

BENCHMARKING PIRSA'S COMMERCIAL WILDCATCH FISHERY COMPLIANCE FRAMEWORK

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EXECUTIVE SUMMARY

In 2024, the South Australian Government commissioned an independent review of its seafood sector cost recovery model, leading to the establishment of the *Cost Recovery Implementation Committee* to oversee implementation of key recommendations. Following this, under the leadership of this committee, *Atlantis Advisory* was engaged by *Seafood Industry South Australia* to benchmark fisheries compliance services across the 16 South Australian wildcatch commercial fisheries.

The Compliance Benchmarking Project was tasked with evaluating the effectiveness, efficiency, and cost structures of current compliance frameworks, with a focus on transparency, risk-based management, digital transformation, and alignment with the *South Australian Fisheries Management Act 2007*. The Act prioritises *Ecologically Sustainable Development* but also notes the requirement to achieve cost effective and efficient management as a secondary objective.

The authors engaged with PIRSA and industry stakeholders via online surveys, in-person interviews and correspondence, using these insights as leads to identify key issues to investigate further and corroborate these with industry. The project also undertook data collection and analysis including comparative benchmarking. Work included the development of an innovative compliance-specific modelling tool that contrasted the trade-offs in fisheries management decisions between risk, cost and catch, or in this case compliance risk, compliance cost and catch uncertainty. This tool allows assessment of the proportionality of compliance servicing across all fisheries.

The high-level findings of this project are:

- South Australian fisheries are perceived by stakeholders as professional and generally compliant. PIRSA compliance is described by industry as operating professionally with a level of vigour that extends to over-servicing. Benchmarking has shown that PIRSA's vessel and fish processor inspection rates are significantly higher than those in comparable jurisdictions. Industry is also frustrated about the relative level of application of compliance resources between fisheries.
- PIRSA use fully costed compliance officer days to apportion and charge the compliance resource across fisheries. This process is not systematic. There are unexpected relationships between the compliance resources applied (compliance fees), catch uncertainty and compliance risk. There should instead be an appropriate level of correlation where compliance fees, compliance risk and catch uncertainty, increase together. However, this is not the case in some fisheries - several are significant outliers, and several others have unexpected or weak relationships.
- There is therefore a need to progress the apportionment of compliance resources at a fishery level to achieve a stronger relationship with stock risk.



- Despite adoption, albeit partial, of digital technologies and the reduced compliance risk this achieves, there appears to be a weak linkage to flow-through reductions in physical inspections and reduced compliance levies as should be the case.
- Certain fisheries appear to have negotiated enduring ‘unique’ arrangements (other than special event subsidies) that create ambiguities in the relationships between compliance fees, compliance risk, and catch uncertainty, as well as in the adoption of digital technologies and deployment of compliance assets. While such arrangements can yield short-term benefits for some fisheries, they ultimately erode fishery–PIRSA and inter-fishery relationships and diminish the integrity of South Australia’s world-class fishery management.

The project has made 12 primary and two secondary recommendations. The primary recommendations provide a complementary suite of outcomes and should be implemented as holistically as possible. The themes of these recommendations are:

- A. Reduce compliance resources by at least a third, but less than 61% (the higher number being the exact reduction required to bring PIRSA in line with compliance contacts per vessel made by several Australasian peers).
- B. Recalculate compliance budgets for all fisheries from scratch using the risk-catch-cost model. Do so with input from fishery managers, periodically review compliance risk and stock exploitation assessments with industry and re-set budgets. (This report provides a worked example of budgets using the project’s *Assessment of risk-catch-cost of compliance* (ARCCC) model).
- C. Implement targeted efficiency improvements, which will enable A. These include limiting at-sea inspections to where they are genuinely needed or digital tools are lacking, managing TEP species under the EPBC Act which might allow less compliance focus, installing enabling management arrangements, removing hail-in/hail-out where VMS is in place, standardising TEP interaction reporting, and considering if two officers are always required for inspections.
- D. Fully implement VMS in 12 of the 15 fisheries. Encourage and investigate cost-effective use of EM in the *Sardine Fishery*.



This report acknowledges the gravity of the recommended reductions in compliance services. In return industry must play its part and support the implementation of VMS and eLogs, where this has not yet occurred. If EM is cost-effective, the *Sardine Fishery* should work with PIRSA to implement it given WTO conditions relating to dolphin interactions. Some fisheries may need to give up some unique management arrangements that carry a costly compliance burden. Failure by any fishery to implement the complete suite of recommendations may compromise the collective benefits intended for the broader South Australian commercial fishery.

The reduction in compliance services will lead to an immediate reduction in compliance fees in most (likely not all) fisheries. More importantly weighting compliance resources in fisheries with higher compliance risk and higher exploitation uncertainty, will incentivise fisheries to work with PIRSA to reduce their compliance risk, and with fishery managers and assessment scientists to increase the certainty of stock exploitation. The aim of ecologically sustainable development is given priority by the South Australian Fisheries Act. Yet some South Australian fisheries still operate with uncertain stock exploitation. Applying this framework consistently across all fisheries will encourage them to reduce compliance risks and improve the certainty of their catch. This can only bring positive outcomes for PIRSA, industry and the South Australian community.

The implementation of these reforms will assist the South Australian industry through an unprecedented toxic algal bloom event and complement the ≈\$130m relief package already provided by the South Australian and Australian governments.



CONTENTS

EXECUTIVE SUMMARY	3
CONTENTS.....	6
LIST OF FIGURES	9
LIST OF TABLES	11
GLOSSARY	12
ACKNOWLEDGEMENTS	13
1 PROJECT OVERVIEW and FOUNDATIONS	14
1.1 Background	14
1.2 Purpose.....	14
1.3 Objectives	14
1.4 Scope of Activities	15
1.5 Description of South Australian Fisheries Operating Environment.....	16
1.6 <i>South Australian Fisheries Act 2007</i>	17
1.7 PIRSA Corporate Plan	17
1.8 Foundational thinking in this report	18
1.9 Report Structure	18
1.10 Report Limitations	19
2 COMPLIANCE Approach.....	20
2.1 Best Practice Theory.....	20
2.2 Australia’s National Compliance Strategy	21
2.3 AFMA’s Approach	21
2.4 International Fisheries Compliance Networks with Australian Support	23
3 PROJECT METHODS:	24
3.1 PIRSA Discussions & Data Provision	24
3.2 Online Survey	24
3.3 Virtual Interviews	24
3.4 In-Person Interviews in South Australia	24
4 DIAGNOSTICS	25
4.1 Understanding Current Management and Fishery Subjects	25
4.2 Description of PIRSA’s Current Compliance Framework.....	30



4.3	Compliance Data Trends & Benchmarking	31
4.4	<i>Assessment of Risk-Catch-Cost for Compliance (ARCCC)</i>	36
5	APPLICATION OF <i>RISK-COST-CATCH</i> : ARCCC results	48
5.1	Expected application of <i>Risk-Cost-Catch</i> ('Conformists')	48
5.2	'Happy' Outlier Beneficiaries of <i>Risk-Cost-Catch</i>	48
5.3	'Unhappy' <i>Risk-Cost-Catch</i> Outliers	49
5.4	ARCCC Analysis Summary	49
6	DISCUSSION OF <i>RISK-COST-CATCH</i> OUTLIERS	50
6.1	<i>Northern Zone Rock Lobster Fishery</i>	50
6.2	<i>Sardine Fishery</i>	52
6.3	<i>Western Zone Abalone Fishery</i>	54
6.4	<i>An Alternative measure of Compliance Cost</i>	56
7	DISCUSSION: SOUTHERN RANGER & OTHER INSPECTION VESSELS	60
7.1	Conclusion: Inspection vessels	61
8	DISCUSSION: INDUSTRY INTERVIEWS & SURVEYS	62
8.1	Online Survey	62
8.2	Interviews	63
8.3	Conclusion: Interviews & Surveys	64
9	DISCUSSION: COMPLIANCE PERFORMANCE	65
9.1	Determining acceptable compliance levels via risk assessments	65
9.2	Proportionality of Response & Enabling Legislation	66
9.3	Inspections	68
9.4	Commercial Fisher vs. Fish Processor	68
9.5	<i>Vongole Fishery</i>	68
9.6	Compliance Reporting	70
10	DIGITAL TRANSFORMATION	71
10.2	Cost Attributions and Budgets	76
10.3	FTE Day Rate Activity Based Costing	76
10.4	Worked example of the application of RCC in South Australia's fisheries	78
11	TEP COMPLIANCE	84
11.1	Marine mammal Interactions and Social Licence	84
11.2	Legislation governing TEPs	84



11.3	TEP Benchmarking	87
11.4	TEP Conclusions	88
12	PRIMARY RECOMMENDATIONS:	90
12.1	Resourcing & Operational Recommendations:	90
12.2	Digital Efficiency Recommendations:	90
12.3	Planning Recommendations:	91
12.4	TEP Recommendations:	92
13	SECONDARY RECOMMENDATIONS:	93
	Appendix 1 ARCCC ANALYSIS BY FISHERY	94
	Appendix 3 compliance budget by fishery	102
	Appendix 4 management arrangement matrix	103
	Appendix 5 compliance activity by fishery	104
	Appendix 6 online survey summary	105
	Appendix 7 <i>Compliance Benchmarking Team</i>	132

LIST OF FIGURES

Figure 1 Braithwaite Compliance Triangle, source: https://johnbraithwaite.com/responsive-regulation/assumption-pyramid/	21
Figure 2 Trend in Compliance Levy by Fishery Last 6 Years, note any fishery not listed is combined into “other” as the trend was the same.....	31
Figure 3 Percentage of total compliance costs per fishery, stacked bar chart.....	32
Figure 4 Compliance Cost by Vessel by Epoch 2005/06 to 2024/25 for fisheries, grouped by broad categories due to historical data groupings.....	32
Figure 5 Catch Revenue vs Compliance Levies South Australian Fisheries.....	33
Figure 6 Catch Volume vs Compliance Levies South Australian Fisheries	34
Figure 7 Risk Indicator Score vs Compliance Levies South Australian Fisheries.....	34
Figure 8 Compliance Contacts per Active Licence (most recent year data available) for all South Australian and some AFMA-managed fisheries and across all NZ Rock Lobster fisheries.	35
Figure 9 CRIS budgeted compliance days planned by fishery 2024/25.....	36
Figure 10 ARCCC model theory	39
Figure 11 Relative calculated Risk-Cost-Catch of South Australian fisheries.....	45
Figure 12 Fishery performance for Risk-Cost-Catch vs average stacked bar chart	46
Figure 13 Scatter plot of the compliance cost per active fisher and the combined average risk score and catch exploitation scores per fishery. Red-amber-green colouring of data points is approximate; green indicating the fishery shows the expected correlation between variables, amber some correlation and red disagrees (i.e reds are outliers). Note that Marine Scalefish compliance cost data is the unsubsidised amount.	47
Figure 14 South Australian Risk-Cost-Catch conformers within the ARCCC radar plot. 48	
Figure 15 “Happy Outlier” South Australian fisheries	48
Figure 16 Relative calculated Risk-Cost-Catch of South Australian Outlier Fisheries ...	49
Figure 17 ARCCC for South Australian abalone fisheries	55
Figure 18 ARCCC using cost per active licence as ‘cost’ allocation base on the left, and number of CDRs (unloads) as ‘cost’ allocation base on the right.	57
Figure 19 Scatter plot of the compliance cost per CDR (unloading document use in some fisheries). Red-amber-green colouring of data points is applied; green indicating the fishery shows the expected correlation between variables, amber somewhat and red disagrees (i.e reds are outliers). Not all fisheries have CDR data. Note that Marine Scalefish compliance cost data is the unsubsidised amount.	58
Figure 20 Variance analysis comparing compliance cost per CDR relative to per active fisher.....	58
Figure 21 Variance between current and worked RCC example of FTE budgets by fishery	82



Figure 22 Scatter plot of worked example of 50%-reduced, ARCCC apportioned FTE budgets (imposed green colouring is applied suggesting all fisheries now sit within the expected RCC relationship) Note that the Marine Scalefish Fishery cost is plotted using unsubsidised compliance levies. 83

LIST OF TABLES

Table 1 South Australian Fisheries: Management Arrangements, Compliance Metrics, Economic Metrics, Data & Reporting, Unloading, Electronic Tools	29
Table 2 Fishery Risk Indicator Scoring (highlighted scores are highest relative).....	42
Table 3 Categorisation of ARCCC analysis for South Australian fisheries (excluding Charter) see also Figure 13. Listed in each category in order of sum of risk and catch scores.	49
Table 4 Comparison of PIRSA explanations of compliance cost drivers in both rock lobster fisheries	51
Table 5 Project estimation of days allocated vs expended in the Northern Zone Rock Lobster Fishery	52
Table 6 Project estimation of days allocated vs expended in the Western Zone Abalone Fishery	55
Table 7 Benchmarking of compliance cost allocation in New Zealand and South Australia	77
Table 8 Worked risk-cost-catch weighted example of 50% reduction in compliance servicing of fisheries.....	81
Table 9 PIRSA Compliance Levies by Fishery	102
Table 10 Management arrangements and other traits of South Australian fisheries	103
Table 11 2024/25 Inspections by Fishery	104

GLOSSARY

Acronym	Meaning
AFMA	Australian Fisheries Management Authority
AI	Artificial intelligence
ARCCC	Assessment of risk-catch-cost for compliance
CDR	Catch Disposal Record
CRIC	Cost Recovery Implementation Committee
CRIP	Cost Recovery Review Panel
CRIS	Cost Recovery Implementation Statement
DCCEEW	Department of Climate Change, Energy, Environment and Water
DPIRD	Department Primary Industries and Regional Development (Western
eCDR	Electronic Catch Disposal Record
eLog	electronic logbook
EM	Electronic Monitoring (video monitoring)
ESD	Ecologically Sustainable Development
FAP	Fisheries and Aquaculture Enforcement Prosecution Policy
FTE	Full time equivalent
IMCS	International Monitoring, Control, and Surveillance
ITQ	Individual Transferrable Quota
MLS	Minimum legal size (mm)
MLW	Minimum legal weight (grams)
MSC	Marine Stewardship Council
NCEP	National Compliance and Enforcement Strategy
NSW	New South Wales
OMC	Operational Management Committee
OCS	Offshore Constitutional Settlement
PIRSA	Department of Primary Industries and Regions South Australia
RCC	Risk-Catch-Cost
RFID	Radio Frequency Identification.
ROI	Return on investment
SAFS	Status of Australian Fish Stocks
SISA	Seafood Industry South Australia (Incorporated)
SPF	Small Pelagic Fishery (Commonwealth-managed)
TAC	Total allowable catch
TEP	Threatened, Endangered and Protected (species)
VMS	Vessel Monitoring System
WTO	Wildlife Trade Operation (certified)

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1 PROJECT OVERVIEW and FOUNDATIONS

1.1 Background

In 2023, the Minister for Primary Industries and Regional Development established the Independent Cost Recovery Review Panel (ICRRP), comprising experts with extensive experience in commercial fishing, natural resource economics, and fisheries economics. The ICRRP reviewed cost recovery arrangements for the commercial fisheries sector in South Australia. Following this review process, the State Government embraced most of the recommendations presented by this panel, including an independent review/benchmarking of PIRSA's compliance program and costs.

The Cost Recovery Implementation Committee (CRIC) was established to guide the implementation of these recommendations and address the key challenges identified. The CRIC is made up of members from the Department of Primary Industries and Regions (PIRSA) and Seafood Industry South Australia (SISA) representing the fisheries and aquaculture sectors. The independent Chair of the CRIC is Mr Brian Jeffriess. Under the guidance of project leads Ian Cartwright and Keith Sainsbury, the CRIC established and funded a review of PIRSA-managed aquaculture science and compliance, fisheries science, and fisheries compliance.

Atlantis was engaged by Seafood Industry South Australia (SISA) to undertake this benchmarking relating to wildcatch fisheries compliance. Although Atlantis' contractual agreement is with SISA, reporting and steerage was provided by the CRIC and project leads.

1.2 Purpose

This project has completed a comprehensive benchmarking exercise of fisheries compliance services across South Australia's commercial fisheries. The review has evaluated the effectiveness, efficiency, and cost structures of existing compliance frameworks at both the sector-wide and individual fishery levels. The overarching goal is to ensure that future compliance programs are appropriate, risk-based, cost-effective, and aligned with legislative requirements and best practice.

1.3 Objectives

The primary objectives of the Fisheries Compliance Benchmarking Review are to:

1. Evaluate current compliance frameworks and associated cost structures to assess their appropriateness, risk-basis, and effectiveness.
2. Promote transparency in compliance costs and ensure alignment with best practice principles.
3. Identify current and future efficiencies in compliance service delivery, with a focus on opportunities for digital transformation.



4. Ensure alignment with the *Fisheries Management Act 2007*, particularly regarding the efficient and cost-effective management of South Australia's aquatic resources.

1.4 Scope of Activities

The Contractor has delivered the following key activities:

1) Sector Review: Benchmarking compliance services across the following 16 fisheries:

1. *Abalone – Central Zone*
2. *Abalone – Southern Zone*
3. *Abalone – Western Zone*
4. *Blue Crab*
5. *Charter Boat*
6. *Lakes and Coorong – Finfish*
7. *Lakes and Coorong – Pipi*
8. *Marine Scalefish*
9. *Giant Crab*
10. *Prawn – Gulf St Vincent*
11. *Prawn – Spencer Gulf*
12. *Prawn – West Coast*
13. *Rock Lobster – Northern Zone*
14. *Rock Lobster – Southern Zone*
15. *Sardine*
16. *Vongole*

2) Review of Current Compliance Program

- Analyse the effectiveness, efficiency, and cost structure of current compliance measures (e.g. monitoring, audits, enforcement).
- Assess whether current compliance activities are appropriate, risk-based, and effective.
- Provide recommendations for a sustainable, risk-based compliance model that is financially viable for both PIRSA and industry stakeholders.

3) Digital Transformation Opportunities

- Identify and assess opportunities for digital transformation to improve efficiency and reduce compliance costs.
- Consider potential impacts on compliance processes and long-term service delivery.

4) Stakeholder Engagement

- Engage, as required, with fisheries licence holders, industry bodies, and PIRSA to identify current challenges and explore potential improvements to compliance delivery.



5) Benchmarking with Other Jurisdictions

- Compare South Australia's compliance framework with those of other jurisdictions and sectors to identify best practice approaches and innovations.

1.5 Description of South Australian Fisheries Operating Environment

South Australian wildcatch fisheries are a major contributor to the state's economy, landing more than 50,000 tonnes of seafood annually and generating over \$450 million in gross production value. This represents more than a quarter of the value of all Australian wildcatch fisheries. Around half of this catch value (rock lobster and abalone) is exported.

The fisheries range from the high-volume *Sardine Fishery*, which lands tens of thousands of tonnes per year and plays a critical role in supplying feed for South Australia's *Southern Bluefin Tuna Ranching* industry, to smaller quota-managed sectors such as the artisanal *Vongole Fishery*, which harvests around 70 tonnes annually.

Across the sector, there are roughly 700 licences, of which ≈80% are active. Quota utilisation rates are generally consistently high. This low degree of latency demonstrates efficient use of allocated fishing rights. The value of access and quota rights is ≈\$40m and economic reports indicate that most fisheries are profitable. Unusually for fisheries managed by Australian states, these metrics indicate a low risk of latent effort entering the fishery.

Fishing methods include purse seine, demersal trawl, pots, diving, and longline, hand-gathering, and the sector supports over 2,000 direct jobs in fishing, deck operations, and processing, with thousands more employed indirectly in transport, logistics, sales and regional services.

Most fisheries target stocks under moderate exploitation rates occurring under moderate stock status certainty, with only a small number (*Central Zone Abalone*, *Marine Scalefish* and *Giant Crab*) requiring more work. Many of South Australia's key fisheries are *Marine Stewardship Council* (MSC) accredited. This demonstrates the strength of the management of these fisheries but does not necessarily suggest that non-accredited fisheries are poorly managed, rather they may be too small to afford certification or not placed strategically to benefit from it. South Australia's prawn fisheries are iconic examples of regionally significant, high-value, sustainably managed trawl fisheries enjoying high levels of community support.

This combination of significant and consistent catches, internationally recognised sustainability credentials, and significant economic impact, positions South Australian wildcatch fisheries as a model of responsible fisheries management and a critical driver of regional and community economic resilience.



1.6 South Australian Fisheries Act 2007

The South Australian Act sets down a series of guiding objectives that underpin all fisheries management decisions. The Objectives of the Act include:

1. Ecologically sustainable development (ESD); conservation measures to ensure there is no over-exploitation, access achieving optimum utilisation, protection of aquatic habitats, recreational and commercial fishing benefiting the whole community and the participation of users in management. This aim is considered to have priority over the remaining four principles (objective 2) with some useful definitions (objective 5) defining ESD.
2. Efficient and cost-effective management (including cost-recovered levies)

There are specific mentions of dolphin sanctuaries and legal definitions of relationships to acts governing marine parks and the River Murray (objective 4).

PIRSA's Compliance Section (Compliance) translates these legislative intents into on-the-water enforcement and monitoring actions. This report is mindful throughout of these objectives, and especially objective 1 which gives priority to ESD.

1.7 PIRSA Corporate Plan

PIRSA's Corporate Plan 2024-25 sets out its mission to “make a difference so South Australia thrives” by growing the value of primary industries, strengthening regional communities and protecting the state's natural resources. The plan emphasises balancing economic growth with environmental sustainability and highlights the importance of resilient supply chains, innovation and effective risk management to maintaining South Australia's competitive advantage. PIRSA positions itself as a collaborative, evidence-driven organisation that partners with industry, government and communities to achieve shared outcomes.

To deliver on this mission, PIRSA has identified six strategic aims:

1. Stimulate value growth – Leverage government capabilities and market opportunities to increase the value of primary industries.
2. Reset the operating environment – Remove regulatory, structural, and economic barriers that constrain growth.
3. Sustain the resource – Invest in research, monitoring, and regulation to protect natural resources and ensure long-term sustainability.
4. Manage risk and recovery – Prepare for and respond quickly to adverse events such as biosecurity threats, climate impacts, and market disruptions.
5. Enable regional growth – Support infrastructure, investment, and community wellbeing to strengthen South Australia's regions.



6. Perform well – Operate as a modern, responsive, and efficient organisation that values its people, partners, and evidence-based decision-making.

Together, these six aims form a structured framework for action, performance measurement and resource allocation, positioning PIRSA to deliver lasting prosperity and sustainability for South Australia.

1.8 Foundational thinking in this report

Mindful of the purpose and objectives of this review, the structure of South Australia's fisheries, the guiding principles of the *Fisheries Management Act 2007* and PIRSA's corporate plan, this report evaluates current commercial fisheries compliance arrangements.

The analysis gives emphasis on how compliance supports ESD, the effectiveness and efficiency of enforcement, its cost-efficiency, its contribution to regional growth and value creation, and any barriers from the compliance programme that may be constraining optimal outcomes.

1.9 Report Structure

This report follows a logical, evidence-driven structure designed to evaluate and improve South Australia's fisheries compliance framework.

An Executive Summary outlines key findings and headline recommendations.

The Project Overview section establishes the background, purpose, and objectives, clarifying the review's scope and alignment with the *Fisheries Management Act 2007* and PIRSA's corporate plan.

The core of this report is organised into Diagnostics and Analysis, combining survey data, interviews, compliance metrics, and economic indicators to provide a detailed, fishery-by-fishery assessment of issues. A key feature is the introduction of an adaptation of the *Risk-Cost-Catch* framework to fisheries compliance. This adaptation, called the *Assessment of risk-catch-cost of compliance (ARCCC)*, which scores and integrates compliance risk, stock exploitation/uncertainty, and compliance cost per active licence to highlight outliers and identify potential opportunities for improvement.

Subsequent chapters apply this model, discuss fisheries that conform, or do not conform to this model, and present case-specific insights for major sectors. This report then explores alternative cost measures, the role and use of major assets such as the vessel *Southern Ranger* and industry feedback gathered through surveys and interviews.

