

**NORTHERN COMMITTEE**

**TWELFTH REGULAR SESSION**

29 August – 2 September 2016

Fukuoka, Japan

**NC Member’s Response to:**

**Management Strategy Evaluation Template: Information and Instructions**

**WCPFC-NC12-2016/WP-01**

**Secretariat**

1. This document is the compilation of NC members’ responses to *Management Strategy Evaluation Template: Information and Instructions* related with Paragraph 98 of the NC11 Summary Report. All email communications were put together, which seemed useful for members to understand where we are now in the process of developing MSE.
2. List of contents include:
3. Communications between Japan and Dr John Holmes (NPALBWG Chair) …………..2
4. Philippines ………………………………………………………………………………4
5. Fiji ………………………………………………………………………………………5
6. USA ……………………………………………………………………………….…….7
7. Chinese Taipei ………………………………………………………………………….18
8. Japan ……………………………………………………………………………………20
9. Canada ………………………………………………………………………………….20
10. **Communications between Japan and Dr John Holmes (NPALBWG Chair)**

**From:** yuujirou\_akatsuka@nm.maff.go.jp [mailto:yuujirou\_akatsuka@nm.maff.go.jp]   
**Sent:** Friday, November 13, 2015 9:35 PM  
**To:** john.holmes@dfo-mpo.gc.ca  
**Cc:** Hisashi Endo; …; Mr. Masanori Miyahara  
**Subject:** Re: NC11: Management Strategy Evaluation Template: Information and Instructions

Dear Dr. John Homes,   
  
I am writing in order to confirm our “homework” at NC11 meeting on MSE for the NPALB.   
  
According to paragraph 98 in the draft NC11 summary report, the members are requested to submit answers to the question by the Secretariat by November 19, 2015.  Through the process of development of “answers” internally, Japan consider it appropriate to clarify “the question” in order to prevent confusion among members, especially members which unfortunately could not attend the NC11 meeting.  While instruction from the Secretariat responded to the request to some extent, it would be appreciated if the ALB WG chair could confirm that what members are requested according to the paragraph is to submit input from managers by filling out cells in “Proposed Management Objective Information for North Pacific Albacore Tuna” of WCPFC-NC11-IP-12.   
  
In addition to this, Japan would like to request the NPALB WG the followings:   
  
1) In WCPFC-NC11-IP-12, you explained the definition of terms used in MSE process: Japan considers it is very helpful for stakeholders to understand the process.  In this context, it would be appreciated if the NPALB WG chair could prepare the conceptual overview of MSE for the NPALB in order to promote stakeholders’ understandings.   
  
2) For reference, it would be appreciate if the NPALB WG chair could show the tonnage of female spawning biomass corresponding to the LRP (20% SSB current, F=0).   
  
Thank you for your positive consideration toward the above requests in advance.   
  
Regards,   
  
Yujiro

**From:** Holmes, John [mailto:John.Holmes@dfo-mpo.gc.ca]   
**Sent:** Saturday, November 14, 2015 9:45 AM  
**To:** Yujiro Akatsuka  
**Cc:** Hisashi Endo; …; Gerard.DiNardo@noaa.gov  
**Subject:** RE: NC11: Management Strategy Evaluation Template: Information and Instructions

Dear Akatsuka-san,

Thank-you for your email.

You are correct:  members are requested to fill in cells on the blank template pages to the best of their ability.  There is a template for management objectives and a template for harvest control rules.  I do not expect that every member will be able to complete every cell since this is the first time many of you have been exposed to these concepts. But the ALBWG and I would be happy if you tried.  The most important outcome that we need from this exercise are your ideas about management objectives for the stock, even if its only a sentence, for example, “maintain female spawning biomass above the limit reference point” (an ecological objective) or maintain catches between 70,000 and 90,000 t (an economic objective). The other cells are attempting to pull out more specific information that the ALBWG will use to operationalize the objectives for testing in the MSE. We provided some examples in bold text designed to show you the level of detail that we will eventually need to conduct the MSE. The examples are not meant to limit your choices.

This is the first attempt to get this kind of information from you as managers.  It will not be the only engagement between the ALBWG and NC on the MSE. In my view as Chair of the ALBWG, this exercise and the reporting at the Commission meeting in Bali is a way to get a first look at what NC members are thinking and perhaps identify areas where managers are having trouble so that we (the ALBWG) can prepare material for the upcoming workshop in April 2016.

