
**Guidelines for Auditors
of the
Fisheries Management Standard**



**Marine Eco-Label Japan Council
(2018)**

I. Introduction

This document shows the criteria for deciding whether the Applicant conforms to the Fisheries Management Standard, Version 2.0 (hereinafter referred to as “FMS”) of Marine Eco-Label Japan (MEL). This document, which is intended to be utilized as guidelines when certification auditors of MEL examine applications, provides explanations of the respective requirements of the FMS, and illustrates evidentiary materials for deciding conformity as well as evidence, concepts, etc. for judgment.

In addition to this document, a template of assessment report, “Checklist for Auditors on Fisheries Management Standard and “Requirements for Certification Body Certifying Fisheries Management Standard” shall contribute to uniformizing the quality of MEL certifications.

It should be noted that the materials, concepts, etc. described in this document and its appendices are examples, and that if more proper evidence is available, the name and summary of the evidence as well as the grounds and reason for conformity that evidence shall be described in the comments section.

II. Criteria for Certification

Fisheries management certification shall not be granted any of following situation.

- When there is at least **one major non-conformity** against one of the principles of requirements for FMS
- When there are more than **four minor non-conformities** against one of the principles of requirements for FMS.

III. Terms and Definitions Used for Evaluation

- **Major Non-Conformity:** A situation where the audit team concludes there is no information and evidence to demonstrate conformity of the applicant organization’s fisheries procedures with the requirements of the FMS.
- **Minor Non-Conformity:** Although information and evidence exist to demonstrate the target fisheries with the requirements of the FMS, the audit team concludes those information and evidence are not sufficient enough to be certifies the target fisheries with the requirements of the FMS.
- **Observation:** A situation where, while not an actual non-conformity with the requirements of the FMS, the audit team notes that there is room for improvement, or a risk of falling into non-

conformity.

- **Conformity:** A situation where the audit team concludes that there exists full sufficient information and evidence indicating conformity with the requirements for of the FMS.
- **Not Applicable:** A situation where the audit team concluded that the requirement and indicator of the FMS is not applicable for the applicant.

IV. Body Text

1. Requirements concerning a management system

(Fisheries must be operated under an effective management system)

In this section, the Applicant's status of compliance with the Japanese Fishery Act and related laws on the management of stocks is checked and confirmed.

1.1 Assessment for Acquisition of Fishing License and Permission

1.1.1 Acquisition of fishing license and permission

Requirement: 1.1.1	
The unit of certification shall be operated legally in accordance with national legislation, such as acquiring fishery license and permission necessary for operating the fisheries from the competent authority (i.e. national or prefectural governments).	
Indicator: ①	
Whether the following matters for operating the target fishery can be confirmed. <input type="checkbox"/> Acquisition of a license or permit issued by a prefectural governor <input type="checkbox"/> In the case that the above is not acquired, the target fishery is not prohibited with respect to those who have no license or permission.	
Evaluation:	
• Major non-conformity	No license nor permission is observed.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	A license or a permission is observed.
Guidance for Auditors:	
For the requirement 1.1.1, a copy of the “license, permission or the like of the fishery which is necessary for operating the marine capture fishery” must be checked and confirmed, and if applicable, it is possible to assess for the requirement by checking and confirming that the target fishery is lawful even with no need of a permission or license. The latter case is based on the background in which while anybody can, in principle, freely engage in fishery in Japan, specified (a great number of) marine capture fisheries are respectively under public regulations from the standpoint of serving the public interest (management of stocks and adjustment of marine capture fisheries).	
Examples of Evidence:	
Fishing license issued by national and/or local government. Interview to local government.	

1.1.2 Management system

Requirement: 1.1.2	
An organization and system shall be established to manage the fishery of which the unit of certification is a part.	
Indicator: ①	
Whether the organization (such as a fisheries cooperative association) and the system (of national, prefecture, fisheries experiment station, etc.) which manage the fishery are established. <input type="checkbox"/> References illustrating the management system of the target fishery	
Evaluation: ①	
• Major non-conformity	No organization nor system is established.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	An organization and a system are established.
Guidance for Auditors:	
In Japan, there are from a small-scale of management organization on a village basis to a national level of management organization and further to a regional fisheries management body for international stocks. In a small-scale of management organization among these, management of stocks may be performed organizationally, but traditional knowledge may not be sufficiently reduced into written materials. Consequently, for the materials to supplement such insufficiency, it is possible to collect interviews, etc. with constituent members of the organization and market participants, and use such interviews, etc. as evidence.	
Examples of Evidence:	
Organization chart of management bodies for target fisheries (local government, fishing cooperative, fishers, Fisheries Adjustment Commissions, Japan Coast Guard, etc.)	

1.1.3 Understanding of status of the fishery

Requirement: 1.1.3	
There shall be knowledge and documentation of the current state of the fishery of which the unit of certification is a part; this includes the following:	
<ul style="list-style-type: none"> ① Outline of the fishery of which the unit of certification is a part. ② Fishing gears and fishing methods ③ Catch volume and fishing effort ④ Fishery business form and business condition 	
Indicator: ①	
Summary of the unit of certification	
<input type="checkbox"/> Materials illustrating a summary of the marine capture fishery (such as fishing period and fishing-ground map)	
Evaluation: ①	
• Major non-conformity	No information are collected or stored.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	Information are collected and stored.
Indicator: ②	
Fishing gear and fishing method	
<input type="checkbox"/> Schematic diagram of fishing tools	
Evaluation: ②	
• Major non-conformity	No information are collected or stored.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	Information are collected and stored.
Indicator: ③	
Catch amount and fishing effort	
<input type="checkbox"/> Fish catch data, number of fish	
Evaluation: ③	
• Major non-conformity	No information are collected or stored.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	Information are collected and stored.

Indicator: ④	
Fishery business form and business condition	
<input type="checkbox"/> Materials illustrating marine capture fishery business form and business condition	
Evaluation: ④	
• Major non-conformity	No information are collected or stored.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	Information are collected and stored.
Guidance for Auditors:	
Auditors shall assess the status of unit of certification though the review of evidences.	
Examples of Evidence:	
① Fishing rights, Fishing times, Fishing grounds, etc.	
② Pictures of fishing gear	
③ Catch data, Fishing license, Plan of resource management	
④ Financial statement (visual inspection only due to privacy protection)	

1.2 Compliance and surveillance with regulations and arrangements concerning the unit of certification and the target stock

1.2.1 Compliance with regulations and arrangements

Requirement: 1.2.1	
The unit of certification shall be operated in compliance with the relevant regulations and arrangements by national and local governments under the effective and appropriate monitoring, control and surveillance.	
Indicator: ①	
Whether there is an effective management system (including a monitoring system) for complying with the regulations, arrangement, etc. associated with the target fishery.	
<input type="checkbox"/> A legal system associated with the target fishery <input type="checkbox"/> An effective management system for having laws, regulations and rules observed	
Evaluation: ①	
• Major non-conformity	No legal system nor management system is available.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	Both legal system and management system are available.
Indicator: ②	
Whether there are measures (such as penalties) taken when any regulations, arrangements, etc. associated with the target fishery are not observed, and such measures are implemented.	
<input type="checkbox"/> Measures (penalties) when any laws, regulations or rules are not observed	
Evaluation: ②	
• Major non-conformity	No measures (such as penalties) are available, and are implemented.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	Measures (such as penalties) are available and are implemented.
Guidance for Auditors:	
For the requirement 1.2.1, in conducting an examination of unit of certification, it is necessary to making a judgment of whether the regulations and arrangements by the State and the local government(s) are observed, and whether there are measures to be taken in case of non-compliance of the regulations and arrangements and such measures are actually implemented. Whether the requirement is satisfied may be assessed by checking and confirming the materials as shown below.	
Examples of Evidence:	

- ① Laws and regulations relating to target fisheries (Fishery Act, Fisheries Adjustment Rules, Act on the Protection of Fishery Resources, etc.)
- ② Penalties and measures of violation of laws and regulations mentioned above (local government report the actual conditions)

1.2.2 Formulation and implementation of Stock Management Plan

Requirement: 1.2.2	
A Stock Management Plan for the fishery of which the unit of certification is a part and stock under consideration shall be prepared in accordance with the Stock Management Policy (including management objectives and management measures) by the national and local government, in view of the best scientific evidence available. Alternatively, an effective management rules complying with the stock management measures equivalent to the Stock Management Plan shall be established. Further, the implementation status is confirmed.	
Indicator: ①	
Whether the Stock Management Policy concerning comprehensive regulations on fishing effort and fish catch and the Stock Management Plan in accordance with the Stock Management Guidelines (or stock management measures equivalent thereto) for the target fishery and the target stock are prepared.	
<input type="checkbox"/> Preparation of Stock Management Policy (including those equivalent thereto) <input type="checkbox"/> Preparation of Stock Management Plan (including those equivalent thereto)	
Evaluation: ①	
• Major non-conformity	No policy and plan are prepared.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	Both policy and plan are prepared.
Indicator: ②	
Whether the implementation status of the Stock Management Plan is checked and confirmed by the organization which manages the fishery.	
<input type="checkbox"/> Implementation report on the Stock Management Plan	
Evaluation: ②	
• Major non-conformity	The report is not observed.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	The report is observed.
Guidance for Auditors:	
For the small-scale fishery, in the case of a management organization not only under the State and prefectural regulations, but also under its own voluntary regulations, traditional promises may not be sufficiently reduced into written materials. Consequently, for the materials to supplement such insufficiency, it is necessary to collect interviews, etc. with constituent members of the organization and market participants as evidence.	

