



“Expanded” Scientific Committee Multi-Annual Work Plan (2019)

(incorporating decisions made at COMM7)

Jack mackerel Working Group

Task	Objective	Timeline
Jack mackerel assessment data	<ul style="list-style-type: none"> Review available input data JM assessment Evaluate the impact on age-length keys due to any revisions in age determinations Standardization of commercial tuning indices Review industry data availability and usability (using self-sampling biological data and acoustic data from fishing vessels in the JM assessment). 	2019
Jack mackerel assessment (US\$80k)	<p>Conduct an assessment of Jack mackerel and have a workshop:</p> <ul style="list-style-type: none"> SC and other funds to support experts An evaluation of alternative stock structure hypotheses Review appropriate data weightings Provide TAC advice Review biological reference points (BRPs), rebuilding plan, commence MSE development to design alternative harvest control rule Explore alternative stock assessment models (Benchmark?) 	2019 and on 2019 and on 2019 2019 2019-2020 2020?
Estimation of growth	<ul style="list-style-type: none"> Analyse growth estimation in light of spatial-temporal changes using a variety of techniques such as daily increment, carbon dating, tagging Update growth estimation to be provided to the SC intersessional prior to SC07 to allow the SC to schedule a data compilation workshop at its earliest convenient 	2019-2020
Predict recruitment under climatic drivers	<ul style="list-style-type: none"> Investigate SPRFMO specific drivers of recruitment such as El Nino to improve productivity prediction 	2020-2025
Jack mackerel connectivity	<ul style="list-style-type: none"> Use modelling and observation data to predict connectivity and seasonal to decadal variability herein 	2019-2021

Deepwater Working Group

Task	Objective	Timeline
Orange roughy assessment	Conduct Orange roughy stock assessments: <ul style="list-style-type: none"> • Explore alternative stock assessment models • Estimate stock status • Provide advice on sustainable catch levels Louisville Ridge stock(s) Relevant Tasman Sea stocks Louisville Ridge stock(s)	2019 2020 2021
Orange roughy assessment data	<ul style="list-style-type: none"> • Ageing of existing and new orange roughy samples • Coordinate and design acoustic surveys for relevant stocks (intersessional consideration) 	2019-2021
Deep water stock structure (US\$15k)	Provide priority list for deepwater stock structure analyses based on assessment for non-ORY stocks Use modelling and observation data to predict connectivity: <ul style="list-style-type: none"> • Using genetic, microchemistry, morphometric, parasite prevalence and tagging experiments 	2019 2021
Other stock assessments, including ecological risk assessment	<ul style="list-style-type: none"> • Propose categorisation of stocks into assessment framework • Refine risk assessment of teleost stocks • Refine quantitative risk assessment of DW sharks caught in SPRFMO bottom fisheries • Recommend relevant reference points and/or management rules for all assessed DW stocks 	2019 2018-2020 2020 2020
VME Encounter	<ul style="list-style-type: none"> • Annual review of benthic and VME indicator taxa • Design approach for benthic bycatch review • Collect and review VME catch and other benthic sampling data 	Annual from 2019 2019 2020
Spatial management	<ul style="list-style-type: none"> • Update and re-assess VME and habitat suitability modelling as appropriate 	2020
<u>CMM 03 request regarding Encounters with VMEs.</u>	<u>Review all reported VME encounters and:</u> <ul style="list-style-type: none"> • <u>provide advice on whether each encounter is consistent with the models applied to prevent SIAs on VMEs</u> • <u>determine whether any encounters were unexpected based on the relevant VME habitat suitability models,</u> • <u>provide advice on appropriate management actions</u> 	<u>2019</u>

	<p><u>(including but not limited to any proposed by the relevant Member or CNCP).</u></p> <p>This review should include consideration of:</p> <ul style="list-style-type: none"> • <u>analyses provided by a Member or CNCP;</u> • <u>historical fishing events within 5nm of the encounter, in particular, any previous encounters, and all information on benthic bycatch;</u> • <u>model predictions for all VME indicator taxa;</u> • <u>details of the relevant fishing activity, including the bioregion; and</u> • <u>any other relevant information</u> 	
<u>CMM 03 request regarding VME management measures.</u>	<p><u>Review and provide advice on the effectiveness of the applied management measures, including:</u></p> <ul style="list-style-type: none"> • <u>VME indicator thresholds;</u> • <u>The number of encounters;</u> • <u>The number of encounters that were expected based on habitat suitability models;</u> • <u>The appropriateness of the management approach (e.g. scale);</u> • <u>Additional relevant VME indicator species that have not been modelled, assessed or for which thresholds have not been established;</u> • <u>Refinement of the encounter protocol;</u> • <u>Measures to prevent the catch and/or impacts on rare species; and</u> • <u>Anything else the SC considers relevant to ensure the measure is achieving its objective and the objectives of the Convention</u> 	<u>2019 -2020</u>
<u>CMM 03 request regarding ongoing appropriateness of CMM.</u>	<ul style="list-style-type: none"> • <u>Review all available data and provide advice on the ongoing appropriateness of the management measures to ensure the CMM continues to achieve its objective and the objectives of the Convention</u> 	<u>From 2020</u>
Bottom Fishery Impact Assessment	<ul style="list-style-type: none"> • Revise and update BFIAS • Review updated BFIA, including cumulative impacts, from members relative to revised BFIAS 	2019 2021
<u>CMM 03 request regarding Marine mammals, seabirds, reptiles and other species of concern.</u>	<p><u>The Scientific Committee shall provide advice biennially to the Commission on:</u></p> <ul style="list-style-type: none"> • <u>Direct and indirect interactions between bottom fishing and marine mammals, seabirds, reptiles and other species of concern;</u> • <u>Any recommended spatial or temporal closures or spatially/temporally limited gear prohibitions for any identified hotspots of these species; and</u> • <u>Any recommended bycatch limits and/or measures for an encounter protocol for any of these species.</u> 	<u>From 2020</u>