In answer to your numbered points below:

1. I am happy to prepare some sort of conceptual overview of MSE for NPALB, but I’m not sure what you are looking for and when you want it.  Let me ask some questions:  do you want a general presentation on MSE, with specific details related to NPALB such as the propose timeline or do you want a presentation that shows how the terms defined in WCPFC-NC11-IP-12 fit together or something else entirely?  When do you want this overview?  In Dec at the Commission meeting or April 2016 or NC12?  Please clarify and I will be happy to comply. In the meantime, I have attached a copy of the presentation on NPALB and MSE that I made at NC11.
2. I have attached a plot of estimated female spawning biomass from 1966 to 2012 from the last assessment, showing unfished female spawning biomass, the LRP, and female spawning biomass supporting MSY (SSBMSY).  A caveat about this plot:  we have a scaling issue with biomass estimates. This is not a new issue, but it means that absolute biomass estimates are highly uncertain. However, the location of the LRP relative to current female spawning biomass or SSBMSY does not vary with the scaling. At this time, the ALBWG recommends that you do not use a specific biomass value for objectives or harvest control rules, e.g., we suggest you do not formulate an objective such as “maintain female spawning biomass above 70,000 t”.

I trust that these comments are helpful and I look forward to your reply.

John

**From:** yuujirou\_akatsuka@nm.maff.go.jp [mailto:yuujirou\_akatsuka@nm.maff.go.jp]   
**Sent:** Tuesday, November 17, 2015 3:09 PM  
**To:** Holmes, John  
**Cc:** Jason Raubani; …; wan.chen@live.com  
**Subject:** RE: NC11: Management Strategy Evaluation Template: Information and Instructions

Dear John,

Thank you for your comments.  They were very helpful for our work, not only for the Bali meeting but also future works on this matter.   
  
Regarding your confirmation on the conceptual overview of MSE for NPALB, I response as follows:

* Japan would appreciate it if you could make a presentation that shows how the terms defined in WCPFC-NC11-IP-12 fit together.  Since your presentation at NC11 was very good one for us to understand the broad framework of NPALB and MSE, then it would be really appreciated if you could make further specific presentation with terms defined in WCPFC-NC11-IP-12.
* Japan would like to see this overview to be explained at workshop in April 2016 because it will be held for Managers/Stakeholders. As mentioned previously, the concept of the MSE process is a new concept for most managers/stakeholders. Therefore overview of the process should be helpful for them to understand it.

Thank you again for your comments.   
  
Regards,   
  
Yujiro   
  
**From:** Holmes, John [mailto:John.Holmes@dfo-mpo.gc.ca]   
**Sent:** Wednesday, November 18, 2015 4:05 AM  
**To:** Yujiro Akatsuka  
**Cc:** Jason Raubani; …; wan.chen@live.com  
**Subject:** RE: NC11: Management Strategy Evaluation Template: Information and Instructions

Hi Yujiro,

Thanks for your reply.  I will of course put together a presentation on the terms as you have requested for the April 2016 workshop.  In fact, I have been asked to do this kind of presentation at the MOW4 workshop in Bali on Nov30 and Dec 1 so any NC members in Bali at that time will be able to get a double dose of the presentation and provide feedback to me prior to the April workshop.

MSE is also a new concept for many scientists as well.  So we’re all feeling our way slowly through it.

John

**From:** yuujirou\_akatsuka@nm.maff.go.jp [mailto:yuujirou\_akatsuka@nm.maff.go.jp]   
**Sent:** Wednesday, November 18, 2015 4:16 AM  
**To:** Holmes, John  
**Cc:** Jason Raubani; …; wan.chen@live.com  
**Subject:** RE: NC11: Management Strategy Evaluation Template: Information and Instructions

Thank you for your response, John.  I am very pleased to hear that we have opportunity to hear this kind of presentation at the MOW4.  Looking forward to seeing you again in Bali!   
  
Regards,   
  
Yujiro

1. **Philippines**

-----Original Message-----  
From: Benjo Tabios [mailto:benjo\_tabios@yahoo.com]   
Sent: Saturday, November 14, 2015 11:40 AM  
To: Yujiro Akatsuka; JohnHolmes  
Cc: Hisashi Endo; …; Gerard.DiNardo@noaa.gov  
Subject: RE: NC11: Management Strategy Evaluation Template: Information and Instructions

Hi to all.