Examples of Evidence:
<ul style="list-style-type: none">① Stock Management Policy prepared by local government.② Stock Management Plan or equivalent rules prepared by local government.③ Report of resource management.

1.2.3 Participatory management and ensuring transparency

Requirement: 1.2.3	
Decision-making process for the management of for the fishery of which the unit of certification is a part shall be transparent and ensure the participation of stakeholders including relevant fishers, scientists, the government and other interested parties.	
Indicator: ①	
Whether relevant fishers, researchers, government and other interested parties participate in the decision-making on the management of the target fishery.	
<input type="checkbox"/> An organizational chart or a summary of participation of interested parties	
Evaluation: ①	
• Major non-conformity	No involvement of interested parties.
• Minor non-conformity	Although interested parties are involved, there is a portion with no evidence.
• Observation	Although interested parties are involved, there is a room for improvement.
• Conformity	Interested parties are involved.
Indicator: ②	
Whether there exists an agreement forming process.	
<input type="checkbox"/> Rules for the process; records on consultation arriving at the formation of an agreement	
Evaluation: ②	
• Major non-conformity	The process does not exist.
• Minor non-conformity	Although the process exists, there is a portion with no evidence.
• Observation	Although the process exists, there is a room for improvement.
• Conformity	The process exists.
Guidance for Auditors:	
Auditors shall assess the participation of stakeholders into decision-making process though the review of evidences.	
Examples of Evidence:	
① Organization chart and name list of Fisheries Adjustment Committee.	
② Minutes of meetings on Fisheries Adjustment Committee.	

1.2.4 Establishment of a regional cooperation system

Requirement: 1.2.4	
A regional or wide-area stock management system for utilizing the stock under consideration shall be established. If the target stock is internationally managed (such as transboundary fish stocks, straddling fish stocks or highly migratory fish stocks), the fishery shall be operated in compliance with the stock management measures set by the relevant authorities.	
Indicator: ①	
Whether there is a regional or wide-area stock management system for utilizing the stock, in addition to the national (or a local government) which manages the target fishery.	
<input type="checkbox"/> An inter-regional stock management system <input type="checkbox"/> An international stock management system	
Evaluation: ①	
• Major non-conformity	No management system exists.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	The management system exists.
• Not applicable	The stock under consideration is not regional or wide-area stock.
Indicator: ②	
Whether the stock under consideration is managed in compliance with management measures set by the competent management authorities in case the international managed is in place.	
<input type="checkbox"/> Measures (such as penalties) in the case of non-compliance with the management measures	
Evaluation: ②	
• Major non-conformity	The stock is not managed in compliance with the regulations.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	The stock is managed in compliance with the regulations.
• Not applicable	The stock under consideration is not regional or wide-area stock.
Guidance for Auditors:	
Auditors shall assess the regional or wide-area stock management system through the review of evidences.	
Examples of Evidence:	
① Fishing committee and/or Fishery Adjustment Commission covers multi regions.	
② Penalties and measures of violation of laws and regulations mentioned above.	

1.2.5 Formulation of plan of fish release

Requirement: 1.2.5	
In the case that releasing the seedlings of stock under consideration is in place, the plan of fish release shall be formulated and implemented upon consultation of the national or local government with relevant fishers.	
Indicator: ①	
Whether a plan of fish release is formulated upon consultation of the national or a local government with relevant fishers and implemented.	
<input type="checkbox"/> Plan of fish release (including those equivalent thereto) <input type="checkbox"/> Implementation status (reports)	
Evaluation: ①	
• Major non-conformity	No plan of fish release is formulated nor implemented.
• Minor non-conformity	Although a plan of fish release is formulated and implemented, there is a portion with no evidence.
• Observation	Although a plan of fish release is formulated and implemented, there is a room for improvement.
• Conformity	A plan of fish release is formulated and implemented.
• Not applicable	No plan of fish release with respect to the target stock.
Guidance for Auditors:	
Auditors shall assess the plan of fish release though the review of evidences.	
Examples of Evidence:	
① Guidelines and annual plan of fish release.	
② Report of fish release.	

1.2.6 Precautionary approach and adaptive management

Requirement: 1.2.6	
Fishery management shall be precautionarily carried out in consideration of various uncertainties associated with fishery resources, ecosystem and management. Further, a system shall be available for adaptively amending and improving the content of management measures and policies, in response to the state of the stock under consideration and of the ecosystem.	
Indicator: ①	
Whether a system is available which enables a flexible response in response to an unexpected situation due to an environmental variation, etc.	
<input type="checkbox"/> Presence or absence of precautionary measures and a system for adaptive management	
Evaluation: ①	
• Major non-conformity	No such measures and system are introduced.
• Minor non-conformity	Although such measures and system are introduced, there is a portion with no evidence.
• Observation	Although such measures and system are introduced, there is a room for improvement.
• Conformity	Such measures and system are introduced.
Guidance for Auditors:	
Auditors shall assess the system of precautionary approach and adaptive management through the review of evidences.	
Examples of Evidence:	
① Whether the necessity of precautionary approach and adaptive management in view of various uncertainties associated with fishery resources, ecosystem and stock management is explicitly indicated in the standards.	
② Whether the consideration of precautionary approach in view of various uncertainties associated with fishery resources, ecosystem and stock management is explicitly described in the management plan, etc.	
③ Whether the system for adaptive management is explicitly described in the management plan, etc.	
④ Whether the implementation status of precautionary measures can be checked and confirmed by a report, the minutes of a meeting, etc.	
⑤ Whether the implementation of adaptive management can be checked and confirmed by a report, the minutes of a meeting, etc.	

1.2.7 Agreement formation concerning multifaceted utilization

Requirement: 1.2.7	
In case that activities other than fishery production are carried out in the same water for the unit of certification, stakeholders shall have continuous discussions of the effectiveness of management measures, and the record of discussions shall be maintained.	
Indicator: ①	
If applicable, whether there is set an occasion of discussions in which a wide range of people concerned other than fishery industry also participate, and the content of the discussions is recorded.	
<input type="checkbox"/> Presence or absence of an occasion of discussions <input type="checkbox"/> Record(s) that discussion results are incorporated into the management	
Evaluation: ①	
• Major non-conformity	No occasion of discussions by stakeholders is set.
• Minor non-conformity	Although there is set an occasion of discussions by stakeholders, and discussion results are incorporated into the management, there is a portion with no evidence.
• Observation	Although there is set an occasion of discussions by stakeholders, and discussion results are incorporated into the management, there is a room for improvement.
• Conformity	There is set an occasion of discussions by stakeholders, and discussion results are incorporated into the management.
• Not applicable	In the water area for the unit under consideration, no activities other than production of the fishery are carried out.
Guidance for Auditors:	
Auditors shall assess the occasion of discussions and those records through the review of evidences.	
Examples of Evidence:	
① Rules and regulations and/or name list of Sea Use Committee and/or Fishery Adjustment Commissions.	
② Minutes of meetings of organizations mentioned above.	

1.2.8 Dissemination of management rules

Requirement: 1.2.8	
Information on management rules and fishing activities shall be available to the public.	
Indicator: ①	
Whether information on management rules and fishing efforts is available to people other than fishers.	
<input type="checkbox"/> Presence or absence of sending and disclosing information	
Evaluation: ①	
• Major non-conformity	No information is available to the public.
• Minor non-conformity	Although information is available to the public, there is a portion with no evidence.
• Observation	Although information is available to the public, there is a room for improvement.
• Conformity	Information is available to the public.
Guidance for Auditors:	
Auditors shall assess the information on management rules and fishing efforts available to the public through the review of evidences.	
Examples of Evidence:	
Pamphlet, web site and other information sources for recreation fishers to notice closed season and areas of target fisheries.	

2. Requirements on the Stock Under Consideration

(Stock under consideration is maintained at a level that allows its sustainable utilization)

2.1 Understanding of biological information

Requirement: 2.1	
Biological information (including the following items) of the stock under consideration shall be collected.	
<ul style="list-style-type: none"> ① Distribution and migration ② Age, growth and life span ③ Maturity and spawning 	
Indicator: ①	
Distribution and migration	
<input type="checkbox"/> Knowledge and publications concerning distribution <input type="checkbox"/> Knowledge and publications concerning migration	
Evaluation: ①	
• Major non-conformity	No data and information are collected or stored.
• Minor non-conformity	Although data and information are collected and stored, there is a portion with no evidence.
• Observation	Although data and information are collected and stored, there is a room for improvement.
• Conformity	Data and information are collected and stored.
Indicator: ②	
Age, growth and life span	
<input type="checkbox"/> Knowledge and publications concerning age and life span <input type="checkbox"/> Knowledge and publications concerning growth	
Evaluation: ②	
• Major non-conformity	No data and information are collected or stored.
• Minor non-conformity	Although data and information are collected and stored, there is a portion with no evidence.
• Observation	Although data and information are collected and stored, there is a room for improvement.
• Conformity	Data and information are collected and stored.
Indicator: ③	
Maturity and spawning	
<input type="checkbox"/> Knowledge and publications concerning maturity	

