

International Consultations on the Establishment of the South Pacific Regional Fisheries Management Organisation

Eighth International Meeting: Science Working Group

SP-08-SWG-INF-07

Proposed Process for the 2009 Review of Jack Mackerel Fishery Indicators by the SPRFMO Science Working Group - Jack Mackerel Sub-Group

Background

The SPRFMO SWG Jack Mackerel Sub-Group will be conducting a review of fishery indicators for the jack mackerel fisheries at the next meeting of the Sub-Group in New Zealand from 2 - 6 November 2009. The purpose of this document is to propose a process for preparation of papers on jack mackerel fishery indicators, and for reviewing these papers at the November SPRFMO meeting.

The process proposed here is based on experiences with running a process of fishery indicators review within the Scientific Committee of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). A description of the CCSBT fisheries indicator review process, example papers and reports and an example of the sort of scientific advice which emanates from such reviews are provided in background information papers SP-08-SWG-JM-INF-01, 02 and 03. Participants should refer to those documents for examples of how to prepare papers on, and subsequently review, fishery indicators.

Proposed Indicators Review Process

1. All participants in South Pacific jack mackerel fisheries are to prepare National Reports on their fisheries for submission to the November 2009 SWG meeting. These reports should specifically include descriptions and information on trends in jack mackerel catch, effort and nominal CPUE over the history of their fisheries, and should describe changes in fleet composition, trends in fishing effort and changes in geographic distribution of fishing effort over the past five years, in accordance with National Report Guidelines adopted at the 7th SPRFMO meeting in Lima Peru in May 2009 (see below).

Extract from SPRFMO National Report Guidelines

2.1 Description of Fisheries

A general overview description of the fisheries of the flag state concerned over the previous five years, providing summarised information on:

- Fleet composition (number of vessels by gear type and size) and how this has changed by year.
- Summary tables of effort and total catches by year, gear-type, season and area.
- Brief description of significant changes and new developments in fisheries over the past year.

2.2 Catch, Effort and CPUE Summaries

Overview summary figures of trends in nominal effort, catch and CPUE in the SPRFMO area over the history of the fishery, including:

- Trends in nominal fishing effort by gear type over time.
- Trends in catch by species for the main target, by-catch, associated and dependent

species.

- Trends in nominal CPUE by gear type for the main species contributing to catches.

(SPRFMO May 2009)

- Participants should also prepare scientific papers on potentially relevant fishery indicators for jack mackerel fisheries or components of the jack mackerel stock/s. These papers should describe data used to calculate these indicators, calculation methods used and provide initial interpretation on what the indicators appear to show. A list of potentially useful indicators based on the list identified at the May 2009 meeting of the Jack Mackerel Sub-Group is attached in Annex A.
- National Reports and fishery indicators papers should be submitted to the SPRFMO Interim Secretariat by 5 October, four weeks before the start of the next SWG meeting, and posted on the SPRFMO website for review by all participants. This will allow participants to review these indicator papers before the meeting, and to prepare additional overview papers reviewing groups of indicators submitted by others, should they so wish.
- At the JMSG meeting in November, all jack mackerel fishery indicator papers (including National Reports), will be reviewed by the JMSG. The purpose of this review will be to critically review methods of calculating indicators, evaluate validity or bias in indicators, discard indicators considered to be inappropriate and provide interpretation of indicators which are retained as appropriate indicators for components of the jack mackerel stock/s and fisheries (see SP-08-SWG-JM-INF-01 for an example of such a review process).
- The JMSG will then prepare an overview and summary of the main conclusions which can be drawn from the interpretation of appropriate indicators regarding trends in status of the jack mackerel stock/s. In producing this overview and summary, participants will need to refer back to results of the most recent stock assessments available for jack mackerel in order place the changes or trends shown by indicators in the context of estimated stock status at some point in the history of the indicators (see SP-08-SWG-JM-INF-01 for an example of such a summary).
- The SWG will then have an opportunity to review the summary, conclusions and any stock status or management advice produced by the JMSG.

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List of Potential Fishery Indicators for South Pacific Jack Mackerel Fisheries

The list below shows potentially useful fishery indicators for South Pacific jack mackerel stocks and fisheries, adopted and expanded from the report of the May 2009 meeting of the Scientific Working Group - Jack Mackerel Sub-Group:

- **Trends in the Fisheries:**
 - Trends in catch.
 - Trends in effort.
 - Trends in geographic distribution of the fishery.
- **Fishery-Derived Abundance and Exploitation Indices:**
 - CPUE indices (nominal and standardised).
 - Size composition of catches.
 - Age composition of catches.
 - Estimates of fishing mortality.
- **Survey Indices:**
 - Acoustic indices of abundance (relative or absolute).
 - Biomass estimates from egg and larval surveys.
 - Trends in location and spatial extent of the stock/s.
 - Trends in the location and extent of spawning areas.
 - Size composition from surveys.
 - Age composition from surveys.
- **Biological Parameters:**
 - Size or age at maturity.
 - Condition factors.
 - Estimates of natural mortality.
- **Environmental Indices:**
 - Changes in characteristics and distribution of water masses.
 - Changes in salinity, temperature, dissolved oxygen.
 - El Niño, La Niña, ENSO and other oceanic change indices.