Noted with thanks.

North Pacific Albacore is a by-catch for the Philippines.

Nevertheless, we shall attempt to fill in the blanks that we are aware of the answer.

Best regards to all.

Benjamin

1. **Fiji**

**From:** Aisake Batibasaga [mailto:abatibasaga@gmail.com]   
**Sent:** Tuesday, November 17, 2015 9:56 AM  
**To:** SungKwon Soh  
**Cc:** masanori\_miyahara@nm.maff.go.jp; … ttaleo@gmail.com; Jason Raubani  
**Subject:** Re: NC11: Management Strategy Evaluation Template: Information and Instructions

Good afternoon Dr SungKwon,

I am forwarding the response from Fiji (in consultation with colleagues from the Pacific SIDs and FFA).

We have attempted to fill and complete the template, and is forwarded herewith.

Please find attached a response from Fiji regarding the request for input to define management objectives for the North Pacific albacore tuna to begin the Management Strategy Evaluation (MSE) process.  We have also put up some additional comments.

Fiji notes that the example of management objectives shown in your example template are derived from the policy statements in the North Pacific albacore management framework approved by NC10.  As these have been approved by NC10, Fiji accepts these as the overall objectives.

However, Fiji has recently witnessed a sharp decline in the economic viability of the South Pacific Albacore tuna fishery due to an increased number of subsidised foreign vessels, and there is potential for these fleets to target North Pacific albacore as the southern fishery increasingly produces lower CPUEs, and becomes uneconomic.

As a result of these concerns, and based on our experience we recommend a more risk averse approach when undertaking the MSE and setting harvest control rules.  Based on Fiji’s concern that more caution in the exploitation of the North Pacific albacore is essential, our management objectives in the template are more conservative than those agreed by NC10.

Fiji looks forward to working with the ALBWG as you progress the MSE and HCRs for north Pacific albacore.  Should you have any queries with the attached please, contact me via return email.

Many thanks again,

Aisake.

Fiji Representative.

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| **Value** | **Question** | **Potential Management Objective** | **Target or Threshold Value** | **Measurement Time Horizon** | **Acceptable Risk (Probability for Achieving Target/Avoiding Threshold)** | **Performance Indicators & Criteria** |
| Ecological | What is the desired status (i.e., abundance) of the stock? | Maintain biomass above the LRP | 20% SSB0 F=0     2 generations, 30 yr | 2 generations, 30 yr | 95% of the projected years | Number of years in which stock in/not in overfished state |
| Ecological | How do we grow the biomass? | Move biomass towards a target reference point | 50%SSB0 F=0 | At least 2 generations |  | Gradual increase in available biomass |
| Socio-economic | What is the desired level of catch? | Maintain catch at recent average levels subject to achieving ecological objectives | Average of recent catches | 2010 - 2014 | 70% of projected years | Proportion of years in which average catch achieved |
| Socio-economic | What is the maximum change in catch? | Limit average annual variability (AAV) in catch | 10% | Most recent 5 years | 70% | CV of annual catch |
| Cultural | What is a viable level of resource access for harvesters? | Maintain current catches in targeting and non-targeting fisheries | Median catch (2010-14) | Annual | 70% of projected years | Average annual catch by fishery |

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| **Evaluation Method** | **Fishery Control** | **Reference Point** | **Data Evaluated by Rule** | **Evaluation Period** | **Rules** | |
| **Spawning Biomass Below Reference Point** | **Spawning Biomass Above Reference Point** |
| Model | Total allowable catch (TAC) | Limit Reference Point (LRP) | SSB | 3 yr (when assessment model run) | TACt+3 =0; | TAC = F-target (i.e., use the agreed F-target when SSB is above the LRP) |
| Data | TAC | Average catch | Annual catch | Every year | TACt+1 = TACt when Annual catch < Average Catch | Maintain TAC and move towards TRP |

1. **USA**

**From:** Tom Graham [mailto:tom.graham@noaa.gov]   
**Sent:** Thursday, November 19, 2015 12:45 PM  
**To:** SungKwon Soh  
**Cc:** Michael Tosatto; Mr. Raymond Clarke; Emily Crigler  
**Subject:** Re: NC11: Management Strategy Evaluation Template: Information and Instructions

Dear SK,  
  
On behalf of Michael Tosatto, attached is the US input for the NP albacore MSE.  The input is organized into five sets of scenarios to be evaluated, the last of which is actually multiple scenarios, as proposed by the United States in NC11-DP01.  Please let us know if there are any questions about our input.  We look forward to seeing you in Bali.  
  
