

FISHERIES
& AQUACULTURE
PIRSA

PIRSA Fisheries & Aquaculture Cost Recovery Program

SARDINE FISHERY

FOR THE YEAR ENDING AT 30 JUNE 2018

PREMIUM
FOOD AND WINE FROM OUR
CLEAN
ENVIRONMENT



Table of Contents

Summary Table 3

Program Daily Charge Out Rate..... 4

Introduction..... 5

Management Objectives 2016/17 to 2018/19..... 6

Fisheries Policy and Management Program..... 8

Legal Services Program 11

Leasing and Licensing Program 14

Directorate Program 17

Fisheries Compliance Operations Program..... 19

Stock Assessment and Monitoring Program..... 27

Information current as of June 2017

© Government of South Australia 2017

Disclaimer

PIRSA and its employees do not warrant or make any representation regarding the use, or results of the use, of the information contained herein as regards to its correctness, accuracy, reliability and currency or otherwise. PIRSA and its employees expressly disclaim all liability or responsibility to any person using the information or advice.

Summary Table Sardine Fishery

2016-17 (\$)	PROGRAM AREA	2017-18 (\$)	COMMENTS	DAYS	FTE
RESEARCH COSTS					
293,072	Stock Assessment and Monitoring	564,598	As per one year Sardine fishery SARDI project scope (\$494,726) and year 2 of a 3 year "Interactions of the Sardine Fishery with short-beaked common dolphins" SARDI project scope (\$69,872).		
13,687	Economic Assessment	13,716	As per contracted services 2017-18		
77,865	Observer Coverage	73,673	As per contract with Kempwilson Pty Ltd (trading as Seatec). Contract in place to 30 June 2020		
PIRSA RELATED COSTS*					
72,752	Policy and Management	74,353	Same level of service as previous year	80	0.40
14,892	Legislation	15,219	Same level of service as previous year	15	0.08
14,933	Licensing	15,261	Same level of service as previous year	21	0.11
6,310	Directorate	6,449	Same level of service as previous year	7	0.04
110,527	Compliance	112,959	Same level of service as previous year	90	0.45
50,980	Vessel	52,101	Same level of service as previous year	7	0.04
12,600	VMS	12,600	Maintained at \$900 per licence holder	14	0.07
13,407	Quota Monitoring	13,702	Same level of service as previous year	22	0.11
OTHER COSTS					
51,588	FRDC	55,634	Funding based on 0.25% of rolling three year average GVP		
7,498	Co-Management Services	7,498	In accordance with Marine Scalefish sector co-management services for 2017-18		
740,110	TOTAL	1,017,763			

Licence Fee 17-18 (\$)	
MS Base Fee	5,361
Net Fee	67,336
<i>Licence Fee 16-17 (\$)</i>	
MS Base Fee	5,059
Net Fee	47,786

* Indexation rate of 2.2% has been applied to 'PIRSA Related Costs', which is consistent with the rate to be applied for the 2017-18 regulated fees and charges process.

Program Daily Charge Out Rate

DAILY RATE (\$)	Compliance	Directorate	Legislation	Licensing	Policy	Quota	Vessel
Total Employee Expenses	609	575	685	460	582	365	2,307
Total Operating Expenses	325	136	123	71	150	61	3,252
Depreciation & Capital Costs	78	0	0	8	0	4	1,308
Total Other Expenses*	213	193	193	185	193	185	403
TOTAL DAILY RATE	1,224	904	1,002	723	925	614	7,269

Please Note: All dollar values have been rounded to the nearest dollar figure.

* Other expenses includes ICT, finance, human resources, WHS, accommodation, insurance and other costs incurred corporately in providing services to divisions, apportioned across PIRSA using a range of cost drivers such as number of logons, headcount, volume data and other workload indicators, in accordance with PIRSA's cost recovery policy. It excludes the costs of servicing government and costs too far removed from the activity such as Ministerial Offices, Office of the Chief Executive, Strategic Communications and Engagement and the PIRSA Policy Unit, for example.

Introduction

Wild catch commercial fisheries in South Australia continue to be managed in accordance with the PIRSA Cost Recovery Policy. This policy requires commercial fishery licence fees to fund services related to commercial fisheries management costs. PIRSA Fisheries & Aquaculture continue to manage the process of consulting with service providers and relevant industry associations to establish fishery based management programs which form the basis of annual licence fees.

For each sector, the program required to manage the fishery has the following components:

- Assessment and Research Services;
- Fisheries Policy and Management Services;
- Compliance Services, including communication, enforcement and monitoring activities;
- Support Services, including Legislation, Licensing and Business Services (Directorate).

This documentation provides a framework to assist in establishing appropriate research, policy, compliance and support services to manage a fishery.

SARDINE FISHERY MANAGEMENT OBJECTIVES 2016/17 TO 2018/19

Management Plan Objectives	Outcomes 2015/16 to 2018/19	Policy and Management	Compliance	Assessment and Research	Leasing and Licensing
<p>Maintain harvest of sardines at ecologically sustainable levels</p> <p>Optimum utilisation and equitable distribution</p>	<p>Stock and ecosystem maintenance in line with the management plan under the Fisheries Management Act 2007</p>	<p>Review and progress rules review outcomes, including:</p> <ul style="list-style-type: none"> • permanent transferability of quota • standardise quota declaration process • review netting closure exemption in Port Lincoln & Coffin Bay <p>Administer Sardine TACC-setting in accordance with harvest strategy</p> <p>Administer Anchovy TACC-setting in accordance with harvest strategy</p> <p>Preparation, attendance and participation at SASIA meetings and provision of advice, as required</p> <p>Lead review of Sardine harvest strategy in accordance with management plan requirements</p>	<p>Implement compliance program, in accordance with risk assessment</p> <p>Support implementation of management plan</p> <p>Pre-season briefings with licence holders</p>	<p>Support implementation of management plan</p> <p>Provide scientific advice to PIRSA Fisheries & Aquaculture and Research and Management Committee of SASIA</p> <p>Undertake and deliver fishery assessment report, consistent with harvest strategy (2015/16, 2017/18)</p> <p>Undertake fishery-independent DEPM surveys, consistent with harvest strategy (2016/17, 2018/19)</p> <p>Provide scientific advice to industry for fishery-dependent sampling</p> <p>FRDC project – improve estimates of egg production, including CUFES methodology, for incorporation into DEPM model</p> <p>Support review of Sardine harvest strategy</p>	<p>Support implementation of management plan</p> <p>Provide ongoing support for licensing, quota and transfer queries</p>

