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Schleswig-Holstein blue shell mussel fishery

3rd Surveillance Report

Prepared for
Erzeugerorganisation Schleswig-Holsteinischer Muschelfischer e.V.

Certificate No: MSC-F-0072

MRAG Americas, Inc.
August, 2020

Conformity Assessment Body (CAB)	MRAG Americas
Assessment team	Amanda Stern-Pirlot and Julian Addison
Fishery client	Erzeugerorganisation Schleswig-Holsteinischer Muschelfischer e.V
Assessment Type	Second Surveillance

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1.1 List of Tables

2 Glossary

Abbreviation	Definition
CAB	Conformity Assessment Body
CFP	Common Fisheries Policy
CRs	(MSC) Certification Requirements
EU	European Union
KüFO	Küstenfischereiverordnung (Coastal Fisheries Decree)
LFischG	Landesfischereigesetz (State Fisheries Law)
LKN	Landesbetrieb für Küstenschutz, Nationalpark und Meeresschutz, Schleswig-Holstein (Schleswig-Holstein Agency for Coastal Defence, National Park and Marine Conservation)
LLUR	Landesamt für Landwirtschaft, Umwelt und ländliche Räume (State Agency for Agriculture, Environment and Rural Areas)
MEC	ME Certification Ltd
MEP	MacAlister Elliott & Partners Ltd
MELUR	Ministerium für Energiewende, Landwirtschaft, Umwelt und ländliche Räume (Ministry for Energy Transition, Agriculture, Environment and Rural Areas)
NABU	Naturschutzbund Deutschland e.V. (Nature and Biodiversity Conservation Union Germany)
PSA	Productivity Susceptibility Analysis
RBF	Risk Based Framework
SMA	Saatmuschelgewinnungsanlagen (artificial substrate spat collectors)
UoA	Unit of Assessment
UoC	Unit of Certification
VMS	Vessel Monitoring System
WWF	Worldwide Fund for Nature

3 Executive summary

This report contains the findings of the third surveillance cycle in relation to the Schleswig-Holstein blue shell mussel fishery. A surveillance audit was carried out remotely on 27 March, 2020, three weeks following the annual Muschelmeeting as specified in the Framework Agreement between stakeholders with interest in this fishery. The Muschelmeeting took place on 6 March 2020, and was attended by participants in the Muschelmeeting, detailed below.

As of this third surveillance audit, there were no open Conditions of Certification. The previous conditions, dates of closure and rescoring justifications remain appended to this report, though there have been no changes since the 2nd surveillance audit in 2019. New information was reviewed as part of this audit and discussions were held with relevant parties. There are no changes to the status of the fishery or Performance Indicator scores as a result of this audit.

MRAG Americas confirms that this fishery continues to meet the MSC Fisheries Standard and shall remain certified.

4 Report details

4.1 Surveillance information

Table 1. Surveillance information

1	Fishery name	
	Schleswig-Holstein Blue Shell Mussel Fishery	
2	Surveillance level and type	
	Level 4 – Remote audit	
3	Surveillance number	
	1st Surveillance	
	2nd Surveillance	
	3rd Surveillance	X
	4th Surveillance	
	Other (expedited etc.)	
4	Team leader	
	Ms. Amanda Stern-Pirlot will serve 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. MRAG Americas confirms that Ms. Stern-Pirlot meets the competency criteria in Annex PC for team leader as follows: • She has an appropriate university degree and more than five years' experience in management and research in fisheries; • She has passed the MSC team leader training; • She has the required competencies described in Table PC1, section 2; • She has passed the MSC Traceability training module; • She meets ISO 19011 training requirements; • She has undertaken two fishery assessments as a team member in the last five years, and • She has experience in applying different types of interviewing and facilitation techniques and is able to effectively communicate with clients and other stakeholders. In addition, She has the appropriate skills and experience required to serve as a Principle 2 & 3 assessors as described in FCP Annex PC table PC3. - MRAG Americas confirms that Ms. Stern-Pirlot has no conflicts of interest in relation to the fishery under assessment.
5	Team member
	Julian Addison. Julian Addison is an independent fisheries consultant specializing in shellfish and inshore fisheries. Until 2010 he served for 28 years at the Centre for Environment, Fisheries and Aquaculture Science (Cefas), which is the UK Government's marine science agency for environment, fisheries and aquatic science, most recently as Senior Shellfish Advisor. Relevant skills and experience include 30 years' experience of stock assessment and provision of management advice on shellfish and inshore fisheries, extensive shellfish research primarily in the field of crustacean population dynamics and assessment, extensive knowledge of the UK shellfish and inshore fisheries industry and liaison with fishers and other stakeholder groups, knowledge of shellfisheries management regimes worldwide, effective oral and written communication skills and winning of contracts under competitive tender. He has conducted MSC full assessments for the Newfoundland and Labrador snow crab fishery, the Ireland and Northern Ireland bottom grown mussel fisheries, both the Estonia and Faroe Islands Barents Sea cold water prawn fisheries, the Nephrops fishery in the Skagerrak and Kattegat, separate assessments for the Swedish, Danish and Norwegian Skagerrak and Norwegian Deep cold water prawn fishery, the Eastern Canada offshore lobster fishery, Limfjord mussel and cockle fisheries and Chile squat lobster fisheries. Peer reviews of MSC assessments in both Europe and North America of lobster, cold water prawn, and razorfish, cockle and scallop fisheries. MRAG Americas confirms that Mr. Addison meets the competency criteria in Annex PC for team members as follows: • He has an appropriate university degree and more than five years' experience in management and research in fisheries; • He has undertaken at least two MSC fishery assessments or surveillance site visits in the last five years; • He is able to score a fishery using the default assessment tree and describe how conditions are set and monitored. In addition, he has the appropriate skills and experience required to serve as a Principle 1 assessor as described in FCP Annex PC table PC3, and MRAG Americas confirms he has no conflicts of interest in relation to the fishery under assessment.

	- The whole assessment team collectively meets the requirements as described in FCP Annex PC table PC3.
6	Audit/review time and location
	-
	The surveillance audit was conducted remotely via teleconference on 27 March 2020.
7	Assessment and review activities
	The surveillance reviewed changes in science and since the previous audit. See section 6.1 for details.

4.2 Background

Update on the fishery since the 1st surveillance audit

Target stocks update

The original assessment team for this fishery determined in relation to Principle 1, that the fishery does not have an impact on the target stock and does not involve translocation (which is not permitted), hence Principle 1 was not scored. Although there are discussions underway concerning importation of mussel seed, there has not yet been an application made by the industry to request permission for this. Therefore, as of the third surveillance audit, there is no update provided on fishery impacts to the target mussel stocks. This fishery continues to meet all the MSC scope requirements for enhanced fisheries.

Ecosystem update

There was one initial condition of certification pertaining to Principle 2 for Performance Indicator 2.4.1 on the potential impact of the fishery on sub-tidal mussel beds which has been addressed by restricting mussel dredging and seed collection activities within the Framework Agreement. This condition was closed following the second surveillance audit, as it is evident that these spatial restrictions are monitored and enforced, and working, thus there is no longer any concerns in this regard.

Regarding minor species, assessed in the original assessment using the RBF, logbook records continue to be collected, reporting on catches of incidental species such as starfish and crabs, which remain generally low according to the Fisheries Administration. In total approximately 1-2 tons of starfish were captured and discarded in Hönumtief, and no significant crab bycatch was recorded, though ghost crab infestation on seed collection sites is consistently reported by the industry (Diederichs 2020; see Appendix 6.4). The major component of non-target catch is mussel shells and other stones/rubble.

There is still a particular focus on monitoring bycatches of Pacific oysters in the mussel fishery, as requested by NGO stakeholders in this fishery. Currently, bycatches of Pacific oysters remain low (roughly one bucket collected during an entire day of mussel fishing). It was noted that it is already required for fishermen to record Pacific oyster (and all other) bycatch in their logbooks, but due to specific NGO concerns, the industry continues to ensure they are explicitly reporting this and taking note of any trends. Industry representatives also reported no commercial interest in oysters. However, there is a concern that there is generally an increase in oysters in the area of the National Park, particularly colonizing old mussel sites. This is possibly due to climate change causing a lack of winter ice in these areas.

No new concerns, issues, or questions have arisen relative to ETP species interactions. The National Park Authority reported that enforcement rangers based in Sylt change their focus each year and due to other priorities, the ranger's focus has been elsewhere this year. Monitoring for disturbances to e.g. protected Eider ducks around culturing sites has been rare, and no disturbances have been reported.

Potential or actual changes to the management system

The “Framework Agreement” (Eckpunktevereinbarung zur Miesmuschelkulturwirtschaft im Nationalpark Schleswig-Holsteinisches Wattenmeer) which sets out arrangements for the sustainable management of the mussel fishery in the Wadden Sea National Park, has now been in place for almost three years. This agreement was made between the German state of Schleswig-Holstein, the mussel fishing industry association, and several nature protection groups, including WWF Germany and is a major addition to the fisheries management framework for this fishery.

The implementation of the Framework Agreement is subject to annual review. The meeting to discuss the third year’s implementation (Muschelmeeting) took place on the 6th of March, 2020. All stakeholders in attendance reported good cooperation within this framework. One example is an agreement between the parties to investigate possible changes to the areas identified for mussel culturing and seed collection based on newly allocated testing areas. Specifically for seed collection, there are new testing sites in the Hörnum Deep that began in March 2019.

Changes or additions/deletions to regulations.