Regards, Tom

| **USA 1: Proposed Candidate Management Objective Information for North Pacific Albacore** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Value** | **Question** | **Potential Management Objective** | **Target or Threshold Value****[[1]](#footnote-1)** | **Measurement Time Horizon** | **Acceptable Risk (Probability for Achieving Target/Avoiding Threshold)1** | **Performance Indicators/Criteria1** |
| --- | --- | 1. Ensure long-term conservation and sustainable catch of North Pacific albacore by achieving an optimum level of average yield taking into account economic, social, and ecological factors (including long-term economic and social benefits to the various North Pacific albacore fishery participants) | * Achieve FTARGET:   when SBCURRENT ≥ SBTARGET, FTARGET = 0.71F20%; when SBLIMIT < SBCURRENT < SBTARGET, FTARGET = 0.71F20% \* SBCURRENT/SBTARGET;  when SBCURRENT < SBLIMIT, FTARGET determined by rebuilding plan – see objective 2c and HCR   * Achieve SBTARGET:   SBTARGET = 0.2SBcurrent,F=0   * Avoid TAC <25th percentile of catches in 1985-2014 * Avoid CPUE falling below 1985-2014 average | * 30y * 30y * 30y * 30y * 30y * 30y        * 30y | * ≤10% likelihood (i.e., 1 year in 10) * ≤50% likelihood in any year over 30 years | * F, relative to FTARGET (proportion of years above and below) * SB, relative to SBTARGET (proportion of years above and below) * TAC, relative to 25th percentile of catches in 1985-2014 (proportion of years above and below) * CPUE, by fishery, relative to 1985-2014 respective averages * Catch, by fishery and year * Average annual catch, by fishery * Fishing effort, by fishery and year |
| --- | --- | 2. Prevent overfishing and recover rapidly from an overfished condition, should it occur | * Avoid FLIMIT:   when SBCURRENT ≥ SBTARGET, FLIMIT = F20%;  when SBCURRENT < SBTARGET, FLIMIT = F20% \* SBCURRENT/SBTARGET   * Avoid SBLIMIT: SBLIMIT = 0.1SBcurrent,F=0 | * 30y * 30y * 30y | * ≤50% likelihood in any year over 30 years * ≤50% likelihood would ever occur over 30 years | * F, relative to FLIMIT (proportion of years above, and likelihood of being above in any one year over 30 years) * SB, relative to SBLIMIT (proportion of years above and below, and likelihood of ever going below over 30 years) * Likelihood stock will rebuild to SBTARGET within 10 years once overfished |
| --- | --- | 3. Equitably distribute the “conservation burden” among members. (Conservation burden may be assessed in terms of revenue foregone and costs incurred because of management restrictions and requirements.) |  | * 30y * 30y * 30y |  | * Proportional distribution of catch among fisheries * Partial F, by fishery and year * Relative fishery impact (contribution to depletion of SB), by fishery and year |
| --- | --- | 4. Ensure a stable supply of high-quality North Pacific albacore | * Avoid >25% inter-annual change in TAC | * 30y | * ≤10% likelihood (i.e, 1 year in 10) | * Inter-annual variability in TAC |

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| **USA 1: Proposed Candidate Harvest Control Rule Information for North Pacific Albacore** | | | | | | |
| **Evaluation Method** | **Fishery Control** | **Reference Point** | **Data Evaluated by Rule** | **Evaluation Period[[2]](#footnote-2)** | **Rules** | |
| **~~Below Reference Point~~** | **~~Above Reference Point~~** |
| Model | TAC | See specifications above for:  SBLIMIT  SBTARGET  FLIMIT  FTARGET | See rules | * 3 years, with new assessment * As applicable | * Set TAC every three years in concert with new stock assessment at FTARGET. Each time the TAC is set, it would be re-allocated—first, between fisheries in the WCPO and fisheries in the EPO, and then among fisheries within each of the two areas. The allocations will be in proportion to the areas’ and fisheries’ respective proportional contributions to total F during the most recent three years for which estimates are available. * If SB<SBLIMIT at any time, adopt and implement rebuilding plan expected to rebuild SB to SBTARGET within 10 years with at least 50% probability, adjusting TAC every three years to maintain that probability. | |

