



Australian Government
Australian Fisheries Management Authority

Annual Research Statement 2017-18

Small Pelagic Fishery

Small Pelagic Fishery Annual Research Statement for 2017-18

This Small Pelagic Fishery (SPF) Annual Research Statement was developed by AFMA, in consultation with the SPF Scientific Panel and South East Management Advisory Committee. It identifies areas of high priority research for funding in 2017-18 and will be presented to the AFMA Research Committee (ARC) for consideration in their 2017-18 funding round. It should be read in conjunction with the overview provided by the FRDC of current, future and recently completed research activities in Australian small pelagic fisheries, including the SPF ([Attachment 1](#)).

AFMA funding in 2017-18 (AFMA Research Committee; ARC)

Title	Objectives and component tasks	Evaluation		
		Total cost (\$) (approx. only)	Priority/ rank	Feasibility
NEW				
Annual compilation of the Fishery Assessment Report (2016-17 onwards)	The annual assessment presents fishery statistics and catch at size/age data and synthesises existing stock assessment information for the key target species of the SPF. This is a requirement of the SPF Harvest Strategy.		Essential	High
Daily Egg Production Method Surveys (DEPM)	The objective of these surveys is to estimate the spawning biomass of SPF stocks to underpin the determination of Recommended Biological Catches. Stocks which either have not been surveyed, or which were surveyed more than five years ago, should be prioritised for surveying following the completion of the DEPM for jack mackerel west (2016-17). Redbait west is planned for 2017-18.		Essential	High

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		Total cost (\$) (approx. only)	Priority/ rank	Feasibility
Data standards and performance indicators for the SPF Annual Fishery Assessment	Currently, a lot of information is collected for the SPF Annual Fishery Assessment, which is costly to collect and analyse. The objective of this project is to consider risk-catch-cost principles to identify a minimum data standard for future Annual Fishery Assessments.			
Analysis of spatial impacts of fishing in the SPF	The objective of this project is to evaluate if there is evidence of localised depletion of SPF quota species due to fishing. This project should consider distribution and migration patterns of SPF quota species and environmental drivers (e.g. sea surface temperature and surface chlorophyll) that could possibly impact the distribution of pelagic stocks.			
Annual monitoring, reporting and assessment of the effectiveness of current mitigation measures and impact of the fishery on protected species	<p>With the resumption of midwater trawling operations in the SPF, there is a need to ensure that marine mammal bycatch data are collected through observer and camera coverage to:</p> <ol style="list-style-type: none"> 1) evaluate the effectiveness of the seal excluder device or barrier net in mitigating lethal interactions with marine mammals; 2) synthesise information on interactions to examine how operational and environmental factors influence interaction rates; and 3) review the effectiveness of the current monitoring program including an analysis of the data and information collected from the recent fishing activity. <p>These analyses are intended to provide the basis for recommended modifications to fishing practices and the design or improvement of mitigation devices.</p>			High, subject to permit arrangements.
The economic impact of reference point selection	Given the potential economic impetus to use higher harvest strategy reference points, a desktop study should be undertaken to quantify the marginal effect of cost on biomass to explore the maximum economic yield (MEY) and the drivers and constraints on MEY for the			

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		Total cost (\$) (approx. only)	Priority/rank	Feasibility
	SPF. The study should draw on similar case studies in other multi-gear fisheries.			
Tracking economic performance of the SPF	The collection of economic data is required if the value of the fishery, and the factors that contribute to cost-effective fishery performance, are to be evaluated.			
CURRENT				
Monitoring & assessment of SPF quota species under the SPF Harvest Strategy (data from seasons 2013-14 to 2015-16)	The annual Assessment Report produced under this project presents fishery statistics and catch at size/age data and synthesises existing stock assessment information for the key target species of the SPF.	\$74 000 (total project cost over three years is \$216 000)	Essential	High Ongoing since 2013-14
Spawning biomass of Jack Mackerel (<i>Trachurus declivis</i>) between western Tasmania and Kangaroo Island, South Australia	No DEPM survey has previously been conducted for Jack Mackerel in the West sub-area of the SPF. Estimates of spawning biomass obtained using the Daily Egg Production Method (DEPM) survey will be used to determine Recommended Biological Catches (RBCs) and to set Total Allowable Catches (TACs) under the SPF Harvest Strategy.	~\$340 000 (total over 2 years)	Essential	High Ongoing since 2016-17

FRDC funding in 2017-18 (Commonwealth Research Advisory Committee; ComRAC)

Title	Objectives and component tasks	Evaluation		
		Total cost (approx. only)	Priority/rank	Feasibility
Will the current management framework ensure future sustainability: stock structure of Australian Sardine (<i>Sardinops sagax</i>) off eastern Australia	To determine if there are two genetically distinct spawning groups of Australian Sardine off eastern Australia. To evaluate the current management framework for Australian Sardine off Eastern Australia. To identify options for improving the current management framework for Australian Sardine off eastern Australia.	\$180 000	Medium Note that an expression of interest for this project was submitted to FRDC for potential funding in 2016-17; however this project was not supported by FRDC for funding in 2016-17.	
Jack mackerel genetics	A study using modern genetic markers (e.g. mitochondrial DNA) which offer much greater discriminatory power to clarify structuring in jack mackerel (<i>T. declivis</i>) stocks.	\$100 000 - \$250 000	Medium Note that this priority was considered in March 2015 and included in a new priority: a national project to develop a toolkit for biomass estimation for all species and identify the best approach for a particular species or situation. This would include a case study on the SPF as well as exploring the applicability of the close kin method to small pelagics. This national priority is managed by FRDC and a call for an expression of interest by FRDC is yet to occur.	