<input type="checkbox"/> Knowledge and publications concerning spawning	
Evaluation: ③	
• Major non-conformity	No data and information are collected or stored.
• Minor non-conformity	Although data and information are collected and stored, there is a portion with no evidence.
• Observation	Although data and information are collected and stored, there is a room for improvement.
• Conformity	Data and information are collected and stored.
Guidance for Auditors:	
<p>For the requirement 2.1, assessment of the requirement may be conducted by checking and confirming the “materials showing biological knowledge of the target stock.”</p> <p>In Japan, in the case of fish species subject to TAC (total allowable catch) which are shown in the Assessment of Fishery Resources in Japan, etc. biological knowledge on the target stock is comprehensively provided there, so that the auditor only must check and confirm the described biological knowledge.</p> <p>In the case that the target stock is a regional species, such as sakura-ebi (small pink shrimp) and kotamagai (a kind of shellfish; macridiscus melanaegis), academic journals, survey research reports of the target prefectural research and development institute, etc. may be used to confirm the biological knowledge.</p>	
Examples of Evidence:	
<p>① Assessment of Fishery Resources in Japan http://abchan.fra.go.jp/digests2017/details/2017details_part1.pdf http://abchan.fra.go.jp/digests2017/details/2017details_part2.pdf http://abchan.fra.go.jp/digests2017/details/2017details_part3.pdf</p> <p>② Trends of Fishery Resources in Japan http://abchan.fra.go.jp/resource_trends_report/index.html</p> <p>③ Status of Fishery Resources in the World http://kokushi.fra.go.jp/index-2.html</p>	

2.2 Scientific evidence

Requirement: 2.2	
Scientific evidence for determining the status and trends of the stock under consideration shall be collected and maintained.	
Indicator: ①	
Whether the following scientific evidence data are collected and preserved in the management of the target stock, based on international standards such as FAO Guidelines for the routine collection of capture fishery data (hereinafter referred to as FAO Guidelines).	
<input type="checkbox"/> Fish catch data <input type="checkbox"/> Fishing effort data <input type="checkbox"/> Other data necessary for stock under consideration	
Evaluation: ①	
• Major non-conformity	No data and information are collected or stored.
• Minor non-conformity	Although data and information are collected and stored, there is a portion with no evidence.
• Observation	Although data and information are collected and stored, there is a room for improvement.
• Conformity	Data and information are collected and stored.
Guidance for Auditors:	
<p>For the requirement 2.2, assessment of the requirement may be conducted by checking and confirming the “materials showing the existence of scientific evidence data of the target stock.”</p> <p>In Japan, in the case of fish species subject to TAC (total allowable catch) which are shown in the Assessment of Fishery Resources in Japan etc., data necessary for stock assessment of the subject biological stock are collected, so that the auditor only must check and confirm the data. In the case of the stocks whose stock assessment employs a VPA (Virtual Population Analysis), data are collected including not only monthly fish catch and fishing effort by fishery type, but also statistics by fishing-ground, age-length, length-weight, length composition, age composition, and maturity rate by age. However, these data are often collected even if no stock assessment by VPA is conducted. This is because the period during which the data can be used is short, and there occurs a failure in tuning, etc. so that another stock assessment technique is employed. It is therefore necessary to keep this in mind.</p> <p>In the case that the target stock is a regional species, such as sakura-ebi (small pink shrimp) and kotamagai (a kind of shellfish; <i>macridiscus melanaegis</i>), academic journals, survey research reports of the target prefectural research and development institute, etc. may be used to confirm the biological knowledge.</p>	

Examples of Evidence:

- ① Assessment of Fishery Resources in Japan
http://abchan.fra.go.jp/digests2017/details/2017details_part1.pdf
http://abchan.fra.go.jp/digests2017/details/2017details_part2.pdf
http://abchan.fra.go.jp/digests2017/details/2017details_part3.pdf
- ② Trends of Fishery Resources in Japan
http://abchan.fra.go.jp/resource_trends_report/index.html
- ③ Status of Fishery Resources in the World
<http://kokushi.fra.go.jp/index-2.html>

2.3 Consideration of catches by non-target fisheries and resilience

Requirement: 2.3	
The assessment of the current status and trends of the stock under consideration shall take into account the total fishing mortality caused by other fisheries utilizing the stock under consideration within the distribution area of the stock under consideration, as well as resilience of the stock.	
Indicator: ①	
Whether consideration is given in the stock assessment also to catches of the target stock by fisheries other than the target fishery, in addition to catches by the target fishery.	
<input type="checkbox"/> Catch data by the target fishery <input type="checkbox"/> Catch data by non-target fisheries	
Evaluation: ①	
• Major non-conformity	No consideration of these data.
• Minor non-conformity	Although these data are considered, there is a portion with no evidence.
• Observation	Although these data are considered, there is a room for improvement.
• Conformity	These data are considered.
Indicator: ②	
Whether the stock management measures for the target stock consider the impacts on the target stock by all the fisheries which catch the target stock in the distributional area of the target stock.	
<input type="checkbox"/> Presence or absence of the influences to the target stock by all the fisheries which catch the target stock	
Evaluation: ②	
• Major non-conformity	No consideration of these data.
• Minor non-conformity	Although these data are considered, there is a portion with no evidence.
• Observation	Although these data are considered, there is a room for improvement.
• Conformity	These data are considered.
Indicator: ③	
Whether the assessment of the current situation and tendency of the target stock considers the biological characteristics (such as life span) of the target stock which contribute to resilience.	
<input type="checkbox"/> Presence or absence of consideration of biological characteristics (such as life span) of the target stock which contribute to resilience	

Evaluation: ③	
• Major non-conformity	No consideration of these data.
• Minor non-conformity	Although these data are considered, there is a portion with no evidence.
• Observation	Although these data are considered, there is a room for improvement.
• Conformity	These data are considered.
Guidance for Auditors:	
<p>For the requirement 2.3, the requirement may be assessed by checking and confirming the “materials showing that the data on the entire target local stock are collected.”</p> <p>In Japan, in the case of the fish species subject to TAC (total allowable catch) which are shown in the Assessment of Fishery Resources in Japan etc., as for ① and ②, the stock assessment and the ABC (Allowable Biological Catch) formulation, both by local stock, are carried out, so that data and influences other than the applicants are naturally taken into consideration. As for ③, a future forecast of stock amounts after implementation of new allotments is calculated, and it is designed to ensure resilience of stocks.</p> <p>Even if the applicant engages in a small-scale of marine capture fishery, for example, a regional fishery targeting abalone, lobster, etc., as for ① and ②, there may be a problem of the geographical range of each local stock, but data on fish catch, etc. are collected nationwide through the statistics by the Ministry of Agriculture, Forestry and Fisheries which are official statistics. In addition, as for ③ as well, restricted length based on the matured size and fishing season restriction during spawning period are formulated by each prefecture, and maintaining stocks are considered and stocks are recovered. However, if the target stock is not a major biological stock, it is necessary to check and confirm whether an independent survey is conducted.</p>	
Examples of Evidence:	
<p>① Assessment of Fishery Resources in Japan http://abchan.fra.go.jp/digests2017/details/2017details_part1.pdf http://abchan.fra.go.jp/digests2017/details/2017details_part2.pdf http://abchan.fra.go.jp/digests2017/details/2017details_part3.pdf</p> <p>② Trends of Fishery Resources in Japan http://abchan.fra.go.jp/resource_trends_report/index.html</p> <p>③ Status of Fishery Resources in the World http://kokushi.fra.go.jp/index-2.html</p>	

2.4 Disclosure of stock assessment and results

Requirement: 2.4	
Assessment of the status and trends of the stock under consideration shall be conducted based on the collected information, and assessment results shall be incorporated into the decision-making process for management. The assessment methods and results shall be available to the public in a timely manner.	
Indicator: ①	
Whether a stock assessment based on the Best Scientific Evidence Available is conducted. Further, whether precautionary measures and adaptive management based on the stock assessment are implemented.	
<input type="checkbox"/> Implementation of a stock assessment based on the Best Scientific Evidence Available <input type="checkbox"/> Implementation of precautionary measures and adaptive management based on the above Best Scientific Evidence Available	
Evaluation: ①	
• Major non-conformity	No assessment, measures and management is implemented.
• Minor non-conformity	Although the assessment, measures and management are implemented, there is a portion with no evidence.
• Observation	Although the assessment, measures and management are implemented, there is a room for improvement.
• Conformity	The assessment, measures and management are implemented.
Indicator: ②	
Whether assessment results are incorporated into the decision-making for preparing a stock management guideline and a stock management plan.	
<input type="checkbox"/> Report(s) and/or minutes showing the incorporation	
Evaluation: ②	
• Major non-conformity	No assessment results are incorporated.
• Minor non-conformity	Although assessment results are incorporated, there is a portion with no evidence.
• Observation	Although assessment results are incorporated, there is a room for improvement.
• Conformity	Assessment results are incorporated.
Indicator: ③	
Whether an organization which performs the management of fisheries receives the timely and best scientific evidence available concerning the status of the target stock as well as the forecast and degree of adverse effects of the target fishery onto the target stock and ecosystem, and whether the	

organization which performs the management of fisheries has periodically as needed provided an opportunity to administer controlled processes for collection of information, stock assessment, planning, formation of management objectives and targets, formulation of management measures, and establishment of fishery rules.

Whether there is a comprehensive system through which timely scientific evidence can be received.

Whether there is a comprehensive system to administer controlled processes.

Evaluation: ③

• Major non-conformity	No system exists.
• Minor non-conformity	Although the system exists, there is a portion with no evidence.
• Observation	Although the system exists, there is a room for improvement.
• Conformity	The system exists.