Squid Working Group

Task	Objective	Timeline
<u>Squid workshop</u>	<ul style="list-style-type: none"> • <u>SC7 in Cuba will be preceded by a 2-day workshop covering squid topics</u> 	<u>2019</u>
Squid assessment and CMM development	<ul style="list-style-type: none"> • Develop a plan for more detailed within-season fishery monitoring • Develop and present alternative assessment approaches • Evaluate possible management approaches against Commission objectives 	2018 2019-2021 2019+
Squid assessment data	<ul style="list-style-type: none"> • Identify data needs and recover historical data • Sample biological information year-round in its entire distribution area • Reconstruct historical total catch records including non-CNCPs and non-members • Record and analyse diet data • Review on the acoustic surveys for Squid biomass estimation (pros, cons, challenges) 	2018-2020
Squid connectivity	<ul style="list-style-type: none"> • Develop standardised approaches, e.g., for genetic sampling (<u>US\$20k</u>) • Collect and analyse genetic samplings (Convention area and adjacent EEZs) • Use modelling and observation data to predict connectivity and seasonal to decadal variability possibly using genetic, microchemistry, morphometric, parasite prevalence, and tagging experiments 	2018-19 2019-2021 2019-2022

Habitat Monitoring Working Group

Task	Objective	Timeline
Evaluate the applicability of data collected from fishing vessels targeting pelagic species	<ul style="list-style-type: none"> • Mapping spatial-temporal population density distribution of jack mackerel using a combination of the existing acoustic survey data and acoustic information as obtained from by industry vessels. 	2019-2020
Further developments of standardized oceanographic data products and modelling	<ul style="list-style-type: none"> • Characterize jack mackerel habitat (e.g., past studies done in Peru and Chile) • Provide ecosystem status overview for SC at seasonal to decadal scale 	2019-2020
Habitat working group (US\$40k)	<ul style="list-style-type: none"> • Review the state of the art of habitat research in order to recommend specific lines of investigation in this topic within the framework of the SPRFMO. • Explore the concept of CJM habitat through retrospective analysis (including bibliographical analysis). • Define a list of existing environmental data: satellite, acoustic surveys, acoustic fisheries surveys, fishing data, fishing vessel data (VMS, Observers...) in time and space that already exist inside the SPRFMO area. • Explore possibilities to organize a symposium on the topic of pelagic habitat in the 2020s. • Organize a workshop on the state of the art of habitat research in the same place as, and immediately before, the SC meeting • Habitat suitability modelling of Jack Mackerel 	2019-2021

Other (Crosscutting issues)

Task	Objective	Timeline
Observer programme	<ul style="list-style-type: none"> Analyze observer coverage rates from simulation study for SPRFMO fisheries and recommend values to Commission (<u>periodically review</u>) Evaluate available observer data on seabird interaction rates (jack mackerel, different squid fisheries, demersal) and determine where estimates can be improved <u>provide advice on the appropriate levels of observer coverage for fisheries for which there is no fishery -specific CMM in force</u> 	<p>2019</p> <p>2019</p> <p><u>2019</u></p>
Exploratory fishing	<ul style="list-style-type: none"> Evaluate <u>and</u> review analyses on data collected from first voyages of Cook Islands exploratory lobster/crab fishery and provide advice to Commission <u>Evaluate and review the amended Cook Islands proposal due to be presented to SC7</u> Review results from <u>the New Zealand</u> exploratory toothfish fishery <u>and provide advice on progress, including whether any stock indicators show sustainability concerns and what, if any, additional measures might be required to restrict the likely bycatch of deepwater sharks or other non-target species.</u> <u>Review results from the EU exploratory toothfish fishery and provide advice on progress, including whether any stock indicators show sustainability concerns and what, if any, additional measures might be required to restrict the likely bycatch of deepwater sharks or other non- target species (including VMEs)</u> 	<p>2019</p> <p><u>2019</u></p> <p>2019-2022±</p> <p><u>2020</u></p>
Seabird / bycatch monitoring	<ul style="list-style-type: none"> Evaluate available observer data on seabird interaction rates (jack mackerel, different squid fisheries, demersal) and determine where estimates can be improved Progress southern hemisphere quantitative risk assessment (SEFRA) 	<p>2019</p> <p>2019</p>
EBSA	<ul style="list-style-type: none"> Evaluate impacts of fishing activities 	2019
<u>CMM17 Marine pollution</u>	<ul style="list-style-type: none"> <u>SC Members and CNPCs are encouraged to undertake research into marine pollution related to fisheries in the SPRFMO Convention Area to further develop and refine measures to reduce marine pollution and are encouraged to submit to the SC and the CTC any information derived from such efforts</u> 	<u>n/a</u>