Management Plan Objectives	Outcomes 2015/16 to 2018/19	Policy and Management	Compliance	Assessment and Research	Leasing and Licensing
Protect and conserve aquatic resources, habitats and ecosystems	<p>Real-time monitoring of threatened, endangered and protected species (TEPs) interactions</p> <p>Review of Code of Practice (CoP) to mitigate TEPS interactions (ongoing)</p> <p>Manage observer program</p> <p>Progress DotE WTO accreditation under EPBC Act</p>	<p>Real-time monitoring of TEPs interactions with industry</p> <p>Preparation, attendance and participation in TEPs working group meetings</p> <p>Develop suitable performance indicators and decision rules to inform mitigation of dolphin interactions and observer coverage</p> <p>Assist in the review of CoP</p> <p>Manage observer contract and authorisations</p> <p>Continue implementation and management of existing programs</p>	<p>Implement compliance program, in accordance with risk assessment</p> <p>Real-time monitoring of TEPs interactions with industry</p> <p>TEPS interactions investigated</p> <p>Any mortalities collected and processed</p> <p>Preparation, attendance and participation in Wildlife Interaction Working Group meetings</p>	<p>Support industry's real-time monitoring of TEPS interactions with industry</p> <p>Assist in ongoing review of CoP</p> <p>TEPS annual report</p> <p>Maintenance of observer data in SARDI database</p> <p>Preparation, attendance and participation in Wildlife Interaction Working Group meetings</p>	
Cost effective and consultative co-management of the fishery	Effective engagement with industry	<p>Preparation, attendance and participation at SASIA meetings</p> <p>Regular communication with industry and Executive Officer, SASIA</p> <p>Review and progress rules review outcomes</p>	<p>Annual session with licence holders</p> <p>Attend SASIA meetings and provide advice on compliance issues, as required</p>	Attend SASIA meetings and provide scientific advice, as required	Provide ongoing support for licensing, quota and transfer queries

Fisheries Policy and Management Program

SARDINE FISHERY

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

Jon Presser, General Manager Fisheries Policy and Management Unit
Telephone: 08 8429 0588 Email: Jon.presser@sa.gov.au

Program Summary

The Fisheries Policy and Management Unit of PIRSA Fisheries & Aquaculture undertakes activities such as day-to-day management, long-term planning and policy development for South Australian commercial, recreational and Aboriginal traditional fisheries.

The Fisheries Policy and Management unit has the following core functions:

- Administer the *Fisheries Management Act 2007* and regulations.
- Day-to-day management of fisheries resources, to ensure catch and effort levels are commensurate with resource sustainability.
- Develop and implement management plans, including harvest strategy development and ESD risk assessment, in accordance with the *Fisheries Management Act 2007*.
- Provide advice to the Minister for Agriculture, Food and Fisheries, Chief Executive and Deputy Chief Executive on matters relating to fisheries.
- Represent the Director, Fisheries & Aquaculture Policy and Director, Operations on committees and other forums on matters related to the administration of the *Fisheries Management Act 2007*.
- Develop over-arching policy frameworks to support fisheries management.
- Build and maintain relationships with key stakeholders, with a particular focus on the commercial and recreational fishing sectors.
- Progress Australian Government recommendations under EPBC Act assessment.

Objectives

To provide day-to-day fisheries management services to for the Sardine Fishery to government and industry, as well as advice and facilitation of fisheries policy and management issues, through the Fisheries Policy and Management Program.

PROGRAM STRATEGIES AND SUPPORTING ACTIONS & INITIATIVES

Program Delivery

1. Participate in inter and intra-departmental meetings and workshops on issues relevant to fisheries management
2. Liaise within the Fisheries and Aquaculture Division, with SARDI Aquatic Sciences, other parts of PIRSA and other State and Commonwealth agencies on matters relevant to fisheries management
3. Liaise within PIRSA, with other government agencies and with industry representatives in implementing decisions relevant to fisheries management
4. Conduct regular assessment or review of existing management arrangements for fisheries management, including analysis of statistical information on fisheries and interactions with threatened, endangered and protected species
5. Coordinate consultation with fishery stakeholders through established co-management processes
6. Participate in industry liaison in the field and on vessels to strengthen fishery management knowledge and understanding, and develop rapport with licence holders and divers.
7. Participate in industry development initiatives related to fisheries management
8. Attending to general correspondence and enquiries relevant to fisheries
9. Provide advice to Minister in relation to the management of fisheries and Ministerial correspondence
10. Communicate on fisheries management issues to key stakeholder groups and the broader community

Anticipated Outcomes

- Prepare day-to-day necessary legislative instruments and/or advice required for the management of the Sardine Fishery (regulations, catch limits, closure notices, licence conditions, Ministerial exemptions etc).
- Prepare policies to support fisheries management
- Prepare regular fisheries status reports
- Develop and maintain day-to-day productive working relationships and outcomes through cooperative management and collaboration with stakeholders
- Deliver quality and timely responses to correspondence.
- Further the development of co-management arrangements

Performance Indicators:

1. Progress rules review outcomes.
2. Australian Government requirements met in relation to EPBC assessment.
3. Setting of TACC for Sardine Fishery.

Program Effort Allocation

The table below includes an abbreviated suite of core activities and initiatives used to manage risks and reflect the anticipated split of effort and associated costs.

Strategy/Activities	Days	FTE	Cost (\$)
Policy and Management	80	0.4	74,353

Please Note: All dollar values have been rounded to the nearest dollar figure.

Legal Services Program

SARDINE FISHERY

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

Lambertus Lopez, Manager, Legal and Legislative Programs
Telephone: 08 8429 0527 Email: Lambertus.lopez@sa.gov.au

Program Summary

PIRSA Fisheries & Aquaculture Directorate provides legal services to the Deputy Chief Executive and all other members of the Division, in particular the policy group, on a daily basis. Among other things these services include strategic advice and problem solving, review of draft documentation and correspondence, statutory interpretation and the provision of general advice and statutory interpretation, in consultation with the Crown Solicitor's Office where necessary, regarding any legal issues relating to proposed actions and the implementation or administration of Sardine fisheries management and regulatory arrangements through existing legislative frameworks and licence conditions. Consideration is also given to the impacts and effects of other related legislation if and when required.

Objectives

To provide legal services supporting the implementation of necessary, appropriate and effective statutory and administrative changes to government administration of all fishery sectors, as well as strategic advice and facilitation of related policy development, legislative and regulatory issues, through the Legal Services Program.