| **USA 2: Proposed Candidate Management Objective Information for North Pacific Albacore** | | | | | | |
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| **Value** | **Question** | **Potential Management Objective** | **Target or Threshold Value[[3]](#footnote-3)** | **Measurement Time Horizon** | **Acceptable Risk (Probability for Achieving Target/Avoiding Threshold)1** | **Performance Indicators/Criteria1** |
| --- | --- | 1. Ensure long-term conservation and sustainable catch of North Pacific albacore by achieving an optimum level of average yield taking into account economic, social, and ecological factors (including long-term economic and social benefits to the various North Pacific albacore fishery participants) | * Achieve FTARGET:   when SBCURRENT > SBLIMIT, FTARGET set such that the likelihood of exceeding FLIMIT in any one year over 30 yr is ≤10%;  when SBCURRENT < SBLIMIT, FTARGET determined by rebuilding plan – see objective 2c and HCR   * Avoid annual total catch less than average in 1985-2014 | * 30y * 30y * 30y * 30y * 30y      * 30y * 30y | * ≤50% likelihood in any year over 30 years | * F, relative to FTARGET (proportion of years above and below) * Annual total catch, relative to annual catches in 1985-2014 * TAC, relative to 25th percentile of catches in 1985-2014 (proportion of years above and below) * CPUE, by fishery * Catch, by fishery and year * Average annual catch, by fishery * Fishing effort, by fishery and year |
| --- | --- | 2. Prevent overfishing and recover rapidly from an overfished condition, should it occur | * Avoid FLIMIT:   when SBCURRENT ≥ SBTARGET, FLIMIT = F40%;  when SBCURRENT < SBTARGET, FLIMIT = F40% \* SBCURRENT/SBTARGET   * Avoid SBLIMIT: SBLIMIT = 0.2SBcurrent,F=0 | * 30y * 30y * 30y | * ≤40% likelihood in any year over 30 years * ≤10% likelihood would ever occur over 30 years | * F, relative to FLIMIT (proportion of years above, and likelihood of being above in any one year over 30 years) * SB, relative to SBLIMIT (proportion of years above and below, and likelihood of ever going below over 30 years) * Likelihood stock will rebuild to SBLIMIT within 10 years once overfished |
| --- | --- | 3. Equitably distribute the “conservation burden” among members. (Conservation burden may be assessed in terms of revenue foregone and costs incurred because of management restrictions and requirements.) |  | * 30y      * 30y      * 30y |  | * Proportional distribution of catch among fisheries * Partial F, by fishery and year * Relative fishery impact (contribution to depletion of SB), by fishery and year |
| --- | --- | 4. Ensure a stable supply of high-quality North Pacific albacore |  | * 30y |  | * Inter-annual variability in TAC |

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| **USA 2: Proposed Candidate Harvest Control Rule Information for North Pacific Albacore** | | | | | | |
| **Evaluation Method** | **Fishery Control** | **Reference Point** | **Data Evaluated by Rule** | **Evaluation Period[[4]](#footnote-4)** | **Rules** | |
| **~~Below Reference Point~~** | **~~Above Reference Point~~** |
| Model | TAC and TAE | See specifications above for:  SBLIMIT  FLIMIT  FTARGET | See rules | * 3 years, with new assessment * Always * As applicable | * Set TAC every three years in concert with new stock assessment at FTARGET. Each time the TAC is set, it would be re-allocated—first, between fisheries in the WCPO and fisheries in the EPO, and then among fisheries within each of the two areas. The allocations will be in proportion to the areas’ and fisheries’ respective proportional contributions to total F during the most recent three years for which estimates are available. * Fishing effort in fisheries targeting albacore is limited to each fishery’s respective 2002-2004 average level. * If SB<SBLIMIT at any time, fishing effort in fisheries targeting albacore is limited to zero until SB≥SBILMIT. | |

