

Terms of Reference: Technical workshop on approaches to utilising tagging data within regional stock assessments

Part A: Administrative Summary	
1. Project Title	Technical workshop on approaches to utilising tagging data within regional stock assessments to support best available science
2. Organization	SPC-OFP
3. Administrative Contact	Graham Pilling (grahamp@spc.int)
4. Principal Investigator (PI) and CV	Paul Hamer (SPC)
5. Commencement and Completion Date	1/1/2027 to 31/12/2028
6. Project Budget Summary	Salary - The project requires a key technically proficient person (independent consultant, preferably external to the WCPO) to oversee and coordinate the production of the synthesis/review paper, and support the co-ordination and development of the technical inputs to the workshop: 65 K USD - Logistical organisation of the workshop will be provided in-kind through science staff supported by RFMOs and host venue support organisation. Operational - Catering for the meeting, 10K USD Contingency - Unforeseen operating expenses 10K USD Travel - Flights and subsistence for at least 4 independent experts: 40 K USD Publication fees - Publication costs: 10K USD Travel costs for the RFMO analysts would be expected to be covered from their own budgets. In-person attendance is essential, but hybrid sessions could be considered. Total: <u>135K USD</u> Co-funds sought Some SPC-OFP attendance would be supported through non-WCPFC funds.
Part B: Project Proposal Description	
1. Project Title	Technical workshop on approaches to utilising tagging data within regional stock assessments to support best available science

2. Background and Need	Tagging information is a critical data input to many WCPO tuna assessments, harvest strategy estimation methods, and models of climate impacts on tuna distribution, where they provide information on growth, mortality and movement, amongst other demographic parameters. Scientific work in the western and central Pacific Ocean benefits from a unique and extensive time series of tagging information for tropical tuna. A range of decisions must be made during the development of integrated stock assessments for tropical tuna on how data from these tagging programmes are dealt with, as a function of the structural assumptions of the assessment model being considered. This includes decisions on the length of assumed mixing periods, the level of tagging-induced mortality effects, tag reporting rates, recaptures occurring outside the model area, use of the tagging data in release-recapture or recapture-conditioned modes, etc. Many of these are defined through external analyses that develop the data sets being provided to the model. In turn, settings relating to the interpretation of tagging data must be defined within the model itself. Recent assessments have developed and refined approaches to the incorporation of tagging data and model settings. This work has identified key uncertainties such as tag mixing and the degree of potential overdispersion in the distribution of tag recaptures through time, to name two, which are either estimated or captured as key uncertainties within model uncertainty grids, particularly where they have implications for stock assessment outcomes. These decisions and settings will interact. Following focussed work on CPUE and size data inputs into regional assessment in the last few years and following the features identified in 2026 assessments, it is now important to bring a comparable level of focus on the tagging data – both the development and processing of these data sets to be introduced into the integrated model, and the model settings used.
3. Objectives and Benefits	• Conduct a comprehensive evaluation of the approaches and key decision points in the development of tagging data sets. • Review current practices and identify alternative approaches for the inclusion of tagging data sets within integrated models. • Review approaches that utilise tagging data external to integrated models. • Develop good practice approaches to the use of tagging data within regional tuna stock assessments.
4. Note	Detailed above
5. Rationale	Tagging data are a key input into a range of WCPFC assessments, as well as assessments for tuna and other species worldwide. Bringing together global experts and practitioners to discuss how to improve how these data are dealt with is timely and should benefit all relevant assessments.

6. Assumptions	• Relevant RFMOs commit and support the participation of their analysts • Relevant external experts are able to attend • Travel restrictions permit international participation • Co-funding partners can be found Suitable Timing: To be determined, but it is appropriate for this workshop to occur in 2027 prior to work being undertaken on the 2028 skipjack stock assessment.
7. Scope of Work	This project will support: 1. Convening a 5-day technical workshop on the development of tagging data sets and their incorporation within assessment models, attended by analysts involved in the modelling of tagging across relevant RFMOs, with invited experts in relevant modelling methods. 2. The workshop would cover key themes: ○ The nature and key uncertainties present in tagging data sets ○ Development of tagging data inputs for integrated assessments ○ Consideration of the assumptions that typically need to be made for tagging data to be used in integrated stock assessment models, and how those assumptions relate to tagging programme realities ○ ‘External’ methods to develop information from tagging data to input into integrated assessments (e.g. SEAPODYM, DTU Aqua spatiotemporal model) ○ Implementation, application, and strengths/weaknesses of these methods in stock assessment models, with a focus on the key sources of uncertainty and the role of assumptions (e.g., overdispersion (estimation or fixed), and including recapture rates in the mixing period calculations) 3. The outcomes of the workshop would include: ○ Synthesis paper reviewing current practices across relevant RFMOs ○ Good practice guidelines specific to the development and implementation of these data sets for tropical tuna assessments ○ Workshop report with actionable recommendations ○ Journal article/special edition (tbd) In a more general sense, the workshop’s discussions on potential future analyses will help inform the necessary logistics, experimental design and project management of tagging programmes. It will therefore feed into the discussions initiated considering SC22-SA-WP-04. A small informal steering committee of SPC and non-SPC personnel will

	be arranged to help develop and guide the workshop logistics and details and support development of outputs.
8. Activity Schedule	Phase 1 (5 months): Preparation and coordination • Literature review and RFMO consultation • Participant selection and workshop planning • Venue confirmation and logistics Phase 2 (Workshop): (potentially post SC23) Phase 3 (6 months): Follow-up and deliverables • Guidelines development • Implementation of key developments within the framework of the 2028 skipjack stock assessment Reporting to SC24
9. Project Outcomes	The outcomes of the workshop would include: ○ Synthesis paper reviewing current practices across relevant RFMOs ○ Good practice guidelines specific to the development and implementation of these data sets for tropical tuna assessments ○ Workshop report with actionable recommendations ○ Journal article/special edition (tbd)
10. Forms of Results	Report to SC24, relevant SPC PAW and consideration within 2028 SKJ assessment. Scientific publication.
11. Methods	See #10
12. Data Management Plan / Data Sets Required	Led by SPC under existing data policies and agreements
13. Other Related Projects	Following the same approach as P122a workshop on longline CPUE.
14. Collaborations	SPC IATTC Other RFMOs (e.g. CCAMLR, ICCAT, IOTC) CCMs Relevant NGOs
15. Project Staff and CVs	SPC staff External experts to be identified by small project steering committee (through correspondence)
16. Risks of Project Not Achieving Objectives	Sourcing of venue for workshop Non-funded parties have sufficient resources to cover their attendance (hybrid option not costed)
17. Timeframe	See details above
18. Budget	Salary • The project requires a key technically proficient person (independent consultant, preferably external to the WCPO) to oversee and coordinate the production of the synthesis/review

	paper, and support the co-ordination and development of the technical inputs to the workshop: 65 K USD • Logistical organisation of the workshop will be provided in-kind through science staff supported by RFMOs and host venue support organisation. Operational • Catering for the meeting, 10K USD Contingency • Unforeseen operating expenses 10K USD Travel • Flights and subsistence for at least 4 independent experts: 40 K USD Publication fees • Publication costs: 10K USD Travel costs for the RFMO analysts would be expected to be covered from their own budgets. In-person attendance is essential, but hybrid sessions could be considered. Total: <u>135K USD</u> Co-funds sought ○ Some SPC-OFP attendance would be supported through non-WCPFC funds.
19. References	SC22-SA-WP-04 SC22-SA-WP-05 SC22-SA-WP-06