PROGRAM STRATEGIES AND SUPPORTING ACTIONS & INITIATIVES

Anticipated Outcomes

1. Co-ordinate the introduction, amendment or revocation of Fisheries legislation in line with Fisheries Policy decisions i.e. Act or regulation amendments, the introduction of new regulations and drafting of other legislative and administrative instruments such as delegation, permit or exemption instruments as required under the *Fisheries Management Act 2007* (the Act). New regulations or amendments require the drafting of Cabinet submissions and supporting documentation, including the preparation of drafting instructions, for consideration by Cabinet. This service includes co-ordinating the cabinet process involving liaison with the Office of Parliamentary Counsel and the Crown Solicitor's Office and inter agency consultation to ensure that proposed regulatory arrangements are accurately described, drafted and scrutinised before being implemented.
2. Review licensing arrangements required on an as needs basis to appropriately implement approved fishery management policy and measures within the limitations of the Act. The service includes working with the Licensing program (part of Leasing and Licensing) where necessary to implement efficient administrative systems and finalise forms and instruments that are legally sound.
3. Problem solve together with the provision and co-ordination of legal advisory services in liaison with the Crown Solicitor's office relating to the implementation and administration of the Act, Regulations and fisheries management policies, interaction with other Acts, and the defence of those policies and arrangements raised in litigation or industry correspondence.
4. Coordinate applications for Ministerial exemptions under Part 10 Division 1 and Permits under Part 7 Division 2 of the Act.
5. Additional legal services to support, on an as needs basis, the decision-making of the Director Fisheries and Aquaculture policy and the Director Operations and other delegates of the Minister under the Act to safeguard the ongoing sustainability of a fishery in any particular year (where required), depending on positive or negative scientific indicators, to implement new fisheries management arrangements (for example the introduction or variation of a quota system) or new administrative or compliance arrangements (for example, changes to licensing processes, conditions, introduction of closures).

6. Support compliance for statutory interpretation, problem solving and correspondence advice (per above).

Program Effort Allocation

The table below includes an abbreviated suite of core activities and initiatives used to manage risks and reflect the anticipated split of effort and associated costs.

Strategy/Activities	Days	FTE	Cost (\$)
Legislation	15	0.08	15,219

Please Note: All dollar values have been rounded to the nearest dollar figure.

Leasing and Licensing Program

SARDINE FISHERY

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

Rob Falco, Manager, Leasing and Licensing
Telephone: 08 8204 1374 Email: Rob.Falco@sa.gov.au

Program summary

The fisheries leasing & licensing unit within PIRSA Fisheries & Aquaculture is responsible for the management of licensing and quota monitoring services.

This business unit provides a range of services related to the timely processing and management of information leading to the issue of licences and other reporting services.

The unit administers a licensing call centre for licence inquiries and other administrative services. The success of these functions is based on maintaining the Primary Industries Information Management System (PIIMS) database.

Objectives

To provide leasing and licensing services to government and industry through the leasing and licensing program.

Program strategies and supporting actions & initiatives

Anticipated outcomes

1. Issue licences to licence holders in an accurate and timely manner.
2. Provide accurate and timely information related to licences.
3. Provide reports as required.

Services to directly support the fishery:

1. Renew and maintain fishery licences.
2. Database management for licence renewal.
3. Collect licence fees and associated payments.
4. Compose and send quarterly instalment notices.
5. Record and track unpaid invoices.
6. Compose and send late payment instalment notices for un-paid quarterly instalments.
7. Draft and issue notices to fishers.
8. Process requests for information from fishers who make such inquiries over the counter, through the call centre, via facsimile or e-mail. For example, helping fishers to process information relevant to licence renewal forms, application for licence transfers, boat changes, gear enquiries and fishing regulations.
9. Regularly update information about licence holders.
10. Research and prepare documents for public record.
11. Liaise with government stakeholders to verify the credentials of fishers.
12. Liaise with PIRSA Fisheries & Aquaculture, SARDI Aquatic Sciences, Crown Solicitors and other state and local agencies on matters relevant to the fishery.
13. Draft and update licence conditions over the duration of the licensing year as determined by the Deputy Chief Executive, Fisheries and Aquaculture and the Director, Fisheries and Aquaculture Policy.
14. Provide information to licence holders relating to the requirements pursuant to licence administration.

15. Manage calls from fishers regarding late payment notices, fees and general enquiries about their licences.
16. Provide support regarding an increased frequency of last minute administrative enquiries from fishers. e.g., master changes and quota transfers, as well as provide advice and support to fishers on licence information, to complete the required forms.

Services to support fisheries management:

1. Participate in inter and intra departmental meetings and workshops on issues relevant to the fishing industry.
2. Liaise with relevant staff within PIRSA Aquaculture and Fisheries in implementing decisions relevant to the fishery.
3. Interrogate the PIIMS database to extract information for other stakeholders to use in preparing reports.
4. Prepare reports requested by internal and external customers including maintenance of a public register of licence holders.
5. Liaise with information technology providers to maintain PIIMS and administer licensing requests.
6. Generate quota management reports to update stakeholders on varying Total Allowable Commercial Catch (TACC) returns and end of season quota holdings.

Program effort allocation

The table below includes an abbreviated suite of core activities and initiatives used to manage risks and reflect the anticipated split of effort and associated costs.

Strategy/Activities	Days	FTE	Cost (\$)
Leasing and Licensing	21	0.11	15,261
Quota Monitoring	22	0.11	13,702
TOTAL	43	0.22	28,963

Please Note: All dollar values have been rounded to the nearest dollar figure.

Directorate Program

SARDINE FISHERY

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

Chiara Ciui, Business Manager

Telephone: 08 8429 0378 Email: Chiara.ciui@sa.gov.au

Program Summary

Business Strategy, within Directorate of PIRSA Fisheries & Aquaculture, provides a range of services to support fisheries management. These include coordinating the cost recovery process and establishing agreements with service providers; coordinating program provider reports; administering external contracts and agreements; and providing audit, financial and human resource functions.

Objectives

To provide support services to government and industry, as well as advice and facilitation of corporate related policy and management issues, through the Directorate Program that incorporates the Fisheries & Aquaculture Business Strategy Unit.

PROGRAM STRATEGIES AND SUPPORTING ACTIONS & INITIATIVES

Anticipated Outcomes

1. Coordinate and facilitate cost recovery processes and program agreements, including liaising with program providers, managers and financial services as required.
2. Attend meetings relating to cost recovery, licence setting and related policy issues.
3. Develop and review cost recovery policy, processes and program agreements.
4. Manage major service providers' contractual agreements, and co-management services contractual agreements with industry associations
5. Project manage and administer external contractual services and agreements – including liaising with PIRSA Accredited Purchasing Unit, preparing acquisition plans and selecting evaluation criteria, managing tender processes, drafting purchase recommendations and liaising with the Crown Solicitor's office to develop contractual agreements.
6. Provide advice on procurement and invoicing requirements.
7. Consult with the Deputy Chief Executive, Director Fisheries and Aquaculture Policy, Director Operations, PIRSA fisheries managers, and the Office of the Minister and other parties as needed.
8. Ongoing review, development and documentation of the cost recovery model, framework, processes and roles.
9. Meet agreed timeframes on management and administration of external contractual services.
10. Appropriate management of industry funds and services.

