



Government of South Australia

Primary Industries and Regions SA

PIRSA FISHERIES & AQUACULTURE

COST RECOVERY PROGRAM

2016-17

MARINE SCALEFISH FISHERY

including MUD COCKLES

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SUMMARY TABLE: MARINE SCALEFISH FISHERY

2015-16 \$	PROGRAM AREA	2016-17 \$	COMMENTS	DAYS	FTE
RESEARCH COSTS					
768,712	Stock Assessment and Monitoring	708,237	As per first year of three-year scope.		
28,106	Economic Assessment	23,405	As per contracted services 2016-17		
12,042	Other Research	12,324	Contribution towards Threatened and Endangered Species		
PIRSA RELATED COSTS					
196,724	Policy and management	199,283	Same level of service as previous year.	220	1.10
9,762	Legislation	9,777	Same level of service as previous year	10	0.05
62,927	Licensing	63,262	Same level of service as previous year	90	0.45
14,182	Directorate	14,131	Same level of service as previous year	16	0.08
1,167,701	Compliance	1,166,971	Same level of service as previous year	967	4.84
42,966	Vessel	42,706	Same level of service as previous year	6	0.03
OTHER COSTS					
53,218	FRDC	52,182	Funding based on 0.25% of rolling three year average GVP		
168,700	Co-Management Services	161,202	Co-Management Services requested for 2016-17. Total of \$168,700 to be collected from across MSF and Sardine Fisheries.		
\$2,525,040	Total	\$2,453,481			

Licence Fees	2016-17
Base Fee	5,059
Net Fee	4,544
<i>LICENCE FEES</i>	<i>2015-16</i>
<i>Base Fee</i>	<i>5,174.55</i>
<i>Net Fee</i>	<i>4,556</i>

SUMMARY TABLE: MUD COCKLE FISHERY

2015-16	PROGRAM AREA	2016-17	COMMENTS	DAYS	FTE
RESEARCH COSTS					
31,114	Stock Assessment and Monitoring	26,104	As per first year of three-year scope. Logbook program removed from West Coast and Coffin Bay scopes from 2016-17. Section Bank closed 2016-17.		
1,648	Economic Assessment	1,676	As per contracted services 2016-17		
PIRSA RELATED COSTS					
40,239	Policy and management	40,762	Same level of service as previous year. Industry requested for fee split of: 20% base fee, 40% Coffin Bay, and 40% West Coast from 2016-17.	45	0.23
4,881	Legislation	4,889	Same level of service as previous year	5	0.03
6,992	Licensing	7,029	Same level of service as previous year	10	0.05
1,773	Directorate	1,766	Same level of service as previous year	2	0.01
45,887	Compliance	45,858	Same level of service as previous year	38	0.19
6,592	Quota Monitoring	6,623	Same level of service as previous year	11	0.06
OTHER COSTS					
2,571	FRDC	2,422	Funding based on 0.25% of rolling three year average GVP		
141,696	Total	137,130			

LICENCE FEES	2016-17
Base Fee	1,809
(plus MSF Base fee)	5,059
Total Base:	6,867
Section Bank Quota Unit Fee	0.00
Coffin Bay Quota Unit Fee	68.65
West Coast Quota Unit Fee	44.95
<i>LICENCE FEES</i>	<i>2015-16</i>
<i>Base Fee</i>	<i>4,272</i>
<i>(plus MSF Base fee)</i>	<i>5,175</i>
<i>Total base</i>	<i>9,446</i>
<i>Section Bank Quota Unit Fee</i>	<i>0.00</i>
<i>Coffin Bay Quota Unit Fee</i>	<i>53.45</i>
<i>West Coast Quota Unit Fee</i>	<i>32.75</i>

PROGRAM DAILY CHARGE OUT RATE

DAILY RATE (\$)	Compliance	Vessel	Quota	Directorate	Legislation	Licensing	Policy
Total Employee Expenses	594	2,269	362	542	669	448	566
Total Operating Expenses	325	3,227	56	153	120	70	151
Deprecation and Capital Costs	79	1,227	3	0	0	4	0
Total Other Expenses*	209	395	181	189	189	181	189
TOTAL DAILY RATE	1,207	7,118	602	883	978	703	906

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: MARINE SCALEFISH FISHERY

Fishery	Management Plan Goals	Outcomes 2016/17 to 2018/19	Policy and Management	Compliance	Assessment and Research	Systems & Information
Marine Scalefish Fishery	Ensure MSF resources are harvested within ecologically sustainable limits	Implement management plan, including harvest strategies	<p>Lead implementation of management plan, including harvest strategies</p> <p>Lead review of management plan in 2017/18 including:</p> <ul style="list-style-type: none"> • investigating developing economic indicators for inclusion in the harvest strategies (subject to funding) • review Snapper harvest strategy • review Vongole harvest strategy • alignment with SA harvest strategy policy • other aspects as detailed in the management plan 	<p>Implement and review fishery compliance plan, informed by risk assessment</p> <p>Support implementation of management plan</p>	<p>Support implementation of management plan, including harvest strategies</p> <p>Support review of management plan in 2017/18</p>	<p>Support implementation of management plan, including issue of 10-year licences</p>
			<p>Update Snapper harvest strategy as appropriate, taking into account outcomes of the FRDC projects.</p> <p>Update Snapper management arrangements as needed.</p> <p>Implement outcomes of King George Whiting management review</p>	<p>Support implementation of Snapper management changes</p> <p>Support implementation of outcomes of King George Whiting management review</p>	<p>Support review of Snapper harvest strategy as necessary</p> <p>Undertake FRDC project – 'Developing DEPM to estimate the spawning biomass of snapper populations in the South Australian Gulfs'</p>	<p>Implement changes to licensing systems and update licences as required</p>

			<p>Ongoing meetings with Marine Fisheries Association to review and propose measures to meet harvest strategy</p> <p>Lead review of harvest strategy for Garfish in 2016/17</p> <p>Implement management changes via licence conditions or Notices under the <i>Fisheries Management Act 2007</i> or Regulation amendments (including Cabinet submissions) or a combination of the above instruments.</p> <p>Support FRDC projects as needed</p>	Support implementation of Garfish management changes	<p>Input and expertise into consultation processes with MFA (and or working groups) (Project 1)</p> <p>FRDC project- 'Do commercial fishery data reflect stock status in South Australia's Southern Garfish fisheries'</p>	Implement changes to licensing systems and update licences as required
		Monitor the biological performance of the fishery and ensure the collection of fishery and biological data	<p>Facilitate the distribution of research outcomes</p> <p>Consider stock assessment and stock status report with Marine Fisheries Association /SARDI, address any performance indicators (harvest strategy) as needed.</p>		<p>Stock assessment report for key species as per schedule in the harvest strategy (Project 3)</p> <p>Market sampling of key species to feed into fishery assessment reports as per schedule in the harvest strategy (Project 2)</p>	
		Logbook review to improve catch validation and confidence of fishery dependent information which is used to monitor the stocks and allocations	<p>Lead process to review logbook and reporting requirements for MSF species with the MFA</p> <p>Support development of e-catch reporting arrangements</p>	<p>Support logbook review, as required</p> <p>Support development of e-catch reporting arrangements</p>	<p>Support logbook review, as required</p> <p>Update logbook and database and assist in education, as required.</p> <p>Support development of e-catch reporting arrangements</p>	Support development of e-catch reporting arrangements

	Minimise impacts on the ecosystem	Address recommendations and conditions from DotE under EPBC Act accreditation	Reporting and submissions on ecological sustainability for Commonwealth EPBC Act assessment as required by the accreditation Address other conditions/recommendations as required		TEPs annual report	
	Optimum utilisation and equitable distribution of Marine Scalefish Fishery resources	Manage catch of each sector within allocated shares	Review any breaches of allocations and implement management arrangements as necessary		Status reports include assessment of catches against allocation triggers	
		Finalise review of individual closures to commercial net fishing in South Australian coastal waters Investigate development of underutilised species	Undertake consultation on proposals, consider the outcomes of consultation and implement management arrangements as necessary	Support development and implementation management strategy	Support development and implementation management strategy	
	Cost-effective and participative management of the fishery	Support industry body to participate and function within the co-management framework of the fishery	Support MFA in the development and implementation of a consultative model within the MSF Develop and implement communication protocol, with annual review Regular communication with industry and Executive Officer, Marine Fishers' Association and attendance of meetings, as required Implement changes to cost recovery from the 'Independent review of cost sharing arrangement for Marine Scalefish species cost recovery apportionment' as necessary. Update MSF operator user guide, as required	Implement and review fishery compliance plan, informed by risk assessment Attend meetings with MFA and provide compliance advice, as required Support updates to MSF operator user guide as required	Industry liaison, attendance of meetings with MFA and provision of research advice, as required	Provide ongoing support for licensing queries Support and coordination of FISHWATCH number and commercial app Support updates to MSF operator user guide, as required