There have been no changes in the regulations affecting the fishery since the previous surveillance audit.The only changes are in relation to new seed collection sites, as authorized through the agreement, with the total seed collection area still below the maximum level allowed under the Framework Agreement.

Personnel changes in science, management or industry to evaluate impact on the management of the fishery.

New staff at the Ministry of Energy, Agriculture, the Environment, Nature and Digitization include a new Head of the Department of Water Management, Marine and Coastal Protection, Mr. Dr. Johannes Oelerich who resumed in this post approximately one year ago. In addition, Ms. Janina Schrader joined the LKN SH in a support role pertaining to shellfish fishing.

There have been no changes in administrative or institutional arrangements since the fishery was certified.

Potential changes to the scientific base of information, including stock assessments.

There has been no change to the scientific base of information since the last surveillance audit. In the second surveillance audit, a research study on mussel larval distribution led by Jacob Capelle at the Wageningen University in the Netherlands was reported. Since then, the mussel fishery has discontinued participation in this research, as no “larvae of interest” were being collected (S. Leuschel pers.com). In addition, the Lister Deep research project as reported on during the 2nd surveillance audit was initiated in 2019, however there has been no substantive progress to report as of this audit. The first project meeting was held in April of 2020. The project is being led by Dr. Christian Buschbaum, a post doctoral researcher at the Alfered Wegener Institute for marine research (AWI).

Monitoring, Control and Surveillance Update

There were no official sanctions issued in the mussel fishery in the past year nor any reported incidents. Monitoring has consisted of review of ‘black box’ (VMS) and logbook data and some *in situ* monitoring via opportunistic vessel boardings wherein gear configuration and compliance with other fishery regulations is checked. Landing controls were also performed dockside, where landings are checked for compliance with regulations. Compliance is generally high within the fleet and no concerns were reported (M. Müller pers comm).

Traceability Update

There have been no changes since the previous audit affecting the traceability requirements for this fishery.

4.3 Version details

Table 2. – Fisheries program documents versions

Document	Version number
MSC Fisheries Certification Process	**Version 2.1**
MSC Fisheries Standard	**Version 2.0**
MSC General Certification Requirements	**Version 2.3**
MSC Surveillance Reporting Template	**Version 2.0**

5 Results

5.1 Surveillance results overview

5.1.1 Summary of conditions

Table 3. Summary of Condition

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
Add rows as needed	Add condition summary		Choose from: New / Closed / Ahead of target / On target / Behind target. If closed, indicate surveillance number when closed.	PI score from most recent assessment	PI score after this surveillance, or 'Not revised'.
1	See Table 5	2.4.1	**Closed 2nd Audit**	**70**	**95**
2	See Table 6	3.1.2	**Closed 2nd Audit**	**70**	**80**
3	See Table 7	3.2.2	**Closed 2nd Audit**	**65**	**80**

5.1.2 Total Allowable Catch (TAC) and catch data

Table 4. Catch data (this fishery does not operate with a TAC)

TAC	Year	**2019**	Amount	**NA**
UoA share of TAC	Year	**2019**	Amount	**NA**
UoA share of total TAC	Year	**2019**	Amount	**NA**

Total green weight catch by UoC	Year (most recent)	**2019**	Amount	**19,477 mt (culture plot harvest)**
Total green weight catch by UoC	Year (second most recent)	**2018**	Amount	**13,597 mt (culture plot harvest)**

5.1.3 Recommendations

Once the National Park Administration is capable of reviewing and analysing the black box data, the assessment team will specifically request a report on how they are able to use this data and whether it is sufficient for the purposes of ongoing direct monitoring and identification of emerging issues. The team may make further recommendations based on the results of this report.

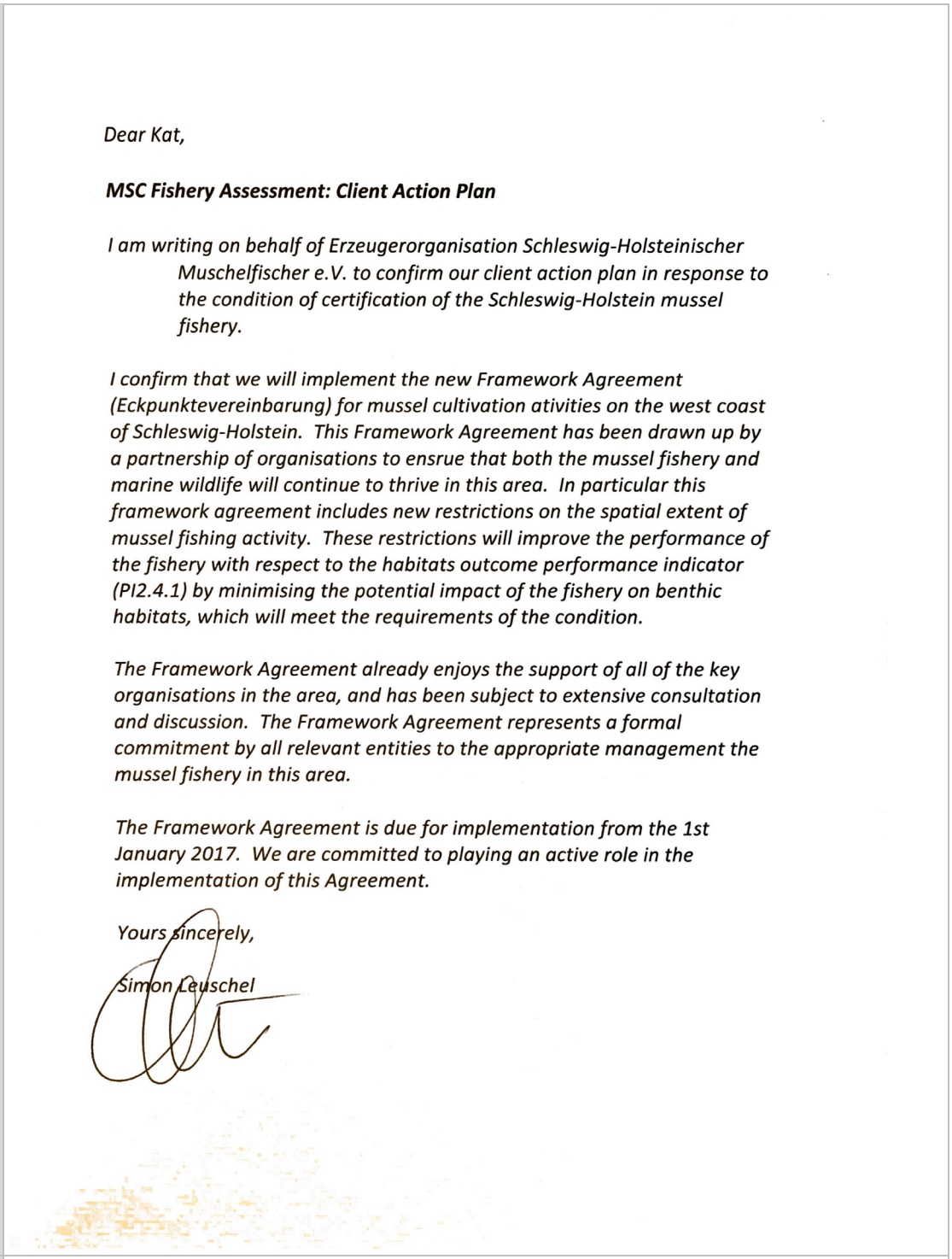
2020 Update: The National Park Administration is still developing its system to monitor the black box data in cooperation with the Fisheries Authority and mussel fishing industry. Accessibility to data is improving, and the parties are working together to make further improvements, for example in the timeliness of data transmission, and standardization of data formats.

5.2 Conditions

There were no open conditions as of the 3rd surveillance audit, and no new condition were raised. The following tables from the 2nd surveillance audit are included here for completeness.

Table 5. Condition 1

Performance Indicator	2.4.1 (scoring issue b for UoA 1)
Score	70
Justification	See MEC 2016 page 85.
Condition	There is some evidence that the historic footprint of mussel beds in the subtidal was considerably larger than it is now, and the long-term impact of the fishery may be part of reason for the decline. Although the mussel biomass is at least partly compensated for by the culture plots, Reise and Buschbaum (2015) note that the ecological value (biodiversity) of the culture plots may be lower relative to natural mussel beds. Reise and Buschbaum (2015) conclude that if the subtidal were not fished, the historical extent of subtidal mussel beds would regenerate (see Conclusion 10). Although this does not appear to have happened in existing closed areas, it will be better tested by the implementation of the Framework Agreement which provides for more extensive closed areas, including complete tidal basins. These have been selected in agreement with stakeholders (the National Park Authority, WWF). Overall, the team (following agreement with stakeholders) concluded that based on the current management system, while the fishery is 'unlikely' to cause serious or irreversible harm to VMEs (naturally-occurring and persistent subtidal mussel beds) it is not 'highly unlikely'. More extensive closed areas, such as those provided for in the Framework Agreement, would be required to meet the SG80 guidepost ('highly unlikely').
Milestones	By the end of the first year, more extensive subtidal areas will be protected from seed mussel fishing, either via the implementation of the Framework Agreement or via another means. This is to include comprehensive impact assessments for all components of the fishery and the reduction of culture plots to 1,700 ha, 250 ha of which can be used for SMAs.
Consultation on condition	The following letter by the client confirming commitment to the Framework Agreement comprises the action plan for this condition:



Dear Kat,

MSC Fishery Assessment: Client Action Plan

I am writing on behalf of Erzeugerorganisation Schleswig-Holsteinischer Muschelfischer e.V. to confirm our client action plan in response to the condition of certification of the Schleswig-Holstein mussel fishery.