Finally, this report consolidates its findings into Primary and Secondary Recommendations, grouped under logical headings. These provide a practical roadmap for implementing a more proportionate, risk-based, and cost-effective compliance model.



1.10 Report Limitations

- The *Compliance Benchmarking Team* has struggled to accommodate the *Charter Fishery* within the methods, logic and personal experiences. The sector is significantly different to other commercial sectors because the catch is not sold, and its clients pay for the experience of fishing against recreational rules and arrangements. The *Charter Fishery* is a hybrid activity.
- Benchmarking with other national and international jurisdictions is limited in detail because of significant differences in cost-recovery, KPI data and the time constraints of the project.
- It was not the role of the *Compliance Benchmarking Team* to undertake detailed accounting/cost management auditing and analysis.
- This report did not consider compliance intelligence, confidential information known to PIRSA. Application of that information would better inform their consideration of compliance risks in different fisheries when applying the report recommendations.



2 COMPLIANCE APPROACH

2.1 Best Practice Theory

Historically, compliance enforcement focused on a binary assessment - determining whether an entity did or did not breach the law. This traditional model has been superseded by a more sophisticated approach, with many Australian and New Zealand regulatory agencies adopting the principles of [John Braithwaite's Compliance Pyramid](#) (Figure 1).

Braithwaite's model seeks to influence behaviour by applying proportionate and graduated responses. It encourages voluntary compliance wherever possible, escalating only to full enforcement and prosecution for the most serious breaches. The application of increasing responses encourages voluntary compliance prior to the full application of the law for the most serious of offences.

[Professor Malcolm Sparrow](#) from the *Havard School of Business* (and a former British police officer) further developed these principles. Sparrow draws on the *Braithwaite model*, however he differs by not only considering the behavioural drivers for non-compliance but by emphasising the harms of non-compliance behaviours to further determine the appropriate intervention and prioritisation of resources.

PIRSA's compliance approach reflects the core principles of the *Braithwaite model*, aligning interventions with the behaviours of non-compliant actors. This is evident in PIRSA's Prosecution Policy, which prioritises education and awareness for those attempting to comply, reserving prosecution for the most serious and deliberate offenders.

However, PIRSA could strengthen its framework by incorporating Sparrow's harm-based approach into its risk assessment process. This would enable a more robust determination of proportionality when selecting compliance interventions and to ensure resources are directed toward the most significant risks (of harm, not breach of rule).

Sparrow's model requires high-quality data, intelligence and analysis to assess both the behavioural drivers, and the harms associated with non-compliance. It promotes the use of a diverse set of tools and innovative solutions to achieve sustainable behaviour change. These solutions may extend beyond education, deterrence, and enforcement, potentially including legislative reform where actors face practical barriers to compliance.

Currently, PIRSA's approach resembles *Braithwaite's model* in practice but is not formally documented. It is recommended that PIRSA develop a written compliance strategy that integrates both Braithwaite's and Sparrow's thinking. This strategy should be embedded in PIRSA's risk assessment methodology and reflected in a comprehensive prosecution policy that provides clear guidance on fisheries officers' discretion. The strategy should be cognisant of the extent to which compliance risks impact on ESD (stock exploitation and uncertainty) and consider the risk of non-compliance by fishery.





Figure 1 Braithwaite Compliance Triangle, source: <https://johnbraithwaite.com/responsive-regulation/assumption-pyramid/>

2.2 Australia’s National Compliance Strategy

For reference, [Australia’s National Compliance Strategy](#) provides a strong example of a documented, principles-based approach.

This Strategy (2022–2026) was prepared by the *National Fisheries Compliance Committee*, under the *Australian Fisheries Management Forum*, to provide a unified, risk-based framework for managing compliance across Commonwealth, State, and Territory fisheries (including South Australia).

It sets out a vision to achieve “optimal compliance” by promoting voluntary adherence to rules through clear communication, education, and stakeholder engagement, while reserving robust enforcement measures for serious non-compliance. The strategy emphasises shared responsibility among commercial, recreational, Indigenous, and conservation stakeholders, integrates harm-based risk prioritisation, and addresses emerging issues such as organised crime, biosecurity, and habitat protection. It commits to strengthening inter-jurisdictional cooperation, building workforce capacity, leveraging technology and data, and maintaining transparency and governance to protect the sustainability, integrity, and social licence of Australia’s fisheries.

2.3 AFMA’s Approach

Australian Fisheries Management Authority (AFMA)’s [National Compliance and Enforcement Strategy 2025–2027](#) (NCEP) provides a comprehensive, risk-based and intelligence-led framework to deter illegal fishing and safeguard the sustainability of Commonwealth fisheries. Built on four key components, education and engagement, monitoring and surveillance, intelligence-driven targeted enforcement, and risk-prioritised compliance programs, the NCEP sets out how AFMA will strengthen voluntary compliance,



detect and deter non-compliance, and allocate resources to address the highest-risk activities. The program includes remote monitoring (vessel monitoring system (VMS), electronic monitoring (EM)), electronic reporting, routine inspections, catch and effort audits, targeted communication campaigns, and data-driven analyses to identify and investigate illegal activities.

The Strategy also focuses on two priority risk areas: *quota evasion* (catching more than entitled and not decrementing against quota) and compliance with species management strategies, including protections for threatened, endangered and protected species (TEPs). Dedicated *Compliance Risk Management Teams* develop and deliver targeted interventions, combining surveillance, education, and enforcement to mitigate these risks. AFMA has set clear performance targets, such as 98% VMS compliance, annual risk assessments, and a minimum of three targeted intelligence operations per year, ensuring measurable progress. This structured approach not only strengthens fisheries governance and industry confidence but also supports AFMA's mandate to secure Australia's fishing future through sustainable and legally compliant practices

AFMA adopts a risk-based, intelligence-led compliance strategy to ensure resources are directed where they deliver the greatest compliance impact. The risk review process follows ISO 31000:2018 standards and is integrated across all major Commonwealth fisheries, not just individual fisheries in isolation. This comprehensive approach allows AFMA to identify, analyse, and rank non-compliance risks systematically, including illegal fishing activities and emerging threats.

Following the assessment, AFMA's Operational Management Committee (OMC) reviews the outcomes, prioritises the highest risks, and recommends which ones will be the focus of targeted compliance and enforcement programs. This means that while risks are assessed across all fisheries, enforcement resources are concentrated on the highest-priority risks, with treatments applied in specific fisheries as needed. Routine monitoring and inspections still occur in all fisheries, even those not prioritised for formal risk assessment, to maintain general deterrence and compliance presence.

AFMA's approach highlights several benefits of this approach: improved compliance outcomes through targeted effort, efficiency gains by concentrating on significant risks, reduced compliance costs for industry by avoiding unnecessary interventions, and stronger industry support due to transparency and relevance of compliance activities. Together, this model balances deterrence, education, and voluntary compliance promotion, ensuring that AFMA not only enforces rules but also fosters long-term behavioural change and sustainable fishing practices.



2.4 International Fisheries Compliance Networks with Australian Support

The *International Monitoring, Control and Surveillance* (IMCS) is an international network established in 2001 to promote and facilitate communication, cooperation, coordination, and capacity development across fisheries. Australia is a foundation member. The IMCS Optimal Compliance Model is reflected in the AFMA Compliance Strategy.

The IMCS states that the level of optimal compliance in fisheries is:

“In fisheries, the optimal level of compliance is that which holds the level of non-compliance at an acceptable level, which can be maintained at a reasonable cost while not compromising the integrity of the fisheries management framework or ecological sustainability and ensuring ongoing social licence and legitimacy.

To achieve optimal levels of compliance, compliance actions and responses need to be targeted to ensure they are most effectively changing behaviours and promoting compliance. These actions can range from advisory and extension (awareness and education) through to deterrence and enforcement (prosecution and the application of sanctions).

These diverse responses are critical to achieving the desired outcome of the compliance regime, which is to encourage and ensure compliance with legal obligations.”

This *Optimal Compliance* philosophy should also be adopted by PIRSA and included in their Compliance Approach. Although some fishers surveyed perceive that PIRSA’s expectation is perfect compliance, this has never been espoused by the organisation. 100% compliance is problematic and resource intensive. Adoption of *Optimal Compliance* would give greater meaning to the risk assessment process ensuring limited resources are applied against the greatest risks and harms.



3 PROJECT METHODS:

Four investigatory methods were used to populate Diagnostic Tools.

3.1 PIRSA Discussions & Data Provision

A formal data request was sent to PIRSA which was filled quickly. Several virtual discussions with PIRSA also took place. A series of written questions were also sent using a rolling email. Tight timelines and numerous requests complicated this exchange, but PIRSA made significant and genuine efforts, filling most requests and questions in good time.

Data obtained was used in various diagnostic analyses that are examined through fishery-by-fishery case studies.

3.2 Online Survey

An online survey was sent using Mailchimp software. The compliance survey was combined with the science survey. Results are presented in Appendix 6 online survey summary page-104.

3.3 Virtual Interviews

More than 20 virtual interviews were undertaken with 15 fishing industry associations. The *Giant Crab Fishery* does not have an industry association, so an interview was not undertaken.

Virtual interviews were recorded using an *AI notetaker* and summaries made. Interviewees agreed to the recording of conversations on the basis that transcriptions would be destroyed at the end of the project, remained confidential to the project, and that that individual statements were not attributed to an individual or association. Given this, interviews are summarised in section 8.2 on page-63.

Interviews took 60-90 minutes each.

Attendees were provided with contact information for the *Compliance Benchmarking Team* and encouraged to engage should they think of additional important comments. Several attendees were contacted by the Team following their interview and asked for specific further comment.

Interviews are summarised in Appendix 2.

3.4 In-Person Interviews in South Australia

A second series of interviews were held with PIRSA and industry during early September in Adelaide and Port Lincoln. The interviews were introduced with a presentation of insights to date from the reviewers.

Interviews are summarised in Appendix 2.



4 DIAGNOSTICS

4.1 Understanding Current Management and Fishery Subjects

There are several metrics that were reviewed to determine the current state and risk (when considering compliance) profile of the SA fisheries, these are outlined in Table 1. The following is an overview of the key metrics.

There are 544 active fishers within 16 South Australian ‘fisheries’ (management units) catching more than 54,000 tonnes, valued at more than \$200m (Table 1). Of this, 46,000 tonnes supports (as feed) the *Southern Bluefin Tuna* aquaculture which is valued at an additional \$200-\$300m. Around 21% of South Australian wildcatch licences are not currently utilised, indicating a relatively low level of latent effort. Two of South Australia’s fisheries hold *Marine Stewardship Council (MSC) certification*, with several others in transition towards MSC. All South Australia’s wildcatch fisheries are certified Wildlife Trade Operations (WTOs) and have EPBC Part 13 accreditation. The Commonwealth-managed *Southern Bluefin Tuna Fishery*, the catch from which is input to the South Australian-managed aquaculture operation, is also a MSC certified fishery.

4.1.1 Fisheries & Fishing Gears

There are more than ten types of fishing gear used across South Australian fisheries. These include hand gathering, hookah & SCUBA (dive), pots, rod and reel, demersal trawl, longline, purse seine, various smaller scale methods (nets, rakes, spears, hand-based, etc.), gillnets and traps. This reflects the variety of fisheries in South Australia, ranging from large industrial to artisanal, operating across ocean, coastal, estuarine and inland marine waters.

Fisheries with more gear types generally have more complicated management arrangements and hence are more at-risk of non-compliance.

4.1.2 Economic Metrics

The economic data show significant variability in catch volume, revenue, licence numbers, and stock status across fisheries (Table 1).

The *Sardine Fishery* dominates in catch (≈46,000 tonnes) and revenue (\$31m), while high-value but low-volume fisheries such as rock lobster and abalone generate substantial revenue per tonne of catch. Latency (inactive licences) varies significantly— between 0% and 60% with an average of 21% across all fisheries. Average price per kg is highest for abalone (\$31-63) and rock lobster (\$50-54), reflecting their premium market status. BDO Global (BDO) estimates that some fisheries have a negative return on investment (profit on investment lower than similar industries or benchmark); *Charter Boat, Prawn – Gulf St Vincent*, and *Lakes and Coorong – Pipi*, all others returning a positive return, with the most positive *return on investment (ROI)* being the *Lakes and Coorong Finfish Fishery*.



The project has considered economic metrics when calculating risk, using the logic that unprofitable fisheries with low value rights have less at risk when a person becomes liable to disqualification or an authority is to be cancelled and are therefore more likely to engage in non-compliance either deliberately or through complacency. The report notes that fisheries with high per kg price may have more incentive for non-compliance given the potential benefit on offer. Compliance Metrics

Compliance, as measured by the rate of inspections to non-compliance events across fisheries, is generally high but varies by fishery.

The average compliance cost recovery consumed 3% of fishery revenue, with a range by fishery from 0.4% to 11.1% across all fisheries. Compliance levies, as a percentage of all levies, ranges between 6% and 76%. Compliance cost per active licence is highest in the *Northern Zone Rock Lobster Fishery*.

Although not a 'compliance event', the compliance cost of TEP interactions are highest in the *Sardine Fishery*.

The project holds the view that compliance costs should not be equal across fisheries as a % of revenue, as a proportion of total levies or per vessel etc. Rather that compliance levies should be aligned with the degree of exploitation of catch (and its certainty) and the relative compliance risk of a fishery.

The project contends that the rate of non-compliance (i.e. the rate of non-compliant events as a rate of compliance contacts) is a key indicator of the underlying compliance risk of a fishery. In the absence of any other practical metric, inspection compliance rates, by default, become the acceptable tool by which to assess compliance.

4.1.3 Industry Stewardship

Industry stewardship mechanisms are widely adopted across fisheries. Codes of practice, co-management models, and voluntary user guides are in place for most fisheries. Current or past Marine Stewardship Council (MSC) certification, is evident in several fisheries, indicating at the least a high level of industry cohesion given the cost and organisation required to achieve certification. Notably, gear restriction specifications and other harvest restrictions are common, demonstrating industry alignment with sustainability and broader conservation goals.

The project contends that evidence of industry investment in compliance and the broader fishery is an indication of lower compliance risk.

4.1.4 Management arrangements

Management frameworks are diverse and tailored by and to, fishery type. Output controls (such as quota), and input controls (including gear limits, minimum size, spatial and seasonal closures) are used. Marine Park overlays and regional management areas are present in most fisheries. A demerit points system applies across all fisheries. A variety of fishery-specific arrangements are in place.

The project contends that fisheries with simple management arrangements have lower compliance risk. And later in this report that simpler management arrangements are enabling for industry and should have lower compliance costs.

4.1.5 Industry Data & Reporting Arrangements

Data reporting is systematic, with a mix of event-based, daily, and periodic reporting. Logbooks are universally used and TEP interaction reporting is mandatory. Levels of independent human observer coverage vary widely and are not widespread, ranging from 0% in several fisheries, and up to 20% in the *Sardine Fishery*. Human observer coverage is being used for scientific surveys in several fisheries.

4.1.6 Unloading Arrangements

Pre-sailing and pre-arrival reporting (hail in, hail out) is used selectively, and is difficult to distinguish from eCDR reporting prior to landing at times.

The project contends that fisheries using eLogs and eCDRs have lower compliance risk than paper-based variants.

4.1.7 Electronic Tools

Australia's eight fishery management jurisdictions (the Commonwealth, New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania, and the *Northern Territory*) are at different stages of adopting electronic monitoring (EM). At the Commonwealth level, AFMA has introduced EM across several major fisheries and is now expanding EM to all (or almost all) fisheries through a standards-based program. Victoria has trialled EM in its *Giant Crab Fishery* and requires electronic reporting and monitoring in selected commercial sectors. Tasmania has implemented VMS across key fisheries such as *rock lobster, giant crab, abalone, and scallops*, while also pursuing two-way VMS upgrades. South Australia, Western Australia, New South Wales, and the *Northern Territory* have not yet mandated EM but have trialled EM through pilot programs and participation in national assistance schemes that support electronic and vessel monitoring upgrades. Collectively, these initiatives demonstrate a consistent trend across jurisdictions: while the Commonwealth leads in mandatory EM deployment, all states and territories are actively exploring or investing in electronic technologies to strengthen fisheries compliance, traceability, and sustainability outcomes.



VMS provides explicit, vessel time and position data and is widely used in Australian fisheries. PIRSA have indicated their default position is that it will be implemented in most fisheries but that there are no firm timelines on implementation. eLogs and eCDR systems support short interval data transmission. The project contends that South Australian fisheries with VMS have significantly lower compliance risk.

RFID fish case tagging and camera-based unloading monitoring are applied in select fisheries and can improve verification and traceability.

4.1.8 Relative Compliance Indicator Risk

PIRSA supplied confidential compliance risk data that couldn't be used directly, so the report applied a high-level set of 19 indicators (12 risk-increasing, 7 risk-mitigating) to compare fisheries, using objective scoring where possible (+5 for highest risk traits, -5 for strongest mitigations, scaled for others) and subjective judgments when needed. The analysis does not incorporate PIRSA intelligence and does not imply greater non-compliance in any specific fishery; it simply profiles relative exposure discussed during industry interviews. Higher risk is associated with traits such as high-value catch, fuller quotas, reported or plausible TEP interactions (especially with conservation-concern species), vertically integrated companies, many ports and long shorelines, complex multi-gear management, more active fishers, poorer compliance history, presence of at-risk TEPs, and WTO conditions warranting focus. Risk is mitigated by strong stewardship, third-party sustainability certification, formal TEP mitigation backed by science, higher profitability and access/harvest value, risk-reducing digital tech, and independent observers. While some fisheries disputed their relative scores, including the top score of 5.0, the comparative method requires a highest score; final scores are presented in Table 2.

Table 1 South Australian Fisheries: Management Arrangements, Compliance Metrics, Economic Metrics, Data & Reporting, Unloading, Electronic Tools

		Abalone - Central Zone	Abalone - Southern Zone	Abalone - Western Zone	Blue Crab	Charter Boat	Prawn - Gulf St Vincent	Prawn - Spencer Gulf	Prawn - West Coast	Rock Lobster - Northern Zone	Rock Lobster - Southern Zone	Lakes and Coorong - Finfish	Lakes and Coorong - Pipi	Marine Scalefish	Giant Crab	Sardine	Vongole
ECONO-METRICS	Catch (BDO 22/23 unless specified) tonnes	79	131	252	597	?	146	1,578	50	279	1,318	951	453	2,142	9.3	46,362	71
	Stock Status (PIRSA)	D/S	D	S	TR	S	S+	S+	S+	S+	S	D/S	S	D/S	D↓	S	S
	Stock exploitation/uncertainty (raw score)	3.3	1.5	2.3	1.5	?	1.8	1.0	2.5	1.5	1.3	2.8	1.3	3.3	3.5	1.0	1.5
	Stock exploitation/uncertainty (relative)	4.6	2.1	3.2	2.1	?	2.5	1.4	3.6	2.1	1.8	3.9	1.8	4.6	5.0	1.4	2.1
	Number of licences	6	6	22	9	80	10	39	3	63	180	36	11	197	1	14	12
	Number active licences	6	6	19	7	50	4	39	3	25	140	32	10	184	1	11	7
	Licence latency	0%	0%	14%	22%	38%	60%	0%	0%	60%	22%	11%	9%	7%	0%	21%	42%
	Value Rights (BDO 2022/23) \$m	6.5	6.5	6.5	6.7	0.0078	1.5	4.1	?	2.7	5.2	2.6	2.6	0.61	?	6.8	?
	ROI (BDO 2022/23)	3.0%	3.0%	3.0%	6.0%	-7.4%	-3.0%	0.0%	?	0.0%	1.7%	17.0%	-4.0%	2.5%	?	9.2%	?
ECONOMETRICS	Revenue (BDO 22/23 unless specified) \$m	5.0	4.0	10.0	10.0	3.4	2.8	26.0	1.0	14.0	71.0	5.6	7.7	22.0	0.5	31.0	1.2
	CDRs 2023 (unless stated)	208	163	772	811	?	?	?	?	850	9466	?	531	12498	55	875	269
	Cost Recovery Compliance as % of Revenue	2.8%	0.4%	5.1%	0.8%	6.4%	1.0%	0.5%	0.9%	5.5%	2.3%	1.0%	0.9%	11.1%	C	0.9%	4.5%
	Compliance Levies as % of Total Levies	29%	6%	37%	23%	60%	17%	12%	10%	46%	44%	12%	17%	76%	32%	12%	52%
	TOTAL CONTACTS (processor, transit, at-sea, landing)	73	8	203	39	84	3	33	?	290	468	70	28	960	?	39	35
	Compliance cautions & expiations	1	0	2	2	3	1	2	?	36	4	4	2	99	?	5	3
	Caution/expiation (non-compliance) rate (inspections)	1%	0%	1%	5%	4%	?	6%	?	12%	1%	?	7%	10%	?	13%	9%
	Cost Recovery per tonne catch \$s	\$ 1,798	\$ 130	\$ 2,030	\$ 140	NOT APP	\$ 195	\$ 77	\$ 180	\$ 2,777	\$ 1,263	\$ 60	\$ 157	\$ 1,143	\$ 1,833	\$ 6	\$ 760
	Harm/stress TEP interactions	0	0	0	0	0	0	1	0	0	0	32	0	3	0	157	0
INDUSTRY STEWARDSHIP	Southern Ranger cost-recovery					SR		SR		SR				SR		SR	
	Compliance Cost Recovery per active participant	\$ 23,679	\$ 2,842	\$26,919	\$11,975	\$ 4,368	\$ 7,104	\$ 3,123	\$ 2,994	\$ 30,989	\$11,893	\$ 1,776	\$ 7,104	\$13,302	\$17,049	\$26,231	\$ 7,712
	User guide	●	●	●	●		●	●	●	●	●			●		?	
	Co-management			●		●	●	●	●					●			
MANAGEMENT ARRANGEMENTS	MSC							●		●	●		●			●	
	Codes of practice (industry)	●	●	●		●	●	●		●	●	●	●	●		●	
	ITQ (TAC, TACC)	●	●	●	●		●			●	●		●	●	●	●	●
	Effort units/controls						●	●	●	●	●	●	●	●			
	Gear restrictions/specs	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Other harvest restrictions	●	●	●	●	●	●	●	●	●	●				●	●	●
	Minimum size	●	●	●	●	●		●	●	●	●	●	●	●	●		●
	Seasonal closures			●	●	●	●	●	●		●	●	●	●	●		●
	Adhoc additional management closures		●			●	●	●	●			●		●			
	Daily limits					●	●	●	●	●	●		●	●	●		
	Spatial areas / zones	●	●	●	●	●		●	●	●	●	●		●	●	●	●
	Marine Parks	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	TEPs mitigation					●	●	●	●	●					●	●	NOT APP
	Landed state regulations	●		●		●								●			
DATA & REPORTING ARRANGEMENTS	Other regulations									●	●	●	●				
	Dual jurisdiction trips										●						
	Logbooks	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Reporting - event, daily, peroid	T	T	T	T	T	E	E	E	D	T	T	T	D		E	T
	TEPs interaction reporting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	NOT APP
UNLOADING ARRANGEMENTS	Observer coverage (yes/no)	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
	Observer coverage (%)	0%	0%	0%	1%	0%	8%	5%	5%	5%	2.5%	0%	0%	0%	?	20%	0%
	Ports of landing last 5 years (number)	N/A	N/A	30	C	N/A	2	2	1	10	7	4	4	32	C	1	6
	Designated ports of landing			●			●				●			●			
	Registered master required	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ELECTRONIC TOOLS	Registered fish processor (have to land to)	●	●	●	●	NA	●	●	●	●	●	●	●	●	●	●	●
	Pre Sailing Reporting (hail out)	●		●	●	●	●			●	●		●	●	●	●	●
	Pre Arrival Reporting (hail in)	●			●		●			●	●		●	●	●	●	●
	CDR prior to unload	●	●		●		●			●	●		●	●		●	
ELECTRONIC TOOLS	VMS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	NOT APP
	RFID or tagged bins										●						
	eLog/eCDR	●	●	●	●	●				●			●	●		●	
ELECTRONIC TOOLS	Camera monitoring	●	●	●	●	●	●	●	●	●	●			●	●	●	●

LEGEND	
?	Unknown
C	Confidential
D	Reporting by day
D	Depleted
D/S	Mixed status depending on stock
D↓	Depleting
E	Reporting by fishing event
●	Not present
●	Present to some extent
●	Present
N/A	Not available
NOT APP	Not aplicable
S	Sustainable
S+	Sustainable high confidence
T	Reporting by trip (by unloading)
TAC	TAC used in absence of catch data
TR	Transitional recovering

4.2 Description of PIRSA's Current Compliance Framework

4.2.1 Compliance Approach

PIRSA's Compliance Approach is articulated in PIRSA Policy FAP 005: Fisheries and Aquaculture Enforcement and Prosecution Policy. PIRSA's approach centres on education and awareness, deterrent, and enforcement functions that also form services for the purposes of a Fee-for-Service Cost Recovery Model. This Policy prioritises education and awareness as a dominant compliance tool. This option provides the highest likelihood of voluntary compliance within the community. Examination of PIRSA prosecution outcomes suggests that this Policy, indeed philosophy, is also reflected in the levels of sanction for non-compliance. Further, the PIRSA structure and staff competencies are aligned to this philosophy with a relatively small investigative capability reserved for the most serious offences.