| **USA 3: Proposed Candidate Management Objective Information for North Pacific Albacore** | | | | | | |
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| **Value** | **Question** | **Potential Management Objective** | **Target or Threshold Value[[5]](#footnote-5)** | **Measurement Time Horizon** | **Acceptable Risk (Probability for Achieving Target/Avoiding Threshold)1** | **Performance Indicators/Criteria1** |
| --- | --- | 1. Ensure long-term conservation and sustainable catch of North Pacific albacore by achieving an optimum level of average yield taking into account economic, social, and ecological factors (including long-term economic and social benefits to the various North Pacific albacore fishery participants) | * Achieve FTARGET:   FTARGET = F15%   * Avoid annual total catch less than average in 1985-2014 | * 30y * 30y * 30y * 30y      * 30y * 30y * 30y | * ≤25% likelihood in any year over 30 years | * F, relative to FTARGET (proportion of years above and below) * Annual total catch, relative to annual catches in 1985-2014 * TAC, relative to 25th percentile of catches in 1985-2014 (proportion of years above and below) * CPUE, by fishery * Catch, by fishery and year * Average annual catch, by fishery * Fishing effort, by fishery and year |
| --- | --- | 2. Prevent overfishing and recover rapidly from overfished condition, should it occur | * Avoid SBLIMIT: SBLIMIT = 0.2SBcurrent,F=0 | * 30 yr * 30y | * ≤50% likelihood would ever occur over 30 years | * SB, relative to SBLIMIT (proportion of years above and below, and likelihood of ever going below over 30 years) * Likelihood stock will rebuild to SBLIMIT within 10 years once overfished |
| --- | --- | 3. Equitably distribute the “conservation burden” among members. (Conservation burden may be assessed in terms of revenue foregone and costs incurred because of management restrictions and requirements.) |  |  |  | * Proportional distribution of catch among fisheries * Partial F, by fishery and year * Relative fishery impact (contribution to depletion of SB), by fishery and year |
| --- | --- | 4. Ensure a stable supply of high-quality North Pacific albacore |  |  |  |  |

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| **USA 3: Proposed Candidate Harvest Control Rule Information for North Pacific Albacore** | | | | | | |
| **Evaluation Method** | **Fishery Control** | **Reference Point** | **Data Evaluated by Rule** | **Evaluation Period[[6]](#footnote-6)** | **Rules** | |
| **~~Below Reference Point~~** | **~~Above Reference Point~~** |
| Model | TAE | See specifications above for:  SBLIMIT  FTARGET | See rules | * 3 years, with new assessment * As applicable | * Set TAE at FTARGET, in terms of fishing days and applicable collectively to all fisheries targeting albacore (see NC determinations for the list of such fisheries), every three years in concert with new stock assessment, based on ISC’s periodic evaluation of relationship between F and fishing effort. The TAE would be competitive—it would not be allocated in any way. * If SB<SBLIMIT at any time, set TAE at FTARGET \* SBCURRENT/SBLIMIT until SB≥SBILMIT. | |

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| **USA 4: Proposed Candidate Management Objective Information for North Pacific Albacore** | | | | | | |
| **Value** | **Question** | **Potential Management Objective** | **Target or Threshold Value** | **Measurement Time Horizon** | **Acceptable Risk (Probability for Achieving Target/Avoiding Threshold)** | **Performance Indicators/Criteria** |
| --- | --- | 1. Avoid biomass falling below the BLIMIT | * BLIMIT=20% Bcurrent, F=0 | * 30y | * Avoid in 90% of projected years | * B, relative to BLIMIT (proportion of years in which B is larger than BLIMIT) |
| --- | --- | 2. Maintain biomass at level which is sustainable and maximizes harvest levels | * BTARGET=33% Bcurrent, F=0 | * 30y | * None | * B, relative to BTARGET (proportion of years above and below) |
| --- | --- | 3. Avoid F exceeding FLIMIT | * FLIMIT=F20% Bcurrent, F=0 | * 30y | * Avoid in 90% of projected years | * F, relative to FLIMIT (proportion of years in which F is smaller than FLIMIT) |
| --- | --- | 4. Maintain F at levels approaching FMSY | * FTARGET=F33% Bcurrent, F=0 | * 30y | * None | * F, relative to FTARGET (proportion of years above and below) |
| --- | --- | 5. Allow catch to approach MSY | * MSY | * 30y | * None | * Annual yield, relative to MSY |

