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Irikla Reservoir Perch and Pikeperch Gillnet Fishery

Public Comment Draft Report

Conformity Assessment Body (CAB)	MRAG Americas, Inc.
Assessment team	Amanda Stern-Pirlot and Dmitry Sendek
Fishery client	Followfood GmBH
Assessment type	1st Reassessment
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Document Draft	Submitted By	Date	Reviewed By	Date
ACDR	ASP, DS	25 Dec 2020	ASP	4 Jan 2021
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2 Executive summary

This Public Comment Draft Report sets out the preliminary results of the Marine Stewardship Council (MSC) re-assessment of the Irikla Reservoir perch and pikeperch gillnet fishery against the MSC Fisheries Standard for sustainability.

MRAG Americas was contracted in 2020, by Followfood GmbH to undertake the MSC reassessment of the Irikla Reservoir perch and pikeperch gillnet fishery. The assessment was undertaken in accordance with the MSC Fisheries Certification Process v2.2for a reduced re-assessment and using the MSC Guidance to MSC Fisheries Certification Requirements v2.0 which sets out the assessment and certification process. As a result, to date, the following steps have been undertaken:

- Announcement of the assessment and production of the Announcement Comment Draft Report
- Notification and undertaking of the site visit
- Production of the client and peer review draft report that describes the background to the fishery, the fishery management operation and the evaluation procedure and results as required by the reduced re-assessment process and reporting template.
- Response to Peer Review comments, and report revisions where necessary
- Production of the Public Comment Draft Report
- ~~Response to stakeholder comments on the Public Comment Draft Report~~
- ~~Review by MRAG Americas' qualified nominated Reviewer and Decision Maker~~
- ~~Consultation on the Final Report and Determination~~
- ~~Production of the Public Certification Report~~

The assessment of the fishery was performed by Dmitry Sendek (Principle 1 and Principle 3), and Amanda Stern-Pirlot (Principle 2 Team Member and Team Leader).

A site visit was conducted via the Zoom meeting platform on 5, and 8-11 February, 2021. During that time the assessment team met with scientists, fishery managers, stakeholders and industry representatives. No written submissions were received ahead of the site visit by outside stakeholders, nor were meetings with the team requested.

The following strengths and weakness were identified with respect to each Principle:

Principle 1

Strengths: Both the perch and pikeperch stocks are in healthy condition, and the stock assessments and system of catch allocation are appropriate for these stocks and this ecosystem.

Weaknesses: For the pikeperch UoA, there is a lack of review of alternative measures to reduce unwanted catches of pikeperch, and it is unclear whether current harvest control rules are robust to the main uncertainties.

Principle 2

Strengths: There is very limited interaction with non-target, including ETP and other out-of-scope species. There is also an excellent derelict gear recovery program in the reservoir, and protections in place for a nesting colony of Palla's gull.

Weaknesses: Although there is generally good management of the reservoir ecosystem, there is a lack of comprehensive ecosystem management strategy that involves all aspects of reservoir use, including electricity production, water use, commercial and recreational fishing, etc.

Principle 3

Strengths: An effective national fisheries management system exists in Russia consistent with MSC Principles 1 and 2 and this is executed well in the Irikla reservoir, with clear short- and long-term objectives for the fishery. The parcel allocation and licensing and quota process provides positive incentives for resource stewardship.

Weaknesses: The decision-making process relating to the fishery responds to most identified issues, however it is difficult to provide evidence that there is a mechanism for all issues to be addressed, for example those of recreational fishermen, who are not centrally organized.

The fishery has two conditions related to harvest control rules for the perch UoA and alternative measures to reduce unwanted catch for the pikeperch UoA.

Draft determination to be completed at Public Comment Draft Report stage

To be competed in the following stages of the assessment.

3 Report details

3.1 Authorship and peer review details

Ms. Amanda Stern-Pirlot served as team leader for the assessment. Amanda is an M.Sc graduate of the University of Bremen, Center for Marine Tropical Ecology (ZMT) in marine ecology and fisheries biology. Ms. Stern-Pirlot joined MRAG Americas in mid-June 2014 as MSC Certification Manager (now Director of the Fishery Certification Division) and is currently serving on several different assessment teams as team leader and team member. She has worked together with other scientists, conservationists, fisheries managers and producer groups on international fisheries sustainability issues for over 15 years. With the Institute for Marine Research (IFM-GEOMAR) in Kiel, Germany, she led a work package on simple indicators for sustainable within the EU-funded international cooperation project INCOFISH, followed by five years within the Standards Department at the Marine Stewardship Council (MSC) in London, developing standards, policies and assessment methods informed by best practices in fisheries management around the globe. Most recently she has worked with the Alaska pollock industry as a resources analyst, within the North Pacific Fisheries Management Council process, focusing on bycatch and ecosystem-based management issues, and managing the day-to-day operations of the offshore pollock cooperative. She has co-authored a dozen publications on fisheries sustainability in the developing world and the functioning of the MSC as an instrument for transforming fisheries to a sustainable basis.

Dr Dmitry Sendek. Dmitry Sendek is a senior researcher scientist in the State Research Institute on Lake and River Fishery (GosNIORKh), St. Petersburg Russia. Dr Sendek holds a BS and MS from St. Petersburg University, and a

PhD from the GosNIORKh. His research interests include evolution, phylogeny and systematics of coregonids fishes, population biology of freshwater and anadromous fishes, genetic conservation of salmonid fishes, and population dynamics. Dr Sendek has authored numerous scientific articles, book chapters, and scientific reports.

A discussion between team members regarding conflict of interest and biases was held and none were identified.

Peer Reviewers

Dr Andrew Hough is a marine environmental consultant, with a PhD in marine ecology from the University of Wales, Bangor (1987-90). He has been involved in marine, coastal and freshwater environmental management since 1991, including management of fishery impacts on ecosystems and marine conservation biology, principally in European inshore waters. He was manager of Moody Marine operations within Moody International Certification from 1999 to 2011 with particular responsibility for the implementation of MSC Certification procedures and development of MSC methodologies. He has acted as lead assessor on a large proportion of MSC pre-assessments and main assessments during this time, and subsequently as team member and/or lead auditor for various assessments. This has involved stock assessment analysis, evaluation of ecosystem effects and management effectiveness of groundfish, pelagic and shellfish fisheries in various administrations around the world. He now works as a freelance environmental/fishery management consultant and auditor, with consultancy projects including certification-related policy advice to the Association of Sustainable Fisheries.

Dr Mohamed Samy Kamal has a PhD from the University of Alicante focused on the evaluation of management measures and regulations in the trawl fishery in the western Mediterranean Sea. This provided experience evaluating different management strategies and regulations; specifically for small-scale multi-species and multi-gear fisheries. He analyzed the effects of implementing a seasonal closure and the short-term effect of selectivity change (as two management measures) in the trawling fishery of the fleet under study. Also based on daily variation of ex-vessel fish prices, an alternative management measure to the seasonal closure was recommended to stop fishing one additional day per week (other than weekend), to avoid negative economic consequences and reduce effort.

Dr Kamal has also published on the current status of the MPAs and fisheries in Egypt, in both the Mediterranean and Red Sea. He has a broad perspective of the current issues in small-scale fisheries, their management and governance within different geographical contexts

He has recently worked as an MSC fishery auditor (P3 expert) in various Full and Pre-assessments in Russia including Barents Sea, Lake Peipus, Sea of Japan, Bering Sea and Okhotsk Sea.

3.2 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**

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

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

4.1.1 Unit(s) of Assessment

MRAG Americas has confirmed that this fishery is within scope for MSC fisheries certification through the following determinations (FCP v2.2 7.4):

7.4.2.1 The following taxa are not target species under Principle 1:
- a. Amphibians
- b. Reptiles
- c. Birds
- d. Mammals

7.4.2.2 The fishery does not use poisons or explosives.

7.4.2.3 The fishery is not conducted under a controversial unilateral exemption to an international agreement.

7.4.2.4 No member of the client group has been successfully prosecuted for a forced or child labour violation in the last 2 years.

7.4.2.10 The fishery has not been convicted for a shark finning violation in the last 2 years.

7.4.2.11 The fishery has a mechanism for resolving disputes and disputes do not overwhelm the fishery.

7.4.2.12 The fishery is not enhanced.

7.4.2.13 The fishery is not based on introduced species.

Table 1. Unit(s) of Assessment (UoA)

UoA1	Description
Species	Common or European perch (*Perca fluviatilis*)
Stock	Irikla Reservoir on Ural River, Orenburg Province, Russian Federation
Fishing gear type(s) and, if relevant, vessel type(s)	Gillnets (30 – 36 mesh size)
Client group	Followfood GmbH, Allmandstrasse 8, 88045, FRIEDRICHSHAFEN, Baden-Württemberg – Tübingen, Germany.
Other eligible fishers	All licensed commercial fishermen nominated by client. To date, there are currently 47 eligible fishermen within the UoC, as shown in Table 2.
Geographical area	Irikla Reservoir on Ural River, Orenburg Province, Russian Federation

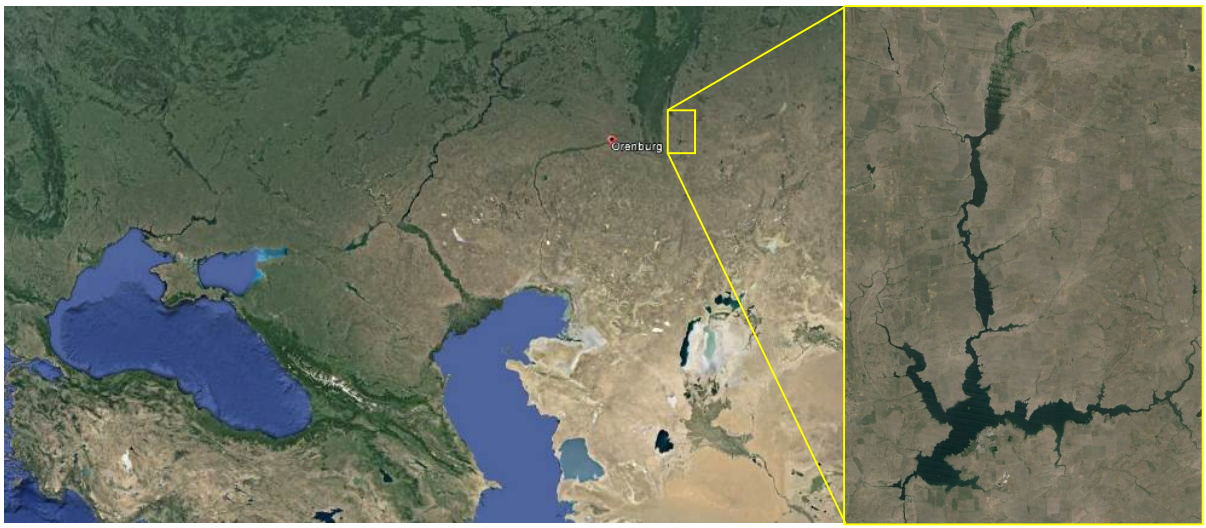


Figure 1. Map showing the location of the Irikla Reservoir, Orenburg Province, Russian Federation [Source: Google Earth].

UoA2	Description
Species	Pikeperch (*Sander lucioperca*)
Stock	Stock of common perch inhabiting Irikla Reservoir
Fishing gear type(s) and, if relevant, vessel type(s)	Gillnets (50-70mm mm mesh size)
Client group	Followfood GmbH, Allmandstrasse 8, 88045, FRIEDRICHSHAFEN, Baden-Württemberg – Tübingen, Germany.
Other eligible fishers	All licensed commercial fishermen nominated by client (see Table 2).
Geographical area	Irikla Reservoir on Ural River, Orenburg Province, Russian Federation (see Figure 1.

Table 2. List of eligible fisherman and associated boats included in units of assessment and current units of certification(correct as of July 2019).

No.	Name	Position	Boat ID	
			Name	Type
	Fish-ka Ltd			
	Sofinsky reach			
1	Turta Oleg Anatolyevich - ТуртаОлегАнатольевич	Brigadier	Stays in one of brigade's boats	
2	Shchukin Aleksei Mikhailovich - Щукин Алексей Михайлович	Fisherman	Irikla-04	Taktika-490 - Тактика-490
3	DavletberdinZufarIshbuldeevich- ДавлетбердинЗуфарИшбулдеевич	Fisherman	Irikla-05	Kazanka-5M2 - Казанка-5М2
4	MukhamedzhanovBeregKakimovich- МухамеджановБерегКакимович	Fisherman	Irikla-08	Kazanka-5M2 - Казанка-5М2
5	ЩукинАндрей Михайлович - Andrei Mikhailovich Schukin	Fisherman	Irikla-10	Progress-2M - Прогресс-2М
6	Mukhamedzhanov Denis Bulatovich - МухамеджановДенисБулатович	Fisherman	-	Rubber boat - Резиноваялодка
	Tanalyksky Bay			
7	Liskovich Andrey ViktorovichЛисковичАндрей Викторович	Brigadier	Irikla-07	Kazanka-5M2 - Казанка-5М2
8	Brylev Alexey Vladimirovich- Брылев Алексей Владимирович	Fisherman	-	Rubber boat - Резиноваялодка
9	Naumenko Nikolay Vladimirovich - НауменкоНиколайВладимирович	Fisherman	-	Rubber boat - Резиноваялодка
10	DeminVladimirDanilovich - Демин Владимир Данилович	Fisherman	Irikla-06	Progress-2M - Прогресс-2М
	Suunduksky Bay			
11	Yeskov Vladimir AlekseevichЕськовВладимирАлексеевич	Brigadier	Irikla-17	Kazanka-5M2 - Казанка-5М2
12	Turta Alexander Anatolievich- ТуртаАлександрАнатольевич	Fisherman	-	Rubber boat - Резиноваялодка
13	Kishkin Andrey Alexandrovich - Кишкин Андрей Александрович	Fisherman	-	Rubber boat - Резиноваялодка
14	Sabirov Ruslan Raphaelevich- СабировРусланРафаэлевич	Fisherman	Irikla-37	Kazanka-5M3 - Казанка-5М3
15	Demidenok Konstantin Alexandrovich- ДемиденокКонстантинАлександрович	Fisherman	Irikla-14	Progress-2M - Прогресс-2М
16	Korchagin Alexander Vladimirovich- КорчагинАлександрВладимирович	Fisherman	-	Rubber boat - Резиноваялодка
17	YanchistovVasilyAlexandrovich- ЯнчистовВасилийАлександрович	Fisherman	Irikla-25	Kazanka-5M3 - Казанка-5М3
	Entire reservoir			
18	Transport boat		Irikla-03	SLK-780 - СЛК-780
19	Transport boat		Irikla-02	SLK-780 - СЛК-780
20	Transport boat		Irikla-01	Saliut-480 - Салют-480
	Volna Ltd			
	Chapaevsky reach			

No.	Name	Position	Boat ID	
			Name	Type
21	Perekhozheva Oksana Alexandrovna - ПерехожеваОксанаАлександровна	Brigadier	-	Stays in one of brigade's boats
22	ShibanovYuryVladimirovich- ШибановЮрийВладимирович	Fisherman	-	Rubber boat - Резиноваялодка
23	BaulinAlexanderAnatolyevich - БаулинАлександрАнатольевич	Fisherman	Irikla-34	Progress-2M - Прогресс-2М
24	ZamolotskyVitalyAnatolievich- ЗамолоцкихВиталийАнатольевич	Fisherman	Irikla-18	Progress-2M - Прогресс-2М
25	ZvekovSergeyAnatolyevich - ЗвековСергейАнатольевич	Fisherman	-	Rubber boat - Резиноваялодка
26	TryapkinAlexanderFilippovich - ТряпкинАлександрФилиппович	Fisherman	Irikla-21	Kazanka-5M2 - Казанка-5М2
27	PerekhozhevAndreyPetrovich - Перехожев Андрей Петрович	Fisherman	Irikla-23	Progress-2M - Прогресс-2М
	Orlovsky reach			
28	Duraev Yuri Borisovich – ДураевЮрийБорисович	Brigadier	Stays in one of brigade's boats	
29	Duraev Maxim Yurievich - ДураевМаксимЮрьевич	Fisherman	Irikla-16	Progress-2M - Прогресс-2М
30	SalinSergeyIvanovich - Салин Сергей Иванович	Fisherman	Irikla-32	Progress-2M - Прогресс-2М
	Tanalyk-Suunduksky reach			
31	Gudina Elena Vladimirovna - Гудина Елена Владимировна	Brigadier	Stays in one of brigade's boats	
32	ErmolovMikhailViktorovich - Ермолов Михаил Викторович	Fisherman	-	Rubber boat - Резиноваялодка
33	Kiselev Dmitry Valerievich - Киселев Дмитрий Валерьевич	Fisherman	-	Rubber boat - Резиноваялодка
34	ZorkovNikolayAleksandrovich - ЗорковНиколайАлександрович	Fisherman	-	Rubber boat - Резиноваялодка
35	TsvetkovIvanEvgenievich - ЦветковИванЕвгеньевич	Fisherman	Irikla-22	Kazanka-5M2 - Казанка-5М2
36	PivtsayevVitalyIvanovich - ПивцаевВиталийИванович	Fisherman	Irikla-19	Kazanka-5M2 - Казанка-5М2
37	Alymov Igor Iurievich - АлымовИгорьЮрьевич	Brigadier	Irikla-27	Progress-2M - Прогресс-2М
38	ChechinAlexeyPavlovich - Чечин Алексей Павлович	Fisherman	Irikla-41	Kazanka-5M3 - Казанка-5М3
39	YeskinAlexanderVladimirovich (rent) - ЕськинАлександрВладимирович(аренда)	Fisherman	Irikla-28	Kazanka-5M3 - Казанка-5М3
40	SvyazninAlexanderMikhailovich - СвяжнинАлександрМихайлович	Fisherman	Irikla-20	Progress-2M - Прогресс-2М
41	DmitrievYuriGeorgievich - ДмитриевЮрийГеоргиевич	Fisherman	Irikla-15	Progress-2M - Прогресс-2М
42	NikishinAnatolyYuryevich - НикишинАнатолийЮрьевич	Fisherman	-	Rubber boat - Резиноваялодка
43	AkkuratnovNikolayViktorovich - АккуратновНиколайВикторович	Fisherman	Irikla-29	Kazanka-5M2 - Казанка-5М2
44	Krauyalis Vladimir Zdislavovich (rent) - КраулисВладимирЗдиславович(аренда)	Fisherman	Irikla-30	Kazanka-5M2 - Казанка-5М2
45	Krauyalis Vladimir Zdislavovich (rent) - КраулисВладимирЗдиславович(аренда)	Fisherman	Irikla-31	Progress-2M - Прогресс-2М
46	Borodulin Vyacheslav Borisovich - БородулинВячеславБорисович	Brigadier	Stays in one of brigade's boats	
47	GorbunovAlexanderVasilyevich - ГорбуновАлександрВасильевич	Fisherman	Irikla-13	Progress-2M - Прогресс-2М

No.	Name	Position	Boat ID	
			Name	Type
48	PinyakovVasilyIvanovich - ПиняковВасилийИванович	Fisherman	Irikla-12	Progress-2M - Прогресс-2М
49	PudovkinEvgenyNikolaevich - ПудовкинЕвгенийНиколаевич	Fisherman	Irikla-26	Kazanka-5M3 - Казанка-5М3
50	Kurganov Peter Vasilyevich - КургановПетрВасильевич	Fisherman	-	Rubber boat - Резиноваялодка
51	RadionovAlexanderValerievich - РадионовАлександрВалерьевич	Fisherman	Irikla-36	Kazanka-5M3 - Казанка-5М3

4.1.2 Unit(s) of Certification

At the time of completing this reassessment PCDR, the proposed Units of Certification are the same as the Units of Assessment listed above. If there are any changes following the present reassessment the table will be amended.

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

UoC1	Description
Species	Common or European perch (*Perca fluviatilis*)
Stock	Irikla Reservoir on Ural River, Orenburg Province, Russian Federation
Fishing gear type(s) and, if relevant, vessel type(s)	Gillnets (30 – 36 mm mesh size)
Client group	Followfood GmbH, Allmandstrasse 8, 88045, FRIEDRICHSHAFEN, Baden-Württemberg – Tübingen, Germany.
Other eligible fishers	All licensed commercial fishermen nominated by client. To date, there are currently 47 eligible fishermen within the UoC, as shown in Table 2.
Geographical area	Irikla Reservoir on Ural River, Orenburg Province, Russian Federation (see Figure 1).
UoC 2	Description
Species	Pikeperch (*Sander lucioperca*)
Stock	Irikla Reservoir on Ural River, Orenburg Province, Russian Federation
Fishing gear type(s) and, if relevant, vessel type(s)	Gillnets (50-70mm mesh size)
Client group	Followfood GmbH, Allmandstrasse 8, 88045, FRIEDRICHSHAFEN, Baden-Württemberg – Tübingen, Germany.
Other eligible fishers	All licensed commercial fishermen nominated by client (see Table 2).
Geographical area	Irikla Reservoir on Ural River, Orenburg Province, Russian Federation (see Figure 1).

4.1.3 Scope of assessment in relation to enhanced or introduced fisheries

Common perch is a native species for the Irikla Reservoir and thus is eligible for MSC certification.

Pikeperch was intentionally introduced in the Irikla Reservoir starting in 1956, and now is integrated into the ecosystem.

Table 3 below describes the criteria that introduced species shall meet in order to be within MSC scope.

Table 4 MSC's FCP v2.2 provisional scope criteria for Introduced Species Based Fisheries. (Source: MSC FCP v2.2 section 7.4.2.13 Table 2 Provisional scope criteria for ISBF pp. 17-18)

A	Irreversibility of the introduction in the new location
I	The introduced species has a large population size (comparable to or larger than the population sizes of other native species occupying similar ecological niches in the new location).
Ii	The species has spread to a range beyond that of its initial introduction in the new location.
iii	There is evidence to demonstrate that the species cannot be eradicated from the location by known mechanisms without serious ecological, economic and/or social consequences.
B	**History of the introduction**
I	The species was introduced to the new location prior to 1993; this being the year that the Convention on Biological Diversity (CBD), which includes provisions on introduced species, was ratified.
Ii	If the introduction occurred after the CBD was ratified, such fisheries shall only potentially be in scope if the introduction was non-deliberate and occurred at least 20 years prior to the date the application is made for assessment against the MSC Fisheries Standard.
C	**No further introductions**
i	There is no continuing introduction of the introduced species being considered for certification to the location (i.e. the species is now entirely self-sustaining in its new location).

The introduction of several commercial fish species into the Irikla Reservoir began in the second half of the 1950s. During this period, wild carp, carp, pikeperch, sterlet, smelt, whitefish, Ladoga Lake cisco, peled, grass carp, silver carp and brown trout were introduced to increase productivity of the water body. A high commercial effect was seen only because of the introduction of coregonids to the Irikla Reservoir. Their total weight in catches over the years reached 90% of the total fish catch at the reservoir (Isaev & Karpova, 1980; Kozmin & Matyukhin, 1964). However, since the end of the 1990s the proportion of coregonids has decreased largely due to the termination of hatchery activities. Fifty years after its formation, the reservoir has turned into a bream-pikeperch reservoir as indicated by the species composition within the fishery (Kozmin & Matyukhin, 1971). The self-reproducing population of pikeperch in the Irikla Reservoir has existed for more than 60 years. During this time, pikeperch has become an important commercial species in fisheries and does not require artificial reproduction measures.

Thus, the team considers that pikeperch population is entirely self-sustaining in the Irikla Reservoir, meeting the requirements of MSC FCP v2.2 section 7.4.2.13 Table 2 (sections A, B and C).

4.2 Assessment results overview

4.2.1 Determination, formal conclusion and agreement

MRAG Americas has made the draft determination, based on the assessment team's evaluation and peer review comments, that this fishery should be recertified against the MSC Fishery Standard. Note this is only a draft determination and is subject to further stakeholder comment, and not a final certification decision.

4.2.2 Principle level scores

Table 5. Principle-level scores.

Principle	Perch	Pikeperch
Principle 1 - Target species	**85.0**	**80.8**
Principle 2 - Ecosystem	**87.0**	**88.0**
Principle 3 - Management	**86.0**	**86.0**

4.2.3 Summary of conditions

Table 6. Summary of conditions.

Condition number	Condition	Performance Indicator (PI)	Deadline	Exceptional circumstances?	Carried over from previous certificate?	Related to previous condition?
1	For pikeperch, by the Year 4 surveillance audit, the client is required to demonstrate that the SG80 requirement of SIf is met, specifically through demonstrating the following: SIf: "*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.*"	1.2.1 (alternative measure)	**Certificate anniversary date in 2024**	**No**	**No**	**No**
2	By the Year 4 surveillance audit, the client is required to demonstrate that the SG80 requirement of SIb is met, specifically through demonstrating the following: SIb: "*The HCRs are likely to be robust to the main uncertainties.*"	1.2.2 (Uncertainties)	**Certificate anniversary date in 2024**	**No**	**No**	**No**

4.2.4 Recommendations

There are no recommendations for this fishery.

5 Traceability and eligibility

5.1 Eligibility date

As this fishery is currently certified, and the reassessment, if successful, will ensure the certificate is renewed before the expiration of the current certificate, product from this fishery is expected to remain continuously eligible.

5.2 Traceability within the fishery

MRAG Americas has evaluated the key elements of traceability within the fishery as required by the by MSC Certification Requirements using the table below.

Table 7. Traceability within the 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 vessels, or during the same season; - How any risks are mitigated.	*Please state whether this occurs within the fishery (e.g. regularly, rarely, never). If so, please describe how this potential traceability risk is addressed or mitigated.* The highest proportion of pikeperch retained in the catch occurs when the Reservoir is covered in ice and small mesh gillnets are not used. This significantly reduces the risk of potential mixing of certified and non-certified catch. Due to the selectivity of gillnet mesh sizes used in the pikeperch fishery (50-70 mm), it would be obvious whether undersized pikeperch have been retained from small mesh size gillnets used to target perch (30-36 mm). Two companies operate collaboratively within the Irikla Reservoir and temporal changes in retained species composition and size structure of processed fish would be reported.
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.	The UoC includes the entire Irikla Reservoir water body. It is therefore not possible for licensed commercial fishing vessels to operate outside the UoC or in different geographical areas.
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.	At the point of first capture, fishermen use colour-coded fish boxes on board each vessel to separate, and transport certified (blue box) from non-certified fish (yellow box). The risk factor occurs if pikeperch caught from the ineligible 30-36 mm mesh size gillnet is included in the UoC. In these circumstances pikeperch from this gear would be placed in the yellow box rather than the blue 'certified' fish box. In practice, this risk is negligible, as pikeperch retained from small mesh size are mostly undersized (illegal) and therefore cannot be landed. Further to this, there is no market for small pikeperch fish, which would not be bought and processed by the client, and undersized pikeperch are readily identified at landing when transferred to processors. Fish are transported to shore and stored in the same colour coded box in cold storage units at various official points of landing. Fish are then collected by representatives from each fishing company and transported in their original fish boxes to their premises at Energetik, Irikla Reservoir for processing.
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.	There is no transhipment of pikeperch within the fishery before the first point of landing. Perch and pikeperch are landed on the day of catch to the specified points of landing, for onward transport by the client within the MSC Chain of Custody.
Are there any other risks of mixing or substitution between certified and non-certified fish? If Yes, please describe how any risks are mitigated.	The risk associated with the substitution of certified fish with non-certified fish has been evaluated and due to the size and scale of the fishery and the gear utilised there is a minimal risk of certified and non-certified fish mixing prior to landing.

5.3 Eligibility to enter further chains of custody

MRAG Americas has evaluated the eligibility of perch and pikeperch from this fishery to enter into further chains of custody as required by MSC Certification Requirements at §27.12.2, below.

a. Eligibility to enter further certified chains of custody
Tracking and traceability information for this fishery is considered sufficient for product to be eligible to enter further chains of custody.

b. Parties eligible to use the fishery certificates
The only party eligible to use the fishery certificate is the client (FOLLOWFOOD GMBH) and the vessels nominated (listed in Table 2 of this report).

c. Eligible points of landing
Pikeperch are only landed by the fleet at various official points of landing. Catches are declared and cross-referenced to sales notes. There is therefore a very low risk of MSC and non-MSC product becoming mixed at the point of landing.

d. Point of change of ownership from which Chain of Custody certification is required
The UoC includes all licensed commercial perch and pikeperch fishers in Irikla Reservoir. Where feasible, individual fishers deliver catches directly to the processor (also the client group), or alternatively, the processor collects fish on a routine basis from each fishing parcel, where fish are temporarily stored in cold stores. There are no sub-contractors or transport companies used. The point of change of ownership from which chain of custody certification is required starts at the first of point of sale between fishers and the processor (FOLLOWFOOD GMBH).

5.4 Eligibility of Inseparable or Practicably Inseparable (IPI) stock(s) to enter further chains of custody

There are no IPI stocks in this assessment.

6 History and context of the fishery

6.1.1 Irikla Reservoir

The fishery occurs solely on the Irikla Reservoir, Orenburg Province, Russian Federation. The Irikla Reservoir is the largest and deepest artificial water body in the Trans-Ural region, which extends 73 km in length and has a maximum depth of 36 m (Balabanova, 1971). The average depth across the entire waterbody is approximately 12.5 m. The topography of the Reservoir is typical of a flooded mountain area, which has a rocky bottom with numerous rocky ridges, peaks and deep hollows, which is favourable habitat for perch fish (Kozmin & Matyukhin, 1971).

Unlike the Volga dam, the Irikla Reservoir is not used for navigation purposes (Kozmin &Matyukhin, 1971). The reservoir is surrounded by the Ural Mountains and has poor soil quality, with small rocky outcrops and rock formations. The region is mainly vegetated by fescue feather-grass steppe, which was previously used for agriculture during the Soviet era. Today, the area immediately surrounding the reservoir may still be used for agricultural purposes including cattle farming, which can lead to localised leaching of organic matter around the periphery of the reservoir.

The climate is continental and has an annual rainfall of 303 mm. Average annual temperatures range from -44 °C (January - February) to +38 °C (July - August). Ice starts to cover the shallow edges of the reservoir during early November and completely covers the lake by early December (Balabanova, 1971). By March the following year the thickness of the ice can reach between 80 and 100 cm. Ice melt eventually starts at the beginning of April higher up in the Ural River starts before reaching the reservoir a few weeks later. During this spring flood (April - May) the reservoir is at its highest level.

The reservoir was built between 1949 and 1957 to regulate the spring water run-off from the surrounding catchment area of 36,950 km^2 and therefore provide a guaranteed water supply to the Eastern and Central parts of the Orenburg region (Kilyakova& Lysenko, 2007). Following completion, the reservoir began filling on April 17, 1958 and was completed on May 8, 1966when the designated high-water mark was reached 245 meters above sea level. Since 1974, the water of the reservoir has been used as a supply of cold water for the power station in Energetik (Isaev &Karpov, 1980).

Fishing has occurred in the Irikla Reservoir since its creation in 1955 and the perch in the reservoir are naturally present being resident in the Ural River from which the reservoir was formed. The initial “commercial” fisheries were carried out as State managed operations, but in the post-Soviet era fishing has been carried out by a number of commercial companies. Since 2000, the organisation and management of the resources has improved with the development of long-term access agreements to fishing companies, which has resulted in limited access to a smaller number of fishing companies. Both the current fishing companies Fish-ka and Volna are part of the fishery under certification.

Ichthyofauna (fish community) of the Irikla Reservoir was being formed due to native species, inhabiting the river Ural and subordinate reservoirs of the flooding zones, and also introduction of some valuable commercial species, that was made since the first years of the existence of the reservoir. At the first stage there was replacement of rheophilic species widely distributed in rivers, at fluviolacustrine complex, used for formation of commercial resources.

Since 1956, a number of commercial fish species has been introduced to the Reservoir to increase production, including wild carp, carp, pikeperch, sterlet, smelt, whitefish, Ladoga Lake cisco, peled, grass carp, silver carp and brown trout. Some species didn’t survive and are not met nowadays (sterlet, smelt, peled and trout). Invasive herbivorous fish is few in number. High commercial effect was seen only because of introduction of coregonids to the Irikla Reservoir. Their total weight in catches in terms of different years reached 90% from the total fish catch at the reservoir (Isaev & Karpova, 1980; Kozmin & Matyukhin, 1964). In terms of 50 years after its formation, the reservoir according to the fish composition in fishery has turned to be bream-pikeperch reservoir (Kozmin & Matyukhin, 1971). In the next years as a result of annual introduction of larvae and bred juvenile of the coregonids from the fish farm, and further and their natural reproduction, coregonids began to take the leading place in trade. During the 1980s and early 90s the proportion of coregonids in total catches reached 80%, with a maximum catchof893 t occurring in 1988 (Silivrov,1993). Fishing was carried out by means of gillnets whilst fishing with beach seine (under ice) was prohibited ue to catches of juvenile bream. This led to a decrease in the catch of small species of fish (perch, roach and other cyprinids fishes). Since the end of 1990s the proportion of coregonids has shown a decrease and led to the general decrease in level of fishery in the reservoir, and since 2000 catches have been dominated by perch, roach and a silver crucian carp.

The observed decline in abundance of coregonids was caused by several factors: (i) increase of fishing effort; (ii) unfavourable hydrological regime of the reservoir with a fast decreasing of the water level in winter to prepare room for spring flood. It caused high mortality of coregonid eggs laid in autumn in the shallow waters (depth 1.5-3 m); (iii) strong spring flood which carried out larvae to the exit of the reservoir; (iv) termination of hatchery activities; (v) increase of water temperature due to global warming above thermal optimum of coregonids; (vi) usual decrease of abundance of introduced species after initial increase typical for invasive species. In addition to coregonids, abundance of pikeperch also decreased due to intensive commercial and sport fishing and mortality of juveniles by water intake structures of Irikla thermal power station. The decline of these species subsequently reduced the competitive pressure on perch allowing them to become well established within the reservoir.

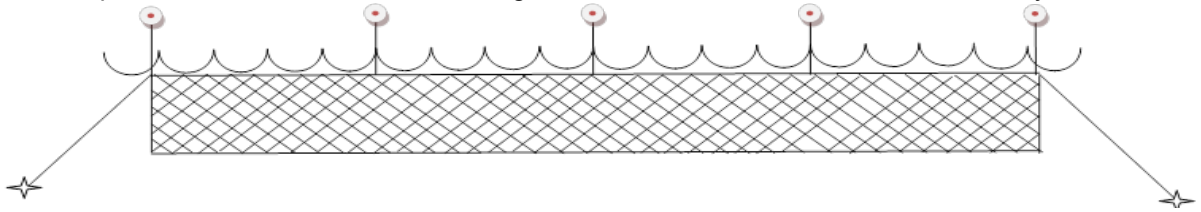
6.1.2 Vessels and fishing gear

There are currently 47 eligible fishermen operating small boats in the Irikla Reservoir within the Unit of Certification, with additional 3 transport boats. Fishing is conducted in a very simple manner with individual fishermen operating from 43 small single engine boats (see Figure 2). The only fishing gear allowed in the fishery, gillnets of 30 – 36 mm and 50 – 70 mm mesh size from knot to knot, are deployed and retrieved from the fishing boats. The large mesh size gillnets are approximately 12-14 m in height and therefore set closer to the bottom than the smaller mesh size gear. Fish-ka collects fish from registered fishermen working in local fishing sites known as “parcels” by small boat, whereas fish caught in parcels further afield are now collected by each company by road and transported to Fish-ka facilities for processing via a new ferry crossing.

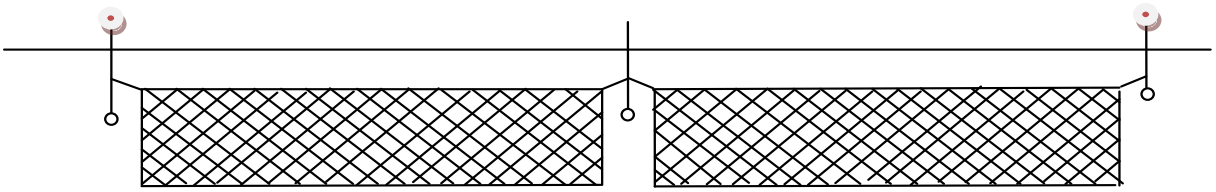
Figure 2. Picture of typical boats, P11-650Ж and P10270Ж used by fishermen in the unit of certification, based near Energetik.

The licensed (legal) commercial set gillnets have a mesh size ranging between 30 – 36 mm and 50-70 mm. Local fishermen are responsible for obtaining and maintaining their own gear, which must comply with all regulations and is checked by Fisheries Department of Fish-ka.

The total length of each gillnet is not more than 250 m, and the total distance between set nets is 300 m. Gear is set using a surface buoy that includes details of the company name, reach name (geographic location), name and telephone number of licensed fishermen, including their identification number and fishing permit number. Set nets are used as day-and-night (taking out of catch 2 times per day), for a limited period of time (from 3 to 8 hours). During the summer period set nets are fastened to the ground with anchors and are differentiated by floats:



During the winter period when ice covers the reservoir, the gear is set below the ice sheet and checked at least once every 96 hours:



7 Scoring

7.1 Summary of Performance Indicator level scores

Table 8. Preliminary scoring ranges for the Irikla Reservior perch and pikeperch gillnet fishery.

Performance Indicator (PI)		Weight	Perch	Pikeperch
1.1.1	Stock status	1.000	90	80
1.2.1	Harvest strategy	0.250	85	75
1.2.2	Harvest control rules & tools	0.250	75	80
1.2.3	Information & monitoring	0.250	90	90
1.2.4	Assessment of stock status	0.250	80	80
2.1.1	Outcome	0.333	80	80
2.1.2	Management strategy	0.333	85	85
2.1.3	Information/Monitoring	0.333	85	85
2.2.1	Outcome	0.333	90	100
2.2.2	Management strategy	0.333	95	100
2.2.3	Information/Monitoring	0.333	100	100
2.3.1	Outcome	0.333	90	90
2.3.2	Management strategy	0.333	85	85
2.3.3	Information strategy	0.333	80	80
2.4.1	Outcome	0.333	100	100
2.4.2	Management strategy	0.333	95	95
2.4.3	Information	0.333	80	80
2.5.1	Outcome	0.333	80	80
2.5.2	Management	0.333	80	80
2.5.3	Information	0.333	80	80
3.1.1	Legal &/or customary framework	0.333	100	100
3.1.2	Consultation, roles & responsibilities	0.333	85	85
3.1.3	Long term objectives	0.333	80	80
3.2.1	Fishery specific objectives	0.250	80	80
3.2.2	Decision making processes	0.250	85	85
3.2.3	Compliance & enforcement	0.250	80	80
3.2.4	Monitoring & management performance evaluation	0.250	90	90
	Overall weighted Principle-level scores		**Perch**	**Pikeperch**
	Principle 1 - Target species		**85.0**	**80.8**
	Principle 2 - Ecosystem		**87.0**	**88.0**
	Principle 3 - Management		**86.0**	**86.0**

7.2 Principle 1

7.2.1 Principle 1 background

Life historical characteristics

Common or European perch

The European perch (*Perca fluviatilis*) has wide distribution in Eurasian rivers, lakes, coastal areas of the seas. This species does not appear at Iberian Peninsula, on the north of England, in Ireland, and at the Atlantic coast of Scandinavia, in the mountain area of the Caucasian region, in the Middle Asia, on the south of Mongolia, in the watershed of Amur, at the Far East, Kamchatka and Chukotka. Due to introduction of perch in the water bodies of Australia, New Zealand, South Africa and Azores islands, the habitat of the European perch has enlarged (Berg, 1949; Popova *et al*., 1993).

In Russia, the northern border of distribution of perch is almost at the coast of the Arctic Ocean, from the Pasvic River to the Kolyma River, in the south – and to the Black Sea, Northern Caucasia and the upper streams of Siberian rivers (see below).

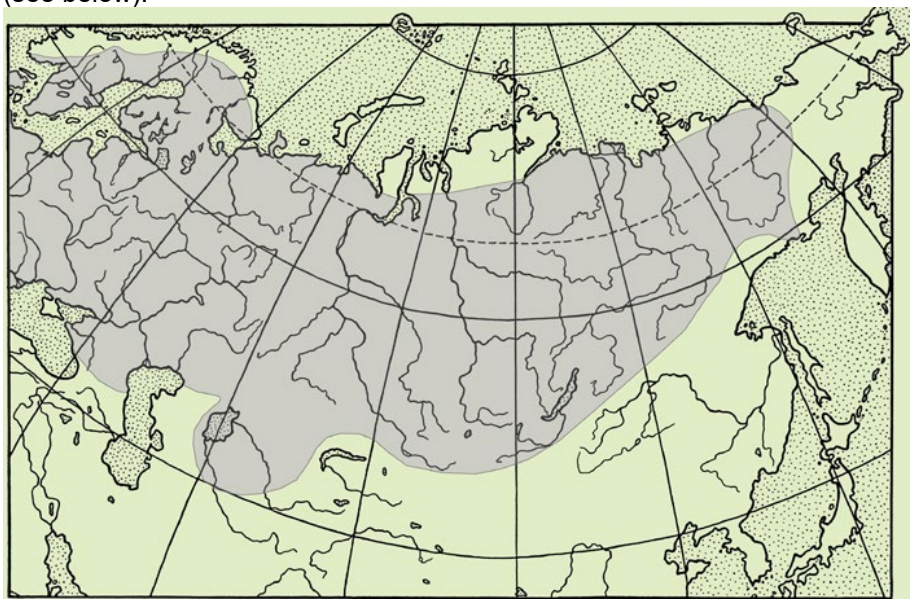


Figure 3. The distribution of European perch within study area.
Source: Reshetnikov (2003)

Coastal perch has slow growth and tend to prey on invertebrates and deep-water forms have higher growth rate, predating mostly on juvenile fish (mainly cyprinids and on smaller perch). Growth rates and maturation times of perch can also therefore vary greatly depending on location and diet. In small and low productivity reservoirs perch often only reach 5 cm body length during the first year, and by the age of 6 it may reach just 20 cm body length. In higher productivity systems such as large lakes and reservoirs and in estuaries of large rivers, 1-year old perch may reach 12 cm and a 5-year-old perch may reach 35 cm. Perch can get mature at different ages having different body length, most commonly at the age of 2-3. Spawn of perch can be early in spring, after melting of ice: in February – March in the south, in May – June in the north when the water temperature is 7-8 °C at depths up to 8 m.

Perch are found throughout the entire reservoir and are a typical lake and river fish, accustomed to living in the coastal vegetation zone of the water body, where it is a generalist feeder, eating zooplankton, benthic organisms and juvenile of different species of fish, which change in size according to the growth and size of the perch. The food sources taken at the different life stages can vary depending on the species present between different waterbodies. In large lakes and reservoirs with diverse prey types and an abundance of appropriate biotopes perch tend to form two or three distinct morphologic types that change between habitats, feeding type and have differing rates of growth. They do not undertake reproductive migrations and therefore specific areas do not need protection for spawning.

Pikeperch

The pikeperch, *Sander lucioperca* is widely distributed across Eurasia, occurring in the drainages of the Caspian, Baltic, Black, Aral, North and Aegean Sea basins. Its northern distribution limit is Finland (Figure 4). It has been introduced to Great Britain, southern Europe, and continental Europe west of the Elbe, Ebro, Tagus and Jucar drainages, as well as to Anatolia, North Africa, Siberia, Kyrgyzstan, and Kazakhstan. Several countries report adverse ecological impact after pikeperch introduction (Wheeler, 1978; Reshetnikov, 2003). Until recently, pikeperch lived in Russia only in the European part of the country, from Karelia to Transcaucasia. At present, pikeperch is acclimatized in the reservoirs of Western Siberia (Novosibirsk and Irtysh reservoirs) from where it descended to the lower reaches of the Ob River.

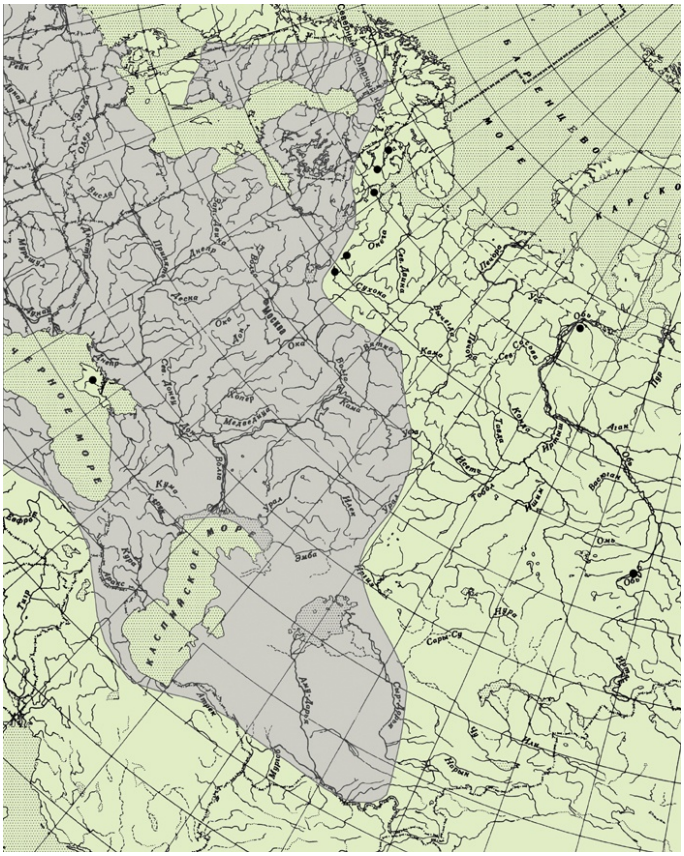


Figure 4. The distribution of pikeperch within study area.

Adult pikeperch inhabit large, turbid rivers and eutrophic lakes, brackish coastal lakes and estuaries.
Pikeperch feed mainly on gregarious, pelagic fishes. They attain first sexual maturity at 3-10 years of age, but usually at age 4. Pikeperch undertake short spawning migrations. Individuals foraging in brackish water move upriver (for up to 250 km) for spawning. Homing is well developed, and even nearby populations may be relatively isolated.
Pikeperch spawn in pairs at dawn or night. The female leaves the nest after all eggs are released. The male defends the nest and fans the eggs with his pectorals. Spawning occurs in April-May, occasionally from late February until July, depending on latitude and altitude when temperatures reach 10-18° C on the spawning grounds.

The success of pikeperch in establishing themselves is owed to a number of factors, one of which is that they are particularly well adapted to life in slow-flowing, sparsely vegetated, rather murky waters. Pikeperch thrive in water with rather low visibility, unlike pike, which often dominate the predatory fish niche in clear water.

The pikeperch is a common and popular game fish in Europe. It is often eaten, and it may reach 20 kg of weight, although typical catches are considerably smaller. The pikeperch is considered one of the most valuable freshwater food fishes native to Europe. It is esteemed for its light, firm but tender meat with few bones and a delicate flavour. Although it is not generally bred for food, its adaptability makes pikeperch fisheries quite sustainable. Pikeperch reach an average length of 40 – 80 cm with a maximum length of 120 cm.

Perch and pikeperch biology in Irikla Reservoir

Common or European perch

Perch spawning in the Irikla Reservoir occurs every year and supports a high abundance of this species. Almost all male and female mature at the age of three. Spawning can occur at shallow water areas of the Irikla Reservoir, but the most favourable conditions for reproduction are in warm shallow waters in Urtazym, Orlovskiy and Suundukskiy bays (cf. Figure 23). Fecundity varies from 12 to 300 thousand eggs. Eggs are laid on the previous year's vegetation in the form of long mesh of eggs. The eggs are large watered, with a diameter of 2.0-2.5 mm. This approach to laying eggs allows for a high survival rate of both eggs and larvae. Spawning occurs once per year with the development phase for the eggs taking about two weeks. At hatching, larvae are 6 mm long and will have almost reabsorbed the entire yolk, so that they start moving actively immediately and predating on planktonic crustaceans.

The juvenile perch eat zooplankton and benthos during the first summer within water depths up to 1.5 m, but in some lakes and reservoirs, when they reach 4 cm in length, they may also start to take larger prey items such as other juvenile fish (Popova 1971, 1979; Reshetnikov, 2003). The juvenile fish then venture into open water feeding on small planktonic animals. As they grow larger perch begin to shoal together close to the edges of rivers and lakes in relatively shallow water. Irikla Reservoir in this respect with its relatively shallow depth and large coastline and areas of shallows would be ideal perch territory. The adult perch tends to live as part of a shoal, often mixing with other species of fish, looking for food and spawning places. In large lakes and reservoirs perch can enter tributaries for spawning, and after that returning to the lake or reservoir for feeding. Males mature when they reach the length of 7-8 cm, females when they are 10cm in length.

Perch can reach a maximum age of 22years (Beverton and Holt, 1959), at which time they would be approximately 600 mm in length (Kottelat & Freyhof, 2007). Normally in commercial catch, fish would be found up to 30 cm long, with an average of 15-20 cm and 200-300 g (corresponding at this size to an age of about 4-6 years). Growth and weight rates of Irikla Reservoir perch are shown in Figure 5 below. In 2007, the perch caught in the fishery were between 57 and 300 mm long, belonging to age groups 1-10. In 2020, there was a slowdown in the growth rate of perch in older ages compared to 2007.

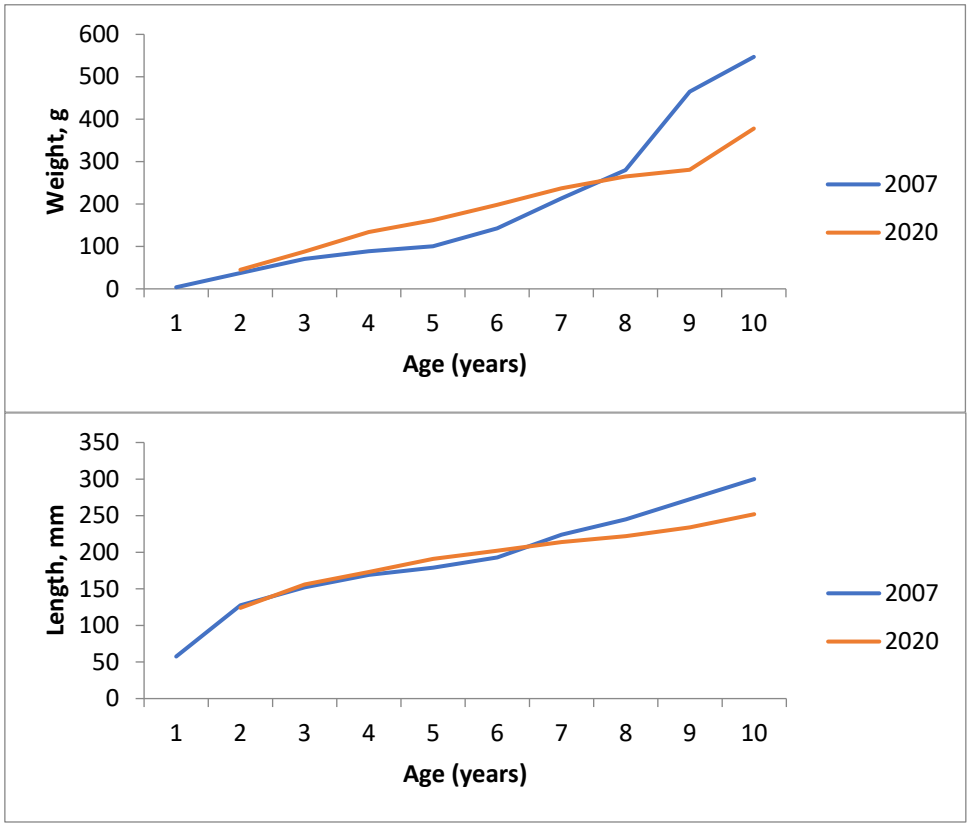


Figure 5. Growth of perch by (a) length mm and (b) weight g in the Irikla Reservoir in 2007 and 2020. Data Source: Voronin (2008), Belyanin (2021).

Linløkken (2008) summarises that many lake-based populations of perch can be predominately smaller "stunted" individuals due to the increased inter-specific and intra-specific (often with roach) competition, This does not seem to be the case for the perch populations of the Irikla Reservoir.

Perch is one of the most common species of fish in the rivers, lakes and reservoirs of Central Russia. Due to the high abundance of perch, it is one of the main or secondary items of fisheries. As the large predators of perch are also often targeted through fishing, the perch populations are able to quickly increase their abundance and recover. Based on the level of primary production and biomass of phytoplankton in the Irikla Reservoir it has been characterised as mesotrophic with a medium level of zooplankton and a high level of benthos (Yermolin, 2014).

