

# August 2019 Competitive Round Call for Expressions of Interest

**Closing date for applications 27th September 2019**

## **Call for Applications**

The Fisheries Research and Development Corporation ([FRDC](#)) is calling for Expressions of Interest (EOI) that address research, development & extension (RD&E) priorities nominated by the FRDC's Advisory Groups: Research Advisory Committees ([RACs](#)), Industry Partnership Agreements ([IPAs](#)) and FRDC [Subprograms](#).

The nominated RD&E priorities for investment are outlined below. EOIs that address multiple priorities are encouraged.

Applicants may also submit an EOI that does not address a nominated priority; however, it should be noted that preference may be given to applications that address nominated priorities. If you do wish to submit an application that does not address one of these priorities, it is recommended that you first discuss your research concept with the relevant [FRDC Advisory Group](#) contact. In addition, FRDC strongly recommends that all applicants consult with the relevant stakeholder groups and expected end users to ensure that research concepts has the support of beneficiaries. Support can be demonstrated through formal letters of support, in-kind contributions and project cash contributions.

## **Minimum EOI Requirements**

All EOIs MUST be completed via [FishNet](#). Refer to the FRDC website for more information on the FRDC's process for [Applying for Funding](#).

**Once you have completed your EOI you must finalise it on FishNet so that FRDC receives notification that the application is submitted. Failure to do so may mean that your application is not submitted and therefore not considered for funding.**

If you have any questions or issues with FishNet, please contact the FRDC by phone (02) 6285 0400 or email [frdc.programs@frdc.com.au](mailto:frdc.programs@frdc.com.au).

**Applications must be finalised by the 27th September 2019. Applications not submitted by this date may not be accepted unless prior approval for a later submission date is provided by the FRDC.**

Each EOI must clearly outline how it will meet the relevant identified Need(s). Provide a succinct description of the proposed Method to achieve the stated Objectives, and deliver the expected Outputs and Outcomes. This should include a quantification of the impact of the research if the outputs were adopted such as a change in fisheries management, an improvement in the species population, increased profitability or efficiency of the commercial sector or improvements in recreational fishing experiences. Applicants also need to define project Extension activities that will be used to disseminate expected project findings. A realistic Budget that reflects the activity to be undertaken is to be provided along with Justification for the budget request. Where appropriate, applicants should demonstrate collaboration with other relevant research providers and end users and consider past and current research to avoid duplication and build on previous outputs.

After the 27th September 2019, the FRDC will forward each EOI to the relevant FRDC Advisory

Group(s) (e.g. RAC/IPA/Subprogram) for assessment. Following their meetings in October 2019, each FRDC Advisory Group will provide advice that will be communicated to applicants on whether their application has been supported or not supported in the round. An application that is not supported by an FRDC Advisory Group(s) is unlikely to be successful in obtaining funding.

The FRDC will assess all applications received in October, taking into consideration the level of FRDC Advisory Group(s) support and provide advice to applicants on the result of their application post-evaluation.

Under the FRDC's flexible approach to investment this is one of three potential [Calls for Applications](#) in 2019; with subsequent calls for applications to be made in November if additional research priorities are nominated. If the RACs, IPAs and Subprograms do not have any priorities they wish to address, a call for applications may not occur.

## **Nominated RD&E Priorities for Investment**

(Relevant Funding Partner(s) are shown beside each RD&E priority title)

Priority Titles	Funding Partners
<b>Increasing oxygen transfer efficiencies in aquaculture systems – assessment of nanobubble technology</b>	NSWRAC
<b>Determining the cause and solution for off-flavours in Murray Cod flesh</b>	NSWRAC
<b>Strategic Planning for Yellowtail Kingfish Stock Assessment in South-Eastern Australia</b>	NSWRAC, QldRAC, SARAC, VicRAC, COMRAC
<b>Research to support a developmental octopus trap fishery in NSW</b>	NSW RAC
<b>Mapping the opportunities in Victorian inshore professional wild-capture fisheries</b>	VicRAC
<b>Preparedness of WA fishing &amp; aquaculture sectors to demonstrate animal welfare management</b>	WARAC
<b>Increasing the health and productivity of <i>Pinctada maxima</i> Pearl Oysters</b>	AAHBS, PPA IPA, WARAC
<b>Assessing the impacts of trawl gear on sawfishes in the Northern Prawn Fishery with the aim to identify and test mitigation measures ensuring the long-term sustainability of Sawfish populations in northern Australia</b>	COMRAC
<b>Building industry capacity to lead co-management initiatives that maximise economic returns to the Bass Strait Central Zone Scallop Fishery: Training industry to help determine the major Scallop spawning event and the season closure date</b>	COMRAC, (also benefit TAS and Vic)
<b>Interactions with marine mammals in the Gillnet Fishery – exploring the possibility and viability of gillnet boats converting to a hook fishery in Bass Strait”</b>	COMRAC
<b>Understanding interactions between the aquaculture industry and Tasmania’s key recreational and commercial fisheries</b>	TasRAC
<b>Developing a cost-effective monitoring regime and stock assessment for Sand Flathead</b>	TasRAC
<b>People Development</b>	All RACs