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| **USA 4: Proposed Harvest Control Rule Information for North Pacific Albacore** | | | | | | | | | | | | |
| **Evaluation Method** | **Fishery Control** | | **Reference Point** | | **Data Evaluated by Rule** | **Evaluation Period[[7]](#footnote-7)** | | **Rules** | | | | |
| **Below Reference Point** | | | **Above Reference Point** | |
| Model | TAC | | See above specifications for:  BLIMIT  BTARGET  FLIMIT  FTARGET | | B | 3 years, with new assessment | | When BCURRENT < BTARGET,  TAC set at FTARGET \* (BCURRENT/BTARGET) | | | When B > BTARGET,  no TAC | |
| **USA 5: Proposed Candidate Management Objective Information for North Pacific Albacore** | | | | | | | | | | | | | |
| **Value** | | **Question** | | **Potential Management Objective** | | | **Target or Threshold Value** | | **Measurement Time Horizon** | **Acceptable Risk (Probability for Achieving Target/Avoiding Threshold)** | | **Performance Indicators/Criteria** | |
| --- | | --- | | Not specified; evaluate performance using the criteria in section 6 of NC11-DP01. | | | See section 5 of NC11-DP01 for 5 candidate combinations of B-limits and F-targets, to be evaluated as part of the 4 candidate HCRs in section 4 of NC11-DP01. | | For evaluation, use a reasonably long projection period. | Not specified; measure performance using the criteria in section 6 of NC11-DP01. | | See section 6 of NC11-DP01. | |

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| **USA 5: Proposed Harvest Control Rule Information for North Pacific Albacore** | | | | | | |
| **Evaluation Method** | **Fishery Control** | **Reference Point** | **Data Evaluated by Rule** | **Evaluation Period[[8]](#footnote-8)** | **Rules** | |
| **~~Below Reference Point~~** | **~~Above Reference Point~~** |
| Model | TAC, TAE | See section 5 of NC11-DP01 for 5 candidate combinations of B-limits and F-targets. | See section 4 of NC11-DP01. | 3 years, with new assessment | See section 4 of NC11-DP01 for four sets of candidate HCRs, each of which is to be evaluated using the five different candidate combinations of reference points in section 5 of NC11-DP01. | |

1. **Chinese Taipei**

From: FA302\_Liu Chi-Chao [mailto:chichao@ms1.fa.gov.tw]   
Sent: Friday, November 20, 2015 2:38 AM  
To: SungKwon Soh  
Cc: ' 傅家驥秘書'; Hsiang-yi Yu; Mr. Ding-Rong Lin; chency@mail.nkmu.edu.tw  
Subject: <FAMS1>Re: NC11: Management Strategy Evaluation Template: Information and Instructions

Dear Dr. Soh,

Attached please find the filled MSE template submitted by Chinese Taipei in accordance with NC decision.

We look forward to discuss on this matter with other members in Bai.

Sincerely yours,

Chi-Chao Liu

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| **Proposed Management Objective Information for North Pacific Albacore Tuna.** | | | | | | | |
| **Value** | | **Question** | **Potential Management Objective** | **Target or Threshold Value** | **Measurement Time Horizon** | **Acceptable Risk (Probability for Achieving Target/Avoiding Threshold)** | **Performance Indicators/Criteria** |
| Ecological | | What is the desired status (i.e., abundance) of the stock? | Maintain biomass above the LRP | 20% SSB0 F=0 | 2 generations, 30 yr | 90% of the projected years | Number of years in which stock in/not in overfished state |
| Socio-economic | | What is the maximum change in effort? | Limit average annual variability (AAV) in effort | 25% | 10 yr | 50% |  |
| Cultural | What is a viable level of resource access for harvesters? | | Maintain current fishing effort in targeting fisheries | Average (2002-04) or the level in 2004 | Annual | 50% of projected years | Average annual fishing effort by fishery |

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| **Proposed Harvest Control Rule Information for North Pacific Albacore Tuna.** | | | | | | |
| **Evaluation Method** | **Fishery Control** | **Reference Point** | **Data Evaluated by Rule** | **Evaluation Period** | **Rules** | |
| **Below Reference Point** | **Above Reference Point** |
| Model | Total allowable effort (TAE) | LRP | SSB | 3 yr | TAEt+3 = (F-target\*SSBcurrent)/LRP | TAEt+3 = F-target when SSBcurrent > LRP |

1. **Japan**

**From:** yuujirou\_akatsuka@nm.maff.go.jp [mailto:yuujirou\_akatsuka@nm.maff.go.jp]   
**Sent:** Wednesday, November 25, 2015 8:01 PM  
**To:** SungKwon Soh  
**Cc:** Mr. Masanori Miyahara; …; Feleti Teo  
**Subject:** Response from Japan: NC11: Management Strategy Evaluation Template: Information and Instructions

Dear Soh-san   
  
I submit the response from Japan as follows.  This time the distributed template was not used for the response; we continue to try to complete it for the April meeting.   
  