Indicator: ④

Whether information is disclosed in a timely manner on the assessment results and techniques thereof.

Disclosure of techniques and results of stock assessment

Evaluation: ④

• Major non-conformity	No information is available.
• Minor non-conformity	Although information is available, there is a portion with no evidence.
• Observation	Although information is available, there is a room for improvement.
• Conformity	Information is available.

Guidance for Auditors:

For the requirement 2.4, the requirement may be assessed by checking and confirming the “materials showing that the stock assessment and its results are disclosed for the target local stock” .

In MEL, the information described in the materials such as Assessment of Fishery Resources in Japan and Stock Trend Report which are examined, prepared and published every year mainly by the nation’s largest official committee comprised of scientists, fishers and administrative officials in Japan or Status of Fisheries Resources in the World which is published every year by summarizing the reports from the scientific committees of regional fisheries management organizations or equivalent scientific advice, or the traditional knowledge of fishers or their region whose validity is objectively verifiable are defined as the “Best Scientific Evidence Available (BSEA).”

The examination results of the above committees are also disclosed every year on the website of

Fisheries Agency in Japan. Therefore, the reports may be retrospectively checked and confirmed on the website of Fisheries Agency on the items ① - ④ for fish species subject to TAC.

Further, in a management organization where the applicant runs small-scale of local fishery and where such organization is subject not only to the national and prefectural regulations but also to its own voluntary regulations, considerable recovery of fish catches under its own regulations is often disclosed by persons such as researchers because such organization itself has no advantage in disclosing the information. In such organization, the matters such as ① validity of applied reference point, ② - ③ validity of its own management objectives and management guidelines, and ④ validity of substitute stock assessment by means such as annual fluctuation of CPUE are checked and confirmed not only with the materials such as reports of scientific examination but also with operation rules describing a precautionary and adaptive operation system where the operation is suspended under such unexpected poor catch as in the item 1.2.6 or fish catch records and the like.

Examples of Evidence:

- ① About TAC: Fisheries Agency
http://www.jfa.maff.go.jp/j/suisin/s_tac/
- ② Minutes of meetings about TAC: Fisheries Policy Council, Fisheries Adjustment Commissions and Fisheries Agency.
<http://www.jfa.maff.go.jp/j/council/seisaku/honkaigi/index.html>
http://www.jfa.maff.go.jp/j/suisin/s_kouiki/index.html
- ③ Minutes of meetings about TAC: Public hearing from fishers and other stakeholders.
http://www.jfa.maff.go.jp/j/suisin/s_koukan/index.html
- ④ Assessment of Fishery Resources in Japan
http://abchan.fra.go.jp/digests2017/details/2017details_part1.pdf
http://abchan.fra.go.jp/digests2017/details/2017details_part2.pdf
http://abchan.fra.go.jp/digests2017/details/2017details_part3.pdf
- ⑤ Trends of Fishery Resources in Japan
http://abchan.fra.go.jp/resource_trends_report/index.html
- ⑥ Status of Fishery Resources in the World
<http://kokushi.fra.go.jp/index-2.html>

2.5 Establishment of stock management measures

Requirement: 2.5	
The target reference point by public agencies and the limit reference point or the substitute point based on the best scientific evidence available shall be set for the purpose of maintaining and recovering the stock under consideration to the levels which may achieve the maximum sustainable yield (MSY) or appropriate substitute point.	
Indicator: ①	
Whether “target species” and “limit reference point” or its “substitute point” are defined in compliance with precautionary approach and based on the Best Scientific Evidence Available in the management objectives.	
<input type="checkbox"/> Whether the “target reference point” is set to accomplish the MSY (or its substitute point) in average and whether the “limit reference point” is defined to avoid recruitment overfishing and irreversible or moderately reversible influence.	
<input type="checkbox"/> Appropriate definition of target species, “limit reference point,” “target reference point” or its “substitute point” under the management objectives and the like.	
Evaluation: ①	
• Major non-conformity	The terms are not defined.
• Minor non-conformity	Although the terms are defined, there is a portion with no evidence.
• Observation	Although the terms are defined, there is a room for improvement.
• Conformity	The terms are defined.
Indicator: ②	
Whether the management objectives and management measures to accomplish the management objectives are prepared based on the Best Scientific Evidence Available.	
<input type="checkbox"/> Management objectives (including those equivalent thereto)	
<input type="checkbox"/> Management measures (including those equivalent thereto)	
Evaluation: ②	
• Major non-conformity	No objectives or measures are prepared.
• Minor non-conformity	Although objectives and measures are prepared, there is a portion with no evidence.
• Observation	Although objectives and measures are prepared, there is a room for improvement.
• Conformity	Objectives and measures are prepared.
Indicator: ③	
Whether the outcome benchmark (or those equivalent thereto) is prepared which is consistent with the management objectives to maintain sustainable fisheries and with the limit reference point,	

target reference point and target related to substitution thereof.	
<input type="checkbox"/> Establishment of outcome target (including those equivalent thereto)	
Evaluation: ③	
• Major non-conformity	No objectives or measures are prepared.
• Minor non-conformity	Although objectives and measures are prepared, there is a portion with no evidence.
• Observation	Although objectives and measures are prepared, there is a room for improvement.
• Conformity	Objectives and measures are prepared.
Indicator: ④	
In the case of small-scale fisheries or fisheries with insufficient data, whether fishery management and operation system for small-scale fisheries and fisheries with insufficient data in light of risk management are established and those fisheries are managed under such system.	
<input type="checkbox"/> Existence of small-scale fisheries and fisheries with insufficient data	
<input type="checkbox"/> Existence of management and operation system for small-scale fisheries and fisheries with insufficient data	
Evaluation: ④	
• Major non-conformity	The management and operation system do not exist.
• Minor non-conformity	Although the management and operation system exist, there is a portion with no evidence.
• Observation	Although the management and operation system exist, there is a room for improvement.
• Conformity	The management and operation system exist.
• Not applicable	Small-scale fisheries are not operated.
Indicator: ⑤	
Whether the knowledge of traditional fisheries, fishers and fishery regions which is utilized in the management system may be objectively verified.	
<input type="checkbox"/> Existence of verification means	
Evaluation: ⑤	
• Major non-conformity	The means do not exist.
• Minor non-conformity	Although the means exist, there is a portion with no evidence.
• Observation	Although the means exist, there is a room for improvement.
• Conformity	The means exist.
• Not applicable	Small-scale fisheries are not operated.
Guidance for Auditors:	

For the requirement 2.5, the requirement may be assessed by checking and confirming the “materials showing that the target reference point such as MSY and limit reference point or scientific substitute level are disclosed”.

For the fish species specified in the Act on Preservation and Control of Living Marine Resources of Japan, MSY is set as the target of stock management, and for the fish species for which ABC is established under this Act, calculation is made in accordance with the basic rule for ABC calculation. This rule adopts the Precautional Approach and specifies the limit reference point and target reference point based on the Spawning Stock Biomass (SSB). As TAC is set based on the candidate of ABC and future forecast of SSB (recovery target), the items ① - ③ may therefore be checked and confirmed in the Assessment of Fishery Resources in Japan for the fish species subject to TAC specified under the above Act. Further, as TAC is also normally set through similar procedures for the international stock controlled by the regional fisheries organizations, those items may be checked and confirmed by means of the Status of Fishery Resources in the World and the quoted annual report of regional fisheries organizations. The remaining amount after securing stock biomass necessary for egg collection to maintain the historic high level is set as the total allowable catch (homing amount - necessary stock biomass) for salmon as well, which leads to such formula as this necessary stock biomass = limit reference point = target reference point.

Further, in a management organization where the applicant runs small-scale of local fishery and where such organization is subject not only to the national and prefectural regulations but also to its own voluntary regulations, considerable recovery of fish catches under its own regulations is often disclosed by persons such as researchers because such organization itself has no advantage in disclosing the information. In such organization, the matters such as ① validity of applied reference point, ② - ③ validity of its own management objectives and management guidelines, and ④ validity of substitute stock assessment by means such as annual fluctuation of CPUE are checked and confirmed not only with the materials such as reports of scientific examination but also with operation rules describing a precautionary and adaptive operation system where the operation is suspended under such unexpected poor catch as in the item 1.2.6 or fish catch records and the like.