		<p>Implement rules review outcomes</p> <p>Finalise and implement gear review</p>	<p>Lead implementation of rules review outcomes, and consultation and regulatory changes, via relevant legislative means</p> <p>Undertake review of lift nets (combining hoop nets and drop nets) (NB: linked with review of recreational arrangements)</p> <p>Lead finalisation of gear review, undertake consultation and commence implementation of legislative changes</p>	<p>Support implementation of rules review outcomes</p> <p>Assist in development of user guide</p> <p>Participation in gear review and support implementation</p>	<p>Participation in gear review (Project 1)</p>	<p>Support implementation of rules review</p> <p>Implement changes to licensing systems and update licences as required</p>
		<p>Develop, agree and commence implementation of a strategic direction and plan for the MSF with the MFA</p>	<p>Assist the MFA in developing a strategic direction for the fishery (including consultation and seeking industry input and support)</p> <p>Develop a project plan to implement key projects to address the strategic issues</p> <p>Commence implementation of project plan to undertake agreed projects</p>	<p>Participation in projects and support of implementation</p>	<p>Participation in projects and support of implementation</p>	<p>Participation in projects and support of implementation</p>

MANAGEMENT OBJECTIVES 2016/17 TO 2018/19: COCKLE and VONGOLE FISHERY

Long term objectives	Outcomes 2016/17 to 2018/19	Fishery Policy and Management	Compliance	Assessment and Research	Systems & Information
<p>Ensure the Cockle and Vongole resource is harvested sustainably</p> <p>Optimal utilisation and equitable distribution of the Cockle and Vongole resource</p>	<p>Determine annual TACCs for Vongole quota zones according to biannual biomass estimates.</p> <p>Implement new management arrangements for the Cockle and Vongole fishery</p> <p>Review status of Port River closure</p> <p>Support research and development for Port River stock enhancement project</p>	<p>Recommend annual TACCs for quota zones, in consultation with industry</p> <p>Implement Vongole harvest strategy in management plan for the Marine Scalefish Fishery</p> <p>Review status of Port River closure with industry and SARDI</p> <p>Implement new management arrangements for the Cockle and Vongole fishery.</p> <p>Assist in stock enhancement research for Port River, and support, where necessary</p> <p>Review regularity and spatial extent of Vongole biomass surveys</p>	<p>Implement compliance program, informed by risk assessment.</p> <p>Provide compliance advice for the implementation of new managements arrangements for the Cockle and Vongole fishery</p> <p>Provide compliance advice for the stock enhancement initiatives for Port River, and support, where necessary</p>	<p>Provide scientific advice to support harvest strategy, underpinned by biomass estimates</p> <p>Provide scientific advice for the implementation of new managements arrangements for the Cockle and Vongole fishery</p> <p>Provide scientific advice for the stock enhancement initiatives for Port River.</p> <p>Support review of status of Port River closure with industry and PIRSA</p>	<p>Provide ongoing support for licensing quota and transfer queries</p> <p>Provide licensing advice for the implementation of new managements arrangements for the Cockle and Vongole fishery</p>
<p>Minimise impacts on the ecosystem</p>	<p>Address recommendations and conditions from DotE under EPBC Act accreditation</p> <p>Reassessment of the fishery before January 2015</p>	<p>Prepare EPBC Act reassessment report</p> <p>Address DotE conditions and recommendations</p> <p>Provide management advice on fish kills, as required</p>	<p>Provide support with investigation of fish kills, as required</p>	<p>Provide scientific advice and aid in investigation of fish kills</p>	
<p>Cost effective and participative management of the Cockle and Vongole Fishery</p>	<p>Support co-management of the fishery</p>	<p>Maintain regular communication with Executive Officer of the Marine Fishers' Association and be accessible to all licence holders</p> <p>Provide management advice, where necessary, throughout the licensing year</p>	<p>Maintain regular communication with industry representatives</p> <p>Provide compliance advice, where necessary, throughout the licensing year</p>	<p>Maintain regular communication with industry representatives</p> <p>Provide scientific advice, where necessary, throughout the licensing year</p>	

PROGRAM: FISHERIES POLICY AND MANAGEMENT

PROGRAM MANAGER

Alice Fistr, Manager Fisheries Policy and Management Unit
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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 Executive Director 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 Marine Scalefish 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
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 Marine Scalefish Fishery, and Cockle and Vongole 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 Marine Scalefish Fishery, and Cockle and Vongole fishery
- Prepare policies to support fisheries management
- Prepare submissions to enable regular assessment of the Marine Scalefish Fishery, and Cockle and Vongole fishery under the EPBC Act
- Prepare annual report to the Australian Government on EPBC Act requirements for the Marine Scalefish Fishery and Cockle and Vongole fishery.
- 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 Vongole Fishery

PROGRAM EFFORT ALLOCATION

The table below includes an abbreviated suite of core activities reflect the anticipated split of effort and associated costs.

Strategy/Activities	Days	FTE	Cost (\$)
Policy and Management - Marine Scalefish	220	1.10	199,283
Policy and Management - Mud Cockle	45	0.23	40,762
TOTALS	265	1.33	240,045

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

PROGRAM: LEGAL SERVICES

PROGRAM MANAGER

Lambertus Lopez, Manager, Legal and Legislative Programs
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PROGRAM SUMMARY

PIRSA Fisheries & Aquaculture Directorate provides legal services to the Group Executive Director 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 Marine Scalefish 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 reflect the anticipated split of effort and associated costs.

Strategy/Activities	Days	FTE	Cost (\$)
Legislation – Marine Scalefish	10	0.05	9,777
Legislation – Mud Cockle	5	0.03	4,889
TOTALS	15	0.08	14,666

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

PROGRAM: LEASING AND LICENSING

PROGRAM MANAGER

Erin Conlon, Manager, Leasing & Licensing
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PROGRAM SUMMARY

The Fisheries Leasing & Licensing Section of PIRSA Fisheries & Aquaculture is responsible for the management of Licensing, Quota Monitoring and VMS 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 quarterly activity report (as required), within one month at the end of each quarter.

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 renewals.
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 Executive Director, 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 reflect the anticipated split of effort and associated costs.

Strategy/Activities	Days	FTE	Cost (\$)
Leasing and Licensing – Marine Scalefish	90	0.45	63,262
Leasing and Licensing – Mud Cockle	10	0.05	7,029
Quota Monitoring – Mud Cockle	11	0.06	6,623
TOTALS	111	0.56	76,915

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

PROGRAM: DIRECTORATE

PROGRAM MANAGER

Chiara Ciui, Business 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 Group Executive Director, 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 – Marine Scalefish	16	0.08	14,131
Directorate – Mud Cockle	2	0.01	1,766
TOTALS	18	0.09	15,897

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

FINAL

PROGRAM: FISHERIES COMPLIANCE OPERATIONS MARINE SCALE FISHERY 2016-17

PROGRAM MANAGER

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COMPLIANCE PROGRAM SUMMARY

PIRSA Fisheries and Aquaculture teams undertake coordinated compliance activities to educate fishers, deter opportunistic and financially motivated fishery related offences and enforce the rules and regulations.

In consultation with industry a dedicated compliance plan has been developed for the Marine Scale fishery. This compliance plan was developed to direct effort and ensure compliance activities are intelligence driven, efficient, cost effective and outcome focussed. The compliance plan is underpinned by three core strategies (Education and Awareness, Effective Deterrence and Appropriate Enforcement) which are focussed towards increasing voluntary compliance and maximising effective deterrence.

An analysis of intelligence and information holdings is conducted to identify the major risks for the fishery. A series of strategies, actions, and initiatives are detailed and used to focus the primary compliance effort in order to manage the risks and achieve targeted outcomes.

OBJECTIVES

This program provides a compliance framework to monitor and regulate fishing activities that support the sustainable commercial take of species that are able to be taken pursuant to a Marine Scale licence in accordance with the Act and the Management Plan for the South Australian Commercial Marine Scalefish Fishery

The plan provides a focus for Fisheries Officers to undertake coordinated compliance activities to educate fishers, deter opportunistic and financially motivated fishery related offences, and enforce the rules and regulations of the fishery.

Any compliance related risks or emerging trends/issues of significance that arise outside the plan are addressed as required.

The risks and strategies are regularly reviewed and assessed for relevance to ensure compliance activities meet the following objectives:

- Meet the objectives of the *Fisheries Management Act 2007*;
- To promote compliance with the *Fisheries Management (Marine Scalefish Fisheries) Regulations 2006*;
- To support meeting the goals and objectives of the Management Plan for the South Australian Commercial Marine Scalefish Fishery;
- To promote increased voluntary compliance;
- To deliver an effective education and awareness program;
- Continue developing effective deterrence strategies;
- Undertake appropriate enforcement activities;
- Increase integrity in fishery management systems and/or quota systems;
- Promote positive interactions & collaboration with stakeholders;
- To deliver an efficient and effective compliance program.

COMPLIANCE EFFORT

- Monitoring of fishing activity, landings and consignments for compliance and integrity
- Offence identification and response
- Operational and Investigation Planning and Surveillance
- Risk assessments, trend and threat analysis
- Master Operational Planning Process
- Legislative review for efficacy and relevance
- Industry liaison and education

ANTICIPATED OUTCOMES

The principal outcome of this compliance program is to support sustainable management of the Marine Scalefish Fishery by:

- Increased voluntary compliance;
- Continued development of effective deterrence strategies;
- Accurate intelligence and risk predictions;
- Successful enforcement outcomes for repeat or serious offences;
- Development of efficient and cost effective compliance strategies;
- Continued development of stakeholder engagement programs;
- Reduced incidence of reported illegal activity
- Reduced incidence of documentation errors and inconsistencies
- Increased integrity in fishery management systems and/or quota systems
- Increased positive interactions & collaboration with stakeholders

PROGRAM DELIVERY

The Fisheries & Aquaculture Operations Group comprises three Regional Operations teams, an Offshore Patrol Operations team and an Intelligence & Strategic Support team. All contribute to the delivery of the compliance program dedicated to the Marine Scale fishery.

