

PIRSA Fisheries & Aquaculture Cost Recovery Program

PIPI FISHERY & NET SECTOR (LAKES AND COORONG)

FOR THE YEAR ENDING AT 30 JUNE 2018



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Information current as of June 2017

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Summary Table Pipi Fishery & Net Sector (Lakes and Coorong)

2016-17		Program Area	2017-18		Comments	Days	FTE
Pipi (\$)	Lakes & Coorong (\$)		Pipi (\$)	Lakes & Coorong (\$)			
RESEARCH COSTS							
174,605	0	Stock Assessment and Monitoring	178,686	0	Pipi: Year 2 of 3 year SARDI project scope Finfish (L&C): Net fee relief granted for 2017-18, no SARDI costs.		
4,660	5,202	Economic Assessment	4,664	5,272	As per contract services 2017-18		
0	1,357	Other Research		1,387	Contribution towards Threatened and Endangered Species		
PIRSA RELATED COSTS							
36,233	36,233	Policy and Management	37,000	37,000	Same level of service as previous year	80	0.40
4,889	4,889	Legislation	5,010	5,010	Same level of service as previous year	10	0.05
4,569	4,569	Licensing	4,700	4,700	Same level of service as previous year	13	0.07
1,766	1,766	Directorate	1,808	1,808	Same level of service as previous year	4	0.02
60,340	48,272	Compliance	61,200	48,960	Same level of service as previous year	90	0.45
12,042	0	Quota Monitoring	12,280	0	Same level of service as previous year	20	0.10
OTHER COSTS							
7,793	7,642	FRDC	8,053	7,727	Funding based on 0.25% of rolling three year average GVP		
0	110,480	Co-Management Services		92,560	Co-Management Services requested by industry for 2017-18.		
306,897	220,409	TOTAL	313,401	204,424			

Licence Fees for 2017-18 (\$)	
Lakes and Coorong Access Fee	2,756
Net Sector Base ¹	0.00
Net Fee ²	0.00
Pipi Base	3,328
Pipi Unit Fee	256.85

Licence Fees for 2016-17 (\$)	
Lakes and Coorong Access Fee	3,251
Net Sector Base	0.00
Net Fee	0.00
Pipi Base	3,250
Pipi Unit Fee	251.65

¹ Net sector base fee waived in 2015-16, 2016-17 and 2017-18

² Net fee was waived in 2015-16, 2016-17 and 2017-18

Program Daily Charge Out Rate

DAILY RATE (\$)	Compliance	Quota	Directorate	Legislation	Licensing	Policy
Total Employee Expenses	609	365	575	685	460	582
Total Operating Expenses	325	61	136	123	71	150
Deprecation and Capital Costs	78	4	0	0	8	0
Total Other Expenses*	213	185	193	193	185	193
TOTAL DAILY RATE	1,224	614	904	1,002	723	925

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.

MANAGEMENT OBJECTIVES 2016/17 to 2018/19: LAKES AND COORONG FISHERY

NET SECTOR

Fishery	Management Plan objectives	Outcomes 2016/17 to 2018/19	Policy and Management	Compliance	Assessment and Research	Leasing and Licensing
Lakes and Coorong Fishery (Net Sector)	Ensure LCF resources are harvested within ecologically sustainable limits	Implement the new management plan under the <i>Fisheries Management Act 2007</i> , including harvest strategies	Implement new management plan, including annual TACE decision making Develop and implement recovery strategy for Black Bream	Support implementation of management plan Implement compliance plan in accordance with risk assessment	Support implementation of management plan Annual fishery and environmental statistical report Ecosystem-based fishery assessment report: Freshwater Large Mesh Gillnet 2016/17 Estuarine large mesh gill net 2017/18 Estuarine small mesh gill net 2018/19 Support development of recovery strategy for Black Bream	Support management plan implementation and review.
	Optimum utilisation and equitable distribution of the LCF resources	Monitor and manage catches of each sector within allocated shares Mitigate interactions with long-nosed fur seals	Catch and effort managed within allocations and changes in shares detected and acted on appropriately Develop and implement arrangements to mitigate interactions with long-nosed fur seals		FRDC project Developing alternative strategies for managing seal-fisher interactions in the South Australian Lakes and Coorong Fishery'	

	Minimise impacts on the ecosystem	Participate in relevant environmental water flow Initiatives Progress DotE recommendations	Undertake DotE reassessment of the LCF and progress recommendations (re: condition 4 - Murray Cod)		Produce overall TEPS report	
	Cost-effective, efficient and participative management of the fishery	Support industry to maintain MSC accreditation Effective engagement with industry in accordance with agreed co-management arrangements. Implement outcomes of Rules Review	Support ongoing MSC accreditation Liaise with industry and attend meetings as appropriate Implement outcomes of Rules Review Consult with SFA and GPHA on policy and management issues. Finalise and implement consultative arrangements in line with Co-management arrangements	Support ongoing MSC accreditation Liaise with industry and attend meetings as appropriate	Support ongoing MSC accreditation Liaise with industry and attend meetings as appropriate	Provide ongoing support for licensing, quota and transfer queries