Examples of Evidence:

- ① Basic rules to calculate ABC
http://abchan.fra.go.jp/digests2017/details/2017details_part1.pdf
- ② Assessment of Fishery Resources in Japan
http://abchan.fra.go.jp/digests2017/details/2017details_part1.pdf
http://abchan.fra.go.jp/digests2017/details/2017details_part2.pdf
http://abchan.fra.go.jp/digests2017/details/2017details_part3.pdf
- ③ Trends of Fishery Resources in Japan

http://abchan.fra.go.jp/resource_trends_report/index.html

- ④ Status of Fishery Resources in the World

<http://kokushi.fra.go.jp/index-2.html>

- ⑤ Number of catches, collecting eggs and releases in each river. Hokkaido National Fisheries Research Institute, The National Research and Development Agency, Japan Fisheries Research and Education Agency (FRA)

<http://salmon.fra.affrc.go.jp/zousyoku/river/river.htm>

2.6 Compliance with TAC

Requirement: 2.6	
In applicable cases, the total allowable catch (TAC) system shall be complied by the fishery of which the unit of certification is a part.	
Indicator: ①	
Whether TAC system is complied if such system is implemented and complied. <input type="checkbox"/> Compliance with TAC	
Evaluation: ①	
• Major non-conformity	The TAC system is not complied.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	The TAC system is complied.
• Not applicable	The TAC system is not applicable.
Guidance for Auditors:	
<p>For the requirement 2.6, the requirement may be assessed by checking and confirming the “materials such as official fisheries statistics showing compliance with TAC”.</p> <p>As the Fisheries Agency supervises TAC under the national laws of Japan and the amount of fish catch results and publishes the results thereof every year, these published data are checked and confirmed. As TAC is allocated to, and managed under, each type of fisheries, compliance with the allocated amount by the fishery to which the applicant belongs is also checked and confirmed with this material.</p> <p>If TAC is set for the fish species other than those for which TAC is set under the national laws, the items are checked and confirmed by reference to the materials such as records of “tripartite council of red snow crab industry” as TAC is not disclosed on the website for the fisheries of regionally distributed stock such as red snow crab and coast flying fish.</p>	
Examples of Evidence:	
<p>① Report: Number of catches. Fisheries Agency. http://www.jfa.maff.go.jp/j/suisin/s_tac/index.html</p> <p>② Report: Number of catches, collecting eggs and releases in each river. Hokkaido National Fisheries Research Institute, The National Research and Development Agency, Japan Fisheries Research and Education Agency (FRA) http://salmon.fra.affrc.go.jp/zousyoku/river/river.htm</p> <p>③ Regional management of Red Snow Crab: Fisheries Agency.</p>	

http://www.jfa.maff.go.jp/j/suisin/s_kouiki/nihonkai/attach/pdf/index-8.pdf#search=%27%E3%83%99%E3%83%8B%E3%82%BA%E3%83%AF%E3%82%A4%E3%82%AC%E3%82%AD+IQ%27

2.7 Prevention of overfishing

Requirement: 2.7	
The stock under consideration shall not be overfished. Necessary measures are taken in a timely manner to avoid recruitment overfishing if the stock is below the reference point where stock recovery measures are required to be taken.	
Indicator: ①	
Whether overfishing is defined. <input type="checkbox"/> For example, definition of overfishing such as reference point (including those equivalent thereto)	
Evaluation: ①	
• Major non-conformity	The overfishing is not defined.
• Minor non-conformity	Although the overfishing is defined, there is a portion with no evidence.
• Observation	Although the overfishing is defined, there is a room for improvement.
• Conformity	The overfishing is defined.
Indicator: ②	
Whether it may be checked and confirmed that no overfishing occurs to the target stock. <input type="checkbox"/> Stock status of target stock	
Evaluation: ②	
• Major non-conformity	The status corresponds to the definition of overfishing.
• Minor non-conformity	Although the status does not correspond to the definition of overfishing, there is a portion with no evidence.
• Observation	Although the status does not correspond to the definition of overfishing, there is a room for improvement or there is a risk that it will correspond to such definition in the future.
• Conformity	The status does not correspond to the definition of overfishing.
Indicator: ③	
Whether management measures are prepared in the case that the stock under consideration are below the level of management objectives which allow the stock to recover in a reasonable time system. <input type="checkbox"/> Stock recovery measures are prepared (including those equivalent thereto).	
Evaluation: ③	
• Major non-conformity	Stock recovery measures are not prepared.

• Minor non-conformity	Although stock recovery measures are prepared, it may not be confirmed that such measures work effectively (there is a portion with no evidence).
• Observation	Although stock recovery measures are prepared, it may not be confirmed that such measures work effectively (there is a room for improvement).
• Conformity	Such measures are prepared as to be confirmed to work effectively.

Guidance for Auditors:

For the requirement 2.7, the requirement may be assessed by checking and confirming the “materials showing prevention of overfishing”.

If recruitment overfishing is defined as overfishing, there is a limit reference point as a reference point to avoid such overfishing.

As TAC is checked and confirmed in the Assessment of Fishery Resources in Japan for the fish species subject to TAC specified under the above Act. Further, as TAC is also normally set through similar procedures for the international stock controlled by the regional fisheries organizations, those items may be checked and confirmed by means of the Status of Fishery Resources in the World and the quoted annual report of regional fisheries organizations.

In a management organization which runs small-scale of local coastal fishery and is subject not only to the national and prefectural regulations but also to its own voluntary regulations, various substitute measures are taken to avoid recruitment overfishing. The examples include 1) discontinuing fishing even during fishing season if CPUE becomes below a certain value (sand lance), and 2) having a certain number of parent fish escape (salmon) to secure the Spawning Stock Biomass. If only MSY is the management objective, limit reference point is treated as equals to (=) target reference point. In addition, the permanent preserve, similar to the Marine Protected Area (MPA), designated all over the country targeting abalone and the like is a measure to prevent overfishing in a sense that a certain level of Spawning Stock Biomass is secured. In the farming type of rotational harvesting of scallop, which becomes mature at the age of one, three demarcated areas comprised of mature population at the age of one to three are protected in the four rotational harvesting schemes.

Examples of Evidence:

- ① Basic rules to calculate ABC
http://abchan.fra.go.jp/digests2017/details/2017details_part1.pdf
- ② Assessment of Fishery Resources in Japan
http://abchan.fra.go.jp/digests2017/details/2017details_part1.pdf
http://abchan.fra.go.jp/digests2017/details/2017details_part2.pdf
http://abchan.fra.go.jp/digests2017/details/2017details_part3.pdf

- ③ Trends of Fishery Resources in Japan
http://abchan.fra.go.jp/resource_trends_report/index.html
- ④ Status of Fishery Resources in the World
<http://kokushi.fra.go.jp/index-2.html>

3. Requirements on Consideration for Ecosystem

(Appropriate measures should be taken for conservation of ecosystem.)

In this section, it is checked and confirmed whether efforts are made to reduce the influence which the applicant's fishery directly or indirectly has on population other than the target biological stock or environment.

3.1 Establishment of Ecosystem-Conscious Management System

3.1.1 Information for assessment of impact on non-target species and ecosystem

Requirement: 3.1.1	
Scientific information on assessment shall be collected and maintained on the following items to assess the impact of stock under consideration on non-target species and the ecosystem.	
<ul style="list-style-type: none"> ① Fish catch and discard of non-target stock ② Bycatch of endangered species by the target fishery and efforts for conservation ③ Information on the essential habitat for stock under consideration (e.g. spawning and nursery sites) ④ Impacts of fishing gear used in the target fishery on the ecosystem (including benthic environment) ⑤ Predator-prey interaction of the stock under consideration ⑥ Balance of whole ecosystem (whether the ecosystem is not disturbed) 	
Indicator: ①	
Whether information on the reality of fish catch and discard of non-target stock by the target fishery is collected and understood.	
<input type="checkbox"/> Presence or absence of fish catch and discard of non-target stock <input type="checkbox"/> Collection and understanding of information on the influence by the above matter	
Evaluation: ①	
• Major non-conformity	Information is neither collected nor understood.
• Minor non-conformity	Although information is collected and understood, there is a portion with no evidence.
• Observation	Although information is collected and understood, there is a room for improvement.
• Conformity	Information is collected and understood.
Indicator: ②	
Whether information on the reality of bycatch of endangered species by the target fishery is collected and understood.	

<input type="checkbox"/> Collection and understanding of information on the influence on endangered species by collection of information compliant with international standards such as FAO Guidelines	
Evaluation: ②	
• Major non-conformity	Information is neither collected nor understood.
• Minor non-conformity	Although information is collected and understood, there is a portion with no evidence.
• Observation	Although information is collected and understood, there is a room for improvement.
• Conformity	Information is collected and understood.
Indicator: ③	
Whether information on the essential habitat (such as spawning sites and sites for growth of juvenile fish) out of whole habitats of target stock is collected and understood.	
<input type="checkbox"/> Collection and understanding of information on the important habitat	
Evaluation: ③	
• Major non-conformity	Information is neither collected nor understood.
• Minor non-conformity	Although information is collected and understood, there is a portion with no evidence.
• Observation	Although information is collected and understood, there is a room for improvement.
• Conformity	Information is collected and understood.
Indicator: ④	
Whether information on the impacts of fishing gears used in the target fishery has on the ecosystem (such as seabed environment) is collected and understood.	
<input type="checkbox"/> Collection and understanding of information on the impact by the fishing tools used	
Evaluation: ④	
• Major non-conformity	Information is neither collected nor understood.
• Minor non-conformity	Although information is collected and understood, there is a portion with no evidence.
• Observation	Although information is collected and understood, there is a room for improvement.
• Conformity	Information is collected and understood.
Indicator: ⑤	
Whether information on the predator-prey interaction of target stock is collected and understood.	
<input type="checkbox"/> Collection and understanding of information on the predator-prey interaction	
Evaluation: ⑤	