PROGRAM STRATEGIES AND SUPPORTING ACTIONS & INITIATIVES

The compliance program is tailored to the Marine Scalefish Fishery and uses a number of initiatives and actions that fall under the three core strategies of Education & Awareness, Effective Deterrence and Appropriate Enforcement. These initiatives and actions are outlined in the Marine Scalefish Fishery compliance plan which has been developed in consultation with the sector.

PROGRAM EFFORT ALLOCATION

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
- 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 Marine Scalefish 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 an abbreviated suite of the core activities and initiatives used to manage the risks. The table also includes days allocated to reflect the anticipated split of effort and associated costs.

Strategy/Activities	Days	FTE	Cost (\$)
Education Awareness <ul style="list-style-type: none"> • Provide fishery related compliance advice to all industry stakeholders and potential stakeholders • Provide electronic distribution of educational material to fishers and licence holders as required • Ensure all stakeholders understand their respective obligations and the compliance focus for the coming season • Develop Industry communication & relationship program to facilitate discussion of topics such as subsequent change management process (eg. Haul net mesh sizes, snapper longlining requirements, snapper closure compliance program) • Ongoing one on one education during inspections and with new licence holders and masters 	130	0.65	156,883
Effective Deterrence <ul style="list-style-type: none"> • Ensure all aspects of commercial fishing activities are monitored including inspections of fishing operations, catch at sea, catch when landed, in transit and at change of ownership in fish processing premises • Conduct intelligence driven operations and use appropriate enforcement action • Collaborate with other enforcement agencies in order to provide greater reactive and proactive investigative capability • Communication Strategy 	557	2.79	672,185
Enforcement <ul style="list-style-type: none"> • Investigate reports of non-compliance and where appropriate take action • Issue expiations, cautions and court enforced actions 	280	1.40	337,903
TOTALS	967	4.84	1,166,971

Fisheries Patrol Vessel (FPV) Southern Ranger	Days	Cost
<ul style="list-style-type: none"> The offshore patrol vessel FPV Southern Ranger is integral to the overall compliance strategy. It is the only State owned vessel with capability to operate in both inshore and offshore waters and in a broad range of sea and weather conditions. FPV Southern Ranger is important for compliance in the Marine Scalefish Fishery as it provides an effective deterrence in areas traditionally fished by Marine Scalefish fishers including long-line and large mesh net fishers. The crew of Southern Ranger conduct targeted inspections of Marine Scalefish operators to ensure compliance with gear specifications, closed areas and permitted species. 	6	42,706

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.

All values have been rounded to the nearest dollar figure

FINAL

**PROGRAM: FISHERIES COMPLIANCE OPERATIONS
MUD COCKLE FISHERY 2016/2017**

PROGRAM MANAGER

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COMPLIANCE PROGRAM SUMMARY

PIRSA Fisheries and Aquaculture teams undertake coordinated compliance activities to educate fishers, deter opportunistic and financially motivated fishery related crimes and enforce the rules and regulations.

In consultation industry a dedicated compliance plan has been developed for the Vongole fishery. This compliance plan was developed to direct effort and ensure compliance activities are intelligence driven, efficient and cost effective and outcome focussed. The compliance plan is underpinned by three core strategies (Education and Awareness, Effective Deterrence and Appropriate Enforcement) and is focussed towards increasing voluntary compliance and maximising effective deterrence.

A detailed analysis of intelligence and information holdings is conducted to identify the major risks for the fishery. A series of strategies, actions, and initiatives are detailed and used to focus the primary compliance effort in order to manage the risks and achieve targeted outcomes.

OBJECTIVES

This program provides a compliance framework to monitor and regulate fishing activities that support the sustainable commercial take of Cockles and Vongole in the Cockle and Vongole fishery in accordance with the Act and the Management Plan for the South Australian Commercial Marine Scalefish Fishery.

The compliance program provides a focus for the teams to undertake coordinated compliance activities to educate fishers, deter opportunistic and financially motivated fishery related crimes, and enforce the rules and regulations of the fishery.

Any risks or emerging trends/issues of significance that arise outside the compliance plan are addressed as required.

The risks and strategies are regularly reviewed and assessed for relevance to ensure compliance activities meet the following objectives:

- Meet the objectives of the *Fisheries Management Act 2007*
- To promote compliance with the *Fisheries Management (Marine Scalefish Fisheries) Regulations 2006*
- To support meeting the goals and objectives of the Cockle and Vongole fishery within the Management Plan for the South Australian Commercial Marine Scalefish Fishery
- To promote increased voluntary compliance
- To deliver an effective education and awareness program
- Continue developing effective deterrence strategies
- Undertake appropriate enforcement activities
- Increase integrity in fishery management systems and/or quota systems
- Promote positive interactions & collaboration with stakeholders
- To deliver an efficient and effective compliance program

COMPLIANCE EFFORT

- Monitoring of Cockle and Vongole fishery management arrangements and quota systems for compliance and integrity
- Offence identification and response
- Operational, investigation planning and surveillance
- Risk assessments, trend and threat analysis
- Master operational planning process
- Legislative review for efficacy and relevance
- Industry liaison and education

ANTICIPATED OUTCOMES

The principal outcome of this compliance program is to support sustainable management of the Cockle and Vongole fishery by:

- Increased voluntary compliance
- Continued development of effective deterrence strategies
- Accurate intelligence and risk predictions
- Successful enforcement outcomes for repeat or serious offences
- Development of efficient and cost effective compliance strategies
- Continued development of stakeholder engagement programs
- Reduced incidence of reported illegal activity
- Reduced incidence of documentation errors and inconsistencies
- Increased integrity in fishery management systems and/or quota systems
- Increased positive interactions & collaboration with stakeholders

PROGRAM DELIVERY

The Fisheries & Aquaculture Operations Group comprises three Regional Operations teams, an Offshore Patrol Operations team and an Intelligence & Strategic Support team.

The compliance program dedicated to the Cockle and Vongole fishery is primarily delivered by Fisheries Officers from the West Region, and with support, as required, by officers from within the Intelligence & Strategic Support team.

PROGRAM STRATEGIES AND SUPPORTING ACTIONS & INITIATIVES

The compliance program is tailored to the Cockle and Vongole fishery and uses a number of initiatives and actions that fall under the three core strategies of Education & Awareness, Effective Deterrence and Appropriate Enforcement. These initiatives and actions are outlined in the Cockle and Vongole fishery compliance plan which has been developed in consultation with the sector.

PROGRAM EFFORT ALLOCATION

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
- 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

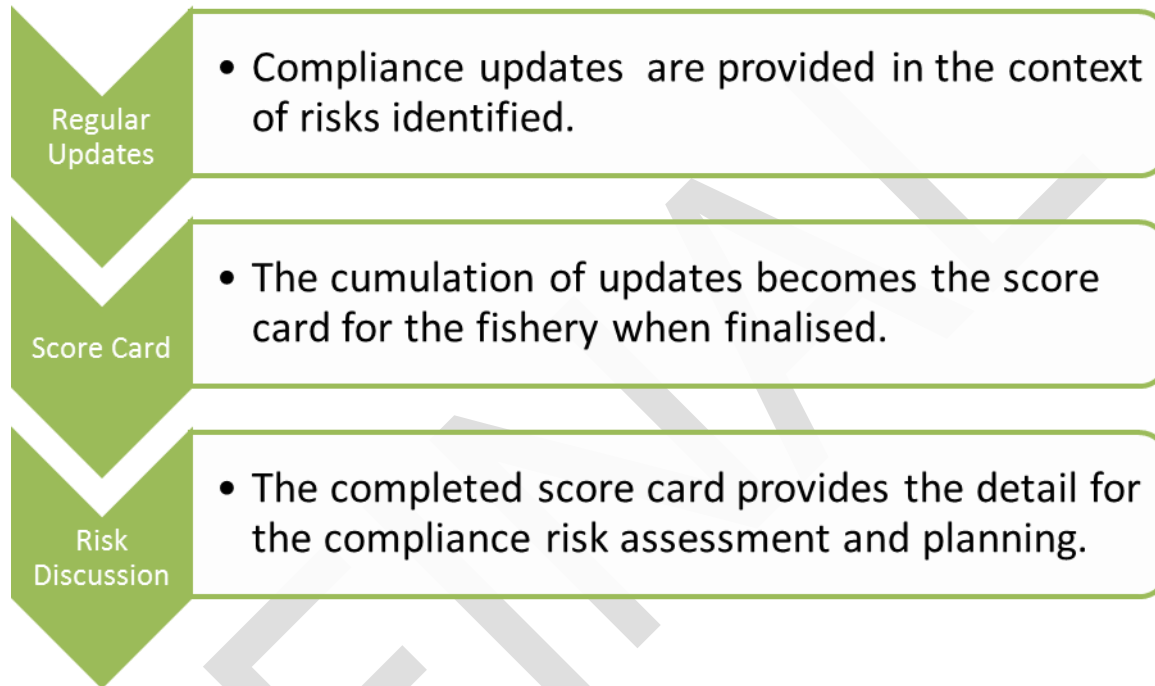
PIRSA has continually reviewed the Cockle and Vongole fishery compliance program, gaining efficiencies through intelligence driven and targeted operations, and re-directing compliance effort where necessary to address current and emerging issues and risks.