<b>Priority</b>	<b>Increasing oxygen transfer efficiencies in aquaculture systems – assessment of nanobubble technology</b>
<b>Need</b>	<p>Oxygenation in aquaculture systems using conventional technologies is extremely inefficient, with standard oxygen transfer efficiencies estimated to be 2-6% per m submergence for coarse and fine bubble diffusers under standard conditions.</p> <p>Nanobubble systems are an emerging technology that potentially can be applied to aquaculture production to provide a more efficient oxygen delivery system for fish stock, improve the nitrifying capacity of biofilters, and improve efficiencies in fractionation units. There are currently no reliable studies demonstrating nanobubble efficacy in aquaculture systems and its potential impacts on fish health.</p>
<b>Planned Outcomes</b>	<ul style="list-style-type: none"> <li>• Adoption of nanobubble technology in DPI's production facilities and allow managers to revise hatchery operation advice for operators using Recirculating Aquaculture Systems (RAS).</li> <li>• Recommendations and guidance on nanobubble technology application could be included in best practice guidelines such as HQAS.</li> </ul>
<b>Jurisdictions</b>	NSWRAC

<b>Priority</b>	<b>Determining the cause and solution for off-flavours in Murray Cod flesh</b>
<b>Need</b>	<p>Earthy and musty off-flavours of farmed fish in NSW including Murray cod, Barramundi and silver perch are a significant impediment to marketability and have been highlighted among industry R&amp;D priorities (including FRDC 2018-084: <i>Development of technical and extension material to support Murray Cod aquaculture industry expansion in Australia</i>). These off-flavours are commonly attributed to Geosmin (GSM) and 2-methylisoborneol (MIB), but there are others. These chemicals are produced by cyanobacteria and actinomycetes that proliferate in freshwater fish culture systems. A prerequisite to R&amp;D to reduce the impacts of off-flavours on product quality is to know which chemicals are responsible for off-flavours, which organisms are producing them and are they common across species and systems.</p> <p>Whilst the Seafood CRC has completed some research to reduction or prevention of taint specifically for Barramundi (2009-775, 2010-757, 2013-719), there is a need to discern reduction or prevention mechanisms for Murray Cod</p>
<b>Planned Outcomes</b>	<ul style="list-style-type: none"> <li>• Causes of the off-flavours known</li> <li>• Methods to limit or prevent off-flavours proliferation developed</li> <li>• increased confidence in the market when purchasing Murray Cod</li> </ul>
<b>Jurisdictions</b>	NSWRAC

<b>Priority</b>	<b>Strategic Planning for Yellowtail Kingfish Stock Assessment in South-Eastern Australia</b>
<b>Need</b>	<p>Yellowtail Kingfish area priority species for recreational anglers and comprise a significant part of a high value commercial fishery. The Eastern Australian Stock of Yellowtail Kingfish is assessed as being "Undefined" with data from NSW, the largest harvester of the resource, indicating that Yellowtail Kingfish off the NSW coast are significantly depleted. There is a clear need to provide information to underpin management actions that will provide for the recovery of this stock.</p> <p>A workshop comprising relevant scientists and managers from Queensland, NSW, Victoria, South Australia and potentially the Commonwealth and Tasmania, to discuss the current understanding of the stock status and historical and current research across the distribution could assist in directing the strategic direction of research for this species</p>
<b>Planned Outcomes</b>	<ul style="list-style-type: none"> <li>• Identify knowledge gaps and potentially appropriate assessment (and management) methods.</li> <li>• Commitment for a multi-jurisdictional application for research funding to facilitate ongoing, collaborative stock assessment.</li> </ul>
<b>Jurisdictions</b>	New South Wales, Queensland, Victoria, South Australia, Commonwealth RACs