This approach, as opposed to a litigious enforcement-oriented approach, reflects the maturity, stewardship and high levels of compliance (i.e. low risk) in most of the regulated wildcatch fisheries PIRSA administer. However, while prosecution decision-making reflects the Enforcement and Prosecution Policy, most services appear to be still delivered against the deterrence and enforcement component of PIRSA's compliance approach.

While industry appreciates the low severity of sanctions for low level technical or administrative non-compliance, it remains concerned that the level of deterrence and enforcement services/costs have remained constant in fisheries now consistently demonstrating high levels of compliance with few serious offences detected. This is evidenced by nil or close to nil prosecutions with minimal compliance sanctions the lower end of the scale, but with very high compliance contacts (Table 1). Industry therefore concludes that there is an absence of incentives within PIRSA to reduce compliance costs regardless of the demonstrated high levels of compliance in most fisheries.

PIRSA has espoused to the project team that their compliance emphasis is on voluntary compliance (via education and awareness). Therefore, this should be reflected in their resource allocation between the education and awareness, deterrent and enforcement functions.

While an education outcome as a sanction for non-compliance is captured in compliance reporting, reporting of education and awareness interactions are not and due to this, rates of non-compliance remain somewhat opaque. All compliance reports capture education and liaison interactions. However, there is no descriptor as to what a one-on-one interaction or an industry liaison activity is, meaning these reports lack the necessary fidelity to assess what time and cost is incurred in delivering these services.



4.3 Compliance Data Trends & Benchmarking

To assess the relative change in compliance levies over time 2020/21 compliance levies were used as a base (100%) and change of levies over time plotted for each fishery. Fisheries not individually listed are under “other”, as they had the same trend, to ensure visibility on the graph.

Excluding Prawn West Coast which has low compliance fees, levies have stayed relatively constant over the last six-years in most fisheries, except for *Sardines*, *Abalone – Southern Zone*, and to a lesser extent *Abalone – Central Zone* and *Abalone – Western Zone* (Figure 2).

The *Sardine Fishery* saw a jump in levels in 2023/24 and has remained elevated to 2025/26. *West Coast Prawn* saw a drop in 2023/24 a return to “baseline” in 2024/25 and then a drop again in 2025/26, however these changes occurred applied to a small cost. *Southern Zone Abalone* has seen declines in levies in 2023/24 and 2025/26, where Central and Western Zone Abalone saw decreases in 2021/22 and stayed relatively consistent since.

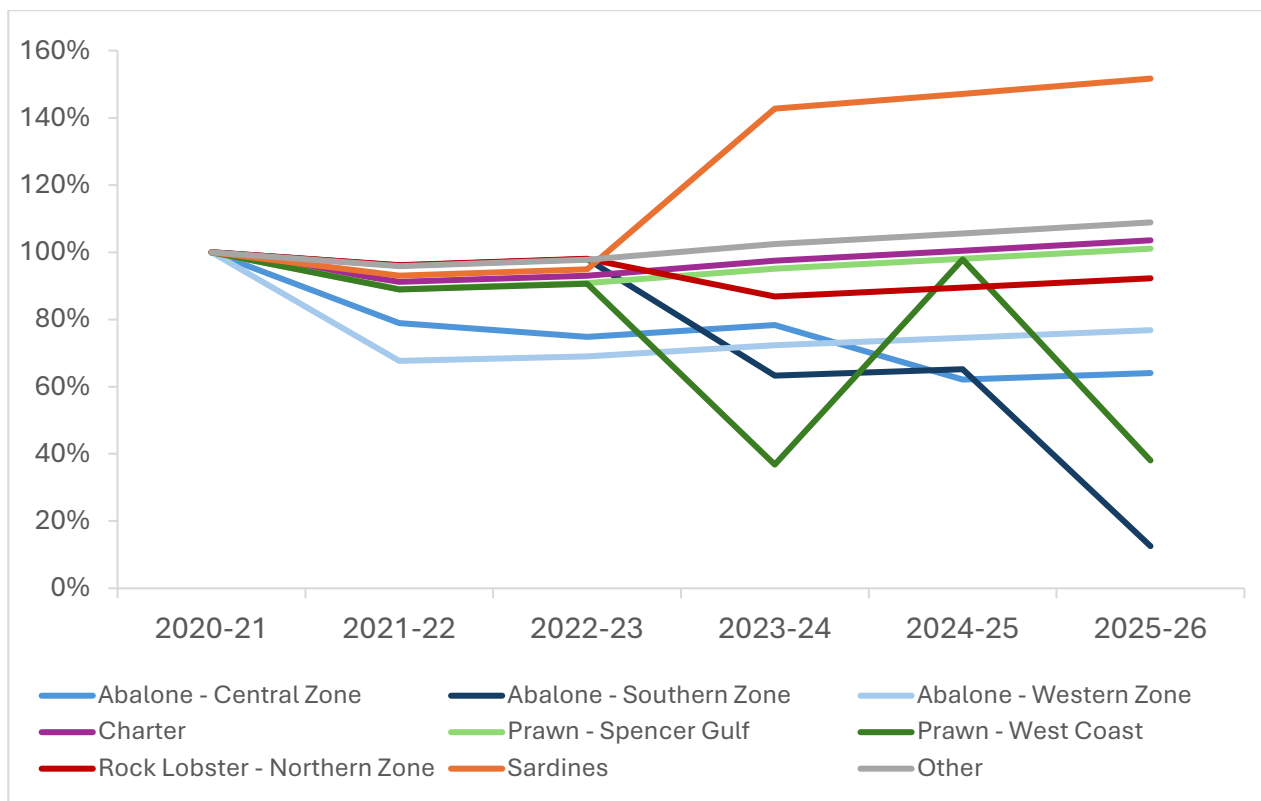


Figure 2 Trend in Compliance Levy by Fishery Last 6 Years, note any fishery not listed is combined into “other” as the trend was the same.

Southern Zone Rock Lobster, *Marine Scalefish Northern Zone Rock Lobster* and *Western Zone Abalone* contribute most total compliance costs, with percentages remaining relatively consistent over the past 6 years (Figure 3).

Trend in Compliance Levies Previous 6 Years

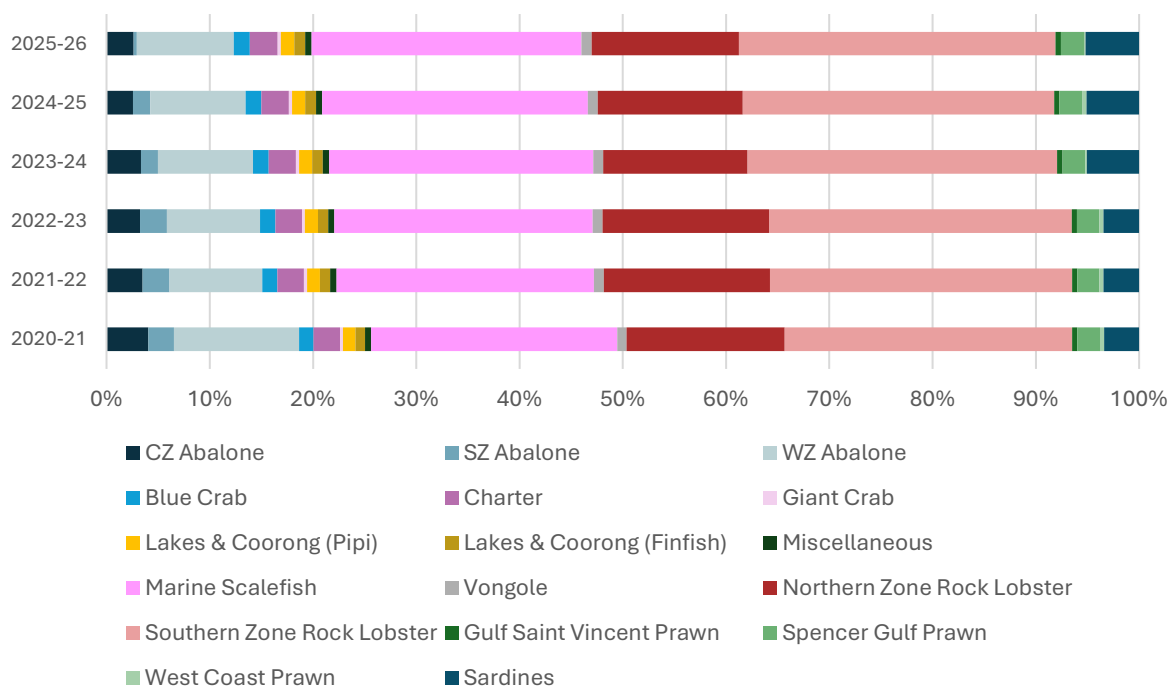


Figure 3 Percentage of total compliance costs per fishery, stacked bar chart

However, there have been larger changes over a longer period (Figure 4). Abalone (combined) have reduced, there has been a significant increase in *Southern Zone Rock Lobster* and an almost threefold increase in *Northern Zone Rock Lobster*.

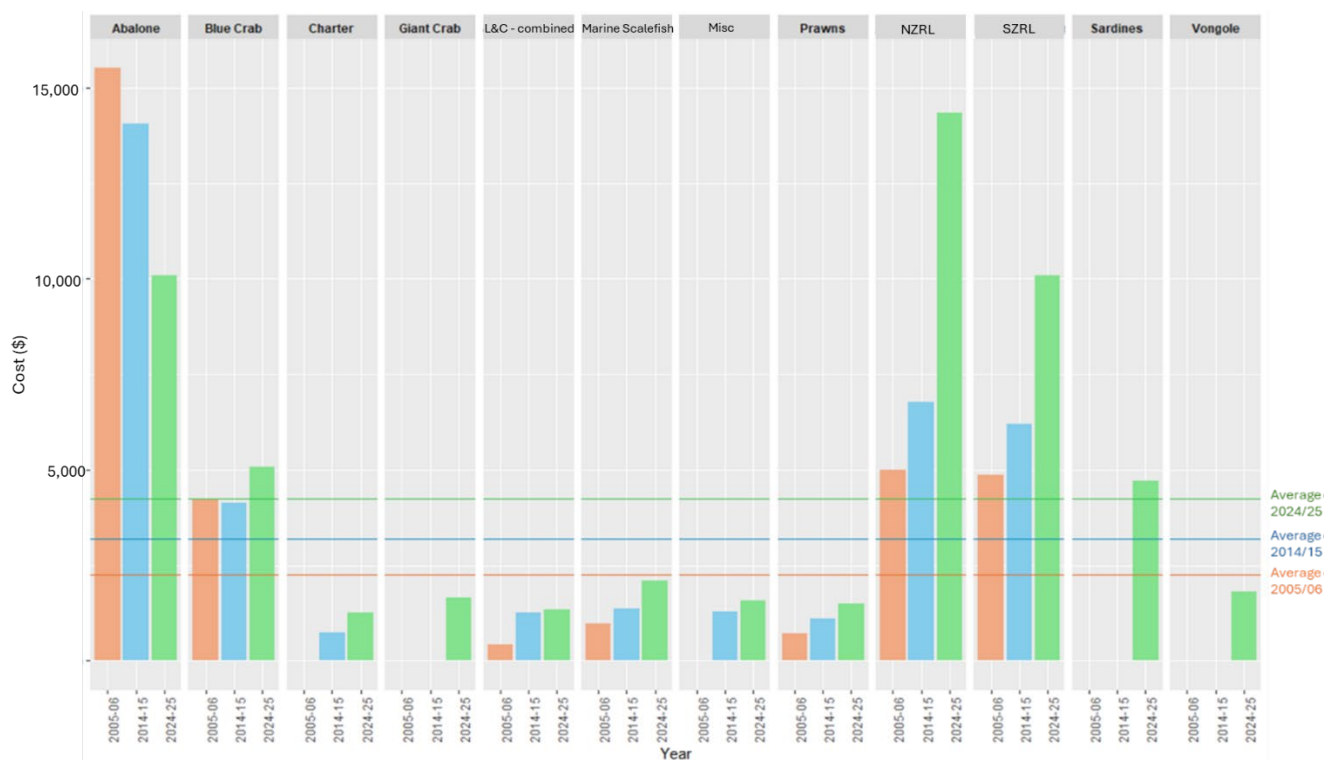


Figure 4 Compliance Cost by Vessel by Epoch 2005/06 to 2024/25 for fisheries, grouped by broad categories due to historical data groupings.

Due to survey responses relating to the perception that larger or more profitable fisheries contribute more towards compliance levies, the correlations between average compliance cost per active licence and average revenue per active licence; average catch per active licence; and relative risk scores, were investigated (Figure 5, Figure 6, Figure 7). There were no apparent relationships between any investigated variables and average compliance cost per active licence, indicating either that compliance costs are not related (in a linear fashion) or weakly correlated to revenue, catch or relative risk of each fishery.

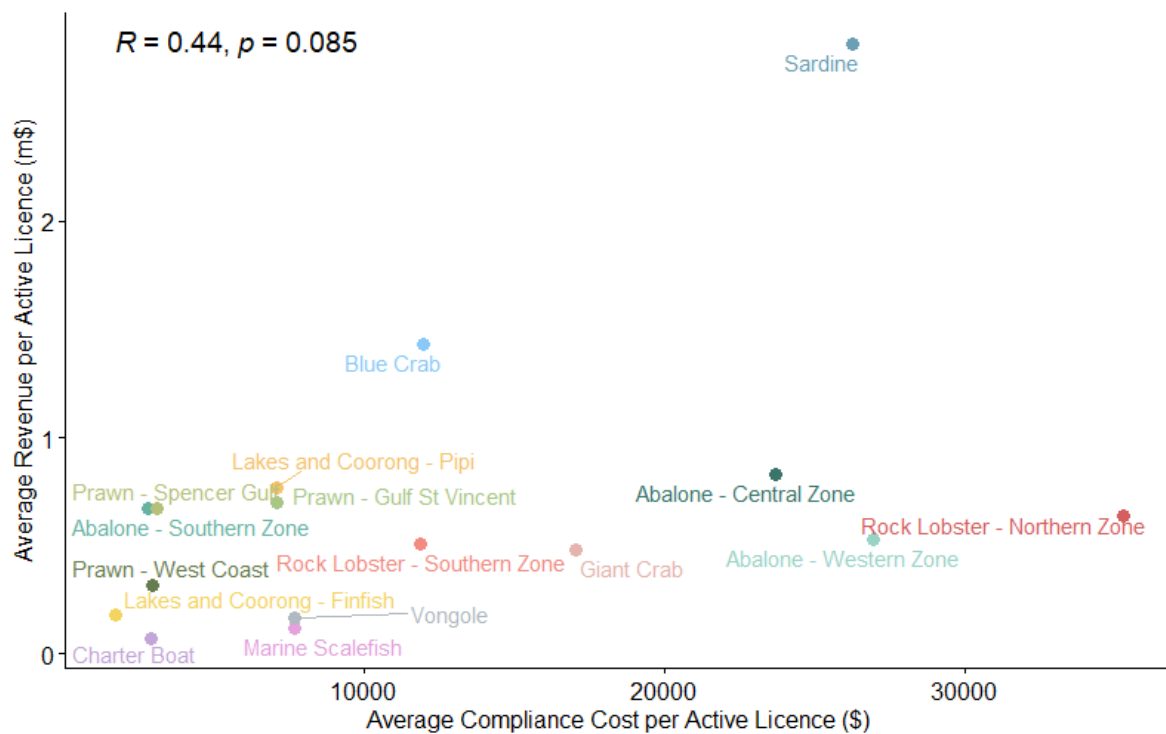


Figure 5 Catch Revenue vs Compliance Levies South Australian Fisheries

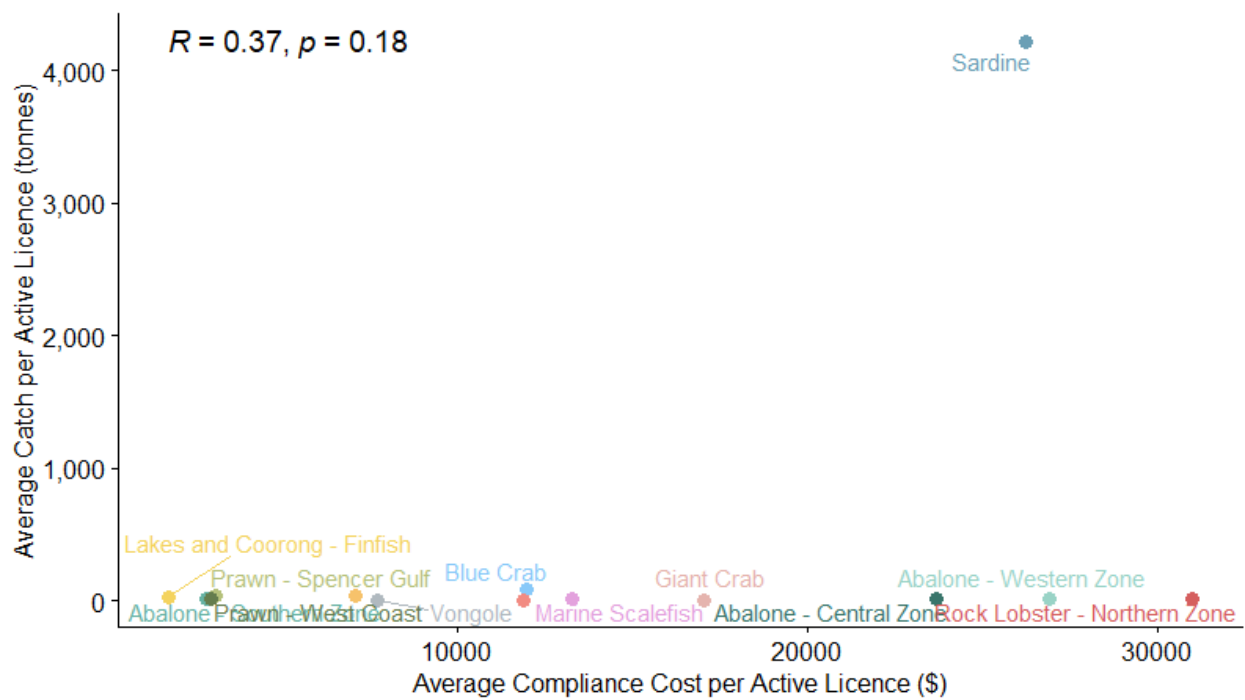


Figure 6 Catch Volume vs Compliance Levies South Australian Fisheries

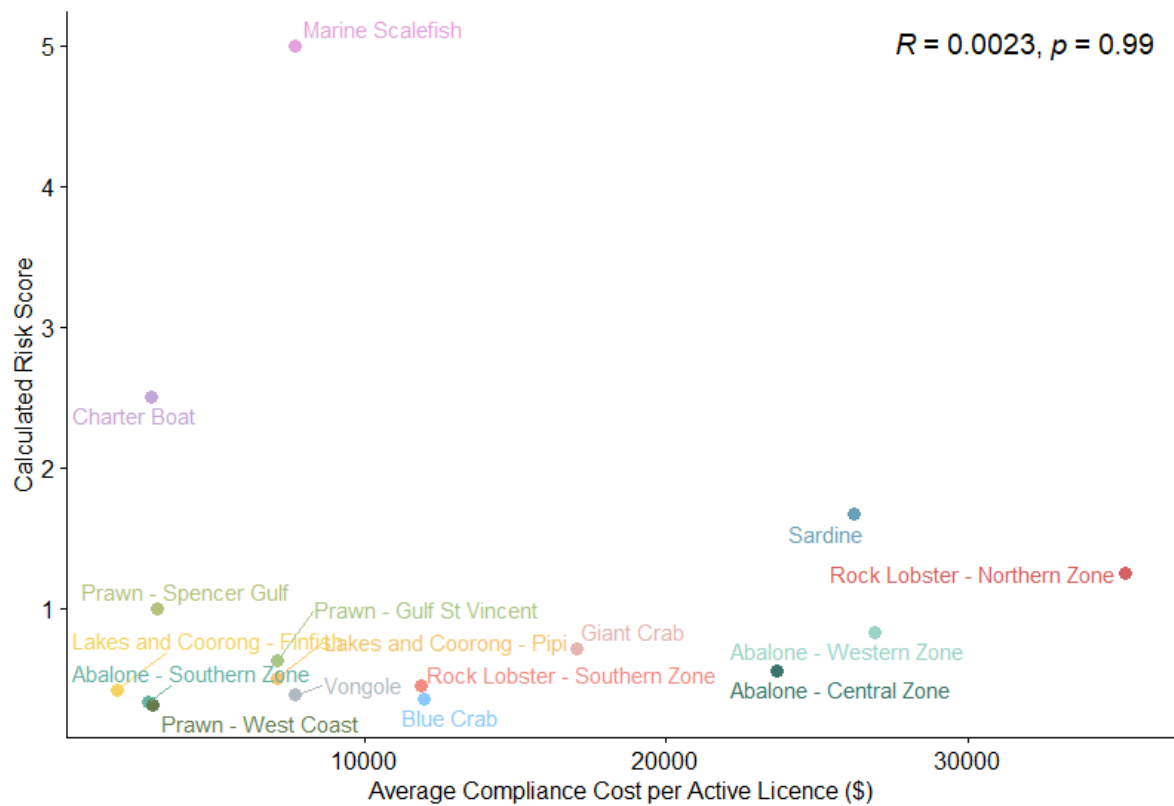


Figure 7 Risk Indicator Score vs Compliance Levies South Australian Fisheries

A comparison of compliance contacts per active licence was made with New Zealand (NZ), Western Australia (WA), and Commonwealth-managed (AFMA) fisheries was undertaken to benchmark against other jurisdictions. Overall, PIRSA compliance numbers are higher than other jurisdictions by a significant amount, with the average number of contacts in SA higher than any other benchmarked fishery (Figure 8). If PIRSA were to halve the contacts across fisheries, the average would be just above the average of the other benchmarked fisheries.