I confirm that we will implement the new Framework Agreement (Eckpunktevereinbarung) for mussel cultivation ativities on the west coast of Schleswig-Holstein. This Framework Agreement has been drawn up by a partnership of organisations to ensrue that both the mussel fishery and marine wildlife will continue to thrive in this area. In particular this framework agreement includes new restrictions on the spatial extent of mussel fishing activity. These restrictions will improve the performance of the fishery with respect to the habitats outcome performance indicator (PI2.4.1) by minimising the potential impact of the fishery on benthic habitats, which will meet the requirements of the condition.

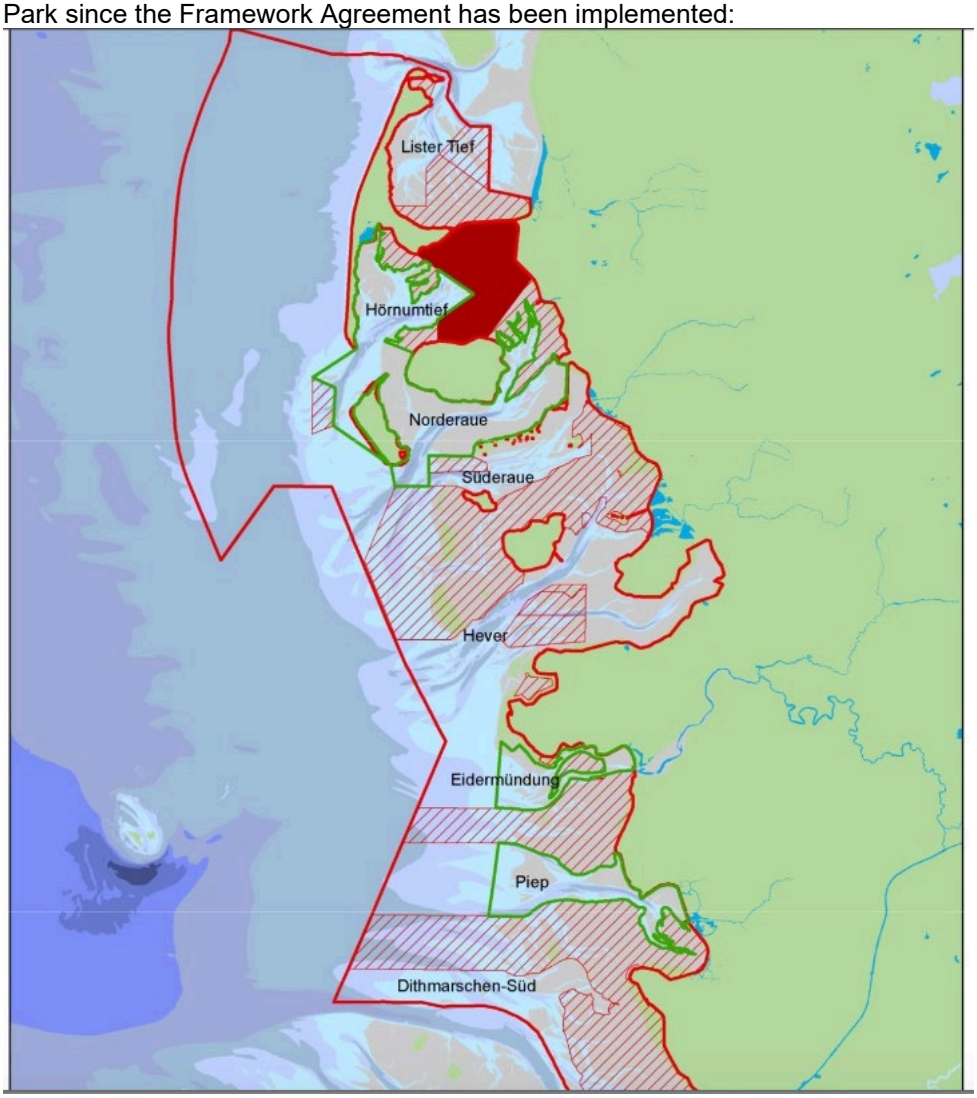
The Framework Agreement already enjoys the support of all of the key organisations in the area, and has been subject to extensive consultation and discussion. The Framework Agreement represents a formal commitment by all relevant entities to the appropriate management the mussel fishery in this area.

The Framework Agreement is due for implementation from the 1st January 2017. We are committed to playing an active role in the implementation of this Agreement.

Yours sincerely,

Simon Leuschel

Progress on Condition (Year 1)	The Framework Agreement is now implemented and the fishery has been operating accordingly during the 2017 and 2018 seasons. It includes the following restrictions (additional to those that have been part of the mussel program regulations previously): (i) No mussel fishery activities (culture plots, seed mussel fishery, SMAs) in Zone 1 of the National Park (ii) No mussel fishery activities (culture plots, seed mussel fishery, SMAs) in defined areas of Zone 2 of the National Park (see Figure 1). Reefs reported by MELUR cannot be fished (iii) Total size of culture plots is reduced to 1,700 ha (iv) 250 ha of this area can be used for SMA (v) Comprehensive environmental impact assessment for all components of the fishery

	The following figure shows how the mussel fishery has been constrained within the National Park since the Framework Agreement has been implemented:  **Figure 1. Mussel culturing and harvesting area of the fishery in Schleswig-Holstein under the Framework Agreement. Mussel fishing activity (spat collectors, wild seed harvest and on-growing plots) are permitted only inside the three areas outlined in green. This map has been reproduced from the Public Certification Report (ME Certification Ltd 2016).** Regarding the requirement for a comprehensive impact assessment, this had been done in order to designate the areas open to fishing and seed collection pictured in the above map. However, at the site visit it became apparent that there is no intent to repeat such an impact assessment to assess the effectiveness of the new fishing restrictions. The assessment team therefore would recommend that the fishery, National Park, and other eNGOs work together to establish a means of measuring the success of restricting fishing to these areas according to the sustainability objectives laid out in the Framework Agreement and elsewhere.
Progress on Condition (Year 2)	Fishing has continued only in the restricted areas as laid out in the Framework Agreement and presented in Figure 1, above, through the 2018 and into the 2019 season. In relation to ongoing research to determine the affect of restricting mussel fishing to these areas, there has been a project initiated by the Alfred Wegener Institute in collaboration with the National Park Authority as described in the background section of this report. The Fisheries Administration and other parties to the Framework Agreement have indicated high confidence that the fishery is complying with these area restrictions and thus it is now highly unlikely that the fishery is reducing the structure and function of commonly encountered and VME habitats to the point where there would be serious or irreversible harm and the SG80 is met.

Status	This condition is **closed** following the second surveillance audit. PI 2.4.1 has been rescored in section 5.4 of this report.
Additional information	N/A

Table 6. Condition 2

Performance Indicator	3.1.2
Score	75
Justification	A consultation process exists to engage fisheries and environmental administrations, fishermen and NGOs. Relevant information is regularly collected personally and through the Blackbox system. Licences for seed fishery and culture plots are allocated for several years. Both NGOs and National Park administration have never fully agreed however with the decisions of the fishery administration because they believe that the impact of the mussel fishery has been underestimated. Lately, the cooperation between all parties has been strengthened by the signature of a framework agreement between the State Government, the PO “Schleswig-Holstein Mussel Fishermen” and five NGOs where further reductions of fishing possibilities have been agreed and offering long term stability for the fishermen. There was, however, no roundtable where management decisions are presented and all stakeholders can participate in the discussion. The Fisheries Administration took the decision on the basis of its own considerations and views on the legal situation, which however was challenged both by the Nature administration and by the NGOs. This dispute finally resulted in the Framework Agreement.
Condition	The management system must include consultation processes that regularly seek and accept relevant information, including local knowledge. The management system must demonstrate consideration of the information obtained.
Milestones	By the end of the first year, the Framework Agreement will have been implemented resulting in an improvement of the consultation process to allow the building of mutual trust. Annual meetings of all parties will serve to discuss the success or possible problems in the implementation of the Agreement.
Consultation on condition	See above under condition 1
Progress on Condition (Year 1)	The first annual “Muschelmeeting” under the Framework Agreement took place on 26 March, 2018. This was the first opportunity to demonstrate the new consultation process with respect to stakeholder involvement with management decisions is working.
Progress on Condition (Year 2)	The second annual Muschelmeeting to review and discuss the implementation of the Framework Agreement took place on 30 April, 2019. All stakeholders in attendance reported good cooperation within this framework. One example is an agreement between the parties to investigate possible changes to the areas identified for mussel culturing and seed collection based on newly allocated testing areas. Specifically for seed collection, there are new testing sites in the Hörnum Deep that began in March 2019.
Status	This condition is **closed** following the second surveillance audit. PI 3.2.1. has been rescored in section 5.4 of this report.
Additional information	N/A

