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CANDIDATE INPUTS TO INFORM A MANAGEMENT STRATEGY EVALUATION FOR NORTH PACIFIC SWORDFISH

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Submitted by the United States of America

Candidate Inputs to Inform a Management Strategy Evaluation for North Pacific Swordfish

Introduction

In 2025, the WCPFC Northern Committee (NC) agreed to initiate a management strategy evaluation (MSE) for Western and Central North Pacific Swordfish (NP SWO). The NC tasked the International Scientific Committee for Tuna and Tuna-Like Species (ISC) to develop a work plan for conducting the MSE for NC's review in 2026. The NC also tasked itself to discuss candidate operational management objectives in 2026. After NC21 concluded, the funding for a contractor to assist with the technical MSE work was secured. This funding, however, is time-limited so MSE work needs to be completed by 2028. To ensure the MSE can be completed within the time constraints of funding, the United States believes that it is important for NC to provide ample guidance on inputs to the MSE so that the ISC can begin work on preliminary analyses. The United States has developed the following candidate inputs for consideration by NC22 for an MSE for NP SWO. The United States used some of the inputs used in the NP albacore and Pacific bluefin tuna MSEs as templates for the candidate inputs for NP SWO.

Candidate Management Objectives and Performance Indicators

The United States proposes the following candidate management objectives and candidate performance indicators for use in the NP SWO MSE evaluation (Table 1).

Table 1. Candidate management objectives and performance indicators by category for a NP SWO MSE.

Category	Management Objective	Label	Performance Indicator
Safety	Maintain SSB above the limit reference point with at least 80% probability	Probability SSB > LRP	Probability that SSB is greater than the LRP in any given year of the MSE evaluation period
Status	Maintain fishing intensity (F) at the target value with at least a 50% probability	F_{Target}/F	F_{Target}/F
Stability	Change in total allowable catch between years should	Catch stability	Probability that change in TAC is <10% between consecutive management periods

	be relatively gradual	Probability of no management change	Probability of SSB > $SSB_{threshold}$
Yield	Maintain catches above average historical catch levels	Probability catch ≥historical catch levels	Probability that catch in any given year of the MSE evaluation period is greater than or equal to average historical (2014-2018) catch.

Candidate Reference Points

Previously, the ISC has identified NP SWO as a Level 1 stock, and HS 2016-01 specifies the LRP for NP SWO at F_{MSY}.

The United States proposes the additional following candidate reference points for consideration as part of the WCNPO MSE evaluation:

- LRP = SSB_{MSY} = 17% $SSB_{F=0}$
- TRPs = FSPR40%, FSPR35%, FSPR30%,
- ThRP = 35% $SSB_{F=0}$, 30% $SSB_{F=0,}$, 25%$SSB_{F=0}$

Candidate Harvest Control Rules

The United States proposes evaluating the candidate harvest control rules (HCRs) contained in Table 2 with the general HCR shape as depicted in Figure 1. Additionally, these HCRs should be evaluated with and without a meta-rule that limits TAC changes between management periods to 10%.

Table 2. Candidate Harvest Control Rules

HCR	F_{TARGET}	Control Point 1 (ThRP)	Control Point 2 (LRP)	Fmin
1	F40%	35% $SSB_{F=0}$	17% $SSB_{F=0}$	F90%
2	F40%	30% $SSB_{F=0}$	17% $SSB_{F=0}$	F90%
3	F40%	25% $SSB_{F=0}$	17% $SSB_{F=0}$	F90%
4	F35%	30% $SSB_{F=0}$	17% $SSB_{F=0}$	F90%
5	F35%	25% $SSB_{F=0}$	17% $SSB_{F=0}$	F90%
6	F30%	25% $SSB_{F=0}$	17% $SSB_{F=0}$	F90%

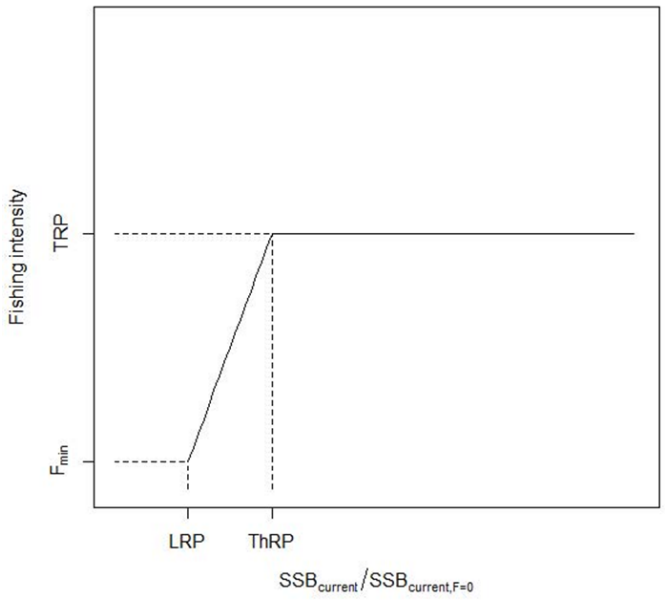

Figure 1. Generalized HCR shape

Other Operational Considerations

The United States suggests that the WCNPO SWO MSE be designed such that the duration of the management periods be 3 years. Additionally, the United States suggests that the output controls of the MSE are total allowable catch (TAC).

The MSE should be designed to manage all fisheries harvesting NP swordfish (Western and Central North Pacific Ocean SWO and North Eastern Pacific Ocean SWO) in the Pacific Ocean north of the equator.