Program Effort Allocation

The table below includes an abbreviated suite of core activities and initiatives used to manage risks and reflect the anticipated split of effort and associated costs.

Strategy/Activities	Days	FTE	Cost (\$)
Directorate	7	0.04	6,449

Please Note: All dollar values have been rounded to the nearest dollar figure.

Fisheries Compliance Operations Program

SARDINE FISHERY

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

Andrew Carr

Regional Manager

Telephone: 0438 459 679

Email: andrew.carr@sa.gov.au

State Coordinator

Yolande Markey

Senior Fisheries Officer

Telephone: 0427 979 085

Email: yolande.markey@sa.gov.au

Compliance Program Summary

PIRSA Fisheries and Aquaculture teams coordinate compliance activities (outputs) to build awareness and behavioural outcomes that have a long term beneficial impact in the Sardine Fishery. The objective of the compliance activities (outputs) is to minimise the risks to aquatic resource sustainability, resource allocation and access rights and ultimately commercial economic viability.

The outputs of the Sardine Compliance Plan are primarily delivered by teams located in Port Lincoln and the Offshore Patrol Vessel. Support is also provided as required from other Regional Operation teams and the Intelligence and Strategic Support team.

The coordination of the compliance outputs is guided by an industry specific compliance plan which was developed in consultation with the Sardine Industry. These outputs are aimed at educating fishers, deterring opportunistic and financially motivated crimes, enforce the rules and regulations and reducing overall compliance risks to resource sustainability.

A diagrammatic representation of the PIRSA compliance model is shown as a Program Logic Model (Appendix 1). This identifies the high level relationships and intended causal links between fisheries compliance inputs, outputs and intended program outcomes.

The elements of the compliance Program Logic Model are also linked to a new assessment tool (Maturity Model) that was developed during National Fisheries Compliance Committee (NFCC) workshops. The Maturity Model allows a weight of evidence approach to assess the efficacy of the compliance outputs and the outcomes achieved. This is designed to support decisions that achieve a shared view between Sardine industry and PIRSA and the existence of a mature sustainable fishery.

Compliance Inputs

Compliance inputs are the resources and constraints that frame the delivery of the compliance outputs or activities. This covers policies, legislative and regulatory frameworks, program funding, human resourcing, information technology systems and research. The compliance inputs for the Sardine fishery are identified herein.

Legislative and Regulatory Framework

Fisheries Management Act 2007

Fisheries Management (Fish Processors) Regulations 2007

Fisheries Management (General) Regulations 2007 Schedule 2

Fisheries Management (Demerit Points) Regulations 2009

Fisheries Management (Marine Scalefish Fisheries) Regulations 2006

Fisheries Management (Vessel Monitoring Scheme) Regulations 2007

Sardine Fishery Management Plan

Program Effort, Funding & Resources

The level of effort required to deliver the compliance program in accordance with the dedicated plan is reviewed annually taking into account;

- previous effort required to deliver established programs developed over last 10 years
- the identified risks to the fishery and any associated changes

- shifts or changes to the fishery management
- changes to fishing practices
- additional pressures or influences on fishers or the fishery
- intelligence holdings
- trends or change behaviours that required monitoring and/or investigation
- cost effectiveness and identified efficiencies
- any other relevant information required to deliver an effective compliance program to monitor and enforce the rules and regulations for each fishery

PIRSA has continually reviewed the Sardine fishery compliance program, gaining efficiencies through intelligence driven and targeted operations and re-directing compliance effort where necessary to address current and emerging issues and risks.

It should be noted that for the year ending 30 June 2016 PIRSA expended an additional 32 days of effort (~\$39k) above the cost recovered program. The table below includes the number of days predicted to reflect the anticipated split of effort and associated costs to deliver the compliance outputs for 2017/18.

Table 1: Sardine - Effort Allocated Against Compliance Outputs

Compliance Outputs	Days	FTE	Cost (\$)
Education Awareness	6	0.03	7,531
Effective Deterrence, Monitoring & Surveillance	71	0.35	87,857
Enforcement	13	0.07	17,571
TOTAL OFFICER DAYS	90	0.45	112,959
Offshore Patrol Vessel	7		52,101

Please Note; to comply with Work Health & Safety obligations and evidentiary requirements, operational activities are generally required to be undertaken by a minimum of two (2) officers at any time.

IT Systems, Technology & Data

Fisheries and Aquaculture Compliance Operations are supported by a number of electronic systems which continue to be refined to allow optimum delivery of information in a reliable and timely way. Some of the key systems that assist to drive the compliance outputs include:

- IBase and Analyst Notebooks (Intelligence system)
- FACT (Fisheries and Aquaculture Information Collection Tool)
- Timewise (Effort Reporting Tool)
- Evidence.com (Video Evidence Collection Tool)
- PIIMS (Primary Industries Information Management System – Quota and Licence Information)
- eCatch

- eBrief (prosecutions system)
- Vessel Monitoring System (VMS)
- Commercial Fishing Application

Compliance Delivery Outputs

The coordination of compliance outputs is guided by an industry specific compliance plan which was developed in consultation with the Sardine Industry. The plan ensures compliance effort is intelligence driven, efficient, and cost effective and outcome focused. The compliance plan comprises three core outputs (Education and Awareness, Effective Deterrence and Appropriate Enforcement) and is optimised towards increasing voluntary compliance and maximising effective deterrence.

Analysis of intelligence and information holdings is regularly conducted to identify the major risks to the sustainable harvest of Sardines. The combination of strategies, actions, and initiatives are critical to focus the primary compliance effort to manage the risks and achieve targeted outcomes. The details are identified herein.

Intelligence

- Information collection.
- Analysis and testing of information voracity.
- Provide recommendations for targeted operations.
- Develop strategic assessments.

Education and Awareness

- Conduct pre-season education meetings and participate in industry days.
- Provide electronic distribution of educational material to fishers and licence holders at the start of the season.
- Ensure all interested parties understand their respective obligations and the compliance focus for the coming season.
- Develop Industry communication & relationship programs to facilitate discussion of topics such as compliance inspection outcomes, Threatened Endangered Protected Species (TEPS) and other issues impacting the Sardine fishery.
- Ongoing one on one education during inspections

Effective Deterrence, Monitoring and Surveillance

- Ensure all aspects of the Quota Management System are monitored such as prior reporting and chain of custody requirements in catch disposal records (CDR) including auditing.
- Ensure all aspects of commercial fishing activities are monitored such as inspections of catch at sea, when landed, in transit and at change of ownership in fish processing premises.
- Conduct intelligence driven operations that give rise to appropriate enforcement action
- Respond to reported incidents/issue
- Communicate activities in formal reporting

Enforcement

- Investigate reports of non-compliance and where appropriate take action
- Investigate reports of TEPS mortalities.
- Issue expiations, cautions and court enforced actions.
- Communicate enforcement outcomes in formal reporting
- Service of suspension

Risk Assessment and Management (work priorities)

PIRSA use information obtained from intelligence, monitoring, surveillance and enforcement processes to assess compliance and sustainability risks to the fishery. This subsequently informs work priorities for service delivery. The priorities are prone to change during the fishing season however the following are currently relevant to the Sardine Fishery.

