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Research mortality allowance

Proposed allowance for 2018 and 2017 usage report

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Summary

Australia requests a small research mortality allowances (RMA) for one project (1.2 t) on southern bluefin tuna (SBT) in 2018 to continue examining the health of wild SBT. In 2016, Australia was granted 1.7 t of RMA for two projects in 2017. As of 1 June 2017, a total of 1.188 had been used.

1 Proposals for 2018

Health assessment of wild southern bluefin tuna

The major aim of this project is to assess the health of wild SBT. As well as traditional health assessments including histology, microbiology, immunology and haematology, this project will aim to further develop and apply new molecular methods, including those for pathogen detection and associated pathology in wild SBT. New molecular methods will be developed which could help to identify specific blood borne biomarkers for various pathogens (disease agents) and ultimately could lead to non-lethal health assessment for these animals.

This project will have significant scientific and ethical benefits. The results of this project will greatly contribute to the current lack of knowledge of the health of wild southern bluefin tuna populations including pathogen prevalence and/or intensities. Identification of suitable health biomarkers (in particular use of mucus samples, gill biopsies or blood samples) could also negate the need for destructive sampling of animals. This project could therefore have profound implications for future SBT research and therefore will be highly suitable for publication in high end scientific journals.

Most health assessments for SBT have been conducted using ranched animals. Comparatively, the health status of non-ranched wild SBT has received little attention. Some wild SBT sampling has previously been conducted with participation of SBT industry as part of Aquafin Cooperative Research Centre and Fisheries Research and Development Corporation projects. This research was based on frozen and formalin fixed samples that were collected by the industry from tuna schools captured for ranching so for example the samples for pathogen detection (particularly some species of parasites) were limited. All SBT were from the Great Australian Bight, further limiting interpretation of the results. Some of the results from this work with wild tuna have been published (please see Rough et al. 2005, Aiken et al. 2007, Aiken et al. 2008, Aiken et al. 2009, Kirchoff et al. 2014).

This project was granted 1.2 t RMA request granted for 2016. In 2016, a total of 60 SBT have been caught for this project, amounting to 1.044 t (see Section 2). This RMA request is to cover further work in 2017. Based on the above, an RMA of 1.2 t is requested for this project for 2017, based on an estimate of 20 SBT with a maximum weight of 60 kg each.

To date, several publications from this research are in review or have been published (e.g. Balli et al. 2016, 2017).

2 Summary of 2017 RMA usage

A total of 1.7 t of RMA was granted in 2016 for Australian research projects undertaken in 2017. To date (1 June 2017), 1.188 t of RMA has been utilised in 2017, well below the amount granted, although additional RMA may be used during the remainder of 2017.

- 1) A 0.5 t RMA was granted for a study examining the molecular basis for endothermy using SBT as a novel model. This project involves the capture of small SBT off southern Western Australia. Larger fish are purchased from Port Lincoln aquaculture farms and so not included in the RMA request. RMA has been granted previously for this project. No RMA was used for this project in 2017.
- 2) A 1.2 t RMA was granted for a project examining the health of wild SBT. RMA has been granted previously for this project. In 2017, to date, a total of 1.188 t of the 1.2 t RMA has been used.

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