MANAGEMENT OBJECTIVES 2016/17 to 2018/19: LAKES AND COORONG FISHERY

PIPI FISHERY

Fishery	Management Plan objectives	Outcomes 2016/17 to 2018/19	Policy and Management	Compliance	Assessment and Research	Leasing and Licensing
Lakes and Coorong Fishery (Pipi fishery)	Ensure LCF resources harvested within ecologically sustainable limits	Implement new management plan under the <i>Fisheries Management Act 2007</i> , including harvest strategy Facilitate industry economic and market development initiatives	Implement management plan, including annual TACC decision making Review Pipi fishing season arrangements considering the FRDC Pipi report	Support implementation of new management plan Implement compliance plan in accordance with risk assessment	Pipi stock assessment in 2016/17 Annual advice note regarding harvest strategy performance indicators for Pipi Continue development of a method for estimating relative abundance of pre-recruits to the Pipi fishery Support implementation of management plan	Support management plan implementation and review.
	Optimum utilisation and equitable distribution of the resources for the benefit of the community					
	Minimise impacts on the ecosystem	Progress DotE recommendations	Progress DotE recommendations	Implement compliance plan in accordance with risk assessment	Produce overall TEPS report	
	Cost-effective, efficient and participative management of the fishery	Finalise and implement agreed co-management arrangements. Implement outcomes of Rules Review	Consult with SFA and GPHA on policy and management issues Liaise with industry and attend meetings as appropriate Implement outcomes of Rules Review	Implement outcomes of Rules Review Liaise with industry and attend meetings as appropriate	Liaise with industry and attend meetings as appropriate	Provide ongoing support for licensing, quota and transfer queries

Fisheries Policy and Management Program

PIPI FISHERY & NET SECTOR (LAKES AND COORONG)

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

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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 Lakes and Coorong 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

- Provision of clear instructions for complex legal drafting or compilation of drafts of simple legislative instruments in consultation with the legal manager as necessary for the management of the Lakes and Coorong Fishery (regulations, closure notices, licence conditions, Ministerial exemptions etc).
- Provide advice to the Minister or his/her delegate on setting total allowable commercial catch and effort levels for the Lakes and Coorong Fishery.
- Prepare policies to support fisheries management
- Prepare submissions to enable regular assessment of the Lakes and Coorong Fishery under the EPBC Act
- Prepare annual report to the Australian Government on EPBC Act requirements for the Abalone fisheries
- Prepare regular fisheries status reports
- Develop and maintain day-to-day productive working relationships and outcomes through cooperative management and collaboration with stakeholders
- Further the development of co-management arrangements

Performance Indicators:

1. Strong industry and government involvement in co-management relationship and adherence to formally agreed co-management arrangements.
2. Develop and implement management plan. Management plans to include harvest strategies that protect sustainability of the fishery based on ESD risk assessment processes.
3. Australian Government recommendations met in relation to EPBC assessment.
4. Setting of TACC for Lakes and Coorong 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 – Pipi	40	0.20	37,000
Policy and Management – Lakes & Coorong	40	0.20	37,000
TOTALS	80	0.40	74,000

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

Legal Services Program

PIPI FISHERY & NET SECTOR (LAKES AND COORONG)

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

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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 Lakes and Coorong 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 Systems and Information) 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 - Pipi	5	0.025	5,010
Legislation – Lakes & Coorong	5	0.025	5,010
TOTALS	10	0.05	10,020

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

Leasing and Licensing Program

PIPI FISHERY & NET SECTOR (LAKES AND COORONG)

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

Rob Falco, Manager, Leasing and Licensing

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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 - Pipi	6.5	0.035	4,700
Leasing and Licensing – Lakes & Coorong	6.5	0.035	4,700
Quota Monitoring – Pipi	20	0.10	12,280
TOTALS	33	0.17	21,680

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

Directorate Program

PIPI FISHERY & NET SECTOR (LAKES AND COORONG)

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

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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 - Pipi	2	0.01	1,808
Directorate – Lakes & Coorong	2	0.01	1,808
TOTALS	4	0.02	3,616

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

Fisheries Compliance Operations Program

LAKES AND COORONG FISHERY

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

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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 Lakes and Coorong 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 Lakes and Coorong Compliance Plan are primarily delivered by teams located in Largs North and Kingston. Support is also provided as required from the three 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 members of the Lakes and Coorong Fishing 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 Lakes and Coorong 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 Lakes and Coorong fishery are identified herein.