<b>Priority</b>	<b>Research to support developmental octopus trap fishery</b>
<b>Need</b>	<p>The assessment (by DPI) regarding the potential for a developmental octopus trap fishery has been conditionally supported. Currently, there is a lack of knowledge about the life history, abundance, and distribution needed to assess the current status of octopus stocks and inform any control measures necessary for sustainable management of the proposed fishery.</p> <p>It is anticipated that the main species that would be targeted are <i>O. tetricus</i> and <i>Macroctopus maorum</i>, with some bycatch of <i>O. pallidus</i> likely along the south coast as well as <i>O. australis</i> caught as a trawl byproduct and an existing fish trap catch of <i>M. maorum</i> that would need to be considered in future management of the stock.</p> <p>There is a need to develop knowledge about key biological parameters, primarily for the target species of the proposed fishery, to inform management.</p>
<b>Planned Outcomes</b>	<ul style="list-style-type: none"> <li>• Information that will directly inform the risks and potential control measures associated with the development of this fishery</li> <li>• Improve information regarding stock statuses, potentially transitioning these species from 'undefined'</li> <li>• Provide commercial management with an evidenced based framework for the development of this fishery.</li> </ul>
<b>Jurisdictions</b>	NSWRAC

<b>Priority</b>	<b>Mapping the opportunities in Victorian inshore professional wild-capture fisheries</b>
<b>Need</b>	<p>With 7 out of 9 Victorian Bay and Inlet net fisheries now closed or restricted to fishing, approximately 60% of the fish caught 20 years ago is no longer available to the Victorian public. There are a number of reasons for the reduction in catches; however, these have not necessarily been for sustainability concerns. There is a need to identify new and emerging opportunities, with potentially greater social acceptability or commercial viability to enable Victorian wild-capture fisheries to provide more seafood sustainably to Victorian consumers</p> <p>VicRAC is seeking an initial desktop study to aid in identifying the opportunities in Victorian inshore professional wild-capture fisheries. VicRAC has suggested desktop study could consider opportunities through any or all of the following pathways:</p> <ul style="list-style-type: none"> <li>• <u>Analysis of catch records</u>: Synthesise historical information on changes in fish production and species composition, and the reasons for change in production to identify economic and socio-political opportunities and barriers to increasing production as well as viability, particularly for underutilised species.</li> <li>• <u>Analysis of operator data</u>: Critically examine existing latent licences, the social, economic, environmental and political reasons for latency, barriers and risks to optimal use, as well as the opportunities and viability of innovation, sustainable use and management.</li> <li>• <u>Fisher interviews</u>: Identify opportunities and viability for commercial development and growth of emerging Victorian fisheries and critically examine barriers to increasing production.</li> <li>• <u>Visualisation of opportunities</u>: Catch trends, operator trends could be spatially mapped to further outline and prioritise opportunities in Victorian inshore professional wild-capture fisheries</li> </ul> <p>The desktop study should seek to synthesis what is the viability of potential opportunities, who would they attract, and what are the barriers to sustainably increasing production? This would then enable VicRAC to strategically direct future investment in fisheries that provide the greatest opportunities for inshore professional wild-capture fisheries.</p>
<b>Planned Outcomes</b>	<ul style="list-style-type: none"> <li>• Identification of opportunities for sustainably growing Victorian wild-capture fisheries</li> <li>• Identification of the barriers and risks that need to be addressed to sustainably grow Victorian wild-capture fisheries</li> <li>• Determination of the investment required and viability of opportunities identified, including who would be most attracted to take up a new opportunity (e.g. existing operators from certain fisheries, or new entrants)</li> </ul>
<b>Jurisdictions</b>	VicRAC

