certain times and/or certain sites;

6) prohibiting fishing for certain species;

7) fixing the boundaries of the coastal and Curonian Lagoon fishing zone;

8) fixing the boundaries of the coastal and Curonian Lagoon fishing areas;

9) fixing the procedure for the marking of fishing gear.

3. Regulatory measures for fishing activity in marine waters shall be established by the European Union legislation, while measures which are not regulated by the European Union legislation shall be established by the Minister of Agriculture or an institution authorised by him. Regulatory measures for fishing in inland waters shall be established by the Minister of Environment. The Minister of Environment shall fix the fishing limits in inland waters, prohibit or restrict commercial fishing in inland waters at certain times (or at certain sites), or prohibit fishing for certain species only on the basis of data of fish stocks research carried out in accordance with the procedure laid down in paragraph 6 of this Article.

4. The procedure for granting the right to a fishing quota, its suspension, lifting of the suspension and withdrawal of the right to a fishing quota shall be established by the Minister of Agriculture. The right to a fishing quota shall, in compliance with the provisions of Article 141 of this Law, be granted by the Commission Granting the Transferable Right to a Fishing Quota in Inland Waters, which shall consist of representatives of the Ministry of Agriculture, the Fisheries Service under the Ministry of Agriculture of the Republic of Lithuania (hereinafter: the ‘Fisheries Service’) and the Ministry of Environment.

5. The procedure for allocating individual fishing opportunities in marine waters and commercial fishing quotas in inland waters shall be established by the Minister of Agriculture. Individual fishing opportunities and commercial fishing quotas in inland waters shall, on the basis of the granted right to a fishing quota, be allocated by an institution authorised by the Minister of Agriculture.

6. Research on fish stocks in the Baltic Sea and the Curonian Lagoon shall be carried out each year, and in other inland water bodies exceeding 200 hectares in which commercial fishing is permitted – at least every five years. Research on fish stocks in the remaining inland water bodies in which commercial fishing is permitted shall be carried at least every ten years. Research on fish stocks in inland waters shall be carried out in accordance with the procedure established by the Minister of Environment, while in marine waters – in accordance with the procedure established by the Minister of Agriculture. Economic entities carrying out research on fish stocks must, in accordance with the set procedure, submit the research data to the Ministry of Agriculture and the Ministry of Environment.

7. Research on fish stocks in water bodies of national significance shall be financed from the Environmental Protection Support Programme or funds from other programmes implemented by the Ministry of Environment or the Ministry of Agriculture or at the expense of economic entities in accordance with the procedure established by the Government.

Lithuanian stock assessment

Andrašūnas et al. (2022) used CMSY (version CMSY_2019_9f. R) to assess maximum sustainable yield (MSY) and related indicators for four major fish species stocks in the Lithuanian and Russian parts of Curonian Lagoon: freshwater bream, roach, pike-perch, and European perch. A decline in pike-perch and roach was identified, while the stocks of freshwater bream and European perch were sustained. According to Andrašūnas et al. (2022), B2020/Bmsy = 0.7 for pike-perch (overfished stock), and 1.2 for perch (healthy stock).

As the CMSY model does not consider the impact of environmental factors, the decline in roach stock may be attributed to the increase in salinity rather than to overfishing. In the case of freshwater bream and pike-perch, the method cannot consider the increase of the percentage of small-sized fishes in catches due to the allowance of low-selectivity gears in the fishery. Additionally, in the case of the pike-perch, the model does not take into account the interannual fluctuations in the stock-recruitment system. The assessment of the European perch stock can be considered to be good. However, the accuracy of CMSY is limited, and it should be used for fisheries management only in combination with other methods.

Authors use the very low level of perch and pike-perch resilience in the model.