1. Quota Management System Integrity
2. Threatened Endangered Protected Species Interactions
3. By-Catch
4. Illegal Unreported Unregulated Take

Anticipated Compliance Outcomes

PIRSA will assess the efficacy of the compliance program by evaluating particular outcomes. The outcomes will be in the form of stakeholder awareness, behavior and impact. The evaluation in the form of a maturity model will be used to establish an order of magnitude to support decision making and progress towards a common view of a mature fishery and ultimately co-management.

Awareness

Awareness is a short term outcome that is necessary to prevent unnecessary use of enforcement activities. Awareness constitutes and improved community and stakeholder attitude towards compliance, an improved understanding of legislation and regulation, improved stakeholder buy-in and participation and community support for offence detection. The attributes for each are articulated herein.

Improved community and stakeholder attitude

- Confidence in compliance ability to use statutory and discretionary powers appropriately
- Understanding of the public value of compliance
- Comprehension of services delivered by compliance against the objects of The Act
- Confidence in compliance ability to sustain resource allocation equity amongst direct resource users.

Improved understanding of legislation and regulation

- Understanding fishing obligations
- Legislation and regulation is considered simple and fair to follow.

Improved stakeholder buy-in and participation

- Actively engage with compliance in development of risk assessments, reporting frameworks, reviewing rules
- Collaborative problem solving

Community support for offence detection and sanctions

- Actively provide relevant information
- Industry driven initiatives and evidence of self-regulation

Behaviour

Successful outcomes and long term sustainable fisheries are ultimately driven by behavior that is in the interest of sustainability, ongoing economic viability and public value. The behavioural outcomes that are important to PIRSA include stewardship, voluntary compliance and proactive approaches to compliance issues. The attributes for each are articulated herein.

Stewardship

Stewardship is the aggregation of a number of actions and behaviours where industry is entrusted with the management of the Sardine resource and the associated compliance of its members within the regulatory and legislative input constraints.

Some of the behaviours of stewardship include:

- An acceptance of change from traditional approaches and attitudes to strong partnerships between government, industry and key stakeholder groups.
- An established mutual trust and respect between government, industry and key stakeholders
- An alignment of values that gives rise to industry and PIRSA communicating the same message focusing on the sustainability of the aquatic resource and associated ongoing economic viability as the primary drivers.
- PIRSA compliance appears seamless to industry. Inputs and outputs are shared. Joint investigations and national problem solving actions are taken by all, collectively and with representative groups engaged in partnership.
- Minimal conflict exists with other stakeholder groups or industry has clear mechanisms or a demonstrated capacity to address the conflict.

Voluntary compliant behavior

- All appropriate attempts to understand and adhere to rules and regulations are made by industry.
- PIRSA Fisheries and Aquaculture compliance is contacted when industry is unable to meet regulatory requirements so an alternative legal solution can be arranged.
- Industry members report other commercial fishers who fail to meet regulatory requirements.

Proactive approaches to compliance issues (incl. participation in governance process)

- Use established industry structures to collaborate on compliance issues to deliver the shared objective of sustainability and public value.
- Actively participate and respond to compliance issues.

- Highlight deficiencies in compliance programs and suggest improvements.
- Influence other industry participants to promote voluntary compliance.

Impact

The awareness and behavior changes will lead to a longer term impact that is reflected in economic and ecological sustainability, broad confidence in the allocation of Sardine between user groups, a confidence in the ability of PIRSA to manage Sardine resources and an industry that is free from the influence of serious and organised crime. The attributes for each impact is articulated herein.

Ecological and economic sustainability of aquatic resources

- SARDI stock status assessments reflect an ecological sustainability
- Industry reflect economic sustainability

Confidence and equity in resource allocation and access

- Recreational, commercial and Aboriginal fishing stakeholders are confident that the division of Sardine resources is fair and equitable.
- Investment support continues for ecologically and economically sustainable harvest of Sardine.

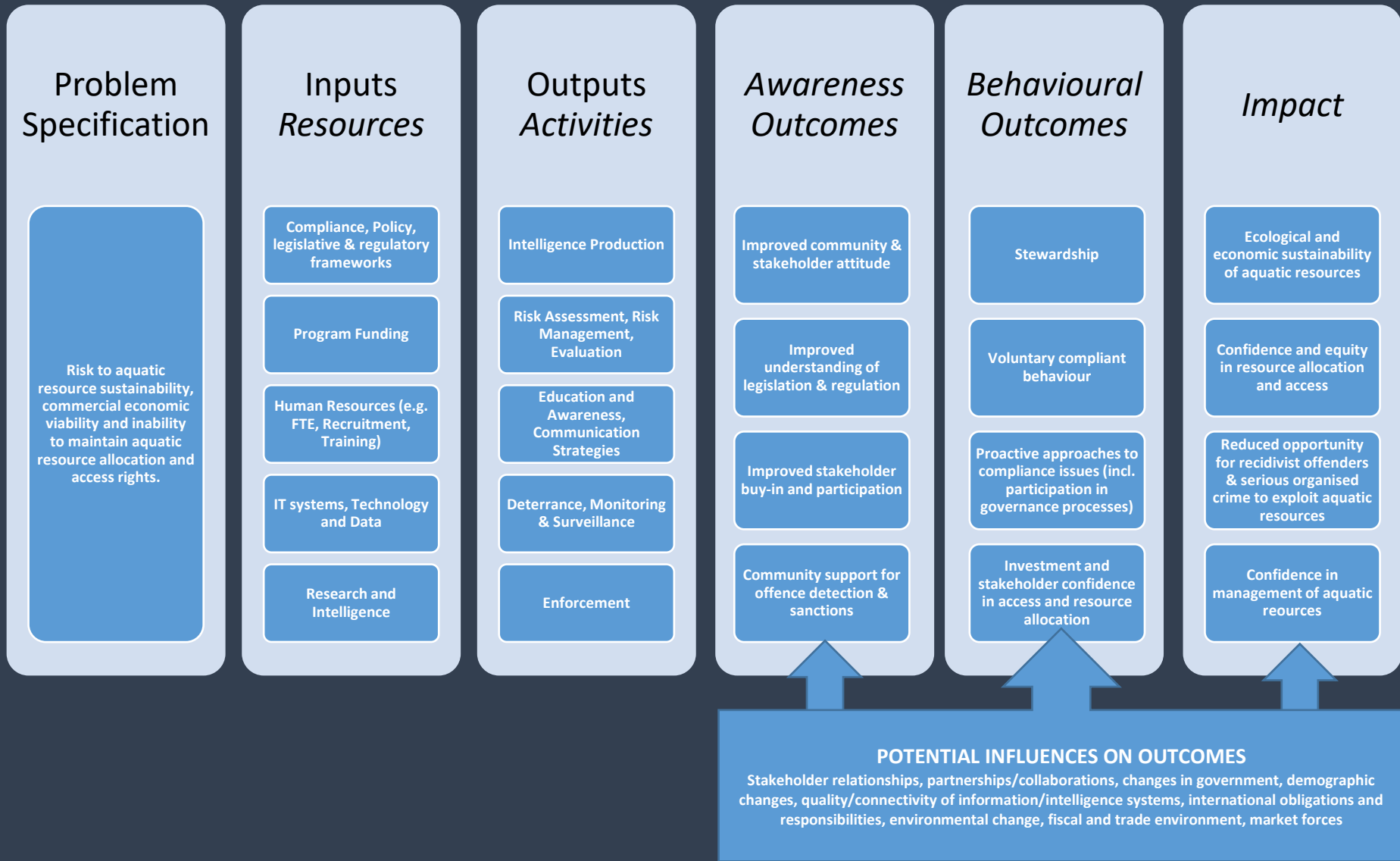
Reduced opportunity for recidivist offenders and Serious Organised Crime to exploit aquatic resources

