

Scoping the next stock assessment platform

P123 – Background and discussion

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SPC Pre-Assessment Workshop Nouméa, 28 March 2024 **Overview**



Project P123 objective, background, terms of reference

Software Platforms *operational, current and future development*

Road Ahead assessments, workshops, collaboration, adaptive plan

Possible Outcomes level of funding, partnerships



SPC buildings - large project, resources, requirements, interim phase, flag

AD Model Builder - comparable lifetime, succession, from maintainer to container

Flight – research and development, novel breakthrough, uncertain project duration, uncertain outcome

Timing – John, Nick, Dave





Scoping the next tuna stock assessment software

Project scheduled 1 Feb 2024 to 31 Dec 2026

50K USD each year: 2024, 2025, 2026

Project P123



Project objective

Scoping phase to assess what features and capabilities will be important in future assessment software for tunas

Overarching objective

Continue to support the specificities and future requirements of WCPFC tuna stock assessments

Desired outcome

Software platform that has the desired functionality for tuna assessments around the world

Background



Future advances to MFCL are not expected to be as mathematically innovative as in the past

Need to plan and identify whether alternative existing software exists, or new software must be developed in the longer term

Starting a phased approach to replace MULTIFAN-CL

Collaboration with other tuna RFMOs is essential to produce the desired outcome

This is anticipated to be a multi-year endeavor that may need additional funding

Terms of Reference



2024

- 1. Review and identify important model features for tuna assessments
- 2. Identify existing platforms that have these features or can be extended
- 3. Reach out to and initiate collaboration with model developers
- 4. Conduct two workshops in 2024, one online and one in person

2025–2026

- 5. Conduct simulation studies
- 6. Determine which platforms can be considered viable candidates
- 7. If a viable platform has been identified, plan transition
- 8. If no viable platform is identified, extend a platform or create a new one

Software Platforms



Existing platforms that fit to length composition data

Stock Synthesis

Casal2

Gadget

Ongoing development

SAM fitted to length compsColin Millar, Anders NielsenWHAM fitted to length compsGiancarlo Correa, Tim MillerALSCLFan Zhang, Noel CadiganCCSBTD'Arcy Webber, Rich HillaryFIMSNOAA

Road Ahead



Tunas every 3 years Swordfish every 4 years Striped marlin every 5 years

> 2024 ALB MLS 2025 SKJ SWO 2026 BET YFT 2027 ALB 2028 SKJ 2029 BET YFT SWO MLS 2030 ALB



Possible Outcomes



If commitment and funding is limited, then the following unwanted outcome, characterized by a lack of progress, could well occur...

Upcoming assessments:

2024 MFCL with config changes, other platform(s) did not work well, workshop
2025 MFCL with config changes, other platform(s) did not work well, workshop
2026 MFCL without config changes, other platform(s) did not work well, workshop
2027 MFCL without config changes, other platform(s) did not work well, workshop
2028 MFCL without config changes, other platform(s) did not work well, workshop
2029 MFCL without config changes, other platform(s) did not work well, workshop
2030 MFCL without config changes, other platform(s) did not work well, workshop

Possible Outcomes

will depend on:

Level of funding

- Level 0 Annual workshops, coordination
- Level 1 Hire one person for 5 years
- Level 2 Hire two people for 5 years

Partnerships

Tuna RFMOs – funding and scientists' time Domain experts in state-space model development – scientists' time Other funding sources



Summary



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