Legislative and Regulatory Framework

Fisheries Management Act 2007

Fisheries Management (Lakes and Coorong Fisheries) Regulations 2006

Fisheries Management (Fish Processors) Regulations 2007

Fisheries Management (General) Regulations 2007 Schedule 2

Fisheries Management (Demerit Points) Regulations 2009

Lakes and Coorong 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 Lakes and Coorong 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. One such emerging issue is the changes to management arrangements which will require a strong emphasis on ensuring individual net allocations are not exceeded.

It should be noted that for the year ending 30 June 2016 PIRSA expended an additional 73 days of effort (~\$88k) above the cost recovered program and a further 24 days into Lakes and Coorong recreational nets compliance. 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.

Compliance Outputs	Days	FTE	Cost (\$)
Education Awareness	6	0.03	7,344
Effective Deterrence, Monitoring & Surveillance	10	0.05	12,240
Enforcement	24	0.12	29,376
TOTAL OFFICER DAYS	40	0.20	48,960

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)
- 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 Lakes and Coorong 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 Lakes and Coorong resources. 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 education meetings with new entrants into the fishery and participate in industry days.
- Provide electronic distribution of educational material to fishers and licence holders.
- Ensure all interested parties understand their respective obligations.
- Develop Industry communication & relationship programs to facilitate discussion of topics such as compliance inspection outcomes and issues impacting the Lakes and Coorong fishery
- Ongoing one on one education during inspections

Effective Deterrence, Monitoring and Surveillance

- Ensure all aspects of monitoring, such as reporting of relief days, and associated chain of custody requirements in maintaining records are met.
- Ensure all aspects of commercial fishing activities are monitored such as inspections of catch at sea, when landed, in transit and at 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
- Issue expiations and caution notices

- Prepare briefs of evidence for the Crown Solicitors office for considerations of court enforced actions.
- Communicate enforcement outcomes in formal reporting
- Service of suspension notices

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 Lakes and Coorong Fishery.

1. Use Excess, Unregistered or Illegal Gear.
2. Taking Undersize.
3. Use Excess Agents.
4. Fail to Supply Periodic Returns to SARDI.

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 Lakes and Coorong resources 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 Lakes and Coorong species between user groups, a confidence in the ability of PIRSA to manage Lakes and Coorong 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 Lakes and Coorong resources is fair and equitable.
- Investment support continues for ecologically and economically sustainable harvest of Lakes and Coorong resources.

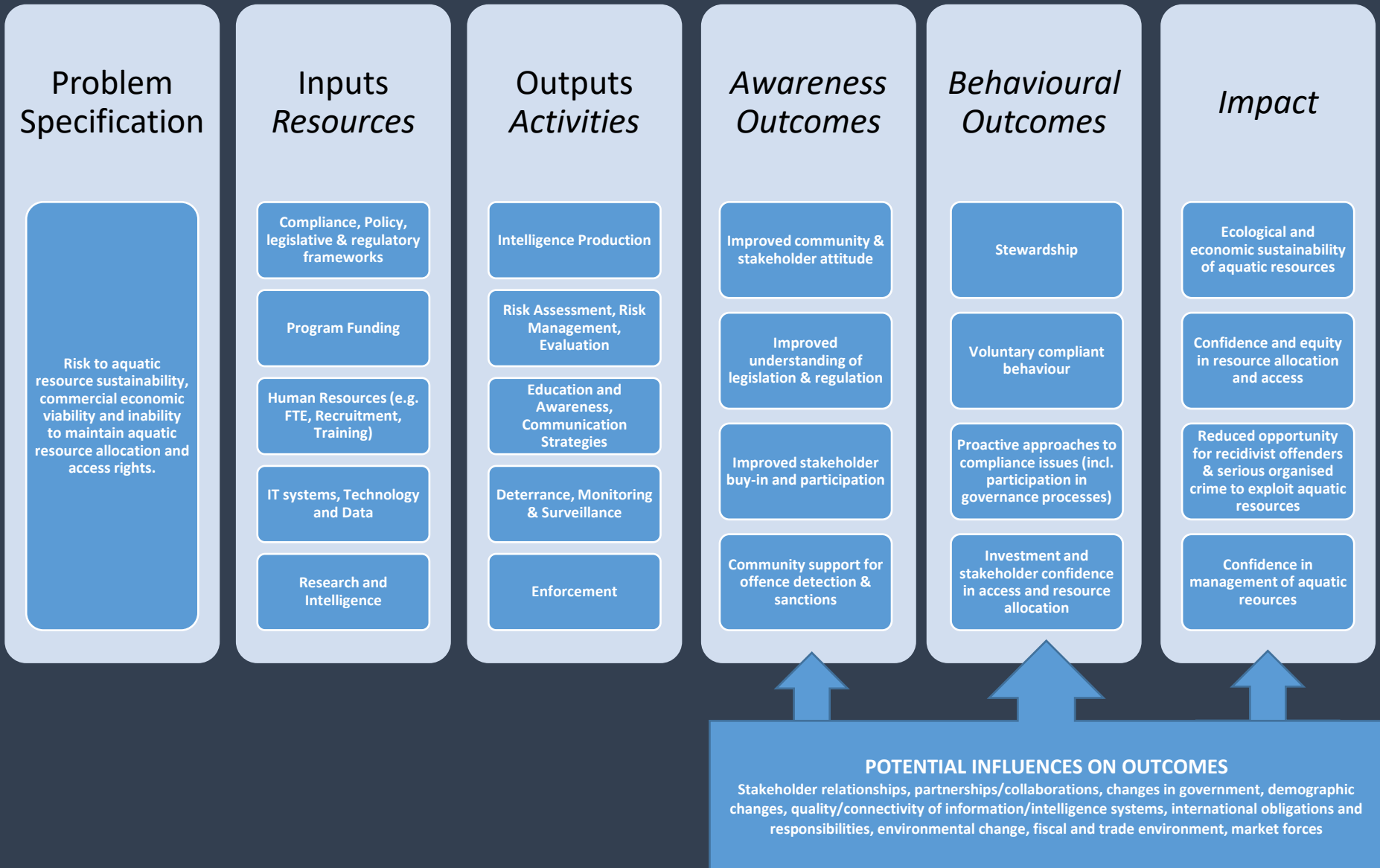
Reduced opportunity for recidivist offenders and Serious Organised Crime to exploit aquatic resources