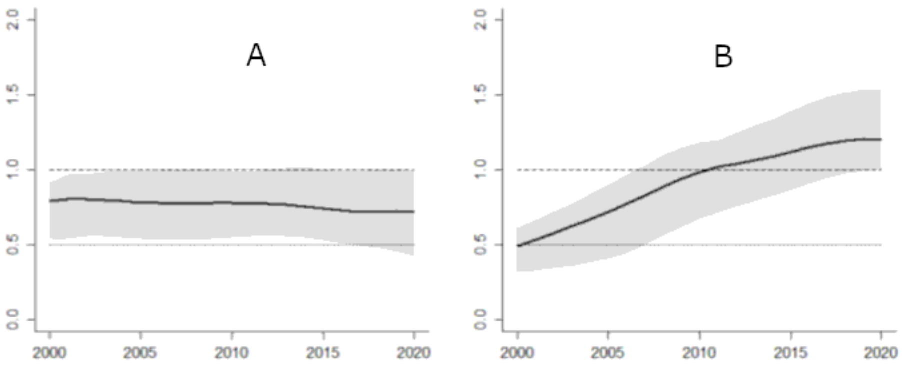

Figure 45 – Relative stock size of pike-perch (A) and perch (B) in the Curonian Lagoon according to CMSY model (Andrašūnas et al., 2022). Y-axis – B/Bmsy; X-axis – years.

Table 98 – Size composition of perch catches in gillnets with a mesh size of 36-45 mm (knot to knot) in Curonian Lagoon (Based on data of Jakubavičiūtė et al., 2022).

Total length, cm	Number of fish
13	1
16	4
17	2
18	2
19	1
21	8
22	7
23	24
24	23
25	31
26	10
27	26
28	22
29	16
30	19
31	10
32	12
34	2
35	2
36	1
All	223

Note. Minimum Landing Size (MLS) for perch is 18 cm (TL). The proportion of perch below the MLS in gillnets with a mesh size of 36-45 mm (knot to knot) in Curonian Lagoon is 3.14%.

VNIRO established a smaller TAC for pike-perch in the Russian part of the Curonian Lagoon for 2023 (250 tons) than in 2011-2022 (260 tons) (VNIRO, 2022).

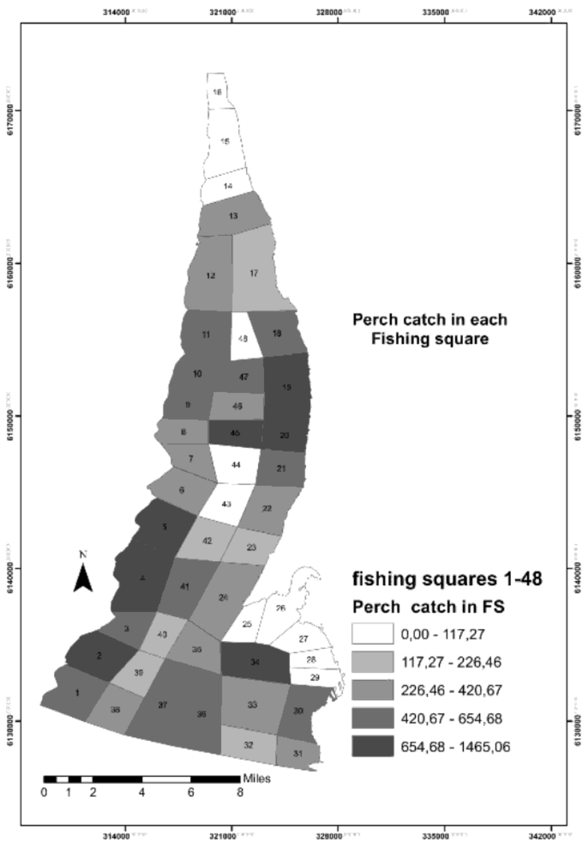

Figure 46 – Distribution of perch catches (kg) of commercial fisheries in fishing square in Lithuanian part of Curonian Lagoon (Ivanauskas et al., 2022).

8.12.1 Recreational fishery

This section is based on publication of Sporrong (2017).

Russia

In the Kaliningrad region, recreational fishing with passive, commercial style gears is prohibited, but angling is popular – more than 10 % of the population go fishing on occasion. The region has a total population of around 1 million people.

