

## TALKING POINTS OF SCIENTIFIC DESIGN ON RESEARCH PLAN FOR WESTERN BLUEFIN TUNA

Japan

### SUMMARY

*This document presents the skeleton for a research project on western Atlantic bluefin with the objective of obtaining fisheries-dependent and fishery-independent abundance and recruitment indices.*

### RÉSUMÉ

*Le présent document dresse le schéma d'un projet de recherche sur le thon rouge de l'Atlantique Ouest dans le but d'obtenir des indices d'abondance et de recrutement dépendants et indépendants des pêcheries.*

### RESUMEN

*Este documento presenta la estructura para un proyecto de investigación sobre atún rojo del Atlántico oeste con el objetivo de obtener índices de abundancia y reclutamiento dependientes e independientes de la pesquería.*

### KEYWORDS

*Research program, Fishery independent indices, Larval indices, Spawning*

The paragraph 6 of the Appendix 7, Chair's Paper [WBFT-009B] of the report of the 1<sup>st</sup> Meeting of the Working Group of Fisheries Managers and Scientists in support of the Western Atlantic Bluefin Tuna Stock Assessment stipulates that:

***6. In consideration of the research proposal [WBFT-006], submitted by Japan, and the discussion that occurred within the Working Group, based upon SCRS advice, the Commission consider possible measures to support methodologies and sampling programs aimed at improving and developing fisheries-dependent and fisheries-independent abundance and recruitment indices, which would reduce uncertainties associated with the stock assessment, as well as detect possible stock collapse.***

In order for the Commission to consider possible measures to support methodologies and sampling programs according to the paragraph 6, Japan is submitting this document in 2013 ABFT WG to produce a skeleton of scientific design of research plan for western Bluefin tuna for the plenary of 2013 SCRS.

Japan is planning that related CPCs will submit an entire scientific research plans including administrative design, based on the skeleton of scientific design of research plan, until the deadline of document submission to the next Commission meeting held in the middle of November.

And, in the next Commission meeting, CPCs will discuss the all provided plans and then include agreed contents of research plan in the revised recommendation of western Bluefin tuna which replaces the Rec.12-02.

### **1. Longline research in Gulf of Mexico for spawning fish,**

#### ***1.1 Purpose of research***

Bluefin tuna in Gulf of Mexico (GOM) is important for stock indices of adult fish as well as for investigate spawning ecology. The index is considered to be for fish of western origin only.

## ***1.2 Scientific design of research plan***

In order for the related CPCs to consider, Japan is submitting the following tentative proposal in the first instance of producing a skeleton of scientific design of research plan:

- a) Present index in GOM is derived from longline fishing targeting for other species, such as yellowfin and bigeye tunas, and swordfish, which make bluefin tuna as by-catch. Then, the index is based only on a small number of bluefin tuna caught which would cause a large variance in result. Conduct fishery independent operations by using longline vessel(s) and targeting for bluefin tuna to examine the spatio-temporal distribution of bluefin tuna.
- b) Fish caught were used for biological samples or released with electronic tags such as pop-up archival tag.
- c) Gonad for spawning study can be collected from the fish caught. The length data of bluefin tuna caught is derived and provide data to examine the age and size at maturity, which is under debate for the western stock in ICCAT, at least for fish in GOM. Muscle tissue and otoliths are also collected.

Japan is expecting that the related CPCs could picture a skeleton of scientific design of research plan based on the Japan's tentative proposal mentioned above and produce their individual proposal on a skeleton of scientific design of each research plan, considering the following talking points:

(Talking points of scientific design on research plan)

- In order to achieve the purpose of the scientific research plan, what scientific data do we have to collect for each research item (A~C)?
- What are effective and appropriate research area and term?
- Considering scientific data needed to be collected, how much of research quota do we need?
- What are the number of operations/days and the number of operational vessels to achieve the research quota?
- What is observer coverage suitable for scientific needs? (Basically 100% coverage is preferable.)
- What is the term of each scientific research?

(Talking points to be needed to consider in the Commission)

SCRS requests the Commission to consider the following points other than scientific design on research plan:

- Operational method of research quotas
- Special exemption for scientific research activities from “the Area and time restrictions (i.e., the Gulf of Mexico)” provided in the paragraph 11 of the Rec.12-02
- The number of operational vessels participating in scientific research plan which will automatically decided according to scientific design of research quota, area and term.)
- Selection method of research vessels participating in scientific research plan
- Budget for scientific research plan
- Treatment of fish caught under research quota (sell? or release?)
- Dispatch of observers to research vessels (ICCAT Regional Observer? CPC's national observer of flag state? CPC's national observer of other than flag state?)

## **2. Research for young-of-the-year fish as recruitment monitoring**

### **2.1 Purpose of research**

There is no index of young-of-the-year (YOY) bluefin tuna, i.e. 20-50 cm in body length, at present. YOY index is useful because YOY has already passed through larval stage, which has severe mortality rate with highly variability under fluctuating environmental conditions, then has relatively high correlation with recruitment stock of fishery.

Because YOY of Bluefin tuna are distributed in coastal areas than in older ages, it is easier to do research than doing in high-seas and it may provide information from whole the cohort which will disperse in wider area along with getting older. It is also a strong merit that YOY would be comprised solely with western origin fish, which can be evaluated if samples were collected.