<b>Priority</b>	<b>Preparedness of WA fishing &amp; aquaculture sectors to demonstrate animal welfare management</b>
<b>Need</b>	<p>The Commonwealth government established the Australian Animal Welfare Strategy (AAWS) in 2005. The AAWS Aquatic Animals Working Group developed a number of guidelines that demonstrate best practice for optimised animal welfare outcomes across the range of fishing methods applied in the commercial, aquaculture and recreational fishing sectors (see <a href="https://www.frdc.com.au/Issues/Aquatic-Animal-Welfare">https://www.frdc.com.au/Issues/Aquatic-Animal-Welfare</a>).</p> <p>These best practice guidelines were based on the agreed mantra ‘minimise stress between capture and slaughter’ and closely aligned quality of seafood with animal welfare.</p> <p>An important next step is to review the preparedness of these respective WA fishing sectors in terms of:</p> <ol style="list-style-type: none"> <li>awareness of the importance of animal welfare management within the commercial, recreational fishing and aquaculture sectors</li> <li>the status of application of animal welfare best practice with current fishing activities</li> <li>required activities to bridge gaps identified between current status of industry and acceptable levels of animal welfare management</li> </ol> <p>The scope of the project includes both domestic and export seafood products.</p>
<b>Planned Outcomes</b>	<ul style="list-style-type: none"> <li>• Stocktake of current industry processes and legislation that either directly or incidentally address Aquatic Animal Welfare challenges</li> <li>• Identify gaps in management, research and training delivery models to allow the fishing sectors to maximise animal welfare practices</li> <li>• Development of a communication strategy for sectors to maximise understanding of, and adopt, animal welfare principles.</li> </ul>
<b>Jurisdictions</b>	WARAC

<b>Priority</b>	<b>Increasing the health and productivity of Pinctada maxima Pearl Oysters</b>
<b>Need</b>	<p>For over a decade the Pinctada maxima pearl oyster fishery in the North Western bioregion has been affected by shell health and productivity issues. A recent FRDC P. maxima pearl oyster health and productivity workshop in Cairns highlighted that continued uncertainty with respect to the driver of P. maxima health and productivity issues noting that the cause could be readily be an infectious agent, an environmental agent or multifactorial.</p> <p>The workshop highlighted a number of issues with the current shell health case definition and the lack of real understanding with respect to P. maxima epidemiology, and recommended in the first instance that these two issues be addressed in order to better understand the drivers of P. maxima health and productivity issues.</p>
<b>Planned Outcomes</b>	<ul style="list-style-type: none"> <li>• A re-visit of the case definition to ascertain whether or not it is actually a pathogen that is responsible for decreased shell health and productivity, that relies less on existing information and more on carefully structured research to generate new information, that utilises optimal techniques that provide for clear indications of infection/pathology</li> </ul>

	<ul style="list-style-type: none"> <li>An epidemiological study may be able to assist in exploring the question as to whether the problem is either a pathogen and/or an environmental problem. But, it is quite plausible that there is an interaction in which one or more pathogens are triggered by an external environmental stimulus. One way to approach this is by coupling real-time environmental monitoring systems with high-frequency measurements of oyster health.</li> </ul>
<b>Jurisdictions</b>	AAHBS, PPA IPA, WARAC

<b>Priority</b>	<b>Assessing the impacts of trawl gear on sawfishes in the Northern Prawn Fishery with the aim to identify and test mitigation measures ensuring the long-term sustainability of Sawfish populations in northern Australia</b>
<b>Need</b>	<p>Sawfish populations have been declining globally over recent decades. Research interest has focussed on northern Australia as it is one of the last remaining strongholds of viable Sawfish populations. In February 2019, Northern Prawn Fishery (NPF) stakeholders attended a five-year strategic research planning workshop and identified Sawfish interactions as the biggest threat to the fishery and mitigating interactions was the foremost priority. The NPF was also reassessed for export approval in December 2018 and was approved on the basis that three conditions be met:</p> <ul style="list-style-type: none"> <li>AFMA to ensure there is sufficient ongoing monitoring (electronic or human) to evaluate the nature and level of impacts of fishing on EPBC Act protected species</li> <li>AFMA to ensure that interactions with species of Sawfish and sea snakes are minimised by facilitating research and monitoring programs that contribute to: <ul style="list-style-type: none"> <li>understanding the unique characteristics of Sawfish and sea snake interactions with the fishing gear,</li> <li>understanding the population dynamics, including size and structure of Sawfish species populations that occur within the fishing area, and</li> <li>implementing appropriate mitigation measures that aim to increase the survival of Sawfish and sea snake species</li> </ul> </li> <li>AFMA to develop an education program or materials that improve the accurate identification of Sawfish and sea snake species.</li> </ul> <p>There are projects underway to better understand Sawfish biology, fishing impacts and deterrent devices, but there is a gap in understanding how Sawfish interact with current trawl gear and bycatch reduction devices (BRDs). This project will address the research gap by directly observing, through the use of underwater video, Sawfish behaviour and how Sawfish interact with fishing gear. With this information, mitigation measures and BRDs can be designed to reduce Sawfish interactions and protect Sawfish populations ensuring their ongoing conservation. This project also supports other Sawfish projects such as the FRDC funded project '2016-058: <i>Can Sawfish bycatch within the NPF be mitigated through a novel electric device</i>'. If an effective electric repellent device is developed then information will be needed to understand where the device would be best placed in fishing nets. An understanding of how sawfish interact with trawl gear obtained through the proposed project would assist in identifying a suitable location.</p>
<b>Planned Outcomes</b>	Outcomes and Deliverables:

	<p>The planned outcome is to reduce the interactions of Sawfish with vessels in the NPF through:</p> <ul style="list-style-type: none"> <li>• Recommendations on which TED orientation and trawl net configuration is most effective at increasing the escapement rates of sawfish therefore reducing the impacts from fisheries on this ecologically important group</li> <li>• Undertake underwater video monitoring of sawfish escapement and entanglement rates within NPF trawl nets containing TEDs for three banana and tiger seasons</li> <li>• Comparison using underwater video monitoring of entanglement and escapement rates between the currently used trawl gear and modified trawl gear configurations identified in this project as potentially reducing impacts on Sawfishes</li> <li>• Understanding escapement and behaviour of other large animals through video observation</li> </ul>
<b>Jurisdictions</b>	COMRAC

<b>Priority</b>	<b>Building industry capacity to lead co-management initiatives that maximise economic returns to the Bass Strait Central Zone Scallop Fishery: Training industry to help determine the major Scallop spawning event and the season closure date</b>
<b>Need</b>	<p>There is a need to develop capacity within industry to move towards developing future co-management initiatives in the Bass Strait Central Zone Scallop Fishery (BSCZSF). To help move towards this goal, industry needs to be trained to coordinate and collect data that can be used for 'real time' fishery management and complement the existing annual biomass surveys.</p> <p>A fixed season end date (31 December) is the current management arrangement regarding closure of the Commonwealth managed BSCZSF, however within the BSCZSF Management Plan 2002, there is scope for the season start and end dates to be adjusted.</p> <p>The closure date is aimed at reducing the potential of disturbance (and therefore mortality) of newly settled spat, noting that it's generally accepted that spat settle approximately 30 days following successful spawning. The closure post spawning is considered beneficial for markets too, given that scallop condition at this time is poor. However, given the fishery is quota managed, this aspect of the fishery is self-managed by individual operators and processors.</p> <p>Spawning and settlement is highly variable and driven by environmental factors which can vary across the spatial extent of the fishery. Consequently, there can be significant variability in spawning time across the fishing grounds (beds) as well as between years.</p> <p>With the majority of the fishery production coming from King Island rather than Flinders Island in recent years, industry reports indicate that in some year's peak spawning does not occur prior to the season closure. This corresponds to the most recent published data, which also suggest scallops are increasingly reaching spawning condition between December and February (Semmens et al., 2019). Consequently, a significant opportunity to supply fresh, high quality product to market at a time when there is generally high demand for seafood (January) is being missed.</p>

	<p>Commonwealth Scallop Statutory Fishing Right (SFR) owners have only recently established the Bass Strait Scallop Industry Association (BSSIA). One of the association aims is to build industry capacity to participate in and lead co-management initiatives for the fishery. The capacity to collect real-time catch/effort and biological data to support an adaptive season end date has multiple beneficial outcomes including; improved long-term sustainability of the resource, improved management efficiency and increased economic performance. Further, building industry capacity to execute such projects is an important step towards developing future co-management initiatives in this fishery – something that both AFMA and Industry consider a high priority.</p> <p>Importantly this project does not seek to fully understand the linkages between peak spawning time and successful settlement and/or recruitment to the fishery. This project may serve as a precursor to further work to better understand the drivers and/or triggers for settlement and recruitment.</p>
<b>Planned Outcomes</b>	<p>Increased levels of co-management and “real time management of the Bass Straight Scallop Fishery through:</p> <ul style="list-style-type: none"> <li>• Training for co-management aspects, specifically to develop the capacity for industry to coordinate and collect data that can be used for ‘real time’ fishery management and complement the existing annual biomass surveys.</li> <li>• Understand the timing of ‘peak’ spawning time from different regions of the fishery over two seasons. Record beach price information for catches landed prior to and after the season closure on the 31<sup>st</sup> December. Develop the methodology and criteria that is intended to be used to inform the season end date for the fishery on an ongoing basis.</li> <li>• Address flexible management structure.</li> <li>• Implementation of the outcomes in the current management strategy.</li> </ul>
<b>Jurisdictions</b>	Commonwealth, however this will have potential benefits for both the Tasmanian and Victorian scallop fisheries also.
<b>References</b>	Semmens, J.M., Mendo, Jones, Keane, Leon, Ewing, Hartmann., Institute for Marine and Antarctic Studies, 2019, Determining when and where to fish: Linking scallop spawning, settlement, size and condition to collaborative spatial harvest and industry in-season management strategies, University of Tasmania, Hobart, June.