1. Japan supports the management objective of the North Pacific albacore to maintain the biomass, with reasonable variability, around its current level as adopted for the North Pacific albacore fishery at NC10.

2. Following points should be considered as “reasonable variability” of the above management objective.

* Change of the biomass related to North Pacific regime shifts.
* Decline of the biomass due to target shift towards from other species.

Lastly, taking advantage of this opportunity, I would like to express our deepest gratitude to the ISC albacore WG chair for his supplemental explanation, information and advice.   
  
Regards,

Yujiro

**7. Canada**

**From:** Johnson, Kate [mailto:Kate.Johnson@dfo-mpo.gc.ca]   
**Sent:** Thursday, November 26, 2015 9:38 AM  
**To:** SungKwon Soh  
**Cc:** Holmes, John; Lavigne, Élise; Jackson, Corey; Brett Norton; Robert Jones  
**Subject:** RE: NC11: Management Strategy Evaluation Template: Information and Instructions

Hi SK,

Please find attached Canada’s preliminary input on management objectives for an MSE on North Pacific albacore tuna, which are aligned with the broader policy statement objective in the PA Framework adopted by NC10, and WCPFC11.  Thank you for your flexibility with regard to the deadline. This additional time enabled us to have a first round of consultations with our stakeholders.

Given the iterative nature of this process as John Holmes has noted previously to other NC members, Canada looks forward to further opportunities to discuss and revise these objectives through continued work between managers, scientists and stakeholders of NC members, including at an April 2016 ISC-led workshop.

Please let me know if you have any questions with respect to Canada’s input.

Looking forward to seeing you in Bali.

Best,

Kate

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| **Proposed Management Objective Information for North Pacific Albacore Tuna – Canada’s Preliminary Input** | | | | | | |
| **Value** | **Question** | **Potential Management Objective** | **Target or Threshold Value** | **Measurement Time Horizon** | **Acceptable Risk (Probability for Achieving Target/Avoiding Threshold)** | **Performance Indicators/Criteria** |
| Ecological | What is the desired status (i.e., abundance) of the stock? | **Maintain spawning biomass above the Limit Reference Point** | 20% SSB0 F=0 | 2 generations, 30 yr | 95% of the projected years | Number of years in which stock in/not in overfished state |
| **Maintain total biomass around its current level** | B2008-2012 | 2 generations, 30 yr | 75% | Proportion of projected years in which Bcurrent/B2008-2012 ≥ 1.0 |
| Socio-economic | What is the desired level of catch? | **Maintain catch at average levels subject to achieving ecological objectives** | Average2002-2012 | 5 yr, 10 yr | 75% | Proportion of years in which Current catch/Average2008-2012 ≥ 1.0 |
| What is the maximum change in catch? | **Limit average annual variability (AAV) in catch** | 15% | 5 yr, 10 yr | 50% | CV of annual catch |
| What is the maximum change in effort? | **Limit AAV in effort** | 15% | 5 yr, 10 yr | 50% | CV of annual effort |
| Cultural | What is a viable level of resource access for harvesters? | **Maintain current fishing effort (vessel days) in targeting and non-targeting fisheries** | Average2002-2004; | Annual | 50% of projected years | Number of years in which current effort/Average2008-2012 ≥ 1.0 |

1. Where left blank, ideas for indicators, targets, or thresholds are welcome. [↑](#footnote-ref-1)
2. We interpret this column to mean, for this candidate HCR, the frequency of adjustment of the fishery control. [↑](#footnote-ref-2)
3. Where left blank, ideas for indicators, targets, or thresholds are welcome. [↑](#footnote-ref-3)
4. We interpret this column to mean, for this candidate HCR, the frequency of adjustment of the fishery control. [↑](#footnote-ref-4)
5. Where left blank, ideas for indicators, targets, or thresholds are welcome. [↑](#footnote-ref-5)
6. We interpret this column to mean, for this candidate HCR, the frequency of adjustment of the fishery control. [↑](#footnote-ref-6)
7. We interpret this column to mean, for this candidate HCR, the frequency of adjustment of the fishery control. [↑](#footnote-ref-7)
8. We interpret this column to mean, for these candidate HCRs, the frequency of adjustment of the fishery control. [↑](#footnote-ref-8)