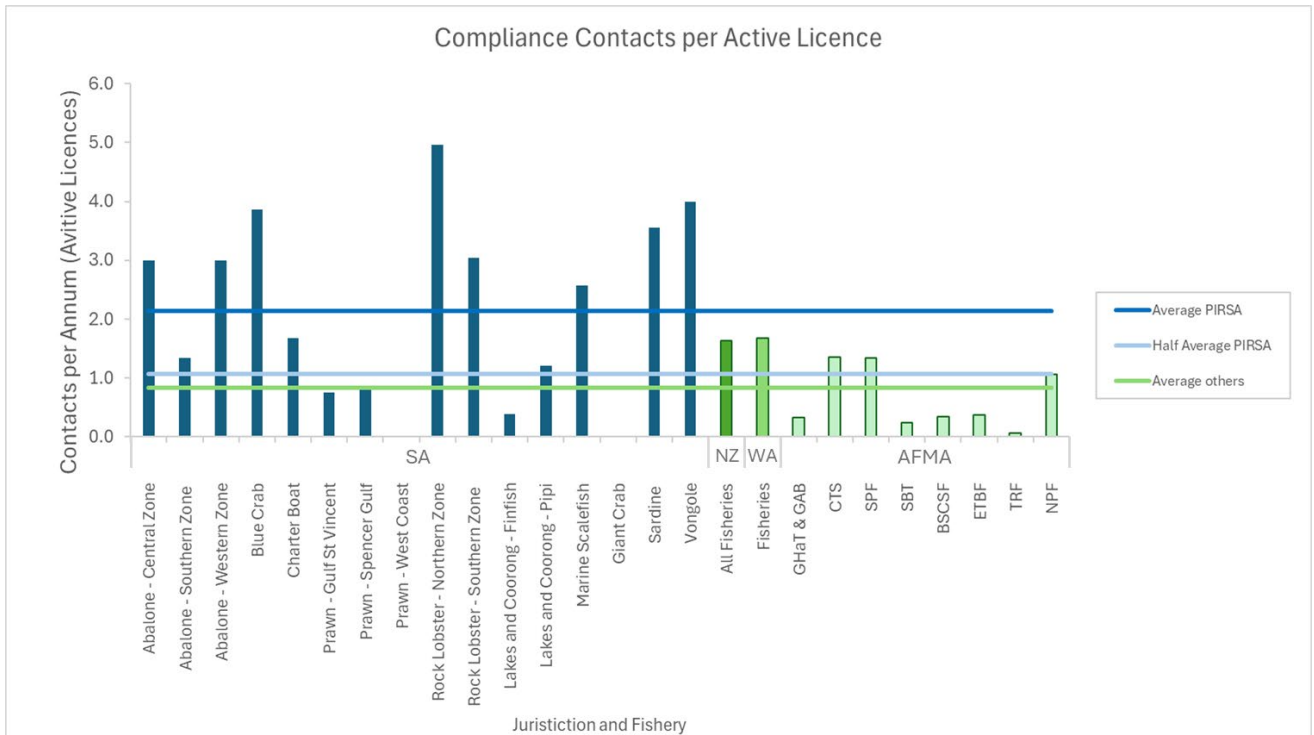


Figure 8 Compliance Contacts per Active Licence (most recent year data available) for all South Australian and some AFMA-managed fisheries and across all NZ Rock Lobster fisheries.

RECOMMENDATION 1

PIRSA should reduce their compliance activities targeting the commercial sector significantly. The reduction proposed is more than one third but less than the 61% that would be required to reach the peer benchmark. This will reduce FTE compliance days charged to commercial fisheries from 3,626 to somewhere between 1,414 and 2,393. This reduction should lead to an allied reduction in compliance assets, their operational costs and will change the way in which overhead costs are applied. PIRSA will and should maintain a higher compliance level than the Australasian benchmark which, if well spent, will continue to place the fishery in good standing.



Compliance FTE days varies across fisheries (Figure 9). *Rock Lobster – Northern Zone* has the highest compliance effort, followed by *Abalone – Western Zone*, both exceeding 18 FTE days. Moderate levels of compliance activity are seen in *Abalone – Central Zone*, *Rock Lobster – Southern Zone*, *Giant Crab*, and the *Sardine Fishery*, each ranging roughly between 10 and 15 FTE days. Lower compliance effort is evident in *Charter Boat*, *Prawn – Spencer Gulf*, and *Lakes and Coorong: Finfish*, all with fewer than 3 FTE days.

It is important to note that essentially it is compliance days / active vessels that equates to the per vessel compliance fee, to be used in the risk-catch-cost analysis in 4.4, below.

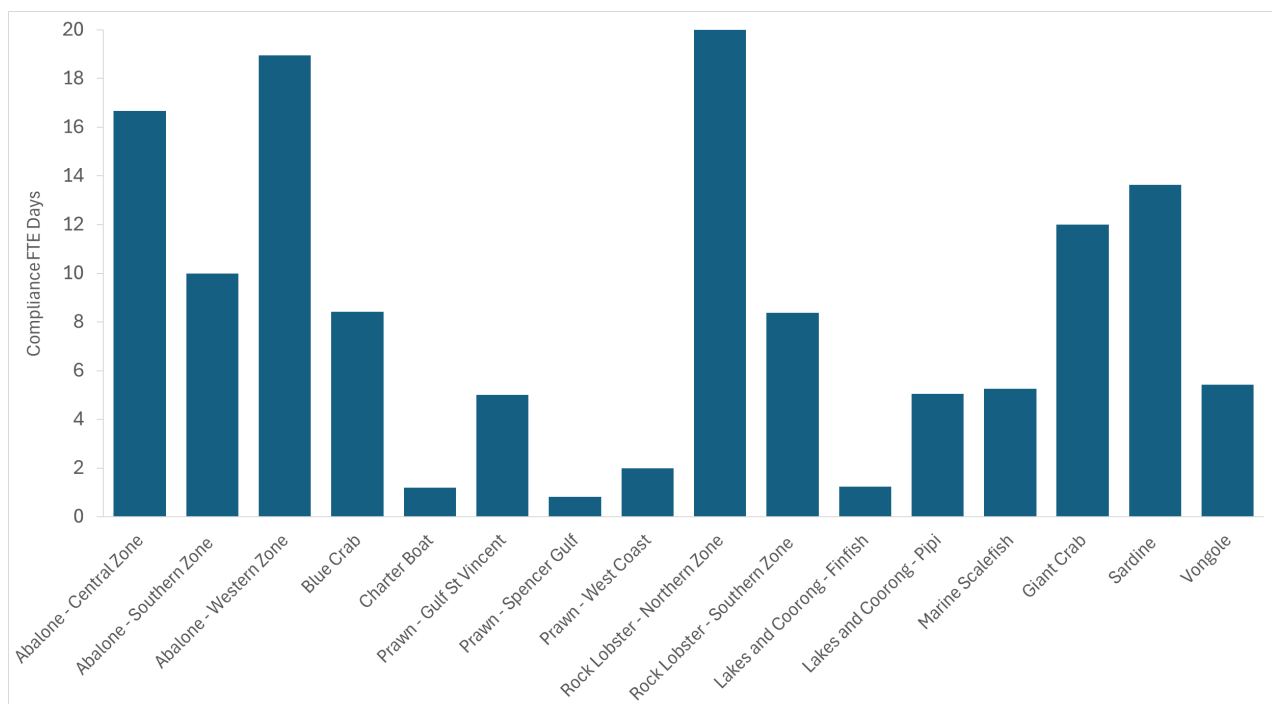


Figure 9 CRIS budgeted compliance days planned by fishery 2024/25

4.4 Assessment of Risk-Catch-Cost for Compliance (ARCCC)

4.4.1 What is the Traditional Risk-Cost-Catch framework?

[Sainsbury's Risk–Cost–Catch framework](#) is a tool available for fisheries managers to use to guide strategic decisions about how to balance sustainability, economic returns, and management effort. It helps managers allocate resources effectively while keeping fishing practices within safe ecological limits. Importantly, it is a diagnostic framework rather than a prescriptive one—designed to inform decisions rather than to determine or dictate them.

1. Risk

Risk refers to the likelihood and potential severity of unsustainable fishing impacts. This includes effects on:

- Target species (overfishing or stock depletion)
- Bycatch species
- Habitats (e.g., damage to seafloor ecosystems)
- Ecosystem health more broadly

2. Catch

Catch represents the degree of exploitation of a fishery (how much of the stock is being harvested) and the confidence in this estimate. It does not simply measure total volume of fish caught.

A fishery with a large catch but robust data showing sustainable stock levels can be considered lower risk than a fishery with a smaller catch, with poor data or uncertain stock status.

3. Cost

Cost covers the resources required to manage the fishery and ensure compliance with regulations. This includes compliance monitoring, enforcement, scientific stock assessments, and administrative processes. In practice, these costs are often reflected in the compliance levies charged to the industry.

The *Risk-Cost-Catch* framework aims to align management effort with risk:

- Low-risk, low-exploitation fisheries should have simpler rules and lower compliance costs.
- High-risk or high-uncertainty fisheries should receive greater oversight, more research investment, and higher compliance levies to mitigate risk.

In other words, higher levels of catch exploitation must be balanced by higher investment in management to keep risk at acceptable levels. Fisheries can also actively invest in better data, technology, and practices to reduce risk and ultimately lower their long-term management costs.

4.4.2 Risk-Cost-Catch Frontier Concept

[Little et al](#) and others have developed the idea of a management frontier that defines the trade-off between risk, catch, and cost. Certain combinations of catch and management cost are unacceptable because they would result in unacceptably high ecological risk. Acceptable management strategies lie within a continuum where higher catch levels must be balanced by higher management investment (e.g., more research, tighter regulation, stronger compliance systems) to keep fishery risk at or below acceptable thresholds.

This concept creates a “decision space” where fisheries managers can see which strategies are sustainable and which cross into unacceptable risk territory.



Fisheries therefore have choices:

1. Investing in better science and monitoring that reduces uncertainty, lowering the risk score and potentially allowing higher catch levels.
2. Spending on technology, training, and mitigation measures (e.g., improved gear to reduce bycatch, protecting threatened species) that can shift a fishery toward a lower-risk profile.
3. Choosing to not to invest and operating with poor data that increases risk, which in turn should trigger higher compliance costs and potentially stricter controls on catch.

4.4.3 *Applied Risk-Cost-Catch Examples from Australia*

Whilst not expressly stated in its Act, AFMA is the first management jurisdiction in Australia that has begun to embrace *Risk-Cost-Catch*, with the term receiving mentions in various fishery harvest strategies.

An example is the Commonwealth-managed *Small Pelagic Fishery*. Stock surveys are completed, then as these data (and associated assessments) become older the exploitation rate drops due to the increasing uncertainty, settling at 25% of the maximum. In this way total science costs are reduced, in exchange for a lower risk fishery in which exploitation rates are very conservative. If industry wishes to catch more, it must invest in science to increase certainty and reduce biological risk before potentially increasing the TAC. The *Small Pelagic Fishery* has generally high investment (levies) in science around its eastern stocks, with subsequently high TACs because it catches these eastern stocks. However, with little processing in the west yet developed, its western stocks have low TACs and lower levies.

These applied examples show that a decision to reduce uncertainty in the stock, reduces risk and reduces management cost. And conversely that higher levels of stock exploitation increase management cost.

4.4.4 *Weaknesses*

A potential weakness of *Risk-Cost-Catch* is that it may not consider social licence. Arguably, this could form a fourth axis where strong social licence issues (i.e. community concern) are addressed. This report does not attempt to introduce this fourth axis but did add some aspects of social licence that were supported by management arrangements or law, to the scoring of compliance risk indicators.

4.4.5 What might Risk-Cost-Catch Analysis tell us about the application of compliance?

Requiring a way to contrast the application of compliance across South Australian fisheries the *Compliance Benchmarking Team* adapted the broader RCC model only to compliance. Under this adaptation risk becomes only the risk of fishers complying with management arrangements, catch becomes the level of stock exploitation and the uncertainty surrounding it and cost becomes the compliance levies paid per active licence.

This adaptation named *ARCCC* analysis is shown on a three-axis radar plot (Figure 10) shows estimates for compliance risk indicators (*Northern* axis), target stock(s) exploitation/certainty (south-eastern) and compliance cost per active fisher (south-western).

Figure 10 shows three theoretical examples of fisheries within the *ARCCC* model:

- The red triangle is an example of a fishery with high and uncertain stock exploitation levels, with indicators suggesting potential non-compliance is occurring, and high compliance costs.
- The green triangle a lower risk fishery with conservative target stock exploitation rates (and high assessment confidence), fewer indicators suggesting poor compliance risk and therefore lower compliance cost.
- The hatched triangle is a fishery with a moderate level of risk, exploitation and resultant compliance fees.

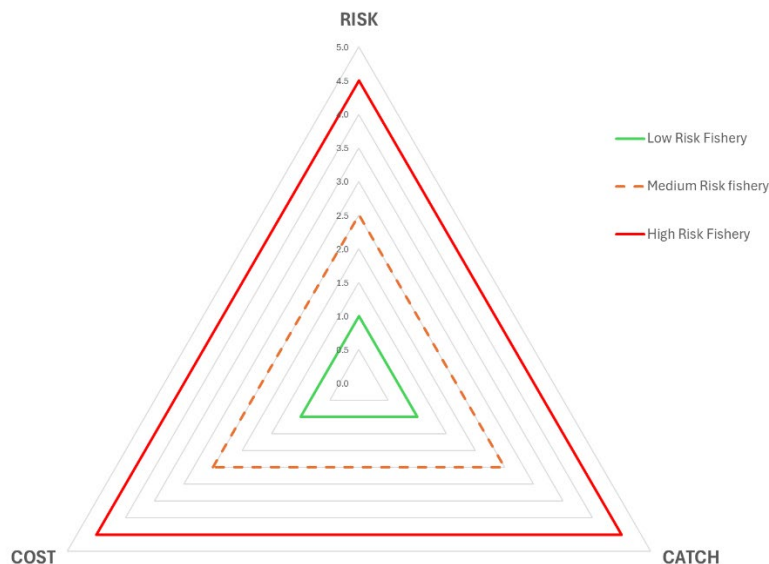


Figure 10 ARCCC model theory

All three examples are valid strategies and adhere to *Risk-Cost-Catch* principles. Adherence does not suggest that the triangles be equilateral. However, it would be reasonable for a fishery manager to apply the same risk appetite to all fisheries so triangles can be of any size but should be broadly the same shape. The model's true value is therefore in determining the presence of *outlier* fisheries where *Risk-Cost-Catch* is not

harmonised which leads to further investigation. It is a descriptive or investigatory tool, not determinative or directive tool.

The comparison of triangular shapes is difficult, so different visualisations of ARCCC were undertaken:

- Figure 12 is a horizontal stacked bar chart where each fishery's total score was expressed as a % of their total and contrasted against the average across all fisheries.
- Figure 13 is potentially clearer. This second presentation sums together the scores for compliance risk indicators and catch exploitation/uncertainty and plots this in an XY plot against per licence compliance cost.

4.4.6 *How ARCCC aligns with ESD and cost-effectiveness*

Noting the Act's emphasis on ESD, the model aligns with ESD in two main ways. First, the compliance risk indicator score incorporates several TEP measures and WTO conditions. Second, the catch exploitation/uncertainty score assesses the risk of over-exploitation, essentially the likelihood that ESD might not be occurring.

The model also strongly supports the second objective of the Act regarding cost-efficient fisheries management. At a high level, it shows whether resources are being applied consistently across all South Australian fisheries and whether they are being directed towards those fisheries with the highest ESD risk.

4.4.7 *Scoring methodology for ARCCC axes in this report*

The axes were populated in the following ways:

1. *Risk: Compliance Risk Indicator Scores ("Risk")*

PIRSA has provided confidential risk assessment data but given its confidentiality this could not be used to populate the risk arm of the plot. Instead, the assessment of background risk indicators for each fishery was applied (results in Table 2). This report stresses that this high-level analysis of risk indicators around each fishery does not consider intelligence gathered and known to PIRSA and does not suggest that non-compliance is occurring in some fisheries to a greater extent than in others. However, the report team did explore compliance risks within each fishery and gathered information during fishery representative interviews and considered the historical compliance performance of each fishery.

The analysis considers 12 traits likely to increase, and seven traits likely to mitigate, compliance risks in a fishery (19 total). Where possible (in about half the traits) trait scores were calculated with the highest scorer receiving +5.0 for traits that add risk and -5 for risk mitigation with remaining fisheries a calculated percentage of this. Where objective scoring was not possible a subjective score was used.

The analysis considered higher risk fisheries to have the following traits:



- Fisheries catching higher priced fish
- More fully caught quotas
- Higher reported TEP interactions¹
- TEP interactions with species of conservation concern
- Fisheries characterised by companies with a higher degree of vertical integration (catching, processing and selling) within their structure
- More ports of landing (not locations within a single port)
- Greater length of shoreline (generally for larger fisheries)
- Complex management arrangements involving multiple gear types, input controls and many target stocks
- More active fishers
- Poor compliance history (non-compliance events relative to inspections/interactions [i.e. rates])
- The presence in a fishery's habitat of potential TEPs that might reasonably be expected to negatively interact with the gear used (even if not reported)
- WTO conditions justifying compliance focus

The analysis considered that the following mitigations reduce risk:

- Strong industry stewardship
- Current or previous 3rd part sustainability certification (MSC or similar)
- Formal TEP mitigation processes with science that supports their use
- Higher profitability
- Higher value access (e.g. licence) and harvest rights
- Digital technologies that reduce risk
- Independent observer coverage

It is likely that individual fisheries will disagree with their relative compliance risk indicator scoring given that all interviewees described their fishery as being low risk and highly compliant. Even fisheries that accepted that they were the highest risk, did not accept the 5.0 risk score. However, relative scoring requires that the highest risk is scored at 5.0. The *Compliance Review Team* scored fisheries based on their knowledge and experience. Scores are set down in Table 2.

¹ Only harms or stress interactions considered, data excludes: 'physical contact' interactions, depredation events and syngnathid catches.

Table 2 Fishery Risk Indicator Scoring (highlighted scores are highest relative)

	Abalone - Central Zone	Abalone - Southern Zone	Abalone - Western Zone	Blue Crab	Charter Boat	Prawn - Gulf St Vincent	Prawn - Spencer Gulf	Prawn - West Coast	Rock Lobster - Northern Zone	Rock Lobster - Southern Zone	Lakes and Coorong - Finfish	Lakes and Coorong - Pigi	Marine Scalefish	Giant Crab	Sardine	Vongole
Risks:																
High product value	5.0	2.4	3.1	1.3	0.8	1.5	1.3	1.5	4.0	4.3	0.5	1.3	0.8	4.1	0.1	1.3
Active Fishers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.1	0.0	5.0	0.0
TEP interactions of conservation concern	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	2.0	0
Typical company structure (degree of integration)	1	1	4	1	0	4	4	4	0	0	4	1	2	1	5	1
Number ports	?	?	?	?	?	0.6	0.6	0.5	1.7	1.3	0.8	0.8	5.0	?	0.5	1.0
Complexity of arrangements	2	2	2	1	2	2	1	1	2	2	4	4	5	2	3	1
Active Fishers	0.4	0.4	0.7	0.5	1.7	0.4	1.3	0.3	0.8	2.5	1.0	0.6	5.0	0.3	0.6	0.5
Fishery coastline	0.7	0.6	1.3	0.8	5.0	0.3	0.5	0.4	1.7	0.6	0.4	0.4	5.0	1.0	0.5	0.3
WTO conditions requiring compliance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	5.0	0.0
Quota constrained	0.4	1.0	0.8	0.5	0.0	0.7	5.0	0.0	0.6	1.3	0.0	5.0	0.5	0.4	0.6	5.0
Compliance performance	0.6	0.4	0.5	0.7	0.6	?	0.8	?	2.5	0.5	?	1.0	1.7	?	5.0	1.3
"Potential" TEP presence of conservation concern	0	0	0	0	0	3	3	3	3	2	1	0	1	0	1	0
Mitigations																
Demonstrable Industry Stewardship	-3.0	-3.0	-2.5	-2.0	-1.0	-4.0	-5.0	-4.0	-3.0	-3.0	-2.0	-2.0	-1.0	0.0	-2.5	-2.5
Credible 3rd party certification/review	0.0	0.0	0.0	0.0	0.0	0.0	-5.0	0	-2.5	-2.5	0.0	-5.0	0.0	0.0	-2.5	0.0
TEP Mitigations (inverse)	0	0	0	0	0	-1	0	0	-1	0	0	0	0	0	-3	0
Profitability BDO ROI	1.5	1.5	1.5	1.2	5.0	4.2	3.5	?	3.5	3.1	0.4	4.6	2.7	?	0.8	?
Value Rights	0.6	0.6	0.6	0.4	5.0	1.7	0.7	?	0.8	0.6	1.3	1.3	2.5	?	0.4	?
Digital technologies	3	2	3	2	5	2	2	2	2	1	2	2	2	2	2	5
Observer coverage	5.0	5.0	5.0	0.6	5.0	0.4	0.5	0.5	0.5	0.5	5.0	5.0	5.0	?	0.3	5.0
RAW SCORE	17.2	13.9	20.0	8.0	29.1	15.8	15.2	9.2	16.5	14.0	20.3	20.0	40.8	10.8	23.7	18.9
RELATIVE RISK SCORE	2.1	1.7	2.5	1.0	3.6	1.9	1.9	1.1	2.0	1.7	2.5	2.4	5.0	1.3	2.9	2.3

2. Stock exploitation/uncertainty scoring (“Catch”)

The fisheries considered have different harvest strategies and assessment methods, so it was not possible to directly contrast exploitation rates. Initially PIRSA stock status (SAFS) was used but doubt was raised on this method, including by PIRSA. The scoring of the exploitation extent/uncertainty axis was therefore delegated to the *Science Benchmarking Project Stream*.

The Science Team has described that their methods were to score fisheries from 1 to 5 where 1 is low exploitation/uncertainty and 5 is high exploitation/uncertainty. It is comprised of four components:

1. monitoring risk,
2. stock assessment risk,
3. harvest strategy risk and,
4. stock status risk.

Monitoring risk arises from uncertainty about catch levels (e.g. if recreational catches are significant but measured infrequently or imprecisely), about catch composition, and about indicators of abundance (e.g. fishery independent surveys tend to lower risk).

Stock assessment risk is related to the form of the assessment (e.g. weight of evidence, trends in CPUE, use of quantitative stock assessment models) but also to the complexity of the fishery (e.g. multispecies, multi-gear, multisector, or high spatial complexity such as abalone).

Harvest strategy risk is related to the robustness of the primary indicators, the selection of reference levels, and the form of the harvest control rules or decision tables. How well the harvest strategy has performed in the past is also a consideration.

Finally, stock status risk is related to the level of depletion of key stocks.

The overall exploitation/uncertainty score is the average of these four component scores. Stock exploitation/uncertainty scores are shown in Table 1.

3. Compliance cost (“Cost”)

Compliance cost can be measured in various ways including total, per tonne, per licenced operator, per unload (CDR) or per active operator. Given the compliance management unit of work is active operators, the cost per active licence metric was selected. Some additional analysis was completed using unloads, but these were not available for all fisheries. Compliance costs and relative scores used here are shown in Table 1.

The populated ARCCC analysis is presented in Figure 10. The model struggled to produce sensible results for the *Charter Fishery* and although this is managed as a commercial fishery it has very little in common with the other 15 commercial fisheries. No conclusions should be drawn about the *Charter Fishery* using this analysis. The *Charter Fishery* is a commercial fishery where revenue is not derived directly from catches, where “crew” pay the Skipper, where the crew and Skipper are strangers, commercial catch controls are recreational bag and size limits, and there are no ‘buyers’ of catch.

Henceforth, the detailed calculation and definition of Compliance Risk Indicators, Stock Exploitation and Uncertainty, and Compliance cost per active licence, are referred to as risk-catch-cost both in the text and in Figures.