The main fishing areas along the coast are the transboundary Curonian (RU/LT) and Vistula (RU/PL) lagoons, as well as a few rivers flowing into lagoons, for example Neman (RU/LT), Pregel, Matrosovka and Deima; inland it is mainly Vistylis Lake (RU/LT) and about 200 other small lakes and river sites. The Baltic Sea fishing area includes part of the territorial waters, a coastal zone of 2.5 nautical miles from the coast. There are very few suitable fishing places on the coast.

Recreational fishing in private ponds requiring a fishing permit is not popular and play minor role in the recreational fishery as a whole; there are no more than ten such places in the region.

Gear/fishing methods

Only angling is allowed in Kaliningrad: fly fishing, trolling, jigging, ice fishing and bait fishing with rods. Sea angling from boats is popular but expensive to most people.

Target species

The most popular species targeted by anglers along the Baltic Sea coast are cod, salmon, flounder, garfish and herring. In the lagoons and inland water: roach, bream, pikeperch and pikeperch.

A number of rules and limitations are contained in the current laws applied to angling, including gear limitations, bag limits, minimum size limits and closed seasons.

Fishing for a number of species is prohibited; they are covered in the Russian Red List and include sea trout, sturgeon and shad.

Minimum landing size is used for few species: salmon 60 cm, pike 50 cm, pikeperch 46 cm, eel 45 cm, cod 38 cm, white-fish 36 cm, bream 35 cm, perch 18 cm and herring 16 cm.

In terms of closed seasons, no fishing is allowed in spawning rivers or out to 500 metres from the coastline of the Curonian and Vistula lagoons from 20 April until 20 June.

Angling in Kaliningrad also comes with a few “natural restrictions”:

- the most productive ice-fishing season is very short – only 2–6 weeks when there is ice on the Curonian and Vistula lagoons
- spring fishing is only possible during a few weeks before the closed season begins on 20 April
- summer fishing in the lagoons and inland lakes is not very productive and is mostly a supplementary activity for relaxing
- fishing in the Baltic sea is very expensive (needing boats) and therefore not very common.
- Monitoring

Recreational fisheries are under the control of the regional branch of the Federal Fishery Agency. There is no official monitoring, but some scientific research is done by Kaliningrad State Technical University, mainly through surveys.

Currently, there is no reporting obligations. As a result, official information about the number of anglers, fishing effort (number of gears or fishing days), as well as any catch statistics is almost non-existent.

Nevertheless, despite unlimited catch opportunities for more than 10 years, scientific research has not observed any negative impacts on fish stock. During this period, stocks status and TACs have stayed almost on the same level with only small fluctuations, except for eel.

Recreational catches and potential impacts

There are a number of important recreational fisheries in the region. We cover cod, salmon and eel in more detail further down, but a number of other fisheries are popular too:

1. Fishing for cod in the Baltic Sea with small boats (mostly inflatables) using vertical flashing.

2. Spring fishing for Baltic herring. This fishery mainly takes place in one location near the town Baltisk, in the narrow strait between the Vistula Lagoon and the Baltic Sea. At its peak, this fishery is intensive and may include up to 2 500 anglers per day on weekends during the spawning migration of herring. The fishing gear used is spinning with 5–10 hooks without any bait. Total fishing effort is about 25 000–35 000 fishing days, with a catch of up to 150–200 tonnes. The commercial TAC for herring is 25 000 tonnes.

3. Ice-fishing for **pikeperch** on the **Vistula lagoon**. This takes place in end of December to early February when there is ice on the lagoon. In reality, it does not occur every year and the fishing period is very short, just 10–15 days on Saturday/Sunday. At its peak, it involves 2 500–3 500 anglers per day. Total fishing effort is about 10 000–15 000 fishing days, with a catch of up to 20 tonnes. The commercial TAC for pikeperch is 120 tonnes.