The availability of suitable prey in the Irikla Reservoir has positive effects on the survival and abundance of the commercial stock of perch. Perch predation easily shifts between fish and invertebrates (mainly organisms of soft benthos) whose abundance in the Irikla Reservoir is extremely high. This high abundance favourably affects the growth of perch and prey shifting allows the intensity of feeding of perch to remain at high level (Yermolin, 1984).

Typically perch in Irikla Reservoir shift to predating when approaching 15 cm in length. Perch actively predate for young fish, in particular cannibalistic predation on smaller juvenile perch.

Among other fish species perch is being predated by pikeperch, pike, burbot, wels, and predatory birds as seagull, tern and fish-hawk. In the Irikla Reservoir perch compete for food mostly with coregonids (plankton feeding vendace and benthos feeding whitefish), which previously were very abundant in the reservoir and were supported mainly by artificial farming.

The perch is the most abundant commercial fish of the Irikla Reservoir. In most water bodies within the same river basin, catches of perch will consist of fish of 3 to 10 years old (Voronin, 2007, 2008; Yermolin, 2014). In 2020, perch from 3-7 years old dominated in the population in the Irikla Reservoir (84% in total), of which the same age categories occurred as 97% in 2006, 79% in 2007 and 86% in 2013 (see Figure 6). The average age of spawning population of perch is 5.5 years old. In the last year or two, due to an increase in the fishing load, some rejuvenation of the perch population has been observed (interview with I. Belyanin).

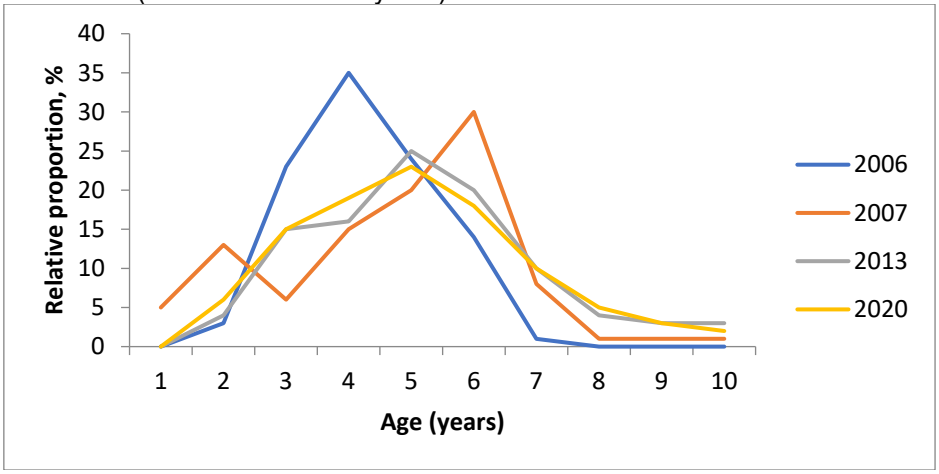


Figure 6. Proportion of different age groups of perch in commercial catches of Irikla Reservoir in different years. Data Sources: Voronin (2007); Voronin (2008); Yermolin (2014); Belyanin (2021).

Irikla Reservoir is relatively small water body without environmental heterogeneous variety of perch at the level of subpopulations therefore the perch stock is managed as a single population (Yermolin & Belyanin, 2015).

Pikeperch

In Irikla Reservoir, pikeperch avoid areas of aquatic vegetation, and live in open water. Depending on the temperature and transparency of the water, dissolved oxygen and spatial-temporal distribution of food, pikeperch can be located at different depths of the lake.

The majority of pikeperch in Irikla Reservoir become sexually mature at the age of four. The minimum sizes of mature males and females are 36 – 44 cm, mean 39 cm (Matyukhin, 1968). Pikeperch spawning in age groups older than five years occurs annually. In the Irikla Reservoir spawning usually takes place in May - early June, when the water temperature reaches 12 – 14°C. But in some parts of the reservoir spawning can occur at a sufficiently low temperature. So, in Su-Unduk Bay, the beginning of spawning was observed at 7.4°C, in Tanalyk Bay - at 11.3°C (Matyukhin, 1968). The optimum water temperature at the culmination of spawning is 13 – 15°C.

Pikeperch is not specialized in terms of spawning substrate (Kryzhanovskiy, 1949; Nebolsina, 1980; Shashulovsky, 2006). In the Irikla Reservoir the spawning of pikeperch occurs on grounds with low-solid pebble at a depth of0.5 to 1.5 m, but sometimes pikeperch spawning is observed on the plant substrate. The spawning grounds are also located in the estuaries of the flowing rivers and the upper reaches of the Irikla Reservoir. The largest spawning grounds of pikeperch are located on the Urtazymsky and Tanalyk - Suunduksky bays of the Irikla Reservoir (Figure 23). It has been established that 16.5% of the total area of the bottom of the reservoir is suitable for the reproduction of pikeperch; therefore, it is considered that pikeperch in Irikla Reservoir is provided with spawning substrate in sufficient volume (Matyukhin, 1968).

Most often pikeperch build nests (usually males). Females of pikeperch immediately migrate from the spawning grounds after laying the eggs. Males continue to remain in the spawning grounds, waiting for new females and to protect the nests. The plasticity of pikeperch with respect to the substrate and protective behaviour on spawning grounds contributes to successful spawning, and consequently, to a stability in its population reproduction.

Natural reproduction is dependent on the annual state of the water level. During the dry year of 2010, the spawning area was limited, and the efficiency of spawning was not high. In 2011-2012, due to higher water level and synchronized melting of the snow, the efficiency of spawning was satisfactory. In 2017-2020, the water level was much lower, thus the reproduction of pikeperch was considered average efficiency (Belyanin, 2021).

The average fecundity of four to six-year-old females are 105.8 – 276.2 thousand eggs, the average fecundity of eight-year-old female is 1075.5 thousand (Matyukhin, 1968).

Size-age characteristics of pikeperch in Irikla Reservoir is presented in the following figures. The growth of pikeperch is relatively high during the last several years and no sudden changes in size and weight were observed. Indicators of linear weight growth in 2020 are quite good and slightly higher than the inter-annual average rate. The growth of pikeperch of the same ages does not differ from different parts of the reservoir, which indicates the uniformity of pikeperch in the Irikla Reservoir (Matyukhin, 1968).

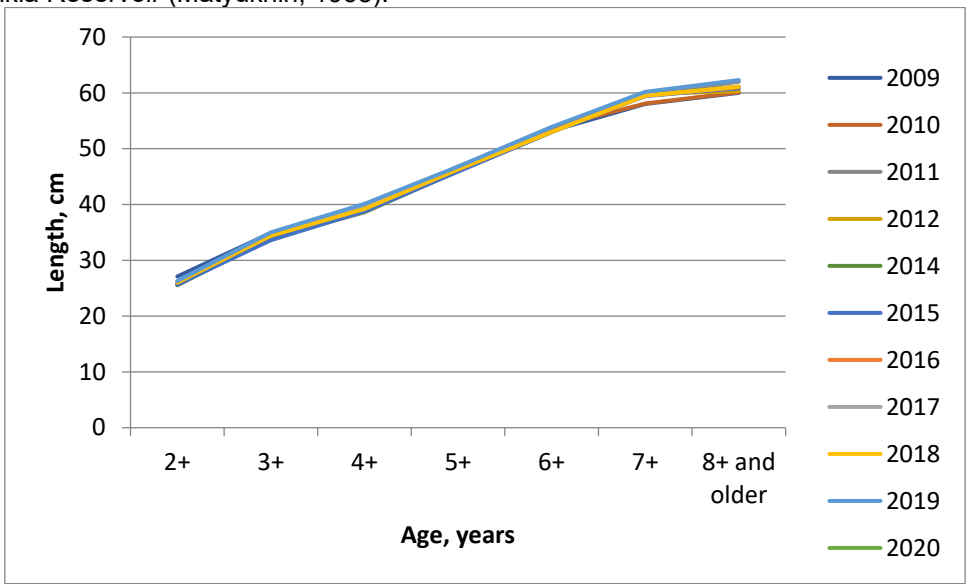


Figure 7. Size characteristics of pikeperch in the Irikla Reservoir for 2009-2020 (2-7 yrs and 8+ yrs).

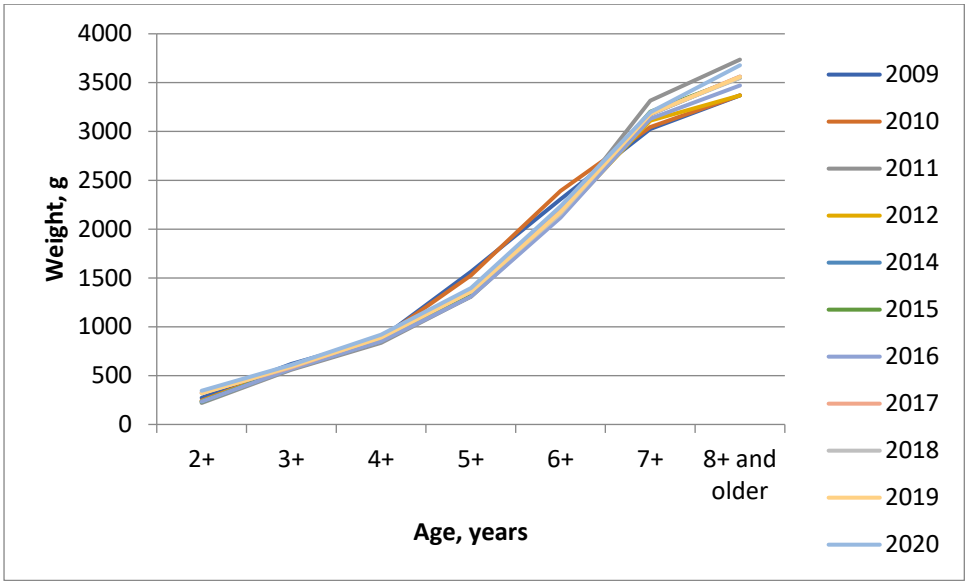


Figure 8. Weight characteristics of pikeperch in the Irikla Reservoir for 2009-2020.

The population of the Irikla Reservoir consists of 8-10 age groups. In population of pikeperch younger age classes has dominated in the control catches during all years of monitoring (Figure 9). During 2010-2014, there was a rejuvenation of the pikeperch population, when more than 85% of the fish of the stock was formed by pikeperch of age 2+-4+. Good recruitment in those years provided some shift in the age range towards the aging of the population in subsequent years, 2015-2017. In 2018-2020, the ratio of ages in the pikeperch population was close to the average figures observed in 2009-2014.

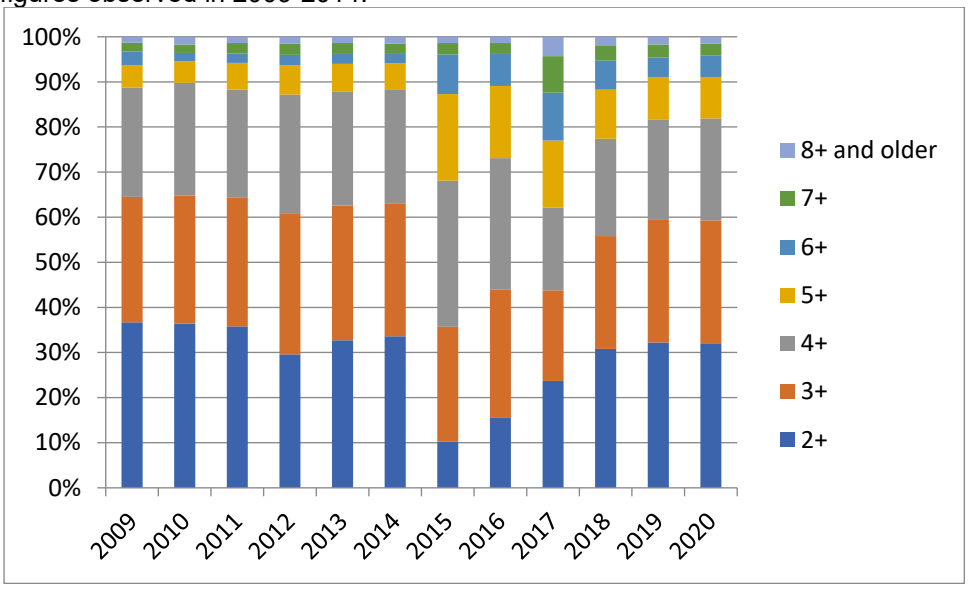


Figure 9. Age composition of pikeperch from the control catches by nets with mesh size 25-120 mm, %

Pikeperch juveniles (age 0+) switch to predatory food upon reaching a body length of 29 mm. Young fish were found in the stomach of 60% of juvenile pikeperch yearlings of 29–81 mm in length. Daphnia (in stomachs of 40% of fish) were the most frequently encountered as other nutritional components (Shilkova, 1965). In the second year of life, pikeperch completely switches to predatory food, eating perch, ruff, roach, ripus and their juveniles, as well as juvenile pikeperch. The availability of suitable prey in the Irikla Reservoir has positive effects on the survival and abundance of the commercial stock of pikeperch.

7.2.2 Catch profiles

Landings

The commercial perch and pikeperch gillnet fishery accounts for the majority of landings from the Irikla Reservoir. The importance of perch and pikeperch within the commercial fishery has changed considerably throughout the existence

of Irikla Reservoir. During the first two decades, there was no separate accounting of perch catch, and they were included in a single category named “small tiddler”, which also included roach, silver crucian carp and white bream. Catches of perch in the Reservoir have shown a general increase from less than 10 tonnes in the late 1980s to around 250 tonnes in 2011 (see Figure 10).

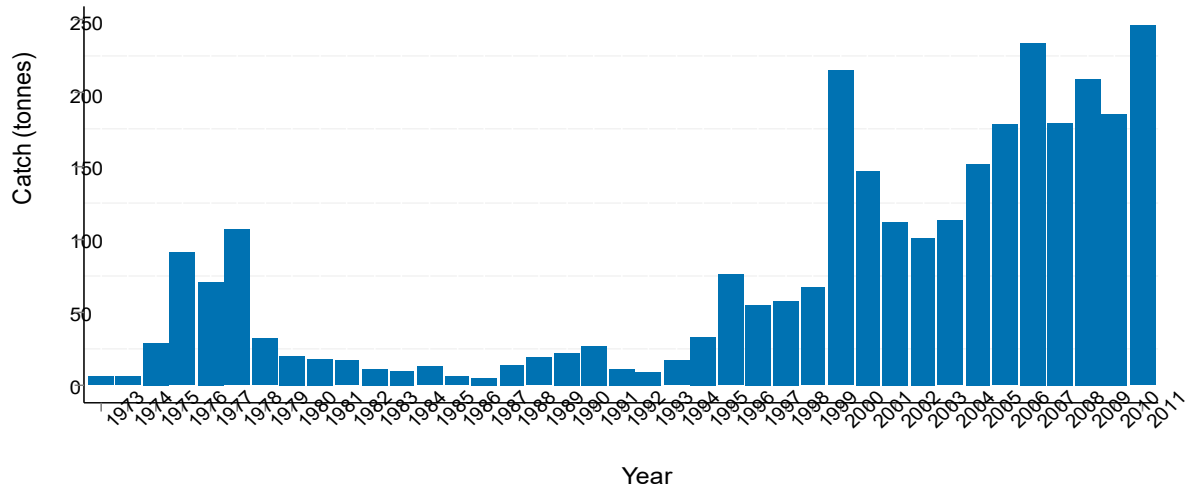


Figure 10. Total annual landings of perch in Irikla Reservoir, 1973-2011. Data source: Saratov Research Institute

Two periods with high pikeperch catches are noted. The first occurred in 1975, with catch of 45 tonnes, followed by a decrease in stock and catch. The second period of stock increase occurred in 1989-1991, with a maximum catch in 1990 of 73 tonnes (Figure 11). Since 1991, there has been a steady decline in catches, with relative stabilization in 2005-2008 and some subsequent increase. The dynamics of pikeperch catches in the Irikla Reservoir resembles the long-term dynamics of pikeperch stocks in the Volgograd Reservoir, when, apart from the causes of waterbody-intrinsic and organizational nature, the connection with natural repeated fluctuations of stocks was found. However, according to scientists from the Saratov Institute, the increase and subsequent sharp decrease in catches at the turn of 1980-1990 is mainly due to overfishing during the collapse of the USSR, which led to a worsening of the economic situation in the country.

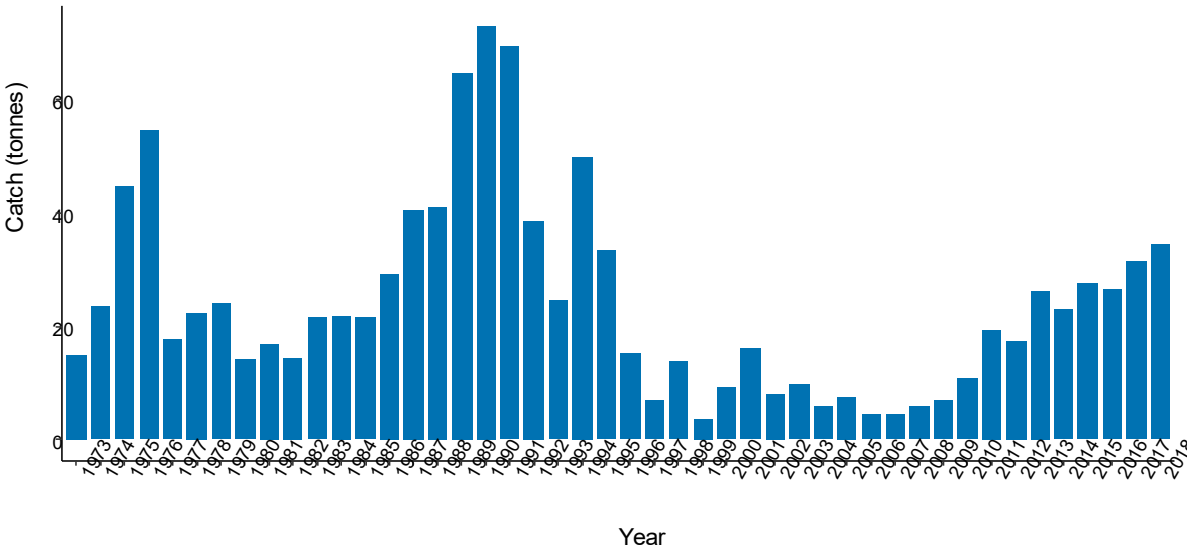


Figure 11. Total annual landings of pikeperch in Irikla Reservoir, 1973-2018.

Data source: Saratov Research Institute

Stock status

Perch

The stock status of the perch population within the Irikla Reservoir is determined on an annual basis by the Saratov Research Institute. A time series of the commercially available stock biomass (tonnes) shows the biomass has continued to increase over the past two decades from approximately 80 tonnes in 1994 to over 900 tonnes in 2011 (Figure 12).

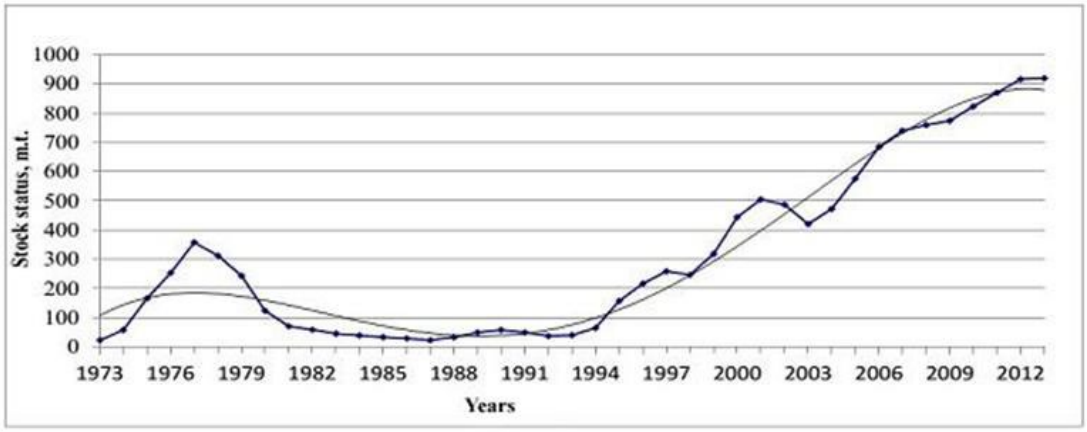


Figure 12. Trends in stock status of perch (tonnes) in Irikla Reservoir between 1973 and 2013.

Data Source: Yemolin (2014).

In recent years, the stock of perch of the Irikla reservoir reached a plateau, over the past 10 years its fluctuations did not exceed the limits of 870-960 tons (Figure 13).

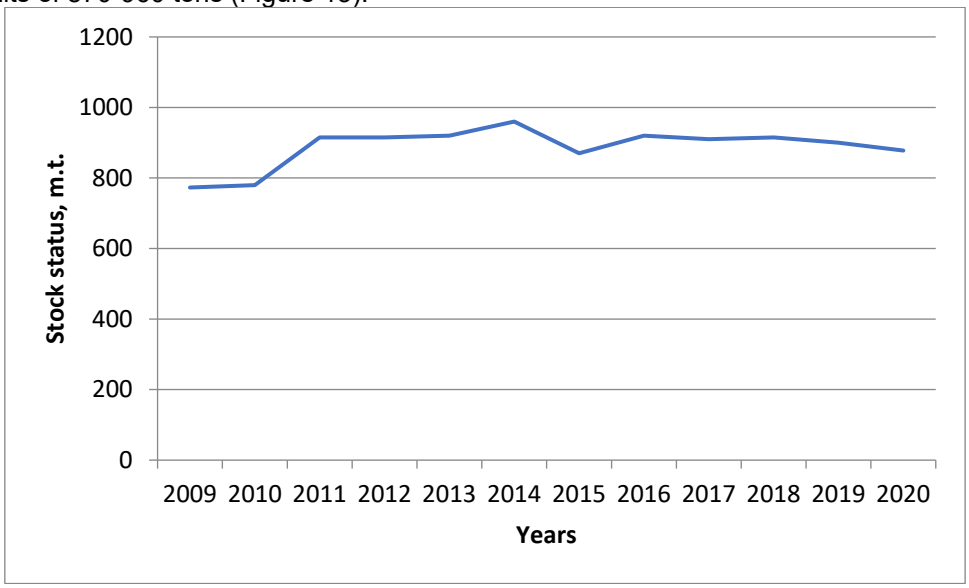


Figure 13. Trends in stock status of perch (tonnes) in Irikla Reservoir between 2009 and 2020.

Data Source: Belyanin (2021).

This observed increase in perch biomass during the last decades has been attributed to a decline in competition from other commercial species within the waterbody supported mainly by fish farming of vendace and whitefish, and the low level of fishing mortality achieved through the suite of precautionary management measures implemented as part of the harvest strategy.

Pikeperch

Prior to 2008, the stock assessment of pikeperch had been carried out by the State Research – Industrial Centre of Fisheries (located in Yekaterinburg). The pikeperch stock calculation methods applied at that time were not rigorous, so the quality of stock assessment was not high. The dynamics of the stock of pikeperch before 2010 can be judged

only by indirect data, in particular, by catches that were characterized by significant fluctuations over the entire observation period. During the period of sharp deterioration of the economic situation in the country in 1980-1990, pikeperch overfishing occurred, which affected the depletion of its stock and the subsequent decrease in catches. The relative stabilization of the stock and catches of pikeperch occurred only in 2005–2008, after which a gradual increase in the stock began. According to Saratov Research Institute, during the period 2010-2020, pikeperch stock biomass in the Irikla Reservoir has grown more than 8 times. The increasing trend in the total and commercial stock of pikeperch in the Irikla reservoir has persisted over the last five years (2016-2020) (Figure 14).

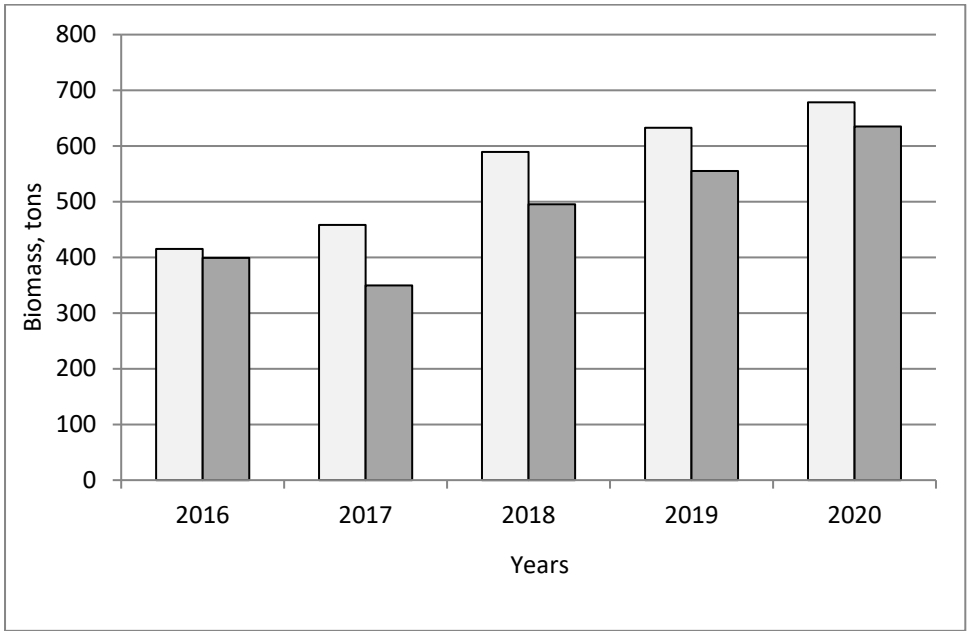


Figure 14. The dynamics of total stock biomass (white columns) and commercial stock biomass (dark columns) of pikeperch in the Irikla Reservoir for 2016-2020

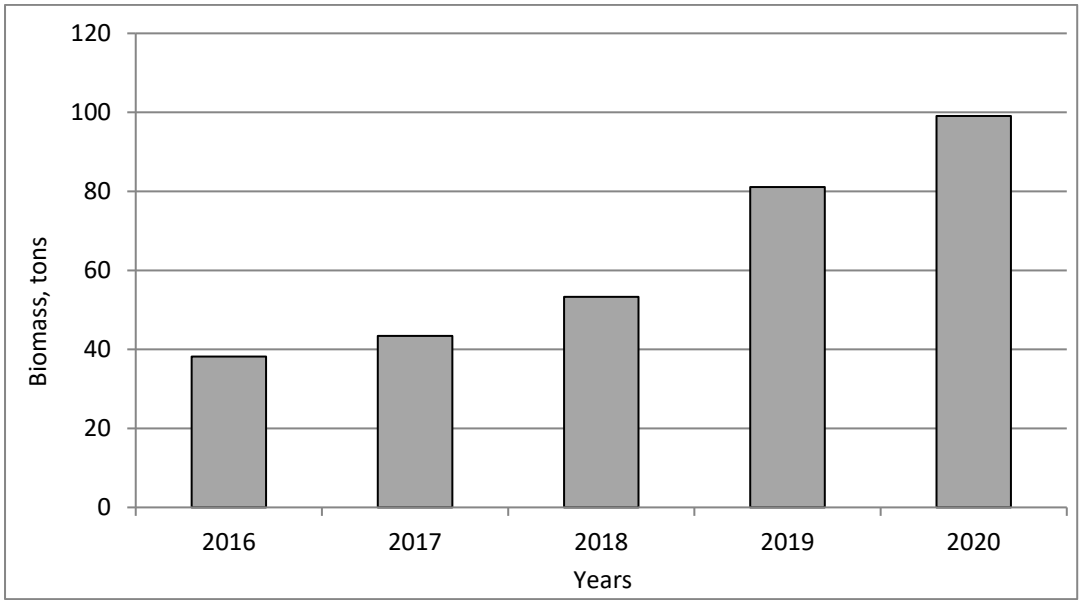


Figure 15. The dynamics of total catches (commercial plus recreational) of pikeperch in the Irikla Reservoir for 2016-2020

It is obvious that the positive dynamics in the state of the pikeperch stock in recent years is due, among other things, to the low level of fishing mortality achieved through the suite of precautionary management measures implemented as part of the harvest strategy.As a result, over the last eight years (2013-2020) there has been a positive trend in catches of the pikeperch in the Irikla Reservoir; at the same time, the percentage of commercial stock biomass harvested did not exceed 16% (Figure 16).

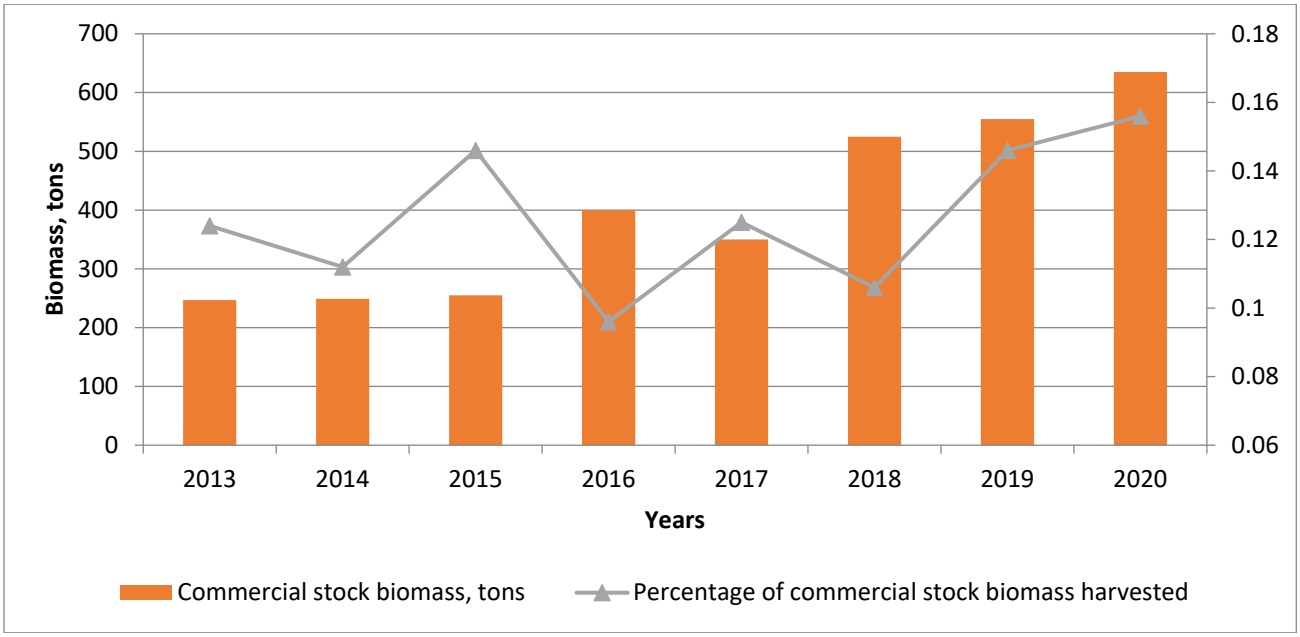


Figure 16. Percentage of commercial stock biomass harvested in the Irikla Reservoir in 2013-2020

Determination of the biological status of commercial stocks within the Irikla Reservoir does not explicitly use biological reference points, such as those used in western fisheries management (e.g. B_{LIM} or B_{MSY}, see section below). However, it is argued that the stock biomass must be above the point where recruitment would be impaired, else the stocks would not show the year-on-year increase in biomass over the past 10 (pikeperch) and 20 (perch) years.

In addition, due to annual fluctuations in water level and other environmental conditions (e.g., ice cover), the ecosystem and fish populations within the reservoir do not reach equilibrium status. The maximum sustainable yield and equivalent target reference point (TRP) for each stock are therefore subject to change. Given that the total allowable catch (TAC) for pikeperch and the recommended allowable catch (RAC) for perch are calculated each year based on maintaining the level of commercially available stock biomass at or above a proxy value consistent with B_{MSY} (which is re-calculated each year) it is argued that the available stock biomass must be at or above a level equivalent to the TRP. Further to this, as the precautionary TAC has not always been fully utilised by commercial fishery (usually not more than 80% of TAC), this would enable the stocks to continue to increase with the observed trend in biomass.

Reference points

The fishery does not have explicit reference points, such as BLIM or BMSY. Instead, a proxy value for the target reference point (TRP), which is also equivalent to the limit reference point (LRP).

Stock assessments for perch and pikeperch are carried out by the Saratov Research Institute to estimate the total commercially available biomass (Ba) on an annual basis (Voronin 2007, 2008; Yermolin, 2014). Calculation of the commercially available biomass (Ba) is carried out according to the results of scientific fishing of all age classes of the perch and pikeperch populations using minnow seine and specialized ichthyological gill nets with different mesh sizes. The estimates of Ba is used to calculate 0.3Ba for pikeperch and 0.5Ba for perch, which are equivalent to the target reference points (TRP) as are used with the same intent as BMSY. The TRP based on a portion of Ba rather than a portion of virgin biomass (i.e. B0) is used to establish annual fishing opportunities for perch and pikeperch and this precautionary approach has been demonstrated to effectively keep the stocks well above the point at which recruitment would be impaired. This approach is considered appropriate for the scale and intensity of the fishery.

In addition, there is no explicit limit reference point (LRP) in the Irikla perch and pikeperch fishery, although this is considered to be implicit within the management measures and harvest control rules. For example, the legal mesh size of gillnets used within the perch fishery prevent capture of undersized fish and minimises the risk of recruitment overfishing. According to fishing regulations for the Irikla Reservoir, the minimum size of a pikeperch to be caught by commercial fishery is 40 cm, and this measure is also introduced to protect the immature part of the population from overfishing. Further to this, a limited number of licenses (47fishermen) are issued each year to strictly control fishing effort, and permanent spatial and seasonal closures protect a proportion of the stocks.

Harvest Strategy

The Irikla perch and pikeperch fishery is managed through a suite of precautionary management measures and tools as part of a comprehensive harvest strategy appropriate to the scale and intensity of the fishery.

The harvest strategy is responsive to the state of the stocks and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points. The harvest strategy is based on managing the fishery based on a TAC (RAC) quota, which is defined to meet the objectives in the target reference point (single reference point). It is responsive to the status of the stock as it is based on the updated annual estimates of the stock size calculated in the assessment before the season commences.

In Russia, pikeperch is traditionally considered a valuable commercial fish and perch is not ('low valuable' species). In both cases, management quotas for these species are set based on the results of an assessment for total allowable catch (TAC, for pikeperch) and recommended allowable catch (RAC, for perch). The values of TAC (RAC) are estimated annually. The strict division of quotas among separate Irikla Reservoir parcels, without the right of their transfer during a fishing season, provides a regular under-exploitation of the perch and pikeperch stocks by commercial fishermen below the TAC (RAC) quota levels.

The fishery is automatically stopped when the quota (or any part of other species' quotas) is reached. Only a proportion of the overall TAC (RAC) quota is fully utilised as the total quota is divided among all fishing parcels. This makes exceeding the quota in any of part of the reservoir difficult. The reported catches from the commercial fishery demonstrate that the annual catch is lower than the TAC quota: the uptake of quotas by commercial fishermen usually is around 80% of TAC and even less of RAC.

At the Irikla Reservoir, the Rules of Fishery are developed for the Volga-Caspian fishery basin according to the article 43.1 of "Federal law of Fishery" and also form part of the harvest strategy. The Rules of Fishery are the basis of the implementation of fishery and preservation of aquatic bio resources. They are obligatory for execution both by the legal entities and citizens, which are carrying out fishery and other activity connected with use of aquatic bio resources. The Rules of Fishery are established:

1) Types of the allowed fishery;
2) Standards, including norms of product yield of processing of aquatic bio resources, including caviar and also range and terms of the allowed fishery;
3) Restrictions of fishery and other activity connected with use of aquatic bio resources, including:
    - Ban of fishery activities in certain areas and concerning separate types of aquatic bio resources;
    - The minimum size of caught aquatic bio resources;
    - Types of prohibited gear and ways of production (catch) of the aquatic bio resources;
    - Mesh size of fishing gear, size and design of fishing tools of production (catch) of aquatic bio resources;
    - Available catches of some species at implementation of production (catch) of other species of aquatic bio resources;
    - Fishery time ranges in water bodies of commercial fishery;
    - Other restrictions established according to federal laws;
4) Requirements to preservation of aquatic bio resources.

The harvest strategy is plausible with some evidence to show that it is achieving its objectives. According to several previous years' data the size - age range of both target species from research catches show that the harvest strategy is sustainable. Although the target age range of the commercial perch and pikeperch fishery consists of fish of 3+-10+ years, the year 3+-6+ fish were the most prevalent in age in the catches of pikeperch and year 3+-7+ fish in the catches of perch (see Figure14). Perch within the current commercial size range has thus already spawned and ensures a high level of production in the Irikla Reservoir. The fishing rules for the Volga-Caspian fisheries basin has defined a minimum fishing pikeperch length for the commercial fishery of 40 cm, which ensures the participation of smaller fish in at least one spawning and a high level of production in the Irikla Reservoir. In commercial fishing, juvenile pikeperch by-catch rates are observed (20% of the catch by number is allowed). If the percentage of young by-catch is large, the fishermen change the fishing area or stop fishing. Additionally, the accepted normal methods of calculation of the TAC (RAC) and well-known methods of possible fishing (taking into account commercial and potential IUU catches) it can be seen that overfishing of perch and pikeperch populations has not been observed. On the contrary, in the last decade there is a steady increase of pikeperch biomass and stabilisation of perch biomass in the Irikla Reservoir and proportion of these species in catches comparing to other fish species, being 60% in 2020 (Belyanin, 2021).

Monitoring exists to record detailed catch information from the commercial fishery. Information is also collected from the recreational fishery and estimates of under-reporting defined to enable the total catch to be raised. Estimates of IUU catch are also included and monitored.

According to appendixes of Fishery Rules, onboard each fishing vessel (including those owned by the fishing companies under assessment “Fish-ka” and “Volna”) the fishing register book, registered in the Territorial Administration of FFA (Federal Fishery Agency) in which the person, responsible for fishing (the foreman / lead man) records the capture of aquatic bio resources (ABR), weight of the caught ABR by ranges (kg), should be left on board the boat. In addition, in the register book a registration of catch of ABR by cumulative total by separate species is kept. Twice a month, fisheries present to the local authorities of Russian Federal Fishery Agency a summary of data for the production of aquatic bio resources for each catch area (fishing parcel) on the 15th day and the last day of the month.

In recent years considerable reduction of the level of illegal catch of fish in the Irikla Reservoir has been noted. There has been a positive effect to the reduction in IUU fishing, through the improvement of activity of the fishery conservation organizations, holding fishery conservation and optimization of fishing activities. As a result, fishermen of “Fish-ka” and “Volna” companies carry out continuous monitoring of observance of rules of the fishery at the reservoir. According to fish inspectors and the staff of the Saratov Research Institute, IUU catch volume for the Irikla Reservoir is lower than other major reservoirs (e.g. Saratov and Volgograd). The method for calculating IUU catch for perch and pikeperch is applied as a standard calculation for the entire stock in the Irikla Reservoir.
The harvest strategy is reviewed annually. The harvest strategy includes an optimization of number of fishers working for the company, which increases the level of control of effort within the fishery.

Harvest Control Rules and Tools

The Irikla perch and pikeperch fishery does not have an explicit harvest control rule or limit reference points, but a suite of technical management tools and measures are in place that are consistent with ensuring the susceptibility of both 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’ that is considered relevant to the scale and intensity of the fishery.

The suite of management measures and tools used in the harvest strategy is considered precautionary in nature and helps prevent the stock status reaching a point of recruitment impairment (PRI). These include both spatial and temporal closures to provide a refuge for a proportion of the stock at any one time, a defined gillnet mesh size range and controls over the number of annual fishing licenses. The highly selective mesh size prevents the capture of both juvenile and large mature fish, thus helping to eliminate recruitment and growth overfishing. If the percentage of young fish in catch is large (the allowed by-catch of undersized fish is 20% of the catch by number), the fishermen have to change the fishing area or stop fishing.

Typical of most Russian inland fisheries, fishing opportunities are calculated on an annual basis to take into account inter-annual variability in estimated stock size (i.e. annual changes in *Ba*) and ensures that the exploitation rate is reduced as stock size declines. As such, annual changes in fishing opportunities are not triggered by a single limit reference point, but rather a proportion of *Ba* such that the exploitation rate decreases as a function of stock size. A schematic diagram to illustrate this concept in comparison to the total biomass (Btotal) is provided in Figure 15.

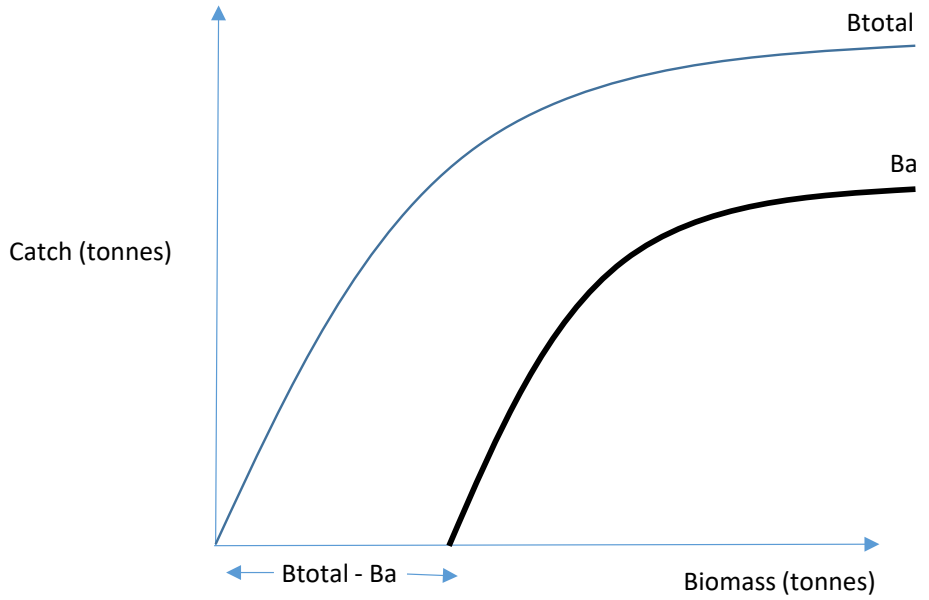


Figure 17. Schematic illustration of the implicit harvest control rule used for Irikla perch and pikeperch. Annual catch quotas based on estimates of annual commercially available biomass (Ba) rather than total biomass.

It has been noted that as the annual TAC (RAC) is calculated on the commercially available biomass (*Ba*), not total stock biomass (*Btotal;* Figure 17). The precautionary harvest strategy will thus always protect a proportion of the juvenile and more productive fish within the population (i.e. larger mature fish), allowing the stock to rebuild, if needed. Furthermore, given that the annual calculation of the TAC (RAC) is based on the *Ba*, the level of uncertainty is expected to increase with sampling lower levels of biomass within the reservoir and therefore act to decrease the annual quota at a faster rate at lower stock sizes. However, in practice, a greater reduction of fishing opportunities at lower stock sizes is highly likely to reduce fleet capacity through poor economic performance before a severe reduction of the stock occurs.

In addition, annual fishing opportunities are reviewed on an annual basis by the expert review panel and a declining abundance and catch series would be expected to trigger further management action such as a decreasing of TAC (RAC) value as proportion of *Ba* or a total ban on the fishery. To date, there is no record of a fishery ban occurring in the fishery.

Information and Monitoring

A comprehensive suite of information is collected on a routine basis to support the harvest strategy, stock assessment and control tools. This relates specifically 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 other environmental and ecological information.

Specific legal requirements for monitoring are detailed within chapter 5 "Management in the fishery and preservation of aquatic bio resources" the Federal law form 20.12.2004 N 166-FZ (edition from 28.06.2014) "About fishery and preservation of aquatic biological resources" describes contents of the Article 42 "State Monitoring of Aquatic Bio resources". In particular:

"1. State monitoring of aquatic bio resources represents system of regular supervision (monitoring) for:

i) Distribution, abundance, quality, reproduction of aquatic bio resources, and also their habitat;

ii) Fishery and preservation of aquatic bio resources.

2. The state monitoring of aquatic bio resources is a part of the state environmental monitoring (the state monitoring of the environment).

3. Data of the state monitoring of aquatic bio resources are applied for the organization of rational use and preservation of aquatic bio resources …"

The Saratov Research Institute organises research surveys to collect the information necessary for the stock assessment. These surveys take place at the Irikla Reservoir three times a year during the spring, summer and autumn (during winter the reservoir is frozen) and are conducted throughout the whole reservoir, including the areas that are closed to commercial fishing and include known spawning areas. The surveys are conducted with researchers from Kamsko-Uralsk Branch of the Federal State Budgetary Institution "Main Basin Administration for Fisheries and Conservation of Aquatic Biological Resources" (Kamsko-Uralsk branch of FSBI "Glavrybvod" (belonging to a statewide network of agencies with main function is to increase the fishery productivity of water bodies). The co-operation of the Saratov Research Institute and Kamsko-Uralsk branch of FSBI "Glavrybvod" at the Irikla water body is conducted according to an approved programme of joint monitoring surveys. Every season, researchers of both organisations visit the reservoir for 10 days surveying. During the survey, they will conduct fishing at set stations using 12 different mesh size nets along with minnow seine and beach seine nets.

During the surveys data related to the species composition of catch, lengths and weights, age, sex, fecundity, maturity, food supply, heavy metal content in fish muscles, quality of environment etc. are collected and analysed.

The Saratov Research Institute also conducts ecological, hydro-biological, hydrochemical research on the reservoir. Kamsko-Uralsk branch of FSBI "Glavrybvod" across the whole year investigates the structure of the catch of recreational fishermen, their catching method and location of fishing and on the basis of the reporting of the recreational fishers the recreational catch is analysed. Calculation of number of recreational fishermen at a reservoir is carried out by the staff of the Saratov Research Institute and Territorial Administration of Federal Fishery Agency (FFA).

The organisation for the management and production of the Irikla Reservoir carries out systematic monitoring of 32 (including pH, O_2) hydrological and hydro-chemical indicators of water quality. For this purpose, 9 sampling gauge stations have been put in place. In June 2013, on one of site visits to the reservoir there was a mass juvenile fish mortality reported and hydro-chemical analyses showed that no excess of any maximum permissible concentration (MPC) was observed. Subsequently, the range of information and data collected indicated that the mortality event was highly likely to be connected with the overproduction of juveniles for which food of a suitable size was limited.

In addition, a range of other biological indexes are monitored according to the standard Russian state methodology (Karagoishev, 1983). The methodology used for stock assessment has been used in Russian lakes, rivers and reservoirs since 1982 and the specific methodology for fish abundance assessment in freshwater reservoirs since 1990 (Sechin, 1998). Within the wide range standard set of tests conducted are those to identify seasonal migration of fish species and tests for the presence of heavy metals in the tissues of fish. As a result of this research, pikeperch are known to occur at approximately 75% of the water body and there are location-specific spawning sites covering about 16.5% of the total area of reservoir's bottom, whereas perch occur throughout the entire water body and there are no location-specific spawning sites.

The same organisations carry out monitoring of the catch of professional fishermen. Specific vessel details for all active boats and gear are reported on a regular basis (monthly) in addition to the number and location of licensed fishermen (see above section).

The person, responsible for fishing records in the logbook the name of each operation connected with production of ABR (with the indication of time of each operation), and also keeps records of the catch weight of each ABR by species (kg) including those retained on board or released. The level of completeness and correctness of maintaining the fishing logbook and filling out of required documentation is regularly checked by the organisations controlling fishing.

Detailed information on removals from the commercial fleet is collected on a daily basis through the vessel logbooks and collected by "Fish-Ka" and "Volna" fishing companies. These data are also made available to national authorities for stock assessment purposes and to monitor the level of removals against annual fishing opportunities.

In recent years a considerable reduction of the level of illegal catch on the Irikla Reservoir has been noted. This is in part due to improvement of activity of the organisations holding fishery conservation events, and optimization of fishing activities and professional fishermen of "Fish-ka" and "Volna" that provide constant monitoring and surveillance over the reservoir, including self-policing effect of licensed fishers.

Saratov Research Institute collects information on the removals taken by the recreational fisheries sector all year round. There is a specific methodology “Count of unorganised amateur fishers and their catches” that is approved by Kamsko-Uralsk branch of FSBI “Glavrybvod” for this purpose. For the recreational fisheries researchers of Kamsko-Uralsk branch of FSBI “Glavrybvod” record through an interview process with the recreational fishers, species composition and weight of fish caught, fishing method, place and duration of fishing, square of fishing area, number of fishermen etc. Based on the collected data, they make an “amateur fisher card”. During a year of fishing about 60-70 such cards will be completed for the Irikla Reservoir under tasking by the Federal Fishing Agency. The collected data are used for estimation of the level of amateur fishing extrapolating the daily catch per species per fisher group (based on the collected data) and the number of amateur fishers per square unit of water basin within different periods of time within one month. This process gives an estimate for the catch of each harvested species per month.

According to official statistics (Table 9) commercial fishing for perch accounted for 88.0% of the total catch between 2011 and 2020, whereas the recreational represents only 12.0% and research catches negligible (0.0005%).

Table 9. Catch of perch (tonnes) in the Irikla Reservoir for commercial, recreational and research purposes and total quota for period 2011-2020

Year	Commercial catch (t)	Recreational catch (t)	Research catch (t)	Total catch (t)	Total quota (t)	Quota uptake (%)
2011	246.63	28.0	0.316	274.946	379.28	65.0
2012	227.39	30.5	0.235	258.125	311.52	73.0
2013	222.70	22.2	n.a.	246.900	354.85	63.3
2014	230.50	26.6	n.a.	257.100	320.00	72.0
2015	74.10	30.0	0.200	104.30	450.00	16.5
2016	212.90	32.9	0.160	245.96	470.00	45.3
2017	248.20	36.0	0.160	284.36	435.00	57.1
2018	280.40	45.4	0.108	325.908	460.00	61.0
2019	334.30	46.9	0.154	381.354	457.00	73.2
2020	452.80	45.5	0.156	498.456	457.00	99.1

Data source: Fish-ka(July 2015); Yermolin (2014); Belyanin (2021).

In general, the quota is usually not taken completely (average total catch for the same period is 62.5% of the total quota). This occurs because the quota is subdivided among individual fishing parcels without opportunity to transfer it, and fishing must be terminated when the quota on individual fishing parcel is taken. Considering that the fishing situation in different parts of the reservoir differs, it is not always possible to take whole quota in each fishing individual parcel. Nevertheless, in the last two years, there has been a fuller uptake of the allocated resource by the fishery (e.g. 99.1% in 2020),which, in particular, is associated with the opening of Suunduk Bay for fishing. Taking into account the volume of catch by amateur fishermen, the excess of the total catch over the established value of RAC was 9% in 2020.

The total annual catch of pikeperch has exceeded the quota in recent years by approximately 6-10% It should be noted that the quotas established for commercial fishing were previously agreed with the State Agency. Actual catches from the commercial sector were less than their allocated quotas (Table 10). Subsequent levels of recreational catches, combined with commercial and research catches, exceeded the quotas in some years. Unlike the commercial fishery, catches from the recreational fishery are not monitored in-season against the quota. Nevertheless, some excess of quotas does not cause concern for managers, since when calculating TAC for pikeperch, 10% of fishing mortality scientists of Saratov research institute leave in reserve that is the part of precautionary approach in pikeperch fishery.

Table 10. Catch of pikeperch (tonnes) in the Irikla Reservoir for commercial, recreational and research purposes and total quota for period 2012-2017

Year	Commercial catch (t)	Recreational catch (t)	Research catch (t)	Total catch (t)	Total quota (t)	Quota uptake (%)
2012	17.5	4.6	0.085	22.200	23.0	76.1

Year	Commercial catch (t)	Recreational catch (t)	Research catch (t)	Total catch (t)	Total quota (t)	Quota uptake (%)
2013	26.2	4.2	0.100	30.500	28.0	93.6
2014	22.98	5.0	0.020	28.000	29.0	79.2
2015	27.8	9.8	n.a.	37.600	35.0	79.4
2016	27.5	10.7	0.107	38.307	35.0	78.6
2017	31.5	11.9	0.090	43.490	41.0	76.8
2018	40.6	12.7	0.047	53.347	41.0	99.0
2019	67.2	13.9	0.092	81.192	70.0	96.0
2020	85.7	13.4	0.064	99.164	86.0	99.7

Data source: Belyanin (2017; 2019)

The new regulations have been introduced to restrict the volume of recreational catches of pikeperch to 5 kg per person per day (see Table 26). It is anticipated that these new measures will prevent future overruns from the recreational sector.