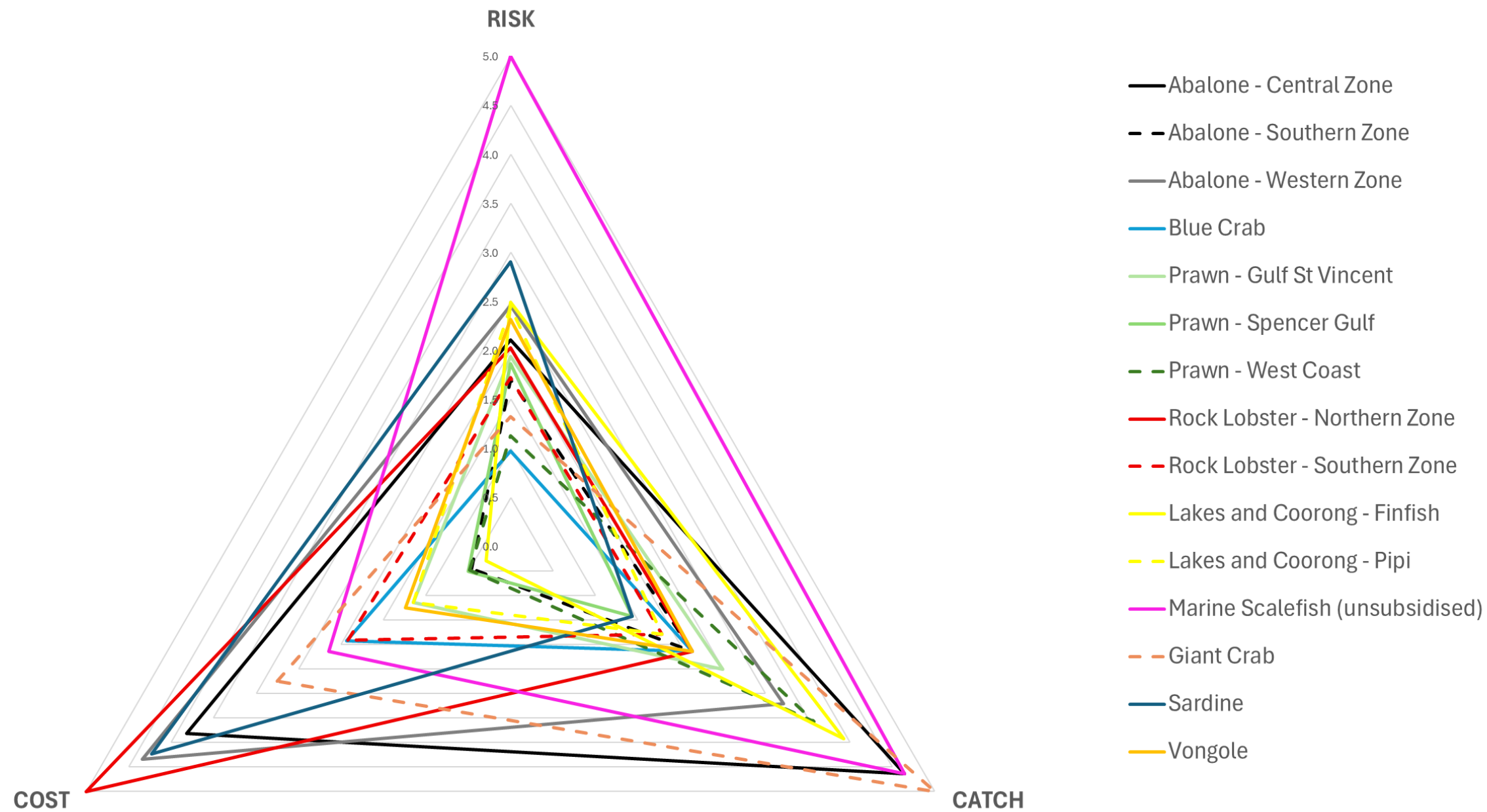


Figure 11 Relative calculated Risk-Cost-Catch of South Australian fisheries

Balance of Risk-Cost-Catch in South Australian Fisheries

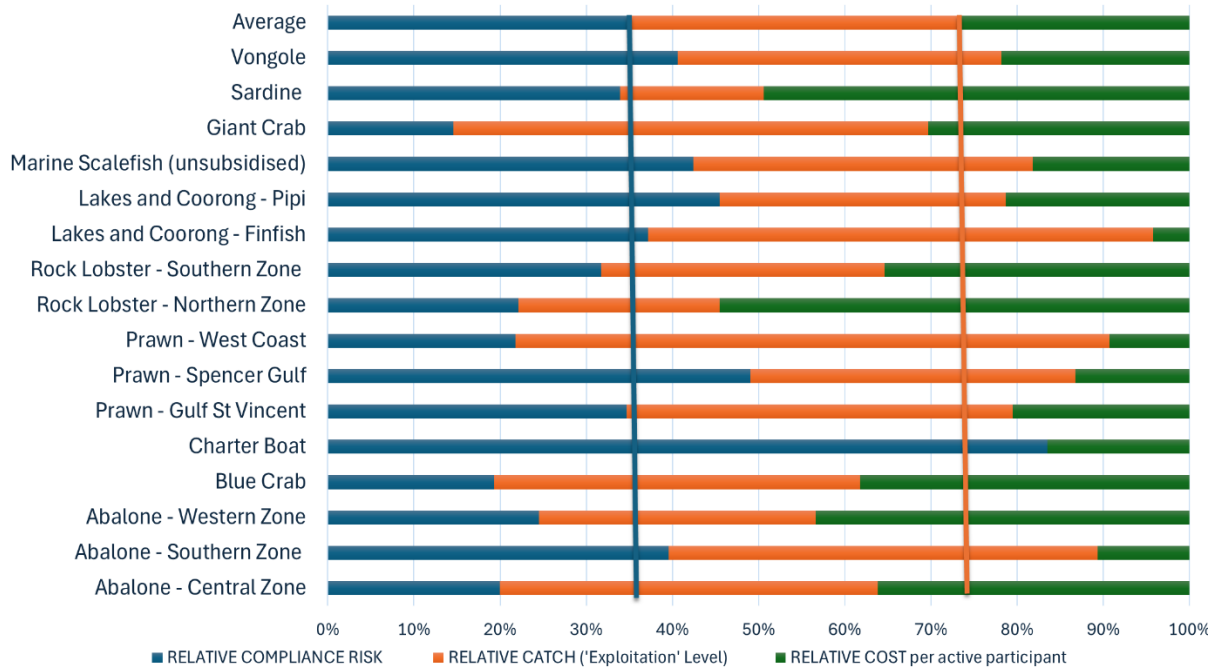


Figure 12 Fishery performance for Risk-Cost-Catch vs average stacked bar chart

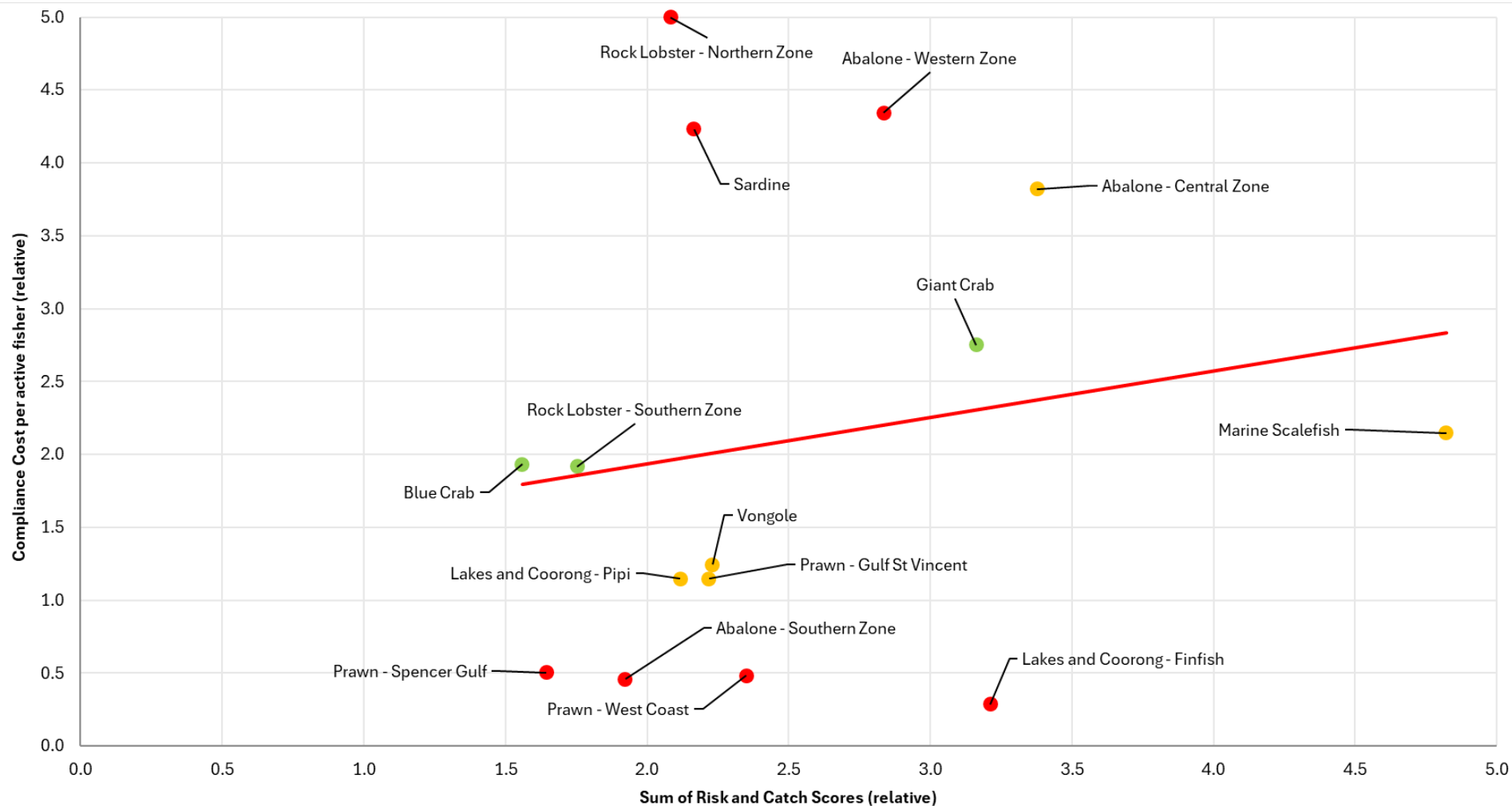


Figure 13 Scatter plot of the compliance cost per active fisher and the combined average risk score and catch exploitation scores per fishery. Red-amber-green colouring of data points is approximate; green indicating the fishery shows the expected correlation between variables, amber some correlation and red disagrees (i.e reds are outliers). Note that Marine Scalefish compliance cost data is the unsubsidised amount.

5 APPLICATION OF *RISK-COST-CATCH*: ARCCC RESULTS

5.1 Expected application of *Risk-Cost-Catch* ('Conformists')

Approximately eight South Australian fisheries fit the *Risk-Cost-Catch* expectation. This is indicated by imposed green and amber markers in Figure 13 and shown for comparison in the plot below (Figure 14). Given that the model does not appear useful for the *Charter Fishery* this means that almost two thirds of South Australian fisheries broadly adhere to the contention that compliance costs should be highest in fisheries with high catch exploitation/ uncertainty and high compliance risk indicators.

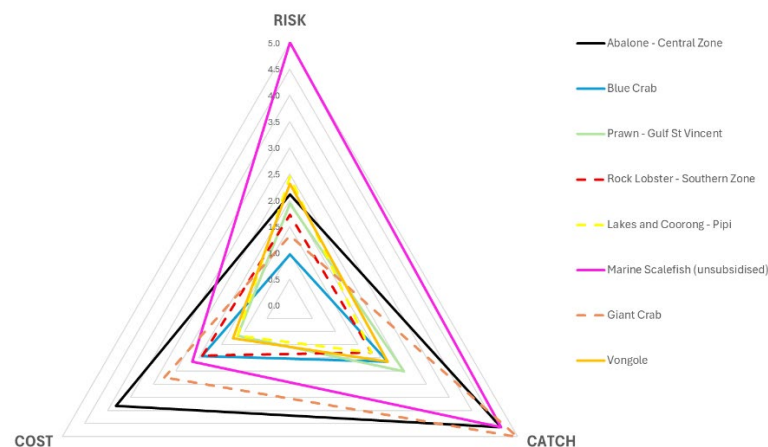


Figure 14 South Australian Risk-Cost-Catch conformers within the ARCCC radar plot

5.2 'Happy' Outlier Beneficiaries of *Risk-Cost-Catch*

Outlier fisheries are indicated by red markers in Figure 13. 'Happy' outlier beneficiaries are those which sit low on the Y-axis and right on the X-axis. The compliance cost for each of these fisheries is lower than expected given their risk and catch exploitation. This can be seen in the ARCC radar (Figure 15) where each triangle extends out towards compliance risk score and catch exploitation score.

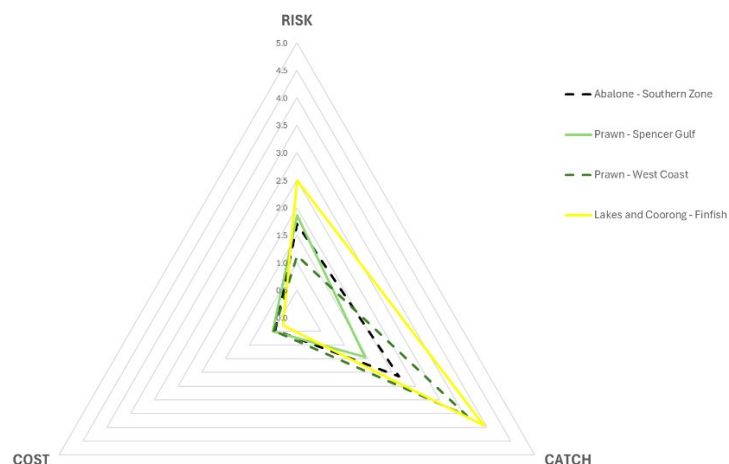


Figure 15 "Happy Outlier" South Australian fisheries

5.3 'Unhappy' Risk-Cost-Catch Outliers

Setting the *Charter Fishery* aside, this leaves three fisheries as *Risk-Cost-Catch* “Unhappy Outliers”. These fisheries have high compliance fees with relatively low compliance risk indicators and catch exploitation/uncertainty. This is indicated by the imposed red data points in Figure 13 reflecting their position to the left of the combined compliance cost and catch exploitation/uncertainty indicators (X-axis) and their high position on the compliance cost axis (Y). These fisheries are the *Rock Lobster Northern Zone*, *Sardine* and *Western Zone Abalone* fisheries. The outlier status of these three fisheries is also shown on the ARCCC radar below, where the outlier status appears to be driven by high compliance costs (Figure 16).

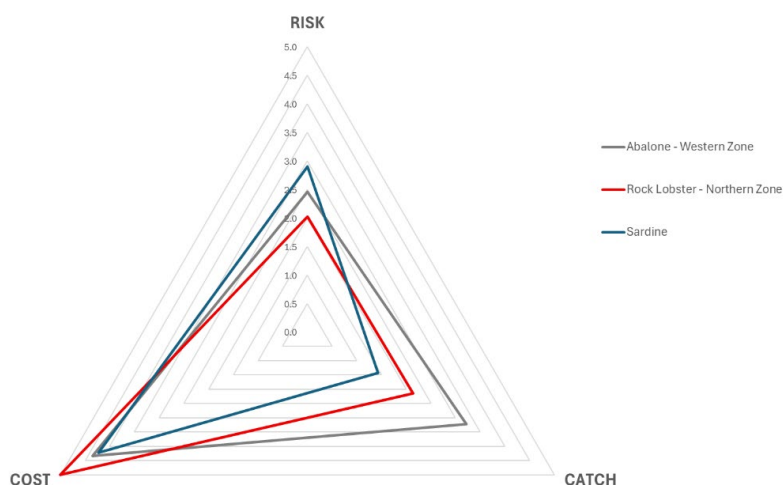


Figure 16 Relative calculated Risk-Cost-Catch of South Australian Outlier Fisheries

5.4 ARCCC Analysis Summary

Table 3 Categorisation of ARCCC analysis for South Australian fisheries (excluding Charter) see also Figure 13. Listed in each category in order of sum of risk and catch scores.

Conformists (green & amber)	Happy Outliers (red)	Unhappy Outliers (red)
Blue Crab	Prawn Spencer Gulf	Northern Zone Lobster
Southern Rock Lobster	Southern Zone Abalone	Sardine
Lakes Coorong Pipi	Prawn West Coast	Western Zone Abalone
Prawn Gulf St Vincent	Lakes Coorong Finfish	
Vongole		
Giant Crab		
Central Zone Abalone		
Marine Scalefish ²		

² Cost data plotted is the gross (before subsidy) amount.

6 DISCUSSION OF RISK-COST-CATCH OUTLIERS

The insight provided by ARCCC, combined with indications from surveys and interviews, have allowed detailed discussions with PIRSA and interpretation of data to try to understand apparent disconformity to the expected risk-cost-catch framework. These insights and other information are analysed and discussed in the following sections by fishery or fishery groups.

6.1 Northern Zone Rock Lobster Fishery

The *Northern Zone Rock Lobster Fishery* is one where compliance costs appear to be higher than expected given the ARCCC analysis (see above discussion). The project accepts that a variety of factors, additional to the 19 considered in compliance risk indicator scoring, put forward by PIRSA, are justifiable drivers of compliance resourcing in the *Northern Zone*.

These include:

- The *Northern Zone*'s reported poorer compliance rate relative to other fisheries
- The size of the *Northern Zone* (3,500km of coastline vs 400km in the *Southern Zone*)
- The requirement to undertake compliance activities all year
- Use of 'corfing' (unloading fish into intermediary, at-sea holding cages) in the *Northern Zone*
- The absence of point-of-unload EM in the *Northern Zone* (compared to SZRL)

However, there are also a variety of attributes proposed by PIRSA that, in the opinion of the *Compliance Review Team*, do not materially increase the compliance burden, could be overcome and / or should reduce compliance cost:

- The *Northern Zone* operates VMS (the *Southern Zone* does not) and does not allow multi-region trips
- The *Southern Zone* has almost six times more vessels, arguably a diluter of compliance costs
- *Squeezy necks* (a device designed to mitigate pinniped interactions) are non-removable and their adoption (versus *seal spikes*) should reduce compliance costs
- Marine Parks exist in both fisheries
- Giant crabs are caught in the *Northern Zone*, but this fishery has its own compliance budget
- Two spatial zones in the *Northern Zone* can be assessed using VMS (noting that the *Southern Zone* does not have VMS)

Equally both fisheries operate:

- Limits on the number of pots
- Sealed bins with RFID tags
- Arrangements allowing *Marine Scalefish Fishery* catches
- Across approximately the same number of ports of landing



Strangely, the *Northern Zone* operates VMS, while the *Southern Zone* does not. VMS is a management arrangement that should, in theory, reduce compliance costs.

The project sees merit in the *Northern Zone* industry association and PIRSA discussing point-of-unload cameras, permanent pinniped pot mitigations and the potential to review and/or abandon *corfing* or move to user-pays for the few operators undertaking this.

Table 4 Comparison of PIRSA explanations of compliance cost drivers in both rock lobster fisheries

	Northern Zone Rock Lobster Fishery ≈\$31,000 per active licence	Southern Zone Rock Lobster Fishery ≈\$12,000 per active licence
Closed seasons	✓	✗
Regions	✓	✗
Corfing	✓	✗
Multi-day trips	✓	✗
MSF overlap	✓	✓
Giant Crab catches	✓	✓
TEP mitigations	✓	✗
RFID tagging of sealed bins	✓	✓
Pot Limits	✓	✓
Take homes	✓	✓
Marine Parks	✓	✓
Reporting	Fish numbers to processor	EM scales
VMS	✓	✗
Coastline (km) of fishery	≈3,500	≈400
Ports of landing	<10	7
Unloading locations	≈17	≈?
Active fishers	≈25	≈140
Non-compliance rate	12%	1%

The project undertook its own check on days charged to the *Northern Zone* (Table 5). This rough analysis makes an estimation of days required (with officers working in pairs) for each logged activity and contrasts this against the 500 days allocated in 2024/25. This approximate analysis struggled to account for the days budgeted and charged.

On balance the *Compliance Review Team* has found it difficult to justify the extent of current compliance costs in the *Northern Zone Rock Lobster Fishery*. The Project notes that days decreased from 600 to 500 between 2022/23 and 2023/24.

Table 5 Project estimation of days allocated vs expended in the Northern Zone Rock Lobster Fishery

Activity	Number (2024/25)	Time per activity (hours)	TOTAL HOURS
1 on 1 Interactions	361	1	361
Brief / Prosecution	1	80	80
Caution	24	2	48
Check Landing	90	4	360
Check Processor	136	8	1,088
Check Transit	5	4	20
Check Water	34	8	272
Covert Observations	17	8	136
Expiation	12	4	48
Fishwatch Call	4	0.5	2
Liaison and Contact	4	4	16
TOTAL DAYS			203
Allocated days			500
Variance			297

6.2 Sardine Fishery

The *Sardine Fishery* has been identified as an outlier (Figure 13 and Figure 16) in that it has:

- above average compliance risk indicators
- low stock exploitation (with high confidence having previously passed MSC principle-1)
- very high compliance levies.

PIRSA have explained that they expend significant compliance resources on ensuring there is no quota evasion occurring in the fishery. This report acknowledges that the fishery scored highest for degree of vertical company integration and that this is a broad indicator of compliance risk and that relevant WTO conditions require compliance focus. However, the fishery has reduced its risk indicator score with a high degree of stewardship, has previously passed MSC without conditions (noting it subsequently self-suspended), has low unit product value, has high (relative to other South Australian fisheries) levels of observer coverage, strong codified TEP mitigations in place, is profitable and is strategically critical to the very large SBT farming industry. Unloading from purse seiners occurs either on land where a conventional method is followed, or directly to aquaculture operations and this is how quota is decremented. Crew are paid on catch share and would be unlikely to

undertake unpaid work for non-declared catches, but this has not been considered within the risk indicator score.

PIRSA have also explained that misreporting of dolphin interactions could lead to “*political, social and Industry reputation damage*” to the *Sardine Fishery*. Therefore, it allocates compliance resources to collaborative initiatives including skipper education, real time reporting and codes of practice. The Compliance Benchmarking Team does not support basing additional compliance actions on a link to reputation and political damage.

There was a 50% increase in compliance levies in 2025/26 in the *Sardine Fishery* (Figure 2) and presumably this corresponds to new WTO conditions. These WTO conditions are likely driven by social licence and community interest in dolphins. The Minister is justified in adding any conditions that they see fit and PIRSA must address them.

The *Sardine Fishery* was MSC accredited until 2024 when the industry elected to withdraw. The fishery has struggled to meet condition 3 of the certification which required them to provide clear evidence that under-reporting of dolphins was not occurring. The MSC surveillance report (2023, p12) notes that, “*the discrepancies between mortality rates reported when observers are or are not present on board as well as the possibility of an observer bias affecting the reliability of the observer data to accurately measure trends and support a strategy to manage SASF impact on common dolphin*”. The ARCCC indicator scores MSC certification as a risk mitigation. Equally, any significant risk identified in the process, and in this case, this led to the withdrawal of the fishery, should be considered. In this instance, because certification was received and the fishery withdrew, the -5.0 score normally awarded for MSC was moderated to -2.5.

The ARCCC risk indicator score for the *Sardine Fishery* negatively scores TEP interactions and WTO conditions requiring compliance focus.

This report understands that as per other fisheries, vessels estimate their catch either in the net or holding tanks and that the only possible use of these data is in the stock assessment as CPUE data but that the assessment is insensitive to this given the weighting of the egg surveys within the sardine assessment. The fishery is fully caught which has added to the risk indicator axis score.

Additionally, it was discovered that the fishery self-funds 20% observer coverage with additional costs of ≈\$250,000 annually.

The *Compliance Review Team* contends that the fishery is being over-serviced.

However, the *Compliance Review Team* does recognise the extent to which they are over-serviced may depend on the metrics used to assess the risk-catch-cost components. When cost per CDR is used instead of active fishers then the *Sardine Fishery* is more adequately serviced – see discussion on page 56.

6.3 Western Zone Abalone Fishery

Western Zone Abalone Fishery is on the margin of being a *Risk-Cost-Catch* “unhappy outlier” and this is indicated by its amber status in Figure 13. For comparison all three South Australian abalone fisheries are plotted in Figure 17.

Industry have explained that they shuck fish at sea and land meat in iced bags in eskies for a variety of reasons including:

- The need to beach-launch means that small vessels are used and therefore cannot hold larger volumes of fish (whole abalone is three times larger).
- Hot conditions mean fish needs to be iced
- Laws limiting the weight that can be put in boat trailers under tow

Industry and PIRSA are in accordance that both a minimum shell length (MSL) and minimum legal weight (MLW) are necessary to manage the fishery. The *Compliance Review Team* considered whether only MLW should be the management arrangement, but industry is not of that view and has explained that there are biological reasons to maintain both despite the added complexity.