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

Strategy/Activities	Days	FTE	Cost
Education Awareness <ul style="list-style-type: none"> • 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 and issues impacting the Cockle and Vongole fishery • Ongoing one on one education during inspections 	7	0.035	\$8,448
Effective Deterrence <ul style="list-style-type: none"> • 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 including inspections of catch at sea, catch when landed, in transit and at change of ownership in fish processing premises • Conduct intelligence driven operations and use appropriate enforcement action • Respond to reported incidents/issues • Communication strategy 	26	0.13	\$31,377
Enforcement <ul style="list-style-type: none"> • Investigate reports of non-compliance and where appropriate take action • Issue expiations, cautions and court enforced actions 	5	0.025	\$6,034
TOTALS	38	0.19	45,858

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. All values have been rounded to the nearest dollar figure

MARINE SCALEFISH FISHERY – 16/17 RISK ASSESSMENT & COMPLIANCE PROGRAM



MARINE SCALEFISH FISHERY RISKS

USING ILLEGAL GEAR	Likelihood: Likely	Consequence: Severe	Risk Rating	High
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Risk Attribute	<ul style="list-style-type: none"> Using unattended long lines, using excess hooks, using unendorsed vessels, using illegally modified fishing gear, not marking fishing gear, using unendorsed gear.
Legislative & Regulatory Framework	<ul style="list-style-type: none"> <i>Fisheries Management Act (2007) Section 53</i> Demerit points Fishery management plan goal –Ensure MSF resources are harvested within ecologically sustainable limits.
Implication	<ul style="list-style-type: none"> The sustainability of key species such as Snapper, King George Whiting and Garfish are threatened by using illegal gear to obtain effort driven advantages. (The latest stock assessment reports indicate several Snapper, King George Whiting and Garfish stocks are transitional declining) Some fishers gain a competitive advantage by using illegal gear in an industry regulated to provide fair access.
Control Measure	<ul style="list-style-type: none"> One on one education sessions offered to all new entrants into the fishery Boarding vessels at sea and inspections at landing Intelligence driven investigations User guide for the fishery available and regularly updated

MARINE SCALEFISH FISHERY RISKS

COLLUSION BETWEEN LICENCED AND UNLICENCED SECTORS	Likelihood: Likely	Consequence: Severe	Risk Rating	High
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Risk Attribute	<ul style="list-style-type: none"> Commercial fishers utilising recreational effort to bolster catch results Commercial fishers utilising other commercial fishers to avoid trip limits Commercial AFMA endorsed vessels utilising state vessels to avoid trip limits
Legislative & Regulatory Framework	<ul style="list-style-type: none"> <i>Fisheries Management Act 2007</i> Fishery Management Plan goal – Ensure MSF resources are harvested within ecologically sustainable limits Licence conditions
Implication	<ul style="list-style-type: none"> Fishery management decisions made without data for illegal unlicensed fishing activity Some fishers may gain a competitive advantage colluding with recreational fishers Sustainable fishing practices undermined
Control Measure	<ul style="list-style-type: none"> Checks at landing, boarding vessels at sea, checks at fish processors and in transit Fishery induction packages and one on one education sessions to all new entrants and user guide

MARINE SCALEFISH FISHERY RISKS

CATCH VALIDATION	Likelihood: Likely	Consequence: Severe	Risk Rating	High
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Risk Attribute	<ul style="list-style-type: none"> • Providing false catch and effort information to SARDI
Legislative Framework	<ul style="list-style-type: none"> • <i>Fisheries Management Act 2007 Section 119</i> • Demerit points
Implication	<ul style="list-style-type: none"> • Some fishers may gain a competitive advantage in any future quota allocation process • Management decisions in the fishery may be adversely influenced by incorrect catch and effort information
Control Measure	<ul style="list-style-type: none"> • One on one education sessions offered to all new entrants • Checks at sea, at landings, in transit and at fish processors, cross referenced with sales documentation and catch effort log books

FINAL

MARINE SCALEFISH FISHERY RISKS

FISH IN CLOSED SEASONS	Likelihood: Likely	Consequence: Severe	Risk Rating	High
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Risk Attribute	<ul style="list-style-type: none"> • Fish during closed seasons to get market advantage.
Legislative Framework	<ul style="list-style-type: none"> • <i>Fisheries Management Act 2007</i> • Fishery management plan goal – Ensure MSF resources are harvested within ecologically sustainable limits • Demerit points
Implication	<ul style="list-style-type: none"> • The sustainability of key species such as Snapper, King George Whiting and Garfish are threatened by fishing in closed seasons. (The latest stock assessment reports indicate several Snapper, King George Whiting and Garfish stocks are transitional declining) • Some fishers gain a competitive advantage by fishing during closed seasons.
Control Measure	<ul style="list-style-type: none"> • One on one education sessions offered to all new entrants into the fishery • Boarding vessels at sea and inspections at landing • Intelligence driven investigations • User guide for the fishery available and regularly updated

MARINE SCALEFISH FISHERY RISKS

FISH IN CLOSED AREAS	Likelihood: Likely	Consequence: Severe	Risk Rating	High
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Risk Attribute	<ul style="list-style-type: none"> • Fish in closed areas
Legislative Framework	<ul style="list-style-type: none"> • <i>Fisheries Management Act 2007</i> • Fishery management plan goal – Ensure MSF resources are harvested within ecologically sustainable limits • Demerit points
Implication	<ul style="list-style-type: none"> • The sustainability of key species such as Snapper, King George Whiting and Garfish are threatened by fishing in closed areas. (The latest stock assessment reports indicate Snapper, King George Whiting and Garfish stocks throughout the state are on the decline) • Fishing in a closed area may provide a competitive advantage.
Control Measure	<ul style="list-style-type: none"> • One on one education sessions offered to all new entrants into the fishery • Boarding vessels at sea • Intelligence driven investigations • User guide for the fishery available and regularly updated

MARINE SCALEFISH FISHERY RISKS

FISH IN CLOSED SEASONS	Likelihood: Likely	Consequence: Moderate	Risk Rating	High
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Risk Attribute	<ul style="list-style-type: none"> • Fish during closed seasons to get market advantage.
Legislative Framework	<ul style="list-style-type: none"> • <i>Fisheries Management Act 2007</i> • Fishery Management Plan goal – Sustainable harvest of marine scalefish fish stocks. • Demerit Points
Implication	<ul style="list-style-type: none"> • The sustainability of iconic species such as Snapper, King George Whiting and Garfish are threatened by fishing during closed seasons. (The latest stock assessment reports indicate Snapper and Garfish stocks throughout the state are on the decline) • Some fishers gain a competitive advantage by fishing during closed seasons in an industry regulated to provide fair access.
Control Measure	<ul style="list-style-type: none"> • One on one education sessions offered to all new entrants into the fishery • Boarding vessels at sea and inspections at landing • Intelligence driven investigations

MARINE SCALEFISH FISHERY RISKS

TAKE UNDER SIZE	Likelihood: Likely	Consequence: Moderate	Risk Rating	Moderate
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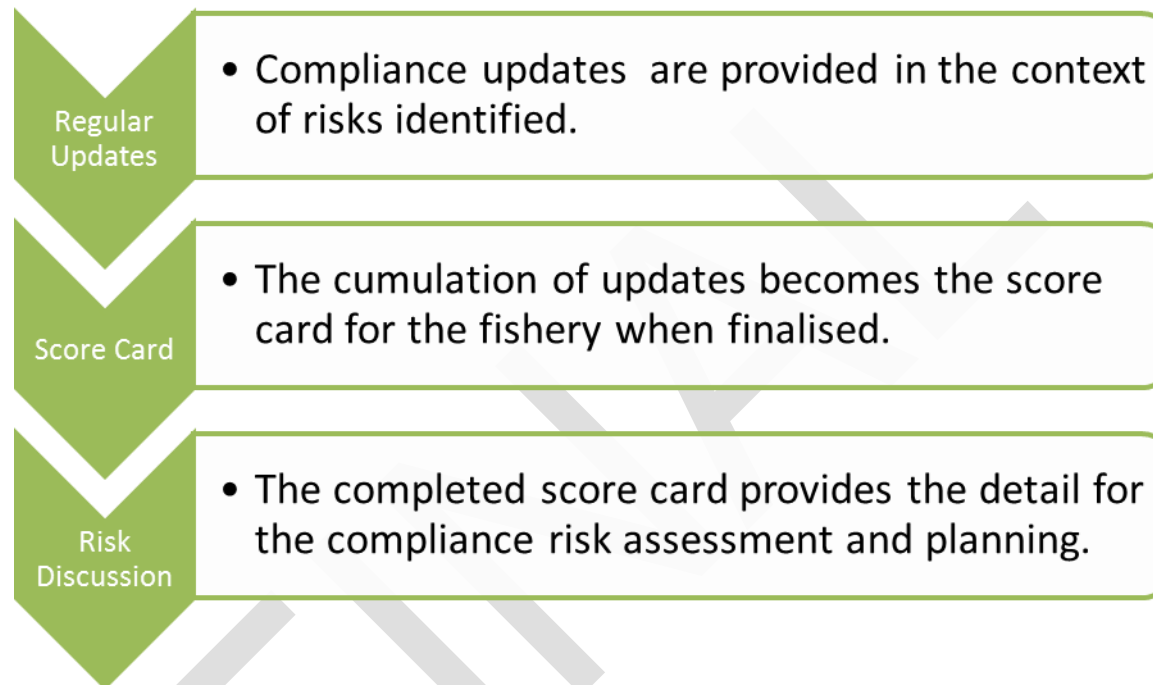
Risk Attribute	<ul style="list-style-type: none"> • Taking undersize or over limit fish.
Legislative Framework	<ul style="list-style-type: none"> • <i>Fisheries Management Act 2007</i> • Fishery Management Plan goal – Ensure MSF resources are harvested within ecologically sustainable limits. • Demerit Points
Implication	<ul style="list-style-type: none"> • The sustainability of iconic species such as Snapper, King George Whiting and Garfish are threatened by the take of undersize fish. (The latest stock assessment reports indicate several Snapper, King George Whiting and Garfish stocks are transitional declining) • The take of undersize fish could compromise recruitment of fish stocks. • Some fishers gain a competitive advantage by taking undersize fish.
Control Measure	<ul style="list-style-type: none"> • One on one education sessions offered to all new entrants into the fishery • Boarding vessels at sea and inspections at landing • Conduct inspections at processors and fish markets • User guide for the fishery available and regularly updated