Performance Indicator	3.2.2.
Score	65
Justification	The decision-making process can react in a timely manner on serious and other important issues but does not always from the NGO's and National Park administration's view. The relevant legislation (National Park Law, German Federal Nature Conservation Law, Natura 2000, all of these being the basis for the Framework Agreement and the subsequent new Mussel Programme), when finally implemented, provide for long-term measures restricting the fishery (closed season, closed areas, size of culture plots, minimum residence period on culture plots, etc.). The fishery can be restricted immediately if for instance large reefs (> 100 ha) in the subtidal zone are discovered. But there is still a lack of information especially in the subtidal areas. Therefore, it can't be assumed that the process responds to all issues. Decisions taken with regard to licenses for the seed mussel fishery or the allocation of culture plots or other fishing methods is made available to the PO and the concerned fishermen. These decisions are, however, not publicly announced. The formal objections of NGOs and National Park administration against some of the decisions were only partly successful. A court case against one of the decisions (translocation from outside the Wadden Sea of Schleswig-Holstein) was successful. Monitoring results are available in the competent Ministry on request and are partly published in annual reports. The PO and other stakeholders are informed on the outcome. As a result of the Framework Agreement, in the future there will be also access of the National Park administration to the black box data. There is, however, no formal reporting to all stakeholders.
Condition	There must be established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. Decision-making processes must 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. Information on the fishery's performance and management action must 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.
Milestones	By the end of the first year, the Framework Agreement will have been implemented. This will improve the exchange of information by guaranteeing the access of the National Park administration to the black box data.
Consultation on condition	See above under Condition 1
Progress on Condition (Year 1)	The Framework Agreement has been implemented as scheduled, and includes provisions for delivering information (including "black box" data) to the National Park administration. It was reported at the site visit that the National Park administration does indeed have the information needed but has not yet worked out a good way to assimilate it given the limitations of their software and hardware. The data currently come from the industry via the Obere Fishereibehörde rather than directly from the fishery. Questions remain concerning how often the data can be delivered (e.g. should it now come directly from the fishery) and whether/how it is filtered and disseminated once received. Currently the data are only from the larger vessels and not the smaller ones. The National Park administration will use the data to see where fishing is happening (monitoring) and possibly other analyses once they have determined the best way to process it. The assessment team will continue to monitor the progress on this aspect of implementation of the Framework Agreement.
Progress on Condition (Year 2)	Key to the ability of decision-making processes to respond serious and other important issues, and information availability on the fishery and management performance, as required of the SG80 in this fishery, the National Park Administration as a key party to the

	Framework Agreement must have access to the so called “black box” (VMS) data provided by the fishery to the Upper Fisheries Management Administration. As confirmed in a stakeholder submission from Ms. Britta Diederichs (National Park Authority), the National Park Administration has available all data from July 2017 through February 2019, as provided by the Upper Fishery Administration approximately every two months. There is currently one facility for the evaluation of this data in the Upper Fisheries Administration, which is used for monitoring and control within the fishery. However, for technical reasons, the National Park Administration has not yet been able to access the data in a usable format. They are still working on this in collaboration with the mussel fishing industry and nature conservation authorities, but since they have not yet been able to view the data, they cannot yet tell if it provides them with sufficient information to detect “serious or other important issues” within the National Park, to which the decision-making processes are required to respond per MSC requirements. During the 2019 annual Muschelmeeting, the responsible department head of the German Ministry, Dr. Ing. Johannes Oelerich, acknowledged their role and responsibility in solving the data accessibility issue within the National Park Administration and hopes to find a solution in a timely manner. It is evident that the industry (mussel producer organization) is fulfilling its obligations with respect to making this black box data available to the National Park (as required of the SG80 scoring issue d), but it is yet to be seen whether this data enables further detection of serious or other important issues, as stated above. It is also evident that the current decision-making processes, particularly with the successful establishment of the annual roundtable under the Framework Agreement, are able to respond to serious or 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, as required of the SG80. The question does remain as to whether the black box data, once usable by the National Park Administration, will reveal any further issues that require attention. However, if it does, evidence suggests that the decision-making processes will be able to respond as required. In summary, the industry has fulfilled their responsibilities by providing the black box data, and the decision-making processes have evolved under the Framework Agreement to being sufficiently responsive.
Status	This condition has been closed following the 2nd annual audit.
Additional information	There was disagreement among stakeholders as to whether this condition should be closed before the National Park Authority has the ability to analyse the available data. It is the view of the assessment team that there has been sufficient progress to close the condition now, as described above. However, the team has added a recommendation related to this condition, for the continued cooperation among parties toward making the data accessible to the NPA. In addition, the team will review at the next annual audit (assuming the data will be accessible in the meantime) the findings of the National Park Authority relative to the usefulness of the data and any detection of issues arising from its analysis.

5.3 Client Action Plan

There have been no changes to the client action plan.

5.4 Re-scoring Performance Indicators

The following performance indicators were rescored as a result of the second surveillance audit (2019) and the following tables remain in the report for completeness. Changes to the original scores and rationales from MEC (2017) are indicated by ~~strikethrough~~ (deletions) and red text (additions).

Evaluation Table for 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(s) covered by the governance body(s) responsible for fisheries management.		
Scoring Issue		*SG 60*	*SG 80*	*SG 100*
a	Commonly encountered habitat status			
	Guidepost	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?	Y	Y	Y – UoA1 N – UoA2
	Justification	Based on the evidence provided to the assessment team during the site visit, the naturally-occurring habitats have been identified as subtidal sand and mud flats and ephemeral subtidal seed mussel beds. These were identified in accordance with the normative text and guidance in MSC CRv2.0, which indicate that only those parts of the UoA supporting VME habitats should be considered as such. The remainder of the area is therefore assessed here as “commonly encountered habitats”. The ephemeral mussel beds are the only likely VMEs to be encountered. No evidence was presented demonstrating the presence of Sabellaria reefs or seagrass beds. Video footage of the seabed area under the suspended cultures, was provided by Maarten Ruth of the Landesamt für Landwirtschaft, Umwelt und ländliche Räume Schleswig-Holstein, clearly showing the habitats present. The assessment team note that WWF (submission via email on 23rd September 2016) consider that the entire Wadden Sea is a VME by virtue of its designation as a National Park, Natura 2000 and World Heritage Site. The team has considered the criteria for identifying VMEs set out in the MSC Fisheries Certification Requirements version 2.0 and its guidance document, as well as the MSC Interpretations website (https://www.msc.org/certifiers/msc-interpretation-website) for clarity on the MSC’s intention of the VME definition. This has been discussed by the team in section 3.4.4. In relation to habitat impacts, there are three issues to consider: the impact of the mussel dredge on habitats while fishing for seed mussels, the impact of the seed collectors on habitats underneath the collectors, and changes in habitat on the culture plots. The Wadden Sea is a dynamic intertidal habitat, composed largely of sand and mudflats intersected by tidal channels which originate from the channels between the barrier islands (Figure 8 and Figure 9). The channels and sandbanks may move from year to year, or following a big storm.		

		Impacts from fishing gear (UoA1 and UoA2): Shallow sand and mud habitats in general are not very sensitive to damage from towed fishing gear, since natural disturbance rates are high (particularly in tidal channels), and recovery rates of habitats are correspondingly high. The team concluded on this basis that the fishery is 'highly unlikely' to cause serious or irreversible harm. There are various sources of evidence to support this conclusion – for example, Collie et al., (2000) predict a recovery time of sand habitats from trawling and dredging of on average ~50 days; there are a wide range of such studies in the literature. SG100 is met. Ephemeral seed mussel beds are – ephemeral; being lost to predation or to winter storms within the first year. The beds tend to consistently re-appear in the same areas but not every year and with variable biomass from year to year. Fishing does not remove all the biomass from the beds. It is not known whether fishing speeds up or reduces the rate of overall loss of these seed beds; this probably varies in different cases. Overall, it is clear that since the habitat lasts for only a few weeks or months in any case, fishing cannot logically reduce structure and function to the point of serious or irreversible harm. SG100 is met. Impacts from seed collectors (UoA2): Seed collectors may have two impacts: i) bio-deposition on to the habitats below (sand or mud) and ii) creation of a novel habitat (hard substrate in the water column). The impact of seed mussel collectors on the seabed has been evaluated in the Netherlands where it was found that there was little difference between the areas inside and outside the seed collectors, except for an increase in the abundance of macrofauna (crabs, starfish and others) under the collectors associated with clumps of mussels which had fallen off. On this basis, serious or irreversible harm from bio-deposition is highly unlikely, with evidence, so SG100 is met. In relation to the creation of new hard substrate, recent species inventories from the Lower Saxony Wadden Sea (described in Gittenberger 2015) have showed that a large number of species, including non-native species not previously known from the area, are present in the small areas of hard substrate available around the Wadden Sea. These inventories focused particularly on harbours, floating pontoons and rocks put in place for coastal protection. The team considered that on this basis, the seed collectors are not creating a new habitat – such anthropogenic habitats are already widely distributed in the area. On this basis, SG80 is met. There is not 'evidence', however, as to the full range of species which might settle on seed collectors in this area (as yet), so SG100 is not met. Impacts on culture plots: The sediment substrate in mussel culture plots is known to be significantly altered when mussels are relaid, because of the generation of 'mussel mud' (organically-enriched fine mud from mussel faeces and pseudo-faeces). This creates a different habitat which supports a community of species typical of organically-enriched mud rather than sand. There is evidence from other areas where mussels are relaid on sandflats (e.g. the Menai Strait; Beadman et al. 2004) that the diversity of this community declines as mussel density (biomass per unit area) increases, because of the increasing tendency for the sediment to become anoxic. However, the impact on natural habitats is confined directly to the footprint of the mussel lays and there is no evidence of any effects propagating beyond the lays (Beadman et al., 2004). Given the life-history characteristics and low diversity of the natural community and the energetic nature of the environment, removal of the mussels most likely results in the restoration of a natural system relatively quickly (within weeks or months). On this basis, the team considered that the UoA is unlikely to cause serious or irreversible harm, and there is some evidence; SG100 is met.