An MSL is a fisheries management tool generally used to ensure that growth-overfishing does not occur. In 2024/25 27 at-sea inspections in the *Western Zone* found nil MSL offences but 83 blacklip and 53 greenlip under-reported MLWs at fish processors. In 2024/25 at-sea inspections in the *Central Zone* found nine undersized MLW incidences (in one event) and a single undersized MSL fish that was 1mm under the limit. The small number of under-MLW abalone being detected at the processor does not appear to be a material threat to the sustainability of the fishery or stock.

Industry proposes an accepted tolerance for both MSL and MWL. Such a decision would form part of PIRSA’s consideration of an optimal level of compliance in conjunction with fishery management objectives (biological and other).

The project undertook the same basic analysis of compliance days allocated versus reasonable estimations for activities reported finding it difficult to account for days charged (Table 6).

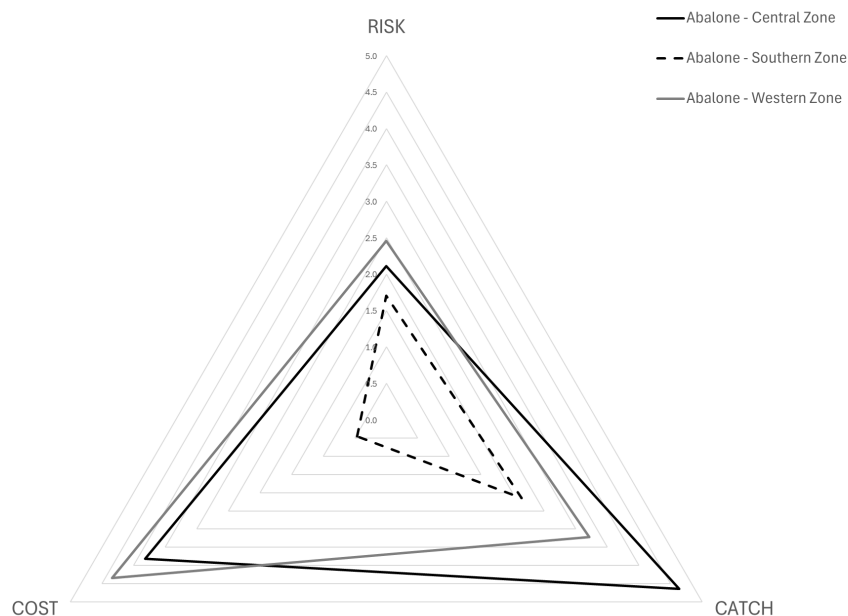


Figure 17 ARCCC for South Australian abalone fisheries

Table 6 Project estimation of days allocated vs expended in the Western Zone Abalone Fishery

Activity	Number (2024/25)	Time per activity (hours)	TOTAL HOURS
1:1 Interactions	112	2	224
Address non-compliance	6	8	48
Audits	101	4	404
Check Landing	42	4	168
Check Processor	146	2	292
Check Transit	8	4	32
Check Water	37	8	296
Covert Observations		8	0
Digital Report Follow-up	135	2	270
Induct entrants	1	4	4
Liaison and Contact	21	4	84
TOTAL DAYS			152
Allocated days			350
Variance			198

6.4 An Alternative measure of Compliance Cost

There is no perfect measure of the relative compliance cost per fishery. The project has elected to rely on the number of active fishers as an allocation base, given the level of compliance activity changes elastically with the number of vessels in a fishery.

Alternative allocation bases for compliance costs include tonnes, days fished, total licences (active and latent), revenue, absolute cost and unloads or CDRs. For reasons described earlier, the project believes active fishers to be the best metric, but it is not perfect.

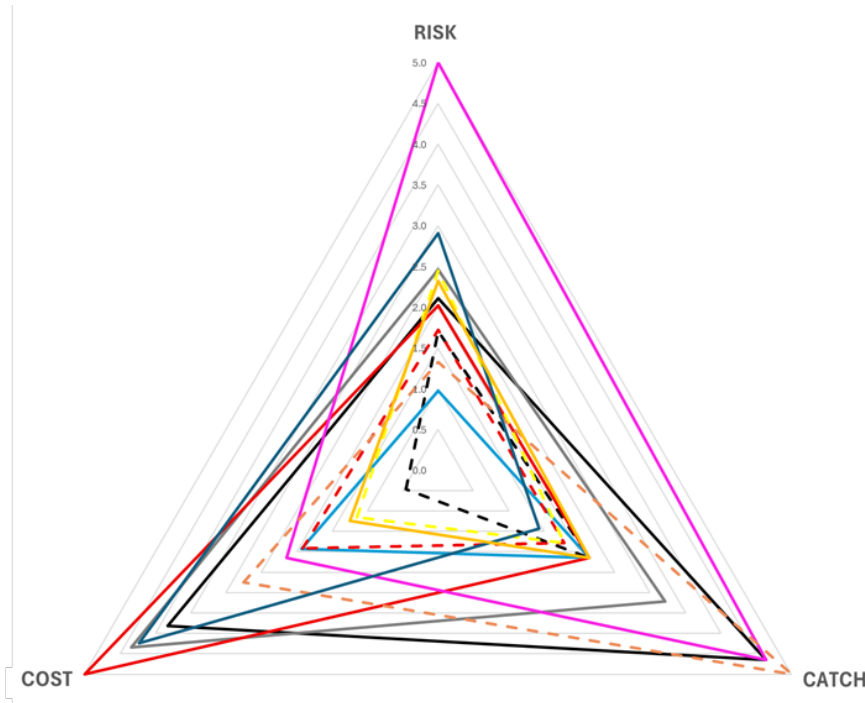
PIRSA has noted that CDR numbers (unloads) might be an alternate metric. This analysis was undertaken (Figure 18) for the 11 fisheries required to complete CDRs.

Variance analysis comparing compliance cost per active vessels and CDR by fishery was undertaken (Figure 20). Several fisheries (*Charter, St Vincent Gulf Prawns, West Coast Prawns, Lakes & Coorong Finfish*) did not have data allowing comparison and were omitted.

The analysis shows that nine of the 12 fisheries assessed showed increased compliance fee (per CDR) when CDR rather than number of active fishers became the allocation base for compliance levies. The *Northern Zone Rock Lobster* returned the same result, and only the *Southern Zone Abalone Fishery* had reduced compliance fee, and even then, only by 25%.

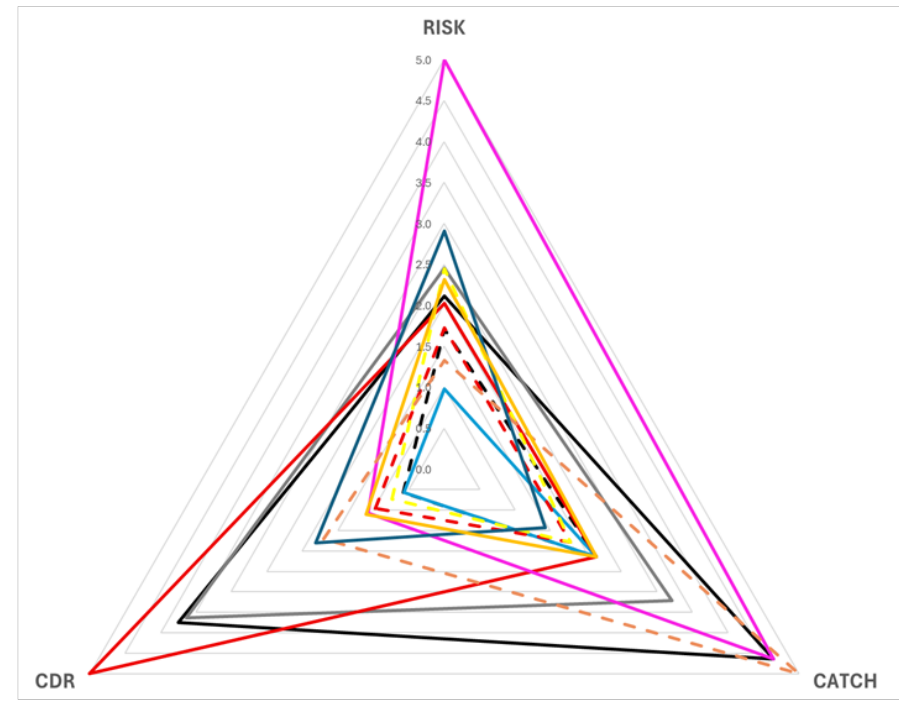
However, four of the fisheries changed by >50% with the *Sardine Fishery* changing by 57% when this fishery's high number of unload events (nearly 80 CDRs per vessel per annum) was used as an allocation base. This does provide some explanation of the *Sardine Fishery's* outlier status under the earlier active-licence-compliance-cost ARCCC model. ARCCC identified two other cost outliers; the *Northern Zone Rock Lobster Fishery* did not change, and the *Western Zone Abalone Fishery* changed very little. The *Western Zone* was on the margin of becoming an outlier and when CDRs are used as a compliance cost allocation base, this fishery becomes a true cost outlier. Noting that the *Southern Zone Abalone Fishery* compliance costs decreased by 25% using the new metric, this makes the approach across the three abalone fisheries even harder to justify.





— Abalone - Central Zone
 — Rock Lobster - Northern Zone
 - - Giant Crab

- - Abalone - Southern Zone
 - - Rock Lobster - Southern Zone
 — Sardine



— Abalone - Western Zone
 — Lakes and Coorong - Pipi
 — Vongole

— Blue Crab
 — Marine Scalefish (unsubsidised)

Figure 18 ARCCC using cost per active licence as 'cost' allocation base on the left, and number of CDRs (unloads) as 'cost' allocation base on the right.

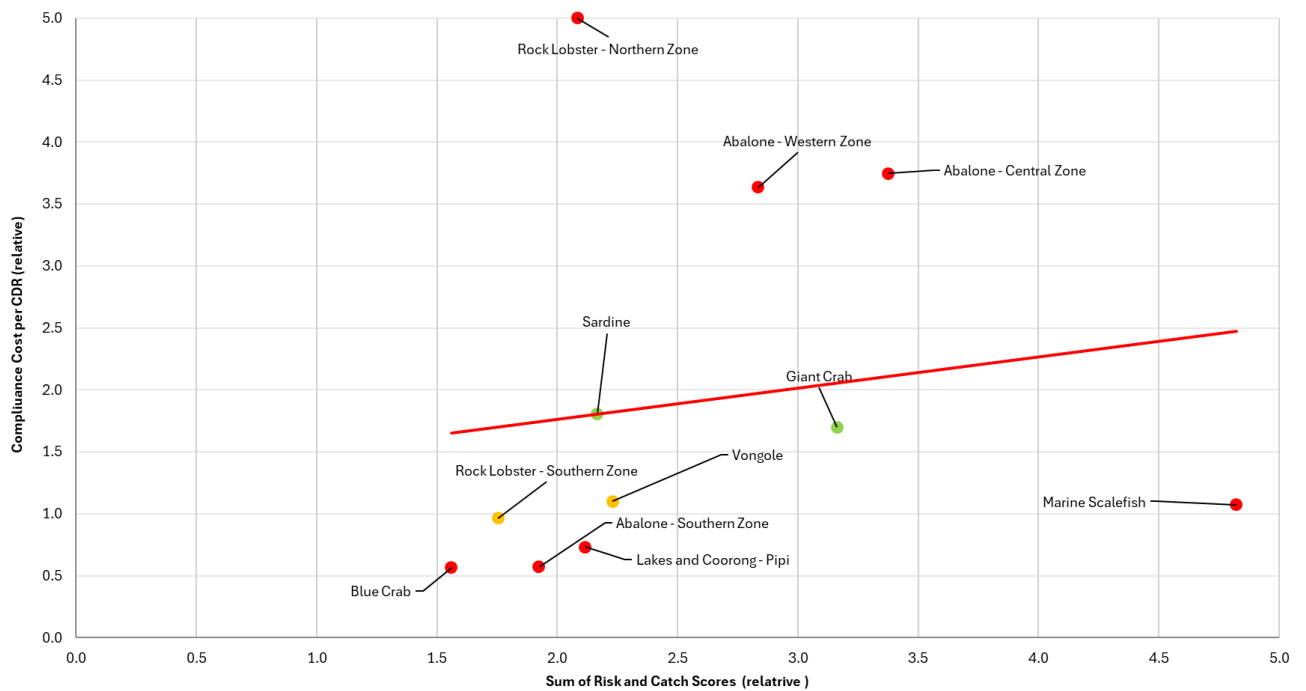


Figure 19 Scatter plot of the compliance cost per CDR (unloading document use in some fisheries). Red-amber-green colouring of data points is applied; green indicating the fishery shows the expected correlation between variables, amber somewhat and red disagrees (i.e reds are outliers). Not all fisheries have CDR data. Note that Marine Scalefish compliance cost data is the unsubsidised amount.

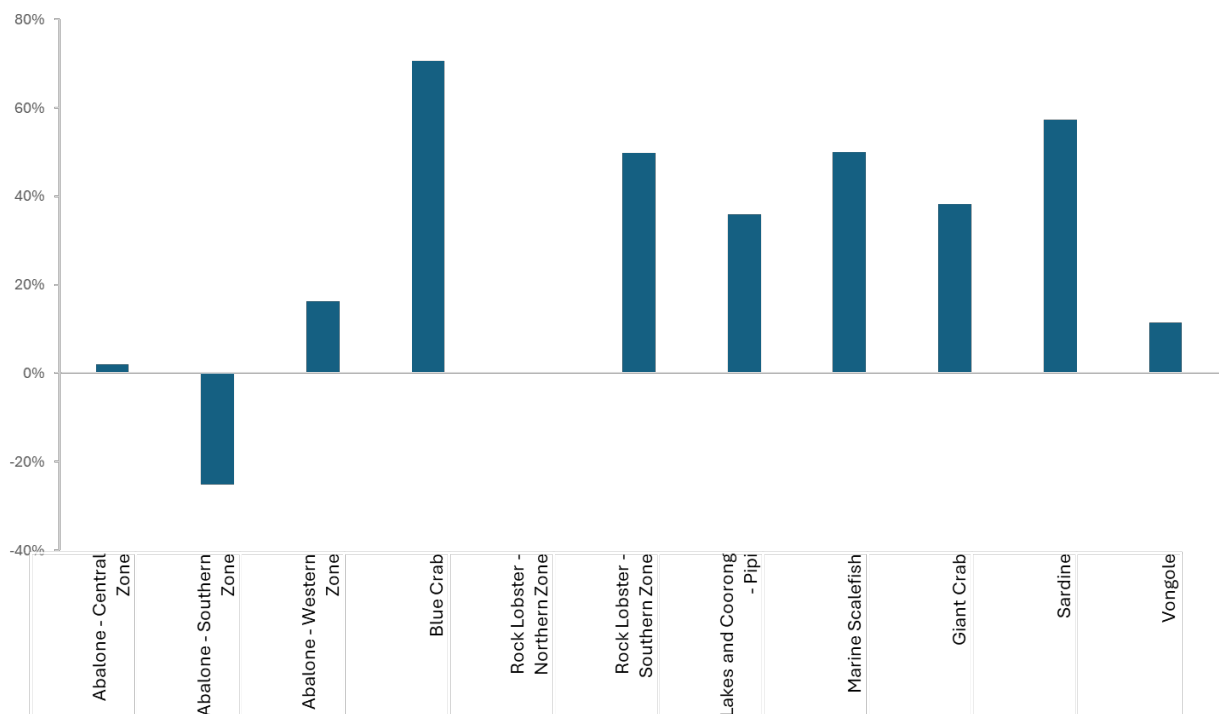


Figure 20 Variance analysis comparing compliance cost per CDR relative to per active fisher.

The comparison of 12 risk-cost-catch ‘triangles’ is complicated, so the project repeated the XY analysis that plotted compliance fees (Y) against the sum of catch exploitation/certainty and compliance risk indicators (X) using CDRs as a cost allocation base (Figure 19). Like the same earlier analysis for active vessels (Figure 13) this second analysis uses imposed red-amber-green data point shading to indicate whether the fishery conforms to the risk-cost-catch framework as expected. Figure 13 uses shading from the previous active vessel analysis because this shows variance.

Some fisheries are not required to complete CDRs and there is no data so only 11 of 16 fisheries can be plotted. The only significant positive change from using the number of CDRs as the compliance fee allocation base is that the *Sardine Fishery* now conforms perfectly to the framework given it sits on the line of best fit.

However, the use of CDRs as the compliance levy allocation base results in a stronger negative correlation between these variables for most fisheries.

7 DISCUSSION: SOUTHERN RANGER & OTHER INSPECTION VESSELS

The project has had difficulty in finding justification for the basis of costs recovered for the use of the fishery inspection vessel *Southern Ranger* in five of 16 fisheries. Arrangements and traits within fisheries that might reasonably contribute to the need for at-sea inspection, and cost-recovery, of the *Southern Ranger*, are included in Table 1, with cost recovery of the *Southern Ranger* is indicated by ‘SR’.

In most fisheries the perceived cost of the *Southern Ranger* far exceeds the reality, with *Southern Ranger* constituting <5% of total recovered compliance costs. While all relevant fisheries are subject to at-sea inspections, only five³ of the 16 fisheries, (Table 1) are subject to cost recovery of the *Southern Ranger*. However, for these five fisheries this cost is generally perceived more strongly than is reality. That said, the *Southern Ranger* represents two thirds of the *Spencer Gulf Prawn Fishery*’s cost-recovered compliance levies, this is excessively highly due to the fishery’s position as a happy outlier (Figure 15).

The *Compliance Benchmarking Team* is not expert in the operational costs of inspection vessels but has general knowledge of fishing vessel operational costs. The team is of the opinion that the current ≈\$7,000 daily charge is not unreasonable, noting that the vessel comes with some crew and that additional fisheries officers onboard are charged to fisheries using the normal allocated-days method.

The project has endeavoured to understand the cost recovery of the *Southern Ranger* in only one of the two rock lobster fisheries. This is partly justified by the existence of two smaller regions within the *Northern Zone* with one region having higher catch rates and a fully caught regional quota. Investigation of the *Southern Ranger* costs in the *Northern Zone* shows that it is not what is driving high compliance costs but that it is a contributor. PIRSA have explained that even though the *Northern Zone* has VMS (the *Southern Zone* does not) that VMS alone may not constitute sufficient evidence to achieve a conviction in a case such as of transferring and reporting catch from one regulatory region to another, and as such the *Southern Ranger* is justified.

The *Southern Ranger* is only cost-recovered in one of the three prawn trawl fisheries (*Spencer Gulf*). It is understandable and sensible that some fisheries (such as the *Vongole Fishery*, *Lakes and Coorong* etc) are not in scope for at-sea inspections. PIRSA have explained to the project that the *Spencer Gulf Prawn Fishery* requested at-sea inspections or presence given the rolling short interval open areas (spatial management regime) set down under the fishery’s effort-based harvest strategy, and this statement has to some

³ Charter Boat, Prawn Spencer Gulf, Rock Lobster Northern Zone, Marine Scalefish, Sardine fisheries

extent been supported by industry. However, VMS might achieve the same effect for spatial monitoring because it provides vessel speed and location so can to an extent determine where fishing was occurring.

PIRSA own and operate 24 vessels including the *Southern Ranger* and its tender. Analysis shows that vessels other than the *Southern Ranger* undertake on average one inspection per fortnight.

7.1 Conclusion: Inspection vessels

While the *Southern Ranger* contributes only a small share of overall compliance costs, its cost-recovery framework creates disproportionate perceptions of burden in certain fisheries. The vessel remains justified in contexts where VMS alone is insufficient, but a clearer alignment of inspection needs, cost allocation, and the realisation of cost savings from digital technologies is required.

On average each inspection vessel (i.e. the *Southern Ranger* and all other inspection vessels) conducts one at-sea inspection per fortnight.

RECOMMENDATION 2

Although *Southern Ranger* costs seem reasonable and are largely immaterial, the *Southern Ranger* and other inspection vessels should only undertake at-sea inspections in fisheries passing three tests:

1. They are fishing in >1 regional quota zone and cannot be monitored using VMS.
2. There is a compliance advantage based on specific objectives from at-sea inspections (rather than in-port).
3. In the case of the *Southern Ranger*, that smaller and less costly trailer vessels cannot be used.

8 DISCUSSION: INDUSTRY INTERVIEWS & SURVEYS

8.1 Online Survey

An online Mailchimp survey covering the science and compliance benchmarking streams was distributed. 141 responses were received (118 belonging to associations). Anonymity was assured so responses are grouped to three themes:

1. *Compliance Activity and Inspection Frequency*

- Most respondents reported being inspected or investigated within the past 12 months, with several indicating five or more inspections across the year. A smaller proportion reported only one inspection, and a minority had not been inspected at all.

2. *Consistency of Service Delivery*

- Opinions on the consistency of compliance services were mixed. A majority said processes and advice were delivered “most of the time” in a consistent manner, but a significant minority reported inconsistent approaches between officers, mixed messages, or errors in correspondence.

3. *Cost Recovery Feedback*

- Concerns about high costs relative to the revenue and risk profile of fisheries.
- Calls to reduce costs wherever possible, particularly for low-risk fisheries or sectors already operating under tight margins.
- Suggestions to share costs more equitably across sectors and ensure cost allocation reflects actual service delivery.
- Calls for greater transparency in cost attribution, frequency of monitoring activities, and efficiency improvements in compliance services.

3. *Adoption of Digital Tools*

- Many respondents reported using electronic reporting, pre-sailing briefings, and internal training systems to reduce risk.
- Future Technology Opportunities: Respondents called for greater adoption of geofencing, real-time VMS alerts, automated catch reporting, and camera-based monitoring to improve compliance efficiency and reduce costs.

Responses by question are aggregated and presented in Appendix 6 online survey summary on page-105.

8.2 Interviews

Executive Officers and other stakeholders from all but one South Australian fishery were interviewed (the *Giant Crab Fishery* was not interviewed directly).

Collectively, these interviews provide rich insight into the compliance environment, cost recovery model (noting this is not in scope for the current review), operational challenges, and opportunities for potential reform.

Across all sectors, interviewees expressed their sector's strong commitment to sustainability and quota integrity, while consistently calling for a more transparent, efficient, and risk-based compliance framework.

Interviewees were assured that statements would not be directly attributable to them or, given the small size of associations, to specific fisheries.

The *Compliance Benchmarking Team* treated statements as perceptions and investigated those deemed material.

Six clear themes emerged:

1. *Compliance Cost and Value for Money*

- Almost every sector raised concerns about the disproportionate cost of compliance services relative to the very low levels of detected non-compliance. Adding that levies and cost-recovery charges are CPI-indexed. Most fisheries highlighted that compliance costs can represent a significant portion of gross revenue, which is a significant and unnecessary burden particularly for small, low-risk fisheries.

2. *Risk-Based Service Delivery*

- Stakeholders repeatedly called for a true risk-based compliance model, where compliance days and inspections are allocated based on risk assessments rather than what they perceive as fixed service-level agreements (e.g. day counts). Several noted that current arrangements create inefficiencies, leading to “work creation” to acquit days rather than address actual risk. A key recommendation from industry was the introduction of materiality thresholds to prevent prosecution or penalties for negligible breaches (e.g., for <1% undersize catch or minor reporting delays).

3. *Adoption of Digital Tools*

- Many fisheries have invested in eLogs, VMS, and eLog reporting but perceive little reduction in compliance overheads or physical inspections despite documented statements that savings would ensue from digital tools roll-out. Industry is seeking a transition where these tools replace manual processes, improve real-time data sharing and analysis, and reduce cost rather than duplicate effort.

4. Quota Integrity

- Several quota-managed fisheries reported very high quota integrity and internal governance, with most sectors harvesting within the TAC and stating that they are often voluntarily leaving quota uncaught to be “precautionary”, stressing that this reflects a strong culture of stewardship and low compliance risk.

5. Interaction with Compliance Officers

- Interviewees generally (but not always) described compliance officers as professional and cooperative but expressed frustration with inconsistent enforcement and limited transparency with the allocation of overheads (particularly the *Southern Ranger*) are costed to industry.
- Interviewees stressed the regional economic importance of these fisheries, as well as emerging threats such as toxic algal blooms, climate variability (such as El Niño impacts on prawns), market pressures from imports and aquaculture competition. Stakeholders emphasised the need for adaptive compliance and management frameworks to maintain both ecological sustainability and industry viability.