		CONSEQUENCES					
		NEGLIGIBLE	MINOR	MODERATE	SEVERE	MAJOR	CATASTROPHIC
		0	1	2	3	4	5
LIKELIHOOD	REMOTE	1					
	RARE	2					
	UNLIKELY	3					
	POSSIBLE	4					
	OCCASIONAL	5				Catch Validation (15)	
	LIKELY	6			Fish in closed season / Areas (12)	Using Illegal gear (18) Collusion between licensed & unlicensed (18) Take u/s and over limit (18)	
LIKELIHOOD DEFINITIONS				CONSEQUENCE DEFINITION			
LIKELY	It is expected to occur			CATASTROPHIC	Local extinctions are imminent / immediate		
OCCASIONAL	May occur			MAJOR	Likely to cause local extinctions, if continued in longer term		
POSSIBLE	Some evidence to suggest this is possible here			SEVERE	Affecting recruitment levels of stocks / or their capacity to increase		
UNLIKELY	Uncommon, but has been known to occur elsewhere			MODERATE	Full exploitation rate, but long term recruitment / dynamics not adversely impacted		
RARE	May occur in exceptional circumstances			MINOR	Possibly detectable, but minimal impact on population size and none on dynamics		
REMOTE	Never heard of but not impossible			NEGLIGIBLE	Insignificant impacts to population. Unlikely to be measurable against background variability for this population		

RISK RATINGS

Negligible	Low	Moderate	High	Extreme
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VONGOLE FISHERY – 16/17 RISK ASSESSMENT & COMPLIANCE PROGRAM



VONGOLE FISHERY RISKS					
QUOTA MANAGEMENT SYSTEM INTEGRITY		Likelihood: Occasional	Consequence: Severe	Risk Rating	High
Risk Attribute	<ul style="list-style-type: none"> • Failure to accurately weigh Vongole • Fail to accurately declare weight of Vongole • Fail to consign all Vongole to fish processor for weighing • Fail to complete CDR • Fail to prior report • Collusion with a Fish Processor (FP) • Errors or omissions on CDRs • Undeclared purged Vongole • Unrestricted take of Vongole (Quota and non-Quota holders) of Vongole from outside Quota areas 				
Legislative & Regulatory Framework	<ul style="list-style-type: none"> • Fisheries Management (General) Regulations 2007, Fisheries Management (Marine Scalefish Fisheries) Regulations 2006 				
Implication	<ul style="list-style-type: none"> • PIRSA require a compliance presence to deter/investigate opportunities to subvert the QMS • Inaccurate knowledge of what is taken from the sea can affect scientific modelling • Collusion allows inaccurate weights to be deducted from quota which can affect scientific modelling • No prior report reduces the ability of Fisheries Officers (FO's) to check the catch and accuracy of CDRs • PIRSA compliance presence is required to ensure weaknesses in quota system not systematically exploited 				
Control Measure	<ul style="list-style-type: none"> • Pre-season briefings • Ongoing liaison with Marine Scale Fisheries EO regarding relevant issues impacting Vongole fishery • Compliance communication to Vongole fishers with intent to educate fishers on rules and requirements • Inspections of catch at landing, at sea, in transit and at Fish Processors • Requirement to prior report, complete CDR's • Audits to include but not limited to CDR, prior reports and sales records 				

VONGOLE FISHERY RISKS					
QUOTA EVASION		Likelihood: Likely	Consequence: Severe	Risk Rating	High
Risk Attribute	<ul style="list-style-type: none"> • Fail to prior report • Fail to complete CDR • Errors or omissions on CDRs • Fishing but failing to submit CDR • Fail to accurately declare weight of Vongole • Fail to consign all Vongole to fish processor for weighing • Collusion between fisher and FP (consignment to self in some instances in isolated locations presents risk) • Not all fish caught delivered to a FP • Water allowance % applied leading to inaccurate weight • Vongole taken from one quota area declared as taken from another • Vongole taken from outside quota areas (unrestricted) being declared as taken from within a quota area(s) 				
Legislative Framework	<ul style="list-style-type: none"> • Fisheries Management (General) Regulations 2007, Fisheries Management (Marine Scalefish Fisheries) Regulations 2006 				
Implication	<ul style="list-style-type: none"> • Commercial advantage • Inaccurate knowledge of what is taken from the sea can affect scientific modelling • Systemic quota evasion has the potential to threaten sustainability • PIRSA compliance presence is required to deter opportunities to evade quota and to ensure equitable access for commercial fishers • The potential exists for a fisher to under declare catch weight (when consigning to themselves), with limited Compliance opportunity to detect thereafter following catch disperse • Collusion allows inaccurate weights to be deducted from quota which can affect scientific modelling 				
Control Measure	<ul style="list-style-type: none"> • Pre-season briefings • Compliance communication to Vongole fishers with intent to educate fishers on rules and requirements • Inspections at landing, at sea, in transit and at FP • FO covert surveillance of catch unload • Requirement to prior report, complete CDR's • Audits to include but not limited to CDR, prior reports and sales records 				

VONGOLE FISHERY RISKS

TAKE UNDERSIZE	Likelihood: Likely	Consequence: Minor	Risk Rating	Low
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Risk Attribute	<ul style="list-style-type: none"> • Variance in grading processes between fishers resulting in varying % undersize taken • Undersize Vongole not graded at point of take and alternatively returned to the water in area of potentially unsuitable habitat
Legislative Framework	<ul style="list-style-type: none"> • Fisheries Management (General) Regulations 2007, Fisheries Management (Marine Scalefish Fisheries) Regulations 2006
Implication	<ul style="list-style-type: none"> • Commercial advantage • PIRSA require a Compliance presence to deter the potential for opportunistic/systemic harvest of undersize Vongole which don't meet regulated size • Juvenile Vongole not protected; small scale bio-mass impact
Control Measure	<ul style="list-style-type: none"> • Pre-season briefings • Compliance communication to Vongole fishers with intent to educate fishers on rules and requirements • Inspections at landing, at sea, in transit and at FP

VONGOLE FISHERY RISKS

FISHING OUTSIDE QUOTA ZONES	Likelihood: Likely	Consequence: Severe	Risk Rating	High
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Risk Attribute	<ul style="list-style-type: none"> Unrestricted take of Vongole (Quota and non-Quota holders) of Vongole from outside Quota areas Vongole taken from outside quota areas (unrestricted) being declared as taken from within a quota area(s)
Legislative Framework	<ul style="list-style-type: none"> Fisheries Management (General) Regulations 2007, Fisheries Management (Marine Scalefish Fisheries) Regulations 2006
Implication	<ul style="list-style-type: none"> Commercial advantage Heightens opportunity to evade quota If sustained this practice could have an adverse impact on stock sustainability in those areas Inaccurate knowledge of what is taken from impacted area(s) can affect scientific modelling
Control Measure	<ul style="list-style-type: none"> Pre-season briefings Compliance communication to Vongole fishers with intent to educate fishers on rules and requirements Inspections at landing, at sea, in transit and at FP FO covert surveillance of fishing activities and catch unload Audits to include but not limited to CDR, prior reports and sales records

VONGOLE FISHERY RISKS				
FISHING WITHIN QUOTA CLOSED AREA	Likelihood: Unlikely	Consequence: Major	Risk Rating	Moderate