Stock assessment

The stock assessment of all commercially fished species in the Irikla Reservoir is led by the Saratov branch of the Russian Federal “Research Institute on Fisheries and Oceanography” (VNIRO) (situated in Saratov). Prior to 2008 the assessment was carried out by the State Research – Industrial Centre of Fisheries (located in Yekaterinburg).
The Saratov Research Institute uses both fisheries-independent survey data and fisheries-dependent data from commercial catches to estimate stock status. These data are collected regularly (approximately once a week) by a researcher from Kamsko-Uralsk branch of FSBI “Glavrybvod” based locally to the reservoir. Samples are taken in the fished areas throughout the fishing season. In total, combining the annual research conducted by the Saratov Research Institute and Kamsko-Uralsk branch of FSBI “Glavrybvod”, biological analysis of about 3,000 individual fish of different species will be conducted each year. From these data, further analysis of the species specific sex and length-weight relationships will be developed and more than half of specimens are used for ageing through scale and otolith analysis (reading). As for the target species of the fishery under certification, the total number of perch and pikeperch analysed each year exceeds 700 for both species with age determination conducted in about 300 individuals of perch and about 400 of pikeperch. In 2020, 950 pikeperch (with age determination - 650 individuals) and 1562 perch (with age determination - 378 individuals) were examined (Belyanin, 2021).

Calculation of the total available stock biomass[1] of the main commercial fish, including perch and pikeperch, in the Irikla Reservoir is performed through two alternative methods. The first method, related to biostatistical methods, is based on the analysis of the commercial fisheries data (from logbook and landings data and the intensity of fishing effort i.e. commercial CPUE data). The second method used belongs to the so-called family of direct statistical methods, when the stock status of fish is assessed by control catches. This group includes methods for assessing the number of producers according to offspring productivity, hydrobiological indicators, according to fish tagging results, by determining fish feed resources, according to aerial visual or sonar reconnaissance, by special fishing with standard fishing gear, etc. In particular, the second method used by the Saratov Institute is based on the CPUE series recorded from the fishery survey (Poddubniy& Gordeev (1966); Yermolin (1980); Yermolin (2004)). This approach of using two independent methods is employed due to the perceived necessity of assessing an accurate stock status, which allows cross-verification and is then used as the basis of the calculation of the annual fishing opportunities.
The first stock assessment method uses commercial data in conjunction with the Baranov equation (Baranov, 1971), where the fish stock is directly proportional to the catch and inverse to the intensity of fishing. The catch parameter in this case refers not only the volume of commercial catch reported in the fisheries statistics, but the amounts of unreported fishing are also taken into account as part of the total catch. Pressure of IUU fishery is considered as a constant coefficient, thus elevating the total catch from commercial fishery. According to data from long-term investigations, provided at the territory level covering all of the reservoirs of Volga, the actual catch is 1.2 to 1.4 times higher in comparison to the quantity reported by statistics (Shashulovskiy&Mosiyash, 2003; Shashulovskiy et al., 2014). This additional catch due to IUU fishing also adds a level of precaution into the assessment process.

Perch

[1] This is the total biomass associated with the commercially exploited part of the stock.

The intensity of fishing refers the portion of the total available stock biomass, which is caught annually from the reservoir. According to the catch statistics from the commercial fishery, the perch catch in 2020 was 452.8 t. The illegal catch accounted for by the statistics was 0.4% of the total catch (commercial and recreational) of aquatic biological resources of the region in 2020.In the Irikla reservoir, different species were unevenly represented in illegal catches: crucian carp (25%), bream (15%), roach (20%), pike perch (10%), ripus (10%), crayfish (10%), and other species(10%).Since the share of perch in the IUU catch turned out to be negligible, it is neglected when calculating the state of the perch stock.

The intensity of fishing is determined by the number of nets used, the number of days and the area of daily fishing (Karagoishiev, 1978). The average annual number of standard fixed nets (75 m in length) for catching perch on the Irikla Reservoir is 834 pieces. The use of these nets for catching pikeperch in 2020 amounted to 218 working days. The area of fishing by one net is 0.283 ha (Karagoishiev, Romanenko, 1981). Accepting the indicated values, the catch area (S_{catch}) for pikeperch in 2020 was 51,452.7 ha. The ratio of the area of fishing (S_{catch}) to the total area of the reservoir (S_{total}= 26,000 ha) gives the intensity of use of fishing gear (J=1.979). The actual coefficient of the intensity of fishing (exploitation coefficient u) in the forecast year is related exponentially tothe product of two coefficients: the coefficient of intensity of the use of fishing gear (J) and the coefficient of gear efficiency (K). The last coefficient is an experimentally established value and is contained in the manuals on commercial ichthyology (e.g. Karagoishiev, 1978, Treschev, 1983). Assuming that the coefficient of gear efficiency for the fixed nets K = 0.35 (Poddubny, Gordeev, 1966), the intensity of fishing was estimated at 0.5 (50%) in 2020.Consequently, the mean total commercial stock biomass of perch in the entire reservoir was estimated at 905.6 t (i.e.452.8 t/0.5 = 905.6 t).

The second stock assessment method uses fisheries independent research data from gillnet catches in autumn as part of an empirical assessment conducted by the Saratov Research Institute (Karagoyshev & Romanenko, 1981).According to the equation, the stock of fish is directly proportional to the product of the average catch from one net with a certain mesh size and the area of water bodies used for feeding by species and inversely proportional to the product of the average area, fished by one net and fishing efficiency coefficient of net.The analysis on the Irikla Reservoir uses the perch catch made by one standard gillnet (mesh size = 28-32 mm, 75 m long and a catch area equivalent to 0.28 ha) per day to extrapolate based on the size of the Irikla Reservoir. In 2020, the catch rate reported was 5.146 kg with total gear efficiency of 0.35, based on selectivity of the gear and total fishing effort (see Yermolin 2015). The area of the Irikla Reservoir available for perch is 16,900 ha.

The perch total available stock biomass therefore in the Irikla Reservoir calculated for the autumn of 2020 was estimated at 878 t (i.e. 5.146 kg x 16,900 ha/0.28 x 0.35 = 878 t). Again, using the precautionary approach, the smaller of the estimates obtained by calculating by two methods was selected as a guaranteed value, and therefore the commercial stock of perch was estimated at 878 t.

Following the stock assessment process, Saratov Research Institute sets standards of the Total Available Catch (TAC) for six high value commercial species (bream, pikeperch, wels, carp, pike and crawfish). TACsare determined based on a principle of optimal removals suggested by Tjurin (1967) and Nebolsina (1980) (see also Alverson and Pereira (1969), Gulland (1971)), according to which the appropriate level of commercial fish mortality should not exceed the natural mortality coefficient. Considering that usually the coefficient of natural mortality for fish targeted by commercial fishing is approximately 30%, the TAC in consequence is set at approximately the same value. This principle of stock management for freshwater fish species has been used for a number of years for Russian freshwater fisheries and has shown to be very effective in maintaining populations.

For perch as well as for a range of other lower value commercial species of fish of the Irikla Reservoir (e.g. white bream, roach, crucian carp and redeye) a Recommended Available Catch (RAC) is calculated. This RAC is developed in a very similar manner to the TAC and a defined proportion of the total stock is removed as the RAC. The annual fishing opportunities for perch are aimed at providing the highest level of exploitation whilst ensuring the remainder of the stock would be able to sustain the structure and function of the ecosystem within the reservoir (Nebolsina, 1980; Nebolsina *et al*., 1986).

The commercial fishing quota takes into account applications for commercial fishing. Since perch is not a commercially valuable species in Russia, the RAC value is calculated as 0.5 x Ba. at the same time, the fishing quota, which was previously underutilized, has been exploited more fully in recent years. For example, according to the Agency of Fisheries decree the RAC for perch in the Irikla Reservoir in 2020 was set as 457 t. Research and control catch make up 0.156 t of that amount, with remaining 456.844 t are assigned to commercial fishing. Territorial authorities of Federal Fishing Agency (Rosrybolovstvo) have been locally distributing this share according to the submitted applications. According to the fishery statistics the commercial catch of perch in the Irikla Reservoir amounted to 452.8 t, which comprised 99.1% of the established RAC (Belyanin, 2021).

Pikeperch

According to the catch statistics from the commercial fishery, the pikeperch catch in 2020 was 85.7 t. The level of the actual pikeperch catch for the Irikla reservoir is 1.2 times higher in relation to the registered catch due to IUU catch (Belyanin, 2021). Thus, the value of pikeperch taken with professional fishing gears in 2020 was 102.8 t (i.e. 85.7 t x 1.2 IUU factor).

The intensity of fishing is determined by the number of nets used, the number of days and the area of daily fishing (Karagoishiev, 1978). The average annual number of standard fixed nets (75 m in length) for catching pikeperch on the Irikla Reservoir is 252 pieces. The use of these nets for catching pikeperch in 2020 amounted to 175 working days. The area of fishing by one net is 0.283 ha (Karagoishiev, Romanenko, 1981). Accepting the indicated values, the catch area (S_{catch}) for pikeperch in 2020 was 12,480 ha. The ratio of the area of fishing (S_{catch}) to the total area of the reservoir (S_{total}= 26,000 ha) gives the intensity of use of fishing gear (J=0.48). The actual coefficient of the intensity of fishing (exploitation coefficient u) in the forecast year is related exponentially to the product of two coefficients: the coefficient of intensity of the use of fishing gear (J) and the coefficient of gear efficiency (K). The last coefficient is an experimentally established value and is contained in the manuals on commercial ichthyology (e.g. Karagoishiev, 1978, Treschev, 1983). Assuming that the coefficient of gear efficiency for the fixed nets K = 0.35 (Poddubny, Gordeev, 1966), the intensity of fishing was estimated at 0.155 (15.5%) in 2020. Consequently, the mean total commercial stock biomass of pikeperch in the entire reservoir was estimated at 663.5 t (i.e. 102.8 t/0.155 = 663.5 t).

The second stock assessment method uses fisheries independent research data from gillnet catches in autumn as part of an empirical assessment conducted by the Saratov Research Institute (Karagoyshev & Romanenko, 1981). According to the equation, the stock of fish is directly proportional to the product of the average catch from one net with a certain mesh size and the area of water bodies used for feeding by species and inversely proportional to the product of the average area, fished by one net and fishing efficiency coefficient of net. The analysis on the Irikla Reservoir uses the pikeperch catch made by one standard gillnet (mesh size = 45-110 mm, 75 m long and a catch area equivalent to 0.283 ha) per day to extrapolate based on the size of the Irikla Reservoir. In 2020, the catch rate reported was 3.226 kg with total gear efficiency of 0.35, based on selectivity of the gear (experimentally established value contained in special literature on commercial ichthyology, for example, Karagoyshiyev, 1978, Treschev, 1983). The area of the Irikla Reservoir available for pikeperch is 75% of the total area of the Irikla Reservoir, namely 19,500 ha.

The pikeperch total available stock biomass therefore in the Irikla Reservoir calculated for the autumn of 2020 was estimated at 635.1 t (i.e. 3.226 kg x 19,500 ha/0.283 x 0.35 = 635.1 t). From the values obtained by the two calculation methods, the smaller one was chosen as the guaranteed value of the stock of pikeperch in 2020.

Following the stock assessment process, Saratov Research Institute sets standards of the Total Available Catch (TAC) for six high value commercial species (pikeperch, bream, wels, carp, pike and crawfish). TACs are determined based on a principle of optimal removals suggested by Tjurin (1967) and Nebolsina (1980) (see also Alverson and Pereira (1969), Gulland (1971)), according to which the appropriate level of commercial fish mortality should not exceed the natural mortality coefficient. Considering that usually the coefficient of natural mortality for fish targeted by commercial fishing is approximately 30%, the TAC in consequence is set at this or a lower level. This principle of stock management for freshwater fish species has been used for a number of years for Russian freshwater fisheries and has shown to be very effective in maintaining populations.

In the case of pikeperch, the calculation of the TAC is made with the determination of fishing mortality for each fishery age depending on its abundance and biomass in the reservoir. Since the stock of pikeperch in the Irikla Reservoir in the past showed significant fluctuations, for all ages precautionary fishing mortality rates were set significantly lower than those recommended by Tiurin (1967). As the result, a maximum recommended quota for 2020 was set at 86 t (i.e. 13.5% of 635 t). The results of the advance forecasting show that in 2021 the TAC can be set at 82 tons (i.e. 14.3% of 573.0 t).

The results of the stock assessment and advice on fishing opportunities are then reviewed by the State Ecological Expertise within the Ministry of Agriculture in Moscow.

7.2.3 Total Allowable Catch (TAC) and catch data

The total quota for perch is usually not taken completely (average total catch for the period 2011-2020 was 62.5% of the total quota). However, in the last two years, there has been a fuller uptake of the allocated quota by the fishery: in 2020 the proportion of the total removals (452.8 t) was around 99% of the allocated quota (457.0 t), that, in particular,

was associated with the opening of Suunduk Bay for fishing. A summary of the total allowable catch (TAC) and associated landings for the Irikla Reservoir perch fishery is shown in Table 11.

Table 11. Catch data for the Irikla Reservoir perch fishery.

TAC	Year	2020	Amount	457.0 tonnes
UoA share of TAC	Year	2020	Amount	Unallocated share of commercial RAC†
UoA share of total TAC	Year	2020	Amount	Unallocated share of commercial RAC
Total green weight catch by UoC	Year (most recent)	2020	Amount	452.8 tonnes
Total green weight catch by UoC	Year (second most recent)	2019	Amount	334.3 tonnes

† Recommended allocated catch (RAC). The commercial fishery get a quota managed in-season, and the recreational and research get quotas managed post-season.

Actual catches from the commercial sector were less than their allocated quotas for pikeperch. At the same time, in the last three years, there has been an almost complete use of the allocated quota by commercial fishing at the level of 96.0% - 99.7%. Subsequent levels of recreational catches, combined with commercial and research catches, usually exceeded the quotas by approximately 6-30%. A summary of the total allowable catch (TAC) and associated landings for the Irikla Reservoir pikeperch fishery is shown in Table 12.

Table 12. Catch data for the Irikla Reservoir pikeperch fishery

TAC	Year	2020	Amount	86.0 tonnes
UoA share of TAC	Year	2020	Amount	Unallocated share of commercial TAC†
UoA share of total TAC	Year	2020	Amount	Unallocated share of commercial TAC
Total green weight catch by UoC	Year (most recent)	2020	Amount	85.7 tonnes
Total green weight catch by UoC	Year (second most recent)	2019	Amount	67.2 tonnes

† The commercial fishery gets a quota managed in-season, and the recreational and research fisheries get quotas managed post-season.

7.2.4 Principle 1 Performance Indicator scores and rationales

PI 1.1.1 – Stock status

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?	**Perch Yes** **Pikeperch Yes**	**Perch Yes** **Pikeperch Yes**	**Perch Yes** **Pikeperch No**

Rationale

Perch

The status of the Irikla Reservoir perch stock is assessed on an annual basis by the Saratov Research Institute (Voronin 2007, 2008; Yermolin, 2014). Trends in the level of stock biomass for perch are available since 1973 and show a continuous increase in biomass from around 80 tonnes in 1994 to 870-960 tonnes in 2011-2020(cf. Figures 12, 13). This observed increase in perch biomass during the last decades has been attributed to a decline in competition from other commercial species within the waterbody supported mainly by fish farming of vendace and whitefish, and the low level of fishing mortality achieved through the suite of precautionary management measures implemented as part of the harvest strategy.

The harvest strategy does not use explicit biological reference points, such a limit reference point (LRP) to determine stock status. However, the magnitude of the increase demonstrates that the stock is highly likely to be above the point of recruitment impairment. A precautionary suite of management measures and tools ensures that fishing effort is low so the stock remains at productive levels that are appropriate to the scale and intensity of the fishery (see P1 1.2.1 and PI 1.2.2). Spawning of perch takes place annually and is very effective in many sites of the reservoir that allows the high abundance of this species. The high reproductive capacity of the perch stock is also supported by the high number of younger year-class spawning fish that are not targeted by commercial or recreational fisheries.

The observed rapid increase in abundance during 1994-2011 and relative stability of stock status in last decade clearly demonstrates that fishing pressure has not adversely affected productivity, supporting a conclusion that the stock is substantially above the PRI. In the absence of the set PRI values for the Irikla Reservoir fishery, proxy indicators can be used to determine the state of the stock in relation to the recruitment impairment. A precautionary suite of management measures and tools ensures that fishing effort for perch is low for recent years: actual F values - are lower than recommended F_{MSY} ($F \leq M = 50\%$ *Ba*): $F_{0.29}$ (2017), $F_{0.30}$ (2018) and $F_{0.37}$ (2019). The stock of perch in fact performed well at least two generation times (according to www.fishbase.se, the generation time of perch is 5.7 years) as evidenced by the increase of stock and recommended catch during the last 25 years (see Figures12,13). Taking into account that the perch biomass has increased over the past two and a half decades from approximately 80 tonnes in 1994 to over 850 tonnes in 2011-2020, there is considered to be a high degree of certainty that the stock of perch is above the point where recruitment would be impaired (MSC Guidance to the Fisheries Standard v2.01, GSA2.2.3.1); SG60, SG80 and SG100 are met.

Pikeperch

The status of the Irikla Reservoir pikeperch stock is assessed on an annual basis by the Saratov Research Institute since 2008 (Voronin 2007, 2008; Yermolin, 2014). Trends in the level of stock biomass for pikeperch are available since 2010 and show a continuous increase in the commercial stock biomass from around 80 tonnes in 2010 to over 630 tonnes in 2020.

The harvest strategy does not use explicit biological reference points, such a limit reference point (LRP) to determine stock status. However, the magnitude of the increase demonstrates that the stock is highly likely to be above the point of recruitment impairment. A precautionary suite of management measures and tools ensures that fishing effort is low, so the stock remains at productive levels that are appropriate to the scale and intensity of the fishery (see P1 1.2.1 and PI 1.2.2). Spawning of pikeperch takes place annually and is quite effective in many sites of the reservoir that allows the high abundance of this species. Pikeperch growth rates in terms of size and weight indicators have been fairly stable over the past ten years.

The observed rapid increase in abundance clearly demonstrates that fishing pressure has not adversely affected productivity, supporting a conclusion that the stock is substantially above the PRI.

This qualitative assessment is deemed sufficient evidence to meet the highly likely requirements at SG80. Despite a noticeable increase in the stock of pikeperch in recent years, there were multidirectional trends in the dynamics of the stock of this species during two generation time (according to www.fishbase.se, the generation time of pikeperch is 10.2 years). Thus, current data does not provide evidence to confirm with a high degree of certainty that the stock of pikeperch is above the PRI to meet SG100.

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?		**Perch Yes** **Pikeperch Yes**	**Perch No** **Pikeperch No**

Rationale

Perch

The harvest strategy does not use explicit biological reference points, such a target reference point (TRP) to determine stock status.

As changes in the reservoir ecosystem continue, including annual fluctuations in water level and ice cover, it is difficult to establish a B_{MSY}-related reference point. Relative to the conditions in first several decades following filling of the reservoir, the current conditions have led to a substantial increase in perch abundance. The current biomass is several times above the abundance in the early days of the reservoir and is not considered a main commercial species within the reservoir. The perch abundance is high largely because of food availability released by reductions in competitor fish.

The estimate of the total available biomass (*Ba*) is used to calculate 0.5*Ba*, which is equivalent to the target reference point (TRP) as is used with the same intent as BMSY. The TRP based on 50%*Ba* rather than virgin biomass (i.e. $50\%B_0$) is used to establish annual fishing opportunities for perch (RAC) and this precautionary approach has been demonstrated to effectively keep the stock well above the point at which recruitment would be impaired.

Given that the total annual catch frequently does not reach the available annual quota allocation set to maintain the stock at levels consistent with B_{MSY}, and that the stock has shown a stability in biomass, provides a strong qualitative rationale that the stock biomass is at or fluctuating around the proxy value for B_{MSY}, meeting SG80.

However, uncertainty in the definition of MSY, uncertainty in accounting for the volumes of amateur fishermen, and uncertainty whether future shifts in the reservoir may alter conditions such that the abundance of perch may decrease back toward former conditions or whether practical, prevent the fishery from reaching the SG100.

Pikeperch

The harvest strategy does not use explicit reference points, such a target reference point (TRP) to determine stock status.

As changes in the reservoir ecosystem continue, including annual fluctuations in water level and ice cover, it is difficult to establish a B_{MSY}-related reference point. Relative to the conditions in first several decades following filling of the reservoir, the current conditions have led to a substantial increase in pikeperch abundance. The current biomass is several times above the abundance just a few years ago when there were significant fluctuations in the water level in the reservoir. The pikeperch abundance is high mainly due to the abundance of fish prey. The estimate of the total available biomass (*Ba*) is used to calculate TAC at the level of 0.3*Ba*, which is equivalent to the target reference point (TRP) as is used with the same intent as BMSY. The TRP based on 30%*Ba* rather than virgin biomass (i.e. $30\%B_0$) is used to establish annual fishing opportunities for TAC regulated species in the Irikla Reservoir. In the case of pikeperch, even softer fishing control measures are applied, so that TAC never actually exceeds $20\%B_0$. This precautionary approach has been demonstrated to effectively keep the stock well above the point at which recruitment would be impaired.

Given that the total annual catch frequently does not reach the available annual quota allocation set to maintain the stock at levels consistent with B_{MSY}, and that the stock has shown a continuous increase in biomass, provides a strong qualitative rationale that the stock biomass is at or fluctuating around the proxy value for B_{MSY}, meeting SG80.

However, uncertainty in the definition of MSY, uncertainty in accounting for the volumes of amateur fishermen, and uncertainty whether future shifts in the reservoir may alter conditions such that the abundance of pikeperch may decrease back toward former conditions or whether practical, prevent the fishery from reaching the SG100

References

Voronin (2007); Voronin (2008); Yermolin (2014); Kilyakova& Lysenko (2007); Belyanin (2018); Belyanin (2021).

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)	No limit reference point is in place for perch and pikeperch in the Irikla Reservoir. Proxy value is used.	Generation time	Perch: Abundance demonstrably higher than at any time in the past, and at record levels; increasing in stock biomass during at least two generation time. Pikeperch: Abundance demonstrably higher than just a few years ago with persisting increasing trend of biomass during one generation time.
Reference point used in scoring stock relative to MSY (SIb)	Biomass	F_{rec} x *Ba* (F_{rec}(%) of total commercially available biomass)	Perch: F ≤ 50% x *Ba* Pikeperch: F ≤ 30% x *Ba*(recommended) F ≤ 20% x *Ba*(in practice)

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

Draft scoring range	**Perch ≥80** **Pikeperch ≥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	**Perch = 90** **Pikeperch = 80**
Condition number (if relevant)	

PI 1.1.2 – Stock rebuilding Not relevant. All UoAs.

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?	**Perch NA** **Pikeperch NA**		**Perch NA** **Pikeperch NA**
Rationale				

The Irikla Reservoir perch and pikeperch stocks do not require rebuilding and so this PI is not relevant to any UoA.

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?	**Perch NA** **Pikeperch NA**	**Perch NA** **Pikeperch NA**	**Perch NA** **Pikeperch NA**
Rationale				

The Irikla Reservoir perch and pikeperch stocks do not require rebuilding and so this PI is not relevant to any UoA.

References

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

Draft scoring range	**NA**
Information gap indicator	**NA**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**NA**
Condition number (if relevant)	**NA**

PI 1.2.1 – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Harvest strategy design			
	Guide post	The harvest strategy is **expected** to achieve stock management objectives reflected in PI 1.1.1 SG80.	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.	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.
	Met?	**Perch Yes** **Pikeperch Yes**	**Perch Yes** **Pikeperch Yes**	**Perch No** **Pikeperch No**
Rationale				

<u>Perch</u>
Perch is not considered a valuable commercial fish and as a result, management quotas for this species are not set based on the results of an assessment for total allowable catch (TAC) species, but rather a recommended allowable catch (RAC) applied to 'low value' species. Low profitability of the perch commercial fishery and the strict spatial division of quotas among separate Irikla Reservoir parcels, without the right of their transfer during a fishing season, provide a regular under-exploitation of the perch stock below the RAC quota levels.

The harvest strategy is based on managing the fishery based on an annual RAC quota, which is defined to meet the objectives in the target reference point. It is deemed responsive to the state of the stock as annual quotas are based on updated estimates of available stock biomass (Ba) and proxy TRP (50%Ba), which are calculated by the Saratov Research Institute before each fishing season commences.

The fishery is automatically stopped when the quota (or any part of other species' quotas) is reached. Only a proportion of the overall perch RAC quota is fully utilised as the total quota is divided among all fishing parcels. This makes exceeding the quota in any of part of the reservoir difficult. The reported catches from the commercial perch fishery demonstrate that the annual catch is considerably lower than the RAC quota.

In addition to catch quotas, the harvest strategy has a suite of management measures that aim to support the objectives of each reference point. These include limited number of commercial fishing licenses, prohibited gear types, gillnet mesh size, permanent closed areas and seaonal closure of the fishery (article 43.1, Federal law of Fishery).

The use of catch quotas and management measures have been shown to be responsive to the state of the stock and work together effectively to maintain the stock at productive levels. This is sufficient to meet the requirements at both SG60 and SG80. There is no evidence to demonstrate the harvest strategy has been 'designed' to meet SG100.

<u>Pikeperch</u>
Pikeperch is considered a valuable commercial fish, and as a result, management quotas for this species are set based on the results of an assessment for total allowable catch (TAC) species. Currently, strict spatial division of quotas among separate Irikla Reservoir parcels, without the right of their transfer during a fishing season, provide a regular under-exploitation of the pikeperch stock below the TAC quota levels by commercial fishermen.

The harvest strategy is based on managing the fishery based on an annual TAC quota, which is defined to meet the objectives in the target reference point. It is deemed responsive to the state of the stock as annual quotas are based on updated estimates of available stock biomass (*Ba*) and proxy TRP (about 20%*Ba*), which are calculated by the Saratov Research Institute before each fishing season commences.

The fishery is automatically stopped when the quota (or any part of other species' quotas) is reached. Only a proportion of the overall commercial pikeperch TAC quota is fully utilised as the total quota is divided among all fishing parcels. This makes exceeding the quota in any of part of the reservoir difficult. The reported catches from the commercial pikeperch fishery demonstrate that the annual catch is lower than the TAC quota.

In addition to catch quotas, the harvest strategy has a suite of management measures that aim to support the objectives of each reference point. These include minimal fishery size for pikeperch, maximal daily harvest for recreational fishermen (5 kg), limited number of commercial fishing licenses, prohibited gear types, gillnet mesh size, permanent closed areas and seasonal closure of the fishery (article 43.1, Federal law of Fishery).

The use of catch quotas and management measures has been shown to be responsive to the state of the stock and work together effectively to maintain the stock at productive levels. This is sufficient to meet the requirements at both SG60 and SG80. There is no evidence to demonstrate the harvest strategy has been 'designed' to meet SG100.

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?	**Perch Yes** **Pikeperch Yes**	**Perch Yes** **Pikeperch Yes**	**Perch No** **Pikeperch No**
Rationale				

Perch
There is a range of evidence to demonstrate the harvest strategy has been successful in achieving its objectives.

Data analyzed by the Saratov Research Institute show the most prevalent age of fish retained in the perch fishery range between 3 and 7 years old, and thus protect both juvenile and older mature fish from exploitation (Yermolin, 2014).

RAC quotas are calculated based on the current status of the stock. Official fishery statistics show the total annual catch of perch is frequently below the RAC quota (cf. Table 18). Further to this, the level of infringements are infrequent and relatively minor, implying the harvest strategy is effective.

Quantitative information on the level of stock biomass is available from stock assessments dating back to 1973 and demonstrates biomass has been maintained at productive levels, with a steady increase observed over the last decades (Figure 12). In addition, an increased proportion of perch is reported in catches compared to other fish species.

This evidence is sufficient to meet the requirements at both SG60 and SG80 but cannot meet SG100 level as there is no evidence that the harvest strategy has been fully tested.

Pikeperch
There is a range of evidence to demonstrate the harvest strategy has been successful in achieving its objectives. Data analyzed by the Saratov Research Institute show the most prevalent age of fish retained in the pikeperch fishery range between 3 and 6 years old, and thus protect both juvenile and older mature fish from exploitation (Yermolin, 2014).

TAC quotas are calculated based on the current status of the stock. Official fishery statistics show the total annual catch of pikeperch by commercial fishermen is below the TAC quota (cf. Table 10). Further to this, the level of infringements is infrequent and relatively minor, implying the harvest strategy is effective.

Quantitative information on the level of stock biomass is available from stock assessments dating back to 2010 and demonstrates a steady increase of biomass observed over the last decade (Figure 13). At the same time, the growth rate of pikeperch remains stable in all age groups.

This evidence is sufficient to meet the requirements at both SG60 and SG80 but cannot meet SG100 level as there is no evidence that the harvest strategy has been fully tested.

c	Harvest strategy monitoring

	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	**Perch Yes** **Pikeperch Yes**		

Rationale

Perch

Monitoring exists to record detailed catch information from the commercial fishery. Besides, during research surveys, which are carried out by research from Saratov Research Institute and Kamsko-Uralsk branch of FSBI “Glavrybvod” three times a year and conducted throughout the whole reservoir, data related to the species composition of catch, lengths and weights, age, sex, fertility, maturity, food supply, heavy metal content in fish muscles, quality of environment etc. are collected and analyzed.

Information is also collected from the recreational fishery and estimates of under-reporting defined to enable the total catch to be raised. Estimates of IUU catch are also monitored.

According to appendixes of Fishery Rules, on board each fishing vessel (including those owned by the fishing companies under assessment “Fish-ka” and “Volna”) the fishing register book, registered in the Territorial Administration of FFA (Federal Fishery Agency) in which the person, responsible for fishing (the foreman / lead man) records the capture of aquatic bio resources (ABR), weight of the caught ABR by ranges (kg), should be left on board the boat. In addition, in the register book a registration of catch of ABR by cumulative total by separate species is kept. Twice a month, fisheries present to the local authorities of Russian Federal Fishery Agency a summary of data for the production of aquatic bio resources for each catch area (fishing parcel) as for the 15th day and the last day of the month.

In recent years considerable reduction of the level of illegal catch of fish in the Irikla Reservoir has been noted. There has been a positive effect to the reduction in IUU fishing, through the improvement of activity of the fishery conservation organizations, holding fishery conservation and optimization of fishing activities as a result of which fishermen of “Fish-ka” and “Volna” companies carry out continuous monitoring of observance of rules of fishery at the reservoir. According to fish inspectors and the staff of the Saratov Research Institute, IUU catch volume for the Irikla Reservoir is lower than other major reservoirs (e.g. Saratov and Volgograd).

Throughout the year, monitoring of the recreational fishery is carried out at the reservoir. This includes an analysis of the total catch of all species caught by recreational fishers (i.e. survey by Kamsko-Uralsk branch of FSBI “Glavrybvod”), and fishing effort by recording the number of recreational fishermen (i.e. survey by Saratov VNIRO) is conducted. These data are used to calculate the total annual catch from the recreational sector for different species of fish.

Available evidence on the level of monitoring of the harvest strategy is sufficient to meet SG60.

Pikeperch

Monitoring exists to record detailed catch information from the commercial fishery. Besides, during research surveys, which are carried out by research from Saratov Research Institute and Kamsko-Uralsk branch of FSBI “Glavrybvod” three times a year and conducted throughout the whole reservoir, data related to the species composition of catch, lengths and weights, age, sex, fecundity, maturity, food supply, heavy metal content in fish muscles, quality of environment etc. are collected and analyzed.

Information is also collected from the recreational fishery and estimates of under-reporting defined to enable the total catch to be raised. Estimates of IUU catch are also included and monitored.

According to appendixes of Fishery Rules, onboard each fishing vessel (including those owned by the fishing companies under assessment “Fish-ka” and “Volna”) the fishing register book, registered in the Territorial Administration of FFA (Federal Fishery Agency) in which the person, responsible for fishing (the foreman / lead man) records the capture of aquatic bio resources (ABR), weight of the caught ABR by ranges (kg), should be left on board the boat in the register book. In addition, a registration of catch of ABR by cumulative total by separate species is kept. Twice a month, fisheries present to the local authorities of Russian Federal Fishery Agency a summary of data for the production of aquatic bio resources for each catch area (fishing parcel) as for the 15th day and the last day of the month.

In recent years considerable reduction of the level of illegal catch of fish in the Irikla Reservoir has been noted. There has been a positive effect to the reduction in IUU fishing, through the improvement of activity of the fishery conservation organizations, holding fishery conservation and optimization of fishing activities as a result of which fishermen of “Fish-ka” and “Volna” companies carry out continuous monitoring of observance of rules of fishery at the reservoir. According to fish inspectors and the staff of the Saratov Research Institute, IUU catch volume for the Irikla Reservoir is lower than other major reservoirs (e.g.Saratov and Volgograd). The method for calculating IUU catch for pikeperch is applied as a standard calculation for the entire stock in the Irikla Reservoir.

Throughout the year, monitoring of the recreational fishery is carried out at the reservoir. This includes an analysis of the total catch of all species caught by recreational fishers (i.e. survey by Kamsko-Uralsk branch of FSBI “Glavrybvod”), and fishing effort by recording the number of recreational fishermen (i.e. survey by Saratov VNIRO) is conducted. These data are used to calculate the total annual catch from the recreational sector for different species of fish.

Available evidence on the level of monitoring of the harvest strategy is sufficient to meet SG60.

	Harvest strategy review			
D	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			**Perch Yes** **Pikeperch Yes**(NB – is not relevant as SIf does not meet SG80)
Rationale				

Perch
The harvest strategy is reviewed annually. The harvest strategy includes an optimization of number of fishers working for the company, which increases the level of control of effort within the fishery.

The commercial strategy used at the moment shows consistency as there were no signs of overexploitation of the population of perch within the last decade. Nevertheless, the fishing companies are interested in sustainable fishing and full development of commercial stock in the reservoir, as according to the available data on average for 2011-2020commercial fisheries used only 62.5% of the available quota for perch on the Irikla Reservoir.

The implementation of the harvest controls and any possible reorganization of fishery are carried out at the scientific justification of Saratov VNIRO and more recently by “Fish-ka” and “Volna” companies. The optimization (reduction) of number of fishermen within the perch fishery decreased from 90 people in the early 2000s to less than 50 fishermen to increase the fishing opportunities for each fisherman. Fishery sites were transferred to fishermen for a long-term use (10 years). These actions allowed to increase productivity of one fisherman (on average 9.8 t. for 31 people in 2011 and 19.1 t. for 47 people in 2020) to increase internal control in the fishing companies, and also to improve observance of law at the reservoir through operational cooperation of fishers with the authorities, controlling the fishing order. As a result, the level of IUU on the Irikla Reservoir decreased to negligible numbers: fishermen of two companies who regularly before the beginning of the season together with a Rybnadzor - Fishery supervision - carry out clearing of fishing parcels, currently report an almost total absence of lost illegal gillnets. Eightyearsago, 4 boats of illegal gillnets were pulled out from water but this has now been reduced to zero. In 2018, the position of freed foremen who carry out the paperwork and control the fishing within the companies was introduced in the fishing companies. Thus, the measures undertaken in reorganization of fishery have helped to increase the level of compliance within the fishery and minimize uncertainties in the results of the stock assessment. Fishing parcels are re-allocated to users (fishing companies) on a regular basis. The license to permit the allocation of TAC/RAC quotas is valid for 10 years. Both distributions of quota and fishing parcels are based on complex assessment of effectiveness of companies and their credit history. In some cases, not all fishing parcels are allocated simultaneously. For instance, one fishing parcel in the Irikla Reservoir (Suunduk Bay) was allocated to the Volna fishing company only two years ago: before that time there was no commercial fishery at the parcel. The process of such allocation is done based on competition among fisheries and thus includes their assessment by the management system. Since May 2018, a daily catch rate of 5 kg has been introduced for amateurs at the Irikla Reservoir. Since November 2018 the fine for illegally fished perch was up to 250rubles per fish (earlier the fine was 17rubles per fish).

The systems described above provide a range of evidence to demonstrate that the harvest strategy is reviewed regularly and that improvements have been made, leading to reduced IUU fishing and increased level of perch biomass, sufficient to meet the requirements at SG100.

Pikeperch
The harvest strategy is reviewed annually. The harvest strategy includes an optimization of number of fishers working for the company, which increases the level of control of effort within the fishery.
The commercial strategy used at the moment shows consistency as there were no signs of overexploitation of the population of pikeperch by commercial fishermen within the last decade. Nevertheless, the fishing companies are interested in sustainable fishing and full development of commercial stock in the reservoir, as according to Saratov VNIRO optimum harvest of pikeperch for Irikla Reservoir could be 95 tons in 2022, which is lower than catch of 85.7tons registered in 2020.

The implementation of the harvest controls and any possible reorganization of fishery are carried out at the scientific justification of Saratov VNIRO and more recently by “Fish-ka” and “Volna” companies. The optimization (reduction) of number of fishermen within the pikeperch and pikeperch fishery decreased from 90 people in the early 2000s to less than 50 fishermen to increase the fishing opportunities for each fisherman. Fishery sites were transferred to fishermen for a long-term use (10 years). These actions allowed to increase productivity of one fisherman (on average 9.8 t. for 31 people in 2011 and 19.1 t. for 47 people in 2020) to increase internal control in the fishing companies, and also to improve observance of law at the reservoir through operational cooperation of fishers with the authorities, controlling the fishing order. As a result, the level of IUU on the Irikla Reservoir decreased to negligible numbers: fishermen of two companies who regularly before the beginning of the season together with a Rybnadzor - Fishery supervision - carry out clearing of fishing parcels, currently report an almost total absence of lost illegal gillnets. Seven years ago, 4 boats of illegal gillnets were pulled out of the water but this has now been reduced to zero. In 2018, the position of freed foremen who carry out the paperwork and control the fishing within the companies was introduced in the fishing companies. Thus, the measures undertaken in reorganization of fishery have helped to increase the level of compliance within the fishery and minimize uncertainties in the results of the stock assessment.

Fishing parcels are re-allocated to users (fishing companies) on a regular basis. The license to permit the allocation of TAC/RAC quotas is valid for 10 years. Both distributions of quota and fishing parcels are based on complex assessment of effectiveness of companies and their credit history. In some cases, not all fishing parcels are allocated simultaneously. For instance, one fishing parcel in the Irikla Reservoir (Suunduk Bay) was allocated to the Volna fishing company only two years ago: before that time there was no commercial fishery at the parcel.The process of such allocation is done based on competition among fisheries and thus includes their assessment by the management system. Since May 2018, a daily catch rate of 5 kg has been introduced for amateurs at the Irikla Reservoir. Since November 2018 the fine for illegally fished pikeperch was up to 3 305 rubles per fish (earlier the fine was 250 rubles per fish).

The systems described above provide a range of evidence to demonstrate that the harvest strategy is reviewed regularly and that improvements have been made, leading to reduced IUU fishing and increased level of pikeperch biomass sufficient to meet the requirements at SG100.

	Shark finning			
e	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				

Perch and pikeperch are not shark species.

	Review of alternative measures			
f	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?	**Perch NA** **Pikeperch Yes**	**Perch NA** **Pikeperch No**	**Perch NA** **Pikeperch No**

Rationale

Fishing was carried out by means of gillnets whilst fishing with beach seine (under ice) was prohibited due to catches of juvenile bream. This led to a decrease in the catch of small species of fish (perch, roach and other cyprinids fishes).

Perch
According to the “Fisheries Rules for the Volga-Caspian Basin”, the minimum commercial size has not been established for perch of the Irikla Reservoir (paragraph 26). Thus, for perch the minimum fishing size is not provided. Paragraph 25.1.2. of the Fisheries Rules indicate that it is forbidden to use the fishing gears with the mesh size of less than 30 mm in the gillnets for fishing single category of fish named "small tiddler"(including perch, roach, crucian carp etc.). It is considered that all fish of non-commercial size could escape through the mesh of fishing gear, the remaining fish is considered commercial and may be used for consumption.
The fishers of the Fish-kause gillnet sizes of of 30 – 36 mm and 50 – 70 mm. It is known, that in the Irikla Reservoir perch males mature when they reach the length of 7-8 cm, females when they are 10cm in length. Thus, all immature perch pass through the nets of minimal allowed mesh size and avoid entanglement in them.Besides juvenile fish, there is no unwanted catch of other fish species because fishers take all the harvest.
Since there is no UoA-related mortality of unwanted catch of the target stock of perch in the Irikla Reservoir, this PI is not relevant for scoring.

Pikeperch

According to the “Fisheries Rules for the Volga-Caspian Basin”, for the IriklaReservoirthe minimum commercial sizefor several species has been established (paragraph 26). For pikeperch the minimum fishing size of 40 cm is provided. Paragraph 25.1. of the Fisheries Rules indicate that it is forbidden to use the fishing gears with the mesh sizeofless than 30 mm in the gillnets for fishing single category of fish named "small tiddler" (including perch, roach, crucian carp etc.) and the mesh size less than 50 mm in the gillnets for fishing other category of fish named "large tiddler" (including pikeperch, pike, wild carp etc.). It is considered that all fish of non-commercial size could escape through the mesh of fishing gear.

The fishers of the Fish-kause gillnet sizesof 30 – 36 mm and 50 – 70 mm. It is known, that all immature perch pass through the nets of minimal allowed mesh size and avoid entanglement in them. However, pikeperch matures later and grows faster than perch, so gillnets of small mesh size could potentially take considerable amounts of juvenile pikeperch. According to the Fishing Rules (paragraph 27.2 and the internal instruction of Fish-ka, when fishing with small-meshed gillnets, the by-catch of juveniles is not allowed more than 20% of the total number of all fish species in one fishing operation. If the catch of immature fish is exceeded, the captain (foreman) must record the catch in the fishing log and change the fishing place. According to the Fishing Rules paragraph 26 and the internal instruction of Fish-ka, when catching pikeperch less than the permitted size, the fish should be immediately released into the natural habitat with the least damage.

While there are a number of possible measures to minimize UoA 1-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 pikeperch stock of the Irikla reservoir, namely: 1. The Fisheries Rules for the Volga-Caspian fishing basin establish the total maximum by-catch of any fish species of less than the permitted size (20% by number) for the entire fishery basin (without differentiation into individual water bodies); 2. The Fishing Rules are reviewed irregularly, the term for the appearance of the new edition of the rules can reach 10 years or more; 3. There are no records of cases of by-catch of large numbers of juvenile pikeperch in the fishing logs of fishermen (as required by the Fishing Rules); 4. There is no up-to-date scientific data on catches (by fish species, by age) and volumes of pikeperch in fishing gillnets with different mesh size; 5. There is no data on the survival rate of pikeperch after its release from fishing gillnets with small mesh size. For this reason the fishery fails to meet SG80 requirements, but meets them at SG60.

References

Shashulovsky*et al*., (2014); Yermolin (2014); Belyanin (2018); Belyanin (2021); (Fish-ka instruction…, 2020)

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

Draft scoring range	**Perch ≥80** **Pikeperch 60-79**
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	**Perch = 85** **Pikeperch = 75**
Condition number	**1 (Pikeperch)**

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?	**Perch Yes** **Pikeperch Yes**	**Perch Yes** **Pikeperch Yes**	**Perch No** **Pikeperch No**
Rationale				

Perch

The Irikla perch fishery does not have an explicit harvest control rule or limit reference point but a suite of well-defined management tools and measures are in place that are consistent with ensuring the susceptibility of perch 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 version 2.01, 2018) that is considered relevant to the scale and intensity of the fishery.

Typical of most Russian inland fisheries, fishing opportunities are calculated on an annual basis to take into account inter-annual variability in estimated stock size (i.e. annual changes in available biomass, *Ba*) and ensures that the exploitation rate is reduced at a higher rate than the rate of stock size declines. In consequence, annual changes in fishing opportunities are not triggered by a single limit reference point, but rather a proportion of *Ba* such that the exploitation rate decreases as a function of stock size. Furthermore, the RAC quotas are calculated on the available biomass (*Ba*), i.e., 50% of stock abundance. Were the Ba to be fished out (mainly fish aged 3-7) no further catches would be permitted, and a proportion of the productive stock (i.e. juvenile and older mature fish; *Btotal* - *Ba*) would remain to facilitate rebuilding and thus reduces the risk of impairing recruitment capacity.

Annual fishing opportunities are reviewed on an annual basis by the expert review panel within the Ministry of Agriculture and a declining abundance and catch series would be expected to trigger early management action such as a total ban on the fishery before *Ba* is significantly reduced. To date, there is no record of this management action being required in the fishery.

In addition, the harvest control rules and tools are supported by a suite of precautionary management measures and tools as part of the harvest strategy that help prevent the stock status reaching a point of recruitment impairment (PRI). These include both spatial and temporal closures to provide a refuge for proportion of the stock at any one time (all age classes), a defined gillnet mesh size range that selects size/age of fish and control over the total number of annual fishing licenses. The highly selective mesh size prevents the capture of both juvenile and large mature fish, thus helping to eliminate recruitment and growth overfishing. Additionally, the strict division of quotas among separate Irikla Reservoir parcels, without the right of their transfer during a fishing season, provides a regular under-exploitation of the perch and pikeperch stocks by commercial fishermen below the TAC (RAC) quota levels.

The main provisions of the Fishing Rules for the Volga-Caspian Basin in relation to the specific conditions of the Irikla Reservoir with a description of the mandatory actions of fishermen when by-catching birds and undersized fish in excess of the norms established by the Fishing Rules are contained in a special internal document issued by the managers of fishing department of the Fish-ka and Volna companies (Fish-ka instruction…, 2020).

These relatively simple harvest control rules and tools are appropriate for the scale and intensity of the fishery, ensure that the exploitation rate is reduced as the PRI is approached, and expected to keep the stock fluctuating around a target level consistent with MSY so both SG60 and SG80 levels are meet. However, there are no evidences that HCRs are taking into account the ecological role of the perch stock most of the time, so SG100 is not meet.

Pikeperch
The Irikla pikeperch fishery does not have an explicit harvest control rule or limit reference point but a suite of well-defined management tools and measures are in place that are consistent with ensuring the susceptibility of pikeperch 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 version 2.01, 2018) that is considered relevant to the scale and intensity of the fishery.

Typical of most Russian inland fisheries, fishing opportunities are calculated on an annual basis to take into account inter-annual variability in estimated stock size (i.e. annual changes in available biomass, *Ba*) and ensures that the exploitation rate is reduced at a higher rate than the rate of stock size declines. In consequence, annual changes in fishing opportunities are not triggered by a single limit reference point, but rather a proportion of *Ba* such that the exploitation rate decreases as a function of stock size. Furthermore, the TAC quotas for pikeperch are calculated on the available biomass (*Ba*), i.e., approximately 20% of stock abundance. Were the Ba to be fished out (mainly fish aged 3-6) no further catches would be permitted, and a proportion of the productive stock (i.e. juvenile and older mature fish; *Btotal* - *Ba*) would remain to facilitate rebuilding and thus reduces the risk of impairing recruitment capacity.

Annual fishing opportunities are reviewed on an annual basis by the expert review panel within the Ministry of Agriculture and a declining abundance and catch series would be expected to trigger early management action such as a total ban on the fishery before *Ba* is significantly reduced. To date, there is no record of this management action being required in the fishery.

In addition, the harvest control rules and tools are supported by a suite of precautionary management measures and tools as part of the harvest strategy that help prevent the stock status reaching a point of recruitment impairment (PRI). These include minimal fishery size for pikeperch, juvenile permissible volume of by-catch (20% by number), both spatial and temporal closures to provide a refuge for proportion of the stock at any one time (all age classes), a defined gillnet mesh size range that selects size/age of fish and control over the total number of annual fishing licenses. Besides, the strict division of quotas among separate Irikla Reservoir parcels, without the right of their transfer during a fishing season, provides a regular under-exploitation of the perch and pikeperch stocks by commercial fishermen below the TAC (RAC) quota levels.

The main provisions of the Fishing Rules for the Volga-Caspian Basin in relation to the specific conditions of the Irikla Reservoir with a description of the mandatory actions of fishermen when by-catching birds and undersized fish in excess of the norms established by the Fishing Rules are contained in a special internal document issued by the managers of fishing department of the Fish-ka and Volna companies (Fish-ka instruction…, 2020).

These relatively simple harvest control rules and tools are appropriate for the scale and intensity of the fishery, ensure that the exploitation rate is reduced as the PRI is approached and expected to keep the stock fluctuating around a target level consistent with MSY so both SG60 and SG80 levels. However, there is no evidence that HCRs are taking into account the ecological role of the pikeperch stock most of the time, so SG100 is not meet.

	HCRs robustness to uncertainty			
b	Guide post		The HCRs are likely to be robust to the main uncertainties.	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.
	Met?		**Perch No** **Pikeperch Yes**	**Perch No** **Pikeperch No**
Rationale				

Perch

Uncertainties are taken into consideration by calculating available biomass with two assessment methods and by establishing annual quotas (see stock assessment, PI1.2.4). Sources of mortality external to the fishery from illegal and recreational fisheries are also considered by scientists of Saratov Institute but there remains some uncertainty over their use in the stock assessment process and allocation of RAC quota.

Until recent years, the intensity of the perch fishery in the Irikla Reservoir was low; the utilization of the quota did not exceed 63% during 2011-2019, which did not require more explicit management actions.However, according to official statistics, the utilization of the quota by commercial fishing in 2020 amounted to 99.1%, which, when taking into account the catch by amateurs, increases the amount of utilization to 109.1% (approximately 56.8% of the commercial stock). At the same time, the natural mortality of perch in recent years could also increase since there are trends in an increase in stock status of main predators for perch - pikeperch (from 399 to 635 tons in 2016-2020) and pike (from 12 to 23 tons in 2016-2020). Thus, it is not clear that the HCRs are likely to be robast to the main uncertainties to meet both the SG80 and SG100 levels.

Pikeperch

Uncertainties are taken into consideration by calculating available biomass with two assessment methods and by establishing annual quotas (see stock assessment, PI1.2.4). Sources of mortality external to the fishery from illegal and recreational fisheries are also considered by scientists of Saratov Institute but there remains some uncertainty over their use in the stock assessment process and allocation of TAC quota. When establishing TAC for pikeperch, managers use an underestimated fishing mortality rate of 0.2Ba instead of the recommended value of 0. 3Ba.This, in particular, leaves a reserve for accounting for non-commercial catches (poachers, amateurs).

There is sufficient evidence that the main uncertainties are taken into account in the selection of harvest control rules (HCRs) to meet the requirements at the SG80 level. It is not clear that the HCRs have been specifically designed for the Irikla Reservoir to take into account a wide range of uncertainties to meet the SG100 level.

	HCRs evaluation			
c	Guide post	There is **some evidence** that tools used **or available** to implement HCRs are appropriate and effective in controlling exploitation.	**Available evidence indicates** that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	**Evidence clearly shows** that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	Met?	**Perch Yes** **Pikeperch Yes**	**Perch Yes** **Pikeperch Yes**	**Perch No** **Pikeperch No**
Rationale				

Perch

There is evidence from the total reported commercial landings of perch, which were consistently below the allocated RAC quota, that the tools are appropriate and effective in achieving exploitation levels under the HCRs. It is noted that total perch catches (commercial and recreational) were reported to overshoot the RAC in 2020 due to limited in-season monitoring of the recreational fisheries sector. However, the results of annual stock assessments conducted by the Saratov Research Institute show a maintaining of perch abundance at productive levels and continuous increase in biomass from around 80 tonnes in 1994 to 870-960 tonnes in 2011-2020.

Under these circumstances, there is sufficient evidence to meet the requirements at both SG60 and SG80 levels but not considered comprehensive to meet SG100.

Pikeperch

There is evidence from the total reported commercial landings of pikeperch, which are consistently below the allocated TAC quota, that the tools are appropriate and effective in achieving exploitation levels under the HCRs. It is noted that total pikeperch catches (commercial and recreational) were reported to overshoot the TAC in recent years due to limited in-season monitoring of the recreational fisheries sector. However, the total catch (commercial and non-commercial) does not exceed the scientifically recommended value, calculated as 30% of commercial stock.

Results of annual stock assessments conducted by the Saratov Research Institute show stock biomass levels have been maintained at productive levels and have significantly increased over the past decade.
Under these circumstances, there is sufficient evidence to meet the requirements at both SG60 and SG80 levels but not considered comprehensive to meet SG100.

References

Shashulovsky*et al*., (2014); Yermolin (2014); Belyanin (2018); Belyanin (2021); Fish-ka instruction (2020).

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

Draft scoring range	**Perch ≥80** **Pikeperch ≥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	**Perch = 75** **Pikeperch = 80**
Condition number (if relevant)	**2 (Perch)**

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?	**Perch Yes** **Pikeperch Yes**	**Perch Yes** **Pikeperch Yes**	**Perch Yes** **Pikeperch Yes**
Rationale				

Perch

A comprehensive range of information relevant to support the harvest strategy exists. This relates 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 other environmental and ecological information.