8.3 Conclusion: Interviews & Surveys

South Australia’s wildcatch fisheries perceive that they maintain a strong culture of stewardship and quota integrity yet face compliance frameworks that are often misaligned with their low-risk profile.

Many reported frequent compliance contacts despite minimal detected non-compliance, creating cost burdens that consume a significant share of revenue. Interviewees consistently called for a shift to risk-based compliance, targeting high-impact risks such as quota fraud and black-market activity rather than routine low material-risk inspections.

Transparency and cost efficiency were recurring themes, with stakeholders seeking clearer attribution of overheads and reforms to CPI-linked levies (noting that CRIS issues are out of scope).

There was also strong espoused support for using digital tools which seems inconsistent with the resistance that PIRSA has experienced with EM and VMS.

Industry emphasised the importance of fair, consistent enforcement and collaborative approaches. Industry proposes that making compliance proportionate, transparent, and digitally enabled would improve efficiency, reduce costs, and strengthen sustainability outcomes and industry confidence.

9 DISCUSSION: COMPLIANCE PERFORMANCE

9.1 Determining acceptable compliance levels via risk assessments

Both Braithwaite and Sparrow acknowledge the importance of risk assessments to determine the most appropriate and cost-effective interventions to mitigate risks.

While South Australia's compliance business group conducts an annual risk assessment of all commercial fisheries it appears this is done with little fisheries management or science input, which should be used to determine the materiality of potential harms generated by each identified risk (i.e. will breaches, and at what level, of certain rules cause real harm to the stock?). This is important given the emphasis within the South Australia Fisheries Act on ESD but also because failing to include fishery managers can lead to the over-delivery of compliance services targeting risks that create minimal harm to the sustainability of the fisheries management regime ("compliance for compliance's sake") with minimal benefit to management outcomes.

To ensure the compliance services and interventions are commensurate with the risk being mitigated it is essential the risk assessment process is led by those responsible for the management of the sector and not solely by the compliance organisation. This requires determining the level of compliance necessary to ensure risks are properly prioritised, with the greatest risks to the management regime's objectives addressed first.

Given the attainment of 100% compliance (or close to it) is both difficult, expensive and unrealistic it is recommended that PIRSA determine an acceptable level of compliance to meet the philosophy of *Optimal Compliance*. New Zealand has set a compliance rate of 95% and AFMA operates a 98% target on VMS availability. The theory being that the lower the risk the greater the accepted tolerance. Importantly, little tolerance is given for those who deliberately chose to not conform. It must also be understood that if services are intelligence led then inspection rates could reflect higher non-compliance with services applied against risk exacerbators.

The *Compliance Benchmarking Team* believes PIRSA's compliance approach should be more closely aligned with the management priorities set by fisheries managers. To achieve this, fisheries managers need to be more closely engaged with the development of compliance arrangements and take a larger role in the risk/catch assessment process so that risks are fully assessed against the potential harms of non-compliance to ESD. At present, the team considers that compliance is targeting risks without sufficient fisheries management input, resulting in too much effort being spent on issues that cause little harm to the management framework.

In addition, it appears that PIRSA's risk assessment process is conducted largely in isolation from the regulated parties (the fishing industry) thus denying industry the

opportunity to demonstrate their compliance efforts and stewardship, and to better understand current risks and concerns from the managers and regulators. A responsible industry, as is the case in most SA fisheries are also able to assist in the identification and mitigation of risks. As a minimum the identified risks should be shared with industry as part of co-management and to ensure risks can be self-mitigated avoiding detection by PIRSA compliance. The absence of industry from the process to identify risks within a fishery can lead to a disproportionate effort by the regulator toward low-level/consequence risks that in turn generate costs greater than what is necessary to ensure the integrity of the management regime.

9.2 Proportionality of Response & Enabling Legislation

The purpose of risk assessments is to identify and prioritise risks so that compliance services can be applied effectively and efficiently. This ensures that regulated parties meet their legal obligations while safeguarding the integrity of fishery management plans, known in South Australia as fishery plans. Risk assessments can also reveal systemic non-compliance that arises even where regulated parties act in good faith. In such cases, the difficulty may not lie in behaviour but in legislation or management settings that are impractical to meet. This creates unnecessary compliance costs without improving outcomes and signals a need for legislative or regulatory review.

During this review the *Compliance Benchmarking Team* found several examples where significant compliance effort is expended despite the risks being extremely low. These include:

- the inspection regime in the *Western Zone Abalone Fishery*, where compliance officers, using expensive at-sea compliance assets verify that abalone are taken in accordance with minimum size limits and that shucked abalone meet minimum meat weight after processing at sea.
- the dual requirement in the Vongole and Pipi fisheries for weighing at both the beach and the processor.
- minor matters such as drip loss between landing points and processors in shellfish fisheries; and
- the conversion factor applied between abalone meat weight and shell length.

In these situations, a small tolerance could be applied without jeopardising the broader sustainability objectives of the fishery. This would reduce unnecessary compliance costs, allow resources to be redirected to higher-value activities, and improve the relationship between PIRSA and the affected sectors.

The *Compliance Benchmarking Team* found no South Australian fishery where current levels of compliance servicing could be justified by the actual risks. In comparison to Western Australia, New Zealand and AFMA, PIRSA delivers around twice the inspection rate

and processor inspections are carried out at seven times the rate of New Zealand. This indicates a misalignment between material ESD risk and regulatory effort. Furthermore, high levels of demonstrated compliance in some fisheries have not been rewarded with reduced oversight. Instead, additional effort is applied, leading to diminishing returns.

As part of the annual risk assessment process, issues that generate significant compliance costs for very low-level risks should not simply be rolled over year after year. Rather, they should be formally tabled for consideration by Fisheries Management to determine the extent to which current measures are commensurate with risk and if legislative or regulatory adjustments could contribute to a more effective solution. This approach should become an operating principle. Where persistent compliance costs deliver little or no results from efforts to improve compliance performance, it is often an indication of impractical legislative demands rather than wilful industry misconduct. Addressing these problems through legislative reform could potentially support industry productivity without increasing risk to the management regime.

There are also opportunities to modernise compliance by making better use of technology. VMS, which is forecast for widespread use in South Australia, can monitor some spatial risks effectively and reduce the need for some costly on-water inspections. In the South Australian prawn fisheries, for example, VMS could provide real-time oversight of fishing activity, making hail-in and hail-out requirements redundant. Given PIRSA's existing ability to track vessel movements directly, such tools should reduce compliance fees without weakening compliance outcomes.

It is estimated that around 75% of compliance operational costs are associated with inspectorate functions, comprising at-sea inspections (10%), landing inspections (45%) and processor or transit inspections (40%). Given the high compliance levels across most South Australian fisheries, and the relatively minor consequences of identified risks, it is reasonable to conclude that inspection effort could be reduced by up to half without unduly diminishing compliance performance. Randomised inspections and appropriate penalties for non-compliance would continue to create a climate of deterrence while enabling resources to be redeployed, saved, or focused on matters of greatest ecological and economic materiality.

Overall, risk assessments should not only guide the allocation of compliance services but also act as a mechanism to identify when legislation itself is driving unnecessary costs. At present, compliance servicing in South Australia is not proportionate to risk, resulting in substantial industry burden without commensurate benefits to management outcomes. By embedding legislative review within the risk process, applying practical tolerances, rewarding demonstrated compliance and embracing cost-effective technologies, PIRSA can deliver a more balanced, risk-based and efficient compliance system that will continue to protect the integrity of fisheries management plans.

9.3 Inspections

PIRSA captures commercial fishing inspections and interactions and presents these in annual compliance reports. PIRSA advised that there is no specific inspection proforma for commercial inspections.

Although outside the scope of this project the ≈30,000 individual interactions in the recreational sector (including those undertaken by *Fish Care* volunteers) are and not collecting systematic data, and so opportunity to provide estimations of recreational catch is missed.

It is suggested that PIRSA design a standard commercial and non-commercial inspection form that is completed with every applicable recreational contact.

9.4 Commercial Fisher vs. Fish Processor

Section 3 Interpretations of the South Australian Fisheries Act defines commercial fishing as, “*fishing for a commercial purpose and a fish processor as a person who, for a commercial purpose, processes, stores, transports or deals with fish or other aquatic resources*”.

These definitions may indicate that commercial fishing ceases upon the landing of fish and from that point transportation, storage and processing of fish that is undertaken by the *fish processor*. However, current cost recovery attributions appear to show that commercial fishers are levied the costs for the delivery inspections of fish processors and transport operators. This may be contrary to these definitions.

While some fish processors are vertically integrated with licenced fishers, there may be an opportunity to more accurately attribute compliance costs across the supply chain. Nearly half of all compliance inspections currently take place at fish processing facilities or during transport operations. Notably, in the *Western Zone Abalone Fishery*, 75% of inspectorate activities are conducted at processors, while in the *Northern Zone Rock Lobster Fishery*, processors account for 60% of compliance contacts.

Although out of the scope of this project it is suggested that PIRSA consider whether the costs of compliance services delivered against fish transporters and processors is being correctly attributed if costed to fishers.

South Australian Fish processors are inspected at seven times the rate of New Zealand.

9.5 Vongole Fishery

Vongole fishers have expressed frustration at their compliance levies and the compliance focus on landed weight vs weight at the processor. The concerns raised warranted a dedicated section within this compliance performance discussion chapter.

The *Vongole Fishery* is artisanal with catch of less than 80 tonnes per annum. Fishers use small boats to access the shoreline before raking up shellfish and placing them in bags. Catch is weighed at the beach and again at the processor.

ARCCC model has not identified the fishery as a cost outlier and the fishery fits the framework very well. However, consideration should be given to the fishery's small size. Fishers pay nearly \$8,000 each in compliance levies which contrasts vividly with fishers in the *West Coast Prawn Fishery* and *Spencer Gulf Prawn Fishery* who pay \$3,000 for fisheries that are 20 times larger.

Figure 9 plots planned (budgeted) compliance days per annum by fishery. Although the *Vongole Fishery* is not an outlier the range of days per active licence ranges between 20 in the *Northern Zone Rock Lobster Fishery* to around one in the *Charter Boat, Prawn Spencer Gulf* and *Lakes and Coorong Finfish* fisheries.

Presumably PIRSA's concern in the *Vongole Fishery* is that during the transit between the beach and processor that fish is removed illegally from the supply chain (and sold). However, it seems unlikely that a fishery intending to illegally remove fish, would declare this catch on the beach.

PIRSA's explanation is that some fishers were concerned about inaccurate weights at the processor and potentially having to pay for more quota than they were being paid by the processor. PIRSA has set an expectation that processor weights must be within 1-2% of beach weight and that fishers must not allow for expected drip loss by over-declaring beach weight.

The project sees this as the most striking example where more compliance than is reasonable is being applied to an issue which is not directly linked to fisheries management. The materiality of the issue is that 1% of the fishery is 700kg and is biologically irrelevant. Although outside of the scope of this project this compliance over-servicing contributes to the 17% of *Vongole* revenue spent on total cost-recovered levies.

PIRSA have proposed the use of sealed bins to which the *Compliance Review Team* is not strongly opposed. However, the move to sealed bins seems to be not risk-proportionate and is potentially an overreach.

RECOMMENDATION 3

Consider a range of enabling changes to management arrangements including:

- The efficiency of stopping or changing corfing in the *Northern Zone Rock Lobster Fishery*.
- The need for both minimum weight and minimum shell length in the Western Zone Abalone Fishery (noting that the fishery wants both).
- The potential for undersized fish to be returned to the water from the vessel.
- Setting reasonable (higher) tolerance between beach/vessel and processor weights and lengths in several fisheries.
- Confirm the term ‘interaction’ and educate fishers to report only TEP harm/stress interactions (i.e. not depredation events).
- Review the use of two fishery officers for dockside and processor inspections as they might not necessarily require two fishery officers.

9.6 Compliance Reporting

Compliance reporting currently focuses on the rare occasions that non-compliance is detected as opposed to the extremely high levels of compliance that is not reported.

The emphasis on verifying low levels of non-compliance must be carefully managed to avoid unintentionally amplifying an artificial negative perception through compliance activities. This becomes particularly concerning when organisational resourcing is predicated on the existence of risks that may be overstated or may not exist at all. A more constructive approach would be to shift the narrative from highlighting instances of poor performance to celebrating and reporting good performance. By contextualising the very low levels of non-compliance, PIRSA can build stakeholder confidence, strengthen social licence, and reinforce with evidence the industry’s reputation for responsible and sustainable practices.

Highlighting the strong compliance performance of South Australia’s fishing industry directly aligns with three of PIRSA’s six strategic goals: stimulate value growth by building confidence in sustainable fisheries, sustain the resource by demonstrating responsible stewardship, and enable regional growth by supporting the reputation and market access of regional industries. Framing compliance as a positive performance outcome reinforces PIRSA’s commitment to transparency and strengthens its social licence with stakeholders.

Fisheries management agencies must be mindful of the principle of *diminishing marginal returns*: when compliance levels are already high, allocating additional compliance resources delivers progressively smaller gains in performance.



10 DIGITAL TRANSFORMATION

10.1.1 PIRSA's Current Digital State

PIRSA's compliance program gives the impression that it is transitioning from a labour and resource intensive model toward a technology enabled regime. However, despite the rollout of eLogs and eCDRs in some fisheries, the unclear transition to mandatory VMS, and a proposal for EM in the *Sardine Fishery*, industry has realised few tangible benefits either from simplified management arrangements or lowered compliance levies. Traditional, officer-led services have largely continued unchanged in addition to these technologies, rather than being reshaped by the capabilities these tools provide. Properly leveraged, these technologies should materially transform how compliance services are delivered and the costs of those services.

To date, the introduction of eLogs and VMS appears to have occurred without an overarching framework linking technology adoption to efficiency gains, improved compliance outcomes, risk reduction, and lower compliance fees, while also better meeting fisheries management information requirements. A visible direct linkage between the uptake of technology and lowered compliance fees would assist industry acceptance.

This report has identified that PIRSA does not currently have a strategic document that outlines its Compliance Approach, particularly how the introduction of digital technologies will change the service delivery of traditional compliance services. The absence of such a strategy risks the introduction of current and emerging technologies, and risks failing to meet organisational information needs. A carefully developed *Compliance Strategy* that considers the benefits of digital technology should drive further efficiencies and changes to traditional compliance approaches.

While PIRSA have commenced a partial introduction of VMS, eLogs and eCDRs, and proposed that the *Sardine Fishery* transition to EM, it appears that this has been implemented without an overall stated vision of its aim or how these technologies can complement each other.

10.1.2 Electronic Monitoring

It is normal for fisheries to hold genuine concerns about the release of EM footage, because of issues of commercial in confidence, the human response to being surveilled, the aim of EM, its use in non-fishery matters (such as occupational health and safety prosecutions) and its cost/benefit. Recent footage showed out of context in conservation-oriented videos compiled and promoted by environmental NGOs illustrates some of the risks.

The *Compliance Review Team* has identified the *Sardine Fishery* as a potential EM candidate given the WTO focus on common dolphins and its potential to reduce observer fees.

EM via onboard cameras can play a targeted role but should not be treated as a universal compliance requirement in South Australia. The selective introduction of EM and the growing potential of *Artificial Intelligence* to analyse its footage may accelerate change and fundamentally alter the operating model.

If used primarily for offence detection, EM can be both costly and intrusive. Its strongest use cases are in fisheries where:

- specific risks such as interactions with TEPs that materially impact ESD, justify elevated oversight;
- EM can replace more expensive human observers; or
- confidence in the broader commercial reporting regime is low (and the results of reporting are meaningfully positive to ESD).

10.1.3 Other Technologies Investigated

The project investigated the use of *eCatch* technology in the *Victorian abalone fishery*. This data entry system provides anonymous spatial catch data available to other industry stakeholders to reduce the likelihood of localised depletion, improve fisheries assessments and improve the efficiency of catch. The system uses a shell measurer onboard with each fish placed through the machine and length-frequency data then collected against the location of catch via GPS. This is interesting and potentially useful technology but more relevant to fishery managers (for spatial biomass management) and the abalone industry rather than as a compliance tool.

10.1.4 Lessons from New Zealand

New Zealand spent significant effort in encapsulating a strategic vision via the integration of geo-spatial reporting (VMS), event based electronic reporting (eReporting) and EM in selected fisheries. The clear objective was to verify the accuracy of self-reporting by the commercial fishing industry. Its purpose was not to develop compliance offence detection tools but to provide industry and fisheries managers with accurate information to inform management decisions. Consequently, these technologies were enabled under the scientific observer program and form a significant component of the fisheries management monitoring framework.

The development of a digital strategy in New Zealand ensured that strategic issues such as fleet coverage, data retention, privacy, review rates, data access, reporting requirements, Freedom of Information access and cost benefits were articulated prior to the approval and introduction into services of these technologies. The level of work required to address these strategic issues should not be underestimated, with New Zealand still refining these following the implementation of digital technologies.

10.1.5 Lessons from AFMA: potential for gains for industry

VMS has been used in many AFMA-managed fisheries for around 20 years, initially as a compliance tool and more recently also to enable industry to undertake activities previously not available to them given it can show that non-compliance is not occurring.

AFMA embarked on digital transformation nine years ago with eLog, eCDR and EM implemented in some fisheries, predated by VMS in all fisheries. They too did this without an integrated digital strategy but one has emerged over time, albeit still undocumented. Following an [Australian Government announcement](#) in 2021, AFMA have recently (October 2025) announced that they plan to extend EM into most fisheries.

Although there were isolated EM-evidenced prosecutions, AFMA has mostly used EM data to validate and improve industry reporting. AFMA contract ABARES to undertake periodic [EM congruence analysis](#) that compares industry eLog reporting with human EM review. This analysis has shown that the introduction of EM has caused a paradigm change level improvement in reporting in EM-enabled fisheries (including the shark fishery).

The 2021 announcement promised that EM would provide export opportunities, cost reduction, environmental outcomes and *red tape reduction*. Some red tape reductions have occurred or are now being considered:

- Some EM-enabled trawl vessels have caught 200 tonnes in the last two years in areas previously closed to them, able to fish in the deeper parts of a fishery closure under scientific permit, provided EM footage was reviewed between trips. They have demonstrated that they were not catching the depleted stock the closure was designed to protect and industry is now calling for the boundaries of that closure to be reviewed.
- A proposed second gain is the potential for a more sensible approach to *Offshore Constitutional Settlement* (OCS) arrangements. Previously catch was deemed taken in waters adjacent to the state into which they were landed. VMS and EM should allow vessels to catch a fish species in waters adjacent to State-A, and land them into a State-B (where landings are normally prohibited) given there are no rules about the species in State-A. Some Commonwealth fisheries work in waters adjacent to four states and are subject to hundreds of such rules.

Setting aside complicated Federation-driven fishery management complexities in Australia, and questionable closure boundaries, these Commonwealth fishery examples show that EM can bring about benefits for industry in some circumstances.

This report understands there is less scope in South Australian given that management arrangements are generally simpler than those run by AFMA because South Australian management:

- Does not rely to the same extent on layers of fisheries closures (some Commonwealth fisheries are 90% closed and have two or even three layers of overlapping closures)
- Is subject to less OCS arrangements given their only interaction is with the Commonwealth.

Interestingly, AFMA's EM rollout schedule now includes their *SBT Fishery* vessels many of which are co-endorsed in the South Australian *Sardine Fishery*. This presents a unique opportunity for PIRSA and AFMA to collaborate and presents additional potential cost efficiencies that should be considered in an EM business case in that fishery.

At times industry argues that AFMA's implementation of EM in the shark fishery suffered from scope creep where new reporting was required of industry, and this was reviewed, but had no purpose. Industry have recently been successful in halving the review % in the shark fishery but this change has not returned any savings to the fishery.

10.1.6 Conclusion:

A core benefit of digital technologies such as eLogs, eCDRs, EM and VMS is the capture and storage of structured, collatable data that can be delivered at fine spatial and temporal scales to support fisheries management and provide better data into fisheries science. Significant additional value can be unlocked by integrating these systems, particularly through event-based reporting tied to eLog and VMS to provide near real-time spatial, effort and catch information. Such integration would enhance compliance efficiency and effectiveness while materially improving the quality, timeliness and utility of management, and scientific datasets and assessments.

PIRSA should consider collaboration with AFMA, other Australian states and perhaps even New Zealand, to develop a common operating picture that could negate the building of a PIRSA-standalone digital system.

For PIRSA to move from their current state to a technology enabled monitoring and compliance regime, a significant piece of work is needed to articulate the future state prior to undertaking the organisational design to meet this vision. This piece of work should not slow down the proposed reduction in, and changes to, current compliance services (recommendations 1 and 2) but rather use the execution of cost-saving recommendations such as this proposed within this report as a catalyst as to how future services will be delivered. The transition to a future state with integrated digital technologies will require phased introduction with the following phases recommended:

1. Phase 1: Development of technology-enabled compliance monitoring and fisheries management data strategy including stated aims and described consideration of FOIs, data storage, health & safety, privacy, the complication of current differing eLogs, potential red tape reduction initiatives, the critical review % and other issues.

2. Phase 2: Design of a virtual fisheries control centre and perhaps common operating picture with other jurisdictions.
3. Phase 3: Change Process to enact a technology enabled compliance business partnership; potentially comprised of AFMA, other states and New Zealand.

RECOMMENDATION 4

VMS and eLogs should be implemented in all relevant fisheries (all other than Lakes and Coorong – Pipi, Lakes and Coorong – Finfish and Vongole).

RECOMMENDATION 5

VMS should replace hail-in and hail-out requirements as spatial monitoring where implemented

RECOMMENDATION 6

Industry and PIRSA should work collaboratively to investigate the cost-effectiveness and practicality of EM as a tool to validate the accuracy of logbook reporting in the *Sardine Fishery*. A framework for declining review rate could be agreed so that if logbook vs EM reviewer congruence is strong, review rates decrease. PIRSA, AFMA and industry should work together to find efficiencies given AFMA's announcement that dual endorsed *SBT/Sardine Fishery* vessels are to receive EM.

RECOMMENDATION 7

The adoption of digital technology will alter traditional compliance service delivery. PIRSA should define its future technology-enabled compliance model before organisational redesign. The transition should progress through phased implementation starting with changed compliance services proposed in this report, then the development of a digital compliance and data strategy, a virtual fisheries control centre, and potentially forming a collaborative, technology-driven compliance partnership with other Australasian jurisdictions.



10.2 Cost Attributions and Budgets

Although detailed cost allocation falls outside the scope of this review, the transparency of compliance cost-recovery is within scope, as is the question of whether current compliance arrangements meet the requirements of the Fisheries Management Act. Notably, the Act's second objective relates to the cost-efficient management of fisheries. Further, several aims of PIRSA's Corporate Plan are also relevant in this context, particularly those addressing value growth, resource sustainability, and organisational performance.

PIRSA is required to apply CPI annually to cost-recovered levies, which has resulted in the fully loaded (overheads applied) compliance officer FTE charge-out rate (excluding the *Southern Ranger*) reaching \$275,000 per annum. Over the six-year period of compliance budgets reviewed, there have been only relatively minor movements in the CPI-adjusted total compliance budget (see Figures 4 and 5).

Industry feedback (i.e. their perception) indicates that the \$275,000 charge-out rate is perceived as excessively high—particularly given that compliance officers typically operate in pairs, effectively doubling the cost of operations including inspections.

Based on PIRSA's staffing profile, where 55 compliance officers are allocated across commercial, recreational, and Indigenous fisheries, this charge-out rate equates to approximately 20 FTEs dedicated to the commercial sector. The remaining non-commercial budget of \$3,404,069 implies a fully loaded FTE charge-out rate of just \$103,153 per officer. Assuming wages are consistent regardless of deployment sector, this suggests an overhead cost allocation imbalance, with the commercial sector bearing a greater share of higher-cost overheads, including assets. This is further investigated in Section 10.3 and Table 7.