<b>Priority</b>	<b>Interactions with marine mammals in the Gillnet Fishery – exploring the possibility and viability of gillnet boats converting to a hook fishery in Bass Strait</b>
<b>Need</b>	<p>AFMA’s Australian Sea Lion Management Strategy implemented in June 2010 aims to monitor and minimise the impacts of interactions between Australian sea lions and gillnets used by Commonwealth shark fishers so as to enable breeding colonies of sea lions to recover.</p> <p>Driven by gillnet method closures aimed at stopping Australian Sea Lion (ASL) interactions, FRDC project 2011/068 investigated the use of hooks in the Gillnet Hook and Trap Sector in waters off South Australia with the aim of better informing management issues around:</p> <ul style="list-style-type: none"> <li>• Offshore Constitutional Settlement shared stock issues such</li> </ul>

	<p>as Snapper</p> <ul style="list-style-type: none"> <li>• Profitability of the hook fishing method</li> <li>• Threatened Endangered and Protected (TEP) species interactions</li> <li>• Non-target shark and ray catches</li> <li>• Size selectivity of target shark catches</li> <li>• By-catch of school shark.</li> </ul> <p>Although the gillnet fishery in Bass Strait does not interact with ASLs, it faces similar pressures from AFMA’s 2017 gillnet dolphin strategy and generally falling profitability.</p> <p>AFMA’s dolphin strategy provides for the escalation of management consequences where an operator continues to have repeated interactions. There are anecdotal reports of mitigations existing, but these have not been stated explicitly by industry or AFMA. In the absence of known mitigations gillnet operators fish in a state of jeopardy in which their vessel could be ordered from the fishery in the case of multiple interactions.</p> <p>Costs in the fishery are increasing such as through the implementation of electronic monitoring and associated data storage, stock assessment requirements, changes to cost recovery and operational costs such as fuel and inflationary pressures. However, fish prices have not increased and although catches remain steady this means that increased costs have not been offset by increased revenue. There is a need for a more profitable fishing method.</p>
	<p>Other sectors have reservations about the arrival of a new method. These include:</p> <ul style="list-style-type: none"> <li>• Increased catches of stocks historically caught by a different Commonwealth or State method. The latter is especially important given that Victorian vessels operate to 39.12.00 S (the midpoint between Victoria and Tasmania). And finally, because the division of fishing rights between Victoria and the Commonwealth is by species and not by a line on the water. This means that any new sector may well be forced by trip limit management arrangements to return catches to the sea dead.</li> <li>• Interactions between static and active fishing gears such as trawls.</li> <li>• Recreational angler concern about increased commercial by-catch of iconic species such as Snapper.</li> </ul> <p>This project would explore the viability of gillnet boats converting to a hook fishery and the associated costs in the Bass Strait and Victorian context in which the fishery would operate.</p>
<p><b>Planned Outcomes</b></p>	<p>The transition of vessels from gillnet to longline through an understanding of: the costs involved with modifying a gillnet boat from gillnets to hook fishing method and any associated additional costs:</p> <ul style="list-style-type: none"> <li>• the economic implications for individual gillnet operators in moving to a hook operation in Bass Strait</li> <li>• the level of: <ul style="list-style-type: none"> <li>○ Threatened, endangered and protected (TEP) species interactions</li> <li>○ Non-target shark and ray catches</li> <li>○ bycatch of school shark</li> <li>○ Bycatch of other species with particular regard to Flathead and Snapper but also to other OCS listed or Commonwealth quota</li> </ul> </li> </ul>