Risk Attribute	<ul style="list-style-type: none"> Vongole bio-mass within the Section Bank Quota Area remains in state of recovery
Legislative Framework	<ul style="list-style-type: none"> Fisheries Management (General) Regulations 2007, Fisheries Management (Marine Scalefish Fisheries) Regulations 2006
Implication	<ul style="list-style-type: none"> Commercial advantage Illegal take of Vongole from those area threatens bio-mass recovery
Control Measure	<ul style="list-style-type: none"> Compliance communication to Vongole fishers with intent to educate fishers on closed area's Land and at sea patrols within the closed area to maintain visible presence Fish Market monitoring

VONGOLE FISHERY RISKS

OTHER

Compliance risks identified within the fishery that may occur which will be addressed as they are detected

Other Risks

- Use excess gear
- Bio-security response
- Fishing from more than one vessel at a time
- Failure to lodge SARDI catch and effort returns
- Inaccurate or misleading reporting of catch location and volume on SARDI returns
- Assist / provide services to other agencies (i.e. SAPOL, threats at sea amongst Industry)

		CONSEQUENCES					
		NEGLIGIBLE	MINOR	MODERATE	SEVERE	MAJOR	CATASTROPHIC
		0	1	2	3	4	5
LIKELIHOOD	REMOTE	1					
	RARE	2					
	UNLIKELY	3				FISHING WITHIN QUOTA CLOSED AREA	
	POSSIBLE	4					
	OCCASIONAL	5			QUOTA MANAGEMENT SYSTEM INTEGRITY		
	LIKELY	6	TAKE UNDERSIZE		QUOTA EVASION FISHING OUTSIDE OF QUOTA ZONES		

LIKELIHOOD DEFINITIONS		CONSEQUENCE DEFINITION	
LIKELY	It is expected to occur	CATASTROPHIC	Local extinctions are imminent / immediate
OCCASIONAL	May occur	MAJOR	Likely to cause local extinctions, if continued in longer term
POSSIBLE	Some evidence to suggest this is possible here	SEVERE	Affecting recruitment levels of stocks / or their capacity to increase
UNLIKELY	Uncommon, but has been known to occur elsewhere	MODERATE	Full exploitation rate, but long term recruitment / dynamics not adversely impacted
RARE	May occur in exceptional circumstances	MINOR	Possibly detectable, but minimal impact on population size and none on dynamics
REMOTE	Never heard of but not impossible	NEGLIGIBLE	Insignificant impacts to population. Unlikely to be measurable against background variability for this population

RISK RATING

Negligible	Low	Moderate	High	Extreme
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SCHEDULE 1 - PROJECT SCOPE

1. PROJECT DETAIL

1.1 Title Marine Scalefish Fishery

1.2 CLIENT CONTACT DETAILS

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1.3 SARDI CONTACT DETAILS

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Position: Research Chief
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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 Project Scope outlines SARDI's research program for South Australia's Marine Scalefish Fishery for the three-year period of 2016/17 to 2018/19. The primary objective of the program is to provide scientific information and assessment of stock status for the different Marine Scalefish Fishery species, to support their sustainable utilisation. It conforms to the research and reporting plan outlined in the Management Plan for the South Australian Commercial Marine Scalefish Fishery. The Management Plan recognises that in this complex, multi-species fishery there is a considerable range in the contribution of the different taxa to the overall economic value of the fishery. Consequently, the multiple taxa taken in the fishery are divided into different categories according to their value and for which the research requirements to underpin the sustainable management also vary. The Project Scope is largely targeted at the three Primary Species of King George whiting, snapper and southern garfish and conforms to a three-year plan during which the focus on the particular species changes annually. As such, whilst the scope of the research work is generally consistent amongst years, the species at which particular tasks are directed change from year-to-year.

The primary outputs will be (1) a comprehensive stock assessment report for King George whiting in June 2017, southern garfish in June 2018 and snapper in June 2019; and (2) a fishery statistics report that summarises statistics at the State-wide scale for 20 of the different taxa taken in the fishery from across the Primary, Secondary and Tertiary species categories. Each report will also be associated with Powerpoint presentations to PIRSA and industry representatives that relate stock status and fishery performance.

2. PROJECT DESCRIPTION

2.1 BACKGROUND

There are four primary components to the research program provided by SARDI Aquatic Sciences to PIRSA in support of the Marine Scalefish Fishery. These are:

1. to collect, collate and enter data on commercial catch and effort statistics to maintain the long-term Marine Scalefish Fishery Information System;
2. to undertake market sampling primarily at the SAFCOL fish market in Adelaide in each year for two of the three Primary species;
3. to provide two comprehensive reports, i.e. a stock assessment report on one of the Primary species and a fishery statistics report. These reports assess the performance of fisheries on individual species using fishery performance indicators and reference points that are specified in the Management Plan;
4. to undertake a strategic research project supporting specific fishery management issues. This is usually a collaborative project with the Fisheries Research and Development Corporation (FRDC). For 2016/17 and 2017/18, this project will focus on southern garfish (FRDC 2015/018), and in 2018/19 will be on King George whiting (FRDC 2016/003).

2.2 NEED

This three-year research program will fulfil the needs for scientific information in order to support the sustainable utilisation of South Australia's Marine Scalefish Fishery. The information conforms to that specified in the Management Plan, allowing application of species-specific harvest strategies and assessment of performances of fisheries based on established fishery performance indicators and reference points.

2.3 OBJECTIVES

2.3.1 to provide to PIRSA, on an annual basis, a comprehensive stock assessment for one of the three Primary species (2016/17 – King George whiting; 2017/18 – southern garfish; 2018/19 – snapper). Each report will summarise: commercial fishery statistics; demographic data from market sampling; and output parameters from the appropriate computer fishery model. The report will provide an assessment of stock status based on fishery performance indicators and reference points.

2.3.2 to provide to PIRSA, on an annual basis, a fishery statistics report that summarises at the State-wide scale: fishery statistics for 20 different taxonomic groups; and considers the recent performance of the fishery of each, based on fishery performance indicators and reference points;

2.3.3 to undertake a strategic research project that contributes to understanding the biology or fishery of one of the primary species;

2.3.4 to assist PIRSA in 2017/18 with a review of the Management Plan for the South Australian Commercial Marine Scalefish Fishery.

2.4 METHODS

For the Primary species, the methodological approach is to integrate all fishery data from the different fishery sectors with the biological data from market sampling and any strategic research project to ultimately assess stock status. For Secondary and Tertiary species considered in the fishery statistics report, fishery performance will be assessed only from commercial fishery data at the State-wide scale. These different levels of assessment require SARDI to:

1. collect, collate, and store commercial catch and effort data from fishery catch returns in order to maintain the on-going Marine Scalefish Fishery Information System;
2. continue market sampling for the Primary species, including the collection of region-specific age and length frequency data;

3. for the particular Primary species for which the stock assessment is being undertaken each year, to integrate the fishery and biological data using the appropriate computer fishery model. Stock status will then be determined based on assessment of fishery and biological performance indicators and reference points specified in the Management Plan;
4. document and interpret the research findings and outcomes of assessment of the status of fisheries in a comprehensive stock assessment report and a fishery statistics report.

3. DELIVERABLES

3.1 SERVICE PROVIDED:

3.1.1 Collect, collate and store commercial fishery data

- 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.

3.1.2 Collect, collate, store and analyse data from market sampling to generate size and age structures for the primary species

- maintain a two-stage market sampling program for the Primary species that involves measurements from representative samples from fishery catches and collections of otoliths to determine ages of fish. Two species are to be considered each year on a rolling basis.
- age fish from their otoliths using validated ageing protocols and established QA procedures
- generate age structures from otolith-based age estimates and length frequency distributions using age-length key statistical procedures
- interpret data on population structure in terms of population dynamics.

3.1.3 Analyse, integrate and interpret fishery and biological data

- for the focus on Primary species, update and run the appropriate computer fishery model with fishery and biological data to provide estimates of output parameters for individual stocks
- assess general and biological performance indicators against reference points to indicate stock status
- summarise all data and findings on stock status in a stock assessment report
- summarise annual commercial fishery data for multiple taxa at the State-wide scale in a fishery statistics report
- provide presentations to industry and PIRSA on outcomes of each annual stock assessment, based on consideration of fishery performance indicators.

3.2 OUTCOMES:

The principal outcome will be fishery and biological information and scientific advice to support the sustainability of South Australia's Marine Scalefish Fishery.

3.3 OUTPUTS AND EXTENSION:

There are several reporting requirements on an annual basis throughout the three years of the Project Scope:

1. an annual stock assessment report for one of the three Primary species to be delivered on June 30th of each year (King George whiting – 2017, southern garfish – 2018, snapper – 2019);
2. an annual fishery statistics report to be delivered on November 30th of each year that will report on fishery performance for multiple taxa in the most recent financial year;
3. PowerPoint presentations to PIRSA and industry in support of each report, and also an annual update for the strategic, collaborative project.