• Major non-conformity	Information is neither collected nor understood.
• Minor non-conformity	Although information is collected and understood, there is a portion with no evidence.
• Observation	Although information is collected and understood, there is a room for improvement.
• Conformity	Information is collected and understood.
Indicator: ⑥	
Whether information on any risks to the ecosystem other than the above matters arising through the performance of target fishery is collected and understood.	
<input type="checkbox"/> Collection and understanding of information on the influence on the ecosystem by collection of information compliant with international standards such as FAO Guidelines	
Evaluation: ⑥	
• Major non-conformity	Information is neither collected nor understood.
• Minor non-conformity	Although information is collected and understood, there is a portion with no evidence.
• Observation	Although information is collected and understood, there is a room for improvement.
• Conformity	Information is collected and understood.
Guidance for Auditors:	
<p>Among the requirements 3.1.1, the requirements are assessed by checking and confirming the materials such as the “Overview on the ecology of target biological stock” for the items ③ and ⑤, and the management plan of by-caught biological stock and the like for other items.</p> <p>The amount of fishery products listed in the item ① above is generally checked and confirmed through the applicant’s direct investigation or outsourced investigation and the like.</p> <p>For the endangered species listed in the item ②, a list of internationally designated species and the Red List are available in the Ministry of the Environment. For these species, a check is performed to see that a management plan and action guidelines are established by the investigation system of the national as a management body or of the prefecture where the applicant is located and that an investigation system is established. Further, the stock assessment of endangered species (such as cetaceans and sea animals) is checked and confirmed with the materials such as the Status of Fishery Resources in the World.</p> <p>For the item ③, a check is performed to see that there is a description in the materials such as the Assessment of Fishery Resources in Japan.</p> <p>For the item ④, as the impacts varies by the fishery type such as influence on the seabed by bottom trawl and ghost fishing by lost fishing gears, the details of influence are checked and confirmed in the literature and the like.</p>	

For the item ⑤, a check is performed to see that there is a description in the materials such as the Assessment of Fishery Resources in Japan. The feeding habit of rare species (such as cetaceans and sea animals) which may be by-caught is checked and confirmed with the materials such as the Assessment of Fishery Resources in Japan.

The examples of item ⑥ include chemical contamination by use of organotin compound and warming by CO2 emissions.

Examples of Evidence:

- ① Marine Mammals Information Database. National Museum of Nature and Science.
<https://www.kahaku.go.jp/research/db/zoology/marmam/index.php>
- ② List of endangered species. Ministry of Environment.
<https://www.env.go.jp/nature/kisho/global/list.html>
- ③ Red list. Ministry of Environment.
<https://www.env.go.jp/nature/kisho/hozen/redlist/index.html>
- ④ Assessment of Fishery Resources in Japan
http://abchan.fra.go.jp/digests2017/details/2017details_part1.pdf
http://abchan.fra.go.jp/digests2017/details/2017details_part2.pdf
http://abchan.fra.go.jp/digests2017/details/2017details_part3.pdf
<http://kokushi.fra.go.jp/index-2.html>
- ⑤ Reducing the incidental bycatch of seabirds in longline fisheries. Fisheries Agency.
http://www.jfa.maff.go.jp/j/koho/bunyabetsu/pdf/umidori_keikaku160315_a.pdf
- ⑥ Scientific and management framework on the conservation of shark species. Fisheries Agency.
http://www.jfa.maff.go.jp/j/koho/bunyabetsu/pdf/samerui_keikaku160315_a.pdf
- ⑦ Q & A the incidental bycatch of whales. Fisheries Agency.
http://www.jfa.maff.go.jp/j/whale/w_faq/konkaku_faq.html
- ⑧ Guidelines on management of sea lions. Fisheries Agency.
<http://www.jfa.maff.go.jp/j/press/sigen/pdf/140806-01.pdf>
- ⑨ Guidelines on conservation of sea turtles.
http://www.env.go.jp/nature/kisho/guideline/SeaTurtle_Handbook.pdf#search=%27%E3%82%A6%E3%83%9F%E3%82%AC%E3%83%A1+%E7%94%9F%E6%81%AF%E6%95%B0%27
- ⑩ Management plan of seals in Hokkaido. Hokkaido prefectural office.
http://www.pref.hokkaido.lg.jp/ks/skn/azarashi/H26_kentoukai3_shiryou1.pdf
<http://www.pref.hokkaido.lg.jp/ks/skn/azarasi2ki2.pdf>
- ⑪ Guidelines on conservation of endangered species in Hokkaido. Hokkaido prefectural office.
<http://www.pref.hokkaido.lg.jp/ks/skn/kishouhousinH26.pdf>
- ⑫ Management plan of brown bear in Hokkaido. Hokkaido prefectural office.

http://www.pref.hokkaido.lg.jp/ks/skn/higuma/hokkaido_bear_management_plan05.pdf

- ⑬ Population of brown bear. Hokkaido prefectural office.

<http://www.pref.hokkaido.lg.jp/ks/skn/higuma/suitei.pdf#search=%27%E3%83%92%E3%82%B0%E3%83%9E+%E7%94%9F%E6%81%AF%E6%A3%9F%E6%95%B0%27>

- ⑭ Habitat of brown bear. Hokkaido prefectural office.

<http://www.biodic.go.jp/reports/2-6/ad087.html>

- ⑮ Development of Trawl Fishing Technology to Mitigate Impacts on Marine Ecosystem. Nagasaki University.

https://www.jstage.jst.go.jp/article/suisan/73/5/73_5_835/_pdf

- ⑯ Ghost Fishing by Lost Trap. Fisheries Research Agency.

https://www.jstage.jst.go.jp/article/suisan/72/5/72_5_930/_pdf

- ⑰ Estimation of Fuel Oil Consumptions and CO2 Emission from Japanese Fishing Vessels. National Research Institute of Fisheries Engineering.

<https://agriknowledge.affrc.go.jp/RN/2010792523.pdf>

- ⑱ International Convention on the Control of Harmful Anti-Fouling Systems on Ships. Ministry of Foreign Affairs.

https://www.mofa.go.jp/mofaj/gaiko/treaty/pdfs/treaty156_4a.pdf

3.1.2 Consideration for ecosystem

Requirement: 3.1.2	
The target fishery shall be operated with consideration for minimizing adverse impact on non-target species and the ecosystem based on the results of items 3.1.1 ① - ⑥.	
Indicator: ①	
Whether target fishery is performed with consideration for minimizing harmful influence on non-target species, endangered species and the ecosystem.	
<input type="checkbox"/> Existence of management objectives and outcome indicator (information/data on non-target species, endangered species and the ecosystem) or matters/efforts which seem to be corresponding thereto with respect to harmful influence on non-target species, endangered species and the ecosystem.	
Evaluation: ①	
• Major non-conformity	No management objectives and outcome indicator nor matters/efforts which seem to be corresponding thereto exist.
• Minor non-conformity	Although management objectives and outcome indicator or matters/efforts which seem to be corresponding thereto exist, there is a portion with no evidence.
• Observation	Although management objectives and outcome indicator or matters/efforts which seem to be corresponding thereto exist, there is a room for improvement.
• Conformity	Management objectives and outcome indicator or matters/efforts which seem to be corresponding thereto exist.
Indicator: ②	
If any severe adverse impact is confirmed in the item ①, whether a measure is taken to avoid unnecessary fish catch and discard such as maximizing release of surviving fish of non-target species and further reducing mortality thereof at such timing.	
<input type="checkbox"/> Release of surviving fish of unused species, reduction of mortality at release, measures to avoid unnecessary fish catch	
Evaluation: ②	
• Major non-conformity	No measure is implemented.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	The measure is implemented.
• Not applicable	No harmful impact is confirmed.
Indicator: ③	

<p>In the item ①, whether information is disclosed in a timely manner if the ecosystem is at risk of severe adverse impact by the target fishery.</p> <p><input type="checkbox"/> Disclosure of information on the influence on the ecosystem (if at risk of serious harmful influence)</p>	
<p>Evaluation: ③</p>	
<ul style="list-style-type: none"> • Major non-conformity 	No information is disclosed.
<ul style="list-style-type: none"> • Minor non-conformity 	N/A
<ul style="list-style-type: none"> • Observation 	N/A
<ul style="list-style-type: none"> • Conformity 	Information is available.
<ul style="list-style-type: none"> • Not applicable 	No harmful impact is confirmed.
<p>Guidance for Auditors:</p> <p>For the requirement 3.1.2, the requirement is assessed by checking and confirming compliance with the “guidelines on management of endangered species and the like”.</p> <p>For seabirds, cetaceans and sea animals and the like, the requirements are checked and confirmed with the materials such as a management plan and management guidelines.</p> <p>A check is performed to see that a management plan for seabirds and sharks which are by-caught by means such as longline is established and implemented by the national as a management body or by the prefecture where the applicant is located.</p> <p>For cetaceans, a check is performed to see that instructions for handling the case such as a cetacean’s entering in set net are given by the State as a management body.</p> <p>For sea animals, population is increasing by protection for some species of sea animals. If damage to marine capture fisheries caused by such species is increasing and threatens survival of fisheries, a check is performed to see that such adaptive management plan as enabling marine capture fisheries and harmful animals to coexist is established and implemented by the national as a management body or by the prefecture where the applicant is located.</p> <p>For turtles, a check is performed with the materials showing compliance with the regulations such as the Act on the Protection of Fishery Resources and the fisheries adjustment rule of the prefecture (where the Applicant is located) as a management body.</p> <p>Further, a check is performed to see that no organotin compound which is internationally regulated is used on ship bottoms or fish nets. A check is also performed to see whether energy-saving facilities and LED are installed for CO2 reduction as necessary.</p>	
<p>Examples of Evidence:</p>	
<p>① Reducing the incidental bycatch of seabirds in longline fisheries. Fisheries Agency. http://www.jfa.maff.go.jp/j/koho/bunyabetsu/pdf/umidori_keikaku160315_a.pdf</p> <p>② Scientific and management framework on the conservation of shark species. Fisheries Agency. http://www.jfa.maff.go.jp/j/koho/bunyabetsu/pdf/samerui_keikaku160315_a.pdf</p>	