The fishing companies on Irikla Reservoir keep records of all licensed commercial fishermen, boats and gear employed (cf. Table 2). They also maintain daily catch records that are monitored on a routine basis to determine the cumulative catch against the allocated quota. This enables strict control over the catch to prevent the quota being exceeded.

Routine environmental monitoring of the fishery by the government is required under chapter 5 of Federal law (article 42; 20.12.2004 N 166-FZ), which specifically highlights the distribution, abundance, quality and reproduction of aquatic bio resources and habitats, the fishery and preservation of aquatic bio resources. According to this law, the organisations of different agencies carry out a variety of monitoring at the Irikla Reservoir.

The Saratov branch of VNIRO (Russian Federal “Research Institute of Fisheries and Oceanography”) together with Kamsko-Uralsk branch of FSBI “Glavrybvod” carries out ichthyological data collection (spring, summer and autumn sampling with 12 different sized gillnets and beach seines).The co-operation of the Saratov Research Institute and KamUralRybvod at the Irikla water body is conducted according to the approved Program of joint monitoring surveys. Sampling is conducted over the whole reservoir including randomised sampling of times and locations. During the surveys data related to the species composition of catch, lengths and weights, age, sex, fertility, maturity, food supply, heavy metal content in fish muscles, quality of environment etc. are collected and analysed to better understand the stock distribution and structure. The same organisations carry out monitoring of the catch of professional fishermen.

The Saratov Research Institute conducts ecological, hydro-biological, hydrochemical research on the reservoir. In addition, Kamsko-Uralsk branch of FSBI “Glavrybvod” monitors the commercial catch volume throughout the year and investigates the structure of the catch of recreational fishermen, their catching method and location of fishing. Calculation of number of recreational fishermen at a reservoir is carried out by the staff of the Saratov Research Institute and Territorial Administration of Federal Fishery Agency (FFA).

The organisation for the management and production of the Irikla Reservoir carries out systematic monitoring of 32 (including pH, O_2) hydrological and hydro-chemical indicators of water quality. For this purpose, 9 sampling gauge stations have been put in place. In June 2013, on one of site visits to the reservoir there was a mass juvenile fish mortality reported and hydro-chemical analyses showed that no excess of any maximum permissible concentration (MPC) was observed. Subsequently, the range of information and data collected indicated that the mortality event was highly likely to be connected with the overproduction of juveniles for which food of a suitable size was limited.

Given the scale and intensity of the fishery, there is sufficient evidence to suggest that a comprehensive range of information is available to support the harvest strategy, including other environmental information in addition to other hydrographic information to help better understand the context of the fishery. Given the scale and intensity of the fishery, this level of information and monitoring meets the requirements at SG60, SG80 and SG100 levels.

Pikeperch

A comprehensive range of information relevant to support the harvest strategy exists. This relates 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 other environmental and ecological information.

The fishing companies on Irikla Reservoir keep records of all licensed commercial fishermen, boats and gear employed (cf. Table 2). They also maintain daily catch records that are monitored on a routine basis to determine the cumulative catch against the allocated quota. This enables strict control over the catch to prevent the quota being exceeded.

Routine environmental monitoring of the fishery by the government is required under chapter 5 of Federal law (article 42; 20.12.2004 N 166-FZ), which specifically highlights the distribution, abundance, quality and reproduction of aquatic bio resources and habitats, the fishery and preservation of aquatic bio resources. According to this law, the organisations of different agencies carry out a variety of monitoring at the Irikla Reservoir.

The Saratov branch of VNIRO (Russian Federal “Research Institute of Fisheries and Oceanography”) together with Kamsko-Uralsk branch of FSBI “Glavrybvod” carries out ichthyological data collection (spring, summer and autumn sampling with 12 different sized gillnets and beach seines).The co-operation of the Saratov Research Institute and KamUralRybvod at the Irikla water body is conducted according to the approved Program of joint monitoring surveys. Sampling is conducted over the whole reservoir including randomised sampling of times and locations. During the surveys data related to the species composition of catch, lengths and weights, age, sex, fecundity, maturity, food supply, heavy metal content in fish muscles, quality of environment etc. are collected and analysed to better understand the stock distribution and structure. The same organisations carry out monitoring of the catch of professional fishermen.

The Saratov Research Institute conducts ecological, hydro-biological, hydrochemical research on the reservoir. In addition, Kamsko-Uralsk branch of FSBI “Glavrybvod” monitors the commercial catch volume throughout the year and investigates the structure of the catch of recreational fishermen, their catching method and location of fishing. Calculation of number of recreational fishermen at a reservoir is carried out by the staff of the Saratov Research Institute and Territorial Administration of Federal Fishery Agency (FFA).

The organisation for the management and production of the Irikla Reservoir carries out systematic monitoring of 32 (including pH, O_2) hydrological and hydro-chemical indicators of water quality. For this purpose, 9 sampling gauge stations have been put in place. In June 2013, on one of site visits to the reservoir there was a mass juvenile fish mortality reported and hydro-chemical analyses showed that no excess of any maximum permissible concentration (MPC) was observed. Subsequently, the range of information and data collected indicated that the mortality event was highly likely to be connected with the overproduction of juveniles for which food of a suitable size was limited.

Given the scale and intensity of the fishery, there is sufficient evidence to suggest that a comprehensive range of information is available to support the harvest strategy, including other environmental information in addition to other hydrographic information to help better understand the context of the fishery. Given the scale and intensity of the fishery, this level of information and monitoring meets the requirements at SG60, SG80 and SG100 levels.

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

Rationale

Perch
The harvest control rule is managed on an annual frequency which is appropriate for the management of the stock.

Whilst carrying out commercial fishing on the Irikla Reservoir, the Volna and Fish-ka companies fully meet the requirements of chapter II "About preservation of aquatic bio resources" relating to the Rules of Fishery for the Volga-Caspian Basin (section 3.3.5). According to regulations of the Rules of Fishery, on board of each fishing vessel of the “Fish-ka” and “Volna” companies is a fishing logbook, registered with the Territorial Administration of Federal Fishery Agency (FFA) which details the organisation conducting the fishery, the person responsible for fishing (the foreman, lead men), licence number of the permission for production of aquatic bio resources (ABR), location of fishing activity, details of fishing gear (e.g. mesh size), physical location (coordinates) of unloading of catch of ABR, type and number of acceptance documents is specified.

The person, responsible for fishing records in the logbook the name of each operation connected with production of ABR (with the indication of time of each operation), and also keeps records of the catch weight of each ABR by species (kg) including those retained on board or released. A cumulative catch of ABR by species is also maintained. The level of completeness and correctness of maintaining the fishing logbook and filling out of required documentation is regularly checked by the organisations controlling fishing.

In addition to commercial catches, an annual stock assessment is conducted before the start of the fishing season by the Saratov Research Institute to monitor available stock biomass (*Ba*) to the fishery. The Saratov Research Institute uses gillnets with a gear selectivity similar to that of the commercial fishery to estimate biomass.

Given the scale and intensity of the fishery, there is sufficient evidence to monitor stock abundance and fishery removals at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule. This is sufficient to meet both SG60 and SG80 levels.

There is no evidence to demonstrate that there is a good understanding of inherent uncertainties in the information and the robustness of assessment and management to this uncertainty to meet the SG100 level.

Pikeperch
The harvest control rule is managed on an annual frequency which is appropriate for the management of the stock.

Whilst carrying out commercial fishing on the Irikla Reservoir, the Volna and Fish-ka companies fully meet the requirements of chapter II "About preservation of aquatic bio resources" relating to the Rules of Fishery for the Volga-Caspian Basin (section 3.3.5). According to regulations of the Rules of Fishery, on board of each fishing vessel of the “Fish-ka” and “Volna” companies is a fishing logbook, registered with the Territorial Administration of Federal Fishery Agency (FFA) which details the organisation conducting the fishery, the person responsible for fishing (the foreman, lead men), license number of the permission for production of aquatic bio resources (ABR), location of fishing activity, details of fishing gear (e.g. mesh size), physical location (coordinates) of unloading of catch of ABR, type and number of acceptance documents is specified.

The person, responsible for fishing records in the logbook the name of each operation connected with production of ABR (with the indication of time of each operation), and also keeps records of the catch weight of each ABR by species (kg) including those retained on board or released. A cumulative catch of ABR by species is also maintained. The level of completeness and correctness of maintaining the fishing logbook and filling out of required documentation is regularly checked by the organisations controlling fishing.

In addition to commercial catches, an annual stock assessment is conducted before the start of the fishing season by the Saratov Research Institute to monitor available stock biomass (Ba) to the fishery. The Saratov Research Institute uses gillnets with a gear selectivity similar to that of the commercial fishery to estimate biomass.

Given the scale and intensity of the fishery, there is sufficient evidence to monitor stock abundance and fishery removals at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule. This is sufficient to meet both SG60 and SG80 levels.

There is no evidence to demonstrate that there is a good understanding of inherent uncertainties in the information and the robustness of assessment and management to this uncertainty to meet the SG100 level.

	Comprehensiveness of information			
c	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		**Perch Yes** **Pikeperch Yes**	

Rationale

Perch

In recent years a considerable reduction of the level of illegal catch on the Irikla Reservoir has been noted. This is in part due to improvement of activity of the organisations holding fishery conservation events, and optimization of fishing activities and professional fishermen of “Fish-ka” and “Volna” that provide constant monitoring and surveillance over the reservoir, including self-policing effect of licensed fishers. Perch is not regarded as a high value species for poachers and generally not targeted. Gillnets with large mesh size, the preferred illegal gear of poachers, target mainly bream and pikeperch.

Estimation of the level of recreational fishing provides an understanding of the uncertainties related to the catches of perch from the recreational fishery and is based on the number of questionnaires from recreational fishers, (KamUralRybvod 60-70 per year) with additional survey information from the Fisheries Research Institute. There remains some uncertainty over the level of recreational catch.

Overall, estimates of all catches are considered to be reported and recorded effectively to support the harvest strategy. Given the scale and intensity of the fishery, there is good information on all other fishery removals to meet the requirements at SG80 level.

Pikeperch

Pikeperch is regarded as a high value species and generally targeted not only by commercial fishermen, but by poachers as well. However, in recent years a considerable reduction of the level of illegal catch on the Irikla Reservoir has been noted. This is in part due to improvement of activity of the organisations holding fishery conservation events, and optimization of fishing activities and professional fishermen of “Fish-ka” and “Volna” that provide constant monitoring and surveillance over the reservoir, including self-policing effect of licensed fishers.

Estimation of the level of recreational fishing provides an understanding of the uncertainties related to the catches of pikeperch from the recreational fishery and is based on the number of questionnaires from recreational fishers, (KamUralRybvod 60-70 per year) with additional survey information from the Fisheries Research Institute. There remains some uncertainty over the level of recreational catch although new regulations currently restrict daily catches of pikeperch to 5 kg per day.

Overall, estimates of all catches are considered to be reported and recorded effectively to support the harvest strategy. Given the scale and intensity of the fishery, there is good information on all other fishery removals to meet the requirements at SG80 level.

References

Poddubniy& Gordeev (1966); Yermolin (1980); Yermolin (2004); Karagoishev, (1983); Yermolin (2014); Belyanin (2018); Belyanin (2021); Federal law 20.12.2004 N 166-FZ

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

Draft scoring range	**Perch ≥80** **Pikeperch ≥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	**Perch = 90** **Pikeperch = 90**
Condition number (if relevant)	

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?		**Perch Yes** **Pikeperch Yes**	**Perch No** **Pikeperch No**
Rationale				

Perch

The assessment methods are used to estimate biological reference points to manage the fishery under an annual quota system. The assessment of the stock is appropriate both for the stock and for the implemented harvest control rules. Two methods of stock assessment are conducted. Estimation of the level of recreational fishing provides an understanding of the uncertainties related to the catches of perch from the recreational fishery and is based on the number of questionnaires from recreational fishers, (Kamsko-Uralsk branch of FSBI “Glavrybvod” 60-70 per year) with additional survey information from the Fisheries Research Institute. This is sufficient to meet the requirements at SG80.

We recommend that additional information in the stock assessment may be required for SG100 (e.g. increased analysis of length at maturity, length at first capture, sex differences). The biological features of the perch population of Irikla Reservoir are regularly studied by the staff of the Saratov Research Institute. During the monitoring works that are carried out by the Institute and based on data from the catch of the commercial fishery such indicators as the size, weight, sex, age, food supply and some other characteristics are analysed. However, the techniques of calculations of the stock status of perch applied now don't consider use of biological characteristics as mathematical parameters. Earlier biological features of fishes were used in calculations of stocks, however, with transition of the Irikla Reservoir under jurisdiction of the Saratov Research Institute (till 2009 the reservoir was supervised by the institute of Yekaterinburg), the alternative options of calculations were applied based on: 1. data of fishing statistics and intensity of catch and 2. According to the catch on fishing effort by set nets. The second method refers to direct statistical methods (the so-called "area method" is used by scientists) when the stock status is estimated on the base on the CPUE series recorded from the fishery survey with one standard set net. Taking into account the catch coefficient of the fishing gear (experimentally established value), the obtained data is then converted to the entire area occupied by the species. The application of two methods is caused by necessity of obtaining reasonable (correct) values of stock, as basis of formation of volume of RAC.

Pikeperch

The assessment methods are used to estimate biological reference points to manage the fishery under an annual quota system. The assessment of the stock is appropriate both for the stock and for the implemented harvest control rules. Two methods of stock assessment are conducted (see section 3.3.6 above). Estimation of the level of recreational fishing provides an understanding of the uncertainties related to the catches of pikeperch from the recreational fishery and is based on the number of questionnaires from recreational fishers, (Kamsko-Uralsk branch of FSBI “Glavrybvod” 60-70 per year) with additional survey information from the Fisheries Research Institute. This is sufficient to meet the requirements at SG80.

We recommend that additional information in the stock assessment may be required for SG100 (e.g. increased analysis of length at maturity, length at first capture, sex differences). The biological features of the pikeperch population of Irikla Reservoir are regularly studied by the staff of the Saratov Research Institute. During the monitoring works that are carried out by the Institute and based on data from the catch of the commercial fishery such indicators as the size, weight, sex, age, food supply and some other characteristics are analysed. However, the techniques of calculations of the stock status of pikeperch applied now don't consider use of biological characteristics as mathematical parameters. Earlier biological features of fishes were used in calculations of stocks, however, with transition of the Irikla Reservoir under jurisdiction of the Saratov Research Institute (till 2009 the reservoir was supervised by the institute of Yekaterinburg), the alternative options of calculations were applied based on: 1. data of fishing statistics and intensity of catch (biostatistical method that allows to characterize the state of fish stocks indirectly) and 2. According to the catch on fishing effort by set nets. The second method refers to direct statistical

methods (the so-called "area method" is used by scientists) when the stock status is estimated on the base on the CPUE series recorded from the fishery survey with one standard set net. Taking into account the catch coefficient of the fishing gear (experimentally established value), the obtained data is then converted to the entire area occupied by the species. The application of two methods is caused by necessity of obtaining reasonable (correct) values of stock, as basis of formation of volume of TAC.

	Assessment approach			
b	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?	**Perch Yes** **Pikeperch Yes**	**Perch Yes** **Pikeperch Yes**	
Rationale				

Perch
The current stock assessment methodology defines a single reference point for both target and limit on an annual basis (implemented through RAC quota allocations). Both limit and target reference points for perch are defined as 50% of the stockbiomass. This TRP (which is also equivalent to the limit reference point LRP) is used to establish annual fishing opportunities (in other words determined fishing mortality, which actually considered as $F_{0.5} \leq M$, is used with the same intent as F_{MSY}). This fishing intensity is based on observations of the dynamics of the abundance and change in the mass of perch in the reservoirsof Volga River basins. It is caused by the need to constrain the number of perch and to release food resources for fast-growing productive fish species (Nebolsina, 1980). This approach has been demonstrated to effectively keep the stock well above the point at which recruitment would be impaired. This approach is considered appropriate for the scale and intensity of the fishery and as a result the team assigns a score of 80 to this SI (SG60 and SG80 are met).

Pikeperch
The current stock assessment methodology defines a single reference point for both target and limit on an annual basis (implemented through TAC quota allocations). Both limit and target reference points for pikeperch are defined as approximately 20% of the stock biomass. This TRP (which is also equivalent to the limit reference point LRP) is used to establish annual fishing opportunities (in other words determined fishing mortality, which actually considered as $F_{0.2} \leq M$, is used with the same intent as F_{MSY}). The stock assessment methodology is based on a principle of optimal removals suggested by Tjurin (1967), according to which the appropriate level of commercially valuable fish mortality should not exceed the natural mortality coefficient (approximately 30%). This precautionary approach has been demonstrated to effectively keep the stock well above the point at which recruitment would be impaired. This approach is considered appropriate for the scale and intensity of the fishery and as a result the team assigns a score of 80 to this SI (SG60 and SG80 are met).

	Uncertainty in the assessment			
c	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?	**Perch Yes** **Pikeperch Yes**	**Perch Yes** **Pikeperch Yes**	**Perch No** **Pikeperch No**
Rationale				

Perch
The assessment takes uncertainty into account, including estimates on the level of the recreational catch and illegal fishing.

The level of illegal catch is estimated from applying a correction factor (1.2-1.4) to the official catch statistics and used for both the Saratov and Volgograd reservoirs. This method is thought to over-estimate the level of IUU catches for perch in the Irikla Reservoir as monitoring of resources in the Orenburg Region (Middle Volga Directorate for Fishery of Federal Agency for Fishery), show that illegal fishing target larger species of higher value, such as pikeperch,

bream, wild carp, ide, catfish, and whitefish. Illegal fishers are more likely to use a large mesh size (50 – 100 mm) rather than the gear used to select the smaller perch.

In addition, information on the level of illegal fishing using other 'minor' gear types such as fishing rod, triangle and square traps are thought to contain less than 0.1% of the total catch. Thus, the currently applied correction factor to estimate illegal perch catches should be checked and adjusted accordingly.
Estimates of recreational catch are obtained directly from recreational fishers in addition to a questionnaire. Volumes of fish caught by recreational fishers are defined based on estimates of the number of fishermen on a reservoir during the winter and summer periods, intensity of fishing, intensity of fishing of particular species of fish (targeting behaviour), average time spent fishing during the winter and summer periods.

Given the scale an intensity of the fishery, the level of information obtained to account for various sources of uncertainty in the fishery is deemed sufficient to meet the requirements at both SG60 and SG80 levels. This uncertainty however, is not described in a probabilistic manner and no bootstrapping (or equivalent) is used in the assessment necessary to meet the requirements at SG100.

Pikeperch
The assessment takes uncertainty into account, including estimates on the level of the recreational catch and illegal fishing.

The level of illegal catch is estimated from applying a correction factor (1.2-1.4) to the official catch statistics and used for both the Saratov and Volgograd reservoirs. This method is thought to over-estimate the level of IUU catches for pikeperch in the Irikla Reservoir as monitoring of resources in the Orenburg Region (Middle Volga Directorate for Fishery of Federal Agency for Fishery) and accounting for catches from poaching, show that in recent years pikeperch has made up 10% of their catch. Thus, the currently applied correction factor to estimate illegal pikeperch catches should be checked and adjusted accordingly.

Estimates of recreational catch are obtained directly from recreational fishers in addition to a questionnaire. Volumes of fish caught by recreational fishers are defined based on estimates of the number of fishermen on a reservoir during the winter and summer periods, intensity of fishing, intensity of fishing of particular species of fish (targeting behaviour), average time spent fishing during the winter and summer periods.

Given the scale an intensity of the fishery, the level of information obtained to account for various sources of uncertainty in the fishery is deemed sufficient to meet the requirements at both SG60 and SG80 levels. This uncertainty however, is not described in a probabilistic manner and no bootstrapping (or equivalent) is used in the assessment necessary to meet the requirements at SG100.

	Evaluation of assessment			
d	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			**Perch No** **Pikeperch No**
Rationale				

Perch
While two alterative assessment methods have been used and been shown to give similar results, there is no evidence to indicate the methods have been tested and explored and that alternative hypotheses have been rigorously explored to meet the requirements at the SG100 level.

Pikeperch
Currently, the Saratov Institute uses two alternative methods (direct statistical and biostatistical) in assessing the stock status of pikeperch. The methods used do not always give similar forecast estimates, and the practice of managing the stock is based on choosing the smaller of the two values obtained by different methods for the subsequent calculation of fishery reference points. Despite the precautionary nature of the approach used, it cannot be concluded that alternative hypotheses have been rigorously explored to meet the requirements at the SG100 level.

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?		**Perch Yes** **Pikeperch Yes**	**Perch No** **Pikeperch No**

Rationale

Perch
Results from the stock assessment and the effectiveness of management actions are evaluated on an annual basis by management agencies, including the Middle-Volga territorial branch of FAR and represents an internal review process.

The TAC allocations of six commercially important species of the Irikla Reservoir are reviewed and approved by the State Ecological Expertise in Moscow. Although perch is not included in the list of species under the TAC regulations, the method of allocation of recommended catch for this species and field data which the TAC/RAC are based on are basically the same and reviewed by the main fishery scientific institution (VNIRO, Moscow). Thus, VNIRO provides an external review of the information and materials of the justification of the TAC and RAC elaborated by the local Saratov institute. Because State Ecological Expertise is independent of the fishery management system, this procedure represents external evaluation of the management system. The external evaluation system also includes (along with consultations) yearly public hearings in the city of Orenburg organized before the fishing season devoted to discussion TAC/RAC allocation, and meetings of the Public council under the Ministry of Forestry and Hunting of Orenburg region.

The peer review of stock status and associated TAC and RAC by the central VNIRO in Moscow is sufficient evidence to meet the requirements at SG80, but although the results of the assessment (and quota allocations) are deemed to be externally reviewed, there is no evidence that the assessment methods are externally peer reviewed to meet SG100 level.

Pikeperch
Results from the stock assessment and the effectiveness of management actions are evaluated on an annual basis by management agencies, including the Middle-Volga territorial branch of FAR and represents an internal review process.

The information and materials of the justification of the TACand RAC are elaborated by the local Saratov institute and annually reviewed by the main fishery scientific institution (VNIRO, Moscow). Besides, the TAC allocations of six commercially important species of the Irikla Reservoir including pikeperch are reviewed and approved by the State Ecological Expertise in Moscow. Because State Ecological Expertise is independent of the fishery management system, this procedure represents external evaluation of the management system. The external evaluation system also includes (along with consultations) yearly public hearings in the city of Orenburg organized before the fishing season devoted to discussion TAC allocation, and meetings of the Public council under the Ministry of Forestry and Hunting of Orenburg region.

The peer review of stock status and associated TAC by the central VNIRO in Moscow and the State Ecological Expertise in Moscow are sufficient evidence to meet the requirements at SG80, but although the results of the assessment (and quota allocations) are deemed to be externally reviewed, there is no evidence that the assessment methods are externally peer reviewed to meet SG100 level.

References

Poddubniy& Gordeev (1966); Yermolin (1980); Nebolsina, (1980); Yermolin (2004); Karagoyshiyev (1978); Karagoishev, Romanenko (1981); Treschev (1983); Shashulovsky&Mosiyash (2003); Shashulovskyet al (2014); Tjurin (1967), Yermolin (2014); Belyanin (2018); Belyanin (2021).

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

Draft scoring range	**Perch ≥80** **Pikeperch ≥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	**Perch = 80** **Pikeperch = 80**
Condition number (if relevant)	

7.3 Principle 2

7.3.1 Principle 2 definitions

Species categorization in P2:

Primary species in Principle 2 are those that meet the following criteria:

- Species in the catch that are not covered under P1 because they are not included in the UoA;
- Species that are within scope of the MSC program as defined in FCR 7.4.1.1; 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 are classified as follows:

- They are not considered 'primary' as defined in SA 3.1.3; or
- They are out of scope for MSC certification (i.e., birds, reptiles or mammals) but are not ETP species.

We 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."

The definition of ETP species includes those protected by national or international legislation, and names a number of international lists/agreements where, if a species is listed, it must be considered as ETP regardless of other national protection. The list of agreements is as follows:

- Annex 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 is not endangered;
- Annex 1 of the Agreement on Conservation of Albatross and Petrals (ACAP);
- Table 1 Column A of the African-Eurasian Migratory Waterbird Agreement (AEWA);
- Agreement on the Conservation of Small Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS);
- Wadden Sea Seals Agreement; and
- Any other binding agreements that list relevant ETP species concluded under the Convention on Migratory Species (CMS).
- Out of scope species that are listed as either critically endangered, endangered, or threatened on the IUCN red list.

Habitats categorization in P2:

MSC requires that if a fishery interacts with benthic habitats, they shall be categorized according to the characteristics "substratum, geomorphology, and biota," and requires that encountered habitats are classified as "commonly encountered, VME, or minor/other" according to the following definitions:

- "A commonly encountered habitat shall be defined as a habitat that regularly comes into contact with a gear used by the UoA, considering the spatial (geographical) overlap of fishing effort with the habitat's range within the management area(s) covered by the governance body(s) relevant to the UoA;and
- A VME shall be defined as is done in paragraph 42 subparagraphs (i)-(v) of the FAO Guidelines7 (definition provided in GSA3.13.3.22) [as having one or more of the following characteristics: uniqueness or rarity, functional significance, fragility, Life-history traits of component species that make recovery difficult, and/or structural complexity]. This definition shall be applied both inside and outside EEZs and irrespective ofdepth."

MSC further interprets their definition of VME on the MSC "interpretations log" as follows:

The CAB shall consider those VMEs and potential VMEs (as defined by the FAO Guidelines; see GSA3.13.3.2) that have been accepted, defined or identified as such by a local, regional, national, or international management authority/governance body. In many cases, the management authority/governance body may have accepted classification designations made by regional, national, or international non-government organisations, such as OSPAR and IUCN. The FAO VME database (see hyperlink) may be a useful tool but should not be considered exhaustive and does not cover areas under national jurisdiction. Identification of VMEs by the UoA or by NGOs may be used if accepted by the management authority/governance body. It should be noted that within the management PI, the UoA

is expected to be precautionary and recognise potential VMEs; within the outcome PI, only accepted, defined or identified VMEs should be considered.

Both commonly encountered and VME habitats are considered 'main' habitats for scoring purposes.

7.3.2 Primary and secondary species

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Primary species

The historical record of landings of commercial species within the Irikla Reservoir has been updated from the 2016 perch assessment to include information from 1962 through to 2018 (Figure 18).

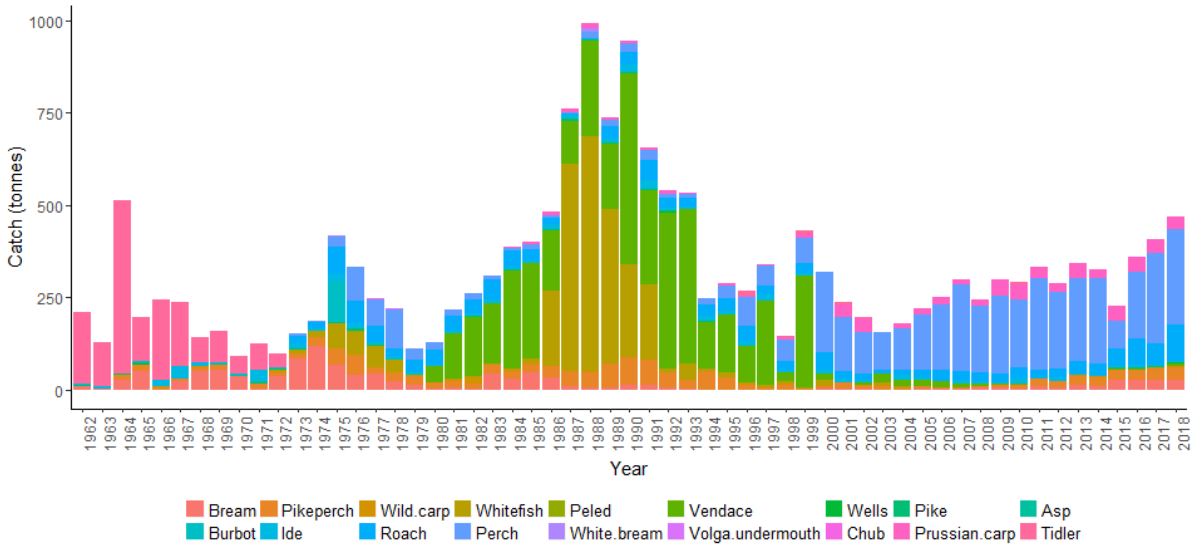

Figure 18: Commercial landings (tonnes) of main commercial fish species in the Irikla Reservoir, updated from MRAG 2016.

Data source: Yermolin (2014); Fish-ka (2019).

The commercial landings of main commercial species have followed a similar trend over the past decade or more, with the highest volume of commercial landings reported for perch and roach. A sharp decline in the total annual catch of perch was reported in 2015, which coincided with original perch assessment.

The selectivity of the large mesh size (50 – 70 mm) gillnet used to target pikeperch retains a number of other commercially important species including bream, ide, Prussian carp and pike. Information on the capture of retained finfish species is not separated by gear mesh size in fisheries statistics. The total landed catch weight (tonnes) of each commercial fish species using both small mesh and large mesh gillnets on a monthly basis between 2012 and 2018 is shown in Figure 12. This shows the proportion of other retained species is highest during December through to April. This trend reflects the sole use of the larger 50 – 70 mm gillnet mesh size during this period.

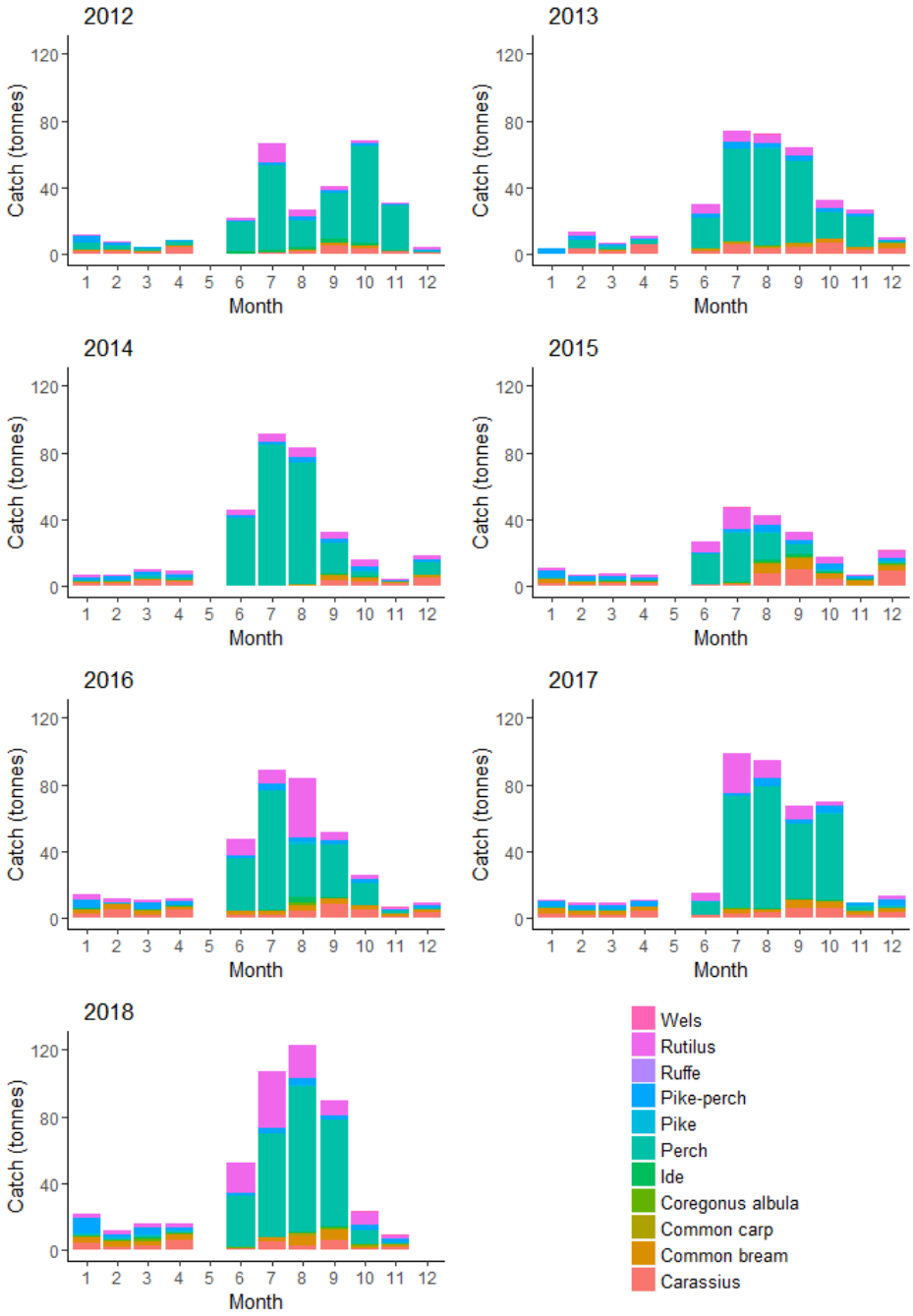

Figure 19. Monthly total weight (tonnes) of fish species captured by small mesh (30 – 36mm) and large mesh (50– 70 mm) gillnets between January 2012 and November 2018.

Data source: Fish-ka (2019).

The proportion of the total catch reported for commercially retained species between 2012 and 2018 is shown in Table 13. Because existing catch reporting does not distinguish between small mesh and large mesh gillnets, these data represent both gillnet sizes. The results show that three species; roach, Prussian carp, and bream have been retained at levels of 5% or higher of the total catch weight at some point between 2012 and 2018.

On average, roach made up nearly 15% of the total catch between 2012 and 2018 but increased to 20% in 2018. Both Prussian carp and bream have both remained important constituents of the large mesh gillnet fishery, with an average of 10.4% and 6% of the total landed catch between 2012 and 2018.

Table 13: Proportion of non-perch or pikeperch catch (%) of species within the gillnet fishery (30-36 mm and 50-70 mm mesh size) between 2012 and 2018. Those shaded in green are considered main species.

Name	Species Name	2012	2013	2014	2015	2016	2017	2018
Roach	*Rutilus rutilus*	8.3	10.3	9.7	20.0	19.9	13.8	21.0
Prussian carp	*Carassius gibelio*	8.4	11.7	7.0	18.4	11.3	8.9	7.3
Bream	*Abramisbrama*	2.5	3.7	3.8	12.1	7.4	6.7	6.0
Vendace	*Coregonus albula*	0.0	0.2	0.2	0.7	0.7	0.3	1.4
Wild carp	*Cyprinus carpio*	0.0	0.7	0.4	0.5	0.5	0.4	0.7
Ide	*Leuciscus idus*	3.2	0.1	0.7	2.7	1.5	1.0	0.7
Pike	*Esox lucius*	0.1	0.3	0.2	0.6	0.9	0.5	0.4
Wells	*Silurusglanis*	0.0	0.0	0.0	0.4	0.1	0.2	0.3

Data source: Saratov Research Institute, 2019.

To better understand the selectivity between each gillnet mesh size, MRAG (2016) reported a preliminary examination of the proportion of the retained species during two sampling periods for both gear types: March 2014 and September 2014. The results showed that ide, bream and Prussian carp form the majority of the large mesh gillnet fishery (Table 14).

Table 14: Preliminary estimates of proportion (%) of primary finfish species taken using small (30-36 mm) and large (50-70 mm) gillnet mesh sizes, updated from MRAG 2016. According to this table, splitting the perch and pikeperch UoAs, there is a fourth main species for the pikeperch fishery, Ide, which is a minor species when the two UoAs are taken together.

Common Name	Species Name	30-36 mm	50-70 mm
Ide	*Leuciscus idus*	0.6	20.1
Bream	*Abramisbrama*	0.2	17.9
Prussian Carp	*Carassius gibelio*	0	16.7
Perch	*Perca fluviatilis*	55.8	1.6
Roach	*Rutilus rutilus*	35.4	0.4
Vendace	*Coregonus albula*	0.4	0.2
Pike	*Esox lucius*	0	0

Source: unpublished data from Fish-ka.

Further detailed information is now available to show the species composition of other commercially retained fish (excluding perch and pikeperch; “primary” species in MSC terms) for gillnets of mesh size 50, 60 and 70 mm (Table 14). This shows that more species are retained using a mesh size of 50 mm than a larger mesh size of 70 mm, which mainly targets bream. Overall, bream, Prussian carp and ide are in excess of 5% of the total catch in the large-mesh fishery, and roach falls into this category in the small mesh fishery (excluding perch and pikeperch), which is also consistent with the results from previous research in 2014.

Both perch and pikeperch are assessed under Principle 1. Based on the latest catch information for large mesh size (50-70 mm), three species are classified as main species, whereas in MRAG 2016 they were considered minor. This was because the original UoA for perch included a small gillnet mesh size only (30-36 mm). The three main species for the pikeperch fishery include ide (*Leuciscus idus*), bream (*Abramisbrama*) and Prussian carp (*Carassius gibelio*). Therefore, PI 2.1.1 requires rescoring on the basis of a different mix of main scoring elements.

Table 15. Primary Principle 2 species in Irikla Reservoir by large (50-70 mm) gillnet mesh sizes fishery.

Species	Species Name	RBF	Less resilient	Avg. % of UoA	MSC Classification
Ide	*Leuciscus idus*	No	No	20.1	Primary – main (for Pikeperch UoA)
Bream	*Abramisbrama*	No	No	17.9	Primary – main (for Pikeperch UoA)
Prussian Carp	*Carassius gibelio*	No	No	16.7	Primary – main (for Pikeperch UoA)
Roach	*Rutilus rutilus*	No	No	0.4	Primary – main (for small mesh size; Perch UoA)
Vendace	*Coregonus albula*	No	No	0.2	Primary – minor
Perch	*Perca fluviatilis*	No	No	1.2	Primary—minor

Status of main primary species

Of the three main primary species of the pikeperch (large mesh) fishery, bream is subject to a total allocated catch (TAC) regulation, whereas ide and Prussian carp are managed through a recommended allocated catch (RAC) quota system[2].

As reported in MRAG 2016, all TAC regulated species are managed on a precautionary basis and annual catch limits are calculated at the start of each fishing season based on the calculated 30 per cent of the total available biomass (i.e. $0.3B_a$). Similarly, RAC species are managed based on 50 per cent of the total available biomass (i.e. $0.5B_a$). The precautionary approach to assessing TAC / RAC species in Russia is described in Babayan (2000).

Since 2009, the Saratov branch of VNIRO (earlier the Saratov branch of the State Research Institute of Lake and River Fisheries) regularly surveys the commercial catches and also undertakes their own research across the entire reservoir water body using pre-defined survey methods.

A summary of the results of a stock assessment between 2013 and 2017 for the four main primary species in the Irikla Reservoir perch (roach) and pikeperch gillnet fishery (bream, ide and Prussian carp) is shown in the table below.

Table 16. Summary of stock assessment for bream, ide and Prussian carp between 2013 and 2017.

Year	Commercially available stock biomass (tonnes)			
	Bream	Ide	Prussian carp	Roach
2013	108	40	165	120
2014	110	33	170	120
2015	121	40	240	180
2016	167	40	300	280
2017	182	45	290	330
2018	309	45	305	330
2019	358	50	230	350
2020	386	49	242	348

[2] See MRAG (2016) and Babayan (2000) for further details of recommended allocated catch (RAC) and how quotas for these lesser commercially important species are calculated.

The results show that the pikeperch fishery has not had a significant impact on the status of bream, ide or Prussian carp, with bream and Prussian carp both increasing in the level of commercially available biomass between 2013 and 2017. In addition, the results show that the commercial abundance of ide has been relatively stable around 40 tonnes over the same period. Regarding roach catch in the perch (small mesh) fishery, it has also shown an increase in the level of commercially available biomass over recent years.

Historical quotas for bream (TAC species) and ide, Prussian carp and roach (RAC species) and reported landings for the four main primary species in the Irikla Reservoir perch and pikeperch fishery are shown in Table 17 and Table 18. The results demonstrate that all reported catches have been effectively controlled and have been below TAC and RAC levels for all species. Given that both TAC and RAC values are already considered precautionary, in addition to the fact that these quotas were not met strongly, and biomass levels are increasing for three species, indicates that the status of these stocks are likely to be above the point of recruitment impairment.

Table 17. Total allowable catch (TAC, tonnes) and actual reported catch (tonnes) for Bream, 2009-2017 (all gears).

Common Name	Species Name		2009	2010	2011	2012	2013	2014	2015	2016	2017
Bream	*Abramisbrama*	Total allowable catch	10.430	4.818	17.894	19.600	22.398	12.282	n.a.	35.0	38.0
		Actual catch	n.a.	2.338	11.534	7.077	13.040	8.906	29.4	29.86	29.74
		Utilization rate (%)	-	48.5	64.5	36.1	58.2	72.5	-	85.3	78.3

Data source: Fish-ka 2014; Saratov Research Institute, 2015; 2019.

Table 18. Recommended allocated catch (RAC, tonnes) and actual reported catch (tonnes) for Ide, Prussian Carp, and Roach 2009-2017 (all gears).

Common Name	Species Name		2009	2010	2011	2012	2013	2014	2015	2016	2017
Ide	*Leuciscus idus*	Recommended catch	4.460	18.911	9.702	12.690	12.570	10.800	n.a.	12.0	16.0
		Actual catch	n.a.	13.788	3.007	9.093	0.199	1.384	9.3	7.172	8.07
		Utilization rate (%)	-	72.9	31.0	71.7	1.6	12.8	-	59.8	50.5
Prussian carp	*Carassius gibelio*	Recommended catch	20.400	39.163	57.622	51.780	56.440	51.840	n.a.	72.0	96.0
		Actual catch	n.a.	38.836	32.644	24.370	40.312	14.636	59.2	61.10	56.42
		Utilization rate (%)	-	99.2	56.7	47.1	71.4	28.2	-	84.9	58.8
Roach		Recommended catch	12.920	34.860	29.202	28.580	35.680	31.680	55	55	72
		Actual catch		28.592	19.552	26.802	35.242	25.033	53.5	51.589	67.24
		Utilization rate (%)		82.0	67.0	93.8	98.8	79.0	97.3	93.8	93.4

Data source: Fish-ka (2014); Saratov Research Institute; 2015; 2019.

Secondary species

The current version of the MSC fishery standard requires non-ETP “out of scope” species to be assessed as main secondary. In the case of this assessment, that means there are several bird species that could potentially be classified as main secondary.

MRAG Americas (2016) has previously described the monitoring and evaluation of secondary (in the previous assessment this was the bycatch component) species within the fishery. When pikeperch was added as a target species, due to the larger mesh sizes used to target pikeperch (50-70 mm), the gear is set in deep water where it catches other large fish (as discussed in the Primary species component), but generally does not attract birds. In addition, the large mesh is set throughout the winter period when permanent ice cover occurs on the Reservoir, preventing any possibility of interactions with birds. When the ice starts to melt in the spring, fishermen tend to use small-mesh gillnets to target perch.

Large mesh gillnets defined in the Irikla Reservoir pikeperch fishery UoA are highly selective and are not reported to have captured other fish species that are discarded either dead or alive. In addition, as gillnets are set in mid-water (and therefore do not touch the benthic layer), little or no interactions with amphibians occur. This is further supported by fisheries research conducted using a range of gillnet mesh sizes, including that similar to the commercial fleet, used by the Saratov Research Institute.

During the site visit stakeholder consultation, fishermen confirmed they continue to monitor and report interactions with waterfowl and other species of concern during the summer perch fishery using a logbook system (see Table 19). There were 25 actual reported bird interactions recorded in the fishery for 2014 through 2020, all with great crested grebe (*Podiceps cristatus*). In the past two years, though there have been more recorded interactions, the majority of birds were released alive (two of thirteen were fatal). The fishery records all mortalities of bird species that occur within gillnets, with the mortalities being linked to an individual effort record and the date, time and location being recorded for each event.

Table 19. Record of bird interactions for 2014 to 2020, from Fish-ka bird interactions journal.

2014 год						
Date	**Location**	**Species**	**Number**	**Dead**	**Released**	**Photo ref.**
06.08.2014г.	Таналык-Суундукский плёс (Агеев К.А.)	Поганка обыкновенная	1	1	-	-Рис.1
06.08.2014г.	Таналык-Суундукский плёс (Еськов В.А.)	Поганка обыкновенная	1	1	-	-Рис.2
2015 год						
-	&	&		-	&	-
2016 год						
08.11.2016г.	Чапаевский плёс (Щукин А.М.)	Поганка обыкновенная	1	1	-	-Рис.3
2017 год						
13.09.2017г.	Чапаевский плёс (Перехожев А.П.)	Поганка обыкновенная	3	3	-	-Рис.4
19.09.2017г.	Чапаевский плёс (Замолоцких В.А.)	Поганка обыкновенная	2	2	-	-Рис.5
02.10.2017г.	Орловский плёс Дураев Ю.Б.		1	1	-	-Рис.6
2018 год						
24.09.2018г.	Таналыкский Залив (Дёмин В.Д.)	Поганка обыкновенная	1	1	-	- Рис.7
16.10.2018	Таналык-Суундукский плес (Еськов В.А.)	Поганка обыкновенная	2	1	-	- Рис.8
2019 год						

06.10.2019г.	Суундукский залив (Еськов В.А.)	Поганкаобыкновенная Great crested grebe	2	1	1	- Рис.9
2020 год						
10.10.2020г.	Чапаевский плёс (Перехожев А.П.)	Поганкаобыкновенная	4	-	4	Фотоотсутствует
02.11.2020г.	Суундукский залив (Еськов В.А.)	Поганкаобыкновенная	7	1	6	- Рис.10

This confirmed the number of interactions with birds and other secondary species is negligible or non-existent. In addition, Anatoly Davygora (pers. comm., 2021), Chairman of the Orenburg branch of the Russian Bird Conservation Unit and Associate Professor of the Orenburg State Pedagogical University, provided expert opinion which supports these observations, specifically in relation to bird species with a potential to interact with the small-mesh perch fishery, classified as secondary main or ETP, depending on their listing status (summarized in Table 20).

Table 20. Non-ETP bird species with the potential to interact with the Irikla perch and pikeperch fishery.

Common Name	Scientific Name	IUCN listing	Population Size	Population Trend	Potential for nteraction with fishing gear according to A. Davygora
Dalmatian pelican	*Pelecanus crispus*	Near Threatened	12,000-16,000 individuals	Decreasing	Almost zero: species hardly found in this region
Eurasian spoonbill	*Platalealeucorodia*	Least Concern	63,000-65,000 individuals	Unknown; some populations are decreasing while others are increasing or stable	Almost zero: species hardly found in this region.
Black stork	*Ciconia nigra*	Least Concern	24,000-44,000 individuals	Unknown; some populations are decreasing while others are increasing or stable	Low: Species feeds in shallow water, is only sometimes present.
Tundra swan	*Cygnus columbianus*	Least Concern	317,000-336,000 individuals	Unknown; some populations are decreasing while others are increasing or stable	Almost zero: seen only while migrating, does not eat fish
White-tailed eagle	*Haliaeetus albicilla*	Least Concern	17,900-24,500 individuals in Europe	Increasing	Low: A large predator hunting wounded animals, sometimes catching fish in the upper layers of the water.

Pallas's gull	*Ichthvaetusichthyaetus*	Least Concern	125,000-1,100,000 individuals	Overall population is increasing, though some have unknown trends.	Low: Though there is a breeding colony on the reservoir, this is a very large seagull that pulls fish out of its nets, but it does not dive so it's risk of entanglement is minimal.
Great crested grebe	*Podiceps cristatus*(Eurasian subspecies)	Least Concern	609,999-997,000 individuals	Unknown	Low: 13 reported interactions over 2 years, including 2 fatalities.

The majority of the bird species listed in Table 20 are transient species that are present in the region only for a short period during their migration. The potential interaction with the fishery would only apply to their autumnal migration as the spring migration occurs at the same time as the fish spawning season when there is a ban on commercial fishing activities. As these autumnal migrating birds are likely to be present during short periods, are not resident on the lake and do not feed whilst they are present, the risk of interaction with fishing gear is highly limited or negligible. Of the species that are resident and in the Red Book there is only a small possibility of interaction e.g. Eurasian spoonbill (*Platale aleucorodia*) and the black stork (*Ciconia nigra*). No mortalities of these species have been recorded.

Of the species present on the lake throughout the year only **Pallas's gull** *(Ichthyaetus ichthyaetus)*may have a potential interaction with the fishery. A colony of Pallas's gulls exists on one of the islands in Suunduksky Bay, in the south-eastern part of the reservoir which is closed to commercial fishing. The colony was first reported in 2010, during which time 600 nestlings were counted (Barbazyuk, 2010). Because this species has an extremely large range, the global population is increasing with an estimated 125,000-1,100,000 individuals it is listed as "least concern" on the IUCN red list. Recommendations have been made to decrease fishing activities, remove fishing from with 5 km of the colony or set nets deeper (>10m) to mitigate against any interaction between Palla's gull and the fisheries, but as these parcels are not open to the fishery these measures have not been required and no confirmed mortalities exist. To date, no permanent monitoring on the number of nests occurs on a regular basis, although local ornithologists are known to visit the area regularly. The last survey conducted in 2013 counted 340-350 nesting birds but was conducted remotely in order not to disturb the birds and the results are not directly comparable with previous estimates (Morozov & Kornev, 2013).

The population trends for the **Eurasian spoonbill** *(Platalealeucorodia)*, **black stork** *(Ciconia nigra)* and **tundra swan** *(Cygnus columbianus)* are unknown. In all three species some populations are decreasing, while others are increasing or stable. The global population size for each species is 63,000-65,000, 24,000-44,000 and 317,000-336,000 respectively and all are listed as "least concern" on the IUCN red list. The **white-tailed eagle** *(Haliaeetus albicilla)* has an extremely large range and a global population of 24,200-49,000 mature individuals. The white-tailed eagle global population appears to be increasing largely due to conservation measures such as protecting eyries, providing safe (non-poisoned) food and re-introductions to areas such as Bavaria and therefore is listed as "least concern" on the IUCN red list.

The **Dalmatian pelican** *(Pelecanus crispus)* is listed as "near threatened" on the IUCN red list. The estimated global population is 12,000-16,000 individuals and the overall trend is decreasing. Declines are primarily a result of wetland drainage, shooting and persecution by fishers, disturbance from tourists and fishers, water pollution, collision with overhead powerlines and over-exploitation of fish stocks. This species has been downlisted from "vulnerable" due to conservation measures that have resulted in a population increase in Europe. The species remains listed as "near threatened" because it is suspected that the population could undergo a moderately rapid decline in the next three generations.

Finally, the **Great crested grebe** (*Podiceps cristatus)* is the largest member of the grebe family in Europe. Although it's population trend is unknown, it is "least concern" on the IUCN red list because of it large population size and range, and lack of immediate threat from humans (though it was once hunted nearly to extinction in the UK due to its beautiful plumage (*Cocker et. al. 2005).* Although this is a fish-eating diving bird, there have been very few recorded interactions with the Irikla perch fishery (see Table 20).

Where protection does not currently occur and was identified for a species that is found on the reservoir this can be implemented through the Red Book of the Orenburg region if needed. Through this mechanism protected areas can be established to ensure the species is protected. For example, Pallas's gull in the Suunduksky region of the Irikla Reservoir is not officially protected by name but is listed in the Red Book of the Orenburg region, which offers protection of adults, nests and nestlings through regional environmental legislation. Furthermore, the gull is protected by a hunting law of the Orenburg region[3]. To help provide adequate protection for Pallas's gull, a 5km exclusion zone for fishing has been put in place around the colony.

Endangered, Threatened and Protected species

There are a number of fish, mammals, amphibians and birds associated with water bodies listed in the Red Book of the Orenburg Province (2014)[4] that may potentially interact with the perch gillnet fishery (see Table 21). Of the fish species listed, Volga pikeperch (*Sander volgensis*), starlet (*Acipenser ruthenus*) and the brown trout (*Salmo trutta*) were reported to occur in the Ural River during the early 20th Century (Berg, 1916). Volga pikeperch is currently listed as 'least concern' on the IUCN Redlist[5] whereas no fish species occurring in the region are listed in Appendix 1 of CITES.

Both starlet and brown trout are rheophilic species[6] but the formation of the reservoir has created a limnophilic ecosystem. As such both species are now highly unlikely to inhabit this water body. Furthermore, it has been confirmed that the distribution of Volga pikeperch is not found in the reservoir, but further south in the Ural River (Davygora, pers. comm., 2014).

