



# Workplan for new estimates of maturity ogive parameters for southern bluefin tuna

Jessica Farley<sup>1</sup>, Ching Ping Lu<sup>2</sup>,  
Campbell Davies<sup>1</sup>

CCSBT-ESC/2308/08

Prepared for the CCSBT Extended Scientific Committee for  
the Twenty Eighth Meeting of the Scientific Committee

28 August – 2 September 2023

---

<sup>1</sup> CSIRO Environment, Australia

<sup>2</sup> Department of Environmental Biology and Fisheries Science, National Taiwan Ocean University, Taiwan

## Background

In 2014, a costed proposal for developing an independently estimated maturity ogive (Farley et al., 2014) was supported by the ESC. Ovaries were subsequently collected by the CCSBT members including Australia, Korea, New Zealand, and The Fishing Entity of Taiwan and histological sections of the ovaries were prepared and read using the criteria provided in Farley et al. (2014). In 2019, a 2-day workshop to review the ovary sampling programs and develop a standard ovary histology classification scheme for SBT was hosted at the Research Institute for Tuna Fisheries in Bali, Indonesia (Anon, 2019). Discussions at the workshop suggested that the histological classification (and, thus, maturity status) may be incorrect in some cases. Hence, these samples needed to be revisited before any conclusions could be drawn. Additional work was undertaken to finalise the maturity criteria and classification scheme used for SBT, and preliminary maturity ogives were presented in 2022, including a novel “fecundity ogive” (Farley et al. 2022). The maturity ogives were similar across the four areas examined suggesting that spatial differences in maturity do not exist or are not large enough to be detected with the current data. The data suggested, however, that differences among readers may exist that result in different forms of the maturity ogive, and it was recommended that histological samples are read by multiple readers with consensus results before drawing any conclusions.

## Workplan

The workplan for finalising the maturity ogive parameters includes:

- An exchange of ovary histology between histology readers from Farley et al. (2022) in early 2024. The exact number of slides to be exchanged is yet to be determined but will be a representative proportion of the total number analysed.
- Readers classifying the maturity stage of each fish and the resulting data discussed among readers. Multiple online meetings will be held with the aim of identifying the reasons for different results among readers.
- A small workshop (online or in person) to finalise maturity data.
- Updating the maturity modelling based on the revised data set and reporting to the CCSBT ESC in 2024.

## References

- Anonymous (2019) Chair’s Report of the CCS BT Maturity Workshop. CCSBT-ESC/1909/07, 24th Meeting of the Scientific Committee, 7 September 2019, Cape Town, South Africa.
- Farley J, Davies C, Nugraha B. (2014) SRP proposal: Estimating size/age at maturity of southern bluefin tuna. CCSBTESC/1409/23, 19th Meeting of the Scientific Committee, 1-6 September 2014, Auckland, New Zealand.
- Farley J., Eveson P, Lu C-P, Lee SI, Hsu H-H, Kim DN, Davies C. (2022) New maturity ogive estimates for southern bluefin tuna. CCSBT-ESC/2008/10, 27<sup>th</sup> meeting of the Extended Scientific Committee, 29 August – 6 September 2022, online.