- Regulators, law enforcement and industry have closed opportunities for Serious Organised Crime to participate in the Lakes and Coorong fishing 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 Lakes and Coorong stocks.
- Positive consumer perception for commercially harvested species from the Lakes and Coorong.
- An absence of adverse industry publicity.

Ecologically Sustainable Development (ESD) and Risk Management Framework



Fisheries Compliance Operations Program

PIPI FISHERY

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Program Manager

Randel Donovan
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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 Pipi 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 Pipi Compliance Plan is primarily delivered by teams located in Largs North and Kingston. Support is also provided as required from the 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 Pipi 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 Pipi 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 Pipi fishery are identified herein.

Legislative and Regulatory Framework

Fisheries Management Act 2007

Fisheries Management (Lakes and Coorong Fishery) Regulations 2009

Fisheries Management (Marine Scale Fishery) Regulations 2006

Fisheries Management (Fish Processors) Regulations 2007

Fisheries Management (General) Regulations 2007

Fisheries Management (Demerit Points) Regulations 2009

Pipi Fisheries 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 Pipi 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. 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: Pipi Effort Allocated Against Compliance Outputs

Compliance Outputs	Days	FTE	Cost (\$)
Education Awareness	10	0.05	12,240
Effective Deterrence, Monitoring & Surveillance	20	0.10	24,480
Enforcement	20	0.10	24,480
TOTAL OFFICER DAYS	50	0.25	61,200

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)
- 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 Pipi 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 Pipi. 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 education meetings with new entrants into the fishery and participate in industry days.
- Provide electronic distribution of educational material to fishers and licence holders.
- Ensure all interested parties understand their respective obligations.
- Develop Industry communication & relationship programs to facilitate discussion of topics such as compliance inspection outcomes and issues impacting the Pipi 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 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
- Issue expiations and caution notices
- Prepare briefs of evidence for the Crown Solicitors office to consider court enforced actions.
- Communicate enforcement outcomes in formal reporting

- Service of suspension notices

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 Pipi Fishery.

5. Quota Management System Integrity.
6. Take Undersize.
7. Fail to Supply Periodic Returns to SARDI.
8. 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 Pipi 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 Pipi between user groups, a confidence in

the ability of PIRSA to manage Pipi 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 Pipi resources is fair and equitable.
- Investment support continues for ecologically and economically sustainable harvest of Pipi.

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 Pipi 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 Pipi stocks.
- Positive consumer perception for commercially harvested Pipi.
- An absence of adverse industry publicity.

Ecologically Sustainable Development (ESD) and Risk Management Framework

Problem Specification

Risk to aquatic resource sustainability, commercial economic viability and inability to maintain aquatic resource allocation and access rights.