- Regulators, law enforcement and industry have closed opportunities for Serious Organised Crime to participate in the Sardine industry.
- Industry has not had any impact resulting from Serious Organised Crime activities for a significant period of time.

Confidence in management of aquatic resources

- Positive public perception in the management of Sardine stocks.
- Positive consumer perception for commercially harvested Sardine.
- An absence of adverse industry publicity.

Ecologically Sustainable Development (ESD) and Risk Management Framework



Stock Assessment and Monitoring Program

SARDINE FISHERY

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Client Contact Details

Sean Sloan
Director PIRSA Fisheries & Aquaculture
Telephone: 8429 0111 Email: Sean.sloan@sa.gov.au

Principal Investigator

Prof Gavin Begg
Research Chief, SARDI Aquatic Sciences
Telephone: 8207 5401 Email: gavin.begg@sa.gov.au

SCHEDULE 1 - RESEARCH PROJECT SCOPE

1. PROJECT DETAIL

1.1 Title South Australian Sardine Fishery

1.2 Client Contact Details

Name: PIRSA FISHERIES AND AQUACULTURE
Address: GPO Box 1625, Adelaide, SA 5001
Attention: Sean Sloan
Email: Sean.Sloan@sa.gov.au
Telephone: 8429 0111
Facsimile: 8226 0434

1.3 SARDI Contact Details

Name: Prof Gavin Begg
Position: Research Chief
Address: SARDI Aquatic Sciences
Email: Gavin.Begg@sa.gov.au
Telephone: 8207 5401
Facsimile: 8207 5406

1.4 Subcontractor/Collaborator

Not Applicable

1.5 Timeframe

Commencement Date: 1 July 2017
Completion Date: 30 June 2018

1.6 Summary

The South Australian Sardine Fishery (SASF) is Australia's largest fishery, with a TACC of 42,750 t in 2017. The SASF is managed under the *Fisheries Management Act 2007*.

Estimates of spawning biomass obtained using the Daily Egg Production Method (DEPM) have been the primary biological indicator for the SASF since 1995. Stock assessments that integrate all existing data on the stock and fishery have been undertaken since 1999.

The current Management Plan for the SASF provides for biennial or annual application of the DEPM and/or completion of a stock assessment report (depending on the exploitation rate and catch/risk level). The DEPM was applied in 2013, 2014 and 2016. A stock assessment was completed in 2015.

A separate Research Scope covers a DEPM survey and Spawning Biomass Report to be conducted and reported in 2017. The 2016-17 Research Scope covers the Stock Assessment Report that will be completed in October 2017.

This 2017-18 Research Scope is for a DEPM survey and Spawning Biomass Report that will be conducted in summer 2018 and reported in October 2018. The 2018/19

Research Scope will cover Spawning Biomass and Stock Assessment Reports to be completed in October 2019.

2. PROJECT DESCRIPTION

2.1 BACKGROUND

The South Australian Sardine Fishery (SASF) is Australia's largest fishery, with a TACC of 42,750 t in 2017. The SASF is managed under the *Fisheries Management Act 2007*.

Estimates of spawning biomass obtained using the Daily Egg Production Method (DEPM) have been the primary biological indicator for the SASF since 1995. Stock assessments that integrate all existing data on the stock and fishery have been undertaken since 1999.

The current Management Plan for the fishery provides for biennial or annual application of the DEPM and/or completion of a stock assessment report (depending on the exploitation rate and catch/risk level). The DEPM was applied in 2013, 2014 and 2016. A stock assessment was completed in 2015.

The 2016/17 Research Scope covers the Stock Assessment Report that will be completed in October 2017. A separate Research Scope covers a DEPM survey and Spawning Biomass Report to be conducted in 2017.

This 2017-18 Research Scope includes:

- Processing of catch samples provided by observers, laboratory time for length/age measurements including otolith removal and ageing, data entry and analysis.
- Completion of a DEPM survey and Spawning Biomass Report
- Collection of biological samples from commercial vessels for estimating DEPM parameters

The 2018/19 Research Scope will cover Spawning Biomass and Stock Assessment Reports to be completed in October 2019.

The planned assessment program for the SASF from 2016/17 to 2019/20 is outlined below.

Financial year	Report	Delivery date
2016-17	Spawning Biomass Report	31 October 2016
2017-18	Stock Assessment Report (2016 season)	31 October 2017
	Spawning Biomass Report	31 October 2017
2018-19	Spawning Biomass Report	31 October 2018
2019-20	Stock Assessment Report (2018 season)	31 October 2019

	Spawning Biomass Report	31 October 2019
--	-------------------------	-----------------

This project includes collection of commercial catch and effort data, provision of catch-at-age data, a Spawning Biomass Report (October 2018) and provision of advice to PIRSA.

Catch and effort data

Catch and effort data in the SASF have been collected continuously since the inception of the fishery in 1991. These data are primary inputs to the Stock Assessment Report.

Catch-at-age data

Catch-at-age data has been collected for SASF since 1995 and are also primary inputs to Stock Assessment Reports.

Stock Assessment Reports

Stock Assessment Reports integrate all existing data, including fishery-dependent data on catch, effort, size and age structure as well as fishery-independent information on other aspects of the biology and ecology of Sardine, including estimates of spawning biomass obtained using the DEPM.