### **2.2 Scientific design of research plan**

In order for the related CPCs to consider, Japan is submitting the following tentative proposal in the first instance of producing a skeleton of scientific design of research plan:

- Fishery independent research will be conducted. Conduct research surveys in the GOM or east coast of USA during a period between August and December using chartered boat by trolling or other gears.

Japan is expecting that the related CPCs could picture a skeleton of scientific design of research plan based on the Japan's tentative proposal mentioned above and produce their individual proposal on a skeleton of scientific design of each research plan, considering the following talking points:

(Talking points of scientific design on research plan)

- In order to achieve the purpose of the scientific research plan, what scientific data do we have to collect for the research item?
- What are effective and appropriate research area and term?
- Considering scientific data needed to be collected, how much of research quota do we need?
- What are the number of operations/days and the number of operational vessels to achieve the research quota?
- What is observer coverage suitable for scientific needs? (Basically 100% coverage is preferable.)
- What is the term of each scientific research?

(Talking points to be needed to consider in the Commission)

SCRS requests the Commission to consider the following points other than scientific design on research plan:

- Operational method of research quotas
- Special exemption for scientific research activities from "Minimum fish size requirements and protection of small fish" provided in the paragraph 8 of the Rec.12-02
- The number of operational vessels participating in scientific research plan which will automatically decided according to scientific design of research quota, area and term.)
- Selection method of research vessels participating in scientific research plan
- Budget for scientific research plan
- Treatment of fish caught under research quota (sell or release?)

- Dispatch of observers to research vessels (ICCAT Regional Observer or CPC's national observer of flag state or CPC's national observer of other than flag state?)

### **3. Improvement of Rod & Reel data collection in USA**

#### **3.1 Purpose of research**

Catch rates of Rod & Reel off the east coast of USA is important information for young (age 2 to 8 or more) bluefin tuna.

It is based on information collected through telephone interview for sampled boats at present. Because the number of fish caught was small, it seems that it includes only a small part of catch and effort of recreational fishing.

#### **3.2 Scientific design of research plan**

In order for the related CPCs to consider, Japan is submitting the following tentative proposal in the first instance of producing a skeleton of scientific design of research plan:

- Report by submitted document would be convenient way in work force and speed of procedure. Note the importance of collect effort data for zero- catch. The fish for Rod & Reel is comprised with both western and eastern origin fish. Therefore, it is necessary to distinguish the two origin fish based on sufficient number of otoliths collected. Biological sampling and routine analysis program should also be established.

Japan is expecting that the related CPCs could picture a skeleton of scientific design of research plan based on the Japan's tentative proposal mentioned above and produce their individual proposal on a skeleton of scientific design of each research plan, considering the following talking points:

(Talking points of scientific design on research plan)

- In order to achieve the purpose of the scientific research plan, what scientific data do we have to collect for the research item?
- Issues of current telephone interview to collect fishing information/data for sampled boats.
- Issues of introducing a catch documentation scheme for all boats which catch ABFT including by-catch.

(Talking points to be needed to consider in the Commission)

SCRS requests the Commission to consider the following points other than scientific design on research plan:

(No particular points)

### **4. Fishery independent research which lasts for several months in Gulf of St. Lawrence Canada**

#### **4.1 Purpose of research**

The fishing season was quite short in Gulf of St. Lawrence (GSL) in 2009 and 2010 resulted in extremely high CPUE. In 2011, the season expanded by implementation of ITQ. Such an inconsistency of fishing pattern may change the relationship between CPUE and stock abundance as SCRS scientists had concerned. It is effective to conduct a fishery independent research.

#### **4.2 Scientific design of research plan**

In order for the related CPCs to consider, Japan is submitting the following tentative proposal in the first instance of producing a skeleton of scientific design of research plan:

- Conduct a fishery independent research last for several months using longline or other suitable gear. Derived results will be used to correct the fishery data and to establish independent index.

Japan is expecting that the related CPCs could picture a skeleton of scientific design of research plan based on the Japan's tentative proposal mentioned above and produce their individual proposal on a skeleton of scientific design of each research plan, considering the following talking points:

(Talking points of scientific design on research plan)

- In order to achieve the purpose of the scientific research plan, what scientific data do we have to collect for the research item?
- What are effective and appropriate research area and term?
- Considering scientific data needed to be collected, how much of research quota do we need?
- What are the number of operations/days and the number of operational vessels to achieve the research quota?
- What is observer coverage suitable for scientific needs? (Basically 100% coverage is preferable.)
- What is the term of each scientific research?

(Talking points to be needed to consider in the Commission)

SCRS requests the Commission to consider the following points other than scientific design on research plan:

- Operational method of research quotas
- The number of operational vessels participating in scientific research plan which will automatically decided according to scientific design of research quota, area and term.)
- Selection method of research vessels participating in scientific research plan
- Budget for scientific research plan
- Treatment of fish caught under research quota (sell? or release?)
- Dispatch of observers to research vessels (ICCAT Regional Observer? CPC's national observer of flag state? CPC's national observer of other than flag state?)