- ③ Q & A the incidental bycatch of whales. Fisheries Agency.
http://www.jfa.maff.go.jp/j/whale/w_faq/konkaku_faq.html
- ④ Guidelines on management of sea lions. Fisheries Agency.
<http://www.jfa.maff.go.jp/j/press/sigen/pdf/140806-01.pdf>
- ⑤ Guidelines on conservation of sea turtles.
http://www.env.go.jp/nature/kisho/guideline/SeaTurtle_Handbook.pdf#search=%27%E3%82%A6%E3%83%9F%E3%82%AC%E3%83%A1+%E7%94%9F%E6%81%AF%E6%95%B0%27
- ⑥ Management plan of seals in Hokkaido. Hokkaido prefectural office.
http://www.pref.hokkaido.lg.jp/ks/skn/azarashi/H26_kentoukai3_shiryou1.pdf
<http://www.pref.hokkaido.lg.jp/ks/skn/azarasi2ki2.pdf>
- ⑦ Guidelines on conservation of endangered species in Hokkaido. Hokkaido prefectural office.
<http://www.pref.hokkaido.lg.jp/ks/skn/kishouhousinH26.pdf>

3.1.3 Conservation of environment at the fishing ground and habitat

Requirement: 3.1.3	
Applicants shall contribute to the conservation of environment where covers fishing ground and habitat of the stock under consideration.	
Indicator: ①	
Whether the applicant contributes to conservation of the environment at fishing-ground and habitat for the target stock. Examples: Conservation of a seaweed bed or a tidal flat, environmental beautification and conservation of a coastal zone, conservation of a river or lake ecosystem, environmental conservation practiced in fishing activities <input type="checkbox"/> Presence or absence of any contribution made by the applicant to conservation of the habitat for the target stock	
Evaluation: ①	
• Major non-conformity	No contribution is made.
• Minor non-conformity	Although a contribution is made, there is a portion with no evidence.
• Observation	Although a contribution is made, there is a room for improvement.
• Conformity	A contribution is made.
Guidance for Auditors:	
For the requirement 3.1.3, the requirement is assessed by checking and confirming "records on habitat conservation activities" and other documents. There are various instances showing contributions in coastal fishery. Examples of the contributions include self-restraint in the use of neutral detergents, removal of beach waste and drifting waste on the ocean, recovery of heavy oil cast ashore due to an oil spill accident, tree planting in the upper reaches of a river, holding of training or learning sessions on environmental conservation, and seaweed bed raising activities.	
Examples of Evidence:	
① Activities considering environment. Kyoto prefectural office. http://www.pref.kyoto.jp/suiji/12400011.html	

3.2 Consideration of ecosystem in fish farming and resource enhancement

3.2.1 Production of artificial seedlings considering the ecosystem

Requirement: 3.2.1	
Production and release of artificial seedlings shall be conducted with due consideration given for maintaining the biological characteristics and genetic diversity.	
Indicator: ①	
Whether permission (permission for private use, water rights, etc.) necessary for seed production is acquired.	
<input type="checkbox"/> Acquisition of permission or licenses for seed production facilities, wherein the permission specifies requirements including friendliness to the environment.	
Evaluation: ①	
• Major non-conformity	No permission is acquired.
• Minor non-conformity	N/A
• Observation	N/A
• Conformity	The permission is acquired.
• Not applicable	No seed production is conducted.
Indicator: ②	
The measures for the preservation of the subpopulation of released artificial seedlings and genetic diversity is carried out.	
<input type="checkbox"/> Measures for preservation of the subpopulation (such as transplant release)	
<input type="checkbox"/> Measures for preservation of genetic diversity (such as the number of parent fish)	
Evaluation: ②	
• Major non-conformity	No measures are implemented.
• Minor non-conformity	Although measures are implemented, there is a portion with no evidence.
• Observation	Although the measures are implemented, there is a room for improvement.
• Conformity	The measures are implemented.
• Not applicable	No release of artificial seedling is implemented.
Indicator: ③	
Whether the parent fish used for seeding production has no record of subcultured, and the applicant takes measures to use the parent fish that provides a clear record of capture.	
<input type="checkbox"/> The parent fish have catch record	
<input type="checkbox"/> The parent fish are not subcultured	

Evaluation: ③	
• Major non-conformity	No measures are implemented.
• Minor non-conformity	Although measures are implemented, there is a portion with no evidence.
• Observation	Although the measures are implemented, there is a room for improvement.
• Conformity	The measures are implemented.
• Not applicable	No release of artificial seedling is implemented.
Indicator: ④	
Whether the record of release (the number of releases, timing, size, etc.) are collected. Whether appropriate release methods (released size, appropriate growth stage, etc.) are implemented.	
<input type="checkbox"/> Record of release data (the number of releases, release date, size, etc.) <input type="checkbox"/> Considerations of appropriate release methods (growth stage, etc.)	
Evaluation: ④	
• Major non-conformity	No measures are implemented.
• Minor non-conformity	Although measures are implemented, there is a portion with no evidence.
• Observation	Although the measures are implemented, there is a room for improvement.
• Conformity	The measures are implemented.
• Not applicable	No release of artificial seedling is implemented.
Indicator: ⑤	
Whether measures are taken to prevent the spread of disease.	
<input type="checkbox"/> System for diagnosis of fish disease <input type="checkbox"/> Measures taken to prevent the spread of fish disease	
Evaluation: ⑤	
• Major non-conformity	No measures are implemented.
• Minor non-conformity	Although measures are implemented, there is a portion with no evidence.
• Observation	Although the measures are implemented, there is a room for improvement.
• Conformity	The measures are implemented.
• Not applicable	No release of artificial seedling is implemented.
Guidance for Auditors:	
For the requirement 3.2.1, the requirement is assessed by checking and confirming "materials on	

the seed production facility's organization and records" and other documents.

The item ① is assessed and confirmed with official paper about permission for the seed production facility and other documents at the facility.

The item ② is assessed and confirmed with the applicant's survey research reports to see that a local stock is determined based on generic data and release is performed based on determined results to maintain the local stock. In the case of salmon, the survey research reports are assessed and confirmed to see that the applicant has performed monitoring such as observing the number of salmon fishes going upstream in a river where natural spawning is only conducted.

The item ③ is assessed and confirmed with documents such as the applicant's record on production to see that seed is produced in accordance with Guidelines on Release of Artificial Seeds and other standards. In the case of salmon, check to see that seed is produced to maintain the race (or local stock) of the seed in a river.

The item ④ is assessed and confirmed with the applicant's statistical data.

The item ⑤ is assessed and confirmed with guidebooks such as a manual that describes a management system (reporting in the event of a fish disease and taking steps thereafter) in which management is properly performed by an expert of fish disease or a person who qualifies as a fish epidemic prevention specialist (certified by the Japan Fisheries Resource Conservation Association).

Examples of Evidence:

- ① Permit of seeding production. Blueprint of hatchery.
- ② Genetic structure of chum salmon populations in Japan. Hokkaido National Fisheries Research Institute, Fisheries Research Agency
<https://www.fra.affrc.go.jp/bulletin/bull/bull39/39-04.pdf#search=%27%E3%82%B5%E3%82%B1+%E9%81%BA%E4%BC%9D%E7%9A%84%E5%A4%9A%E6%A7%98%E6%80%A7+%E7%B3%BB%E7%BE%A4%27>
- ③ Distribution of naturally spawning chum salmon populations in Hokkaido. Salmon and Freshwater Fisheries Research Institute.
<https://www.hro.or.jp/list/fisheries/marine/att/o7u1kr000000r0w.pdf#search=%27%E3%82%B5%E3%82%B1+%E8%87%AA%E7%84%B6%E7%94%A3%E5%8D%B5%27>
- ④ Monitoring report of salmon. Shiretoko White Paper. Shiretoko Data Center. Ministry of Environment.
http://shiretoko-whc.com/data/research/annual_report/h23/ap4_11.html
- ⑤ Guidelines on Release of Artificial Seeds. The National Research and Development Agency. Japan Fisheries Research and Education Agency. Fisheries Agency.

http://www.jfa.maff.go.jp/j/koho/bunyabetsu/pdf/identeki_tayousei_sisin.pdf#search=%27%E3%82%B5%E3%82%B1+%E9%81%BA%E4%BC%9D%E7%9A%84%E5%A4%9A%E6%A7%98%E6%80%A7+%E7%B3%BB%E7%BE%A4%27

- ⑥ Resource evaluation of subpopulation of halibut in the North Pacific in 2018. Tohoku National Fisheries Research Institute. Fisheries Research Agency
<http://abchan.fra.go.jp/digests28/details/2857.pdf#search=%27%E3%83%92%E3%83%A9%E3%83%A1+%E6%94%BE%E6%B5%81%E5%8A%B9%E6%9E%9C%27>
- ⑦ Stock enhancement of halibut in the North Pacific. Fisheries Research Agency
<http://www.yutakanaumi.jp/pdf/saibai/2-2.pdf#search=%27%E3%83%92%E3%83%A9%E3%83%A1+%E6%94%BE%E6%B5%81%E5%8A%B9%E6%9E%9C%27>
- ⑧ Annual report of major prefectures (Salmon). The National Research and Development Agency. Japan Fisheries Research and Education Agency. Fisheries Agency.
<http://salmon.fra.affrc.go.jp/zousyoku/result/result.htm>
- ⑨ Number of catches, collecting eggs and releases in each river. Hokkaido National Fisheries Research Institute, The National Research and Development Agency, Japan Fisheries Research and Education Agency (FRA)
<http://salmon.fra.affrc.go.jp/zousyoku/river/river.htm>
- ⑩ Manual on diagnosis of specific disease. Japan Fisheries Resource Conservation Association.
<http://www.fish-jfrca.jp/02/pdf/H28diagnosticmanual.pdf>
- ⑪ Manual on investigation of pathogen in salmon. The National Research and Development Agency, Japan Fisheries Research and Education Agency
http://nria.fra.affrc.go.jp/sindan/kenkyu/pdf/sakemasu_yagai.pdf