Inputs *Resources*

Compliance, Policy, legislative & regulatory frameworks

Program Funding

Human Resources (e.g. FTE, Recruitment, Training)

IT systems, Technology and Data

Research and Intelligence

Outputs *Activities*

Intelligence Production

Risk Assessment, Risk Management, Evaluation

Education and Awareness, Communication Strategies

Deterrance, Monitoring & Surveillance

Enforcement

Awareness *Outcomes*

Improved community & stakeholder attitude

Improved understanding of legislation & regulation

Improved stakeholder buy-in and participation

Community support for offence detection & sanctions

Behavioural *Outcomes*

Stewardship

Voluntary compliant behaviour

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

Investment and stakeholder confidence in access and resource allocation

Impact

Ecological and economic sustainability of aquatic resources

Confidence and equity in resource allocation and access

Reduced opportunity for recidivist offenders & serious organised crime to exploit aquatic resources

Confidence in management of aquatic resources

POTENTIAL INFLUENCES ON OUTCOMES

Stakeholder relationships, partnerships/collaborations, changes in government, demographic changes, quality/connectivity of information/intelligence systems, international obligations and responsibilities, environmental change, fiscal and trade environment, market forces

Stock Assessment and Monitoring Program

PIPI FISHERY & NET SECTOR (LAKES AND COORONG)

FOR THE YEAR ENDING AT 30 JUNE 2018

All enquiries

Client Contact Details

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Principal Investigator

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Research Chief, SARDI Aquatic Sciences

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SCHEDULE 1 - RESEARCH PROJECT SCOPE

1. PROJECT DETAIL

1.1 Title Lakes and Coorong Fishery (Finfish)

1.2 Client Contact Details

Name: PIRSA FISHERIES AND AQUACULTURE
Address: GPO Box 1625, Adelaide, SA 5001
Attention: Sean Sloan
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1.3 SARDI Contact Details

Name: Prof Gavin Begg
Position: Research Chief
Address: SARDI Aquatic Sciences
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1.4 Subcontractor/Collaborator

NOT APPLICABLE

1.5 Timeframe

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

1.6 Summary

The original scope of work for the Lakes and Coorong Fishery (Finfish) in South Australia in 2017/18 had a broad research program to deliver two main outputs. These were: (1) a fishery statistics and environmental performance indicators report, which included a historical summary of fishery statistics for key species, and an assessment of the environmental performance indicators against the reference points identified in the harvest strategy for finfish; and (2) an ecosystem-based fishery assessment report for the estuarine small mesh gill net sector of the Lakes and Coorong Fishery (LCF), which included a detailed stock assessment for Yelloweye Mullet.

Following provision of fee relief and subsequent removal of funding for 2017/18, the broad research program was revised to meet the minimum and immediate needs for management in 2017/18. The revised scope of work for 2017/18, which is the same as that undertaken in 2016/17, has retained the fishery statistics and environmental performance indicators report, as it provides PIRSA with the information required for the ecologically sustainable management of the LCF for finfish. The modified broad research program for 2017/18 is:

1. to continue collection of commercial catch and effort data, and the delivery of advice to PIRSA, industry and other stakeholders;

2. to analyse the fishery statistics (i.e. commercial catch and effort data) for key species;
3. to obtain Coorong Hydrodynamic Model outputs for the Coorong estuary and daily water level data for the Lower Lakes, and provide updated estimates of the environmental performance indicators for 2016/17 to inform the harvest strategy for finfish.

The primary output of the modified research program for 2017/18 is:

1. a fishery statistics and environmental performance indicators report, which includes estimates of the environmental performance indicators for 2016/17 used to inform the harvest strategy for finfish.

The modified research program for 2017/18 does not include:

1. the ecosystem-based fishery assessment report for the estuarine small mesh gill net sector of the LCF, which was to include a detailed stock assessment for Yelloweye Mullet;
2. commercial catch sampling to obtain demographic information for Yelloweye Mullet in the Coorong estuary;
3. collection, storage, processing and interpretation of otoliths to provide age structures for Yelloweye Mullet.

2. PROJECT DESCRIPTION

2.1 BACKGROUND

This research program builds on previous research by SARDI Aquatic Sciences that includes fishery statistics reports (2006a, 2006b, 2008, 2010, 2011, 2012a, 2012b, 2014, 2015, 2016) and stock assessment reports on Yelloweye Mullet (2005, 2013), Black Bream (2008, 2016), Greenback Flounder (2007, 2016), Mulloway (2003, 2011, 2014) and Golden Perch (2004, 2011, 2012). A multi-species study of the LCF was completed in 2010.

Additionally, between 2001-02 and 2007-08, PIRSA was also provided a review of the literature on Greenback Flounder and peer-reviewed publications on habitat association and stock structure of Mulloway in South Australia. Funding through PIRSA and SARDI towards a PhD on the biology and ecology of Mulloway supplemented the cost of producing a workshop on this species in 2005 and stock assessments in 2003, 2011 and 2014.

