Scoping the next stock assessment platform

Project 123 progress update and outline of options

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Overview

Introduction *background, project outline, existing software, new development*

Possible Tasks *migrate assessments to existing software, model exploration, software development*

Timeline *PAW 2024, expert meeting 2024, workshops 2024–2026, launching the main project*

Required Resources *collaboration with other tuna RFMOs, SPC staff positions & consultants*

The need to to migrate to new software

MULTIFAN-CL (MFCL) has been used in SPC tuna assessments since 1990s

MFCL team (Dave Fournier, John Hampton, Nick Davies) retiring in the 2020s

Development of new features is slowing down

Resources are being allocated to succession plans

Migrating all MFCL assessments to other platforms

Shared process, **continuous** communications, **adaptive** strategy

WCPFC – ownership, guidance, and decisions

SPC – conduct and coordinate the work

Also involved: other tuna RFMOs and various research labs

Possibly different software platforms for different stocks

Project outline

This scoping project is scheduled from 1 Feb 2024 to 31 Dec 2026. It will:

- Evaluate features and capabilities that will be important in future tuna assessments
- Explore fitting models to tuna data using existing software platforms
- Guide decisions on what kind of new software development will be required
- Establish collaboration with tuna RFMOs and research labs to achieve these goals

Possible tasks for SPC to prioritize

Pacific Community
Communauté du Pacifique

Subject to SC advice and funding approvals by WCPFC:

- *Migrate assessments to existing software*
- *Model exploration using existing software*
- *Extend existing software*
- *Design and develop new software for tuna assessments*

Timeline

2024 Scoping project launched (Feb)

2024 Pre-assessment workshop (Mar)

2024 International expert meeting (May–Jun)

2024 Developer workshop (Aug–Sep)

International expert meeting 2024

Invited stock assessment and software development experts from around the world

tuna RFMOs and various research labs

stock assessment software projects, relevant programming environments

Around 40 participants, two sessions covering European and N American time zones

Objectives: communicate, discuss, seek advice and collaboration

Outcomes: **recommendations**, expressed interest in **collaboration** among scientists

Timeline

2024 Scoping project launched

Pre-assessment workshop

International expert meeting

SC20 discussion

2024–2026 Workshops

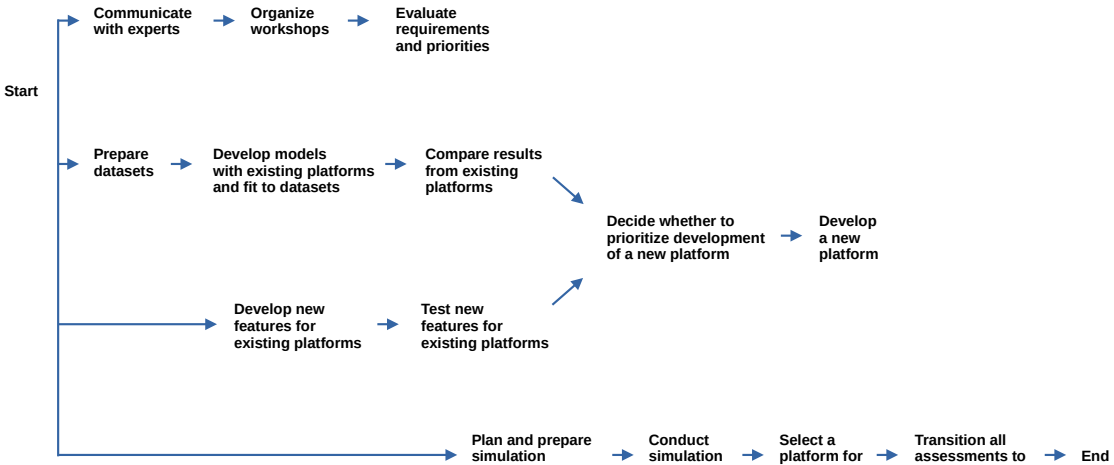
2024–2026 Launching the **main project**

The main project

The current annual budget of project 123 is sufficient for **scoping the needs**, identifying current software platforms, reaching out to the scientific community for consultation, and to conduct occasional workshops to strengthen collaboration ties and initial explorations.

The goal of the **main project**, which could either overlap or succeed the scoping project, is to test/develop tuna stock assessment software and transition all SPC assessments from MFCL to other platforms.

Scoping project (first line) and main project (next lines)



Required resources

The overarching objective of transitioning all WCPFC assessments from MULTIFAN-CL to other software platforms will require a larger project with additional project resources beyond the standard service provision agreement for stock assessments, to allow some staff to focus on model exploration and software development.

Collaboration with other tuna RFMOs

Other tuna RFMOs use primarily Stock Synthesis for tuna assessments, a platform that is also expected to be phased out in the not-too-distant future. Therefore, it would make sense for WCPFC and other tuna RFMOs to coordinate and collaborate in software succession plans and new software development.

Ideally, each tuna RFMO could hire/assign one full-time person to the project for 5 years, or until assessments have been transitioned to the new software.

SPC staff positions and consultants

Compared to the other tuna RFMOs, there is greater urgency for WCPFC to move this project forward.

Independent of decisions and commitments of the other tuna RFMOs, the main project would probably require one staff to be dedicated to this work initially and, depending on the direction taken, an additional staff or consultant with software development skills.

It is likely that transitioning MFCL assessments to other software is at least a 5 year proposition.

Scientific quality and rate of progress

The resources committed to the main project will determine the scientific quality of the end result and the number of years it takes to transition all SPC assessments from MFCL to other platforms.

Now that the first author of MFCL, David Fournier, has retired, it would be highly beneficial for the project to move relatively fast, before the remaining MFCL team (John Hampton and Nick Davies) will retire and no longer be available for consultation and involvement regarding software design, testing and technical decisions.

Summary

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SC20 discussion

- Whether SPC should migrate upcoming **billfish assessments** to Stock Synthesis
  swordfish 2025, striped marlin 2029

- Select **scoping project** tasks to prioritize in 2024–2026
  from the list of 10 tasks in the report, or other tasks

- What is needed to launch the **main project** and when
  conducting model exploration and software development, TORs, resources