The population trends for the red-breasted goose *(Branta ruficollis)* and lesser white-fronted goose *(Anserervthropus)* are declining. The **red-breasted goose** has an estimated global population of 56,000 individuals that has declined over a short period of time. The reason for the decline is unknown because trend calculations are complicated by interannual variation in survey coverage and reporting across its range (BirdLife International 2020). The "vulnerable" listing on the IUCN red list for this species is a precautionary measure and it could be downlisted if it is found that recent increases are genuine and not a result of improved monitoring efforts. The **lesser white-fronted goose** has a global population of 22,000-27,000 and is listed as "vulnerable" on the IUCN red list. The "vulnerable" listing for this species is a result of the rapid population decline in its key breeding populations in Russia and these declines are predicted to continue. In addition to the fragmentation of their breeding range, this reduction has been attributed to high levels of hunting on the staging and wintering grounds and habitat deterioration from land cultivation. Modelling indicates that 28% of the habitat for this species could be lost by 2070(Zöckler and Lysenko 2000).

The white-headed duck *(Oxyuraleucocephala)*, qualifies as ETP because it is IUCN listed as endangered. Globally there are four populations of the white-headed duck; two of which are declining, one stable and one increasing. The North African population (400-600 birds) is stable, and the Spanish population (2,500 birds) is increasing. The two decreasing populations include Central Asia (5,000-10,000 birds) and the Pakistan wintering population which is on the verge of extinction. Although there is uncertainty about the movement of birds between wintering sites, mid-winter counts indicate that the population of this species has undergone a very rapid decline qualifying the species as "endangered" on the IUCN red list. Declines are caused by habitat loss, over-hunting, unsustainable use of water resources, and competition and introgressive hybridization with the non-native North American Ruddy Duck *(Oxyurajamaicensis)*. It is thought that the total population is appreciably higher than the total recorded during the mid-winter counts casting doubt on the accuracy of the global trend estimates. Until there is better data from more comprehensive counts the species is retained as "endangered" on the IUCN list.

Two amphibians, the great crested newt (*Triturus cristatus*) and the common frog (*Rana temporaria*), have ranges that border on the reservoir. Given the known geographical distribution of the great crested newt and the lack of crossover of habitats and feeding with perch, the likelihood of contact with fishing gear has been estimated as zero (Bannikov*et al.*, 1977 cited in Davygora, 2014). Similarly, the distribution of the common frog in the reservoir is only utilised for breeding in surface waters (Bannikov*et al*., 1977 cited in Davygora 2015), which means that there is little risk of interaction with the gillnet fishery.

Three mammal species are identified; the Russian desman (*Desmanamoschata*), the otter (*Lutralutra*) and the European or Russian mink (*Mustela lutreola).* All three mammal species are identified as being present in the upper

[3] Further details of the hunting law in the Orenburg region can be viewed at: http://orenburg.news-city.info/docs/sistemsy/dok_oeyivb.htm
[4] Red Book of the Orenburg region (2nd Ed.) http://docs.cntd.ru/document/952014811
[5]http://www.iucnredlist.org/details/20862/0 [accessed 13th January 2015].
[6] Preference for fast moving riverine systems

reaches of the Ural River but not to any great degree within the reservoir. No incidences of mammal interaction with the fishing gear of the fishery under assessment had been reported.

Changes in the regional lists of rare species, such as the introduction of new species and exclusion of those which are already listed are made after a proposal put forward by experts on the basis of a reasoned opinion. When it is necessary to review new proposals, the Orenburg region Red Book Commission holds a meeting. The Commission works under the Ministry of Natural Resources, Ecology and Property Relations of the Orenburg region. The Commission consists of experts from various academic institutions of Orenburg and representatives of interested natural resources users, in particular, from the Ministry of Forestry and Hunting of the Orenburg region and from federal SPNRs (see section below). Decision-making is based on open voting by a simple majority.

Currently, special monitoring of populations of rare species of animals, plants and fungi in the Orenburg region is carried out only in the federal and regional Specially Protected Natural Reservations (see section 3.4.4). Information on rare species outside these protected areas is collected by the scientists specializing in major groups of living organisms during the process of conducting field research on various scientific problems.

Table 21: List of ETP species associated with Irikla Reservoir with indication of possible impact by perch fishery.

Species Name	Latin Name	Feed on perch (yes/no)	Possibility of interaction with fishing gear (low, medium, high)
Mammals			
Russian desman	*Desmanamoschata*	Yes	Low (close to zero)
Otter	*Lutralutra*	Yes	Low (close to zero)
Rest mink	*Mustela lutreola*	Yes	Low (close to zero)
Birds			
White-headed duck	*Oxyuraleucoephaia*	No	Low (close to zero)
Red-breasted goose	*Branta ruficollis*	No	Low, almost zero
Lesser white-fronted goose	*Ansererythropus*	No	Low, almost zero
Amphibians			
Great crested Newt	*Triturus cristatus*	No	Zero
Common frog	*Rana temporaria*	No	Low, almost zero
Fish			
Sturgeon	*Acipenser ruthenus*	No	Low
Brown trout	*Salmo trutta*	Yes	Average (not known to interact)
Volga pikeperch	*Sander volgensis*	Yes	Almost zero

Source: Red Book of the Orenburg Province and Davygora, 2014

Habitats

Development of the Irikla Reservoir has led to substantial changes in the local habitat in the region. The riverbed of Ural River was originally rocky and sandy, with steep rocky shores[7]. Following development of the reservoir, the shore remains relatively steep and rocky, with similar riverine characteristics further upstream. In the middle part of the reservoir, the benthic substrate consists of gravel-pebble and sand sediments. Overall sedimentation of the reservoir follows known processes, with a stable accumulation of muddy deposits over time (Kozmin & Matyukhin, 1971). These characteristics of the reservoir will not revert back to those of the riverine system.
To date, approximately 5-7% of the reservoir is occupied by emergent water vegetation. This level of vegetation is expected to increase with ongoing sediment disposition in shallow waters, and its role within the ecosystem will become more important over time.

The expansion of vegetation in reservoirs depends on water transparency. Its depth is limited by the penetration of light that is enough for the photosynthetic activity of plants, providing their growth into deeper water. For example, the water transparency in the reservoirs of the Volga River has increased during the last 25 years up to 68 m and the depth of the emergent water vegetation has increased from 1.5 m in the last century up to currently 6 m. The same process is being observed in the Irikla Reservoir, with vegetation currently extending to depths of 4-5 m (Yermolin 2014).

The stability of plant communities depends on the stability of water level. During the initial stages of the dam operation between 1955 and 1960, the level of water showed a large fluctuation of around 19 m (Balabanova, 1971), whereas in the following years this had been significantly reduced to between 3-5 m (Isaev & Karpov, 1980) (Figure 15). On average, the long-term dynamics of the reservoir have shown a significant negative trend of around 9 cm per annum (Anon., 2013).

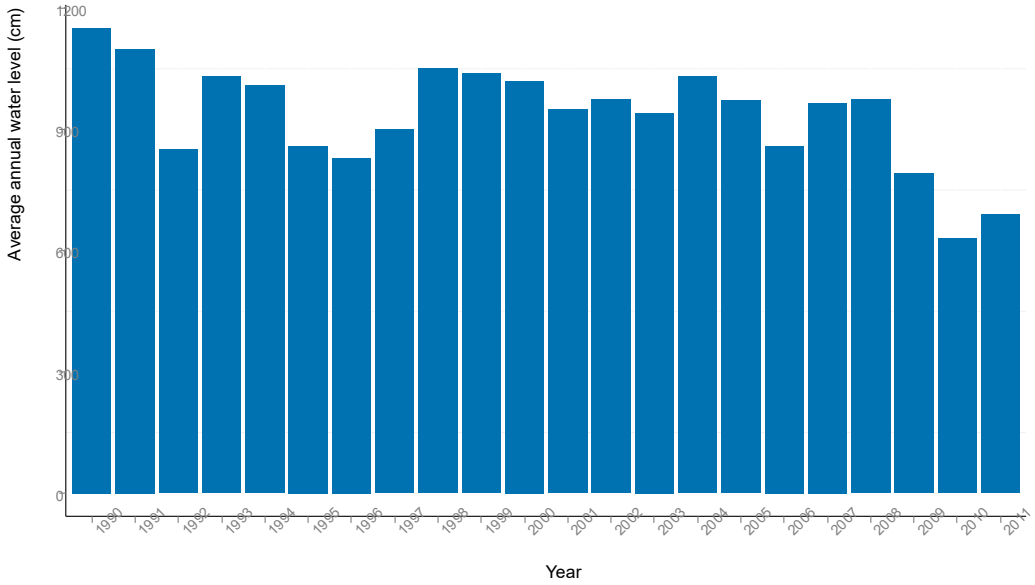

Figure 20: Average yearly water level (cm) of Irikla Reservoir (where 0 m is equivalent to 233 m above sea level).

Data source: Saratov Research Institute, 2014

Due to fluctuations of the dynamic water level, a part of the emergent water vegetation regularly dies. Although recovery of the vegetation is relatively quick (5-6 years), the constant fluctuation in water level and level of ice cover is helping to shape nearshore habitats and the formation of a new ecosystem.

The water level in the reservoir is regulated by the Irikla dam, which is drawn down in early spring (March – April) to allow for the influx of water as a result of the ice and snow melt. Following the ice melt, the water level in the reservoir is gradually reduced, occurring more rapidly during the autumn prior to winter ice coverage.

To date, approximately 40% of the shoreline of the reservoir is protected from anthropogenic activities, including agricultural and fishing activities. Within the waterbody itself, a number of protected areas exist. These have been established (Shvetsov, pers. comm., 2014[8]):

i. To protect the spawning aggregations of spring spawning commercial fish species (not perch)

[7] General information on habitat distribution has been prepared by Yermolin and Belyanin from the Saratov Research Institute (pers. comm. 2015)
[8] Arkady Shvetsov (Managing Director) Federal State Institution "Administration of the Irikla Reservoir", 22nd October 2014.

ii. To protect essential fish habitats (e.g. feeding areas for juveniles)
iii. To delimit sport and/or recreational fishing areas
iv. For other political reasons (e.g. areas close to the dam)

Specially Protected Natural Reservations (SPNR)
Currently, special monitoring of populations of rare species of animals, plants and fungi occurs within the Orenburg region.

There are a number of federal and regional Specially Protected Natural Reservations (SPNR) within the Orenburg region: State Nature Reserve 'Orenburgsky', State Natural Reserve 'Shaitantau', in the National Park 'BuzulukskyBor', in the biological reserve of regional significance 'Svetlinsky'. They are designed to protect wildlife, including populations of rare species of animals, plants and fungi (see also section 3.4.3 on ETP species).
The establishment of SPNRs is taken in accordance with the existing procedure, as specified in the Federal Law 'Concerning Specially Protected Natural Areas' (Yermolin, 2014). Proposals for the creation of new protected areas (SPNR) are reviewed at the meeting of the Commission for the specially protected natural areas of the Orenburg region, which work under the Ministry of Natural Resources, Ecology and Property Relations of the Orenburg region. A decision is taken by open voting by a simple majority.

Gear loss and habitat restoration

Following the ice melt in the reservoir at the beginning of May, representatives of Federal Agency for Fisheries Rosrybolovstvo together with Department for Fisheries and Fish Supervision Agency Rybnadzor undertake joint missions on the territories of fishing parcels in order to remove lost, abandoned or damaged gillnets from the recreational fisheries sector that might otherwise impact the local habitat. This gear is different to the more expensive gear used by commercial fishermen, who are very careful to retrieve any lost or damaged gear. These activities are shown in Figure 16 below.

a. b.

Figure 21: Photos of damaged and lost recreational gillnets collected from fishing parcels within (a) Tanalykskybroad and (b) Orel and Chapaevskiybroads of the Irikla Reservoir during 2014. Source: Fish-ka (2015).

Where old and abandoned gear is found, it is equipped with floats and removed directly from the water. Where illegal activities are thought to occur, the Fish Supervision Agency prepares photo evidence and removes nets that shall later be recycled as required under law. Further details of illegal fishing activities are provided in the Principle 3 background section. There is no information to determine how long the fishing gear might continue to 'ghost fish' if the lost gear remains in the reservoir. This strategy however, minimises the risk of 'ghost fishing' and habitat degradation within the reservoir.

In addition to the retrieval of old nets, areas adjacent to the fishing parcels are also cleaned according to established schedules. Rubbish is collected and deposited in landfills at nearby settlements.

Ecosystems

In addition to fisheries research, the Saratov Research Institute is also responsible for the monitoring of the hydro-chemical, hydro-biological and ecological indexes of the reservoir. A wide range of environmental data are collected from the Irikla Reservoir on a routine basis by the Saratov Research Institute to provide an understanding of the ecosystem dynamics in addition to monitoring changes in the reservoir over time[9]. Samples of water are taken from

[9]Water monitoring is undertaken during six specified time periods: during winter runoff, before snow melt flood, at the peak of snow melt flood, at the end of snow melt flood, during summer runoff and within the ice-covered period.

the reservoir at 9 intake points according to the approved 'Lower Volga BVU' scheme (Shvetsov, pers. comm., 2015)[10]:

- Uralskoye settlement (on the border between Orenburg Region and Republic of Bashkortostan
- Settlements Urtansym, Pokrovka, Mirny, Gorny Erik (Kvarkensky District)
- Settlements Novosepvastopol, Zamorskoje, Energetik (Novoorsky District)
- Irikla settlement (Gaysky District)

A select group of more than 50 environmental indicators including 32 hydro-chemical, plankton (phytoplankton and zooplankton), invertebrates (including zoobenthos), fish and birds are used to determine the health of the ecosystem. The level of primary production through analysis of the distribution and abundance of more than 100 phytoplankton species classifies the reservoir as mesotrophic (Voronin, 2007). Since 2009, research based on the methods described by Pidgaiko*et al*., (1968) shows that there are currently 27 species of zooplankton in the reservoir (7 copepods, 8 cladocera and 12 rotatoria). The average biomass of zooplankton is 0.76 g/m^{3}that indicates the reservoir is a medium-productivity water body (Yermolin, 2014).

During the 1960s and 1970s, a number of zoobenthos species were introduced into the Irikla Reservoir with the aim of enhancing the food base for fish populations (Zadoenko, 1995; cited in Barbashova, 2012). Of these, the Baikal *Gmelinoides fasciatus* was introduced in 1973 until 1976. Recent studies carried out since 2009 show that both *G. fasciatus* and *Micruropuspossolskii* have become naturalised and make up approximately 20% of the level of biomass (Filinova, 2012; Yermolin, 2014).

A range of benthic macro-invertebrate fauna is reported within the reservoir typical for this climate zone, including chironomides, oligochaetes, molluscs, helidae and amphipodae. The average biomass of benthic fauna between 2001 and 2007 was 1,793 ind/m^3 or 13.4g/m^3 and was similar in terms of dominant species to previous time periods (Filinova, 2012; Yermolin, 2014).

The high abundance of benthic invertebrates has a positive effect on the status of perch populations, which are able to consume a range of food items. Throughout the various growth stages of perch, they are able to predate on a wide range of benthic invertebrates (Yermolin, 1984).
Prior to the development of the Irikla Reservoir, the Ural River contained up to 24 native fish species of which chub (*Squaliuscephalus*) and Volga undermouth (*Chondrostomavariabile*) were the most abundant, while bream (*Abramisbrama*) roach (*Rutilisrutilis*) and pike (*Esox lucius*) were also common. Perch (*Perca fluviatilis*) was already present in the Ural River before the reservoir and is typical species found within a boreal plain complex (Nicholas, 1953; 1974).
The species composition within the reservoir is based on the naturally occurring species composition of the Ural River with additional stocking of a number of fish species over the years since creation.
Following the early stages of the reservoir, the number of rheophilic fish speciesstarted to decline and starting in 1956 a number of commercially important limnophilic species were introduced to the water body, including sterlet (*Acipenser ruthenus*), grass carp (*Ctenopharyngodonidella*) and silver carp (*Hypophthalmichthys molitrix*), brown trout (*Salmo trutta*), smelt (*Osmerus eperlanus*), and several species of Coregonids: whitefish (*C.laveretus*), vendance (*C. albula*) and peled (*C.peled*) (Isaev &Karpov, 1980; Matyukhin, 1967). Since their introductions, starlet, smelt andpeled have all failed to become established and grass carp (*Ctenopharyngodonidella*), silver carp (*Hypophthalmichthys molitrix*) and brown trout are now also becoming rare.

To date, fish fauna within the Irikla Reservoir includes about thirty species of fish. Of these, there are currently only 3 major species retained as commercial value using both small mesh and large mesh gillnets. Between 2009 and 2013 more than 90% of total catch were perch, roach (*Rutilus rutilus*) and crucian carp (*Carassius carassius*), although perch made up about 70% of the total catch (Figure 11). In addition to the three main commercial species, relatively minor catches of wild carp (*Cyprinus carpio*), pike (*Esox lucius*), burbot (*Lota lota*) have been reported for large mesh gillnets.

Table 22: Fishes of Irikla Reservoir

Common name	Species Name	Native†	Management‡	Present in catch
Bleak	*Alburnusalburnus*	n		
Bream	*Abramisbrama*	n	TAC	Juveniles
Brown trout	*Salmo trutta*	i	RL	

[10] AV Shvetsov, (Director) Federal Agency of water resources (Rosvodresusy), Directorate for Management of Irikla Reservoir, FGU UEIV, 17th March 2015.

Common name	Species Name	Native†	Management‡	Present in catch
Burbot	*Lota lota*	n	PC	
Chinese sleeper	*Perccottusglenii*	i	PC	
Chub	*Squalius (Leuciscus) cephalus*	n	M	
Common carp	*Cyprinus carpio*	i	TAC	
Crusian carp	*Carassius carassius*		PC	
Grass carp	*Ctenopharyngodonidella*	i		
Gudgeon	*Gobio gobio*	n	PC	
Ide	*Leuciscus idus*	n	RAC	
Peled	*Coregonus peled*		M	
Perch	*Perca fluviatilis*	n	RAC	
Pike	*Esox lucius*		RAC	
Pikeperch	*Sander lucioperca*	n	TAC	Juveniles
Prussian carp	*Carassius gibelio*		RAC	
Roach	*Rutilus rutilus*	n	RAC	Yes
Round goby	*Neogobiusmelanostomus*	n	M	
Rudd	*Scardinius erythrophthalmus*	n	PC	
Ruffe	*Gymnocephalus cernuus*	n	PC	Yes
Sichel	*Pelecuscultratus*	n	PC	
Silver carp	*Hypophthalmichthys molitrix*	i		
Smelt	*Osmerus eperlanus*	i		
Spined loach	*Cobitis taenia*			
Sterlet	*Acipenser ruthenus*	i	RL, AR	
Tench	*Tincatinca*	n	PC	
Three-spined stickleback	*Gasterosteus aculeatus*	n		
Vendace	*Coregonus albula*			
Volga pikeperch	*Sander volgensis*	n	RL	
Volga undermouth	*Chondrostomavariabile*		PC	
Weatherfish	*Misgurnusfossilis*	n		
Wels catfish	*Silurusglanis*	n	TAC	
White bream	*Bliccabjoerkna*	n	PC	
White-eye bream	*Ballerus (Abramis) sapa*	n	PC	
Whitefish	*Coregonus laveretus*		TAC	

† Native to Ural River (n) or introduced to Irikla Reservoir (i); ‡ Species managed subject to a total allowable catch (TAC) or recommended allowable catch (RAC) regulations; species that can be potentially caught (PC) by gillnets (mainly large mesh gill-nets); mentioned in official catch statistics (M); red book of the Orenburg region (RL); artificially reproduced for conservation reasons (AR).

7.3.3 Fish kills in Irikla Reservoir

In June 2013, a mass fish mortality event occurred in the Irikla Reservoir, stretching 120 m by 1 m wide in the coastal margin of the Orlovsky broad[11]. Of the estimated 5,000 fish killed, about 95% were perch, pikeperch and ruffe of age group 0+ (fingerlings).

As part of the environmental investigation, samples of water were sent for laboratory testing at the Orenburg TsGMS (a branch of FGBU Volga UGMS, Directorate for Rospotrebnadzor in Orenburg region. In addition, samples of the dead fish were taken by representatives of the Saratov Research Institute for testing cause of death.
The results of the qualitative indicators of the water samples from different laboratories show that the hydrochemical indicators are well within limits of the past few years and do not exceed stated norms for this fisheries water basin. These analyses were conducted using standard, approved monitoring programme.

The Saratov Research Institute concluded that the reported mass fish mortality event in the Irikla Reservoir was caused by a natural event, such as stormy weather or a severe thunderstorm, in addition to the fact that the high density of perch age group 0+ (fingerlings) were also in shallow water (less than 0.5 m). These factors coupled with the direction of the tide flow that prevented them swimming into deeper water resulted in their mass mortality so near to the coastline.

Table 23. Scoring elements

Component	Scoring elements	Designation	Data-deficient
e.g. P1, Primary, Secondary, ETP, Habitats, Ecosystems	e.g. species or stock (SA 3.1.1.1)	Main or Minor	
P1	European perch	N/A	No
P1	Pikeperch	N/A	No
Primary	Roach	Main	No
Primary	Prussian carp	Main	No
Primary	Bream	Main	No
Primary	Vendace	Minor	Not assessed
Primary	Wild carp	Minor	Not assessed
Primary	Ide	Main	No
Primary	Pike	Minor	Not assessed
Primary	Wells	Minor	Not assessed
Primary	Pikeperch	Minor (perch UoA)	No
Primary	Perch	Minor (pikeperch UoA)	No
ETP	Russian desman	NA	No

[11] Information presented in this section provided by V.S. Kiljakov, Director FGU "KamUralrybvod" (Orenburg regional branch). 30th March, 2015.

ETP	Otter	NA	No
ETP	Rest mink	NA	No
ETP	Breeding loon	NA	No
ETP	Red-breasted goose	NA	No
ETP	Lesser white-fronted goose	NA	No
Secondary	Dalmatian pelican	Main	No
Secondary	Eurasian spoonbill	Main	No
Secondary	Black Stork	Main	No
Secondary	Tundra swan	Main	No
Secondary	White-headed duck	Main	No
Secondary	White-tailed eagle	Main	No
Secondary	Pallas's gull	Main	No
Secondary	Great crested grebe	Maine	No
Habitat	Irikla Reservoir	Only	No
Ecosystem	Irikla Reservoir	Only	No

7.3.4 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?	**Bream, Ide, Prussian carp, Roach-Yes**	**Bream, Ide, Prussian carp, Roach-Yes**	**Bream, Ide, Prussian carp, Roach-Yes**
Rationale				

Of the four main primary species of the perch and pikeperch fishery, bream is subject to a total allocated catch (TAC) regulation, whereas ide, Prussian carp and roach are managed through a recommended allocated catch (RAC) quota system[12].

All TAC regulated species are managed on a precautionary basis and annual catch limits are calculated at the start of each fishing season based on the calculated 30 per cent of the total available biomass (i.e. $0.3B_a$). Similarly, RAC species are managed based on 50 per cent of the total available biomass (i.e. $0.5B_a$). The precautionary approach to assessing TAC / RAC species in Russia is described in Babayan (2000).

Since 2009, the Saratov branch of VNIRO (earlier the Saratov branch of the State Research Institute of Lake and River Fisheries) regularly surveys the commercial catches and also undertakes their own research across the entire reservoir water body using pre-defined survey methods.

A summary of the results of a stock assessment between 2013 and 2017 for the main primary species in the Irikla Reservoir perch and pikeperch gillnet fishery (bream, ide, Prussian carp and roach) is shown in Tables 8 and 9. There is a high degree of certainty that all of these species are above PRI and fluctuating around an MSY-consistent level. The SG100 is met.

Roach is the only main primary species in the perch UoA, with the other three only in the pikeperch UoA.

b	Minor primary species stock status			
	Guide post			Minor primary species are highly likely to be above the PRI. OR

[12] See MRAG (2016) and Babayan (2000) for further details of recommended allocated catch (RAC) and how quotas for these lesser commercially important species are calculated.

				If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species.
	Met?			**No**
Rationale				

There are several minor primary species in this fishery, however, aside from perch in the pikeperch fishery and pikeperch in the perch fishery, they have not been evaluated against the SG100 guidepost. Hence the SG100 is not met for either UoA.

References

Saratov Research Institute (2019); Fish-ka (2019), Babayan (2000).

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

Draft scoring range	**≥80**
Information gap indicator	**More information sought** re status of minor primary species.

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**Pikeperch UoA-80** **Perch UoA-80** (though the SG100 is met for scoring issue a, the overall score is capped at 80 when minor species are not scored).
Condition number (if relevant)	

PI 2.1.2 – Primary species management strategy

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?	**All main species-Yes**	**All main species-Yes**	**All main species-Yes** **All minor species-No**
Rationale				

All TAC regulated species are managed on a precautionary basis and annual catch limits are calculated at the start of each fishing season based on the calculated 30 per cent of the total available biomass (i.e. 0.3B_a). Similarly, RAC species are managed based on 50 per cent of the total available biomass (i.e. 0.5B_a). The precautionary approach to assessing TAC / RAC species in Russia is described in Babayan (2000).

Since 2009, the Saratov branch of VNIRO (earlier the Saratov branch of the State Research Institute of Lake and River Fisheries) regularly surveys the commercial catches and also undertakes their own research across the entire reservoir water body using pre-defined survey methods.

This constitutes a full strategy for managing at least main primary species, hence the SG80 is met. The minor primary species have not been evaluated, hence the 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?	**All main species-Yes**	**All main species-Yes**	**All main species-Yes** **All minor species-No**
Rationale				

A summary of the results of a stock assessment between 2013 and 2018 for the main primary species in the Irikla Reservoir pikeperch gillnet fishery (bream, ide and Prussian carp) is shown in Tables 8 and 9. These assessments show that the available biomass for harvest for these species has either increased or remained stable over the past several years. This provides at least some objective basis for confidence that the strategy is working based on information directly about the fishery and species involved. The SG80 is met. Because minor primary species have not been evaluated, the SG100 is not met for minor species.

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?		**All species-Yes**	**Main species-Yes** **Minor species-No**
Rationale				

As stated in scoring issue B, the commercially fishable biomass for all main primary species is increasing or remaining stable, and catches do not exceed their respective TACs or RACs. Thus, this provides clear evidence that the strategy is being successfully implemented. The SG80 is met. Since minor species have not been evaluated in detail, the SG100 is not met.

	Shark finning			
d	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 live in the Irikla reservoir.

	Review of alternative measures			
e	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?	**NA**	**NA**	**NA**
Rationale				

There are no unwanted catches of primary species.

References

Saratov Research Institute (2019); Fish-ka (2019), Babayan (2000).

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

Draft scoring range	**≥80**
Information gap indicator	**More information sought pertaining to minor primary species.**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**Perch UoA-85** **Pikeperch UoA-85**
Condition number (if relevant)	

PI 2.1.3 – Primary species information

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?	**All main species-Yes**	**All main species-Yes**	**All main species-Yes**
Rationale				

Of the four main primary species of the perch and pikeperch fishery, bream is subject to a total allocated catch (TAC) regulation, whereas ide, Prussian carp and roach are managed through a recommended allocated catch (RAC) quota system[13].

All TAC regulated species are managed on a precautionary basis and annual catch limits are calculated at the start of each fishing season based on the calculated 30 per cent of the total available biomass (i.e. $0.3B_a$). Similarly, RAC species are managed based on 50 per cent of the total available biomass (i.e. $0.5B_a$). The precautionary approach to assessing TAC / RAC species in Russia is described in Babayan (2000).

Since 2009, the Saratov branch of VNIRO (earlier the Saratov branch of the State Research Institute of Lake and River Fisheries) regularly surveys the commercial catches and also undertakes their own research across the entire reservoir water body using pre-defined survey methods.

This is sufficient to satisfy the SG100 for this scoring issue.

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?			**No**
Rationale				

Minor primary species have not been investigated in detail. Thus, the SG100 is not met.

c	Information adequacy for management strategy

[13] See MRAG (2016) and Babayan (2000)for further details of recommended allocated catch (RAC) and how quotas for these lesser commercially important species are calculated.

	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?	**Main species-Yes**	**Main species-Yes**	**Main species-Yes** **Minor species-No**

Rationale

All TAC regulated species are managed on a precautionary basis and annual catch limits are calculated at the start of each fishing season based on the calculated 30 per cent of the total available biomass (i.e. 0.3B_a). Similarly, RAC species are managed based on 50 per cent of the total available biomass (i.e. 0.5B_a). The precautionary approach to assessing TAC / RAC species in Russia is described in Babayan (2000).

Since 2009, the Saratov branch of VNIRO (earlier the Saratov branch of the State Research Institute of Lake and River Fisheries) regularly surveys the commercial catches and also undertakes their own research across the entire reservoir water body using pre-defined survey methods.

This is sufficient to meet the SG80 but because minor species have not been investigated in detail, the SG100 is not met.

References

MRAG Americas (2016). Saratov Research Institute (2019); Fish-ka (2019), Babayan (2000).

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

Draft scoring range	**≥80**
Information gap indicator	**More information sought on minor primary species**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**Perch UoA-85** **Pikeperch UoA-85**
Condition number (if relevant)	

PI 2.2.1 – Secondary species outcome

PI 2.2.1		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		
Scoring Issue		SG 60	SG 80	SG 100
	Main secondary species stock status			
a	Guide post	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.	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.	There is a **high degree of certainty** that main secondary species are above biologically based limits.
	Met?	**All-Yes**	**All-Yes**	**All-No (Perch UoA)** **All-Yes (Pikeperch UoA)**
Rationale				

There are a number of non-endangered bird species must be classified as main secondary species, which may interact with the fishery; population trends and fishery interactions are summarized in Table 20. Only the perch UoA has any potential to interact with seabirds, as it is prosecuted in the summer, while the pikeperch-directed fishery is under ice in winter. Only great crested grebe has ever been recorded as interacting with the fishery directly, but Palla's gull also has the potential to interact, and must be considered because of a nesting population on the reservoir. Because it does not interact with any secondary species, the pikeperch UoA receives a 100 score for this PI by default. The remaining discussion pertains to the perch UoA.

The majority of the bird species listed in Table 21 are transient species that are present in the region only for a short period during their migration. The potential interaction with the fishery would only apply to their autumnal migration as the spring migration occurs at the same time as the fish spawning season when there is a ban on commercial fishing activities. As these autumnal migrating birds are likely to be present during short periods, are not resident on the lake and do not feed whilst they are present, the risk of interaction with fishing gear is highly limited or negligible. Of the species that are resident and in the Red Book there is only a small possibility of interaction e.g. black-throated loon (*Gaviaarctica*), Eurasian spoonbill (*Platalealeucorodia*) and the black stork (*Ciconia nigra*). No mortalities of these species have been recorded. During the scope extension site visit, it was noted that the black-throated loons do not feed during their migration, therefore reducing the possible interactions with the fishery.

Of the species present on the lake throughout the year only **Pallas's gull** *(Ichthyaetusichthyaetus)*may have a potential interaction with the fishery. A colony of Pallas's gulls exists on one of the islands in Suunduksky Bay, in the south-eastern part of the reservoir which is closed to commercial fishing. The colony was first reported in 2010, during which time 600 nestlings were counted (Barbazyuk, 2010). Because this species has an extremely large range, the

global population is increasing with an estimated 125,000-1,100,000 individuals it is listed as “least concern” on the IUCN red list.

The population trends for the **Eurasian spoonbill** *(Platalealeucorodia)*, **black stork** *(Ciconia nigra)* and **tundra swan***(Cygnus columbianus)* are unknown. In all three species some populations are decreasing, while others are increasing or stable. The global population size for each species is 63,000-65,000, 24,000-44,000 and 317,000-336,000 respectively and all are listed as “least concern” on the IUCN red list. The **white-tailed eagle** *(Haliaeetus albicilla)* has an extremely large range and a global population of 24,200-49,000 mature individuals. The white-tailed eagle global population appears to be increasing largely due to conservation measures such as protecting eyries, providing safe (non-poisoned) food and re-introductions to areas such as Bavaria and therefore is listed as “least concern” on the IUCN red list.

The **Dalmatian pelican** *(Pelecanus crispus)* is listed as “near threatened” on the IUCN red list. The estimated global population is 12,000-16,000 individuals and the overall trend is decreasing. Declines are primarily a result of wetland drainage, shooting and persecution by fishers, disturbance from tourists and fishers, water pollution, collision with overhead powerlines and over-exploitation of fish stocks. This species has been downlisted from “vulnerable” due to conservation measures that have resulted in a population increase in Europe. The species remains listed as “near threatened” because it is suspected that the population could undergo a moderately rapid decline in the next three generations.

During the site visit stakeholder consultation, fishermen confirmed they continue to monitor and report interactions with waterfowl and other species of concern using a logbook system (see Table 19). There were 25 actual reported bird interactions recorded in the fishery for 2014 through 2020, all with great crested grebe (*Podiceps cristatus*). In the past two years, though there have been more recorded interactions, the majority of birds were released alive (two of thirteen were fatal). The fishery records all mortalities of bird species that occur within gillnets, with the mortalities being linked to an individual effort record and the date, time and location being recorded for each event.

The fishery records all mortalities of bird species that occur within gillnets, with the mortalities being linked to an individual effort record and the date, time and location being recorded for each event. To date there have been 6 recorded interactions (5 dead, 1 released alive).

So, although some of the bird species above may be outside of, or approaching, Biologically-based limits, there is extremely limited opportunity for interaction with the fishery under assessment, which is borne out by the lack of recorded interactions over the years. This is sufficient to meet the SG80 requirement that, if the population is outside of biologically based limits, the UoA is demonstrably not hindering any recovery that may be occurring. The SG80 is met for all main secondary species. There is not a high degree of certainty that all main secondary birds are above BBLs, hence the SG100 is not met.

	Minor secondary species stock status			
b	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?			**Yes-Both UoAs**

Rationale

There are no minor secondary species in this fishery.

References

BirdLife International (2020) IUCN Red List for birds. Downloaded from http://www.birdlife.org on 23/12/2020.
http://datazone.birdlife.org/species/factsheet/dalmatian-pelican-pelecanus-crispus
http://datazone.birdlife.org/species/factsheet/eurasian-spoonbill-platalea-leucorodia
http://datazone.birdlife.org/species/factsheet/black-stork-ciconia-nigra
http://datazone.birdlife.org/species/factsheet/tundra-swan-cygnus-columbianus
http://datazone.birdlife.org/species/factsheet/white-headed-duck-oxyura-leucocephala
http://datazone.birdlife.org/species/factsheet/white-tailed-sea-eagle-haliaeetus-albicilla
http://datazone.birdlife.org/species/factsheet/pallass-gull-larus-ichthyaetus
Davygora (pers. comm. 2021).

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

Draft scoring range	**≥80**
Information gap indicator	**More information sought on population status of seabirds.**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**Perch UoA-90** **Pikeperch UoA-100**
Condition number (if relevant)	

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?	**Palla's gull-Yes** **Great crested grebe-Yes**	**Palla's gull-Yes** **Great crested grebe-Yes**	**Palla's gull-Yes** **Great crested grebe-No**
Rationale				

Of the species present on the lake throughout the year only **Pallas's gull** *(Ichthyaetus ichthyaetus)* may have a potential interaction with the fishery. A colony of Pallas's gulls exists on one of the islands in Suunduksky Bay, in the south-eastern part of the reservoir which is closed to commercial fishing. The colony was first reported in 2010, during which time 600 nestlings were counted (Barbazyuk, 2010). Because this species has an extremely large range, the global population is increasing with an estimated 125,000-1,100,000 individuals it is listed as "least concern" on the IUCN red list. Recommendations have been made to decrease fishing activities, remove fishing from with 5 km of the colony or set nets deeper (>10m) to mitigate against any interaction with the fisheries, but as these parcels are not open to the fishery these measures have not been required and no confirmed mortalities exist. To date, no permanent monitoring on the number of nests occur on a regular basis, although local ornithologists are known to visit the area regularly. The last survey conducted in 2013 counted 340-350 nesting birds but was conducted remotely in order not to disturb the birds and the results are not directly comparable with previous estimates (Morozov & Kornev, 2013).

The **Great crested grebe** (*Podiceps cristatus)* is the largest member of the grebe family in Europe. Although its population trend is unknown, it is "least concern" on the IUCN red list because of it large population size and range, and lack of immediate threat from humans (though it was once hunted nearly to extinction in the UK due to its beautiful plumage (*Cocker et. al. 2005).* Although this is a fish-eating diving bird, there have been very few recorded interactions with the Irikla perch fishery (see Table 20). The IUCN states that there is an in-place Action Recovery Plan and a systematic monitoring scheme, however it is not known if this applies to the population in Russia. Conservation sites have been identified over its entire range and occurs in at least one protected area.
Though there have been some recorded interactions, the birds are normally released alive and unharmed. This is evidence of at least a partial strategy to maintain or not hinder recovery of this bird species. SG80 is meet for the perch UoA.

This scoring issue is not applicable to the transient main secondary seabirds as they have not been shown to interact with the fishery. For the winter pikeperch UoA, no strategy is necessary as there is no potential for interaction. SG100 is met for both UoAs

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/species).	There is **some objective basis for confidence** that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	**Testing** support**s high confidence** that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.
	Met?	**Palla's gull and GC grebe-Yes**	**Palla's gull and GC grebe-Yes**	**Palla's gull and GC grebe-No**

Rationale

The near-zero interactions between this fishery and main secondary bird species provides some objective basis for confidence that the strategy for avoidance, including the protected breeding site for Palla's gull, are working. As there are no fishing parcels open near the nesting site, there has been no direct testing of this aspect of the strategy, hence the SG100 is not met for the perch UoA. As the pikeperch UoA fishes in winter, there is no possibility of interaction thus SG100 is met.

	Management strategy implementation			
c	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**	**Yes**

Rationale

The near zero interactions between this fishery and main primary seabirds, including Palla's gulls, provides clear evidence that this strategy is working to achieve its objectives. The SG100 is met.

	Shark finning			
d	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

Irikla reservoir is not home to any sharks.

	Review of alternative measures to minimise mortality of unwanted catch			
e	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 secondary 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 secondary 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 secondary species, and they are implemented, as appropriate.
	Met?	**NA**	**NA**	**NA**

Rationale

There is virtually no interaction between this fishery and any secondary species, even secondary main seabirds. There is no need for a review of the effectiveness of the management strategy since it is working perfectly already.

References

BirdLife International (2020) IUCN Red List for birds. Downloaded from http://www.birdlife.org on 23/12/2020.
http://datazone.birdlife.org/species/factsheet/dalmatian-pelican-pelecanus-crispus
http://datazone.birdlife.org/species/factsheet/eurasian-spoonbill-platalea-leucorodia
http://datazone.birdlife.org/species/factsheet/black-stork-ciconia-nigra

http://datazone.birdlife.org/species/factsheet/red-breasted-goose-branta-ruficollis
http://datazone.birdlife.org/species/factsheet/lesser-white-fronted-goose-anser-erythropus
http://datazone.birdlife.org/species/factsheet/tundra-swan-cygnus-columbianus
http://datazone.birdlife.org/species/factsheet/white-headed-duck-oxyura-leucocephala
http://datazone.birdlife.org/species/factsheet/white-tailed-sea-eagle-haliaeetus-albicilla
http://datazone.birdlife.org/species/factsheet/pallass-gull-larus-ichthyaetus
Davygora (pers. comm. 2021).

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	**Perch UoA-95** **Pikeperch UoA-100**
Condition number (if relevant)	

PI 2.2.3 – Secondary species information

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?	**All main secondary birds-Yes**	**All main secondary birds-Yes**	**All main secondary birds-Yes**
Rationale				

A full description of the population status of the main secondary bird species is given in PI 2.2.1. Described in earlier PIs and in the background section is the management strategy in place regarding Palla's gull, and the near-zero interactions between this fishery and any bird species. This constitutes information capable of determining with a high degree of certainty the impact of the UoA on secondary species and the SG100 is met for both UoAs.

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?			**Yes**
Rationale				

No minor secondary species have been identified.

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?	**Both species and UoAs-Yes**	**Both species and UoAs-Yes**	**Both species and UoAs-Yes**

Rationale

The fishery has a strategy to manage impacts to Palla's gull, with the possibility of interacting with the fishery during its operation and information is adequate to support this strategy (see details in the background section and previous PIs). During the site visit stakeholder consultation, fishermen confirmed they continue to monitor and report interactions with waterfowl and other species of concern using a logbook system (see Table 19). There were 25 actual reported bird interactions recorded in the fishery for 2014 through 2020, all with great crested grebe (*Podiceps cristatus*). In the past two years, though there have been more recorded interactions, the majority of birds were released alive (two of thirteen were fatal). The fishery records all mortalities of bird species that occur within gillnets, with the mortalities being linked to an individual effort record and the date, time and location being recorded for each event. There is also some information about the population status of this species, though its trend is unknown, it has a large population size, range and lack of immediate threat from humans, and thus listed as least-concern on the IUCN redlist.

This provides a high degree of certainty that available information is adequate to support a strategy to manage all secondary species and evaluate with a high degree of certainty that the strategy is meeting it's objectives. SG100 is met for both UoAs.

References

BirdLife International (2020) IUCN Red List for birds. Downloaded from http://www.birdlife.org on 23/12/2020.
http://datazone.birdlife.org/species/factsheet/dalmatian-pelican-pelecanus-crispus
http://datazone.birdlife.org/species/factsheet/eurasian-spoonbill-platalea-leucorodia
http://datazone.birdlife.org/species/factsheet/black-stork-ciconia-nigra
http://datazone.birdlife.org/species/factsheet/red-breasted-goose-branta-ruficollis
http://datazone.birdlife.org/species/factsheet/lesser-white-fronted-goose-anser-erythropus
http://datazone.birdlife.org/species/factsheet/tundra-swan-cygnus-columbianus
http://datazone.birdlife.org/species/factsheet/white-headed-duck-oxyura-leucocephala
http://datazone.birdlife.org/species/factsheet/white-tailed-sea-eagle-haliaeetus-albicilla
http://datazone.birdlife.org/species/factsheet/pallass-gull-larus-ichthyaetus
Davygora (pers. comm. 2021).

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	**Perch UoA-100** **Pikeperch UoA-100**
Condition number (if relevant)	

PI 2.3.1 – ETP species outcome

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				

No national or international limits apply to any ETP species in this assessment.

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?	**All ETPs-Yes**	**All ETPs-Yes**	**All ETPs-Yes**
Rationale				

Listing in the Orenburg Red Book and other legislation named in the MSC Standard as qualifying for ETP are classified as ETP in this assessment. While not national, the Orenburg Red Book follows the Russian Red Book, which is based on IUCN classifications.

Three fish species (brown trout, sterlet and Volga pikeperch) are identified in national legislation (represented in the Orenburg Red Book) but are not found in the reservoir and are therefore not impacted by the fishery.

The population trends for the red-breasted goose *(Branta ruficollis)* and lesser white-fronted goose *(Anserervthropus)* are declining. The **red-breasted goose** has an estimated global population of 56,000 individuals that has declined over a short period of time. The reason for the decline is unknown because trend calculations are complicated by interannual variation in survey coverage and reporting across its range (BirdLife International 2020). The “vulnerable” listing on the IUCN red list for this species is a precautionary measure and it could be downlisted if it is found that recent increases are genuine and not a result of improved monitoring efforts. The **lesser white-fronted goose** has a global population of 22,000-27,000 and is listed as “vulnerable” on the IUCN red list. The “vulnerable” listing for this species is a result of the rapid population decline in its key breeding populations in Russia and these declines are predicted to continue. In addition to the fragmentation of their breeding range, this reduction has been attributed to high levels of hunting on the staging and wintering grounds and habitat deterioration from land cultivation. Modelling indicates that 28% of the habitat for this species could be lost by 2070 (Zöckler and Lysenko 2000). However, there is extremely limited potential for this fishery to interact with these species, and there have been no recorded interactions. This is sufficient to provide a high degree of confidence that there are no significant detrimental direct effects of either UoA on these species.

The white-headed duck *(Oxyura leucocephala)*, qualifies as ETP because it is IUCN listed as endangered. Globally there are four populations of the white-headed duck; two of which are declining, one stable and one increasing. The North African population (400-600 birds) is stable and the Spanish population (2,500 birds) is increasing. The two decreasing populations include Central Asia (5,000-10,000 birds) and the Pakistan wintering population which is on

the verge of extinction. Although there is uncertainty about the movement of birds between wintering sites, mid-winter counts indicate that the population of this species has undergone a very rapid decline qualifying the species as "endangered" on the IUCN red list. Declines are caused by habitat loss, over-hunting, unsustainable use of water resources, and competition and introgressive hybridization with the non-native North American Ruddy Duck *(Oxyura jamaicensis)*. It is thought that the total population is appreciably higher than the total recorded during the mid-winter counts casting doubt on the accuracy of the global trend estimates. Until there is better data from more comprehensive counts the species is retained as "endangered" on the IUCN list. The potential for interaction of the white-headed duck *(Oxyura leucocephala)* with fishing gear is reported as low, almost zero, and there have been none recorded. Thus, there is a high degree of confidence that there are no significant detrimental direct effects of the UoAs on this ETP species.

Two amphibians, the great crested newt (*Triturus cristatus*) and the common frog (*Rana temporaria*), have ranges that border on the reservoir. Given the known geographical distribution of the great crested newt and the lack of crossover of habitats and feeding with perch, the likelihood of contact with fishing gear has been estimated as zero (Bannikov *et al.*, 1977 cited in Davygora, 2014). Similarly, the distribution of the common frog in the reservoir is only utilised for breeding in surface waters (Bannikov*et al.*, 1977 cited in Davygora 2015), which means that there is little risk of interaction with the gillnet fishery.

Three mammal species are identified; the Russian desman (*Desmanamoschata*), the otter (*Lutralutra*) and the European or Russian mink (*Mustela lutreola).* All three mammal species are identified as being present in the upper reaches of the Ural River but not to any great degree within the reservoir. No incidences of mammal interaction with the fishing gear of the fishery under assessment had been reported.

The fishery therefore meets the requirements at SG60, SG80 and SG100 for all ETPs and both UoAs.

	Indirect effects			
c	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?		**All ETPs, both UoAs-Yes**	**All ETPs, both UoAs-No**
Rationale				

The indirect effects of the fishery on ETP species have been considered (e.g. potential to compete with ETP species for prey), and they are thought to be highly likely to not create unacceptable impacts, as none of the ETP species present rely primarily on adult perch or pikeperch for prey, and these are the targets of the fishery. However, no evidence is available to demonstrate clearly with a high degree of confidence that there are no significant detrimental indirect effects to meet SG100. The fishery therefore meets SG80 only, for all ETPs and both UoAs.

References

Bannikov*et al.*, (1977); Davygora, (2014); Davygora, (2015); Red book of the Orenburg Province; Appendix 1, CITES

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	**Perch UoA-90** **Pikeperch UoA-90**
Condition number (if relevant)	

PI 2.3.2 – ETP species management strategy

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?	**NA**	**NA**	**NA**
Rationale				

National or international limits to not apply to any ETP species in this list.

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?	**Yes**	**Yes**	**No**
Rationale				

A number of management measures are available to both the management authority and the fishing companies to minimise mortality of ETP species, including closed seasons, closed areas and gear modification as may be required.

Quantitative data from bycatch forms also record ETP bird interactions and form part of a strategy to ensure the current suite of management measures are effective at minimising the impact of the fishery on ETP species. Bycatch forms are considered sufficiently accurate for monitoring purposes because the two fishing companies stress the importance of accurate reporting to fishermen and minimize the incentive to misreport. Monitoring is ongoing to ensure that if any interactions are observed then additional measures can be taken.

This is deemed sufficient to meet the requirements at SG60 and SG80. Given the scale and intensity of the fishery, and lack of interactions between the fishery and ETP species, a comprehensive strategy is not deemed necessary, although this prevents the fishery from meeting SG100.

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 this fishery and any 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.

This is sufficient to meet SG60 and SG80.

There is no evidence of a quantitative analysis to demonstrate the strategy supports a high confidence that it will work to meet SG100.

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**	**Yes**
Rationale				

Quantitative data collected from the fishery (bird bycatch forms) provide clear evidence that the current management strategy to avoid interactions with ETP species is working. This is sufficient to meet the requirements at both SG 80 and SG100.

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?	**NA**	**NA**	**NA**
Rationale				

As this fishery is not known to interact with any ETP species, a review of alternative measures is not necessary.

References

Davygora, (2014); Davygora, (2015), Davygora (2021)

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	**Perch UoA-85** **Pikeperch UoA-85**

Condition number (if relevant)	

PI 2.3.3 – ETP species information

PI 2.3.3		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		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts			
	Guide post	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.	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.	Quantitative information is available to assess with a high degree of certainty the **magnitude of UoA-related impacts, mortalities and injuriesandtheconsequences for the status** of ETP species.
	Met?	**Both UoAs-Yes**	**Both UoAs-Yes**	**Both UoAs-No**
Rationale				

Some information is sufficient 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. Were instances of mortality to exist for ETP species, these would be recorded in bycatch forms that provide details of all incidents of bycatch mortality with date, time and position of mortality allowing direct fishery related mortality to be quantitatively estimated for all bycatch species, including ETP. This is sufficient to meet both SG60 and SG80.

While the system in place to report interactions with bird ETP species is deemed sufficient to meet SG100, a lack of fisheries independent data to provide evidence that other ETP species are not at risk (e.g. amphibians) prevents the fishery reaching SG100. It is noted that Fish-ka has initiated reporting of all new fish species encountered, including bycatch, to ensure potential fish ETP risks can be evaluated.

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?	**Both UoAs-Yes**	**Both UoAs-Yes**	**Both UoAs-No**
Rationale				

While a full strategy has not yet been fully developed for the fishery (see SIa above), the detailed information collected through the bird bycatch form, including details of released alive/dead (see Table 19) can be used measure trends and support a comprehensive strategy to manage impacts of the fishery on all potential bird ETP species. This is

sufficient to meet the requirements at both SG60 and SG80. It does not meet SG100 as there is no evidence to demonstrate that interactions with other potential ETP species (e.g. amphibians) are adequately reported at this time.

References

Davygora, (2014); Davygora, (2015); MRAG (2016); Davygora (2021);

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	**Perch UoA-80**
Condition number (if relevant)	**Pikeperch UoA-80**

PI 2.4.1 – Habitats outcome

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**	**Yes**
Rationale				

The licensed fishery operates pelagic gillnets set approximately 1 m below the surface of the water-body to target adult pikeperch and perch. The gear is set in deeper mid-water areas where the target species are more abundant, and away from benthic substrates and nearshore areas.

The pelagic gear is set above the benthic layer of the reservoir to avoid becoming entangled. All commercial fishers use the same gear type (50-70 mm mesh size) and monitored throughout the season by enforcement officers. Due to the high selectivity of the gear, fish processors can determine different fish size or species composition from fishermen using different gear.

Evidence from fish processors and the reported number and type of fisheries infringements help to demonstrate that the gear will not be modified or changed (e.g. smaller mesh size or shift to bottom-tending) and it is therefore highly unlikely that the fishery will reduce the benthic habitat structure and function to a point where there would be serious or irreversible harm. This is sufficient to meet SG100.

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?	**NA**	**NA**	**NA**
Rationale				

This fishery does not interact with VMEs

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?			**Yes**

Rationale

There is no known interaction between this gear and any habitat type—no minor habitats have been identified. The SG100 is met.

References

Balabanova, (1971); Kozmin & Matyukhin, (1971); Isaev &Karpov, (1980); Anon., (2013); Yermolin, (2014); Belyanin (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	**100**
Condition number (if relevant)	

PI 2.4.2 – Habitats management strategy

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**	**Yes**
Rationale				

A suite of measures is in place to help protect freshwater habitats within the reservoir. These include spatial and temporal controls on fishing effort, restrictions on the type of gear employed and formation of a number of federal and regional Specially Protected Natural Reservations (SPNRs) within the Orenburg region to monitor and protect rare species of animals, plants and fungi.

In addition to various management measures, a strategy is in place to limit the impact of 'ghost fishing' through gear loss and also to facilitate habitat restoration. Representatives of Federal Agency for Fisheries Rosrybolovstvo together with Department for Fisheries and Fish Supervision Agency Rybnadzor undertake joint missions on the territories of fishing parcels in order to remove abandoned, damaged or illegal gillnets that might otherwise impact the local habitat.

In addition to the retrieval of old, damaged or illegal gillnets, there is a strategy to clean areas adjacent to the fishing parcels according to established schedules. Rubbish is collected and deposited in landfills at nearby settlements. Furthermore, approximately 40% of the shoreline of the reservoir is protected from anthropogenic activities, including agricultural and fishing activities.

Strategies to minimize impacts of gear loss and habitat restoration are deemed sufficient to meet the requirements at SG100.