The FRDC funded project (FRDC 2005/061) “Gear interaction of non-targeted species in the Lakes and Coorong commercial and recreational fisheries of South Australia” that was completed in 2010 provided a performance indicator for levels of by-catch in the LCF.

The FRDC funded project (FRDC 2013/225) “Developing a management framework and harvest strategies for small scale multi-species, multi-method community based fisheries, using the South Australian Lakes and Coorong Fishery as a case study” was completed in 2015 and provided recommendations of a new harvest strategy for finfish.

A new harvest strategy for finfish was implemented in 2016/17. The harvest strategy is different to that of a traditional harvest strategy, as it is based upon environmental condition that links to the availability of the fished resources. The harvest strategy aims to manage the sustainable take of finfish in line with environmental conditions—specifically the amount of habitat available for key finfish species within estuarine and

freshwater habitats of the LCF. The harvest strategy uses environmental performance indicators, reference points and decision rules to guide management of the fishery through adjustment of annual Total Allowable Commercial Effort (TACE) for three habitat/gear-based sectors of the LCF.

2.2 NEED

The provision of accurate information on key finfish stocks of the LCF, and the condition of the environment in which the fishery operates is critical to ongoing management strategies for the sustainable harvesting of finfish resources that support the LCF. Data obtained from this modified research program will provide PIRSA with a reduced capacity to monitor the ongoing performance of the fishery and initiate, where necessary adaptive management strategies in a timely manner.

2.3 OBJECTIVES

2.3.1 To provide a fishery statistics and environmental performance indicators report, which includes estimates of the environmental performance indicators for 2016/17 to inform the harvest strategy for finfish.

2.3.2 To ongoing and *ad hoc* advice.

2.4 METHODS

1. Collection, collation, storage and analysis of fishery-dependent catch and effort data.
2. Obtain and analyse Coorong Hydrodynamic Model outputs and daily water level data for the Lower Lakes and provide estimates of the three environmental performance indicators for 2016/17 to inform the harvest strategy for finfish.
3. Document fishery catch and effort data and environmental information in a fishery statistics and performance indicator report for 2016/17.

3. DELIVERABLES

3.1 Service Provided:

1. Collect, collate and store commercial fishery data (SARDI Information Services):
 - manage the comprehensive commercial logbook program;
 - correct erroneous returns, involving contact with fishers when necessary;
 - undertake data-entry in association with appropriate error checking procedures;
 - maintain databases as required;
 - securely store original logbook returns.
2. Collect, collate and store environmental data to provide estimates of the environmental performance indicators for 2016/17 to inform the harvest strategy for finfish:
 - obtain Coorong Hydrodynamic Model outputs for the Coorong estuary;
 - obtain daily water level data for the Lower Lakes.
3. Analyse, interrogate and interpret fishery and environmental data:

- summarise all data in a fishery statistics and environmental performance indicators report;
- provide presentations to industry and PIRSA on key findings.

3.2 Outcomes:

The principal outcome will be fishery and environmental information and scientific advice to support the sustainable harvesting of finfish resources in South Australia's LCF.

3.3 Outputs and Extension:

1. A fishery statistics and environmental performance indicator report.
2. Presentations to PIRSA and industry.

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	(\$ Ex GST
SUBTOTAL	62,245
GST	NO GST
TOTAL	622,45

4.3 MILESTONE AND PAYMENT SCHEDULE

Date	Milestone	Payment (\$) Ex GST
31 December 2017	Payment 1 2017/18 SLA ¹	0
31 April 2018	Report: Fishery statistics and environmental performance indicators report	0
31 May 2018	Payment 2 2017/18 SLA ¹	0
SUBTOTAL		62,245
GST		NO GST
TOTAL FUNDED		62,245

¹Note there are no payments from PIRSA F&A due to fee relief.

5. PROJECT STAFF

Staff	FTE 2017/18
Senior Research Officer	0.25
TOTAL	0.25

SCHEDULE 2 - RESEARCH PROJECT COSTING

1. PROJECT COST SUMMARY

Cost	Detail	2017/18 Total (\$) Ex GST
Salaries	0.25	29,098
Operating		
Logbook program		16,116
Payment to industry for surveys		
Fieldwork		
Laboratory		
Travel		1,000
Office & communication		
Capital equipment		
SARDI overhead		16,031
SARDI inkind		9,853
Total Cost		72,098

² Note there are no payments from PIRSA F&A due to fee relief.