b	VME habitat status			
	Guidepost	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?	Y	~~N~~ Y – UoA1 Y - - UoA2	N – UoA1 Y – UoA2
	Justification	Relevant VME habitats (in the sense defined by the MSC) in the UoA area are 'biogenic reefs' (long-term persistent subtidal mussel beds; defined as those with >1 year class present). These may be impacted by fishing gear, but seed collectors and culture plots are not relevant here. Hence for UoA2, since there is no interaction with VMEs, SG100 is met by default. The rationale below applies to UoA1. The key question is the extent to which the subtidal seed beds on which the fishery operates might naturally persist to become permanent mussel beds ('biogenic reefs' in Natura 2000 parlance) and the extent to which fishing on these beds prevents that from happening. Mussel seed that settles in the spring-autumn period is usually found to be gone, either quite quickly (within a few weeks) or at least by the following spring (see 'stability map' made for the Lower Saxony Wadden Sea; van Stralen, 2015). For the SH Wadden Sea, Nehls et al. (2011) describe a sublittoral seed bed where settlement which occurred during 2003 was not fished and was all removed by starfish by the end of 2004; the same reportedly occurred in an abandoned culture plot. The overall conclusion of this monitoring report is that the development of stable subtidal mussel beds in the area is not very likely. This view of subtidal seed beds is largely accepted (by management authorities as well as fishers) in other, similar ecosystems with similar fisheries (e.g. Morecambe Bay, UK; Mandy Knott, Chief Scientist, NW IFCA, pers. comm.; see also PCR Menai mussels and PCR Exmouth mussels), although in some areas winter storms play at least as much of a role as starfish. The experience of the team from two broadly similar (although smaller) sites in the UK suggests that it is optimistic to suppose that subtidal mussel 'reefs' are often able to develop, even in the absence of fishing. Nevertheless, Reise and Buschbaum (2016) use historical data to infer that subtidal mussel beds were more extensive in the Schleswig-Holstein Wadden Sea than they are now, and hypothesise that the fishery has played a significant role in the reduction of their footprint. They also note that these natural beds may be more diverse and species rich than the beds formed by the culture plots. Furthermore, mapping carried out by the National Park authority since 2009 (Figure 9) suggests that some persistent mussel beds may still be present. This mapping is carried out by side scan but also ground-truthed via grab samples and in some cases towed video. At the site visit, the team did not find consensus among stakeholders (on the management side) as to whether these 'reefs' were in fact subtidal mussel beds or not, and a detailed description of mapping methods is not available to allow the team to make a judgement. The team ~~has~~ therefore proceeded with scoring on the assumption that such mussel beds may be present and may be impacted by the fishery. The Dutch research project 'PRODUS' addressed the issue of fishery impact on subtidal mussel beds directly (Smaal et al., 2013; van Stralen et al., 2013; Craeymeersch et al.,		

2013; Drent and Dekker, 2013a and b; Jansen et al., 2013; Glorius et al., 2013; van Bemmelen et al., 2013). This research found no impact of the autumn fishery on subsequent biomass and persistence of mussel beds, nor of any fishing on spatfall, but a medium-term (up to 2 years) effect of the spring fishery on subtidal beds which had persisted through the winter.

Under the National Park zoning and the Mussel Programme, the fishery only operates in certain parts of the subtidal, hence any seed beds which form in the other areas will be left unfished, and the competing hypotheses will therefore be able to be tested directly in the future. The Framework Agreement has provision for the closures of any persistent mussel beds, even in fished areas (beds with >1 year class present). The location of such persistent mussel beds forms part of the ongoing appropriate assessment (as agreed in the Framework Agreement) and the outcome of this assessment was translated into management under the Framework Agreement. ~~the Framework Agreement states that the outcome of this assessment will be translated into management~~. Specifically, unless major impacts on the feature from fishing can be ruled out, the fishery ~~will be~~ has been excluded from this area, and there is provision for compensation if required.

~~Weighing up the balance of existing evidence, and~~ The Framework Agreement in which mussel fishing, seed collecting and culturing areas have been further restricted and agreed by all parties has been in place for more than two seasons. The Fisheries Agency and other parties to the Framework Agreement indicate no concerns with industry compliance with these area restrictions, and VMS data exists to confirm compliance. ~~considering in particular that the fishery may only operate in part of the total area under the existing rules, the team considered overall that the fishery is 'unlikely' to cause serious or irreversible harm to these habitats. SG60 is met.~~ The results of PRODUS suggest that at worst, there may be a short-medium term impact (lasting up to ~2 years) on mussel biomass on some of the fished beds, particularly from the springtime fishery. Furthermore, the management system allows for any damage to be evaluated and if necessary mitigated in the future by a change in management (exclusion from the area). Nevertheless, there is some evidence that the historical impact of the fishery may have been more severe than previously thought. Reise and Buschbaum predict that in the absence of the fishery, natural mussel beds would spread back to the subtidal – in other words, they predict that this harm is not irreversible, and this can now be tested. In collaboration with the National Park Authority, the Alfred Wegener Institute has begun such a study in 2019. Results of this study may contribute to 'evidence' as required of the SG100 when they are available. ~~but this cannot be tested until the implementation of the Framework Agreement~~. Based on this assessment, as well as the agreement with stakeholders and the client during the 2nd surveillance audit in 2019, it can therefore be considered highly unlikely that the mussel fishery reduces the structure and function of VME habitats to the point of serious or irreversible harm, and the SG80 is met for UoAs 1 and 2. (~~Tönning, 8th September, 2016), the team concluded that until the Framework Agreement is implemented, after which large areas of the subtidal will be closed for seed mussel fishing, SG80 is not met for VMEs for UoA1.~~

~~Note: The assessment team have considered the point of view of WWF that the shrimp fishery is using the complete subtidal (see http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF-Bericht-Wo-die-Krabben-gefischt-werden-kleine-Fassung.pdf) except culture plots and rope installations. Therefore there is a combined impact of both the seed mussel fishery and the shrimp fishery on the habitats where seed mussels are fished.~~

~~The team note that the WWF report shows the area fished by shrimp vessels over a 6 year period, which does indeed cover the entire subtidal area. It is also noted that shrimp fishing gear is not designed to catch seed mussels or to damage mussel beds. This evidence,~~

		~~coupled with the evidence that seed mussel beds have been a recurring feature of the UoA throughout a period of time when there has been both shrimp trawling and seed mussel fishing, supports a view that the combined effect of both seed mussel dredging and shrimp trawling is unlikely to cause serious or irreversible harm to seed mussel beds, justifying a score of 60 for UoA1.~~ ~~A condition of certification has been generated in response to the concerns raised about habitat impacts during the assessment process.~~		
c	**Minor habitat status**			
	Guidepost			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?			Y
	Justification	The fishery is limited in where it can operate at present ~~(and will be further restricted under the Framework Agreement)~~ and its overall footprint is small. The team did not identify any minor habitats – SG100 is met by default.		
References		H&S Consultancy, 2014; Beadman et al., 2004 ; van Stralen, 2015; Nehls et al., 2011; Collie et al. 2000; Gittenberger 2015; Smaal et al. (2013); van Stralen et al. (2013); Jansen et al. (2013); Glorius et al. (2013); Craeymeersch et al. (2013); van Bemmelen et al. (2013); Drent and Dekker et al. (2013a and b); MEP, 2012; MEP, 2016; Framework Agreement and associated map (Germany, 2015); Reise and Buschbaum, 2016. M. Müller pers. Comm 2019.		
OVERALL PERFORMANCE INDICATOR SCORE:				**~~75~~ 95 (UoA1) 95 (UoA2)**
CONDITION NUMBER:				**1 (closed 2019)**

Evaluation Table for PI 3.1.2 – Consultation, roles and responsibilities for UoA1 and UoA 2

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			
	Guidepost	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?	Y	Y	N
	Justification	The management system for the fishery involves scientists, government, fisheries managers and stakeholders in a consultative process. The roles of all parties in all areas of responsibility are defined in the valid legislation, particularly in the State Fisheries Law and the National Park Law. In addition, in 2006 the State Ministry of Agriculture, Environment and Rural Areas adopted the Mussel Programme Schleswig-Holstein Wadden Sea where the roles and responsibilities of all concerned are described in detail and 2011 the State Government has signed a contract under public law with the PO and the fishing companies where the framework for the management is defined. However, the NGOs challenged this view and consider the process to be not legally valid, as it – among other issues – did not include an appropriate impact assessment as required under the Natura 2000 directives and did not include a full participation of NGOs as also required. SG 80 is therefore met. Following the implementation of the Framework Agreement this issue will be solved.		
b	Consultation processes			
	Guidepost	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?	Y	~~N~~ Y	N
	Justification	There exists a consultation process engaging fisheries and environmental administrations, fishermen and NGOs. Relevant information is regularly collected personally and through the Blackbox system. Licences for seed fishery and culture plots are allocated for several years.		