3.2.2 Establishment of management objectives and measures for maintaining naturally reproduced population

Requirement: 3.2.2	
Management objectives as to the stock under consideration shall be developed and management measures based on the objectives shall be implemented to maintain an existing the natural reproductive stock components of the stock under consideration.	
Indicator: ①	
Whether measures such as tagging of released fish enable individual assessment of released and naturally-reproduced populations and hence the effect of releasing is assessed. (Whether the naturally-reproduced population is assessed)	
<input type="checkbox"/> The effect of releasing is assessed by taking measures such as tagging of released fish	
Evaluation: ①	
• Major non-conformity	The effect of release is not assessed.
• Minor non-conformity	Although the effect of releasing is assessed, there is a portion with no evidence.
• Observation	Although the effect of releasing is assessed, there is a room for improvement.
• Conformity	The effect of release is assessed.
• Not applicable	No release of fish is conducted.
Indicator: ②	
Whether management objectives, outcome indicator, or items and efforts equivalent thereto are present to maintain an existing naturally-reproduced population.	
<input type="checkbox"/> Existence of management objectives, outcome indicators, or items and efforts equivalent thereto for the naturally-reproduced population	
Evaluation: ②	
• Major non-conformity	Management objectives, outcome indicators, or items and efforts equivalent thereto do not exist.
• Minor non-conformity	Although management objectives, outcome indicators, or items and efforts equivalent thereto exist, there is a portion with no evidence
• Observation	Although management objectives, outcome indicators, or items and efforts equivalent thereto exist, there is a room for improvement.
• Conformity	Management objectives, outcome indicators, or items and efforts equivalent thereto exist.
• Not applicable	No release of fish is conducted.

Indicator: ③	
Whether efforts as management measures for ② are undertaken at assessing and conserving a habitat for the naturally-reproduced population to maintain the population.	
<input type="checkbox"/> Efforts at conserving the habitat	
Evaluation: ③	
• Major non-conformity	No measures are undertaken.
• Minor non-conformity	Although measures are undertaken, there is a portion with no evidence.
• Observation	Although the measures are undertaken, there is a room for improvement.
• Conformity	The measures are undertaken.
• Not applicable	No release of artificial seedling is conducted.
Guidance for Auditors:	
For the requirement 3.2.2, the requirement is assessed by checking and confirming survey reports about "releasing effect" and "releasing plan."	
The item ① is assessed and confirmed by examining whether tagged released fish is recaptured to estimate the ratio of tagged released fish to the naturally-reproduced population.	
The items ② and ③ are assessed and confirmed with survey reports or other information to see that in the case of salmon, a river where no releasing is conducted to exclusively allow natural spawning is preserved (zoning), or efforts or endeavors are undertaken to secure and develop a spawning ground for natural spawning in a river where wild and released populations coexist.	
Examples of Evidence:	
① Resource evaluation of subpopulation of halibut in the North Pacific in 2018. Tohoku National Fisheries Research Institute. Fisheries Research Agency http://abchan.fra.go.jp/digests28/details/2857.pdf#search=%27%E3%83%92%E3%83%A9%E3%83%A1+%E6%94%BE%E6%B5%81%E5%8A%B9%E6%9E%9C%27	
② Stock enhancement of halibut in the North Pacific. Fisheries Research Agency http://www.yutakanaumi.jp/pdf/saibai/2-2.pdf#search=%27%E3%83%92%E3%83%A9%E3%83%A1+%E6%94%BE%E6%B5%81%E5%8A%B9%E6%9E%9C%27	
③ Distribution of naturally spawning chum salmon populations in Hokkaido. Salmon and Freshwater Fisheries Research Institute. https://www.hro.or.jp/list/fisheries/marine/att/o7u1kr000000r0w.pdf#search=%27%E3%82%B5%E3%82%B1+%E8%87%AA%E7%84%B6%E5%86%8D%E7%94%9F%E7%94%A3%27	

- ④ Estimation of the population of wild chum salmon *Oncorhynchus keta* in Japanese hatchery rivers. Hokkaido National Fisheries Research Institute. Fisheries Research Agency.
https://www.jstage.jst.go.jp/article/suisan/79/2/79_12-00054/_pdf
- ⑤ Efficiency of natural reproduction of chum salmon in Chitose river, Hokkaido, Japan. Hokkaido National Fisheries Research Institute. Fisheries Research Agency.
https://www.jstage.jst.go.jp/article/suisan/79/4/79_12-00086S/_pdf

3.2.3 Monitoring the impacts of released seedlings on the stock under consideration and the ecosystem

Requirement: 3.2.3	
Monitoring of the stock under consideration and its habitat shall be conducted, and measures are taken to avoid the adverse impacts of released seedling on natural reproduction of the stock under consideration and the ecosystem.	
Indicator: ①	
Whether the stock under consideration is biologically and genetically monitored and confirmed that there are no morphological changes in the stock under consideration.	
<input type="checkbox"/> Biological (genetic fish size, age, number of eggs, timing of migration) and genetic monitoring. <input type="checkbox"/> Confirmation of morphological changes to the stock under consideration.	
Evaluation: ①	
• Major non-conformity	Not monitored and confirmed.
• Minor non-conformity	Although monitored and confirmed, there is a portion with no evidence.
• Observation	Although monitored and confirmed, there is a room for improvement.
• Conformity	Monitored and confirmed.
• Not applicable	No seedlings are released.
Indicator: ②	
Whether information about the impacts of release of artificial seedling on other species and the ecosystem is collected and understood.	
<input type="checkbox"/> Information about the seed distributional area and growth after the seed is released. <input type="checkbox"/> Other information about influence on other species and the ecosystem.	
Evaluation: ②	
• Major non-conformity	Information is neither collected nor understood.
• Minor non-conformity	Although information is collected and understood, there is a portion with no evidence.
• Observation	Although information is collected and understood, there is a room for improvement.
• Conformity	Information is collected and understood.
• Not applicable	No release of artificial seedling is implemented.
Indicator: ③	

Whether measures are introduced to avoid adverse impacts of release of artificial seedling on the natural reproduction of the stock under consideration and on the ecosystem.	
<input type="checkbox"/> Measures taken to avoid adverse impact	
Evaluation: ③	
• Major non-conformity	No measures are introduced.
• Minor non-conformity	Although measures are introduced, there is a portion with no evidence.
• Observation	Although the measures are introduced, there is a room for improvement.
• Conformity	The measures are introduced.
• Not applicable	No release of artificial seedling is implemented.
Guidance for Auditors:	
<p>For the requirement 3.2.3, the requirement is assessed by checking and confirming "scientific papers about genetic influences" and other documents.</p> <p>The item ① is checked and confirmed with survey reports and scientific papers.</p> <p>In the item ②, information about the seed distributional area and growth is assessed and confirmed with follow-up survey reports on stocked pieces. Further, in terms of influence on other species and the ecosystem, released species are basically similar to naturally-reproduced pieces, and influence of an increase in the number of pieces due to released seedling is assessed and confirmed with information about naturally-reproduced species.</p> <p>The item ③ is assessed and confirmed with the record on seed production to see that seed is produced in accordance with technical guidelines for reducing the risk of an impact on genetic diversity and other standards.</p>	
Examples of Evidence:	
<p>① Effectiveness of hatchery supplementation and its impacts on wild populations. Tokyo University of Marine Science and Technology. https://www.jstage.jst.go.jp/article/suisan/82/3/82_WA2284/_pdf</p> <p>② Genetic structure of chum salmon populations in Japan. Hokkaido National Fisheries Research Institute. Fisheries Research Agency. https://www.fra.affrc.go.jp/bulletin/bull/bull39/39-04.pdf#search=%27%E3%82%B5%E3%82%B1+%E9%81%BA%E4%BC%9D%E7%9A%84%E5%A4%9A%E6%A7%98%E6%80%A7+%E7%B3%BB%E7%BE%A4%27</p> <p>③ Resource evaluation of subpopulation of halibut in the North Pacific in 2018. Tohoku National Fisheries Research Institute. Fisheries Research Agency http://abchan.fra.go.jp/digests28/details/2857.pdf#search=%27%E3%83%92%E3%83%A9%E3%83%A1+%E6%94%BE%E6%B5%81%E5%8A%B9%E6%9E%9C%27</p>	

- ④ Guidelines on Release of Artificial Seeds. The National Research and Development Agency. Japan Fisheries Research and Education Agency. Fisheries Agency.
http://www.jfa.maff.go.jp/j/koho/bunyabetsu/pdf/identeki_tayousei_sisin.pdf#search=%27%E3%82%B5%E3%82%B1+%E9%81%BA%E4%BC%9D%E7%9A%84%E5%A4%9A%E6%A7%98%E6%80%A7+%E7%B3%BB%E7%BE%A4%27

End