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 potential impact of set gillnets used in the commercial perch and pikeperch fishery on the benthic habitats is generally well known. These are not a demersal species, and therefore gillnets set in the water column (approx. 1 m below the surface) to target adult fish are highly unlikely to come into contact with benthic habitats. Fishing is also highly likely to occur away from nearshore areas to minimize the risk of gear becoming entangled with submerged rocks and flora. During winter months, ice cover is likely to have a far greater impact to shallow nearshore areas than fishing activities.

Further to this, specific targeted actions are taken to improve the quality of the local habitat through actions to retrieve any lost or damaged gear (including illegal gear) and improve the quality of the surrounding area by disposing of discarded rubbish.

Controls placed on the type and spatial-temporal distribution of fishing gear ensure that the gear cannot pose a threat to the benthic habitat and thus helps to eliminate the risk of serious or irreversible harm.

Information is available directly about the fishery to provide sufficient evidence to meet the requirements at SG60 and SG80.

To date, no evidence of testing has been shown to demonstrate clearly the strategy will work with a high level of confidence to meet SG100.

	Management strategy implementation			
c	Guide post		There is **some quantitative evidence** that the measures/partial strategy is being implemented successfully.	There is **clear quantitative evidence** that thepartial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).
	Met?		**Yes**	**Yes**
Rationale				

Statutory controls are enforced and results from ongoing monitoring and enforcement provides clear evidence that the strategy is being implemented successfully. Documented evidence from the type of gear employed and species retained demonstrate the gear does not interact with benthic species, indicating the gear is highly unlikely to impact the habitat. This is sufficient to meet SG100.

	Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs			
d	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				

No VMEs are present.

References

Shvetsov, pers. comm., (2014); Yermolin, (2014); Belyanin (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	**95**
Condition number (if relevant)	

PI 2.4.3 – Habitats information

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				

There is a basic understanding of the types and distribution of main habitats within the Irikla Reservoir. In addition to a basic understanding of main habitat types, the average yearly water level of the Irikla Reservoir is monitored on a routine basis. This has important implications both from a management and environmental perspective, with respect to changes in nearshore habitats. Given the relatively shallow depth (~12 m), and opportunity for continuous research and monitoring of the reservoir by the Saratov Research Institute, good information on the nature, distribution and vulnerability of all main habitats has been described at the level of detail relevant to the scale and intensity of the fishery. This information is sufficient to meet the requirements at both SG60 and SG80.

The lack of information on the distribution of all known habitats prevents the fishery from meeting SG100.

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 attributes of the main habitats.	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 is available and is adequate to estimate the consequence and spatial attributes of the main habitats.	The physical impacts of the gear on all habitats have been quantified fully.
	Met?	**Yes**	**Yes**	**No**

Rationale

Data on the temporal and spatial location, number and type of gillnets within the reservoir are well documented sufficient to allow the nature of the impacts of the fishery on known habitat types to be identified. This evidence is sufficient to meet the requirements at SG60 and SG80.

No evidence of a quantitative evaluation is available to show the physical impacts of the gear to meet SG100.

	Monitoring			
c	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

The impact of the licensed commercial fishery on habitats is well known. Due to the nature of the gear used, any increase of the risk to habitats would only occur if the gear was changed or modified.

To date, ongoing information on the number and size of gillnets used in the fishery is collected by Fish-ka at the start of each season as part of their control to regulate the fishery. In addition to these fisheries-dependent controls, fisheries inspectors monitor the gear in-season to regulate the fishery. This evidence is sufficient to meet the requirements at SG80.

There is no evidence to demonstrate that changes in habitat distributions are monitored over time to meet SG100.

References

Yermolin, (2014); Belyanin (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)	

PI 2.5.1 – Ecosystem outcome

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

Biotic and abiotic environmental monitoring of the Irikla Reservoir is undertaken on a routine basis by the Saratov Research Institute. This provides a detailed understanding of the underlying structure and function of the ecosystem since development of the reservoir, which includes species-specific information on the levels of phytoplankton, zooplankton and benthic macro-invertebrates and ichthyofauna, for example.

The exploitation of pikeperch is considered to be relatively low in comparison to the productivity of the stock. Due to the highly selective gear type set above the benthic layer, little or no bycatch is taken in the fishery, although a negligible number of birds are sometimes caught. Control exercised over the number and size of gear used by Fish-ka helps to regulate the potential impact of the gear on the structure and function of the ecosystem. Control of the spatial-temporal distribution of the fishery and knowledge on the distribution and abundance of the only known reported ETP species within the reservoir (Pallas's gull) has demonstrated the risk of interaction with the fishery is minimal. Key habitats are protected under a number of federal and regional specially protected natural reservations (SPNR) within the Orenburg region.

The nature and control exercised over the fishing gear used (surface gillnet), coupled with a broad understanding of the main habitat types associated within the reservoir and quantitative evidence from the number of lost and damaged gear, demonstrates the fishery is highly unlikely to impact habitat types. The ecosystem within the Irikla Reservoir is subject to other non-fishery related impacts, including seasonal changes in water level as a result of draw-down of water and the occurrence of ice coverage during the winter. Combined, these impacts are considered to be far greater to the ecosystem than that of the fishery. Information available on the level of catches (target and non-target), bycatch, and risk of interaction with ETP species and main habitat types provides sufficient evidence that the fishery 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. This is sufficient to meet all requirements at SG60 and SG80. The requirements at SG100 are not met as a specific ecosystem wide analysis has not been conducted.

References

Matyukhin, (1967); Isaev &Karpov, (1980); Yermolin, (2014); Belyanin (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)	

PI 2.5.2 – Ecosystem management strategy

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				

A series of management measures are place under each Component (e.g. target fishery, retained and bycatch species, ETP species and habitat), that form at least a partial strategy for the overall ecosystem. Combined, these take into account a wide range of information that ensures that management measures restrain impacts on the Irikla Reservoir. This is sufficient to meet the requirements at both SG60 and SG80.

A number of agreements and practices are in place within the fishery that might represent a strategy and contain mechanisms that are expected to modify fishing practices in the light of the identification of unacceptable impacts. However, this 'strategy' does not contain a specific ecosystem plan, and thus prevents the fishery from meeting SG100.

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				

The partial strategy is considered likely to work based on evidence from a range of ongoing monitoring and research of both biotic and abiotic factors since the development of the Irikla Reservoir in the early 1960s.

Whilst there have been a number of reported changes in the ecosystem structure and function during the development of the reservoir, these have been due to natural and other man-made changes within the environment (e.g. annual changes in water-level, ice coverage). Against these other significant and widespread impacts on the environment, it is argued that the partial strategy to limit the impact of the pikeperch fishery on the ecosystem fishery is expected to be comparatively minimal and sufficient to meet SG60 and SG80. Given that there is no ecosystem-specific measure in place, the fishery does not meet SG100.

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

A range of evidence exists to demonstrate that the measures comprising the partial strategy are being implemented successfully. These include:
The total number of reported government inspections and low number of infringements detected each year;
Trends in stock status of TAC and RAC species do not show significant decline in abundance;
Low incidence of bird bycatch reported by commercial fishermen;
Government monitoring and research of biotic and abiotic factors within the reservoir have reported no adverse changes;
Low incidence of reports from commercial fishermen on fishing violations.
This evidence is sufficient to meet the requirements at SG80. Insufficient evidence is available to demonstrate that all measures are being implemented successfully to meet SG100.

References

Yermolin, (2014); Yermolin&Belyanin, (2015); Zobkov, (2015); Belyanin (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** *If more information is sought, include a description of whattheinformation gap is and what is information is sought*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	

PI 2.5.3 – Ecosystem information

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				

Prior to the construction of the Irikla Reservoir, the Ural River had been monitored to provide an understanding of the underlying riverine system and surrounding ecosystem. More recently, the Saratov Research Institute conducts routine monitoring and evaluation of various biotic and abiotic components of the Irikla Reservoir (e.g. water pH, temperature, level of primary production, fish abundance and biodiversity) that provides sufficient information to broadly understand the key elements of the ecosystem. This meets the requirements at SG80.

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) are routinely monitored and evaluated by the Saratov Research Institute. Quotas are set to subject to precautionary management levels to prevent over-exploitation of all main commercial species and monitored by fish processors and the research institute. Changes in the status of stock biomass can be monitored through time to understand the main impacts of the fishery on fish abundance. In addition to commercial fish species, information is collected on the main bycatch and ETP species. Some of the impacts, such as loss of illegal fishing gear have been investigated in detail. This is sufficient to meet both SG60 and SG80.

Limited or no information is available to demonstrate that the 'main interactions' between the fishery and the ecosystem elements have been investigated in detail such that the fishery is capable of adaptive management to environmental changes as well as managing the effect of the fishery on the ecosystem. The fishery does not meet the requirements to score SG100.

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 are **known**.	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 ecosystem are **understood**.
	Met?		**Yes**	**No**
Rationale				

A broad level of information and knowledge is available on the main functions of the Components of the ecosystem. This includes the trophic level of each commercial finfish species and the vulnerability of main bycatch and ETP species. Knowledge is available on the distribution of main habitat types and the location of finfish spawning areas

and essential habitat for ETP species (birds). The impacts of the fishery on some Components are also known, although this is not comprehensive. This is deemed sufficient to meet the requirements at SG80. Limited information was available on the definition and function of all known ETP species within the region to demonstrate sufficient evidence to meet SG100.

	Information relevance			
d	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

Historical monitoring and research of the Irikla Reservoir has been undertaken since its formation in 1960s. More recently, detailed information has been collected on the extent of bird bycatch and ETP species impacted by the fishery. In addition to monitoring the main Components of the reservoir, a range of bio-chemical and other related analyses are regularly evaluated to determine changes in the health of the ecosystem, including water clarity, pH levels, temperature and level of primary production, for example.

There is sufficient information available to meet the requirements at SG80 but not to demonstrate the impacts of the fishery on both the main Components and elements of the fishery to meet SG100.

	Monitoring			
e	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 continue to be collected on the outcome indicator for the Components of the ecosystem described for each monitoring and information PI (described above) is deemed sufficient to detect any increase in risk level to the ecosystem.

Routine monitoring and research by the Saratov Research Institute is ongoing and data continue to be collected on the reservoir suitable to support the development of strategies to manage ecosystem impacts. This includes for example, information on the distribution and abundance of Pallas's gull that has enabled spatial closures in the reservoir to protect vulnerable species.

The comprehensive range of bio-chemical analyses has helped to identify the likely cause of fish kills reported in one area of the Irikla Reservoir during 2012. The level of ongoing information and data collected is deemed sufficient to meet the requirements at SG80.

Without evidence of information and ongoing monitoring on the distribution of habitat types over their range, with particular attention to the occurrence of vulnerable habitat types, the fishery does meet SG100.

References

Isaev &Karpov, (1980); Voronin, (2007); Yermolin, (2014); Shvetsov, pers. comm.,(2015); Belyanin (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)	

7.4 Principle 3

7.4.1 Particulars of the recognised groups with interests in the fishery

All freshwater fisheries within the Russian Federation fall under the management of the Federal Agency for Fishery (Rosrybolovstvo / Росрыболовство)[14] an Agency of the Ministry of Agriculture of the Russian Federation[15]. The Federal Agency for Fishery is a federal executive body created by Decree of the President of the Russian Federation of 12.05.2008 № 724 by converting a pre-existing Russian State Committee for Fisheries, Resolution of the Government of the Russian Federation of 11.06.2008 № 444 approved the Regulations on the Federal Agency for Fisheries, in accordance with claim 12 of the Decree of the President of the Russian Federation of 21.05.2012, № 636 "On the structure of federal executive bodies" Federal Fisheries Agency under the Ministry of Agriculture of the Russian Federation.
The Federal Fisheries Agency (Rosrybolovstvo) is a federal executive authority responsible for:

- The federal state control (supervision) in the field of fisheries and conservation of aquatic biological resources in the inland waters of the Russian Federation, with the exception of internal sea waters of the Russian Federation, as well as the Caspian and Azov seas to determine their status, state supervision of merchant shipping in terms of safety swimming fishing vessels in the fishing areas in the implementation of fisheries;
- Public service, management of state property in the area of fisheries management, conservation and sustainable use, study, conservation and reproduction of aquatic biological resources and their habitats, as well as fish farming (aquaculture), commercial fish farming, production of fish and other products from aquatic biological resources to ensure safe navigation of fishing vessels and rescue operations in the fishing areas in the implementation of fisheries, as well as in industrial activity in the courts of the fishing fleet and sea ports for marine terminals designed for complex service of fishing vessels.

Federal Fisheries Agency has exercised the authority established by the legislation of the Russian Federation cases in the Russian Federation, in the exclusive economic zone and continental shelf of the Russian Federation, as well as in cases stipulated by international treaties of the Russian Federation in foreign countries and in the open ocean. Additionally, at a regional level, individual Russian States (e.g. Orenburg) may adopt additional laws subservient to the federal laws and regional or state research bodies may conduct additional research. Subordinate organisations of the Federal Agency for Fishery of relevance to the Irikla Reservoir fishery include the Kamsko-Uralsk Branch of the Federal State Budgetary Institution "Main Basin Administration for Fisheries and Conservation of Aquatic Biological Resources" (Kamsko-Uralsk branch of FSBI "Glavrybvod"earlier "KamUralRybvod") and the Saratov branch of FGBNU "-VNIRO", Russian Federal "Research State Scientific Institution of Fisheries and Oceanography" (earlier Saratov branch of FGBNU "GosNIORKh", Federal State Scientific Institution "State Research Institute of Lake and River Fisheries").

The Federal law "On Fishery and Protection of Aquatic Biological Resources" (2004) postulated a long-term objective of fisheries management system in Russia 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 legal framework for fishing on the reservoir is implemented through the Federal Law and District Regulations issued for each catchment area. The applicable rules for the Irikla Reservoir are the "Rules for fisheries of the Volga-Caspian basin" (2009) of November 18, 2014 (with amendments and additions of May 26, 2015; January 12 and April 19, 2016; July 27, 2017; April 18, November 6, 2018, and July 25, 2019). The rules are well defined and are summarised below:

[14]http://government.ru/en/department/243/
[15]http://www.mcx.ru

1. Russian legal entities, individual entrepreneurs and citizens engaged in fishing in the Caspian Sea and inland waters, the fisheries.
2. Foreign legal entities and citizens engaged in fishing activities in accordance with the laws of the Russian Federation and international treaties of the Russian Federation.
3. The Volga-Caspian fisheries basin is subdivided into the Northern and Southern fisheries regions, separated by a conventional line running along the dam of the Volga Hydroelectric Power Plant (Volgograd city).
4. Rules governing fisheries production (catch) in order to implement the commercial fisheries in coastal fisheries, fisheries research and control purposes, fisheries training and cultural and educational purposes, fishing to fish farming, reproduction of aquatic biological resources and acclimatization, amateur and sport fishing.
5. Types of permitted fisheries, including caviar production, as well as the parameters and terms of permitted fisheries, restrictions on fishing and other activities related to the use of living aquatic resources, related to fisheries, including the prohibition of fishing in certain areas and for certain species of living aquatic resources; the minimum size of produced (harvested) of living aquatic resources, the mesh size of fishing gear, valid bycatch of some species, periods of fishing established in accordance with federal laws, restrictions, requirements for the conservation of living aquatic resources assigned to objects in the fisheries, including the responsibilities of users implementing extraction (catching) of aquatic biological resources, the list of documents required for users to implement the fisheries requirements users engaged in extraction (catching) of living aquatic resources, daily rate of extraction (catching) of aquatic biological resources (by number, by weight) of a certain species, allowed to a citizen for extraction (catching) in the implementation of recreational fishing.
6. The implementation of fisheries research and monitoring, training purposes and for fish farming, reproduction of water bio-resources and acclimatization, catch of aquatic biological resources mining areas (catch), time(periods of) production (catch), the instruments and means of production (catch), species, sex and size composition of catches of fishery. Tools and methods of fishing areas and time production (catch)water bio-resources, species, sex and size composition of catches for these objectives are established scientific programmes, plans of work in production (catch) of water bio-resources for training purposes, as well as the programmes of work on artificial reproduction and acclimatization of aquatic biological resources.
7. If the international treaties of the Russian Federation in the field of Fisheries and the conservation of living aquatic resources, establish regulations other than the fishing rules, these rules shall apply to international treaties.
8. In order to maintain those species listed in the Red data book of the Russian Federation and/or the Red Book of the Russian Federation the extraction (catch) of endangered species is prohibited. In exceptional cases, extraction (catching) of rare and almost endangered species of aquatic biological resources is allowed under permissions for extraction (catching) of aquatic biological resources in order established by the Government of the Russian Federation (Federal law from December 20, 2004 No. 166-FZ "on fisheries and the conservation of water biological resources ", art. 27 (collection of laws of the Russian Federation, 2004, no. 52 (part 1), art. 5270; 2006, N 1, art. 10. N 23,art. 2380; No. 52 (part 1), art. 5498; 2007, N 1 (part 1), art. 23; N 17,art. 1933; N 50, art. 6246; 2008, no. 49, St. 5748)). II. Requirements for the conservation of living aquatic resources assigned to the fisheries.
9. The right to production (catch) on aquatic resources is conferred on the basis of agreements and decisions established by the Federal law of 20 December 2004 N 166-FZ "on fisheries and the conservation of aquatic biological resources "(Federal law of December 20, 2004 No. 166-FZ "on fisheries and the conservation of aquatic biological resources", HL. 3.1)).
10. The types of fishing referred to in paragraph 3 of the fishing regulations (with the exception of the amateur and sport fisheries), members may carry out fishing in amounts not exceeding the amounts specified for individual types of water bio-resources and mining areas (catches) and/or fishing sites in the permits to mine(yield) of living aquatic resources; provide a separate accounting of catch, specifying the weight (size) of the balance of species in the catch, fishing gear and catch (district, sub-district, fishing area, square) in the fishing log and other records; lead documentation reflecting the daily extraction activities (catching) of water bio-resources: logbook, and in implementing the processing of water bio-resources-log verification products (history of technology. The territorial authorities are of Rosrybolovstvo with information about the production (capture) of aquatic biological resources of production (catch) provided not later than the 18th and 3rd day of each month as of the 15th and the last day of the month - when fishing is carried out on ships submitting ship daily reports monthly with documentation reflecting the daily catch.
11. The implementation of the amateur and sport fishery: the holding of sports events in the field of fisheries is subject to the rules of the fishery; at fishing sites and an organization not amateur sports fisheries-citizens must obtain the consent of the user in the fisheries sector; where provided for the Organization of recreational and sport fisheries-citizens must contract for service someone with a contract regarding the provision of fishing the

plot for this type of fishing (hereinafter permit production (catch) of aquatic biological resources). Again, the territorial authorities of Rosrybolovstvo the information about the production (capture) of aquatic biological resources of production (catch) should be provided monthly with documentation reflecting the daily catch. In organizing recreational and sport fishing under the agreement granting fishing site for extraction (yield) of living aquatic resources users: produce the issuance of mining permits to citizens (capture) of water life within fixed quotas for the specified the fishing area; provide a separate accounting for the types, volumes and production sites (catches) of aquatic biological resources in fisheries journal. Again, the territorial authorities of Rosrybolovstvo the information about the production (capture) of aquatic biological resources of production (catch) should be provided monthly with documentation reflecting the daily catch.

12. The citizens of the amateur and sport fishing provided for this purpose fishing sites must have the permit for extraction (catching) of living aquatic resources; Passport or another identification document.

13. Water users do not have the right to (1) carry out extraction (catching) of water bio-resources without the permission of the production (catch) of water bio-resources and without selected production (catch) quotas of water bio-resources, unless otherwise provided for by the legislation of the Russian Federation; in excess of the quota allocated to them production (catch) on areas of production (catch), types and volumes of water bio-resources the permitted bycatch; from ships and other vessels not registered in the established order and do not have clearly printed on the Board standard markings; using piercing gear, except for the amateur and sport fishing by using special pistols and shotguns (the Fisher boy);with the use of firearms (except production (catch) seals), pneumatic weapons, as well as explosive, toxic, drugs, electric shocks and other gear types prohibited by the legislation of the Russian Federation of fishing gear; stopping the oxygen in the water body; reducing the value of the fishery through the destruction of its water sources, and blocking the movement of water and reduction of the fishery value (catch) through dams, bridges, locks and other hydraulic structures less than 0.5 miles from waste collectors and less than 0.5 km of the intakes and ducts of power stations (with the exception of mining (catches) of aquatic biological resources in research and monitoring purposes); at no time and in no-production (catch) areas without the consent of users of fishery areas in the implementation of the amateur and sport fishery on the hatcheries, their shops and cages for growing points and fish-keeping at a distance of less than 0.5 km from ponds and waterways spawning-outgrown farms. Apart from fishing to fish farming, reproduction and acclimatization of living aquatic resources during periods of release of fish fry fish factories and for a period for 15 days in waterbodies fisheries values less than 0.5 km in all directions from the release, except for catching prey and invaluable species to prevent this valuable fish species of juvenile fish; to carry out underwater hunting during the spawning period, the mass and organized recreation of citizens, as well as apply means of spearfishing from shore or from floating equipment; the underwater hunt with aqualung and other self-contained breathing apparatus; to set fishing gear that would overlap more than 2/3 the width of the bed of the watercourse, and the reservoir, with a loose part should consist of the most the deep part of the river, set gear in chessboard order; to use fishing gear from the water objects of the fisheries value, if gear if found to contain parasitic and/or infectious diseases that would threaten the water bio-resources and other resources of high value without first disinfecting the gear; set (anchor) and drift (gradual) gear, not to indicate their status by means of buoys or marking standard form; to discard extracted (recovered) catches, with the exception of the amateur and sport fishery, through the principle of "catch and release", as well as fish caught for fish breeding and reproduction.

    Staying of gill nets and traps in the water is not allowed, counting from the moment of their complete installation, recorded in the fishing log, until the start of their bulkhead or hauling on the shore or side of the vessel (stagnation of nets, traps), exceeding: 24 hours - from April 16 to October 14; 96 hours - from October 15 to April 15.

    In the case of catching prohibited species of aquatic biological resources, or exceeding the permitted by-catch of aquatic biological resources that are not specified in the permit for catching aquatic biological resources for which the total allowable catch (TAC) is established, they must be with the least damage, regardless of their condition, released into their natural habitat. At the same time, legal entities and individual entrepreneurs are obliged to: change the position of catch (the route of the next trawling or the position of the next sweep, the setting of the catch must be at least 0.5 nautical miles (for sea areas) and at least 0.5 km (in inland waters, with the exception of inland sea waters) from any point of the previous trawling, sweeping or setting), and in case of repeated exceeding of the permitted by-catch - to stop harvesting (catching) aquatic biological resources in this area or in this fishery area and remove the fishing gear, or bring them into a state that does not allow fishing; reflect their actions in the ship's documents and the fishing log and send this information to the territorial bodies of the Federal Agency for Fishery;

14. No production (catch) of all types of aquatic biological resources are allowed throughout the year) near the lower pond at a distance of 1 km of the Iriklinskaya Hydroelectric Power Station.

15. No production (catch) of specific water bio-resources allowed as below:

    from 15 April to 15 June-all species of living aquatic resources;

from 25 October to 25 November-for whitefish and vendace in Irikla Reservoir;
from 15 December to 30 January- burbot; all water bodies of Orenburg;
from 1 December to 14 July and from 16 August to 14 September–crayfish; and
from October 1 to April 30 - in wintering pits specified in Appendix No. 5 to the Fishing Rules "List of wintering pits located on water bodies of fishery importance in the Volga-Caspian fishery basin".

16. The types of enforcement tools and methods of production (catch). In production (catch) of aquatic biological resources are applied to standard gear, manufactured in conformity with the technical documentation. Other tools and methods for fishing not provided for in should not be used.

Minimum retention sizes (cm) for species have been set as in Table 23.

Table 24. Minimum retention sizes (cm) by species and location in commercial fishery.

Species	Location [16]	Minimum retention size (cm)
Sterlet		42
Asp		40
Pike		32
Pikeperch		40
Bream		25
	Volgograd Reservoir	30
	(Orenburg region), except for Irikla Reservoir	28
	Iriklinskoye (Irikla) Reservoir	32
	Ivan′kovskoye Reservoir	10
	Galichskoye Lake	10
	Gorky Reservoir	30
	Cheboksary Reservoir	30
Carp		40
Silver carp		55
Whitefish	Irikla Reservoir	40
Vendace	Irikla Reservoir	24
Wels catfish		90
Sabrefish		22
Common nase		24
Ide		25
Burbot		40
Crayfish		10

When harvesting (catching) with large-scale mesh gears (depth trawls, flooding seines, fixed and flowing nets, traps), catch of aquatic biological resources less than the fishing size listed in Table 10 is not allowed in the following amounts: more than 40% of the total catch by number of fish species for which the fishing size has been established, in a single fishing operation (catch) - when fishing (catching) in all water bodies, excluding the Volgograd reservoir. When harvesting (catching) of aquatic resources with small-scale fishing gear, catch of aquatic biological resources less than the fishing size (by-catch of juvenile fish or individuals of less commercial size) is not allowed in the following amounts: more than 20% of the total catch of all fish species for one fishing operation (catch) - when fishing (catching) fish with seines, fixed and floating nets, traps and other allowed small-scale fishing gear. All by-catch of juvenile fish in excess of the permitted amount should be immediately released into their natural habitat with the least damage, with the appropriate entries in the logbook. At the same time, legal entities and entrepreneurs are obliged to:i) stop

[16]Entire Orenburg Province if not specified elsewhere.

(remove or put into a state that does not allow fishing, fishing gears targeted for extraction (catching) of aquatic biological resources in a given area or on a given fishing site; ii) send information about the actions taken to the territorial bodies of the Federal Agency for Fishery.

When recreational fishing is carried out in water bodies of the Orenburg region (including the Irikla reservoir), it is prohibited to catch fish less than the fishing size indicated in Table 24. The daily rate of catch (harvest) of aquatic biological resources for each citizen in recreational fishing is shown in Table 25.

Table 25.Minimum retention sizes (cm) by species and location in recreational fishery.

Species	Location[17]	Minimum retention size (cm)
Asp		40
Pike		32
Pikeperch		40
Bream		28
Carp		40
Wels catfish		90
Crayfish		10

Table 26.The daily rate of catch (harvest) of aquatic biological resources for each citizen in the implementation of recreational fishing.

Name of aquatic resources	Daily catch rate
Asp	5 kg
Pikeperch	5 kg
Pike	5 kg
Catfish	1 individual
Crayfish	20 individuals

The management system in place in Russia does not have an explicit environmental policy that refers directly to fisheries. In place of a specific policy a number of Federal laws and regulations are in place to protect the environment. The law “On Protection of the Environment” (2001) is very generalist set of principles that define protection of the wide range of environments and habitats found in the Russian Federation.
The law defines the quality of the environment as “the environment, which is characterized by physical, chemical, biological and other indicators and (or) their population:

- a good environment is the environment, a quality that ensures the sustainability of the natural ecological systems, natural and man-made objects;
- negative impact on the environment-the impact of economic and other activities, which lead to negative changes in the quality of the environment;
- natural resources-environmental components, natural objects and man-made objects that are used or could be used in the implementation of economic and other activity as a source of energy, food production and consumer items and have the customer value; and
- the use of natural resources, the exploitation of natural resources, integrate them into the economic turnover, including all kinds of effects on them in the process of economic and other activities”.

State environmental monitoring is carried out by the State authorities of the Russian Federation and the State bodies of the constituent entities of the Russian Federation. Relevant articles (to fishing in freshwater systems and the environment) are highlighted below.

Article 2: Legislation in the field of environmental protection

[17]Entire Orenburg Province if not specified elsewhere.

This defines how the environmental legislation is based on the Constitution of the Russian Federation and consists of this federal law, other federal laws, as well as the measures taken in accordance with other regulations of the Russian Federation, laws and other normative legal acts of the constituent entities of the Russian Federation. The federal law applies throughout the territory of the Russian Federation. Where cross-over occurs with the protection and rational use of natural resources, their preservation and restoration are governed by the international treaties of the Russian Federation, land, water, forest legislation, the law on mineral resources, fauna, other legislation in the field of environmental protection and natural resources management.

Article 3: The basic principles of environmental protection

Economic and other activity of bodies of State power of the Russian Federation, bodies of State power of the constituent entities of the Russian Federation, bodies of local self-government, legal and natural persons, which impact on the environment should be carried out on the basis of the following principles:

- science-based combination of environmental, economic and social interests of a person, society and the State in order to ensure sustainable development and a healthy environment;
- the protection, reproduction and rational use of natural resources as necessary conditions for ensuring an enabling environment and environmental safety;
- the presumption of the environmental hazard of the proposed economic or other activity;
- priority of preservation of natural ecological systems, natural landscapes and natural systems;
- to reduce the negative impact of economic and other activities on the environment in accordance with the regulations in the field of environmental protection, which can be achieved through the use of best available technology, taking into account economic and social factors; and
- conservation of biological diversity.

Under Article 5 “The powers of State authorities of the Russian Federation in the sphere of relations connected with the protection of the environment”, the law establishes the procedure for State monitoring of environment (State environmental monitoring), the formation of a State system for environmental monitoring and maintaining the system and the organization and conduct of the State ecological expertise and allows for the economic assessment of the impact of economic and other activity on the environment (i.e. fishing). Article 6 confers powers on the State organisations to implement federal laws and enact their own State legislation in the field of environmental protection and establishing standards (higher than the Federal level) where required as well as the economic evaluation defined in Article 5.

Article 11 allows for the creation of public associations, foundations and other non-profit organizations engaged in activities in the field of environmental protection by citizens. At the time of preparation of this report no associations, foundations or NGOs related specifically to the environment around the reservoir were known to exist.
Article 15 defines how federal programmes in the area of environmental development and environmental protection can be implemented. These should be based on the proposals of citizens and public associations. Legal entities and individual entrepreneurs engaged in economic activity (e.g. fishing) and other activities, with negative effects on the environment are required to plan, develop and implement environmental protection measures in accordance with the legislation. At this time there are no negative environmental impacts from the fishing conducted in the fishery under certification.

Articles 19, 20 and 21 define the standardization in the field of environmental protection that is employed throughout the Russian Federation and ensure that this is carried out in accordance with the procedure established by the Government of the Russian Federation to the required environmental quality standards. Article 22 defines the required standards for environmental impact assessments.

Article 26 defines the exceptions to standards of environment components which are established in accordance with the limitations of their retirement in order to preserve the natural and man-made objects, ensure the sustainability of natural ecological systems and prevent their degradation. These are determined by the law on mineral resources, land, water, forest legislation, the law on the animal world and other legislation in the field of environmental protection, natural resources management and in accordance with the requirements of environmental protection and reproduction of natural resources.

Article 60 provides for the protection of rare and endangered plants, animals and other organisms. In order to protect and account for rare and endangered species of plants, animals and other organisms the Russian Federation has established the “Red Book of the Russian Federation”. Species listed in the Red Books everywhere subject to seizure of economic use. In order to preserve rare and endangered plants, animals and other organisms, activities are prohibited that would lead to a reduction in the size of these plants, animals and other organisms and degrading their

habitat. The Orenburg State Red Book details a number of species of interest and these are detailed in 3.4.3(page**Error! Bookmark not defined.**).
The organization and implementing legislation for the establishment of State environmental monitoring services is put forward in Article 60. State environmental monitoring is carried out in accordance with the legislation of the Russian Federation and laws of constituent entities of the Russian Federation in order to observe the State of the environment, including the State of the environment. The procedure for the organization and implementation of State environmental monitoring (State environmental monitoring) is established by the Government of the Russian Federation. Procedures for providing information on the State of the environment are regulated by law.

Article 70 of the law, provides for scientific research in the area of environmental protection that should be carried out by relevant research organisations in accordance with the Federal law on the science and State scientific and technical policy and article 73 for the training of managers and specialists in the field of environmental protection and ecological security ensuring that people in responsible positions such as the Executive Heads of the organizations and professionals responsible for decision-making in the implementation of economic and other activities which have or are likely to have a negative impact on the environment, should be trained in the field of environmental protection and ecological security. Managers and specialists in the field of environmental protection and ecological security decision makers in implementing economic and other activities which have or are likely to have a negative impact on the environment, also should be trained in accordance with the legislation.

7.4.2 Particulars of the recognised groups with interests in the fishery

Three recognised groups with interests in the fishery have been identified:

- The local fishing companies “Fish-ka” and “Volna”, their employees (51fishers in July 2019 and approximately 70 employees of the fish processing plant) (Fish-ka, 5th February, 2021) and the local inhabitants of Energetik (population 7,600) where the fishing companies combined form the second largest single employer in the area.
- Recreational fishermen from Orenburg and adjacent provinces who fish around the reservoir. Recreational fishermen retain their catch and important food source for many of the fishers around the reservoir.
- Sport fishermen, purely “recreational” fishermen from the Orenburg Sport Fishing Club who compete in fishing competitions on the reservoir. NB: The sport fishermen in contrast to the recreational fishermen do not retain their catch but must release it alive and unharmed after it has been weighed and counted by the competition referees.

7.4.3 Details of consultations leading for the formulation of the management plan

Russian fisheries do not have formal fisheries management plans in the same way as many European or US fisheries would. The Federal Agency for Fisheries is the federally mandated organisation that is responsible for the control and management of fisheries and conservation of Russia’s inland waters, government services and state property management in fishing, the protection, sustainable use, study, preservation and reproduction of biological resources and their habitats, as well as fish farming (aquaculture), commercial fisheries, the production of fish and other products from biological resources.

Regulations issued by the Federal Agency for Fishery are published via the Agency website in a transparent manner available to all members of the public.[18]
There are also yearly public hearings within the framework of the Scientific-Fisheries Council in Orenburg before the fishing season commences that discuss the TAC / RAC allocations along with meetings of the Public Council under the Ministry of Forestry and Hunting of the Orenburg Region (Yermolin&Belyanin, 2015). There is therefore a review process that is both external and independent to the Federal Agency for Fisheries.

7.4.4 Arrangements for ongoing consultation with interest groups

Only two companies with MSC certification - “Fish-ka” and “Volna” - are licensed to commercial fishery at the reservoir (the third company, “Irikla-Ryba”, is engaged in fishing for reproduction purposes). There is a close cooperation between these companies and the Federal Agency for Fishery and the Saratov Research Institute to enable fast, transparent and efficient provision of commercial and scientific data to enable stock assessment to be conducted in the most efficient manner.

There is a close relationship between the fishing companies “Fish-ka” and “Volna” and the local government officials. The Head of the Local Administration, interviewed during the site visit in October 2014, indicated the fishing

[18]http://www.fish.gov.ru/lawbase/Pages/default.aspx

companies were the second and third biggest employers in Energetik and the long-term sustainability and cooperation to manage the fishery was important. It was also noted that the local administration has a good relationship with the recreational and sports fishers that they also see as important sources of revenue and food to the region.

Local businesses have been setup within the recreational fisheries sector with fishing rights. These companies as part of their access rights have responsibilities to take care of the shoreline and that visiting fishers remove their waste and do not cause additional environmental damage.

Meetings with fisheries stakeholders are conducted with the Ministry of Forestry and Hunting of the Orenburg Province four times each year. Reports of these meetings are transparent and are published on the Ministry website. Following on from these meetings a local fisheries council has been created. All documents from the Fishery Council are published to allow transparent discussion of all the issues.

The fisheries council membership includes:

- Local branch of the Federal Agency for Fishery;
- Commercial fishing industry (Fish-ka Ltd and Volna Ltd);
- Fish processing industry (Fish-ka);
- Saratov Research Institute; and
- Orenburg Sport Fishing Club.

It has been proposed by the commercial fishing industry that the recreational fishery should be represented to ensure effective conflict resolution and the Ministry has been positive in this respect.

Ongoing consultations relating to disputes between fishers and other groups are negligible. Access to the reservoir is organised for recreational and sports fishers and conflicts are now not as common as in the previous situations where an open situation existed. Now all fishers should be licensed and have to rent a fixed parcel of shoreline. This has removed most of the conflict from the fishery. In extreme cases of conflict where official written complaints have been received then the Ministry may respond directly and where required face-to-face discussions or formal hearings may be held with representatives of the Ministry present as mediators where opportunity for discussion and interaction between parties is possible. In relation with the reorganization of the fishery areas (rybopromyslovyeuchastki - RPU) into fishing parcels (rybolovnyyeuchastki - RU) in 2020, amateur fishermen received the right to use the traditional areas of commercial fishing for their own purposes. The intersection of the interests of professional fishermen and amateur fishermen on the Irikla reservoir caused mutual discontent, which is the reason for discussing controversial situations at the Fishery Councils to come soon.

7.4.5 Details of non-fishery users or activities, which could affect the fishery, and arrangements for liaison and co-ordination

The primary use of the reservoir is for water management, providing water for downstream settlements and control of flow, avoiding flooding through effective control and not for fisheries. This has been recognised, although the variation in water management is such that it has been shown not to adversely affect the reproductive potential of the pikeperch fishery as the water level is maintained at a level where the breeding and feeding areas for pikeperch are not impacted greatly as they can inhabit the depth range of the entire reservoir. Some shallow areas that may create pools in periods when water has been drained, trapping fish and exposing them to higher temperatures and potential anoxic conditions, are targeted by the management authorities and the sand bars blocking off the pools from the main body of the reservoir are removed (Alexander Zobkov, pers. comm. during stakeholder interview in October 2014).

The volume of water discharge from the Irikla reservoir is determined annually by the flood commission. Until 2006, the flood commission included both specialists in hydrology and representatives of the fishery. For the latter, it was important to defend the preservation of the highest possible water level in the reservoir, since this has a positive effect on fish spawning. However, later, officials came to the flood commission, for whom the most important thing is to prevent possible flooding of settlements lying below the reservoir dam (Vitaly Kilyakov, pers. comm. during stakeholder interview in 11th February, 2021).

Planning for the water management of reservoir is conducted by the Federal Enterprise for the Exploitation of the Irikla Reservoir. The Enterprise's Council conduct planning for the water basin from Orenburg and management is conducted primarily through the control of output. The main aim is to manage water level control of the reservoir to provide water in a controlled flow for downstream settlements. This usually results in an increased level of discharge during the summer months with a filling of the reservoir during the other months of the year. Water is released from the bottom of the reservoir first in spring. Flooding is avoided through hydrodynamic forecasting in the spring, with an 85% forecasting success rate. There is also a target level of water required in the reservoir in spring before water starts to be released at a higher rate to ensure levels are maintained during the summer months. (See Figure 15).In recent years, significant discharges of water level in the spring period is not observed, which causes a smoothed water regime in the reservoir. The Saratov Research Institute considers stability of stock status for main commercial

species has been due mainly to improved management of water levels within the reservoir in addition to regulation of catches through TAC/RAC (Ilia Belyanin, 15th May, 2018; 18th October, 2018; 8th February, 2021). According to Elena Ermolova (pers. comm. during stakeholder interview in 11th February, 2021), in the past three years, the interests of the fishing industry have begun to be taken into account to a greater extent and there are no sharp fluctuations in the water level. This can be seen, in particular, from the improvement in the state of whitefish stocks, for which successful reproduction requires a sufficiently high water level in autumn.

There is currently a plan in place to increase the overall depth of the Irikla Reservoir by 1m to increase the flow of downstream water to Kazakhstan based on discussions between the Russian Federation and Kazakhstan. The draw-down of water has been shown to have no effect on the spawning of pikeperch during the periods of reducing water levels, although it may affect other species in the reservoir. Pikeperch in particular spawn in deeper water and are not affected. There is no navigation of large vessels on the reservoir or Ural River making easier control of the waterbody and reduce any effects on the fishery through disturbance.

The decision-making process or processes include the recognised participants. Key information is collected but the different organisations involved in data collected work together so as to avoid duplication. Results are collected and forwarded to the relevant body for analysis regardless of which organisation collects the data. The police can get involved in the legal process when necessary. There is clear cooperation between management and research agencies with both industry, recreational and sports fisheries on data collection, for the fishery (P1) and environmental aspects (P2).The sports fishers are utilised by the management authorities as surveillance assets reporting on illegal fishing on the reservoir (Alexander Zobkov, pers. comm. during stakeholder interview in October 2014).

It should be noted that for political and security reasons areas around the dam and outlet of the Irikla Reservoir are protected and are not open for fisheries (Rules for fisheries of the Volga-Caspian basin, 2014). Figure 16notes that parcels 1, 7, 8 and 9 are also closed “not to prevent reproduction”. Biologically these areas are important for coregonids which use these areas as refuges during hot periods because the depth is at a maximum in the reservoir and temperatures are minimal.

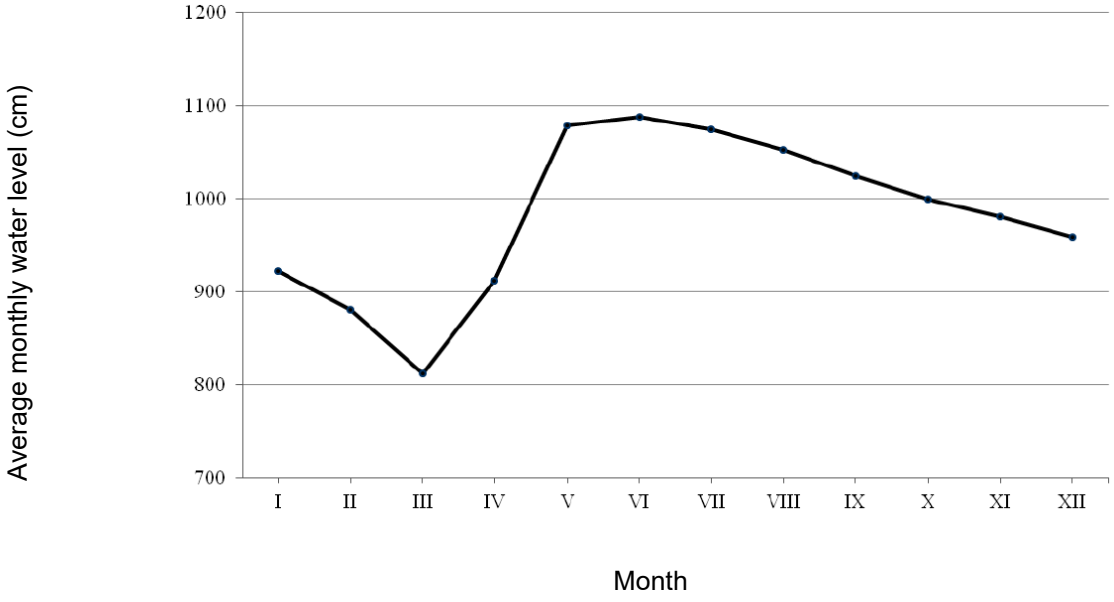

Figure 22. Average monthly water levels (cm) - Irikla Reservoir (1961 - 2010).

Source: Saratov Research Institute.

7.4.6 Objectives for the fishery

Fishing is conducted in a very simple manner with individual fishermen operating from small single engine boats (see Figure 2 for an example of the type of boat used). The fishing gear is restricted to specific gillnets of mesh size 30-36 and 50-70 mm and are deployed and retrieved from the fishing boats associated with both Fish-ka and Volna. Fish-ka collect fish from registered fishermen working in local fishing sites known as “parcels” by small boat, whereas fish caught in parcels further afield are now collected by each company by road and transported to Volna facilities via a new ferry crossing. The new ferry crossing has reduced access time to each parcel and also increased the fish quality. The collected fish are sorted into (i) MSC certified perch and pikeperch, (ii) non-MSC certified large perch and all other species, which are distributed to Fish-ka and Volna processing facilities respectively.

The fishery operates under a single jurisdiction with no indigenous component although rights for local recreational fishers are recognised. There are no shared, straddling or highly migratory stocks.

Commercial fishing rights have been granted to a limited number of companies (Fish-ka and Volna), which in turn grant rights to individual fishermen. These fishing rights are issued on a ten-year basis, and current agreements are in place for twenty years. This generates a clear incentive for licence holders to practice sustainable fishing practices. An application was made in May 2018 to extend the current system of fishing opportunities for quota species (i.e. TAC species) for Fish-ka and Volna until 2030. Fish-ka explained this can then be extended for an additional 15 years (up to 2045) (Fish-ka, 15thMay, 2018). The fishermen are not company employees but are contracted to fish and supply their catch to the company for processing.

In 2020, the fishery areas (rybopromyslovyeuchastki - RPU) were renamed into fishing parcels (rybolovnyyeuchastki - RU). The renaming was rather formal, however, along with the renaming, there was a change in the number and boundaries of parcels on the Irikla reservoir: instead of 6 RPUs, 7 RUs appeared. To date, only seven of the nine parcels have been allocated to the companies (Parcels 1, 2, 3, 4, 5, 6 and 7) with parcels 8 and 9 (southern-most near the dam) not open to commercial fishing (see Figure 16 for details). Of these seven parcels, three have been allocated to Volna and three to Fish-ka (Orlovsky reach, Sofinsky reach, Chapaevsky reach, Tanalyk-Suunduk reach, Tanalyk bay and Suunduk Bay). New fishery company - IriklaRyba LLC - operates at the Solenyy reach ;this company mainly deals with artificial reproduction issues Fish-ka or Volna could not take over the Solenyy reach parcel due to antitrust restrictions.Currently, new contracts for the use of four parcels are in the Ministry of Agriculture for signing. Fishing in all parcels will fully begin after the end of the spring fishing ban (from 04/15/2021 to 06/15/2021), starting from 06/16/2021(KonstantinAgeev,pers. comm. during stakeholder interview in 5th February, 2021).

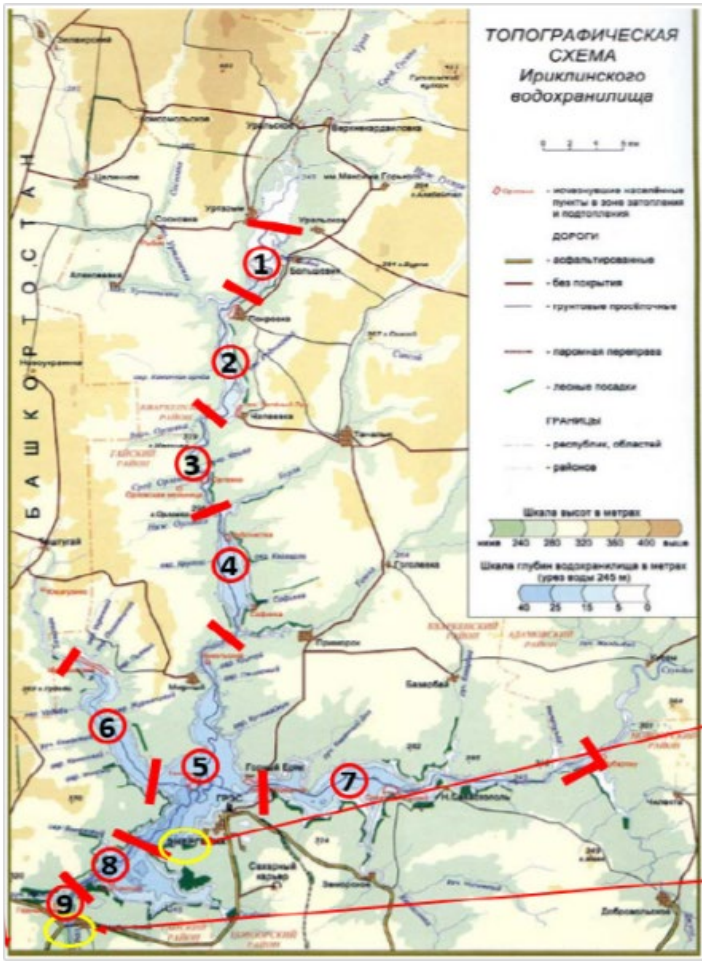

Figure 23.Irikla Reservoir showing the 9 fishing parcels.

Source: Anon.(2014)

7.4.7 Description of measures agreed for the regulation of fishing

The management of the commercial perch and pikeperch fishery includes a wide variety of technical measures available within Russian fisheries management systems to ensure the objectives of the fishery can be met. These

include gear restrictions, closed seasons, closed areas and quotas (both catch and effort limiting). The bulk of commercially sized pikeperch harvest is caught using large-mesh nets (50-70 mm) while perch with small-mesh nets (30-36 mm).. The simplest operational rules imposed by the fishing companies themselves, not by any management body is the limit on gear size limiting the small-mesh gillnets to between 30 and 36 mm to ensure the minimisation of bycatch of species other than perch (including pikeperch) and nets are set several metres deep to reduce incidental mortality. A closed season exists in the fishery between 15/04 and 15/06 annually to protect spring-spawning fish and another closed season between 25/10 and 25/11 annually to protect spawning coregonids. Since 2014 certain rules have changed to permit use of motorboats for recreational purposes during the main spawning period (15thApril – 15thJune). These boats, however, must not be used for fishing (commercial or recreational), but for tourist-related activities only. Closed areas are also used as a management tool, in addition to the fishing parcels not allocated for commercial fishing, but also for the protection of ETP species. For example, a 5km exclusion zone for fishing has been put in place around the colony of Pallas's gull (*Larus ichthyaetus*) in the south-eastern part of the reservoir (see section 3.4.3 for details).

Quotas are also set in terms of effort due to the limited number of licences and fishermen contracted by the fishing companies and by catch as the MSC-certified pikeperch and perch fisheries in the Irikla Reservoir are subject to a Total (or Recommended) Allocated Catch (TAC or RAC) and pikeperch and perch are subject to a TAC (RAC) calculated annually. Fishermen use different coloured fish boxes for MSC (blue) and non-MSC fish (yellow). This system continues to work well and fishermen carry both boxes at all times.

Fishing rules determine the minimum fishing size for a number of fish species (including pikeperch). For the amateur fishermen, the rate of catch per person per day has been introduced since 2018 (for example, a pikeperch can catch no more than 5 kg).

In season regulation of the fishery does not in general require mechanisms for emergency decisions. The fishery relative to other assessed fisheries is small in size, number of actors and the management process is relatively much simpler and therefore quicker to react. With the only companies operating in the commercial fishery being part of the unit under assessment changes to or cessation of fishing can be implemented within a day.

7.4.8 Particulars of arrangements and responsibilities for monitoring, control and surveillance and enforcement

Fishing in the reservoir is allowed through the Federal Law and District Regulations issued for each catchment area. These regulations define the gear types that are allowed to be used within each region, including mesh sizes, hook sizes etc. There may also be bans put in place on a regional basis to enforce species, spatial or temporal restrictions on fishing, e.g. there is a ban in the Irikla Reservoir on whitefish and vendace fishing between 15th October and 15th November annually to protect spawning.
It was noted during discussions with the local inspectors of the Territorial Branch of the FFA, who are responsible for fisheries inspections in Russia, that the commercial, recreational and sports fisheries were strictly monitored and regulated with very low levels of IUU. Illegal fishing was recorded at higher levels in the fishery before 2009. In this period, over sixty commercial licences were issued leading to greater conflict and competition between licence holders. Now only the two MSC-certified companies are licensed with clear allocation of fishing parcels to individual fishers within the company. Illegal operations are therefore much easier to detect. According to the Head of the Department of state control, supervision and protection of aquatic biological resources of the Orenburg province, 207 violations were noted in the Irikla reservoir in 2020, of which 92 were poaching (Rustam Karimov, 10th February, 2021). Currently there are three persons (one inspector and two specialists) allocated to monitor the activities on the reservoir, (Yevgeniy Temirdzhanov 10th February, 2021) with the inspectors being active every day during the fishing season (with a further 5 in the wider administrative region), this is much lower than the number of inspectors before the breakup of the USSR when 35 inspectors would present in the region. The enforcement capacity however is extended during critical phases e.g. spawning periods when the inspectors cooperate with the local police enabling them to double or treble the number of people enforcing the closed periods.
Two types of infringements / violations are recorded, minor and major. Minor infringements make up the majority by number with about 40% of these being environmental related infringements by fishers i.e. not directly related to their fishing activity (e.g. littering and shoreline damage). About 500 cases of violations per year were recorded through the mediation of voluntary assistants or through information coming from the Internet (Alexander Zobkov, 17th October, 2018). In the past two years, there has been a decrease in the number of violations: for example, in 2020, 207 violations were detected, of which 92 were associated with poaching (Rustam Karimov, 10th February, 2021).Major incidents are nearly all related to illegal fishing with gillnets. Currently the highest incidence of IUU fishing events on the reservoir is the absence of fishing permits for recreational fishers. Recreational fishers do not require a permit for hook and line fishing and this refers to recreational fishers targeting larger species with gillnets which is not permitted. Discussions with the inspectors who police the reservoir indicate that the commercial fishers are risk averse and actively work with the inspectors to help them identify and remove IUU fishing gear found in the reservoir. Specific violations associated with recreational fishermen - use of waders in shallow water during the main spawning period.