		Both NGOs and National Park administration ~~have never fully agreed~~ previously had not always agreed with the decisions of the fishery administration because they believe that the impact of the mussel fishery has been underestimated. Lately, the cooperation between all parties has been strengthened by the signature of a framework agreement between the State Government, the PO "Schleswig-Holstein Mussel Fishermen" and 5 NGOs where further reductions of fishing possibilities and improved protection of the National Park have been agreed and offering long term stability for the fishermen. The annual "Muschelmeeting" constitutes a roundtable where operations and management decisions under the Framework Agreement are reviewed by all parties. During this meeting, the effectiveness and practicality of management measures and concerns among parties are discussed and changes are made if agreed. As of June, 2019 there have been two such meetings and all parties involved report good cooperation. For example, at the April 2019 meeting, an agreement was made between the parties to investigate possible changes to the areas identified for mussel culturing and seed collection based on newly allocated testing areas. Specifically for seed collection, there are new testing sites in the Hörnum Deep that began in March 2019. ~~There was, however, no roundtable where management decisions are presented and all stakeholders can participate in the discussion. The Fisheries Administration took the decision on the basis of its own considerations and views on the legal situation, which however was challenged both by the nature administration and by the NGOs. This dispute finally resulted in the Framework Agreement.~~ Explanations on whether and how information has been used to reach a decision are not publicly disseminated, though minutes of the annual meetings are taken and distributed to participating parites. Therefore, 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. This meets the SG80 requirement. Because decisions and rationales are not disseminated publicly, the SG100 is not met. ~~Hence SG60 is met but SG80 is not met.~~		
c	Participation			
	Guidepost		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?		Y	N
	Justification	The exchange between the stakeholders, particularly between the Fisheries Administration and the PO seems to be on a high level. Opportunities exist for all interested parties to be involved in consultation processes. But the final decision is taken in the Ministry and not in a democratic vote. Participation is encouraged and facilitated through the annual Muschelmeeting. ~~but definitely not facilitated~~. SG80 is met but SG100 is not met.		
References		Germany, 1996; Germany, 1999; Germany, 2006; Germany, 2008; Germany, 2011; Germany, 2015; National Park website		
OVERALL PERFORMANCE INDICATOR SCORE:				~~70~~ **80**
CONDITION NUMBER:				**2 (closed 2019)**

Evaluation Table for PI 3.2.2 – Decision-making processes for UoA1 and UoA2

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			
	Guidepost	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?	Y	~~N~~ Y	
	Justification	There are ~~some~~ established decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives. Based on scientific advice and in exchange with the mussel fishery, the National Park Authority, the fishery administration, and the NGOs decisions are taken by the competent Ministry. The consultation and decision processes laid out in the Framework Agreement have thus far been successfully implemented to the satisfaction of all parties. ~~It is however controversial if all measures and strategies clearly aim at the long-term objectives fixed in the European and national legislation.~~ SG80 is therefore ~~not~~ met.		
b	Responsiveness of decision-making processes			
	Guidepost	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?	Y	~~N~~ Y	N
	Justification	The decision-making process can react in a timely manner on serious and other important issues ~~but does not always from the NGO's and National Park administration's view~~. The relevant legislation (National Park Law, German Federal Nature Conservation Law, Natura 2000, all of these being the basis for the Framework Agreement and the subsequent new Mussel Programme)~~), when finally implemented~~, provide for long-term measures restricting the fishery (closed season, closed areas, size of culture plots, minimum residence period on culture plots, etc.). The fishery can be restricted immediately if for instance large reefs (> 100 ha) in the subtidal zone are discovered. The mussel fishery manager within the Fisheries Administration is satisfied that the information available to him through surveillance activites (e.g. black box data) is sufficient to identify emerging issues within the fishery. The National Park Authority is still not able to access the blackbox data due to technical reasons, but it has been made available by the industry for direct analysis by the National Park. It is clear that decision-making processes as currently operational under the Framework Agreement do 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 as required of the SG80. Because the National Park Authority has not yet been able to make use of the black box data, it is not clear whether it contains all information needed to identify all issues potentially needing a management response. Thus the SG100 is not met. ~~But there is still a~~		

		~~lack of information especially in the subtidal areas. Therefore it can't be assumed that the process responds to all issues. SG80 is not met.~~		
c	Use of precautionary approach			
	Guidepost		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		Y	
	Justification	The decision-process is based on the best information available supplied by the very efficient Blackbox system and the regular mussel monitoring. The lately signed Framework Agreement where i.e. the total culture plot area has been reduced beyond the requirements of the Mussel Programme clearly indicates that for the future the precautionary approach is the basis for all decisions. SG80 is met.		
d	Accountability and transparency of management system and decision-making process			
	Guidepost	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?	Y	Y ~~N~~	N
	Justification	Decisions taken with regard to licenses for the seed mussel fishery or the allocation of culture plots or other fishing methods is made available to the PO and the concerned fishermen. These decisions are, however, not publicly announced. The formal objections of NGOs and National Park administration against some of the decisions were only partly successful. A court case against one of the decisions (translocation from outside the Wadden Sea of Schleswig-Holstein) was successful. Monitoring results are available in the competent Ministry on request and are partly published in annual reports. The PO and other stakeholders are informed on the outcome. As a result of the Framework Agreement, the industry has made black box data available for direct analysis by the National Park Administration, demonstrating further that information on the fishery's performance and management action is available on request as required of SG80. There are two research projects that began in 2019 relevant to habitat impacts of the fishery, and distribution of mussel larvae. If either of these projects conclude with recommendations for the management of the fishery, it will be possible to test the consultation and information availability policies, and responsiveness of the management system at that time as well. ~~in the future there will be also access of the National Park administration to the black box data~~. ~~There is, however, no formal reporting to all stakeholders.~~ Reporting to key stakeholders under the Framework Agreement consists in part of a yearly "roundtable" meeting among parties to receive updates and new information on each year's mussel fishery as implemented under the Framework Agreement and discuss/agree any changes as needed. SG 60 and 80 are met, but SG100 is not met due to a lack of comprehensive formal reporting. ~~is met but SG80 is not met~~.		

e	Approach to disputes			
	Guidepost	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?	Y	Y	Y
	Justification	The management system or fishery acts proactively to avoid disputes. The best example for this is the lately signed Framework Agreement between the Ministry, the PO and 5 NGOs. This agreement has ended a long lasting conflict between the undersigned concerning the impact of the mussel fishery on the National Park's eco-system. SG100 is met.		
References		Germany, 1999; Germany, 2006; Germany, 2011; Germany, 2015; National Park website		
OVERALL PERFORMANCE INDICATOR SCORE:				~~**65**~~ **80**
CONDITION NUMBER:				**3 closed in 2019**

6 Appendices

6.1 Evaluation processes and techniques

6.1.1 Site visits

The surveillance audit process as defined in the MSC Fishery Certification Process version 2.1 was followed in this audit.

Information supplied by the clients and management agencies was reviewed by the assessment team ahead of the onsite 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 from the full assessment were informed of the visit and the opportunity to provide information to the auditors in advance of, or during, the site visit. The meeting was held three weeks following the annual Muschelmeeting among parties to the Framework Agreement. We received no submissions in advance of the site visit.

The audit visit was held remotely via teleconference on 27 March 2020.

The following participants were in attendance:

Name	Affiliation
Amanda Stern-Pirlot	MRAG Americas, Assessment team
Simon Leuschel	Client representative
Milan Mueller	Fishery Manager, Fisheries Administration
Hans-Ulrich Rösner	Wattenmeerbüro, WWF Deutschland
Britta Diederichs	Landesbetrieb für Küstenschutz, Nationalpark und Meeresschutz Schleswig-Holstein
Janina Schrader	Landesbetrieb für Küstenschutz, Nationalpark und Meeresschutz Schleswig-Holstein

The table below summarizes the agenda for the meeting, held on 27 March, 2020.

Time	Item	Lead	Supporting documents
08.00	Opening meeting	ASP	Submission by clients
08.15	Updates on fishery over the past year including changes to science, management, enforcement and Framework Agreement implementation	ASP	eNGO, National Park Fisheries Authority verbal updates. Draft minutes from the annual Muschelmeeting
Via email	Closing meeting with clients	ASP	
09.30	End of site visit		

6.1.2 Stakeholder participation

See above for participation by non-industry stakeholders in the surveillance audit. Stakeholders are clearly engaged in this fishery, particularly in the context of the collaboration afforded under the Framework Agreement. Stakeholders were aware and took advantage of opportunities to present issues to the Assessment Team ahead of, and during the audit.

6.2 Stakeholder input

There were no written stakeholder submissions received as part of this surveillance audit.

6.3 Revised surveillance program

Table 7. Fishery surveillance program

Surveillance level	2018	2019	2020	Late 2020 or early 2021
Level 4	On-site surveillance audit	Off-site surveillance audit	off-site surveillance audit (COVID)	On-site surveillance audit & re-certification site visit

Table 8. Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
4	September 2020 (note new certificate expiration is March 2022, as extended due to MSC's COVID derogation)	March 2021	It is efficient to time the surveillance audit with the annual Muschelmeeting of parties to the Framework Agreement and now corresponds with the anniversary date of the certificate due to extension afforded under MSC's COVID derogation.

6.4 Minutes of the 2020 annual Muschelmeeting

Jahresgespräch zur Miesmuschelwirtschaft im Nationalpark gemäß Muschelfischereiprogramm am 06.03.2020 in der Nationalparkverwaltung Tönning

Protokoll
(Stand 27.04.2020)

Teilnehmer
Herren Kuhbier, Ewaldsen, D. de Leeuw, Wagner, A. Leuschel, W. van de Plasse (Erzeugerorganisation, EO),
Frau Gaus, Herr Schultz, Herr Dr. Rösner, Herr Förster (Naturschutzverbände),
Herr Dr. Oelerich, Frau Knoke, Herr Olischläger (MELUND),
Frau Boley-Fleet, Frau Schrader, Frau Diederichs (Protokoll) (LKN.SH)

TOP 1 Begrüßung und Einführung
Herr Dr. Oelerich begrüßt die Anwesenden. Er berichtet, dass die Vertreter der Fischereiverwaltung kurzfristig absagen mussten, aber einen Bericht bereitgestellt haben. Frau Schrader wird als neue Kollegin in der Nationalparkverwaltung vorgestellt.
Herr Dr. Oelerich erinnert an den Anlass, dass gemäß Ziffer 3.7 des Muschelfischereiprogramms das MELUND jährlich zu einem Treffen einlädt, um die Erfolge oder etwaige Probleme in der Umsetzung des Muschelfischereiprogramms mit den Beteiligten zu erörtern. Es sollen Informationen (Daten & Fakten zu Muscheln und Muschelwirtschaft) ausgetauscht und Raum für Diskussionen und Meinungsaustausch gegeben werden.