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 stakeholders⁷

Office and communication

Stationery, communications and publications

Capital equipment

SCHEDULE 1 - PROJECT SCOPE

1. PROJECT DETAIL

1.1 Title Lakes and Coorong Fishery (pipi)

1.2 Client Contact Details

Name: PIRSA FISHERIES
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

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Position: Research Chief
Address: SARDI Aquatic Sciences
2 Hamra Ave, West Beach, SA 5024
Email: gavin.begg@sa.gov.au
Telephone: 8207 5401
Facsimile: 8207 5406

1.4 Subcontractor/Collaborator

Goolwa Pipi Harvesters Association

1.5 Timeframe

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

1.6 Summary

This research scope has been prepared to facilitate a three-year research program (2016/17 - 2018/19) for the Lakes and Coorong Fishery for pipi.

The primary outputs are (1) a fishery assessment report for pipi which is scheduled each five years in the Management Plan for the Lakes and Coorong Fishery (due 30/6/2017), and (2) an annual presentation and advice note on the status of the pipi stock based on biological performance indicators estimated from annual fishery-independent surveys of relative abundance and size structures

The primary biological performance indicators (relative abundance, presence/absence pre-recruits) are estimated from the fishery-independent surveys which are conducted cooperatively by fishers and SARDI. The biological performance indicators are used in the harvest strategy for pipi to recommend an annual Total Allowable Commercial Catch (TACC) of pipi through the Lakes and Coorong Fishery Management Advisory Committee (LCFMAC) in May each year. Supplemental information, based on fishery catch and effort data, is also provided.

This research scope also includes refinement of the index of relative abundance of pre-recruits targeting replacement of the existing indicator based on presence/absence of pre-recruits with a more robust quantitative indicator.

2. PROJECT DESCRIPTION

2.1 BACKGROUND

This project supports sustainable management of the fishery for pipi (*Donax deltoides*) and addresses a key finding of an industry workshop in 2007 that recommended that future assessments of the fishery should not rely solely on commercial CPUE.

The original Management Plan for the LCF (Sloan 2005) was reviewed and updated in 2015 (PIRSA 2015) and now includes separate harvest strategies for finfish and pipi. The first harvest strategy for pipi was implemented in 2012/13 and utilized two primary biological performance indicators (fishery-independent relative abundance, presence/absence pre-recruits) to recommend a biologically acceptable TACC. This harvest strategy was reviewed and updated in 2015/16 based on the time-series (7 years) of annual estimates of relative biomass and presence/absence of pre-recruits.

The methodology for estimating fishery-independent relative biomass was developed over three years and further evaluated after seven years (Ward et al. 2010; Ferguson et al. 2015). The strategy is to continue to build on the collaborative relationship between fishers, researchers, and managers established in 2007/08 to conduct cost-effective, fishery-independent surveys that involve coordinated scientific sampling and structured commercial fishing.

This project builds on (1) stock assessment reports on pipi in 2002/03; 2005/06 and 2013/14; (2) annual stock status presentations from 2007/08 to 2015/16 by SARDI Aquatic Sciences; (3) an FRDC project to support development of the harvesting strategy for the Lakes and Coorong Fishery for pipi; and (4) winter fishing/market trials conducted in 2010 and 2011.

2.2 NEED

This project addresses the need for scientific information to support sustainable harvesting of pipi in the LCF for pipi and application of the harvest strategy for pipi identified in the Management Plan. The importance of annual fishery-independent estimates of relative biomass was identified as a key to addressing uncertainty around commercial CPUE at an industry workshop in 2007 and several subsequent studies (Ward et al. 2010; Ferguson et al. 2015).

Development of an index of pipi pre-recruits has also been identified as useful for sustainable development of this fishery at the Pipi Harvest Plan Development Workshop (19 Dec 2011, PIRSA, Grenfell Centre) and important for further development of the existing fishery-independent survey method (Ward et al. 2010; Ferguson et al. 2015).

2.3 OBJECTIVES

- 2.3.1** To provide PIRSA with an annual advice note on the status of the pipi stock (May)
- 2.3.2** To provide PIRSA and the LCF MAC with an annual presentation on the status of the pipi stock (May)
- 2.3.3** To provide a stock assessment of pipi according to the schedule in the Management Plan (June 2017)

2.3.2 Conduct annual fishery-independent surveys to provide annual estimates of:

- relative abundance of pipi
- presence/absence of pipi pre-recruits
- size/age frequency information to characterise the demographic structure of pipi

2.3.3 Refine the method for estimating relative abundance of pre-recruits to the pipi stock

2.3.4 Provide ongoing and *ad hoc* advice and information to PIRSA

2.4 METHODS

Fishery-independent surveys of pipi on the Youngusband Peninsula use the method developed between SARDI, PIRSA and industry described in Ward et al. (2010) and Ferguson et al. (2015):

- Each annual estimate of relative biomass is based on three sub-surveys conducted between October to May
- Sampling is done by commercial fisher crews using standardised commercial pipi rakes
- Each commercial crew is accompanied by one scientific observer
- The observer collects length frequency data using a pipi rake with fine mesh
- Collect, collate and analyse data

