

Snapper Science Stakeholder Group (SSSG) Communiqué

Meeting #2 – Monday 5 June 2023

The second Snapper Science Stakeholder Group (SSSG) meeting focused on an overview of the proposed structure of the Snapper Science Program and research projects in Research Theme 1 - Biology.

Background

To begin, Dr Troy Rogers (SARDI) provided background information about Snapper biology and recruitment variability, i.e., the number of juvenile Snapper that are added to the population each year. It showed how different trends in juvenile recruitment over the last 40 years have driven changes in abundance and fishery productivity for Snapper populations in South Australia. This demonstrated how prolonged periods of poor juvenile recruitment and continued fishing pressure have contributed to the decline of the Spencer Gulf / West Coast and Gulf St Vincent Stocks.

Dr Rogers then provided examples of other Snapper stocks in Australia and New Zealand that have experienced similar trends over the past 50 years. These included the collapse of the Snapper stock in Tasman Bay, New Zealand during the early 1980s, and the collapse and closure of the Shark Bay fishery in Western Australia during the late 1990s.

Furthermore, Dr Rogers highlighted the progressive declining trend in most of southern Australia's Snapper stocks since 2011, and that each state faces similar challenges to support stock recovery. These challenges primarily relate to the biology and life history of Snapper and included juvenile recruitment variability, sensitivity to changing environmental conditions, and aggregating/schooling behaviour.

Proposed program structure

The Snapper Science Program is a three-year, \$5 million initiative that is co-funded by the Fisheries Research and Development Corporation (FRDC) and the Government of South Australia. Dr Rogers continued with an overview of the proposed structure of the program, identifying potential research partners, and indicating project delivery timelines. The proposed program involves a range of projects that address key research priorities for Snapper that are grouped under four Research Themes – 1. Biology, 2. Estimates of Biomass, 3. Monitoring and Assessment and 4. Ecology.

The Snapper Science Program is a national research initiative that aims to address key research priorities relevant to Snapper fisheries, with a local application in South Australia, led by SARDI.

Potential research partners include Flinders University (FU), University of Adelaide (UoA), CSIRO, Victorian Fisheries Authority (VFA), and the Western Australia Department of Primary Industries and Regional Development (DPIRD).

Summary of the proposed program structure and the projects:

1. Biology

1. Recruitment variability and climate change
2. Contemporary stock structure for the West Coast population
3. Review of biological parameters

2. Estimates of Biomass

1. Refinement of the daily egg production method (DEPM) for Snapper
2. Development and application of hydroacoustic techniques
3. Evaluation of close-kin mark-recapture (CKMR) for Snapper
4. Enhancement of 'SnapEst' stock assessment model

3. Monitoring and Stock Assessment

1. Biological sampling program
2. Fishery-independent estimate of biomass
3. Recreational catch reporting tool
4. Stock assessment report

4. Ecological Needs

1. Habitat use to inform restoration
2. Fishery ecosystem model

Stock structure of Snapper

Stakeholders expressed consistent feedback regarding the uncertainty of the Snapper stock structure in South Australia. To address this, Dr Troy Rogers summarised 30 years of research that have contributed to the development of the current understanding of the structure of South Australia's three Snapper stocks.

- Spencer Gulf/West Coast Stock
- Gulf St Vincent Stock
- Western Victorian Stock

Professor Luciano Beheregaray, Flinders University (FU) then presented on a recent Snapper population genomics study undertaken by his lab, in collaboration with researchers across Australia and New Zealand. The study identified distinct breaks in the genetic structure of Snapper throughout its Australian distribution which support the model of stock structure developed by SARDI. Research findings provided context for the proposed study, which aims to better understand the stock structure of Snapper on the West Coast of Eyre Peninsula (Project 1.2).

Stakeholder involvement and feedback

Following the meeting, stakeholders were invited to provide feedback by 20 June 2023 to inform the refinement of the proposed structure and projects of the Snapper Science Program, particularly for the projects in Research Theme 1 – Biology.

Next meeting

The next SSSG meeting will be held on Friday 4 August 2023.

The meeting will provide an overview of the four proposed projects in Research Theme 2 - Estimates of Biomass, including:

1. Refinement of the Daily Egg Production Method (DEPM) for Snapper
2. Development and application of hydroacoustic surveys
3. Scoping study to evaluate close-kin mark-capture (CKMR) for Snapper
4. Review and enhancement of the stock assessment model ('SnapEst').