Recreational fishermen are restricted to the bank of the reservoir, which under Russian law is defined as land only. Catching undersized fish by amateurs is another fairly common violation (Alexander Zobkov, 15thMay, 2018; 17thOctober, 2018).

During interview, the responses and roles of inspectors and management were described[19].There is a responsive management strategy to risks observed in the fishery. Each inspector is currently responsible to fixed zones within the reservoir. Plans are developed weekly for the areas they will inspect, including areas without commercial fishing (as illegal fishing may occur outside these areas) but the inspectors remain flexible to react to information received. In addition, since 2015 there is a joint agreement between Fish-ka/Volna and Federal Agency for Fisheries (FAR) to conduct joint fisheries patrols. Under this agreement the fishing companies provide transport and fuel and the government provides fisheries inspectors. Members of Fish-ka/Volna do not have enforcement capabilities but can assist FAR fisheries inspectors where necessary. The joint inspection patrols enable representatives from both fishing companies to join government inspection patrols across the Irikla Reservoir. In 2017 there were between 10 and 20 fisheries inspectors during the spawning period, including some representatives of the police, Ministry of Emergency Situations, Ministry of Forestry, National Guard, Cossacks and volunteers on board up to 16 patrol vessels. Since the beginning of 2018 there have been around 8-10 joint patrols over the whole reservoir. Reports from each patrol continue to be produced and can be used to show the level of compliance using the number of inspections and infringements detected (Alexander Zobkov, 15thMay, 2018). Fishermen of Fish-ka/Volnanoted that in general the problem of poaching is not very relevant for the Irikla reservoir. In relation with the Covid-19 pandemic in 2020, a lot of holidaymakers from neighbouring regions (Bashkiria, Chelyabinsk region) came to the reservoir for the weekend, which, it would seem, could increase the pressure of poaching, but a large crowd of people prevented offenses with the installation of prohibited fishing gear. In addition, very high fines deter potential violators. Fish-ka and Volna have purchased a thermal imager to detect illegal fishing at night and thereby contribute to better surveillance of the reservoir (Alexander Ageev, 9th February, 2021).

Given the scale and composition of fishing activities and the current levels of inspectors and flexibility in the system to use external agencies it is thought that the enforcement capacity should be more than sufficient to provide both an effective enforcement and deterrent capability. This is also shown in the gradual decrease over the last five years in the number of infringements detected (with constant enforcement levels) (see Table 26). Further to this, of the total reported infringements between 2009 and 2017, less than 0.2% were detected from the commercial fisheries sector. The level of IUU fishing is now expected to have reduced. Previously the gear had not been confiscated by fisheries inspectors from fishermen that allowed them to continue their illegal activities. However, all illegal gear is now removed and with the decline in violations, more time is available to record the number of illegal activities (including minor violations). As a result, the data do not reflect an increase in the number of violations but simply that they are now being properly recorded. Furthermore, more attention is now being given to report less serious violations such as using multiple hooks etc.

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Table 27. Reported infringements and rates of recovery of fines, Irikla Reservoir (2016-2020) (Source: Annual report…, 2020).

	2016	2017	2018	2019	2020
Infringements	1955	1780	1796	1349	1461
The amount of fines imposed, thousand rubles	5277,2	4477,0	4785,0	3880,0	3350,0
The amount of fines collected, thousand rubles	4358,5	4009,0	4308,0	3410,0	2499,0

The rate of detection of lost nets was previously very common, indicating a higher degree of illegal activity. Now all company employees are checked to ensure they do not conduct IUU fishing, and all company nets are marked and registered. The number of detected lost nets has decreased. Since 2014, Fish-ka no longer purchase and distribute gillnets to fishermen. Instead, local fishermen are now responsible for obtaining and maintaining their own gear, which must comply with all regulations and is checked by a company's new Fisheries Department. Before the fishing season starts a search for lost nets in the water is now conducted before the annual survey fishing takes place and nets are now rarely found (Fish-ka, 2015; Alexander Zobkov, 15thMay, 2018; Rustam Karimov, 10th February, 2021)

[19] Alexander Zobkov (Head - Department of state control, supervision and protection of aquatic biological resources) Thursday 23rd October, 2014; Wednesday 17th October, 2018).

Sanctions are in place for offences in the form of fines and are considered appropriate for the level of offence committed. It was noted that the level of fines had increased recently. If earlier the penalty for one individual of illegally caught pikeperch and perch was 250 rubles and 17 rubles, respectively, then, in accordance with the decree of the Government of the Russian Federation dated November 3, 2018 No. 1321, the rate for one pikeperch was increased to 3305 rubles, and for perch - up to 250 rubles (regardless of size). Currently, according to the law, along with the confiscation of illegal fishing gear, it is also possible to confiscate other possessions such as their boat or car. This measure is also thought to contribute to the positive results at Irikla Reservoir (see Table 27). Reported violations in the Irikla Reservoir are now less serious, and are more related to administrative issues related to fishing permits etc.In 2020, 207 administrative offenses were discovered on the Irikla reservoir, of which 92 were violations of fishing rules.Inspectors can now also use video evidence and do not need to be there in person to satisfy the evidential requirements.

Table 28. Fines for damage to aquatic biological resources of the Orenburg region (2018-2020) (Source: Annual report…, 2020).

	2018	2019	2020
Fines imposed for the damage caused, thousand rubles	105,35	799,43	1165,82
Seized fishing gear, pcs	1014	874	1034
Seized vehicles, pcs	79	40	64

The media have been used to increase the deterrence affect and reduce poaching. Visits by the media to the sites of IUU fishing have been made showing the detention of illegal fishers which should increase the deterrent effect.

In terms of specific inspection evidence for incidental mortality or interaction with ETP species, approximately 10 birds annually have been identified in gillnets (Alexander Zobkov, 15th May, 2018; Alexander Ageev, 9th February, 2021). These have been identified as grebes which are not an ETP species but the recording and inspection results show that if there was any large-scale incidence of ETP species being caught that this would be detected given the level of inspection on the reservoir.

7.4.9 Details of any planned education and training for interest groups

No planned education and training for interest groups were highlighted during the MSC reassessment site visit. Due to the size and number of fishers and interested parties it is unlikely that formal programmes would be developed. In last year the interaction of the fish inspection with amateur fishermen and public has improved. Employees of the fish inspection are working on legal education of the population in the field of fishing. In 2020, the department's employees published 12 articles in the media (regional, district publications) aimed at covering the norms of fish protection legislation. Two interviews were conducted, nine materials were posted on the Internet, 23 legal consultations were given to citizens and legal entities, a memo on compliance with the Fishing Rules in the Orenburg region was also issued. (Annual report…, 2020). It was noted in that the companies with long-term rights in the fishery have invested in the education of their workers. This is not common practice in Russia and may be seen as being very progressive.

7.4.10 Date of next review and audit of the management plan

At the time of writing there is no formal management plan in place and therefore no plans for any audits of this plan.

7.4.11 Research plan

There is no single research plan, as typified in Europe and the US for the fishery, as is normal for Russian fisheries. Glavrybvod's goal within the management of the reservoir is to increase fisheries productivity over the long-term in the reservoir.

Kamsko-Uralsk branch of FSBI "Glavrybvod" implement a long-term data collection and monitoring programme on the reservoir, with annual data collection on the fish species, water composition, plankton populations and benthic condition of the lake in conjunction with the Saratov Research Institute. They collect the data jointly with the Saratov Research Institute, who are responsible for the analysis and publishing of the results. Although the data are not published on a regular basis in scientific journals, the scale of the fishery and the well-defined roles within the

management system ensures that all interested parties are aware of the data available, and that data can be obtained from the Saratov Research Institute.

The current immediate goal is linked to analysing the planktonic component of the reservoir ecosystem as the level of plankton is currently under-utilised and not fully exploited by commercial fish species in the reservoir. It has been proposed to increase the populations of existing species through artificial enhancement possibly through the addition of juveniles from an external source. It is thought that the introduced species will not breed due to lack of suitable conditions in the reservoir but would be able to grow and utilise the resources within the reservoir effectively. It is proposed that this introduction would also lead to the reduction in bacteria and anoxic sediment in the reservoir that could otherwise prove detrimental to other fish species.

As part of the work on the artificial reproduction of fish as a measure of compensation for damage from economic activities on the reservoir, the Saratov branch of VNIRO gives recommendations on the advisability of using certain species of fish for these purposes. The institute also determines the volume of annual stocking. Recommendations for the release of silver carp and carp into the Irikla reservoir are due to the fact that the first species is a natural ameliorator, and the second is a commercial species.
In 2020, within the framework of compensation for the damage caused to aquatic biological resources, the following volumes of fish were released into the Irikla reservoir:

- JSC "Orenburgneft" released 332juvenilesofcarp with a total biomass of 6 kg 972 g;
- LLC "Avtovolgastroy" released 4748 juvenilesofsilver carp with a total biomass of 126 kg 297 g;
- JSC Inter RAO - Electric Power Plants released 127 983 juveniles of silver carp with a total biomass of 3365 kg 953 g;
- OOO Gazprom dobycha Orenburg released 4,200 juveniles of carp with a total biomass of 149 kg 940 g;
- LLC "Blagoustroitel" released 1478 juveniles of carp with a total biomass of 38 kg 871 g.

A programme of activities exists with individual research projects within the programme being submitted to the higher-level Federal Agency for Fishery for approval, one year ahead of the planned implementation. In addition, a framework State programme covering the period up to 2020 also exists.

The IUU and recreational fishing remains a key source of uncertainty in the total catches of fish from the reservoir. It is expected that recreational fishing will increase in future. At the time of writing the report, two key information gaps have been identified as part of Condition 1 in MSC certification of perch and pikeperch fishery at Irikla Reservoir: improved non-commercial (recreational and IUU) in-season catch statistics and improving of fishery mortality statistics of undersized pikeperch in small-meshed gillnets. A research plan to meet specific requirements identified in the fishery has been developed.

7.4.12 Principle 3 Performance Indicator scores and rationales

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**	**Yes**

Rationale

An effective national legal system exists in Russia consistent with MSC Principles 1 and 2. There is a coordinated approach where management efforts are not duplicated. The Normative Framework of the Federal Agency for Fisheries outlines the framework and regulations. A framework for binding cooperation has been established for the different organisations involved in the management of the reservoir each with their own roles defined in the legislation. Where overlaps occur, e.g. in data collection, the organisations work together so as to avoid duplication (Kamsko-Uralsk branch of FSBI "Glavrybvod" and Saratov Research Institute / Inspectorate and Police). Results are collected and forwarded to the relevant body for analysis regardless of which organisation collects the data.

The police can and do become involved in the legal process when necessary. There is clear cooperation between management and research agencies with both industry, recreational and sports fisheries on data collection, for the fishery (P1) and environmental aspects (P2).

The recent State Fisheries Programme of the Russian Federation (2014) has as one of its stated objectives - "Ensuring the effective operation of the organs of State power in the fisheries complex and improved regulatory framework".

The requirements at SG60, SG80 and SG100 are all met.

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**	**Yes**

Rationale

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. A dispute resolution mechanism is built into the management system at two levels. The Russian Federal Agency for Fisheries allows simple appeals to be made by all Russian citizens via their website and as a final resort dispute may end up in the Russian court system. See http://www.fish.gov.ru/obrashcheniya-grazhdan/napisat-obrashchenie

At a more local level when written complaints are submitted to the State Ministry, the Ministry may respond directly and where required face-to-face discussions or formal hearings may be held with representatives of the Ministry present as mediators where opportunity for discussion and interaction between parties is possible. This is appropriate to the context of the fishery but the mechanism in place has the result that disputes rarely reach this stage as they are successfully dealt with beforehand. Conflict has been rare in the fishery but when it has occurred there is clear evidence that positive outcomes can be achieved such as the setting since 2019 of the fishing parcels (rybolovnyyeuchastki - RU) instead earlier existed fishery areas (rybopromyslovyeuchastki - RPU) meetings with commercial and recreational fisheries to discuss and explain the legal basis for the fisheries and how they would operate.

Therefore, the SG60, SG80 and SG100 are all met.

c	Respect for rights			
	Guide post	The management system has a mechanism to **generally respect** the legal rights	The management system has a mechanism to **observe** the legal rights created explicitly	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 or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	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.
	Met?	**Yes**	**Yes**	**Yes**

Rationale

The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing. There are no indigenous people dependent upon fishing for perch and pikeperch in the Irikla Reservoir for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2. Rights for recreational fishing have been established for the local population. Any amateur fisherman is allowed to catch up to 5 kg of pikeperch every day.

The SG60, SG80 and SG100 are therefore all met.

References

Russian Federal Law on Fisheries and Protection of Aquatic Resources of 2004 (with Amendments – 6th Edition, March 2019).

Russian Federal Law on Protection of Environment (2001).

State Programme of the Russian Federation on the Development of Fisheries (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	**100**
Condition number (if relevant)	

PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2		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		
Scoring Issue		SG 60	SG 80	SG 100
a	Roles and responsibilities			
	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **generally understood**.	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.	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.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				

Organisations and individuals involved in the management process have been clearly identified. The functions, roles and responsibilities of each organization are explicitly defined and well understood for all areas of responsibility and interaction with a clear annual cycle of data collection, analysis, well-defined decision-making processes and feedback to the fishers and related parties. All Russian fisheries management is organized through a single common coordinating authority the Federal Agency for Fisheries. Where overlaps could exist in the functions performed or requirements, e.g. data collection one organization will conduct the data collection but the results will be transparently shared amongst other parties to allow effective management.

As the organisations and individuals involved in the management process have all been clearly identified, their functions, roles and responsibilities are explicitly defined and are well understood for all areas of responsibility and interaction the SG60, SG80 and SG100 can all be considered as having been met.

b	Consultation processes			
	Guide post	The management system includes consultation processes that **obtain relevant information** from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that **regularly seek and accept** relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	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 how it is used or not used**.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The management system includes consultation processes through regular data collection and interaction between different agencies governed by FAR (Saratov research Institute, Kamsko-Uralsk branch of FSBI “Glavrybvod”, Inspectorate) with the commercial, recreational and sports fishers throughout the season and formally through the Fisheries Council four times per year. Management authorities clearly seek and accept relevant information, from the commercial fisheries through catch and effort data compiled by the client companies and submitted on a fortnightly basis and from the recreational fishermen through interviews and 100 questionnaire cards each year (R. Karimov, 10th February, 2021, Pers. Comm.), including local knowledge. These data are combined with the information collected by the Saratov Research Institute and a single official data set is issued. Recreational and sports fishermen are consulted also (for example, through fishermen themed websites), although this was not the case in the past when

they noted a lack of influence and comments were often ignored. The economic importance of the sports fishing sector has now been noted by local management and are involved in providing information through the Fisheries Council. Information on illegal fishing when encountered is passed by sports fishers to the appropriate authorities. The management system therefore demonstrates consideration of the information obtained in contributing to combined official datasets and information on illegal fishing.
Clear transparent explanation of the information collected and its use is not available and therefore the management system can be shown to meet SG60 and SG80 but not SG100.

	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				

Russian management system gives the opportunity and encourages all stakeholders to participate in the management process. The consultation process provides opportunity for all affected parties to be represented through the Fisheries Council or through the local administration. The fisheries council is a recent introduction to the management system, meeting 4 times per year with transparent reporting through the Ministry and online. Therefore, there is a process for all parties to be involved (and meet SG80) but at the current time it cannot be shown that all interested and affected parties have been involved and it cannot be shown that this process has facilitated their effective engagement so the SG100 cannot be justified at this time.

References

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Undocumented evidence of the establishment of the Fisheries Council.

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)	

PI 3.1.3 – Long term objectives

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Fisheries Standard, and incorporates the precautionary approach		
Scoring Issue		SG 60	SG 80	SG 100
a	Objectives			
	Guide post	Long-term objectives to guide decision-making, consistent with the MSC Fisheries Standard and the precautionary approach, are **implicit** within management policy.	**Clear** long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach are **explicit** within management policy.	**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.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The management policy has clear long-term objectives established in the legal and regulatory framework that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are explicit within management policy. Although the precautionary approach is not incorporated formally into Russian fisheries legislation the implemented management strategy, quota allocation and harvest control rules set do incorporate a precautionary element. The Federal Fishing Law (2004) defines a number of key principles consistent with the MSC Principles and Criteria (conservation of biological resources for human use and maintenance of ecosystems). It was noted that the fishery is assessed and a Total Available Catch and Recommended Available Catch are defined annually with the required data collection and analysis for management implemented.

The main provisions of the Fishing Rules for the Volga-Caspian Basin in relation to the specific conditions of the Irikla Reservoir with a description of the mandatory actions of fishermen when by-catching birds and undersized fish in excess of the norms established by the Fishing Rules are contained in a special internal document issued by the managers of fishing department of the Fish-ka and Volna companies (Fish-ka instruction…, 2020).

Evidence of long-term objectives in the management for long-term sustainability of the pikeperch, perch and other reservoir species is therefore demonstrated and explicit within management policy and therefore the SG60 and SG80 have been met. This is further emphasized in the long-term allocation of fishing parcels to a small number of fishing companies who have demonstrated their long-term sustainable view of the fishery.

These objectives however are not required by management policy and therefore the SG100 has not been met.

References

Russian Federal Law on Fisheries and Protection of Aquatic Resources 2004 (with Amendments - Edition 6th March 2019).

Russian Federal Law on Protection of Environment (2001).

State Programme of the Russian Federation on the Development of Fisheries (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)	

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**	**No**

Rationale

Long-term objectives consistent with the MSC's Principles 1 and 2 exist clearly within the management system. The introduction of long-term licences for the commercial fishery within the management system demonstrate a commitment to ensuring long term sustainability and planning. The reduction in the number of companies with an active interest in the commercial perch and pikeperch fishery to the current two companies with MSC certificate provides an indication of a longer-term view for a simplified management system. The current system for allocating these long-term licences is through a commercial bidding process, which ensures commitment to the fishery with indicators for contract approval requiring the companies to have processing facilities and staff on the reservoir and a clear financial payment schedule.

Short-term objectives within the management system are based around the annual quota management process established for target (pikeperch TACs, perch RACs) and other species (TAC and RAC managed). Quotas are reviewed annually based on surveys and clearly show an adaptive management system to current stock levels.

The main provisions of the Fishing Rules for the Volga-Caspian Basin in relation to the specific conditions of the Irikla Reservoir with a description of the mandatory actions of fishermen when by-catching birds and undersized fish in excess of the norms established by the Fishing Rules are contained in a special internal document issued by the managers of fishing department of the Fish-ka and Volna companies (Fish-ka instruction…, 2020).

Therefore, the SG60 and SG80 can be shown to have been met. However, these cannot be defined as well defined (as they would be in a clear fisheries management plan) and therefore the SG100 has not been met.

References

Russian Federal Law on Fisheries and Protection of Aquatic Resources 2004 (with Amendments - Edition 6th March 2019).

Russian Federal Law on Protection of Environment (2001).

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)	

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				

There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. These include the long-term allocation of resources to the commercial fishing companies, the small number of companies to which allocation of resources are issued allows companies to invest long-term in the fishery and engenders a culture of long-term sustainable use in the fishery.

The quota setting and allocation process involves an annual review of the quotas for the target and all other species (either TAC or RAC) caught in the fishery. This quota process includes uncertainty to reduce risk. These quotas are set to generate a level of removals that will maximize the catch from the fishery without a level of risk that would reduce the biomass.

There are in addition environmental decision-making processes where fishery specific objectives can be modified such as the closed parcels to protect breeding grounds or closed areas to protect the areas around breeding colonies (e.g. Pallas' gull in shallow parts of Suunduksky Bay) that are based more on environmental restrictions rather than fisheries requirements that can be put in place and therefore the SG60 and SG80 have both been 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 fisheries surveys conducted at the start of each year on the fishery evaluate the size and composition of the target species in the reservoir. This information is then evaluated independently by a number of stock assessment scientists who calculate their estimates for the quota. The minimum level from these estimates is then used to define the short-term one-year quotas for each species that is allocated a total allowable catch (i.e. pikeperch) or a recommended allowable catch (i.e. perch).

Environmental monitoring data are collected at a relatively high frequency and for a large number of parameters with year-round monitoring of the environment. This allows a timely response to any adverse factors when conditions require. Responses include actions such as the closure of parcels based on environmental issues, e.g. the closure of shallow areas of the parcel around the Pallas's gull colony to the southeast of the reservoir.

Consultation occurs with stakeholders through the fisheries council (4 times a year) in a transparent and timely manner. The small size and relatively simple complexity of the fishery means there is a high degree of cooperation between industry, science and management throughout the annual fishery cycle. The non-commercial sector (the sports and recreational fishers) have been invited to attend the Fisheries Council meetings. NGOs and public associations beyond those representing the sports and recreational fishers are not active in the Orenburg region. Although they would be allowed to be present at the Fisheries Council meetings, as far as can be determined none have shown an interest in attending.

The decision-making processes relating to the fishery respond to most issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner. The fishery therefore meets both the SG60 and SG80. It is difficult to provide evidence for all the issues (for example, taking into account the volume of catch of amateur fishermen during the fishing season) and to take into account the wider implications of these decisions for all stakeholders, though there are very minor implications of these decisions outside of the immediate fishery. The fishery therefore would not score 100 for this element.

	Use of precautionary approach			
c	Guide post		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		**Yes**	
Rationale				

Although it is not formally enshrined there is a precautionary approach applied to the quota allocation process. Also measures specified in the Fishing Rules such as minimum landing sizes (pikeperch) and fishing gears specifications are based on the latest scientific information and tries to avoid any harmful impact on target, primary, secondary and ETP species, and associated habitats. Best available information is used throughout the decision-making process. The amount of data available for the scale of the fishery is very good.

The fishery therefore would meet the requirements at SG80.

	Accountability and transparency of management system and decision-making process			
d	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**	**Yes**	**No**
Rationale				

Information on fishery performance and management action is available on request (shown by the number of requests and responded to within initial MSC certification and this process). No lack of action has been observed.

As such we would recommend that the SG60 and SG80 have been met. However, as there is no formal reporting process to stakeholders beyond the fisheries council it cannot be shown that the SG100 guidepost has been met. However, taking into account that consulted scientists were not able to provide justifications of consequences for systematic over exploitation of TAC or RAC values (together by commercial and recreational fisheries), it cannot be

considered that the management system provide a comprehensive information to all interested stakeholders. Therefore, SG100 in not met.

	Approach to disputes			
e	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				

The management system or fishery has no current legal challenges against it. The management system also appears to proactively avoid legal disputes through a system of face-to-face discussions with stakeholders where necessary (e.g. with recreational fishers on allocation of fishing rights to commercial fishers). As there have been no judicial decisions necessary due to the lack of legal challenges it is unknown how quickly these would be dealt with by the Russian court system and therefore the SG60, SG80 and SG100 are all met and a score of 100 has been given.

References

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)	

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**	**Yes**	**No**
Rationale				

A monitoring, control and surveillance system appropriate to the size, scale and complexity of the commercial fishery has been implemented in the Irikla Reservoir, but this may be limited for the recreational fishery that has a larger number of fishers. The system has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules. Therefore, the SG60 and SG80 have been met, but the comprehensive system is lacking in the monitoring of the recreational fishery during the fishing season, which may cause an excess of the TAC and RAC values of pikeperch and perch at the end of the season. Therefore, at this time the SG100 cannot be shown to be 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 to deal with non-compliance in the fishery exist. Fines have been recently increased more than 10 times (for example, the penalty increased for one illegally caught pikeperch from 250 to 3305 rubles for perch from 17 to 250 rubles). The new penalties provide an effective deterrent as, in relation to the average salary in Russia in 2009 (the previous year of the tariff update) and in 2018, the penalties for each illegally caught fish (regardless of its length and weight) increased from 0.09% to 0.57% for perch and from 1.34% to 7.56% for pikeperch. Sanctions also exist in the confiscations of fishing gear, boat, car and catch and provisions have also been introduced to allow the use of video evidence to allow the confiscation of fishing gear and not just first-person evidence from an inspector. These sanctions are sufficient for the size and scale of the fishery and are consistently applied. There has been a significant drop in the total number of recreational and commercial fishermen infringements, from 372 violations in 2009 to 92in 2020. In the last three years, there have been no violations of fishing rules by commercial fishermen of Fish-ka and Volna. It is reasonable to assume that these sanctions provide an effective deterrence.[20] The activities of fishery enforcement patrols have not declined, which supports the conclusion for decreasing infringements. Therefore, the SG60 and SG80 can be shown to be met. Some illegal activity is still continuing through the recreational fishery but there is some evidence that this is related to non-fisheries and more environmental aspects of the enforcement regime. It is not possible to demonstrably prove fully effective deterrence as a number of offences still occur within the fishery and therefore the SG100 has not been shown to be met.

[20]Head of Department of State Control, supervision and protection of aquatic biological resources, Orenburg region of the Middle Territorial Administration of the Federal Agency for Fisheries. Interview date: 27rd October 2018
[20]Head of Department of State Control, supervision and protection of aquatic biological resources, Orenburg region of the Middle Territorial Administration of the Federal Agency for Fisheries. Interview date: 10th February 2021

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				

There is clear evidence to demonstrate that the majority of fishers (primarily the industrial and sports fishers) comply with the regulations and laws setup to manage the fisheries of the Irikla Reservoir. There is clear evidence of the level of cooperation between the industrial fishery and the monitoring of the fishery. Good catch and biological data are provided from the two companies being assessed to allow the management of the fishery (e.g. catch composition, catch (vs. quota) and environmental data (e.g. 100% reporting of the incidental mortality of birds)). The sports fishery is managed on a catch and release basis and therefore catch data are not reported as such. The recreational fishery is by its nature prone to a lower reporting rate of catch and other data. Although the catches of the target species (perch and pikeperch) are lower in the recreational fishery the estimates based on the limited data collection from this fishery mean that it cannot be determined that a high degree of confidence exists that all fishers comply within the management system. There is sufficient evidence to meet the requirements at SG60 and 80 level but not SG100 as some evidence of illegal nets still exists in the fishery.

d	Systematic non-compliance			
	Guide post		There is no evidence of systematic non-compliance.	
	Met?		**Yes**	
Rationale				

There was no evidence found of systematic non-compliance within the two companies licensed in the fishery. The amount of fish by-catch smaller than the fishing size is governed by the fishing regulations, the measures taken (transfer of fishing gear to other areas, use of a larger mesh in the gill nets, description of young by-catch in fishing logbooks) are observed by the fishermen of both companies. The pikeperch catch rate for amateur fishermen (5 kg per person per day) is fixed at the level of the state law and is regularly checked on the reservoir by fishing inspectors. The level of IUU fishing for pikeperch in this fishery is estimated to be at a negligible level and commercial fishermen assisting in the identification and removal of “ghost” and illegal fishing gear in conjunction with the enforcement officers. This is sufficient to meet the requirements at SG80.

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)	

PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4		**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**		
Scoring Issue		SG 60	SG 80	SG 100
a	Evaluation coverage			
	Guide post	There are mechanisms in place to evaluate **some** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **key** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **all** parts of the fishery-specific management system.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The fishery has in place mechanisms to evaluate key parts of the management system on a regular basis. Key elements such as the quota monitoring process and the stock assessment that determine the level of commercial catches occur during the annual fishing season and at the end to ensure the possibility of quota over-run are minimised. In the process of developing the TAC / RAC, the scientific recommendations of Saratov VNIRO are peer reviewed at the central VNIRO in Moscow, and then sent to the Federal Agency for Fisheries (Ministry of Agriculture) and the Ministry of Natural Resources and Environment for comments and approval. In addition, external assessment of the management system is provided by the State Environmental Expertise (Rosprirodnadzor), which reviews key issues such as the establishment of quotas for TAC regulated species.

The central fisheries management body in Moscow (FFA) has a system of various councils at the federal, basin and regional levels through which it receives feedback from all interested stakeholders. Fisheries management recommendations developed by councils at regional levels are taken into account when making decisions by the central office of the Federal Agency for Fisheries.

There is sufficient evidence to meet the requirements at SG60 and 80 level but not SG100 as it is not clear that ‘all’ parts of the fishery-specific management system are reviewed by these mechanisms.

b	Internal and/or external review			
	Guide post	The fishery-specific management system is subject to **occasional internal** review.	The fishery-specific management system is subject to **regular internal** and **occasional external** review.	The fishery-specific management system is subject to **regular internal and external** review.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				

The Irikla perch and pikeperch fishery is managed locally by the Saratov branch of all-Russian Scientific Research Institute of Fisheries and Oceanography" (VNIRO) located in Moscow. The Saratov VNIRO annually sets TAC / RAC quotas for commercial fish species, depending on the current state of their stocks, and manages the fishery, specifying the intensity of the catch. The effectiveness of the management system is reviewed annually by the Federal Fishery Agency in Moscow (mostly by central VNIRO). Specifically, the central VNIRO review the development of “biological justifications for the volumes of total allocated catches (TAC) and recommended allocated catch (RAC) of aquatic biological resources of the seas and fresh waters of Russia”. In addition, materials elaborated by scientific research organizations subordinate to the Federal Fishery Agency (in this case Saratov Research Institute) should be sent to the main scientific institution (VNIRO, Moscow): for the review and assessment of the quality of materials that justify the total allocated catches (TACs) of aquatic biological resources, the possible volumes of catch (harvest) of aquatic biological resources which total allocated catch is not established (recommended catch = RAC), adjustments to the approved TACs and recommended catches in inland waters of the Russian Federation. In addition, the State Ecological Expertise in Moscow provides an independent review of the management system for the TAC regulated

species (pikeperch of the Irikla reservoir). As such, VNIRO and State Ecological Expertise provide an internal and external review of the information and materials of the justification of the TAC and RAC at regular intervals and therefore meets SG100.

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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**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	90
Condition number (if relevant)	

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Russian Federal Law “On Protection of the Environment” (2001) (Source: https://rg.ru/2002/01/12/oxranasredy-dok.html).

9 Appendices

9.1 Assessment information

9.1.1 Previous assessments

This fishery was first certified for perch only in 2016 by MRAG Americas using version 1.3 of the Fishery Certification Requirements including default assessment tree. In 2019, pikeperch was added to the certificate via scope extension, assessed also against version 1.3. There was one condition placed on the fishery which applied both to the perch and pikeperch UoAs, and this was to do with having an adequate research plan that addresses the information needs of management (former PI 3.2.4).

Table X – Summary of previous assessment conditions

Condition	PI(s)	Year closed	Justification
Insert condition number and summary	Insert PI	State year of closure, if applicable.	
Condition 1: A research plan should be prepared and implemented for the Irikla Reservoir pikeperch fishery that is designed to provide the management system with a strategic approach to research and **reliable and timely information** sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	Erstwhile 3.2.4	Closed/Superseded by new version of the default tree.	Although a comprehensive set of research topics is conducted on the fisheries and other related environmental aspects of the reservoir to achieve the objectives consistent with MSC's Principles 1 and 2 there is no single research plan for this particular fishery. As common with other fisheries in the Russian Federation, there is a coherent plan for research handled by the relevant responsible bodies within the Russian Federation that covers a wider basis than just the pikeperch fisheries and covers the entire reservoir and all fisheries within it but not one for this specific fishery. This system, although not in a single management plan, provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. Therefore the SG60 guidepost is met but as no specific written plan exists the SG80 and SG100 guideposts cannot be shown to be met.

9.1.2 Small-scale fisheries

Table 29. – Small-scale fisheries

Unit of Assessment (UoA)	Percentage of vessels with length <15m	Percentage of fishing activity completed within 12 nautical miles of shore
Perch	100%	100%
Pikeperch	100%	100%

9.2 Evaluation processes and techniques

9.2.1 Site visits

The re-assessment process as defined in the MSC Fishery Certification Process version 2.2 was followed in this audit.

Information supplied by the clients and management agencies was reviewed by the assessment team ahead of the remote meeting, and discussions with the clients and management agencies centred on the content within the provided documentation. In cases where relevant documentation was not provided in advance of the meeting, it was requested by the assessment team and subsequently supplied during, or shortly after the meeting.

Thirty days prior to the audit site visit, all stakeholders identified by the client were informed of the visit and the opportunity to provide information to the auditors in advance of, or during, the site visit. The site visit was conducted remotely via the Zoom meeting platform, with meetings scheduled on 5, and 8-11 February, 2021.

The following participants were in attendance:

Name	Affiliation
Amanda Stern-Pirlot	MRAG Americas assessment team leader
Dmitry Sendek	Assessment team member
Dmitry Lajus	Fish-ka client consultant
Elena Ermolova	Fish-ka MSC contact person
Aleksandr Anikin	Fish-ka, Director
Konstantin Ageev	Volna, Director
Ilia Belyanin	VNIRO, Saratov branch
Nadja Kraus	followfood GmbH
Julia Kranewitter	followfood GmbH
AnatoliyDavygora	Russian Bird Conservation Union, Orenburg Branch
Alexandr Ageev	Fishka, Head of Fisheries Department
Igor Alymov	Volna, Fisherman brigadier
Oleg Turta	Fish-ka, Fisherman brigadier
Rustam Karimov	FFA Compliance and Enforcement
Evgeniy Temidzhanov	FFA Compliance and Enforcement
Vitaly Kilyakov	Glavrybvod Orenburg fisheries management agency

The site visit was held remotely via videoconference according to the agenda shown below. Unless otherwise stated, “Assessment Team” comprises Amanda Stern-Pirlot and Dmitry Sendek.

Friday, 5 February, 2021

Time (Moscow)	Meeting	Participants	Location	Topics/Information
17.00-19.00	Opening meeting with Fish-ka and Volna (clients)	Konstantin Ageev Aleksandr Anikin Elena Ermolova Dmitry Lajus Assessment Team	See Zoom link and call information above	1,2, and 5

Monday 8 February, 2021

16.00-18.00	Saratov branch of VNIRO	Ilia Belyanin Assessment team	See Zoom link and call information above	2,3,4
18.00-19.00	followfood GmbH	Nadja Kraus Julia Kranewitter Assessment team	See Zoom link and call information above	1,2,5

Tuesday 9 February, 2021

16.00-17.00	Russian Bird Conservation Union, Orenburg Branch	AnatoliyDavygora Assessment team	See Zoom link and call information above	4
17.00-18.00	Meeting with fish-ka and Volna fishermen	Alexandr Ageev Igor Alymov Oleg Turta	See Zoom link and call information above	1,2,3,4,5

Wednesday, 10 February, 2021

Time (PST)	Topic	Participants	Location	Topics/Information
16.00-18.00	FFA-Compliance and Enforcement	Rustam Karimov Evgeniy Temidzhanov Assessment team	See Zoom link and call information above	2,5

Thursday, 11 February, 2021

16.00-17.00	Glavrybvod Orenburg fisheries management agency	Vitaly Kilyakov Assessment Team	See Zoom link and call information above	4
17.00-17.30	Assessment team post-site visit meeting	Assessment team	See Zoom link and call information above	
17.30-18.30	Closing meeting with clients: Summary of findings, next steps and timeline	Elena Ermolova Dmitry Lajus Assessment team	See Zoom link and call information above	
15:30	End site visit			

Topics

1	**Introductions** **Brief overview of the MSC Sustainable Fishing Program and Objectives of the Reassessment Audit.** Key areas of the surveillance audit for Fishery: • Changes to the fishery and its management including to key personnel • Overview of 2019 and 2020 fishing seasons. • Any developments or changes within the fishery which impact traceability and the ability to segregate MSC from non-MSC products; and • Any other significant changes in the fishery
2	**Review of 2019/2020 fisheries, including impact of pandemic**
3	**PRINCIPLE 1 Target Stocks** • Target stocks status and dynamics • Target stocks assessments (most recent? Any changes to methods since last time?) • TAC determination and other stock management advice (trends? Any changes in methods?) • Research programs or papers on the abundance, biology and ecology of perch and pikeperch? • Fishery data collection.

4	**PRINCIPLE 2 Ecosystem** • Main retained species information (Roach (rutilus rutilus), Prussian carp (Carassius gibelio), Bream (Abramisbrama), others as available (vendance, wild carp, ide, pike, wells). Stock status, assessment, management, information available? • Birds interactions/encounters? Any Russian Red Book or IUCN red list bird species interactions (e.g. Oxyuraleucoephaia)? • Other ETP species possible interactions, management, or research (e.g. sturgeon, brown trout, otters/other mammals)? • Habitat and ecosystem information, new research and management (e.g. any changes to closed areas? Regulations and practices of lost gear recovery? New studies on habitats or ecosystem dynamics?)
5	**PRINCIPLE 3 Management System** • Legal framework: any changes in international agreements, national fisheries legislation, or other overarching policy that could affect the Irikla Reservoir fisheries? • Adjudication: any new legal challenges or disputes. • Management systems: any potential or actual changes during 19/20 seasons: management objectives, decision processes, advisory processes, consultation, stakeholder engagement, dispute resolution, research plan, performance evaluation. • Regulations: any changes or additions/deletions to regulations in 2019 and 2020. • Enforcement: any potential or actual changes in enforcement coverage, level of compliance, disputes. • Personnel: any changes in 2019and 2020 in science, management or industry and their impacts on the management of the fishery.
6	**Traceability:** • Any changes affecting traceability and the ability to segregate MSC from non-MSC products? • Any new or relevant laws or regulations related to traceability affecting this fleet?

9.2.2 Stakeholder participation

Thirty days prior to the audit site visit, stakeholders (see Table 29) were informed of the visit and the opportunity to provide information to the auditors in advance of, or during, the site visit. We received no requests from outside stakeholders to take part in meetings, nor did we receive written comments.

Table 30. Stakeholders invited to participate in Irikla perch and pikeperch MSC assessment

ФИО	Name	Организация	Affiliation
БучГарри	Butch Harry	followfood GmbH	followfood GmbH
АникинАлександрАлексеевич	Anikin Aleksandr	Фишка	Fishka Ltd
Ермолова Елена Петровна	Ermolova Elena	Фишка	Fishka Ltd
АгеевКонтстантинАлександрович	Ageev Konstantin	ООО "Волна"	"Volna" Ltd.
ДавыгораАнатолийВасильевич	Davygora Anatoly	Оренбургскийпедагогическийуниверситет	Orenburg Pedagogical University
Мирошникова Елена Петровна	Miroshnikova Elena	Оренбургскийгосударственныйуниверситет	Orenburg State University
БелянинИльяАлександрович	Belianin Ilia	Саратовскийфилиал ВНИРО	Saratov brabch of VNIRO
ЗобковАлександрСеменович	Zobkov Aleksandr	Оренбургскийотдел ФАР	Orenburg branch of FFA
	MSC Peer Reviewer College		

9.2.3 Evaluation techniques

MRAG published an announcement of the reassessment on our website and sent a direct email to all stakeholders on our stakeholder list. MSC posted the announcement on its Irkla perch and pikeperch track-a-fishery page, as well as sent it by email in their Fishery Announcements newsletter to all registered recipients. At this time, MRAG Americas also announced the assessment site visit dates and location, as well as the assessment team. This was done according to the process requirements as laid out in MSC's Fisheries Certification Process v2.2. In addition, follow-up emails were sent to stakeholder groups closer to the time of the meeting to schedule and provide details for remote participation. Together, these media presented the announcement to a wide audience representing industry, agencies, and other stakeholders.

The assessment team and the clients set up meetings with management and science personnel, and industry and harvest-sector representatives relevant to the fishery assessment.

In the Fisheries Standard v2.01 default assessment tree used for this assessment, the MSC has 28 'performance indicators', six in Principle 1, 15 in Principle 2, and seven in Principle 3. The performance indicators are grouped in each principle by 'component.' Principle 1 has two components, Principle 2 has five, and Principle 3 has two. Each performance indicator consists of one or more 'scoring issues;' a scoring issue is a specific topic for evaluation. 'Scoring Guideposts' define the requirements for meeting each scoring issue at the 60 (conditional pass), 80 (full pass), and 100 (state of the art) levels.

Note that some scoring issue may not have a scoring guidepost at each of the 60, 80, and 100 levels; in the case of the example above, scoring issue (b) does not have a scoring issue at the SG60 level. The scoring issues and scoring guideposts are cumulative; this means that a performance indicator is scored first at the SG60 levels. If not all of the SG scoring issues meet the 60 requirements, the fishery fails, and no further scoring occurs. If all of the SG60 scoring issues are met, the fishery meets the 60 level, and the scoring moves to SG80 scoring issues. If no scoring issues meet the requirements at the SG80 level, the fishery receives a score of 60. As the fishery meets increasing numbers of SG80 scoring issues, the score increases above 60 in proportion to the number of scoring issues met; performance indicator scoring occurs at 5-point intervals. If the fishery meets half the scoring issues at the 80 level, the performance indicator would score 70; if it meets a quarter, then it would score 65; and it would score 75 by meeting three-quarters of the scoring issues. If the fishery meets all of the SG80 scoring issues, the scoring moves to the SG100 level. Scoring at the SG100 level follows the same pattern as for SG80.

Principle scores result from averaging the scores within each component, and then from averaging the component scores within each Principle. If a Principle averages less than 80, the fishery fails.

Scoring for this fishery followed a consensus process in which the assessment team discussed the information available for evaluating performance indicators to develop a broad opinion of performance of the fishery against each performance indicator. Review of the scoring tables by all team members assured that the assessment team was aware of the issues for each performance indicator. Subsequently, the assessment team member, or members in this case, responsible for each principle filled in the scoring table and provided a provisional score. The assessment team members reviewed the rationales and scores, and recommended modifications as necessary, including possible changes in scores.

9.3 Peer Review reports

Peer reviews were received from two experts, with each report anonymized. The tables below lay out the peer reviwer general and PI specific comments and the assessment team responses.

Peer Reveiwer A – General Comments

Fishery	Assess-ment Start Year	Peer Reviewer (A/B/C)	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)**
Irikla Reservoir perch and pikeperch fishery	2021	PR A	Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	Overall, yes. There are specific cases where scoring commentaries or the evidence used are not consistent - these are addressed for specific PIs. Overall, the two UoAs are essentially addressed together, but this may not be appropriate (for example, there are different P2 species affected by the different gears). Scoring should be identified for each UoA in Principle 2.	Thank you, specific comments have been addressed where raised.
Irikla Reservoir perch and pikeperch fishery	2021	PR A	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	The conditions are appropriate.	No response required.
Irikla Reservoir perch and pikeperch fishery	2021	PR A	Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if	NA	Section 4.1.1 re 7.4.2.13. Pikeperch is an introduced species. This should be clarified here re scope criteria of introduced species.	Thank you for the comment. The scope criteria of introduced species for pikeperch of the Irikla Reservoir is provided in section 4.1.1 of the PCDR.

			necessary). Add extra rows if needed below, including the codes in Columns A-C.			
Irikla Reservoir perch and pikeperch fishery	2021	PR A		NA	Table 3. Description of Pikeperch stock (UoA 2) is incorrect.	Thank you for the comment. The description of the pikeperch stock (UoA 2) in the Table 3 is corrected.
Irikla Reservoir perch and pikeperch fishery	2021	PR A		NA	Traceability p14. Are pikeperch/perch (of legal size) caught in either gear certified? If so (and there seems no reason why not) then there would not be a problem of catching some larger pikeperch in small mesh gillnets and large perch in large-mesh gillnets? Traceability also seems to relate to pikeperch only in many sections.	Thank you for the comment. The Assessment team agree that there is not a problem if some larger pikeperch of legal size are caught in small gillnets and large perch in large-mesh gillnets. In our opinion, in terms of traceability it is important to outline the discrimination of pikeperch of allowable landing size of 40 cm and larger (which could be caught in small and large gillnets) from undersized pikeperch usually entangled in small mesh gillnets.

Irikla Reservoir perch and pikeperch fishery	2021	PR A		NA	Harmonisation. Harmonisation considerations of Principle 3 Governance and Policy PIs, and some aspects of fishery-specific management (notably PI 3.2.2 and 3.2.4) should be presented.	Thank you for the comment. The harmonisation table with other Russian inland fisheries for the first component of the Principle 3 (PI 3.1.1, PI 3.1.2, PI 3.1.3) is provided in the relevant part of the report. The SIs for PI 3.2.2 and 3.2.4 try to assess the extent of the review and evaluation mechanisms and its coverage to the parts of the fishery-specific management systems which seems to be hardly harmonised for different fisheries. Some clarification is done as updated rationales of the PI 3.2.4.

Peer Reviewer A – PI Comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	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
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	1.1.1	Yes	No (material score reduction expected to <80)	NA	SIa, both species. At present, there is no dispute with the conclusions drawn, and taking a % of Ba will maintain a healthy population. However, should ecological circumstances in the lake change, there appears no lower limit to TAC/RAC which would maintain viable populations of each species. Were the Ba to be removed (leaving Btotal-Ba), when would the fishery re-start? Does this	Thank you for the comment. In terms of keeping the stock status relative to recruitment impairment at a higher confidence level, it would be helpful to have limit reference points like Blim or Bloss. However, in their absence at the Irikla fishery, stock management focuses on annual estimates of stock abundance and biomass (Btotal and Ba), through which scientists of SaratovNIRO calculate the maximum possible catch rate (TAC or RAC). Having a continuous series of observations over many years, managers are able	Accepted (no score change, change to rationale)

									require a hard limit (such as Bloss)? SI b. Scoring agreed.	to regulate the fishing pressure on commercial fish species, depending on the dynamics of their stock and the current ecological conditions in the reservoir. Fishing activities are regulated via a fishing mortality (F) exploitation rate of F ≤ M = 50% Ba (natural mortality of perch in the middle ages), that is a proxy value consistent with FMSY and that is used with the same intent as BMSY. A precautionary suite of management measures and tools ensures that fishing effort is low for recent years: actual F values - are lower than recommended FMSY - F0.29 (2017), F0.30 (2018) and F0.37 (2019); this approach has been in place since post-Soviet times, and the stock has in fact performed well since at least the 2000s, which clearly comfortably exceeds two generation times as evidenced by the increase of stock and recommended catch during the last 25 years (see Figures 12,13). Taking into account that the perch biomass has increased over the past two and a half decades from approximately 80	

										tonnes in 1994 to over 850 tonnes in 2011-2020, there is considered to be a high degree of certainty that the stock of perch is above the point where recruitment would be impaired (MSC Guidance to the Fisheries Standard v2.01, GSA2.2.3.1); thus SG60, SG80 and SG100 are met. The rational of the scoring table for the SI a is updated. In case of unfavorable trends in the dynamics of the stock, commercial fisheries may be subject to measures to reduce the volume of catch, up to a complete stop of the fishery. In practice, cases of stopping commercial fishing in large inland water bodies of Russia are known for other water bodies, for example, the moratorium on fishing Baikal omul, *Coregonus migratorius* (Lake Baikal), introduced from October 1, 2017, associated, among other things, with the low level of water in the lake in recent years, but with regard to perch and pikeperch of the Irikla Reservoir, such measures have never been applied.	

Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	1.1.2	NA (PI not scored)	NA (PI not scored)	NA			
Irikla Reservoir perch and pikeperch fishery	2021	Perch	Gillnets (30-36) Gillnets (50-70)	PR A	1.2.1	Yes	No (change to rationale expected, not to scoring)	Yes	SI f. For perch, if there are no unwanted catches, then this should be N/A? Other SIs. Scoring agreed.	Thank you for the comment. Yes, the Assessment team agrees with the opinion of the reviewer: since there is no UoA-related mortality of unwanted catch of the target stock of perch in the Irikla Reservoir, the SI f is not relevant for scoring. The rational in the scoring table for the SI f as well as related scores are corrected.	Accepted (score increased)
Irikla Reservoir perch and pikeperch fishery	2021	Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	1.2.1	No (scoring implications unknown)	No (scoring implications unknown)	Yes	SI f for pikeperch. This is scored at 60 - presumably this is only for pikeperch bycatch in UoA 1. However, there do seem to be regulations in place governing plausible possible actions (immediate release), and annual monitoring of fishing activities. If regulations are reviewed annually, then SG100 would be met. It is not clear though how often such reviews of regulations take	Thank you for the comment. Fishermen of Fish-Ka interviewed during the site visit confirmed that the problem of undersized pikeperch by-catch in a small mesh gillnets (UoA 1) exists. In the case of a pikeperch by-catch of less than the permitted size, fishermen are guided by the Fishing Rules for the Volga-Caspian fishery basin and the internal instructions of the Fish-ka company (change the fishing place, immediately release the freed fish into the natural habitat). Despite the existence of regulations for the	Accepted (no score change, additional evidence presented)

										place - clarification of this would determine score.	handling of pikeperch of less than the permitted size, the Assessment team considers that a high score for this SI cannot be obtained due to the large number of uncertainties, namely: 1. The Fisheries Rules for the Volga-Caspian fishing basin establish the total maximum by-catch of any fish species of less than the permitted size (20% by number) for the entire huge fishery basin (without differentiation into individual water bodies); 2. The Fishing Rules are reviewed irregularly, the term for the appearance of the new edition of the rules can reach 10 years or more; 3. There are no records of cases of by-catch of large numbers of juvenile pikeperch in the fishing logs of fishermen (as required by the Fishing Rules); 4. There is no up-to-date scientific data on catch compositions (by fish species, by age) and volumes of pikeperch in fishing gillnets with different mesh size; 5. There is no data on the survival rate of pikeperch after its release from fishing gillnets with small mesh size. In this regard,	

										a score of 60 is retained for this SI. The editing of rational for the SI f is done.	
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	1.2.2	Yes	Yes	Yes	SI a. Scoring agreed for both species. The rules and tools are effective in controlling harvest, notwithstanding comments on limit reference points in PI 1.1.1. Spatial division of quotas should probably also be mentioned here? SI b and SI c. Scoring agreed.	Thank you for the comment. The phrase "Besides, the strict division of quotas among separate Irikla Reservoir parcels, without the right of their transfer during a fishing season, provides a regular under-exploitation of the perch and pikeperch stocks by commercial fishermen below the TAC (RAC) quota levels" is introduced in rationales of SI a for both UoAs.	Accepted (no score change, additional evidence presented)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	1.2.3	Yes	Yes	NA	All SIs. Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	1.2.4	Yes	Yes	NA	All SIs. Scoring agreed	No response required.	NA (No response needed)

Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.1.1	No (change to rationale expected, not to scoring)	No (change to rationale expected, not to scoring)	NA	SI a. Roach is also a main species. Scoring of UoAs will be different and should be made clear.	Thank you. We've gone through P2 and made clear which scoring elements apply to which UoAs and explicitly scored each UoA accordingly, though in many cases the scores don't differ, they do in some cases!	Accepted (no score change, change to rationale)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	SI b. The question for the minor species is whether they are likely to be above PRI or the UoA is not hindering recovery. This will be variously true for combinations of species and gear types. If data-deficient, RBF may voluntarily not be used, and a default 80 assumed, of course. For example, pike has a RAC - is this then managed similarly to perch? Scoring will then also need to be undertaken per element as directed by FCP 7.17.10	Thank you, scoring per scoring element was updated and thus the scores for perch and pikeperch (having different main species) were separated.	Accepted (no score change, additional evidence presented)

Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.1.2	No (change to rationale expected, not to scoring)	No (change to rationale expected, not to scoring)	NA	SI a. Scoring will need to be undertaken per element	Thank you, the management strategy applies the same to all TAC stocks and all RAC stocks, thus the management scores for all scoring elements are the same. Though now they are explicitly referenced.	Accepted (no score change, additional evidence presented)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.1.2	No (change to rationale expected, not to scoring)	No (change to rationale expected, not to scoring)	NA	SI b and c. Will need to be scored for the partial strategy as a whole?	Yes, the rationale has been updated to make the approach more clear.	Accepted (no score change, change to rationale)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.1.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	SI a. Roach is also a main species (perch UoA).	Thank you, Roach has been added.	Accepted (no score change, additional evidence presented)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.1.3	No (score increase expected)	No (score increase expected)	NA	SI b and c. Scoring will need to be undertaken per element? Given the monitoring in place, some or all will likely perform better than is suggested here.	Thank you, this has now been considered at the scoring element level, but no change to the score has resulted.	Accepted (no score change

Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	SI a. The only secondary species apparently likely to interact with the fishery is great-crested grebe (which presumably only interacts with the perch UoA as this is prosecuted in summer). This is not mentioned here. Also, what is Поганка обыкновенная - a merganser? In section 9.4 mortalities of g-c grebes and long-nosed mergansers were identified - these should be the focus of this section? Some species that are mentioned are ETP (e.g. lesser white-fronted goose and more importantly Gavia arctica). Many have no reasonable prospect of interaction with the fishery and can be safely discounted, black-throated diver may. The classification and status of main secondary species	Поганка обыкновенная is Great-crested grebe, and is the only secondary bird with which the fishery has recently interacted (in summer as you rightly point out). Additional rationale has been added to highlight the interactions of the fishery with the great crested grebe, and to specify interactions could only occur in the perch UoA. The secondary species listed as vulnerable by the IUCN have been moved to ETP species (red-breasted goose and lesser white fronted goose). *Gavia arctica. o*r the black throated loon, is listed as least concern on the IUCN Redlist., It is listed on the African-Eurasian Migratory Waterbird Agreement (AEWA) under the Convention on Migratory Species, however no details regarding population or trends could be determined from this information, and there have been no interactions with the fishery nor indication that it could be possible. Hence we have not included it as a scoring element.	Accepted (non-material score increase)

									should be confirmed and this section (and 2.3.1) reviewed. SI b. Scoring agreed if no minor species.		
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.2.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	SI a, b and c. The strategy for Pallas's gull is fine. Does not great-crested grebe also need a partial strategy - even if current fishing regulations are sufficient, this should be recorded?	Thank you for your comment. The rationale has been updated to include the strategies in place for the great crested grebe.	Accepted (non-material score increase)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.2.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	SI e. There should be a review regarding bird species. Actions for Pallas's gull have obviously been considered on some regular basis, but what of g-c grebe and Поганка обыкновенная (merganser?)?	Поганка обыкновенная is the Great crested grebe. Some detail has been added about management strategy here, highlighting very few interactions, and careful handling enabling live release. However, the amount of interaction, particularly since the vast majority of birds are released alive after their	Not accepted (no change)

										rare encounters, means we do not agree that Sie needs to be scored because a regular review of alternative measures to reduce what is already an almost zero mortality seems unnecessary.	
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.2.3	No (change to rationale expected, not to scoring)	No (change to rationale expected, not to scoring)	NA	All SIs. Quantitative information is apparently available on mortalities of birds. This shows no interaction with gulls, but minor interactions with g-c grebes. Fuller explanation of this would properly (at least) confirm existing scoring.	Thank you for your comment. The rationale has been updated to include more information on monitoring and reporting interactions with waterfowl and other species.	Accepted (no score change, change to rationale)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.3.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	General point - does the Orenburg red book qualify as 'National ETP legislation? Is the common frog ETP? ETP birds currently mentioned under Main Secondary would need to be considered here.	Thank you for your comment. Because of the absence of any binding list for ETP species, the assessment team used the Orenburg red book because it is part of the Russian Red Book, which normally follows the IUCN.	NA (No response neeed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.3.1	No (change to rationale expected, not to scoring)	No (change to rationale expected, not to scoring)	NA	SI b. The question is whether the UoA hinders recovery. This is not answered for ETP bird species (which includes more species than only white-headed	Thank you for your comment. Additional rationale confirming there are no direct effects that could hinder recovery was added for ETP bird species.	Accepted (no score change, change to rationale)

									duck). Scoring is probabaly not changed, but should be confirmed.		
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.3.1	No (change to rationale expected, not to scoring)	No (change to rationale expected, not to scoring)	NA	SI c. Indirect effects presumably relate to maintaining prey fish populations (target and primary species), but again this should be confirmed.	Thank you, the rationale has been updated to explicitly mention what possible indirect effects there might be.	Accepted (no score change, change to rationale)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.3.2	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.3.3	Yes	Yes	NA	SI a. The score of 80 seems correct, but the quality of information seeems less than the commentary suggests (e.g. recording of birds but not other taxa) - there is 'some adeuate' information SI b. Scoring agreed	Thank you, we have revised the rationale to be consistent with the score. The score remains at 80.	Accepted (no score change, change to rationale)
Irikla Reservoir perch and	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.4.1	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)

pikeperch fishery											
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.4.2	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.4.3	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.5.1	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.5.2	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	2.5.3	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	3.1.1	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)

Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	3.1.2	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	3.1.3	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	3.2.1	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	3.2.2	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	3.2.3	Yes	Yes	NA	Scoring agreed	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	3.2.4	No (scoring implications unknown)	No (scoring implications unknown)	NA	SI a. This asks what mechanisms are in place to evaluate the performance of the management system as a whole. The commentary provided does not really seem to answer this.	Thank you for the comment. By mistake, both rationals for SI a SI b of PI 3.2.4 from the preliminary version of the report (draft) got to the reviewers. The Assessment team agree with the remark of the reviewer concerning SI a.	Accepted (no score change, change to rationale)

										The rationale for the SI a is re-wrote.	
Irikla Reservoir perch and pikeperch fishery	2021	Perch Pikeperch	Gillnets (30-36) Gillnets (50-70)	PR A	3.2.4	No (scoring implications unknown)	No (scoring implications unknown)	NA	SI b. If external reviews are carried out by VNIRO, what is the process for internal reviews (this is linked to SI a). The frequency of internal and external reviews should be clear - especially as a basis for scoring SG80 or 100. It is noted that this PI was the subject of a previous condition, so should be clear. Harmonisation considerations may also help to clarify this PI.	Thank you for the comment. The rationale for the SI a and SI b are updated. Since the Irikla perch and pikeperch fishery-specific management system is subject to regular internal and external review, the score has been revised and SG100 is met.	Accepted (score increased)

Peer Reviewer B – General Comments

Fishery	Assess-ment Start Year	Peer Reviewer (A/B/C)	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)**

Irikla Reservoir perch and pikeperch fishery	2021	PR B	Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	The current re-assessment has used (in most PIs) the same rationales and scores of the initial assessment for Perch. The outcomes of the assessment have been based on the experience of the Assessment Team (AT) during the previous assessment process and the follow up to the fishery through the following surveillance audits. Therefore the fishery is correctly scored, based on evidence that, in most cases, is well presented in the report.	Thank you. No detailed response needed.
Irikla Reservoir perch and pikeperch fishery	2021	PR B	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	The two conditions raised are appropriately written and no problems are expected to achieve the SG80 outcome within the timeframe.	Thank you. No detailed response needed.
Irikla Reservoir perch and pikeperch fishery	2021	PR B	Is the client action plan clear and sufficient to close the conditions raised? [Reference FCR v2.0, 7.11.2-7.11.3 and sub-clauses]		Note: Include this row for assessments completed against FCR v1.3 and v2.0, but not for FCP v2.1/v2.2 (in which the client action plan is only prepared at the same time as the peer review). Delete this text from the cell for FCR v1.3/v2.0 reviews or delete the whole row if FCP v2.1/v2.2.	
Irikla Reservoir perch and pikeperch fishery	2021	PR B	Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	NA		

Irikla Reservoir perch and pikeperch fishery	2021	PR B	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	**In the whole report** there are many occasions where two or more words attached to each other (are not separated). Here are some examples: Page 8 and 12 "fishermenwithin" Page 13 "includein" Page 16 "Reservoiris" "UralRiver" Page 17 "peledand" "catchof" "prohibiteddue" "eligiblefishermen" Page 20 "Reservoiroccurs" Page 30 "Reservoir.The" "pikeperchbiomass" There are too many to be all mentioned here. Please check.	Thank you, we have gone through and removed these errors.
Irikla Reservoir perch and pikeperch fishery	2021	PR B	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	**In the scoring table -** There are two UoAs for P1 in this assessment. Just for a consistency purpose with tables 31 and 32 of conditions, a presentation of the scores using the UoA number by species for each SI would be clearer e.g. UoA 1 (Perch) and UoA 2 (Pikeperch). Also, the same in Table 4 Principle-level scores.	Thank you for the comment. It is corrected in accordance with the reviewer suggestion.
Irikla Reservoir perch and pikeperch fishery	2021	PR B	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 123** - "*Fishing is conducted in a very simple manner with individual fishermen operating from small single engine boats (see Figure 6)*". The same sentence is written in Page 17 referencing Figure 2.	Thank you for the comment. The reference at Page 123 is corrected.

Irikla Reservoir perch and pikeperch fishery	2021	PR B	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, PI 1.2.1 SIf -** Please remove this sentence from the scoring table "*The CAB shall insert sufficient rationale to support the team's conclusion for each Scoring Guidepost (SG). Scoring Issue need not be scored if sharks are not a target species.*"	Thank you for the comment. The template sentence is removed.
Irikla Reservoir perch and pikeperch fishery	2021	PR B	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	**Table 10** (table of Catch data for the Irikla Reservoir perch fishery) has been cited many times in the report incorrectly. Examples: Page 72 "*Although this is a fish-eating diving bird, there have been very few recorded interactions with the Irikla perch fishery (see Table 10)*" and/or Page 100 "*including details of released alive/dead (see Table 10)*". Please check all.	Thank you. The field code for the correct table (Table 19) were not embedded in all cases, and now the erroneous references to Table 10 should now be correctly pointing to Table 19.
Irikla Reservoir perch and pikeperch fishery	2021	PR B	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	**Tables 16 and 17** - Why the TAC and RAC information for 2015 are not available?	That is a good question! We have gone back to ask for this information, which should appear in the next draft of the report.

Irikla Reservoir perch and pikeperch fishery	2021	PR B	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	**In scoring tables -** in some occasions the AT writes for example "*SG100 guidepost has been met*." I think there is no need to repeat the word "guidepost" as "SG" stands for Scoring Guidepost.	Thank you for the comment. It is corrected in accordance with the reviewer suggestion.
Irikla Reservoir perch and pikeperch fishery	2021	PR B	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	**Harmonisation table -** Although being a separated inland reservoir (does not geographically overlap with other MSC certified fisheries), the scores of P3's first component (PI 3.1.1, PI 3.1.2, and PI 3.1.3) should be harmonised with other Russian inland lake fisheries which have the same overarching management system, most of them certifying the same two species (Perch and Pikeperch), and have been weighed against MSC requirements already by different AT, independent reviewers and different stakeholders during previous assessments. I see that scores are already harmonised (with non-material differences) with other inland lake fisheries, so you can just provide a harmonisation table.	Thank you for the comment. The harmonisation table with other Russian inland fisheries for the first component of the Principle 3 (PI 3.1.1, PI 3.1.2, PI 3.1.3) is provided in the relevant part of the report.

Peer Reviewer B – PI Comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code

									Review stage)		
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	1.1.1	Yes	Yes	NA	UoA 1 (Perch) - See the following comments. UoA 2 (Pikeperch) - Scoring agreed.		
Irikla Reservoir perch and pikeperch fishery	2021	Perch	Gillnets	PR B	1.1.1	No (change to rationale expected, not to scoring)	Yes	NA	**SIa** - It has been explained that the reason behind the observed increase in perch biomass was "*during the last decade has been attributed to a decline in competition from other commercial species within the waterbody*". The same sentence was used in the initial assessmen	Thank you for the comment. It is known that high commercial effect was seen because of introduction of coregonids to the Irikla Reservoir. Their total weight in catches in terms of different years reached 90% from the total fish catch at the reservoir (Isaev & Karpova, 1980; Kozmin & Matyukhin, 1964). During the 1980s and early 90s the proportion of coregonids in total catches reached 80%, with a maximum catch of 893 t occurring in 1988 (Silivrov,1993). This led to a decrease in the catch of small species of fish (perch, roach and other cyprinids fishes). Since the end of 1990s the proportion of coregonids has shown a decrease and led to the general decrease in level of fishery in the reservoir, and since 2000 catches have been dominated by perch, roach and a silver crucian carp. Thus, the increase in the stock of perch observed since 1994 is largely due to the termination of artificial reproduction of vendace and whitefish in the Irikla reservoir and the maintenance of a low level of commercial mortality as one of the measures of the harvest strategy. The rational of the SI a is updated.	Accepted (no score change, change to rationale)

									t back in 2016 which means that the word "decade" probably refers to (2001-2011) as the figure 12 shows. However nothing is mentioned about the reason for the stability of perch biomass in the last decade (2011-2020). Please provide reasons if available.		
Irikla Reservoir perch and pikeperch fishery	2021	Perch	Gillnets	PR B	1.1.1	Yes	No (non-material score reduction expected)	NA	**SIa -** Taking into account that the harvest strategy does not use explicit biological reference points (e.g. limit reference point -	Thank you for the comment. The harvest strategy does not use explicit biological reference points, such as a limit reference point (LRP) to determine stock status. However, fishing activities are regulated via a fishing mortality (F) exploitation rate of F ≤ M = 50% Ba (natural mortality of the middle ages), that is a proxy value consistent with FMSY and that is used with the same intent as BMSY. A precautionary suite of management measures and tools ensures that fishing effort is low for recent years: actual F values - are lower than recommended FMSY - F0.29 (2017), F0.30 (2018) and F0.37 (2019); this approach has been in place since post-Soviet times, and the stock has in fact performed well since at least the 2000s, which clearly	Accepted (no score change, change to rationale)

									LRP) it is hard to conclude with high degree of certainty that the stock is above the point where recruitment would be impaired and to give SG100. Such conclusions have been made by the Assessment Team in the initial assessment of Perch (in 2016), in which it was given SG80. Also, given that the prolonged trend of increasing abundance (1994-2011) is no longer evident, as the stock shows a	comfortably exceeds two generation times as evidenced by the increase of stock and recommended catch during the last 25 years (see Figures 12,13). Taking into account that the perch biomass has increased over the past two and a half decades from approximately 80 tonnes in 1994 to over 850 tonnes in 2011-2020, there is considered to be a high degree of certainty that the stock of perch is above the point where recruitment would be impaired (MSC Guidance to the Fisheries Standard v2.01, GSA2.2.3.1); thus SG60, SG80 and SG100 are met. The rational of the scoring table for the SI a is updated.	

									stability between (2011-2020), thus SG80 would be a more precautionary score.		
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	1.1.2	NA (PI not scored)	NA (PI not scored)	NA	Not scored.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	1.2.1	Yes	Yes	Yes	**SIa-f** - Scoring agreed. Condition 1 seems reasonable and appropriate.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	1.2.1	No (change to rationale expected, not to scoring)	Yes	NA	**SIa** - "*Perch is not considered a valuable commercial fish ....*". "*Pikeperch is considered a valuable*	Thank you for the comment. Whether a particular fish species belongs to less valuable or more valuable fish is determined by the market value and does not always correspond to the management system through TAC or RAC tools. Thus, the average market price for fresh perch in Russia is about five times lower than the price for pikeperch, which is why perch is considered a less valuable species than pikeperch.	Accepted (no score change, change to rationale)

									commercial fish, ...". Is this the basis of managing species according to TAC or RAC in Russia? For example, are Pacific Salmon species not considered valuable species in Russia because they are also managed by RAC?		
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	1.2.1	No (change to rationale expected, not to scoring)	Yes	NA	**SId** - "*The optimization (reduction) of number of fishermen within the perch fishery decreased from 90 to 47 people to increase the fishing opportunities for each*	Thank you for the comment. The optimization of number of commercial fishermen at the Irikla reservoir took place along with reduction of the fishery companies operating at the water body in the beginning of 2000s to two in 2010s - Fish-ka and Volna. As a result, productivity of one fisherman has increased up to three times (on average 9.8 t. for one of 31 fishermen in 2011). Obviously, with the increase in the stock and catch of perch and pikeperch in the water body in the last decade, the average catch per fisherman has also increased. The Assessment team does not have more accurate official statistics for recent years, but it can be tentatively calculated that with an officially recorded commercial catch of 898.1 tonnes in 2020, the average catch per one out of 47 fishermen was 19.1 tonnes.	Accepted (no score change, change to rationale)

									fisherman". Could you please specify in which years? Also, if available, could you provide figure with CPUE (for example, kg · fisherman^{-1} · year^{-1} OR kg · boat^{-1} · year^{-1}) for this period?		
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	1.2.2	Yes	Yes	Yes	**SIa-c** - Scoring agreed. Condition 2 seems reasonable and appropriate.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	1.2.3	Yes	Yes	NA	**SIa-c** - Scoring agreed.	No response required.	NA (No response needed)

Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	1.2.4	No (change to rationale expected, not to scoring)	Yes	NA	**SIe -** The stock status and quotas allocations using the RAC (for Perch) and TAC (for Pikeperch) are internally reviewed by the local scientific institute (i.e. Saratov Research Institute) and management authorities and externally reviewed by VNIRO and the State Ecological Expertise in Moscow on an annual basis. This is true for the TAC, however it is not clear if species that are	Thank you for the comment. The State Ecological Expertise in Moscow provides an independent review of the management system for the TAC regulated fisheries (i.e. pikeperch of the Irikla reservoir) but not the RAC managed fisheries (i .e. perch of the Irikla reservoir). The Assessment team made the necessary adjustments in the rationals of SI 1.2.4e for both UoAs.	Accepted (no score change, change to rationale)

									managed by RAC such as perch are also subject to an external review by State Ecological Expertise. Could you please provide reference for this?		
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.1.1	Yes	Yes	NA	**SIa-b** - Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.1.2	Yes	Yes	NA	**SIa-e** - Scoring agreed. **Suggestion** - In the scoring table, the row "met?" below the guidepost, maybe it is more appropriate (just to avoid confusion) to simply indicate	Thank you. We have left the main/minor met/not met in the guideposts because that will condition the overall score per UoA because of the “few, some, many” approach to scoring element scoring.	Not accepted (no change)

									Yes or No without getting into details that main species meet and minor species do not meet the SG100. This is already explained in the rationale.		
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.1.3	Yes	Yes	NA	**SIa-c** - Scoring agreed. **Suggestion** - see previous comment.	See above response.	Not accpeted (no change)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.2.1	No (change to rationale expected, not to scoring)	Yes	NA	**SIa-b** - Scoring agreed. **SIa** - "*The majority of the bird species listed in Table 20 are transient species*" Do you mean table 19? If yes, please correct this and in the	Yes, thank you, this has been updated to Table 19.	Accepted (no score change, change to rationale)

									background section too (page 71).		
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.2.1	No (change to rationale expected, not to scoring)	Yes	NA	**SIa** - "*To date there have been 6 recorded interactions (5 dead, 1 released alive)*" Which species? Are these interactions for Great crested grebe which indicated in table 18? If so, there were 13 reported cases only in 2019 and 2020 as indicated in table 18, and not only 6 interactions to date. Please check.	Thank you. Yes, the section on Great crested grebe interactions has been revised. The previous text was from the 4th surveillance report which was not reporting on the longer timescale.	Accepted (no score change, additional evidence presented)

Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.2.1	Yes	Yes	NA	**SIa** - "*though this will be re-examined in more detail during the site visit*" Please remove. **Table 19** - "*Potential for **nteraction** with fishing gear according to A. Davygora*". Please correct interaction.	Thank you, typos have been removed and the reference to examining in more detail post site visit has been as well.	Accepted (No score change, change to rationale)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.2.2	Yes	Yes	NA	**SIa-e** - Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.2.3	Yes	Yes	NA	**SIa-c** - Scoring agreed.	No response required.	NA (No response needed)

Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.3.1	No (change to rationale expected, not to scoring)	Yes	NA	**SIa-c** - Scoring agreed. **SIb** - "*There are no specific measures established to protect ETP species because of the known lack of interactions. The fishery therefore meets the requirements at SG60, SG80 and SG100.*" The guideposts for this SI are referring to the outcome of whether there are direct effects of the fishery on ETPs, and not precisely asking about measures	Thank you, the rationale has been revised to make explicit reference to the actual scoring issues in the PI.	Accepted (no score change, change to rationale)

									established to protect them. Please correct. Also this may contradict the opening sentence of the following PI 2.3.2. SIb - "*A number of management measures are available ..... as may be required*".		
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.3.2	Yes	Yes	NA	**SIa-e** - Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.3.3	No (change to rationale expected, not to scoring)	Yes	NA	**SIa-b** - Scoring agreed. **SIb** - "*including details of released alive/dead (see Table 10)*" this is	Thank you, the reference has been corrected.	Accepted (no score change, change to rationale)

									the table of Catch data for the Irikla Reservoir perch fishery. Please correct.		
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.4.1	Yes	Yes	NA	**SIa-c** - Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.4.2	Yes	Yes	NA	**SIa-c** - Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.4.3	Yes	Yes	NA	**SIa-c** - Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.5.1	Yes	Yes	NA	Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeper	2021	Perch and Pikeperch	Gillnets	PR B	2.5.2	Yes	Yes	NA	**SIa-c** - Scoring agreed.	No response required.	NA (No response needed)

ch fishery											
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	2.5.3	Yes	Yes	NA	**SIa-e** - Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	3.1.1	Yes	Yes	NA	**SIa-c** - Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	3.1.2	No (change to rationale expected, not to scoring)	Yes	NA	**SIa-c** - Scoring agreed. **SIb -** the rationale is repeating the same rationale of SIa. I think this has been mistakenly copied here. Also the rationale for not giving SG100 "*The management system does not allow commercial*	Thank you for the comment. By mistake, the rational SI b of PI 3.1.2 from the preliminary version of the report (draft) got to the reviewers. The repeating of the rational of SIa in Sib is delited and the rational for SIb is re-wrote.	Accepted (no score change, change to rationale)

									fishers to exceed quotas ...." is not actually relevant to the consultation processes and whether the management system explains how it uses or not the input from stakeholders. I'm not saying that the score of this SI should be raised to SG100 but the justification is not relevant to what is required by the guide post.		
Irikla Reservoir perch and pikeper	2021	Perch and Pikeperch	Gillnets	PR B	3.1.3	Yes	Yes	NA	Scoring agreed.	No response required.	NA (No response needed)

ch fishery											
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	3.2.1	Yes	Yes	NA	Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	3.2.2	Yes	Yes	NA	**SIa-d** - Scoring agreed.	No response required.	NA (No response needed)
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	3.2.3	No (change to rationale expected, not to scoring)	Yes	NA	**SIa-d** - Scoring agreed. **SIb -** "*Fines have been recently increased more than 10 times (for example, the penalty increased for one illegally caught pikeperch from 250 to 3305 rubles for perch from 17 to 250 rubles)*". One can	Thank you for the comment. Since the existence of the Russian Federation after the collapse of the USSR, the Government of the State has issued four decrees concerning the revision of the amount of damage for illegally obtained aquatic biological resources, namely: No. 515 of May 25, 1994, No. 724 of September 26, 2000, No. 219 of March 10, 2009, and No. 1321 of November 3, 2018. The deterrent effect of fines for illegal fishing is achieved not so much by the frequency of their renewal, but by such an indicator as the amount of calculated damage per unit of fish of a particular species (regardless of weight and size) in relation to the national average salary for the period of tariff revision (Federal State Statistics Service, https://rosstat.gov.ru/labor_market_employment_salaries?print=1). For example, if at the time of the previous revision of tariffs in 2009 the average salary in the economy in Russia was 18,638 rubles, then the established fines for illegally caught perch (17 rubles) and pike perch (250 rubles) were 0.09% and 1.34% of average salary, respectively. In 2018, fines for illegally caught perch (250 rubles) and pikeperch (3,305 rubles) accounted for a significantly larger share of the average salary of residents of the country (43,724 rubles) - 0.57% and 7.56%, respectively.	Accepted (no score change, change to rationale)

									see the amount of penalties were really low. Are these sums reconsidered once in a while, and if yes, how often does it happen? I'm asking because, with the inflation rate of the Russian Ruble, if the sanctions are not updated regularly they will not provide effective deterrence.		
Irikla Reservoir perch and pikeperch fishery	2021	Perch and Pikeperch	Gillnets	PR B	3.2.4	No (scoring implications unknown)	Yes	NA	**SIa-b** - Scoring agreed. The State Ecological Expertise in Moscow can be added also as an external reviewer to	Thank you for the comment. The State Ecological Expertise in Moscow provides an independent review of the management system for the TAC regulated fisheries (pikeperch of the Irikla reservoir). Since the Irikla perch and pikeperch fishery-specific management system is subject to regular internal and external review, the score has been increased up to SG100.The Assessment team made the necessary adjustments in the rationals of SI 1.2.4e and SI 3.2.4b.	Accepted (score increased)

									the key parts of the fishery-specific management system, especially for TAC allocation on an annual basis. As explained above in PI 1.2.4 SIe, I'm not sure if the scope of such expertise also includes the review of RAC allocation.		

9.4 Stakeholder input

No written stakeholder inputs were presented to the assessment team for review. Instead, a verbal summary of the current status of the perch and pikeperch fishery was provided by attendees at the remote site visit (see above for agenda).

The following sections provide a summary of the information provided during the site visit interviews.

Fish-kaand Volna

Surveillance team members Amanda Stern-Pirlot (team leader) and Dmitry Sendek held a remote meeting with Konstantin Ageev, Alexander Anikin, Elena Ermolova and Dmitry Lajus at 17:00 hrs on Friday 5th February 2021.

This served as the opening meeting for both the 4th surveillance audit and reassessment.

Konstantin Ageev (director of the Volna fishing company), Alexander Anikin (director of the Fish-ka fishing company) and Elena Ermolova (standardization engineer at Fish-ka) confirmed that Volna and Fish-ka companies are engaged in fishing in the Irikla reservoir, and FollowfoodGmbH buys fish from them and sells it abroad.

The changes in the fishery for 2020 were as follows. In 2020, the fishery areas (rybopromyslovyeuchastki - RPU) were renamed into fishing parcels (rybolovnyyeuchastki - RU). The renaming was rather formal, however, along with the renaming, there was a change in the number and boundaries of parcels on the Irikla reservoir: instead of 6 RPUs, 7 RUs appeared. To date, only seven of the nine parcels have been allocated to the companies (Parcels 1, 2, 3, 4, 5, 6 and 7) with parcels 8 and 9 (southern-most near the dam) not open to commercial fishing. Of these seven parcels, three have been allocated to Volna and three to Fish-ka (Orlovsky reach, Sofinsky reach, Chapaevsky reach, Tanalyk-Suunduk reach, Tanalyk bay and Suunduk Bay). New fishery company - IriklaRyba LLC - operates at the Solenyyreach; this company mainly deals with artificial reproduction issues Fish-ka or Volna could not take over the Solenyy reach parcel due to antitrust restrictions. Currently, new contracts for the use of four parcels are in the Ministry of Agriculture for signing. Fishing in all parcels will fully begin after the end of the spring fishing ban (from 04/15/2021 to 06/15/2021), starting from 06/16/2021.

Largely due to the opening of the Suunduk Bay parcel for fishing, the Fish and Volna companies managed to more fully use the fishing quotas for perch and pikeperch. So, for the period 2018-2020, the total fishing catch for perch increased from 280.4 to 452.8 tons, for pikeperch from 40.6 to 85.7 tons.The Covid-19 pandemic did not negatively affect fisheries in 2020. Companies bought fishing gear for their fishermen in 2020.

The client explained that the opening of the Suunduk Bay fishing parcel will not directly affect fish reproduction, since the shallow water zones of the bay are not included in the fishing area (RU). The increase in bird by-catch due to the opening of this parcel will need to be clarified with specialists. But in general, all interactions of fishing gear with birds are recorded by fishermen in accordance with a memo developed by fishing companies. The death of one bird in the nets was noted with several cases of entanglement of ducks in the nets.

The new fishing company Irikla-ryba is interested in obtaining the MSC certificate. Volna and Fish-ka will be ready to help Irikla-ryba in this aspiration, but the old companies want to assess first how the new company will organize the fishery.

At present, Irikla-ryba compensates for the damage from the water intake of the Irikla HPP by growing and releasing silver carp into the Iriklareservoir.Silver carp consumes plant food, which is abundant in the Irikla reservoir, i.e.this species lowers the trophic level of the reservoir.

Saratov Research Institute

Surveillance team members Amanda Stern-Pirlot (team leader) and Dmitry Sendek held a remote meeting with Ilya Belyanin, Elena Ermolovaand Dmitry Lajus at 16:00-18:00 hrs on Monday 8th February 2021.

Ilya Belyanin (Head Fish Stocks Sector) said that there have been no significant changes in the work of the laboratory of ichthyology since the last audit. The laboratory staff remained the same and totals 13 people.

Work on the Irikla reservoir is carried out in spring, when the conditions for spawning of fish in a given year are studied, and in summer, when the success of spawning of various fish species, their growth rate, nutrition, and the state of stocks are investigated.To study the state of stocks, gillnets, minnow seines, and beach seines are used.In

addition, the parasite fauna of fish, by-catch of birds and mammals, which have not yet been found in scientific fishing gear, are being investigated.

When assessing the state of reserves, as before, two methods are used - the so-called ‘square method’ and method based on fishery statistics. The latter is used to a greater extent as an additional method, the main one being the square method.

The state of the pikeperch stock is characterized by a continued increase in biomass (635 tons in 2020) and stabilization of the population in a number of indicators (size and weight indicators, age structure); in perch, some rejuvenation of the herd is observed due to the increased fishing load. At the same time, the stock of perch remains at a consistently high level (878 tons in 2020). The assessment methodology to monitor the status of fish stocks in the Irikla Reservoir remains unchanged and TAC/RAC quotas calculated on an annual basis. Biological reference points for calculating TAC (pikeperch) and RAC (perch) remain the same and are associated with the size of the commercial part of the population (available biomass): 0.2 Ba for pikeperch and 0.5 Ba for perch.

For pikeperch, the minimum fishing size (TL=40 cm in 2020) is set by the Fishing Councils, while the Saratov branch of VNIRO scientifically substantiates this size and is one of the initiators of possible changes. At present, for a more complete and rational exploitation of water resources, the Institute is working on the unification of fishing gear in the fisheries (design, mesh size, number of fishing gear).

The tasks of the institute include agreeing on the timing of fishing, areas permitted and closed for fishing, and the commissioning of new fishing parcels (RU). The last example for the Irikla reservoir is the Solenyy reach, the opening of which is initiated by a quota user (a fishing company) and is coordinated by the Saratov branch of VNIRO.

To study the volume of fish catch by amateur fishermen, the Institute conducts special research. To do this, one of the employees regularly conducts their own fishing and conducts a survey among amateur fishermen. In addition, within the framework of the institute's monitoring, a group of employees from time to time comes to the Irikla reservoir to study the species composition of catches, the number of different species in the catches, the amount of catch in terms of all amateurs in different seasons of the year. In general, according to Ilya Belyanin, the catches of amateurs make up about 20% of the total fish catch in the reservoir.

Ilya Belyanin noted a further decline in IUU fishing. According to him, the inspectors record roughly about 1 ton of fish in IUU catch. Estimated IUU volumes are considered as natural mortality when assessing fish stocks.

Some excess of quotas when summing the catch volumes of fishermen and amateurs is due to the lack of monitoring of the catch of amateurs during the season. However, the calculation of the TAC for pike perch is made at an underestimated estimate of 0.2 Ba (instead of the methodical 0.3 Ba).This leaves a reserve for fishing mortality, where the annual excess of the quota for pike perch due to the catch of amateurs fits.

Followfood GmbH.

Surveillance team members Amanda Stern-Pirlot (team leader) and Dmitry Sendek held a remote meeting with Nadja Kraus, Julia Kranewitter, Elena Ermolova and Dmitry Lajus at 18:00-19:00 hrs on Monday 8th February 2021.

Followfood GmBH is the customer in Germany who pays for the MSC assessment and purchases perch and pikeperch from the fishery client participants. Representatives indicated there have been no recent changes to their relationship with the fisheries, or to traceability systems.

Ornithologist

Surveillance team members Amanda Stern-Pirlot (team leader) and Dmitry Sendek held a remote meeting with Anatoly Davygoraand Dmitry Lajus at 16:30-17:15 hrs on Tuesday 9th February 2021.

Anatoly Davygora (Chairman of the Orenburg branch of the Russian Bird Conservation Unit; Associate Professor of the Orenburg State Pedagogical University)

According to Anatoly Davygora, the interaction of fishery with birds in the Irikla reservoir can occur only in spring and summer. The likelihood of bird interaction with gear is low due to the fact that fishing gear is set out on average 5-10 m from the surface of the water. According to the journal with photographs, which Anatoly Davygora has, he noted only two species that fell into the nets of fishermen: these are grebes and mergansers (2 specimens of long-nosed mergansers were identified to species).

According to the list of birds proposed by Amanda Stern-Pirlot for commenting, Anatoly Davygora said the following:

For all Anseriformes (гусеобразных), the nets of fishermen in the Irikla reservoir are not a problem, because these birds do not dive that deep.

The Curly Pelican (Кудрявыйпеликан) is practically not found in this area.

Spoonbill (Колпица) is also a stray species.

The black stork (Черныйаист) is a casual species that hunts in shallow waters.

Red-breasted goose (Краснозобаяказарка) - occurs on migration, not fish-eating species. Resting and feeding in the fields.

Lesser White-fronted Goose (Пискулька) is the same as the previous species.

The small swan (Малыйлебедь) is the same as the previous species.

The white-tailed eagle (Орланбелохвост) is a large predator hunting wounded animals, sometimes catching fish in the upper layers of the water.

Seagull (Чайка) - Pallas's gull, near the village of Novy Sevastopol there is a colony of this species (about 600 pairs). This species is more of a problem for fishermen, because it is a very large seagull that pulls fish out of its nets, but it does not dive. Fishing can only give this gull some concern, but in general for this bird the presence of fishermen in the reservoir is not a problem.

According to Anatoly Davygora, in connection with the opening of the Suunduk reach for fishing, the birds do not suffer.

Fishermen

Surveillance team members Amanda Stern-Pirlot (team leader) and Dmitry Sendek held a remote meeting with Alexander Ageev, Igor Alimov, Oleg Turtaand Dmitry Lajus at 17:15-18:00 hrs on Tuesday 9th February 2021.

Alexander Ageev (engineer of the fishing department), Igor Alimov (foreman of fishermen of Tanalyk-Suunduk reach) and Oleg Turta (foreman of fishermen of Sofinsky reach)

Fishermen informed that there have been no significant changes in the fishery lately. Since September 2019, the Suunduk reach has been opened for fishing, which makes it possible to make fuller use of the general quotas for perch and pikeperch. The Fishing Department hired one more employee, which made it possible to improve the chain of delivery of fish from fishing parcels to processing sites and thereby improve the safety of the catch.

Birds nest on two islands located on the Suunduk reach, but one large island is located in shallow water, where fishing is not conducted. Near the second island, where seagulls nest, the birds themselves do not allow fishermen to fish, and fishermen can approach it only in winter, when there are no birds on the island.

Fishermen keep records of the interaction of fishing gear with birds in fishing logs. There are few such incidents (in 2020, 6 birds entangled in nets were recorded in one reach and 4 birds - toadstools - on the other). Usually, nets are buried 5-10 meters from the surface of the water, which prevents birds from entangling in them. Besides, fish are better preserved at depth. In addition, nets installed close to the surface of the water interfere with navigation. According to the Fishing Rules, in winter nets are checked at least once every 96 hours, in summer - 2 times a day. Perch is better caught in summer; pikeperch begins to be caught in September and is caught in winter from under the ice. The nets are set as deep as possible from the ice.

Fishing begins with setting control nets. If there is a lot of undersized pike perch in the by-catch (no more than 20% per unit is allowed), then the team changes its place. The results of the control catches are recorded in the internal logs of the fishing companies. In any case, oversized pike perch caught in the nets is immediately sent back into the water. In addition, there is a size control at the reception of the fish.

The inspectorate does not note violations in Volna and Fish-ka companies. Problems sometimes arise due to the activities of amateur fishermen who spoil the fishing gear of the fishermen (cut off the buoys, tags). In 2020, there was a claim from the fishery inspection against the company because of the installation of gill nets outside the boundaries

of the fishing site, but in court it was possible to show that there was no violation, and the incident occurred due to the activities of amateur fishermen who rearranged the fishing gear. The problem of exacerbation of relations with amateur fishermen is caused by the fact that in the past the fishing places of fishermen and amateur fishermen were different, now both of them could fish in the same fishing parcels (RU).

Fishermen note that the problem of poaching is not very relevant for the Irikla reservoir. In connection with the Covid-19 pandemic in 2020, a lot of holidaymakers from neighbouring regions (Bashkiria, Chelyabinsk region) came to the reservoir for the weekend, which, it would seem, could increase the pressure of poaching, but a large crowd of people prevented offenses with the installation of prohibited fishing gear. In addition, very high fines deter potential violators. Fish-ka and Volna have purchased a thermal imager to detect illegal fishing at night and thereby contribute to better surveillance of the reservoir.

The fishermen emphasized that in recent years, the zebra mussel, which sits on the lower line of the net, has begun to interfere with fishing. To remove it, fishermen sometimes have to tear the net, which causes material damage. If the expansion of the mollusk into the Irikla reservoir continues, the fishermen may have to change their fishing technique over time.

Fishery Inspection

Surveillance team members Amanda Stern-Pirlot (team leader) and Dmitry Sendek held a remote meeting with Rustam Karimov, EvgenyTemirdzhanov, Elena Ermolova and Dmitry Lajus at 16:00-18:00 hrs on Wednesday 10th February 2021.

Rustam Karimov (head of the department for supervision in the Orenburg region) and EvgenyTemirdzhanov (senior inspector of the department, responsible for the city of Energetik)

In total, the department for supervision of the Orenburg region employs 16 people, among them half are state inspectors. The inspection has at its disposal 7 off-road vehicles, a snowmobile, 2 boats, all inspectors are provided with boats with outboard motors, video recording devices, and special clothing. One of the inspectors constantly works at the Irikla reservoir, he has two specialists under his command, i.e. only 3 people supervise the situation on the reservoir.

Every week from Orenburg, raid tasks are received, in accordance with which inspections are carried out at the Irikla reservoir in different parts of the water body. In addition to the staff working at the Irikla reservoir, the raid group may include other inspectors and specialists from Orenburg. During certain periods (for example, during the spring spawning period), teams of inspectors may work together with the police, the environmental prosecutor's office and other law enforcement agencies. At the same ‘hot’ time, mobile groups of inspectors from other cities (Samara, Moscow, etc.) can come for reinforcement. Sometimes the inspectorate works on signals of violations that come from amateur and professional fishermen (Volna, Fish-ka).

The main task of inspectors is control, supervision and protection of aquatic biological resources. In case of violation of the Fishing Rules (or the regime of stay and / or work in a water protection zone), administrative or criminal protocols are drawn up against the violator. During the inspection of fishermen fishing gear, documents, and the correctness of filling out the logs are checked. Sometimes fishers are checked during the delivery of the catch ashore. Once a month, information about the catch by fishers is transmitted to Orenburg, and the accuracy of the information submitted is also checked by the inspection. In recent years, no violations have been revealed in fishermen Fish-ki and Volna.

Professional fishermen work according to long-term contracts. If a fisherman has two violations per year, the contract may be terminated before the next competition, which is held once every 15 years. Therefore, fishermen try to comply with the Fishing Rules. By the size of the mesh in the fishing gear used, the inspectors have practically no complaints about the fishermen. In 2010, the inspectorate found the catch of small pikeperch above the established norm, and when registering the violation, the inspectors found out whether the intent was in violation. If there was intent, then the fisherman is prosecuted as a poacher. Fines for violations have recently increased significantly; in relation to organizations, they are, on average, 10 times higher than in relation to an individual. Now fishermen try to avoid catching undersized pikeperch and, if they are caught, they immediately release it back into the water.

In addition, inspectors conduct explanatory work with amateur fishermen. The inspectors check the size of the fish they catch, the volume of the catch, which should not exceed 5 kg in a day. Illegal fishing using nets is also being monitored. Every spring, measures are taken to cleanse the reservoir from abandoned nets. In 2020, about 200 abandoned nets were caught and disposed of. In general, the number of nets has decreased since cheap Chinese chains have disappeared from circulation (they are forbidden to sell).

The number of offenses has been steadily decreasing over the past 10 years. Over the past 5 years, there has been a twofold decrease. In total, 207 violations were noted in the Irikla reservoir in 2020, of which 92 were poaching. An increase in fines for both illegal fishing and an increase in tariffs for each illegally caught fish contribute to the decrease in the number of violations. At the same time, the total amount of fines for the last 5 years has increased for the same reason.

Another function of the inspection is control and supervision during the release of farmed fish. This fish (mainly silver carp and carp) is produced as compensation for water intake at the IriklaHPP. In 2020, five such releases were carried out, as a result of which about 5 tons of fish were released into the Irikla reservoir.

Glavrybvod

Surveillance team members Amanda Stern-Pirlot (team leader) and Dmitry Sendek held a remote meeting withVitalyKilyakov, Elena Ermolova and Dmitry Lajus at 16:00-17:00 hrs on Thursday 11th February 2021.

Vitaly Kilyakov (head of the Orenburg branch of the Glavrybvod) explained that the former Kamuralrybvod is now called the Kamsko-Volzhsky branch of Glavrybvod. The responsibilities of Glavrybvod include monitoring of aquatic biological resources (VBR), reclamation and artificial reproduction. As part of the monitoring of the VBG, employees investigate the biological indicators of fish. Monitoring by Glavrybvod is carried out within the framework of the State Monitoring, while the obtained data are exchanged with a specialized institute engaged in assessing the state of commercial fish stocks, i.e. with the Saratov branch of VNIRO. Glavrybvod also shares the data obtained on the state of amateur fishing in the Irikla reservoir. To do this, twice a month, employees of the Glavrybvod go to the reservoir, assess the catches of fishermen and fill out questionnaire fishing cards (60-70 pieces per year).

Reclamation basically means the mowing of aquatic vegetation and the installation of artificial spawning grounds. For the Irikla reservoir, the task of mowing algae is not very relevant, since this reservoir has a canyon shape and grows little in the coastal areas. Artificial spawning grounds are established in spring, their number is determined by the water regime in a given year. This work is also carried out under the State Assignment. Artificial spawning grounds are of factory origin, in total they can be installed about 2 thousand pieces. Artificial spawning grounds can be used by different fish species. The effectiveness of the use of artificial spawning grounds is annually monitored by a specialist of the Glavrybvod.

As part of the work on the artificial reproduction of fish, the Saratov branch of VNIRO gives recommendations on the advisability of using certain species of fish for these purposes. The institute also determines the volume of annual stocking. Recommendations for the release of silver carp and carp into the Irikla reservoir are due to the fact that the first species is a natural ameliorator, and the second is a commercial species. Young fish for annual releases can be supplied from a hatchery based on the Irikla reservoir or imported from the Saratov region. Previous plans to restore the stocks of coregonid fishes (whitefish, vendace) in the Irikla reservoir due to their artificial reproduction in a specially built fish hatchery have been suspended due to lack of funds for hatchery construction.

The volume of water discharge from the Irikla reservoir is determined annually by the flood commission. Until 2006, the flood commission included both specialists in hydrology and representatives of the fishery. For the latter, it was important to defend the preservation of the highest possible water level in the reservoir, since this has a positive effect on fish spawning. However, later, officials came to the flood commission, for whom the most important thing is to prevent possible flooding of settlements lying below the reservoir dam. To do this, they try to dump as much water as possible in autumn and spring, reserving the released volume for possible floods. According to Elena Ermolova, in the past three years, the interests of the fishing industry have begun to be taken into account to a greater extent and there are no sharp fluctuations in the water level. This can be seen, in particular, from the improvement in the state of whitefish stocks, for which successful reproduction requires a sufficiently high water level in autumn.

The rules for regulating the level of water in reservoirs in Russia are now old, 1967. There is a draft of new rules, but it is being coordinated in Moscow.

9.5 Conditions

9.5.1 Summary of conditions closed under previous certificate

Table 6: Summary of previous conditions

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
1	A research plan should be prepared and implemented for the Irikla Reservoir perch fishery that is designed to provide the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	3.2.4	Closed at 3rd surveillance	70	80
2	There should be a system of external 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.	3.2.5	Closed at 4th surveillance	70	80

9.5.2 Open Conditions at reassessment announcement

Table 31. Previous Condition 2, still open at reassessment announcement but now closed.

Performance Indicator	Erstwhile 3.2.5
Score	*70.*
Justification	Although a comprehensive set of research topics is conducted on the fisheries and other related environmental aspects of the reservoir to achieve the objectives consistent with MSC's Principles 1 and 2 there is no single research plan for this particular fishery. As common with other fisheries in the Russian Federation, there is a coherent plan for research handled by the relevant responsible bodies within the Russian Federation that covers a wider basis than just the pikeperch fisheries and covers the entire reservoir and all fisheries within it but not one for this specific fishery. This system, although not in a single management plan, provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. Therefore the SG60 guidepost is met but as no specific written plan exists the SG80 and SG100 guideposts cannot be shown to be met.
Condition	A research plan should be prepared and implemented for the Irikla Reservoir pikeperch fishery that is designed to provide the management system with a strategic approach to research and **reliable and timely information** sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
Condition start	*2016 for perch, 2019 for pikeperch*
Condition deadline	2021

Milestones	Develop and implement a research plan and meet the SG80 milestone by the recertification date in 2021 (expected score 80)
Progress on Condition	The condition is closed. Please see 4th surveillance report for details.
Progress status	This condition is closed as of the publication of the 4th surveillance report. However, since it was still open at the announcement of reassessment, it must still be listed in this section.
Carrying over condition ☐	Not carrying over.
Closing the condition during the reassessment	N/A Closed at 4th surveillance

9.5.3 Conditions

Table 32. Condition 1 UoA 2 (pikeperch)

Performance Indicator	1.2.1 (Alternative measures)
Score	*75*
Justification	According to the “Fisheries Rules for the Volga-Caspian Basin”, for the IriklaReservoirthe minimum commercial sizefor several species has been established (paragraph 26). For pikeperch the minimum fishing size of 40 cm is provided. Paragraph 25.1. of the Fisheries Rules indicate that it is forbidden to use the fishing gears with the mesh sizeofless than 30 mm in the gillnets for fishing single category of fish named "small tiddler" (including perch, roach, crucian carp etc.) and the mesh size less than 50 mm in the gillnets for fishing other category of fish named "large tiddler" (including pikeperch, pike, wild carp etc.). It is considered, that all fish of non-commercial size could escape through the mesh of fishing gear. The fishers of the Fish-ka use gillnet sizesof 30 – 36 mm and 50 – 70 mm.It is known, that all immature perch pass through the nets of minimal allowed mesh size and avoid entanglement in them. However, pikeperch matures later and grows faster than perch, so gillnets of small mesh size could potentially take considerable amounts of juvenile pikeperch.According to the Fishing Rules (paragraph 27.2) and the internal instruction of Fish-ka (Fish-ka instruction…, 2020), when fishing with small-meshed gillnets, the by-catch of juveniles is not allowed more than 20% of the total number of all fish species in one fishing operation. If the catch of immature fish is exceeded, the captain (foreman) must record the catch in the fishing log and change the fishing place. According to the Fishing Rules (paragraph 26) and the internal instruction of Fish-ka, when catching pikeperch less than the permitted size, the fish should be immediately released into the natural habitat with the least damage. While there are a number of possible measures to minimize UoA-1 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 pikeperch stock of the Irikla reservoir, namely: 1. The Fisheries Rules for the Volga-Caspian fishing basin establish the total maximum by-catch of any fish species of less than the permitted size (20% by number) for the entire fishery basin (without differentiation into individual water bodies); 2. The Fishing Rules are reviewed irregularly, the term for the appearance of the new edition of the rules can reach 10 years or more; 3. There are no records of cases of by-catch of large numbers of juvenile pikeperch in the fishing logs of fishermen (as required by the Fishing Rules); 4. There is no up-to-date scientific data on catches (by fish species, by age) and volumes of pikeperch in fishing gillnets with different mesh size; 5. There is no data on the survival rate of pikeperch after its release from fishing gillnets with small mesh size.. For this reason the fishery fails to meet SG80 requirements, but meets them at SG60.
Condition	By the Year 4 surveillance audit, the client is required to demonstrate that the SG80 requirement of SIf is met, specifically through demonstrating the following:

	SIf: "*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.*"
Condition deadline	Certificate anniversary date 2025
Exceptional circumstances☐	*N/A*
Milestones	*Year 1 (certificate anniversary 2022): The fishery will provide a plan to ensure there is a review of alternative measures.* *Year 2 (certificate anniversary 2023): The fishery will provide evidence that the plan is in place and underway on schedule.* *Year 3 (certificate anniversary 2024): The fishery will provide evidence that the plan is underway on schedule* *Year 4 (certificate anniversary 2025): The fishery will provide evidence that there has been a review of alternative measures to reduce unwanted mortality of pikeperch and any measures revealed in this review will be implemented if practicable. The score is expected to change to 80.*
Verification with other entities	*Include details of any verification required to meet requirements in FCP v2.2 7.19.8.*
Complete the following rows for reassessments.	
Carried over condition ☐	*No*
Related condition ☐	*No*
Condition rewritten ☐	*No*

Table 33. Condition 2 UoA 1 (perch)

Performance Indicator	1.2.2 (Uncertainties)
Score	*75*
Justification	At present, it is accepted for the Irikla reservoir that the predicted catch of perch can reach up to 50% of the ichthyomass of the commercial part of the stock (Nebolsina, 1980; Nebolsina et al., 1986; Yermolin, 2014). Research by scientists from the Saratov branch of VNIRO has shown that when catching from 35 to 50% of the commercial stock of perch, there are no significant changes in the ecosystem of the reservoir, however, with a catch of more than 50%, a rejuvenation of the spawning stock can be observed, which will be a harbinger of changes with a further increase in intensity of catch. In 2019-2020 some rejuvenation of the perch population has been observed (interview with I. Belyanin).A hypothetically significant change in the ichthyocenosis (reduction in the feeding area of perch, simplification of the structure of ichthyocenosis) will be traced when more than 60% of the commercial stock is removed (Yermolin, 2014). The catches of commercial fishermen monitored during the fishing season never exceed the established values of the recommended available catch. However, together with the catches of amateur fishermen, which are taken into account only by the end of the year, the total catch of perch has increased in recent years, reaching 56.8% of the commercial stock in 2020. In the context of the increased fishing load (both, commercial and recreational) in recent years and a simultaneous magnification in the natural mortality of perch due to the observed growth in the number of the main consumers of perch - pike and pikeperch, there is a risk of a decrease in the stock of perch in the Iriklareservoirin future.

	Thus, it is not clear that the HCRs are likely to be robast to the main uncertainties to meet both the SG80 and SG100 levels.
Condition	By the Year 4 surveillance audit, the client is required to demonstrate that the SG80 requirement of SIb is met, specifically through demonstrating the following: SIb: "*The HCRs are likely to be robust to the main uncertainties.*"
Condition deadline	Certificate anniversary date 2025
Exceptional circumstances☐	*N/A*
Milestones	*Year 1 (certificate anniversary 2022): The fishery provides a plan to demonstrate that HCRs are robust to the main uncertainties (no score change).* *Year 2 (certificate anniversary 2023): The fishery provides evidence that the plan is underway and on schedule (no score change).* *Year 3 (certificate anniversary 2024): The fishery provides evidence that the plan is on schedule (no score change).* *Year 4 (certificate anniversary 2025): The fishery provides evidence that the HCRs in the pikeperch UoC are likely to be robust to the main uncertainties (score change to 80).*
Verification with other entities	*Include details of any verification required to meet requirements in FCP v2.2 7.19.8.*
Complete the following rows for reassessments.	
Carried over condition ☐	*No*
Related condition ☐	*No*
Condition rewritten ☐	*No*

9.6 Client Action Plan

To be drafted at Public Comment Draft Report stage

The CAB shall include in the report the Client Action Plan from the fishery client to address conditions.

Reference(s): FCP v2.2 Section 7.19

9.7 Surveillance

Table 34. Fishery surveillance program

Surveillance level	Year 1	Year 2	Year 3	Year 4
e.g. Level 5	e.g. On-site surveillance audit	e.g. On-site surveillance audit	e.g. On-site surveillance audit	e.g. On-site surveillance audit & re-certification site visit
TBD	On-site audit	TBD	TBD	On-site audit

Table 35. Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
1	TBD 2021	TBD 2022	Around the anniversary date for the fishery.

Table 36. Surveillance level justification

Year	Surveillance activity	Number of auditors	Rationale
1	On-site audit	All on-site	On site, as the team was prohibited from conducting an on-site reassessment audit due to COVID and the team composition has changed

9.8 Harmonised fishery assessments

Table 37. Harmonized scores for Principle 3.

Performance Indicator (PI)	Russian Lake Peipus perch and pikeperch (PCR, 2019)	Bratsk reservoir perch (Re-assessment, ACDR, 2021)	Lake Chany perch and pikeperch (ACDR, 2021)	Irikla Reservoir perch and pikeperch (Re-assessment CPRDR, 2021)
PI 3.1.1	**95**	**95**	**95**	**100**
PI 3.1.2	**85**	**80**	**85**	**85**
PI 3.1.3	**80**	**80**	**80**	**80**
Harmonized score		Scoring difference		

Table 38. 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 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) as the maximum differences in the scores of all fisheries for the respective PI do not exceed 5 points (i.e. 95-100 for PI 3.1 .1 and 80-85 for PI 3.1.2).

9.9 Objection Procedure– delete if not applicable

To be added at Public Certification Report stage

The CAB shall include in the report all written decisions arising from the Objection Procedure.

Reference(s):MSC Disputes Process v1.0, FCP v2.2Annex PD Objection Procedure