4. Ice-fishing for **perch**, roach and bream on **the Curonian Lagoon**. This fishery depends on the period with ice cover and may be zero or up to 15–20 days. At most, it may involve 3 000–8 000 anglers per day. The average catch per person is about 0.5 kg, though catches of perch may be as high as 5–10 kg. The total catch of those species is estimated to around 40 tonnes; the commercial TAC is 600 tonnes.

5. Spring fishery for roach and bream during their spawning migrations into rivers flowing into the **Curonian Lagoon**. This takes place during March–April with hook gear. At its peak, it involves up to 3 000 anglers per day and the total fishing effort is about 20 000–40 000 fishing days. The total catch may be about 30–40 tonnes; the commercial TAC is more than 1 500 tonnes.

6. Fishing for smelt in the rivers of Vistula and the **Curonian watershed**. This happens during a very short period of 1–2 weeks. It involves around 500 anglers and the total catch is 1–2 tonnes.

7. There are a few other fisheries which are very popular, but where the catch is limited, including fishing for salmon, sea trout and eel.

Lithuania

In Lithuania and its Baltic Sea waters, angling is the only recreational fishing allowed; there is no recreational fishing with commercial type, passive gears. Inland, smaller traps and dipnets are allowed, mainly in order to catch crayfish.

Four per cent (2,639 square km) of the country’s territory is covered by water. There are many places suitable for recreational fishing. Internal waters include the Curonian Lagoon, reservoirs, lakes, rivers and ponds. In the Nemunas River and the Curonian Lagoon pike, perch, pikeperch, catfish, bream and many other species are found.

The most popular places for angling are Nemunas, the biggest river in Lithuania, and its tributaries, the Lithuanian part of the Curonian Lagoon and the waters surrounding Klaipeda.

More recent estimates put the number between 160 000 and 200 000. In 2013, 160 000 annual fishing licences were issued and according to some questionnaires there may be more than 200 000 who fish regularly.

The Ministry of Environment is responsible for the distribution of recreational fishing licences. As those licences allow recreational fishing both inland and at sea, it is difficult to estimate fishing effort for each.

In the Baltic Sea, rods are used from shore, from private boats and chartered boats. Ice-fishing is very popular in inland waters and in the Curonian Lagoon.

Most angling takes place in shallow water, less than 20 metres, and a range of species are targeted including cod, flounder, perch, round goby, smelt, garfish, salmon, sea trout, herring and turbot.

Recreational fisheries are regulated in the Rules for amateur fishing in internal waters, but they do not apply to the Baltic Sea or private waters. These are covered in special Fishing Orders.

In the Baltic Sea, catches of several species are restricted: 1 salmon, 1 sea trout, 1 whitefish and 5 turbot. There is also a 7 kg bag limit for the Curonian Lagoon, but smelt catches are unlimited since 2015.

It is prohibited to catch common nase, European weatherfish, sea lamprey, European brook lamprey and sturgeon. Grayling, brown trout, sea trout and salmon may not be targeted using natural bait.

There are also gear limits. When fishing from a boat, a maximum of two fishing rods per person may be used and the total number of hooks may not exceed six. When smelt fishing on ice, however, a total of 12 hooks may be used. A double or triple hook shall be considered one hook.

Angling may not take place closer than 50 metres from any commercial fishing gear. There are also a number of seasonal fishing closures.

Minimum size limits applies to many species, among them salmon (60 cm), sea trout (60 cm), pikeperch and pike (45 cm), whitefish (36 cm), turbot (30 cm) and ide, vimba and bream (28 cm) Undersized fish or fish caught during a closed season have to be released immediately.

Recreational catches cannot be sold.

According to the Rules for Amateur Fishing, recreational fishers are required to show their fishing licence, relevant fishing permit and personal ID when requested. If they do not comply with the fishing rules, they may be required to compensate for any damaged caused to fish resources4 and, if the owner is absent, fishing gear may be confiscated.

8.12.2 Addition information references

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9 Template information and copyright

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A controlled document list of MSC program documents is available on the MSC website (msc.org).

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