TOP 2 Bericht der Nationalparkverwaltung zum Miesmuschelmonitoring
Der Vortrag der Nationalparkverwaltung (NPV) zum Miesmuschelmonitoring, vorgetragen von Frau Diederichs, ist in der Anlage 1 beigefügt. In dem Vortrag werden die Ergebnisse des Muschelbankmonitorings (Miesmuscheln und Austern) und die Änderungen der naturschutzrechtlichen Zulassungen seit 2017 (Testanlagen SMA) sowie die für 2020 angekündigten Änderungen (Kohärenzsicherung Kolkschutz Mittelplate und geplante Verlagerungen von SMA in 2020) auch anhand von Karten vorgestellt. Die Änderungserlaubnisse zur Umsetzung der Kohärenzsicherungsmaßnahme gemäß Planfeststellungsbeschluss Kolkschutz Mittelplate wurden allen Betrieben am Ende der Sitzung ausgehändigt.

In der Diskussion zum Monitoring wird nach den Ursachen für die Entwicklung der Muschelbänke im Dithmarscher Watt gefragt. Ein Zusammenhang mit der Zunahme der Auster im Gesamtgebiet des Nationalparks und dem Ausbleiben von Eiswintern erscheint wahrscheinlich als Ursache, dass alte Miesmuschelstandorte mit Austern besiedelt werden. Die Muschelfischer erkundigen sich, ob es nach Aufgabe der Muschelfischerei in bestimmten Gebieten eine Zunahme an Muschelvorkommen gebe. Ergebnisse hierzu liegen der NPV bisher nicht vor. Es wird auf das Projekt im Lister Tief verwiesen, das Ende 2019 gestartet ist. In dem noch laufenden Projekt soll die Entwicklung der aufgegebenen Muschelkulturbezirke im Lister Tief untersucht werden.

In der Diskussion zu den Erlaubnissen wird festgestellt, dass die Flächenbilanz von aufgegebenen zu neu beantragten Saatmuschelgewinnungsanlagen etwa gleichbleibt (in der Summe etwas weniger Fläche als zuvor). Die alten Anlagen werden vollständig zurückgebaut. Auf Basis der Erfahrung mit den Testanlagen werden gute Ergebnisse bei den neuen Standorten im Hörnumtief erwartet.

TOP 3 Bericht der Muschelfischer zum Muschelwirtschaftsjahr 2019
a) Berichtsformat
Als Einstieg erläutert Herr Olischläger, dass im Nachgang zum letzten Jahresgespräch zwischen Fischerei- und Naturschutzbehörden eine Berichtstabelle abgestimmt worden ist mit dem Ziel, die von den Fischern beigebrachten Informationen über die Jahre vergleichbar und nachvollziehbar zu dokumentieren. Grundlage ist eine Excel-Tabelle. Inhaltlich hat man sich dabei an den in den Vorjahren ausgetauschten Informationen und an den Nebenbestimmungen der Erlaubnisse orientiert.

Die einzelnen Betriebe haben die erste Spalte der Tabelle in Papierform erhalten, ausgefüllt und über Herrn RA Kuhbier an alle Beteiligten des Jahresgesprächs per Email vom 25.02.2020 übermittelt.

Über diese Berichtsform wurde intensiv diskutiert und folgendes festgehalten:

- Grundsätzlich wird eine „standardisierte" Berichtsform begrüßt (Excel-Format scheint geeignet).
- Die Betriebe sollten möglichst flächenscharf an die Behörden berichten. Die Behörden werden die Berichte und die darin enthaltenen betriebsspezifischen Informationen intern halten und weder den Verbänden noch den anderen Betrieben zugänglich machen.
- Den Naturschutzverbänden soll im Rahmen der Jahresgespräche eine nicht betriebsspezifische Zusammenfassung der Berichte präsentiert werden (z.B. Gesamtmenge angelandeter Konsummuscheln, Erntemenge von SMA, Situation mit Seesternen auf MKB, Bewuchs an SMA, Lageverschiebungen von SMA und MKB, Muschelvorkommen in anderen Tidegebieten, Muschelfraß durch Meeresenten und mögliche Konflikte).
- Die Behörden werden sowohl für die betriebsspezifischen Berichte der Muschelfischer als auch für die Zusammenfassung im Rahmen des Jahresgesprächs standardisierte Berichtsformulare erarbeiten und vorschlagen.

b) Bericht

Die Muschelfischer berichten, dass 2019 wirtschaftlich gesehen ein Erfolg gewesen ist. Es konnte wieder ein hoher Preis erzielt werden. Hierbei spielen vor allem der hohe Fleischgehalt der schleswig-holsteinischen Muscheln gegenüber anderen Anbietern und die Probleme der niederländischen Miesmuschelwirtschaft (z.B. „krankheitsbedingtes" Muschelsterben in der Oosterschelde) eine Rolle. Die hohen Einnahmen sind hilfreich, um die SMA-Investitionen sowie die Bemühungen zur Optimierung der Systeme (Anlage und Standorte) zu finanzieren. Sie geben Auskunft zu den einzelnen Bewirtschaftungsformen:

<u>Besatzmuschelfischerei:</u>
In 2019 hat keine Besatzmuschelfischerei im Nationalpark stattgefunden. Saatmuschelvorkommen sind den Muschelfischern von den Krabbenfischern nur in den „geschlossenen" Gebieten gemeldet worden.

<u>Muschelkulturbezirke (MKB):</u>
Im Jahr 2019 haben die Betriebe 19.477 Tonnen konsumreife Muscheln von den MKB geerntet.

Die Kontrolle hat gezeigt, dass der Befall der MKB mit Seesternen überwiegend gering gewesen ist. Ein MKB ist stark betroffen gewesen. Insgesamt sind 1-2 Tonnen abgefischt und im Hörnumtief / Vortrapptief über Bord gegeben worden.

<u>Saatmuschelgewinnungsanlagen:</u>
Detaillierte Informationen zu Anzahl und Erntemengen von Saatmuschelgewinnungsanlagen können im Bericht der Muschelfischer (s. Email vom 25.02.2020) nachgelesen werden. In der Gesamtschau wird festgestellt:

- Der Betrieb von SMA ist mit hohem Arbeits- und Finanzaufwand verbunden.
- Insgesamt sind im Jahr 2019 ca. 300 Systeme von ca. 1.000 genehmigten Systemen installiert gewesen.
- In der Summe waren die Anlagen sehr ertragreich (in der Antragsunterlage angenommener Ertrag: ca. 7,4 t pro Einheit; 2019: ca. 9,2 t pro Einheit). Die Erträge unterscheiden sich standortspezifisch allerdings mitunter stark.
- Es ist bisher schwierig bis unmöglich, von der geernteten Menge auf die dann später angelandete Menge zu schließen; ein Erfahrungswert lässt sich erst nach der Anlandung, also in einigen Jahren, ableiten.
- Die testweise Verwendung von sog. „Kuscheltauen" bei einigen Netzanlagen liefert sehr gute Larven-Ansiedlungs-Ergebnisse. Ein geeignetes Gerät für die Ernte ist aber bisher nicht gefunden worden. Zunächst wird bei den Netzanlagen weiter mit den „alten" Netzen gearbeitet.
- Im Gebiet der Piep gab es erhebliche Probleme bei der Verankerung der Pfähle. Der Untergrund war stellenweise sehr weich. Das Sturmtief „Sabine" (Anfang Februar 2020) hat einen erheblichen Sandabtrag bewirkt, wodurch es zum „Schiefstand" von Pfählen gekommen ist. Diese müssten nun gezogen und erneut

gesetzt werden. Es ist geplant längere Pfähle einzusetzen, für die ein neues Schiff angeschafft werden musste. Herr RA Kuhbier bittet, diese von Seiten der Muschelfischer unvorhergesehenen („morphologischen“) Schwierigkeiten bei der Auslegung der „100%-Regelung“ (zur Verlagerungsmöglichkeit von SMA) zu berücksichtigen (z.B. bei der Verlagerung von zwar beantragten, bisher aber nicht genutzten Flächen).