These reports assess the status of the stock (including explicit consideration of uncertainty), comment on the biological suitability of current management arrangements and identify future research needs.

Spawning Biomass Reports

The spawning biomass of Australian Sardine off South Australia has been estimated using the DEPM since 1995. Spawning Biomass Reports assess the status of the stock in relation to the limit and target reference points for the primary performance indicator identified in the Management Plan (i.e. spawning biomass).

2.2 NEED

The Management Plan requires estimates of spawning biomass to be obtained at least every two years. In 2016, a decision was made to move to Tier 2 of the Harvest Strategy, which requires DEPM surveys to be done annually.

A separate Research Scope covers a Spawning Biomass Report that will be completed in in 2017.

A Stock Assessment Report that includes model generated estimates of spawning biomass will be completed in October 2017 as the Management Plan for the SASF requires stock assessments be undertaken at least every two years and the last one was completed in 2015.

Commercial catch and effort statistics and catch-at-age samples need to be collected during 2016-17 in order to maintain the time series of data for use in future Stock Assessment Reports.

This SLA is needed to support a DEPM survey and Spawning Biomass Report in 2018.

2.3 OBJECTIVES

Collect and store catch and effort (fishery) data for the SASF

Generate catch-at-age and other biological data needed for stock assessment

Estimate adult reproductive parameters using biological samples collected from commercial vessels

Produce Spawning Biomass Report that assess stock status (October 2018)

2.4 METHODS

Integrate the sardine egg and larval survey data with data from the adult sampling program to provide estimates of spawning biomass.

Integrate data for the SA Sardine fishery to produce stock assessment report that assesses stock status

3. DELIVERABLES

3.1 Service Provided:

3.1.1 Collection of basic biological information

- Conduct sampling program to determine size composition of the catch;
- Determine the age composition of the catch.

3.1.2 Collection of fisheries statistics

- Manage a comprehensive fishing logbook program;
- Collate fishing logbook returns and providing a secure and commercial-in-confidence service;
- Validate returns (consultation with fishers to correct errors);
- Entry and storage of fishery data; database administration, maintenance and development;
- Provide statistical reports as required by PIRSA Fisheries.

3.1.3 Catch-at age data and stock assessment report

- analyse catch samples to determine size composition of catches;
- analyse otoliths to determine the age composition of catches;
- synthesise relevant data in the stock assessment report;
- integrate existing data using stock assessment model;
- provide model generated estimates of spawning biomass;
- assess stock status and uncertainty;

- provide advice on the suitability of the current harvest strategy;
- identify future research needs

- 3.1.4 DEPM surveys and spawning biomass report (separate Research Scope)
- undertake plankton surveys to estimate egg production and spawning area;
 - undertake adult surveys to estimate adult reproductive parameters;
 - develop method for sampling adult sardine in offshore waters
 - estimate spawning biomass and provide advice on stock status and uncertainty.

- 3.1.5 Reporting to PIRSA Fisheries
- Spawning Biomass Report for PIRSA Fisheries by 31 October 2018;
 - Participate in meetings of the South Australian Sardine Industry Association.
 - Update the relevant chapter in the SA Fisheries Status report

3.2 Outcomes:

The principal outcome will be scientific advice to support sustainable management of the SA sardine fishery.

3.3 Outputs and Extension:

Spawning Biomass Report – 31 October 2018

Presentations and data summaries provided to fisheries managers on request.

Ongoing advice provided to fisheries managers and industry

Liaise with PIRSA Fisheries and Aquaculture and SASF.

4. FUNDING ARRANGEMENTS

4.1 PROJECT COSTING POLICY

This Research Project Scope and Costing has been costed at a Discounted rate.

4.2 PROJECT COST

PROJECT COST	TOTAL FUNDED 2017/18	TOTAL IN KIND 2017/18	TOTAL PROJECT COST 2017/18
SUBTOTAL	494,726	104,337	599,063
GST	NO GST	NO GST	NO GST
TOTAL	494,726	104,337	599,063

4.3 MILESTONE AND PAYMENT SCHEDULE

Date	Milestone	Payment (\$) Ex GST
31 October 2018	Spawning Biomass Report	
31 December 2018	Payment 1 of 2017/18 SLA	247,363
31 May 2018	Payment 2 of 2017/18 SLA	247,363
SUBTOTAL		494,726
GST		NO GST
TOTAL COST		494,726

5. PROJECT STAFF

Staff	FTE 2017/18
Principal Scientist	0.40
Research Scientist	0.30
Research Officer	1.20
TOTAL	1.90

SCHEDULE 2 - RESEARCH PROJECT COSTING

1. PROJECT COST SUMMARY

Cost	Detail	2017/18 Total (\$) Ex GST
Salaries	1.9FTE	204,734
Operating		
Logbook program		18,940
Payment to industry for surveys		
Fieldwork		143,168
Laboratory		5,000
Travel		
Office & communication		
Capital equipment		
SARDI overhead		122,884
SARDI inkind		104,337
Total Cost		599,063
Revenue – PRICE		
PIRSA F&A	0.83	494,726
Total Revenue		494,726
SARDI Investment	0.17	104,337

Breakdown explanations:

Logbook Program

Entry, validation, management and reporting of data

Payment to industry for surveys

Direct costs of using industry vessels and staff to undertake surveys

Fieldwork

Fieldwork costs including vessels, travel and OHS requirements

Laboratory

Costs for processing samples

Travel

Costs for attending meetings with industry, PIRSA F&A and stakeholders

Office and communication

Stationery, communications and publications

Capital equipment

SCHEDULE 1 - RESEARCH PROJECT SCOPE

1. PROJECT DETAIL

1.1 Title: Interactions of the Sardine Fishery with short-beaked common dolphins

1.2 Client Contact Details

Name: PIRSA FISHERIES AND AQUACULTURE
Address: GPO Box 1625, Adelaide, SA 5001
Attention: Sean Sloan
Email: Sean.Sloan@sa.gov.au
Telephone: 8429 0111
Facsimile: 8226 0434

1.3 SARDI Contact Details

Name: Prof Gavin Begg
Position: Research Chief
Address: SARDI Aquatic Sciences
Email: Gavin.Begg@sa.gov.au
Telephone: 8207 5401
Facsimile: 8207 5406

1.4 Subcontractor/Collaborator

Not Applicable

1.5 Timeframe

Commencement Date: 1 July 2016
Completion Date: 30 June 2019

1.6 Summary

This is the first three-year research program scope (2016/17–2018/19) for reporting on the Interactions of the South Australian Sardine Fishery (SASF) with short-beaked common dolphins. The project will:

- receive, store and manage observer data from the SASF;
- integrate fishery and interaction data from fishery logbooks, wildlife interaction forms and observers data-sheets;
- assess the efficacy the industry Code of Practice (CoP);
- report on dolphin interaction and reporting rates;
- estimate total encirclements

2. PROJECT DESCRIPTION

2.1 BACKGROUND

This project follows previous investigations by SARDI Aquatic Sciences of the interactions of the SASF with short-beaked common dolphins (*Delphinus delphis*). Interactions with dolphins were first identified in an observer program conducted in 2005. A CoP was established which successfully reduced interaction rates. Ongoing

assessments of the effectiveness of the CoP are needed to ensure interactions are mitigated effectively.

