



**Proposed use of CCSBT Research Mortality Allowance to facilitate electronic and genetic tagging of SBT as part of Australia's contributions to the CCSBT SRP in 2008-09**

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## Abstract

A total of 10 tonnes of research mortality allowance is requested to continue initiatives focused on investigating the spatial dynamics, population size, mortality rates and spawning stock size of southern bluefin tuna as part of the CCSBT Scientific Research Program.

## Proposal

As part of the CCSBT Scientific Research Program, Australia is proposing to continue a significant tagging initiative in 2008-09 aimed at the examining the spatial dynamics (movements, mixing, residency, regional fidelity and frequency of spawning migrations) of adult southern bluefin tuna (SBT). This study involves the tagging of adult SBT with pop-up satellite archival tags in the Tasman Sea region during the austral winter. Results of the progress to date are provided in Gunn and Patterson (2003); Patterson et al. (2005); Gunn et al. (2006); Evans and Patterson (2007) and Patterson et al (2008). The results provide the first records of inter-oceanic migration (both Pacific-Indian and Indian-Atlantic) and spawning in adult SBT and extensive usage of the Tasman Sea region. Collaborative efforts with NZ resulting in deployments of PSATs in the eastern Tasman Sea support similar demonstrated movements. The success of both projects in tagging significant numbers of large SBT, and reductions in mortalities associated with tagging, suggest that ongoing tag releases of large SBT in the Tasman Sea are feasible and cost effective. Thus, Australia proposes to continue the tagging to address these questions. This study is proposing to release in the order of 20 tags on adult SBT and therefore the CCSBT is requested to allocate 5 tonnes of Research Mortality Allowance for this purpose.

In addition, it is proposed that the resumption of conventional tagging of juvenile SBT, trial release of passive integrated responders (in association with the conventional tagging program) and collection of genetic material for the purposes of a pilot of gene tagging be supported under the CCSBT Scientific Research Program. The aim is to provide for improved estimates of fishing mortality rates and movement as outlined by Everson and Polacheck (2008) and Basson and Davies (2008) and provide additional samples for close-kin spawning stock abundance estimation. Results from conventional tag releases on juvenile SBT have been presented extensively in working papers to the CCSBT-SC (e.g. Polacheck et al. 1998; Eveson and Polacheck 2005 2008; Hearn et al. 2007 Polacheck and Eveson 2007) and also in Polacheck et al. (2002); Pollock et al. (2002); Hearn and Polacheck (2003); Eveson et al (2004); Polacheck et al. (2004); Polacheck et al. (2006). Details of the passive integrated responder project can be referred to in Harley et al. (2008). Details of the close kin genetics project can be referred to in Bravington and Grewe (2007) and Bravington and Grew (2008) and details of the gene-tagging project in Davies et al. (2008). This group of projects is proposing to biopsy, tag and release the equivalent of 5 tonnes of juvenile SBT and so therefore requests 5 tonnes of Research Mortality.

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