- Gebietsfremde Arten:
  - In der Datenlieferung der Muschelfischer wird durchweg ein Befall mit Gespensterkrebsen gemeldet.
  - Die Naturschutzverbände regen an, den Bewuchs von SMA aufgrund der z.T. schwierigen Artbestimmung von Experten (möglichst zweimal im Jahr) untersuchen zu lassen. Die Behörden sollen einen geeigneten Rahmen erarbeiten. Es besteht Einigkeit, dass in einem ersten Schritt innerhalb der nächsten zehn Tage Proben von SMA, die im Winter im Hörnumer Hafenbecken gelagert waren, genommen werden (Ergänzung im Nachgang: Probenahme in enger Abstimmung und Unterstützung der Muschelfischer am 16.03.2020 durch Mitarbeiter des AWI erfolgt).
- Winterlagerung SMA:
  - Die Naturschutzverbände fragen nach dem beim letzten Jahresgespräch diskutierten Stand zur Winterlagerung von SMA außerhalb des Wassers.
  - Die Muschelfischer berichten, dass eine Lagerung außerhalb des Wassers für die Langleinensysteme möglich ist und auch erfolgt. Für die Netzanlagen, die den Großteil der Anlagen ausmachen, ist dies aber so aufwendig, dass es quasi nicht möglich ist.
  - Nach Einschätzung der NPV decken die Zulassungen die akt. Winterlagerung von SMA im Wasser ab, weil die zulässige SMA-Gesamtanzahl bisher nur zu ca. 30 % ausgeschöpft ist. Steigt die Ausschöpfung, sollte aber nach Lagerungsmöglichkeiten außerhalb des Wassers gesucht werden, damit es keine Probleme mit einer Nebenbestimmung gibt, nach der die Trittsteinfunktion von SMA zur Ausbreitung gebietsfremder Arten zu minimieren ist (s. Kap. II.2.7.3 der Antragsunterlage von BioConsult SH von 2016).
  - Die vereinbarte Untersuchung des Aufwuchses an SMA kann helfen, die Situation besser einzuschätzen.

TOP 4 Daten zur Überwachung der Fischereitätigkeiten, Blackbox und Betriebstagebücher

Der Bericht der oberen Fischereibehörde (übermittelt von Herrn Momme) wurde von Herrn Olischläger vorgetragen (Anlage 2). Ergänzend zum Bericht der Muschelfischer berichtet er, dass die Muschelfischer in 2019 einen Erlös von 30,9 Mio. Euro erzielen konnten.

Zur Blackbox wird berichtet, dass insgesamt für 8 Fahrzeuge im Jahr 2019 an 38 Tagen keine Blackboxdaten vorlagen, was umgekehrt bedeutet, dass für mehr als 99% der Schiffstage Daten vorlägen. Bei den Geräten von 3 Fahrzeugen ist es zu Lücken bei der Übermittlung der Daten gekommen. Pumpen- und Windensensoren wiesen auf mehreren Fahrzeugen unregelmäßige Aktivitäten aus und mussten/müssen überprüft werden; teilweise liegt dies daran, dass die Pumpe ausgetauscht und der Sensor anschließend nicht wieder eingerichtet wurde. Nach wie vor treten zeitweise Schwierigkeiten auf, Daten aus NL-Gewässern zu empfangen (vermutlich Sache des Mobilfunkvertrages / Roaming). Insgesamt ist aus Sicht der Fischereibehörde das bestehende Blackbox-System grundsätzlich weiterhin geeignet, Gebietsverstöße zu belegen. Im Jahr 2019 ist es zu keinem fischereirechtlichen Verfahren gekommen. Die Betriebstagebücher liegen für die Fahrzeuge/Betriebe, die in SH-Gewässern Muschelwirtschaft betrieben haben, vollständig vor.

Die Nationalparkverwaltung und Ref. 43 ergänzen (mit Blick auf die naturschutzrechtlichen Zulassungen), dass Blackbox-Daten in Abständen von ca. 2 Monaten von der Oberen Fischereiverwaltung an die Nationalparkverwaltung übermittelt werden. Alle Daten von Juli 2017 bis Dezember 2019 stehen der Nationalparkverwaltung zur Verfügung. Die Entwicklung von Analysewerkzeugen für die Nationalparkverwaltung durch einen externen Anbieter ist vorangekommen. Erste Ergebnisse zeigen die Notwendigkeit solcher Werkzeuge für eine automatisierte Datenanalyse (z.B. Ausfall Sensorsysteme über mehrere Monate erkannt). Eine endgültige Blackbox-Lösung ist nach Einschätzung der NPV noch nicht gefunden. Z.B. ist die Ausgestaltung der Sensorsysteme in Diskussion und die Echtzeit-Datenübertragung an die NPV muss noch umgesetzt werden. In einem Gespräch zwischen Fischerei- und Naturschutzbehörden wurde vereinbart, die Zusammenarbeit bei der Auswertung und Bewertung der Black-Box-Daten

zu verbessern. Auf Grundlage der Ergebnisse prüfen die Fischerei- und Nationalparkbehörden, ob und ggf. in welchen Punkten das Blackboxsystem optimiert werden kann / muss.

Die Muschelfischer tragen vor, dass sie nichts zu verbergen hätten, dass aber die Eckpunkte maßgeblich sind. Ziel muss allein eine zeitgleiche Übertragung der Daten sein. Herr Kuhbier trägt vor, dass eine Erweiterung des Kontrollsystems von Seiten der Muschelfischer ausdrücklich abgelehnt und auf Widerstand stoßen werde.

Die Naturschutzverbände betonen, dass sie – wie vereinbart – nicht detailliert einbezogen werden wollen, aber dass sichergestellt sein muss, dass die erhobenen Daten zur Überprüfung der Einhaltung der fischerei- und naturschutzrechtlichen Zulassungen geeignet sind. So verstünden sie auch die Formulierung der Eckpunktevereinbarung. Sie mahnten bei den Behörden eine vollständige Auswertung und Umsetzung innerhalb des nächsten Jahres an.

Herr Dr. Oelerich schließt diese Diskussion ab mit der Bemerkung, dass zum einen das Thema der Gleichzeitigkeit zunächst auf Behördenseite weiter geklärt wird. Zum anderen soll eine Analyse durchgeführt und ein Ergebnis niedergeschrieben werden, welche Informationen das System hergibt, was sich daraus interpretieren lässt und was ggf. nicht.

TOP 5 Bericht der Naturschutzverbände zu ihren Erfahrungen
Die Naturschutzverbände bedanken sich für die Transparenz und bewerten den Austausch der letzten beiden Jahre als sehr positiv. Sie haben keine weiteren Anmerkungen, die über die bereits in den vorigen TOPs angesprochenen Punkte hinausgehen.

TOP 6 Verschiedenes
Importe

Herr Ewaldsen erläutert einleitend, dass seitens der Muschelfischer der Wunsch besteht, sich über die Möglichkeit des Imports von Muschelsaat von außerhalb des Nationalparks, z.B. aus Horns Rev/DK, auszutauschen. Wichtig sei den Muschelfischern eine einvernehmliche Lösung gemeinsam mit den Naturschutzverbänden und Behörden. Um diese zu erreichen, könnten sich die Muschelfischer auch den Verzicht auf Bodenfischerei in weiteren Gebieten des Nationalparks vorstellen.

Herr RA Kuhbier berichtet über den aktuellen Stand zum Thema „Basisuntersuchungen Horns Rev“. Am 18.02.2020 hat es eine Telefonkonferenz zwischen ihren Gutachtern BioConsult SH und GiMaRIS mit der Nationalparkverwaltung gegeben. In dieser ist sich über den Stand, offene Punkte und notwendige Verbesserungen ausgetauscht worden. Weitergehende Schritte sind vereinbart worden. Herr RA Kuhbier kündigt an, dass in der ersten Märzhälfte Untersuchungsergebnisse in Form einer „kommentierten Artenliste“ mit einer Risikoeinschätzung an die Nationalparkverwaltung gesendet werden. Es handelt sich hierbei noch nicht um einen Antrag. Im April soll dann eine Zwischenbilanz auch unter Einbeziehung der Naturschutzverbände erfolgen. Die Naturschutzverbände bittet er um wohlwollende Offenheit bei der Bewertung der Ergebnisse. Eine 100%ige Sicherheit vor dem Eintrag gebietsfremder Arten kann es nicht geben.

Die Naturschutzverbände bitten wiederum auch die Muschelfischer um eine entsprechende Offenheit.

Die Nationalparkverwaltung erklärt, dass sie sich bei der Konzeption und Bearbeitung der wissenschaftlichen Untersuchungen auf Wunsch der Muschelfischer miteinbringt. Es wird aber auch klargestellt, dass es bei den ersten eingereichten Entwürfen zur Basisuntersuchung deutlichen Nachbesserungs- und Klärungsbedarf aus naturschutzfachlicher Sicht gibt.

Wildaustern-Vermarktung

Herr Dr. Oelerich informiert darüber, dass sich jemand bei den Landesbehörden danach erkundigt hat, ob Austern aus dem Beifang der Miesmuschelwirtschaft vermarktet werden dürfen. Dazu findet ein Austausch statt. Im Ergebnis wird festgehalten:

- Die Menge an beigefangenen Austern, die zum Hafen gebracht wird, ist (wie auch schon 2019 berichtet) unbedeutend und beschränkt sich auf „Eimerware“. Es handelt sich nicht um größere Mengen (nur in einem Fall vor einigen Jahren eine größere Menge mit Export nach NL).
- Die Austern werden von den Muschelfischern nicht verkauft und vermarktet.
- Es wird darauf hingewiesen, dass die Vermarktung von Beifang nicht von den naturschutzrechtlichen Zulassungen abgedeckt ist.

MSC

Das im Anschluss an das Jahresgespräch geplante MSC-audit wurde krankheitsbedingt (Fischereibehörde, MSC-Koordinator der Muschelfischer) abgesagt. Ein Ersatztermin wird von den Zuständigen (A. Stern-Pirlot, S. Leuschel) organisiert.

Herr Dr. Oelerich dankt allen Beteiligten und schließt das Gespräch gegen 17:15 Uhr.

Anlagen

1) Vortrag Muschelbankmonitoring und Übersicht Änderung der Erlaubnisse (NPV/LKN.SH GB3)
2) Bericht über Daten zur Überwachung der Fischereitätigkeiten, Blackbox und Betriebstagebücher (LLUR, obere Fischereiverwaltung)