Refinement of a method for estimating relative abundance of pre-recruits:

- Monthly sub-surveys conducted during main recruitment period
- Each sub-survey conducted over two days to increase spatial coverage
- Sampling conducted with modified pipi rake fitted with 20 mm mesh
- Pipi graded into pre-recruits/recruits and each fraction weighed
- Collect, collate and analyse data

3. DELIVERABLES

3.1 Service Provided:

3.1.1 Fishery-dependent (catch and effort) data

- Collect, collate and store data
- Manage a comprehensive fishing-logbook program
- Enter data received into a secure database
- Administer, maintain and develop the database
- Securely store original logbook returns.
- Validate returns, including consultation with fishers to correct errors

3.1.2 Fishery-independent (survey) data

- Coordination of annual fishery-independent surveys
- Training of new fishers and scientific observers
- Collection, collation and storage of data from field surveys
- Collection and storage of size/age samples

- Laboratory processing of size/age samples
- Effective storage of relative abundance and size data
- Collection and storage of biological data e.g. reproductive, length-weight data

3.1.3 Analysis, interpretation and reporting

- Analyse temporal/spatial trends in biomass through fishery-independent estimates of relative biomass
- Analyse temporal/spatial trends in size/age structures
- Assess performance of the fishery against biological performance indicators
- Analyse temporal/spatial trends in fishery-dependent (catch and effort) data
- Interpret the results of the research program in reports and presentations

3.1.4 Project management

- Project Supervision
- Management of Deliverables
- Quality control
- Liaise with PIRSA, industry, State and Commonwealth agencies on matters relevant to the fishery
- Work with PIRSA and stakeholders to identify research priorities and to develop and implement new projects
- Update relevant chapter in status report for SA fisheries

3.2 Outcomes:

Stock assessment of the LCF for pipi

Scientific advice to support sustainable management of the LCF for pipi

Timely, completion of fishery-independent surveys of the pipi resource on Youngusband Peninsula

3.3 Outputs and Extension:

Stock assessment report on pipi as scheduled in the Management Plan (June 2017)

Advice note to PIRSA Fisheries and Aquaculture on the stock status of pipi including annual estimates of biological performance indicators (annual, May)

Presentation on stock status to pipi including annual estimates of biological performance indicators to PIRSA Fisheries and Aquaculture and the pipi LCFMAC (annual, May)

4. FUNDING ARRANGEMENTS

4.1 PROJECT COSTING POLICY

4.2 PROJECT COST

PROJECT COST	TOTAL FUNDED	TOTAL IN KIND	TOTAL PROJECT COST
SUBTOTAL	\$535,963	\$85,144	\$621,107
GST	NO GST	NO GST	NO GST
TOTAL	\$535,963	\$85,144	\$621,107

4.3 MILESTONE AND PAYMENT SCHEDULE

Date	Milestone	Payment (\$) Ex GST
31 December 2016	First Half Payment 2016/17 SLA	\$87,302
30 May 2017	Advice Note – pipi stock status Presentation to PIRSA and LCF MAC	
31 May 2017	Second Half Payment 2016/17 SLA	\$87,303
30 June 2017	Pipi stock assessment report	
31 December 2017	First Half Payment 2017/18 SLA	\$89,343
30 May 2018	Advice Note – pipi stock status Presentation to PIRSA and LCF MAC	
31 May 2018	Second Half Payment 2017/18 SLA	\$89,343
31 December 2018	First Half Payment 2018/19 SLA	\$91,336
30 May 2019	Advice Note – pipi stock status Presentation to PIRSA and LCF MAC	
31 May 2019	Second Half Payment 2018/19 SLA	\$91,336
SUBTOTAL		\$535,963
GST		NO GST
TOTAL FUNDED		\$535,963

5. PROJECT STAFF

Staff	FTE 2016/17	FTE 2017/18	FTE 2018/19
Research Scientist	0.6	0.6	0.6
Research Officer	0.12	0.12	0.12
TOTAL	0.72	0.72	0.72

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)		0.72	0.72	0.72
Salaries (\$)		86,140	88,809	91,351
Operating				
Logbook program		11,108	11,440	11,783
Payment to industry for surveys		19,500	19,500	19,500
Fieldwork		10,500	10,500	10,500
Laboratory				
Travel				
Office & communication		1,000	1,000	1,000
Capital equipment				
SARDI overhead		46,357.48	47,437.48	48,538.48
SARDI inkind		27,683	28,376	29,085
Total Cost		202,288	207,062	211,757
Revenue – PRICE				
PIRSA F&A	86%	174,605	178,686	182,672
Total Revenue				
SARDI Investment	14%	27,683	28,376	29,085

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