4. FUNDING ARRANGEMENTS

4.1 PROJECT COSTING POLICY

4.2 PROJECT COST

Total Program Cost (three years)	TOTAL PROJECT COST	Total Industry Contribution	Total PIRSA F&A Contribution	Total SARDI In-Kind
LOGBOOK PROGRAM	\$542,415	\$542,415	NIL	NIL
SIZE & AGE STRUCTURES	\$1,065,108	\$881,814	NIL	\$183,294
STOCK ASSESSMENT	\$920,440	\$649,827	\$134,622	\$135,991
STRATEGIC PROJECT	\$352,375	\$299,161	NIL	\$53,214
SUBTOTAL	\$2,880,338	\$2,373,217	\$134,622	\$372,499
GST	NO GST	NO GST	NO GST	NO GST
TOTAL	\$2,880,338	\$2,373,217	\$134,622	\$372,499

Note values rounded to nearest \$

4.3 MILESTONE AND PAYMENT SCHEDULE

2016-17 Costs and milestones

Program Milestones	Program Cost (\$) No GST	Industry Contribution 50.5%	PIRSA F&A Contribution	SARDI In-Kind
Logbook Program	\$175,499	\$175,499	NIL	NIL
Size & Age Structures	\$342,292	\$282,696	NIL	\$59,596
30 November 2016 Fishery statistics report	NIL	NIL	NIL	NIL
30 June 2017 Stock assessment report (King George Whiting)	\$298,775	\$150,881	\$103,678	\$44,216
Strategic Project*	\$116,463	\$99,161	NIL	\$17,302
TOTAL	\$933,029	\$708,237	\$103,678	\$121,114

*Total costs (funded and in-kind) for the Strategic Project (Garfish) are in schedule 3; Note values rounded to nearest \$

2017-18 Costs and milestones

Program Milestones	Program Cost (\$) No GST	Industry Contribution 79.5%	PIRSA F&A Contribution	SARDI In-Kind
Logbook Program	\$180,752	\$180,752	NIL	NIL
Size & Age Structures	\$355,525	\$294,440	NIL	\$61,085
30 November 2017 Fishery statistics report	NIL	NIL	NIL	NIL
30 June 2018 Stock assessment report (Garfish)	\$306,894	\$243,981	\$17,592	\$45,321
Strategic Project*	\$117,735	\$100,000	NIL	\$17,735
TOTAL	\$960,906	\$819,173	\$17,592	\$124,141

*Total costs (funded and in-kind) for the Strategic Project (Garfish) are in schedule 3; Note values rounded to nearest \$

2018-19 Costs and milestones

Program Milestones	Program Cost (\$) No GST	Industry Contribution 81.0%	PIRSA F&A Contribution	SARDI In-Kind
Logbook Program	\$186,164	\$186,164	NIL	NIL
Size & Age Structures	\$367,291	\$304,678	NIL	\$62,613
30 November 2018 Fishery statistics report	NIL	NIL	NIL	NIL
30 June 2019 Stock assessment report (Snapper)	\$314,771	\$254,965	\$13,352	\$46,454
Strategic Project*	\$118,177	\$100,000	NIL	\$18,177
TOTAL	\$986,403	\$845,807	\$13,352	\$127,244

*Total costs (funded and in-kind) for the Strategic Project (King George Whiting) are in schedule 3; Note values rounded to nearest \$

Payment schedule

Date	Milestone	Payment (\$) Ex GST
31 December 2016	First Half Payment 2016/17 SLA	\$405,957
31 May 2017	Second Half Payment 2016/17 SLA	\$405,958
31 December 2017	First Half Payment 2017/18 SLA	\$418,382
31 May 2018	Second Half Payment 2017/18 SLA	\$418,383
31 December 2018	First Half Payment 2018/19 SLA	\$429,579
31 May 2019	Second Half Payment 2018/19 SLA	\$429,580
TOTAL FUNDED		\$2,507,839

5. PROJECT STAFF

Staff	FTE 2016/17	FTE 2017/18	FTE 2018/19
Principal Scientist	1.05	1.05	1.05
Research Scientist	0.70	0.70	0.70
Research Officers	1.40	1.40	1.40
TOTAL	3.15	3.15	3.15

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)		3.15	3.15	3.15
Salaries (\$)		392,950	405,812	417,229
Operating				
Logbook program		175,499	180,752	186,164
Payment to industry for surveys				
Fieldwork		32,650	34,664	35,405
Laboratory		5,000	5,000	5,000
Travel				
Office & communication		3,000	3,000	3,000
Capital equipment				
SARDI overhead		202,816	207,536	212,361
SARDI inkind		121,114	124,141	127,244
Total Cost		933,029	960,905	986,403
Revenue – PRICE				
Licence Holders		708,237	819,173	845,807
PIRSA F&A		103,678	17,592	13,352
Total Revenue		811,915	835,925	859,159
SARDI Investment		121,114	124,141	127,244

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 3 - RESEARCH PROJECT COSTING

Total funded and in-kind costs (\$) for the two strategic projects relevant to this 3-year SLA

Project	Funding Source	2016/17	2017/18	2018/19
Garfish	FRDC (cash)	255,781	143,888	-
FRDC 2015/018	SARDI (in kind)	93,291	83,839	-
	PIRSA F&A (licence fees)	99,161	100,000	-
Project	Source	2016/17	2017/18	2018/19
KGW	FRDC (cash)	113,598	159,036	181,756
FRDC 2016/003	SARDI (in kind)	27,366	49,736	53,492
	PIRSA F&A (licence fees)	-	-	100,000

FINAL

SCHEDULE 1 - RESEARCH PROJECT SCOPE

1. PROJECT DETAIL

1.1 TITLE South Australian Mud Cockle Fishery (Coffin Bay)

1.2 CLIENT CONTACT DETAILS

Name: PIRSA FISHERIES & 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
2 Hamra Ave, West Beach, SA 5024
Email: gavin.begg@sa.gov.au
Telephone: 8207 5401
Facsimile: 8207 5406

1.4 SUBCONTRACTOR/COLLABORATOR

Marine Fishers Association

1.5 TIMEFRAME

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

1.6 SUMMARY

The mud-cockle research program provides survey-based estimates of mud cockle biomass and estimates of the size at maturity in each of the three fishing zones in South Australia.

This is the second Project Scope developed specifically for the Coffin Bay Zone of the South Australian Mud Cockle Fishery but the first three-year Project Scope for this zone. To minimise costs, this scope of work undertakes sampling and analysis across the principal fishing grounds within the Coffin Bay fishery (i.e. Point Longnose, oyster farms, Little Douglas and Long beach) on a tri-ennial basis (i.e. areas sampled annually on a rotational basis). Spot samples will be undertaken outside the main area sampled each year to monitor biomass changes between full surveys (e.g. when Point Longnose is sampled, spot samples will be obtained for the oyster farms, Little Douglas and Long beach).

The primary outcome is a report that provides estimates of mud cockle biomass for each fishing zone in a risk-analysis framework.

2. PROJECT DESCRIPTION

2.1 BACKGROUND

There are three primary components to the research provided by SARDI Aquatic Sciences to PIRSA in support of the South Australian mud cockle fisheries, these are:

- (1) conduct fisher-based surveys to determine the biomass of mud cockles on the key fishing grounds of the Port River, Coffin Bay and the West Coast;
- (2) obtain estimates of the size at maturity, and its spatial variability, for mud cockles; and
- (3) provide a summary report that presents estimates of mud cockle biomass in a risk-analysis framework and estimates of size at maturity.

2.2 NEED

This project addresses the need for biomass estimates and associated scientific information to support sustainable utilisation of mud cockles in SA.

2.3 OBJECTIVES

2.3.1 Review 2009/10, 2011/12, 2013/14 and 2015/16 sampling designs and implement an industry-based survey of mud cockle populations on commercially important fishing grounds in the Coffin Bay fishing zone;

2.3.2 Determine estimates of the harvestable biomass of mud cockles from the areas sampled;

2.3.3 Provide PIRSA with biomass estimates in a risk analysis framework; and

2.3.4 Provide PIRSA with scientific advice to support the sustainable management of the South Australian mud cockle Fishery, including TACC setting.

2.4 METHODS

2.4.1 Work with mud cockle fishers from the Coffin Bay fishing zone to review the 2009/10, 2011/12, 2013/14 and 2015/16 sampling design, incorporating changes to important commercial fishing grounds;

2.4.2 Re-map the commercial fishing grounds and sampling locations into a GIS layer;

2.4.3 Undertake a transect-based method, to obtain representative data on the density of mud cockles across those fishing grounds. Sampling across the principal Coffin Bay fishing grounds (i.e. Point Longnose (2016/17), oyster farms and Little Douglas (2017/18) and Long beach (2018/19)) to occur on a tri-ennial rotational basis;

2.4.4 Undertake spot sampling outside of primary sampling area to monitor biomass changes between surveys

2.4.5 Apply a multi-level bootstrap analysis to determine estimates of mud cockle biomass in a risk-analysis framework; and

2.4.6 Document and interpret the research findings in a report.

3. DELIVERABLES

3.1 SERVICE PROVIDED:

3.1.1. SURVEY ESTIMATES OF DENSITY AND BIOMASS

Review the commercially important fishing grounds.

Review (and amend as required) the 2009/10, 2011/12, 2013/14 and 2015/16 surveys to estimate mud cockle density and biomass.

Provide estimates of current biomass to PIRSA following survey

3.1.2. DATA ANALYSIS

Apply a multi-level bootstrap model to provide estimates of mud cockle biomass for the Coffin Bay fishing zone.

3.1.3. MANAGEMENT AND QUALITY ASSURANCE OF RESEARCH DATA

Provide effective storage and management of research data.

Develop and implement a formal quality assurance program.

3.1.4. ANALYSIS AND INTERPRETATION

Interpret the results of the research program in a report.