Table 1. Overview of current and future research activities in small pelagic fisheries (FRDC)

Project	Purpose	Research lead	Status / Timing	Funding	Announced
Egg identification (Project # 2014/022)	Developing a rapid molecular identification technique to improve egg production based fish biomass assessments – currently focused on tropical species but could be extended to temperate species	Richard Saunders (James Cook University)	<ul style="list-style-type: none"> Project at half way point Anticipated completion date August 2017 	\$180 000	Listed among current projects on FRDC website Parliamentary Secretary media release
Method development (Project # 2014/026)	Looking at the robustness and precision of estimates of egg production and spawning biomass obtained using the daily egg production methodology (DEPM)	Tim Ward (SARDI)	<ul style="list-style-type: none"> Draft final report due September 2016 Anticipated completion date December 2016 	\$200 000	Listed among current projects on FRDC website Parliamentary Secretary media release
Small Pelagics Research Co-ordination Program (Project # 2013/064)	Given the national interest in small pelagic resources and their utilisation a subprogram has been formed to coordinate the research undertaken. This will include sardines, jack mackerel, blue mackerel, redbait and small pelagics in the Northern Territory	Prof Colin Buxton (UTAS)	<ul style="list-style-type: none"> Draft final report received and in review Expected completion October 2016 	\$77 000	Listed among current projects on FRDC website

Project	Purpose	Research lead	Status / Timing	Funding	Announced
Expert Knowledge to inform the establishment of trigger limits for key marine mammal species that overlap the Cwth (SPF) (Project # 2015-035)	Developed in response to the outputs of the workshop (2014-046). Gather available information on key marine mammal species to help inform initial population estimates of these species where possible	Dr Alice Mackay (SARDI)	<ul style="list-style-type: none"> • Draft final report received and reviewed • Second draft final report being prepared based on review comments • Second draft final report will be sent for external review 	\$74 713	Listed among current projects on FRDC website
Full DEPM survey / stock survey	Comprehensive survey of Small Pelagic stocks on east coast (does not include west coast). Includes 2 further surveys on the east coast to include redbait and potentially a follow up jack mackerel survey		<ul style="list-style-type: none"> • AFMA has contracted SARDI to undertake west coast SPF surveys 	Unknown	Unknown
				TOTAL	
				\$531 713	
				contracted	
				by FRDC	

Table 2. Overview of recently completed research activities in small pelagic fisheries (FRDC)

Project	Purpose	Research lead	Status / Timing	Funding	Final report
Method Workshop (Project # 2013/063)	Benchmarking Australia's small pelagic fisheries against world's best practice	Tim Ward (SARDI)	<ul style="list-style-type: none"> Project complete and final report available on FRDC website 	\$75 000	http://frdc.com.au/research/final-reports/Pages/2013-063-DLD.aspx
Harvest Strategy (Project # 2013/028)	Reviewing and updating harvest strategy settings for the Small Pelagic Fishery.	Tony Smith (CSIRO)	<ul style="list-style-type: none"> Project complete and final report available on FRDC website 	\$122 741	http://frdc.com.au/research/final-reports/Pages/2013-028-DLD.aspx
Preliminary DEPM survey (Project # 2013/053)	Surveying spawning stock in the Small Pelagic Fishery on the east coast (Sardines and Jack Mackerel).	Tim Ward (SARDI)	<ul style="list-style-type: none"> Project complete and final report available on FRDC website 	\$400 000 (co-contributions being sourced)	http://frdc.com.au/research/final-reports/Pages/2013-053-DLD.aspx
2nd DEPM survey (Project # 2014/033)	Egg distribution, reproductive parameters and spawning biomass of Blue Mackerel, Australian Sardine and Tailor off the East Coast during late winter and early spring	Tim Ward (SARDI)	<ul style="list-style-type: none"> Project complete and final report available on FRDC website 	\$456 900 (co-contributions being sourced)	http://frdc.com.au/research/final-reports/Pages/2014-033-DLD.aspx
Technical workshop to explore mitigation options for TEPS in the Small Pelagic Fishery (Project # 2014-046)	Hold a workshop of invited experts in the areas of marine mammal behaviour, gear technology and acoustics to scope options for mitigation measures for the small pelagic fishery	Jim Fitzgerald	<ul style="list-style-type: none"> Workshop held. Final report available on FRDC website. 	\$50 000	http://frdc.com.au/research/final-reports/Pages/2014-046-DLD.aspx
				TOTAL	
				\$1 104 641	
				contracted by	
				FRDC	