	<p>managed stocks</p> <ul style="list-style-type: none"> <li>• the size selectivity of target Gummy Shark catches</li> <li>• the extent of interactions between trawl, hook and other gear types and possible mitigation methods</li> <li>• address gaps identified in pre-existing relevant work, specifically FRDC project '2011-068 Trials of longlines to mitigate captures of Australian sea lion and other high risk species by SESSF shark operators targeting Gummy Shark in waters off SA'.</li> </ul> <p>Please note, capital costs such as the fitting out of a vessel with longline gear cannot be made with FRDC funds.</p>
<b>Jurisdictions</b>	COMRAC

<b>Priority</b>	<b>Understanding interactions between the aquaculture industry and Tasmania's key recreational and commercial fisheries</b>
<b>Need</b>	<p>Recreational and commercial fishers, as well as some community groups, have become increasingly vocal in expressing concerns about the interaction and potential impacts of aquaculture operations on wild fisheries. Understanding of such interactions remains limited and this has made it difficult to provide an evidence-based response to such concerns. As a first step in addressing this issue there is a need to understand the availability of wild fishery and aquaculture information and advise on information needs or gaps to be able to understand in detail the interactions, both now and in the future.</p> <p>Proposals must clearly articulate the nature of stakeholder concerns and update state of knowledge about interactions between aquaculture and wild fisheries in Tasmania.</p> <p>Key information gaps and needs will be identified, providing industry, managers, stakeholders and researchers a framework to better understand the social, economic and environmental issues of greatest concern and need.</p>
<b>Planned Outcomes</b>	<p>This project will provide a guide on what data is available and what is required to better understand the interactions of all activities occurring in the Tasmanian marine environment. It is anticipated that this product will integrate with other pieces of work currently being undertaken such as the multi-use spatial planning tool which the Department of Primary Industries, Parks, Water and the Environment is developing as well as 2018-145 "Cumulative impact risk assessment tool for aquaculture in Australia".</p> <p>An integrated approach to the management of the Tasmanian marine environment underpinned by data to understand and allow for management of all impacts on the marine environment.</p>
<b>Funding Partners</b>	TasRAC

<b>Priority</b>	<b>Developing a cost-effective monitoring regime and stock assessment for Sand Flathead</b>
<b>Need</b>	<p>Sand Flathead account for well over half of the catch (by numbers) taken by marine recreational fishers in Tasmania and represent the mainstay of the recreational fishery. Furthermore, since the recreational catch exceeds the commercial catch by a factor of about 20 times, trends in commercial catch and catch rates are of little value in inferring changes in stock status. This has meant that fishery independent or novel assessment methods are required.</p> <p>To date IMAS has implemented a research program focussed in the south-east. This provides a restricted and largely qualitative picture of the overall stock condition. Given the significance of the species, there is a need to implement a more comprehensive stock monitoring approach that can support the development of quantitative stock assessment models. In addition, by integrating existing information on the life history and growth dynamics of the flathead with changing environmental conditions there is potential to assess and predict the implications of past and future climate change effects for this species.</p>
<b>Planned Outcomes</b>	The main outcome will be an integrated stock assessment for Sand Flathead as well as predicting the impacts of ocean warming on this species.
<b>Funding Partners</b>	TasRAC

<b>Priority</b>	<b>People Development</b>
<b>Need</b>	<p>All RACs have indicated an interest in developing industry capacity within their jurisdiction, and welcome applications that support people development.</p> <p>Some of the more common types of people development applications that are likely to be considered include:</p> <ul style="list-style-type: none"> <li>• Bursaries, scholarships awarded to enable study to be undertaken</li> <li>• Capacity building - process of developing and strengthening the skills, processes and resources needed to survive, adapt, and thrive</li> <li>• Knowledge exchange (e.g. holding workshops/conferences, visiting experts)</li> <li>• International exposure (e.g. attend conferences, study tours)</li> <li>• Educational opportunities for learning new skills</li> <li>• To provide stewardship into the future (e.g. youth development programs)</li> <li>• Succession planning within industry</li> </ul> <p>Further information on FRDC's approach to People Development can be found here: <a href="https://www.frdc.com.au/Partners/National-Priorities-and-Subprograms/People-development">https://www.frdc.com.au/Partners/National-Priorities-and-Subprograms/People-development</a></p>
<b>Planned Outcomes</b>	<ul style="list-style-type: none"> <li>• Provide opportunities for knowledge transfer and R&amp;D adoption</li> <li>• Enhance industry leadership within, and across, all sectors</li> <li>• Build industry capacity to drive change to achieve goals</li> <li>• Build workforce capability</li> </ul>
<b>Funding Partners</b>	All RACs