3.1.5. PROJECT MANAGEMENT

Ongoing supervision of projects.

Management of deliverables.

Quality control

Liaise with PIRSA, industry, State and Commonwealth agencies on matters relevant to the fishery.

Participate in industry development initiatives.

Development and implementation of new projects and collaboration on proposed/existing projects

Update relevant chapter in status report for SA fisheries

3.2 OUTCOMES:

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

3.3 OUTPUTS AND EXTENSION:

The principal output is a report providing estimates of mud cockle biomass in a risk-analysis framework by 15 May 2019.

4. FUNDING ARRANGEMENTS

4.1 PROJECT COSTING POLICY

4.2 PROJECT COST

PROJECT COST	TOTAL FUNDED	TOTAL IN KIND	TOTAL PROJECT COST
SUBTOTAL	\$36,831	\$7,449	\$44,280
GST	NO GST	NO GST	NO GST
TOTAL	\$36,831	\$7,449	\$44,280

4.3 MILESTONE AND PAYMENT SCHEDULE

Date	Milestone	Payment (\$) Ex GST
31 December 2016	First Half Payment 2016/17 SLA	\$5,993
15 May 2017	Advice Note – Point Longnose Biomass	
31 May 2017	Second Half Payment 2016/17 SLA	\$5,993
31 December 2017	First Half Payment 2017/18 SLA	\$6,139
15 May 2018	Advice Note – oyster farms and Little Douglas Biomass	
31 May 2018	Second Half Payment 2017/18 SLA	\$6,140
31 December 2018	First Half Payment 2018/19 SLA	\$6,282
15 May 2019	Biomass report – Coffin Bay fishery	
31 May 2019	Second Half Payment 2018/19 SLA	\$6,283
SUBTOTAL		\$36,831
GST		NO GST
TOTAL FUNDED		\$36,831

5. PROJECT STAFF

Staff	FTE 2016/17	FTE 2017/18	FTE 2018/19
Research Scientist	0.01	0.01	0.01
Research Officers	0.043	0.043	0.043
TOTAL	0.053	0.053	0.053

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)		0.053	0.053	0.053
Salaries (\$)		6,804	7,006	7,194
Operating				
Logbook program				
Payment to industry for surveys		750	750	750
Fieldwork		250	250	250
Laboratory		25	25	25
Travel				
Office & communication		100	100	100
Capital equipment				
SARDI overhead		4,057	4,148	4,246
SARDI inkind		2,422	2,482	2,545
Total Cost		14,408	14,761	15,110
Revenue – PRICE				
PIRSA F&A	87%	11,986	12,279	12,565
Total Revenue		11,986	12,279	12,565
SARDI Investment	13%	2,422	2,482	2,545

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 South Australian Mud Cockle Fishery (West Coast)

1.2 CLIENT CONTACT DETAILS

Name: PIRSA FISHERIES & 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
2 Hamra Ave, West Beach, SA 5024
Email: gavin.begg@sa.gov.au
Telephone: 8207 5401
Facsimile: 8207 5406

1.4 SUBCONTRACTOR/COLLABORATOR

Marine Fishers Association

1.5 TIMEFRAME

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

1.6 SUMMARY

The mud-cockle research program provides survey-based estimates of mud cockle biomass and estimates of the size at maturity in each of the three fishing zones in South Australia.

This is the second Project Scope developed specifically for the West Coast Zone of the South Australian Mud Cockle Fishery but the first three-year Project Scope for this Zone. To minimise costs, this scope of work undertakes sampling and analysis across the three spatial units of the West Coast fishery (i.e. Venus Bay, Streaky Bay and Smoky Bay) on a tri-ennial basis (i.e. one of the three areas sampled annually on a rotational basis).

The primary outcome is a report that provides estimates of mud cockle biomass for each fishing zone in a risk-analysis framework.

2. PROJECT DESCRIPTION

2.1 BACKGROUND

There are three primary components to the research provided by SARDI Aquatic Sciences to PIRSA in support of the South Australian mud cockle fisheries, these are:

- (1) conduct fisher-based surveys to determine the biomass of mud cockles on the key fishing grounds of the Port River, Coffin Bay and the West Coast;
- (2) obtain estimates of the size at maturity, and its spatial variability, for mud cockles; and
- (3) provide a summary report that presents estimates of mud cockle biomass in a risk-analysis framework and estimates of size at maturity.

2.2 NEED

This project addresses the need for biomass estimates and associated scientific information to support sustainable utilisation of mud cockles in SA.

2.3 OBJECTIVES

2.3.1 Review 2009/10, 2011/12, 2013/14 and 2015/16 sampling designs and implement an industry-based survey of mud cockle populations on commercially important fishing grounds in the West Coast fishing zones;

2.3.2 Determine estimates of the harvestable biomass of mud cockles from the areas sampled;

2.3.3 Provide PIRSA with biomass estimates in a risk analysis framework; and

2.3.4 Provide PIRSA with scientific advice to support the sustainable management of the South Australian mud cockle Fishery, including TACC setting.

2.4 METHODS

2.4.1 Work with mud cockle fishers from the West Coast fishing zones to review the 2009/10, 2011/12, 2013/14 and 2015/16 sampling design, incorporating changes to important commercial fishing grounds;

2.4.2 Re-map the commercial fishing grounds and sampling locations into a GIS layer;

2.4.3 Undertake a transect-based method, to obtain representative data on the density of mud cockles across those fishing grounds. Sampling across the three spatial units of the West Coast fishery (i.e. Streaky Bay (2016/17), Smoky Bay 2017/18 and Venus Bay (2018/19)) to occur on a tri-ennial rotational basis;

2.4.4 Apply a multi-level bootstrap analysis to determine estimates of mud cockle biomass in a risk-analysis framework; and

2.4.5 Document and interpret the research findings in a report.

3. DELIVERABLES

3.1 SERVICE PROVIDED:

3.1.1. SURVEY ESTIMATES OF DENSITY AND BIOMASS

Review the commercially important fishing grounds.

Review (and amend as required) the 2009/10, 2011/12, 2013/14 and 2015/16 surveys to estimate mud cockle density and biomass.

Provide estimates of current biomass to PIRSA following survey

3.1.2. DATA ANALYSIS

Apply a multi-level bootstrap model to provide estimates of mud cockle biomass for the West Coast fishing zone.

3.1.3. MANAGEMENT AND QUALITY ASSURANCE OF RESEARCH DATA

Provide effective storage and management of research data.

Develop and implement a formal quality assurance program.

3.1.4. ANALYSIS AND INTERPRETATION

Interpret the results of the research program in a report.

3.1.5. PROJECT MANAGEMENT

Ongoing supervision of projects.

Management of deliverables.

Quality control

Liaise with PIRSA, industry, State and Commonwealth agencies on matters relevant to the fishery.

Participate in industry development initiatives.

Development and implementation of new projects and collaboration on proposed/existing projects

Update relevant chapter in status report for SA fisheries

3.2 OUTCOMES:

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

3.3 OUTPUTS AND EXTENSION:

The principal output is a report providing estimates of mud cockle biomass in a risk-analysis framework by 15 May 2019.

4. FUNDING ARRANGEMENTS

4.1 PROJECT COSTING POLICY

4.2 PROJECT COST

PROJECT COST	TOTAL FUNDED	TOTAL IN KIND	TOTAL PROJECT COST
SUBTOTAL	\$44,881	\$8,278	\$53,159
GST	NO GST	NO GST	NO GST
TOTAL	\$44,881	\$8,278	\$53,159

4.3 MILESTONE AND PAYMENT SCHEDULE

Date	Milestone	Payment (\$) Ex GST
31 December 2016	First Half Payment 2016/17 SLA	\$7,059
15 May 2017	Advice Note – Streaky Bay Biomass	
31 May 2017	Second Half Payment 2016/17 SLA	\$7,059
31 December 2017	First Half Payment 2017/18 SLA	\$7,231
15 May 2018	Advice Note – Smoky Bay Biomass	
31 May 2018	Second Half Payment 2017/18 SLA	\$7,231
31 December 2018	First Half Payment 2018/19 SLA	\$8,150
15 May 2019	Biomass report – West Coast fishery	
31 May 2019	Second Half Payment 2018/19 SLA	\$8,151
SUBTOTAL		\$44,881
GST		NO GST
TOTAL COST		\$44,881

5. PROJECT STAFF

Staff	FTE 2016/17	FTE 2017/18	FTE 2018/19
Research Scientist	0.005	0.005	0.005
Research Officers	0.065	0.065	0.065
TOTAL	0.07	0.07	0.07

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)		0.07	0.07	0.07
Salaries (\$)		7,188	7,433	7,644
Operating				
Logbook program				
Payment to industry for surveys		880	880	1,320
Fieldwork		1,400	1,400	2,480
Laboratory		40	40	40
Travel				
Office & communication		100	100	100
Capital equipment				
SARDI overhead		4,510	4,609	4,717
SARDI inkind		2,692	2,758	2,828
Total Cost		16,810	17,220	19,129
Revenue – PRICE				
PIRSA F&A	86%	14,118	14,462	16,301
Total Revenue		14,118	14,462	16,301
SARDI Investment	14%	2,692	2,758	2,828

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 WHS 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