The aim of this project is to assess the efficacy of the Code of Practice at mitigating interactions between the South Australian Sardine Fishery and short-beaked common dolphins. Efficacy of the Code of Practice will be reported each calendar year through the analysis of observer data and industry reported data. The project will:

- receive, store and manage observer data from the SASF;
- integrate fishery and interaction data from fishery logbooks, wildlife interaction forms and observers data-sheets;
- analyse and report on these data annually

Key performance indicators that will be reported are:

- Code of Practice (observer data):
 - Success at avoiding an encirclement event
 - Success of release method and time for release procedure to start
 - Mortality rate
 - Observed versus reported encirclement rate
- Representativeness of observer coverage
 - Assessment of coverage relative to spatial and temporal distribution of fishing effort by the fleet and at the individual boat level.

The project will also (1) develop a consolidated database of industry logbook and observer data, including additional data entry from historical observer records (for which an additional cost is included in this SLA for 2017/18 only); and (2) provide SASIA with dolphin interaction datasheets by 1 January 2017.

2.2 NEED

All native animals within the state of South Australia are protected under the National Parks and Wildlife Act 1972. The area of jurisdiction of the SASF was defined under the 1996 Offshore Constitutional Settlement (OCS) for scale-fish species to include all waters from adjacent to the coast of South Australia out to the 200 nautical mile limit of the Australian Fishing Zone. The SASF is also subject to the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Section 196 of the EPBC Act prohibits the taking of any listed marine species in Commonwealth waters and Section 147 requires mitigation of any adverse impacts on the wider marine ecosystem.

2.3 OBJECTIVES

1. Assess the efficacy of the CoP in mitigating interactions with dolphins
2. Compare rates of dolphin encirclement and mortality recorded by observers and in fishery logbooks when an observer was not present.
3. Use a stratified ratio approach to estimate the total number of encirclements per year from observer data and compare these to the total number recorded in fishery logbooks.
4. Report on the degree to which observer coverage represent commercial fishing for the financial year being reported
5. Compare CPUE_{net-set} for observed and unobserved net-sets for the financial year being reported.

2.4 METHODS

Data from fishery logbooks, wildlife interaction forms and observers will be integrated and analysed to determine the extent and nature of interactions with dolphins. This will include examination of patterns of observer coverage and fishing patterns (e.g. CPUE) with and without an observer, as well as analysis of spatial and temporal patterns in encirclement and mortality rates. Observer data will be used to estimate total interactions, logbook reporting rates and assess the effectiveness of the CoP in reducing interactions with dolphins.

3. DELIVERABLES

3.1 Service Provided:

- Monitor interaction rates with dolphins
- Estimate logbook reporting rates
- Assess the effectiveness of the CoP
- Provide ongoing advice to PIRSA and sardine industry

3.2 Outcomes:

- Understanding of interaction rates and effectiveness of the CoP
- Enhanced mitigation of interactions with dolphins

3.3 Outputs and Extension:

- Report by 31 October 2016, 2017 and 2018 on SASF interactions with short-beaked common dolphins for the periods up to 30 June 2016, 2017 and 2018, respectively;
- Liaise with PIRSA Fisheries and Aquaculture and SASF.

4. FUNDING ARRANGEMENTS

4.1 PROJECT COSTING POLICY

This Research Project Scope and Costing has been costed at a Discounted rate.

4.2 PROJECT COST

PROJECT COST	TOTAL FUNDED	TOTAL IN KIND	TOTAL PROJECT COST
SUBTOTAL	\$160,399	\$30,351	\$190,750
GST	NO GST	NO GST	NO GST
TOTAL	\$160,399	\$30,351	\$190,750

4.3 MILESTONE AND PAYMENT SCHEDULE

Date	Milestone	Payment (\$) Ex GST
31 October 2016	Report – SASF interactions with short-beaked common dolphins	
31 December 2016	First Half Payment 2016/17 SLA	\$22,051
31 May 2017	Second Half Payment 2016/17 SLA	\$22,051
31 October 2017	Report – SASF interactions with short-beaked common dolphins	
31 December 2017	First Half Payment 2017/18 SLA	\$34,936
31 May 2018	Second Half Payment 2017/18 SLA	\$34,936
31 October 2018	Report – SASF interactions with short-beaked common dolphins	
31 December 2018	First Half Payment 2018/19 SLA	\$23,212
31 May 2019	Second Half Payment 2018/19 SLA	\$23,213
SUBTOTAL		\$160,399
GST		NO GST
TOTAL FUNDED		\$160,399

5. PROJECT STAFF

Staff	FTE 2016/17	FTE 2017/18	FTE 2018/19
Principal Scientist	0.01	0.01	0.01
Research Scientist	0.22	0.30	0.22
TOTAL	0.23	0.31	0.23

SCHEDULE 2 - RESEARCH PROJECT COSTING

1. PROJECT COST SUMMARY

Cost	Detail	2016/17 Total (\$) Ex GST	2017/18 Total (\$) Ex GST	2018/19 Total (\$) Ex GST
Salaries (FTE)		0.23	0.31	0.23
Salaries (\$)		26,793	36,943	28,417
Operating				
Logbook program			10,000	
Payment to industry for surveys				
Fieldwork				
Laboratory				
Travel		1,700	1,700	1,700
Office & communication		800	800	800
Capital equipment				
SARDI overhead		14809	20,428	15508
SARDI inkind		8,843	12,217	9,291
Total Cost		52,945	82,088	55,716
Revenue – PRICE				
PIRSA F&A	83%	44,102	69,872	46,425
Total Revenue		44,102	69,872	46,425
SARDI Investment	17%	8,843	12,217	9,291

Breakdown explanations:

Logbook Program

Entry, validation, management and reporting of data. Cost in 2017/18 is for required database work

Payment to industry for surveys

Direct costs of using industry vessels and staff to undertake surveys

Fieldwork

Fieldwork costs including vessels, travel and OHS requirements

Laboratory

Costs for processing samples

Travel

Costs for attending meetings with industry, PIRSA F&A and stakeholders

Office and communication

Stationery, communications and publications

Capital equipment