Two examples within the fully loaded FTE charge out rate context have been identified as suggesting that overheads are not being equitably allocated:

1. 480 at-sea inspections were conducted on 22 small (<8.5m) vessels, of which only 96 (20%) involved commercial vessels.
2. 36,183 terrestrial inspections were conducted, of which only 6,386 (17%) involved commercial operators. The project understands that the bulk of recreational contacts are with *Fishcare Volunteers*.

10.3 FTE Day Rate Activity Based Costing

The basis for PIRSA's activity-based-costing model is that each fishery is apportioned a share of 3,626 'FTE fishery officer days' (henceforth *FTE days* or *FTE day budget*). The way in which FTE days are apportioned is covered in other parts of this report including the ARCCC model and several primary recommendations address this issue. The purpose of this section in the report is to investigate and explain the FTE rate with a focus on the transparency of the charge.

The current \$275,000 FTE rate is based on 200 working days per annum per FTE therefore equating to \$1,375 per day. This rate is clearly stated in various PIRSA documents, and all fishery interviewees understood the rate with most stating they believe it to be excessive. The project has not been able to benchmark the overhead loaded FTE rate because of differing asset bases and cost recovery frameworks.

The FTE cost is comprised of four components:

1. Officer costs (53%)
2. Operating expenses (19%)
3. Asset depreciation and cost of capital (4%)
4. Other expenses (various overheads) (24%)

To apportion asset depreciation and cost of capital charges into the FTE rate, PIRSA maintains an *Asset Register* detailing capital assets associated with the delivery of compliance services. There are 460 individual capital items (including 22 vessels) attributed to compliance services, with a purchase price of ≈\$10m and after depreciation these 460 items are now valued at ≈\$4m. The project did not consider the appropriateness of assets and only ran high level metrics to gain some understanding of their use. Investigations were not thorough enough to make recommendations.

Both a depreciation and cost of capital charge is made using the asset register. The cost of capital is charged on the depreciated, i.e not-yet-recovered amount. The question of whether the cost of capital charge is appropriate is out of the scope of this project. This project notes that a small opportunity charge on assets is logical.

66% of these assets costs are charged into the commercial FTE rate. In the absence of recreational licence fees this equates to a 33% public good provision by PIRSA.

Equally 66% of compliance operating expenses are placed within the commercial FTE rate.

The apportionment of 66% of assets and operating costs to commercial is outside the scope of this project. However, interesting benchmarking can be undertaken with New Zealand (Table 7). The table shows that the ratio of recreational anglers to active commercial vessels is *about* the same in both jurisdictions yet South Australia is apportioning more than double of their compliance costs to the commercial sector. The report notes this but does not consider the matter within its recommendations.

Table 7 Benchmarking of compliance cost allocation in New Zealand and South Australia

	New Zealand	South Australia
Recreational Anglers	660,000	350,000
Active commercial vessels	745	544
Ratio (recreational: commercial)	885:1	643:1
Commercial share of compliance levies	30%	66%

PIRSA is transparent in stating the FTE annual rate, and in stating the four components (officer wages, operating costs, assets and other expenses). However, the level of explanation below this is harder to find and understand. PIRSA are in the unenviable position that the more detail they provide to industry, the more industry will interrogate these lower divisions, and greater work (and cost) will be required to explain this to industry. By nature, cost accounting is imperfect.

RECOMMENDATION 8

PIRSA should then zero all compliance budgets (“FTE officer days”) and undertake a holistic review of the risk and catch all fisheries relative to each other. The ARCCC framework, or a similar RCC framework, could be used to allocate the remaining days. This would align the allocation of compliance resources with the *Risk-Catch-Cost* philosophy. This should be reviewed periodically (perhaps at three-year intervals). This review requires re-calculation of relative compliance and catch risks.

10.4 Worked example of the application of RCC in South Australia’s fisheries

The project recognises that high-level strategic recommendations (such as zero-base budgeting before applying new thinking) are potentially ambiguous and will require further development by PIRSA. To provide a practical example, this report has used the ARCCC model to allocate compliance FTE day budgets across fisheries.

Importantly, this report does not suggest that PIRSA must adopt this example as-is. Instead, it demonstrates one way the recommendation could be implemented. If the recommendation is accepted, PIRSA may:

- accept this allocation,
- accept this allocation and adjust for minor operational bounds,
- adjust the inputs used in the ARCCC model,
- develop and apply its own RCC-based allocation model.

The following foundational planning assumptions were used when apportioning FTE days (all consistent with the earlier findings of this report):

1. The balancing metric is FTE days per active fisher. The number of active fishers is as shown in Table 10 (reproduced in Table 8).
2. Risk and catch scores are from Table 9 (reproduced in Table 8).
3. Because it is difficult to score the *Charter Fishery* reliably for risk and catch, the report recommends rolling over its current FTE days into the new budget (i.e. no reduction is applied).
4. While the report recommends a reduction range of 33%–61% in compliance servicing. A 50% reduction in FTE days (to 1,813 days) has been applied in this example for simplicity. Sensitivity analyses across the proposed range of appropriate reductions have not been included but could be run if required.
5. FTE allocations are made in whole days (per fishery) and rounded accordingly.
6. FTE days per active fisher are constrained to a minimum of 2.0 days and a maximum of 5.3 days (embolden in Table 8). The minimum (2.0 days) reflects a practical lower limit and means that the fishery with the lowest risk and catch fits the RCC relationship and is treated equitably. The maximum (5.3 days) is the current number of days allocated to the highest risk and catch score fishery (the *Marine Scalefish Fishery*). The minimum and maximum are an arbitrary imposition, and AI would allocate days based on risk and catch scores between other values.

Within these assumptions FTE days have been re-allocated between fisheries by AI based on risk and catch scoring from the ARCCC. The resultant example FTE day budget is shown in Table 8. Variances between the ARCCC-driven-budget and the current budget are shown directly below that in Figure 21. Figure 22 shows the compliance cost distribution of fisheries across the risk-catch scale.

Discussion points:

- Figure 22 shows a generally linear relationship increasing catch and risk result in increased FTE days (cost). Slight outliers reflect imposed minimum/maximum values and rounding to whole numbers in fisheries with low active fishers.
- Under the current budget days allocated per vessel per annum ranges from 1.2 to 20.0. Under the proposed budget the range is significantly smaller; 2.0 to 5.3.
- Of the 15 fisheries considered (excluding *Charter*): 11 fisheries experience reductions, one remains static (budget rolled over in the *Marine Scalefish Fishery*), three experience slight increases.

- ‘Unhappy outlier’ fisheries (Figure 16) experience the greatest budget reductions while ‘happy outliers’ (Figure 15) achieve smaller reductions or even small increases.
- The last row of Table 8 shows that the ratio of risk/catch score vs cost is constant.
- Figure 22 appears similar to Figure 13 and Figure 19 but differs in that its Y-axis is FTE days per active fisher while in earlier figures the Y-axis is relative compliance cost per active fisher or CDR. Given that the Y-axis in Figure 22 is not a relative score from 5.0 it extends through 5.0 units. In all three figures the relationship of fisheries to the RCC relationship can be assessed by their relationship to the line of best fit.
- There is a steeper more positive relationship between the sum of risk and catch with cost in the ARCCC-driven-budget. Periodic re-assessment of risk and catch means that fisheries are incentivised to improve and invest in reporting, data, surveys and assessment and to be compliant, because doing these things reduces levied compliance cost. Conversely, if PIRSA uses a RCC-driven-budget such as the ARCCC they are applying compliance resources to the highest compliance risk fisheries in need of ESD improvement.

Table 8 Worked risk-cost-catch weighted example of 50% reduction in compliance servicing of fisheries

	Abalone - Central Zone	Abalone - Southern Zone	Abalone - Western Zone	Blue Crab	Charter Boat	Prawn - Gulf St Vincent	Prawn - Spencer Gulf	Prawn - West Coast	Rock Lobster - Northern Zone	Rock Lobster - Southern Zone	Lakes and Coorong - Finfish	Lakes and Coorong - Pigi	Marine Scalefish	Giant Crab	Sardine	Vongole	TOTAL
Current FTE days budgeted pa	100	60	360	59	60	20	32	6	500	1,172	40	50	967	12	150	38	3,626
Active Fishers	6	6	19	7	50	4	39	3	25	140	32	10	184	1	11	7	544
Current FTE days budgeted per active fisher pa	16.7	10.0	18.9	8.4	1.2	5.0	0.8	2.0	20.0	8.4	1.2	5.0	5.3	12.0	13.6	5.4	
Risk Score (max 5)	2.1	1.7	2.5	1.0	NA	1.9	1.9	1.1	2.0	1.7	2.5	2.4	5.0	1.3	2.9	2.3	32
Catch Score (max 5)	4.6	2.1	3.2	2.1	NA	2.5	1.4	3.6	2.1	1.8	3.9	1.8	4.6	5.0	1.4	2.1	43
Combined Score (R-C) (max 5)	3.4	1.9	2.8	1.6	NA	2.2	1.6	2.4	2.1	1.8	3.2	2.1	4.8	3.2	2.2	2.2	37
Proposed FTE days from R-C score pa	25	14	65	14	60	11	79	9	64	301	126	26	967	4	29	19	1,813
Proposed FTE days from R-C score per active fisher pa	4.2	2.3	3.4	2.0	NA	2.8	2.0	3.0	2.5	2.1	3.9	2.6	5.3	4.0	2.6	2.7	
Variance: days per active fisher: current vs proposed	-12.5	-7.7	-15.5	-5.4	0.0	-2.3	1.2	1.0	-17.5	-6.2	2.7	-2.4	0.0	-8.0	-11.0	-2.7	
Proposed FTE days per active fisher to R-C score ratio	0.81	0.82	0.83	0.78	NA	0.81	0.81	0.78	0.81	0.82	0.82	0.81	0.92	0.79	0.82	0.82	

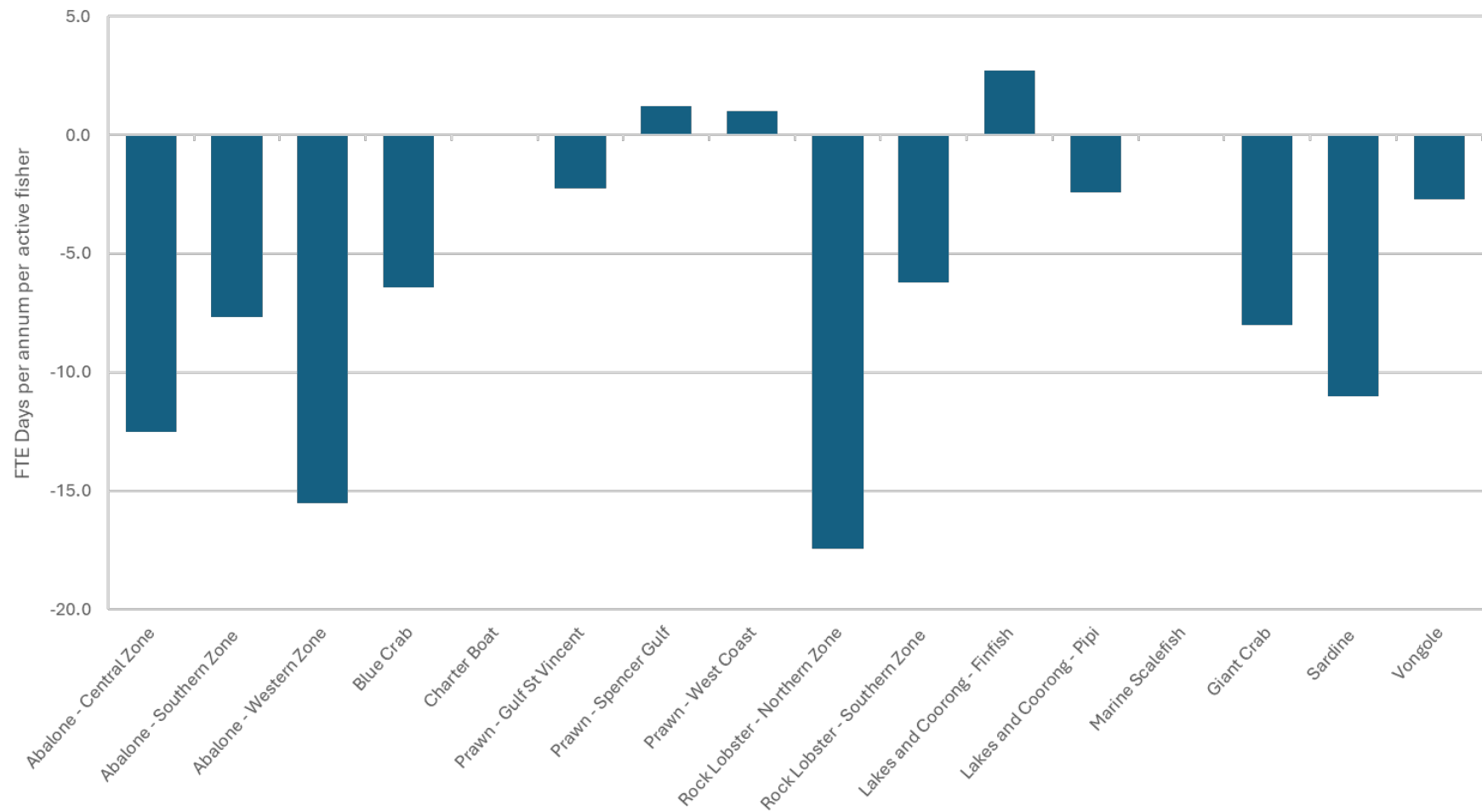


Figure 21 Variance between current and worked RCC example of FTE budgets by fishery

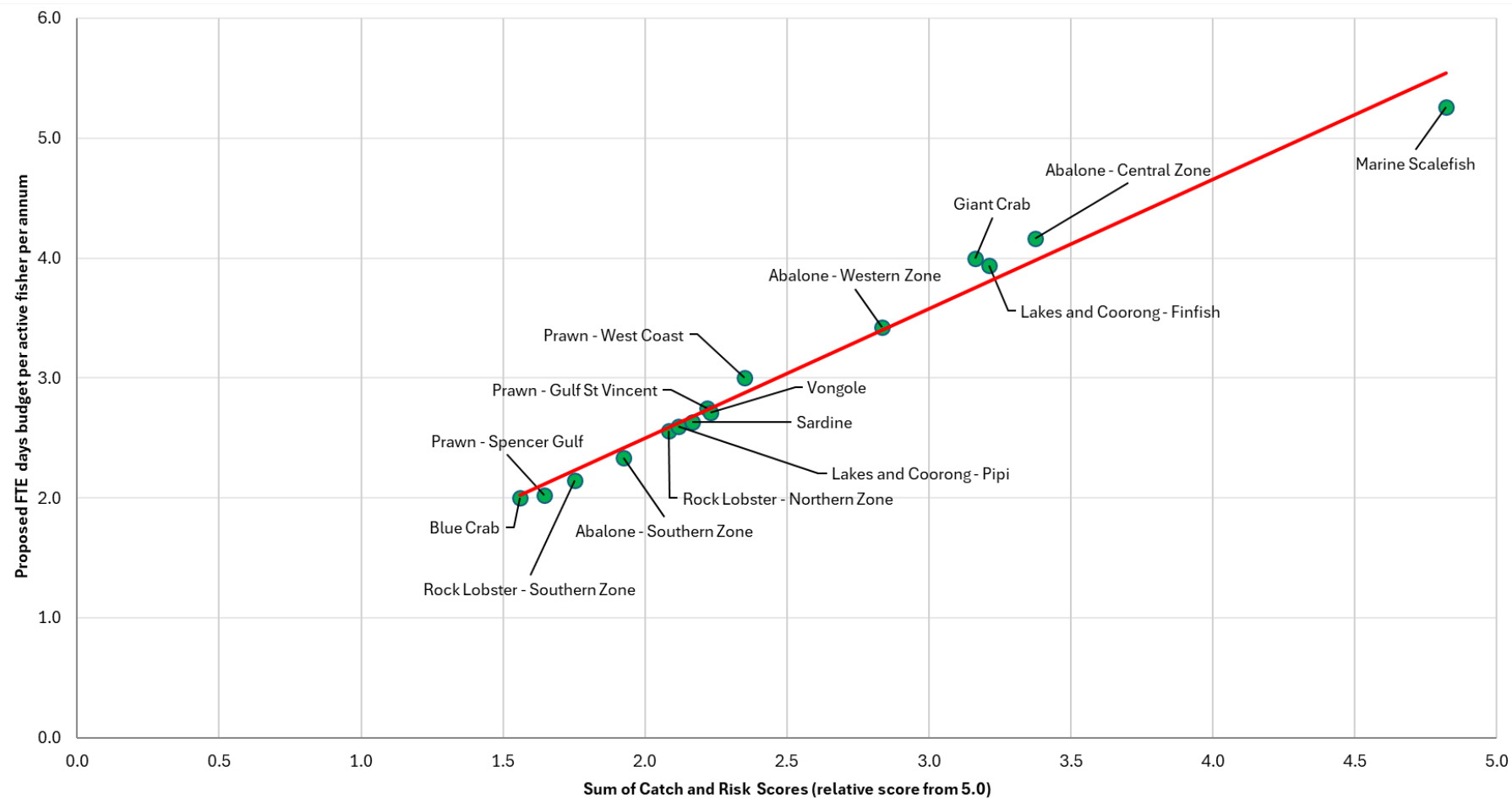


Figure 22 Scatter plot of worked example of 50%-reduced, ARCCC apportioned FTE budgets (imposed green colouring is applied suggesting all fisheries now sit within the expected RCC relationship) Note that the Marine Scalefish Fishery cost is plotted using unsubsidised compliance levies.

11 TEP COMPLIANCE

11.1 Marine mammal Interactions and Social Licence

Between 2012 and 2015 there was controversy off Southern NSW surrounding the operation of the *FV Margiris/Abel Tasman* (143m) and the *FV Geelong Star* (95m) as a foreign ‘deemed’ vessels in the Commonwealth-managed *Small Pelagic Fishery* (SPF).

Public and media concern centred on the *Margiris/Abel Tasman*’s size (143m) and because output controls were not understood, the potential impacts on local fish stocks, but also on TEPs (dolphins, seals, seabirds), and reduced recreational fishing opportunities.

Interestingly, in 2012 the South Australian Government wrote to the federal fisheries minister explaining that the vessel would not be granted permission to fish in South Australian coastal waters (noting the vessel caught less than the South Australian sardine fleet and did not request access).

The *Margiris/Abel Tasman* departed Australia having not been able to reach commercial agreement on lease rates with Australian quota owners. Following its departure the Australian Government placed a two-year interim ban on factory freezer trawlers >130m in Commonwealth waters while a review took place deeming it to be a new fishing method. The [review’s outcome was generally supportive](#), but long after its departure the Government later legislated a permanent ban in 2015 for this single fishing vessel >130m.

The episode is often cited as a defining moment in fisheries social licence, illustrating how community opposition, eNGO co-ordination and environmental concerns can drive regulatory and political action despite scientific assessments of sustainability.

Trawl interactions in the SPF trawl fishery with dolphins do not have the opportunity to release fish, as is the case with those encircled in a purse seine net. The *Margiris/Abel Tasman* interacted with less than 20 dolphins.

The *Sardine Fishery* is responsible for more than half of South Australia’s recorded TEP interactions (few mortalities but ≈150 annual encirclement interactions). As such it is the obvious case study within which to examine PIRSA’s TEP compliance response. Most *Sardine Fishery* interactions are with the short-beaked common dolphin (*Delphinus delphis*) and while uncommon there are possible interactions with bottlenose dolphins (*Tursiops aduncus* and *T. truncatus*).

Noting the issue of social licence set down above for reference, this report stays firmly within its scope and does not consider or mention social licence or reputational risk again.

11.2 Legislation governing TEPs

This project is charged with investigating whether the compliance regime is meeting the requirements of the *Fisheries Management Act 2007* (SA) (henceforth South Australian

Fisheries Act). The project has attempted to consider all relevant State and Commonwealth Acts at a high level but notes this report does not constitute detailed legal interpretation or advice.

Section 71 of the South Australian Fisheries Act prohibits the taking, injuring, or killing of aquatic mammals and other protected species. This includes a variety of marine life, such as seabirds, marine reptiles, marine mammals, and certain protected fish species like great white sharks and syngnathids (seahorses, sea dragons, and pipefish). The section aims to protect these species from unreasonable harm caused by fishing activities. It states, "*Taking, injuring etc aquatic mammals and protected species prohibited*". 71(3) adds, "*In proceedings for an offence against this section, it is a defence if the defendant proves—*

(a) *that the alleged offence was not committed intentionally and did not result from any failure on the part of the defendant to take **reasonable care**⁴ to avoid the commission of the offence; or*

(b) *that the act alleged to constitute the offence was authorised by or under some other Act or law.*"

Further, within South Australian waters, legislation regarding interactions with cetaceans includes the *National Parks and Wildlife Regulation 2010 (Protected Animals – Marine Mammals)*, *Animal Welfare Act 1985* and *Fisheries Management Act 2007*. Regulations within these acts pertain to minimum approach distances, disturbance avoidance, vessel speed in the vicinity of cetaceans, avoidance of injury to individuals, mandatory reporting of interactions, and penalties for non-compliance. For the moment for this discussion these acts are not considered.

All cetaceans are listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (thenceforth EPBC Act). Chapter 5, Part 13, Division 3: Whales and other cetaceans, sets down that it is an offence for a person to cause the death or injury of a cetacean (section 229) but provides several exemptions:

1. The fishery is accredited under Part 13.
2. The fishery is an approved Wildlife Trade Operation (WTO)
3. The interaction was unintended in the context of an approved management plan (and operated within its conditions)

The *Sardine Fishery* is accredited under Part 13 and holds a WTO.

In addition to holding one of the defences above, the operator must not have acted *recklessly*.

⁴ Emphasis added.

A further complication is that the *Sardine Fishery* is a [certified WTO](#) (until March 2027) but that the accreditation contains seven conditions including three specifically addressing dolphins. In summary there are:

1. Condition E: work with industry to adopt mitigation measures
2. Condition F: respond to a FRDC project addressing the sustainability of dolphin interactions
3. Condition G: implement systems to reliably collect “mortality” (not interaction) data

This report contends that *Risk-Cost-Catch* should be considered in compliance efforts so the conservation status of the TEP in question should also be examined. The population of short-beaked common dolphins in South Australia is reported by several sources as being in the range of 20-30,000 and the species’ IUCN global conservation status is *least concern*. Nor is it EPBC listed as threatened. The FRDC project mentioned in WTO condition F has concluded that there was a population increase between 2011 and 2021.

The *Sardine Fishery* operates a “[Wildlife Interactions Code of Conduct](#)” (2023). This was developed following high rates of interaction in 2005. The code sets down the operational steps that must be taken:

- Observation and monitoring of protected species and to not fish if protected species are in the area, visibility must be considered
- Release of dolphins from encirclement events in particular ways
- Land the carcass if possible
- Accurate reporting
- Training
- An aim for continuous improvement
- Notes that PIRSA will interview Skippers following an interaction

PIRSA explain that dolphin bodies are sent to the South Australian Museum and that Compliance always undertake an investigation. It does not appear that the bodies of other protected species, even those of higher conservation concern like white sharks, seabirds, Australian sea lions or turtles are returned to shore for necropsy. Necropsy costs are not recovered in South Australia currently (as they are for e.g. in New Zealand), but industry has expressed concern that they may be in the future.

The Wildlife Interaction Working Group (WIWG) reviews codes of conduct and dolphin and white shark mortality events. However, it does not seem to investigate other protected species interaction events - not even those involving TEPs of higher conservation concern.

Although out of scope this report notes that PIRSA’s annual reporting and collation of protected species is excellent. Like other fishery management jurisdictions, reporting struggles to separate non-harm, beneficial interactions such as depredation with those causing harm and stress (including mortalities). Although outside the scope of this report PIRSA could define the term “interaction” and educate fishers to report only harm/stress interactions.

This report raises the question of whether the EPBC Act provides a defence for TEP interactions under the South Australian Fisheries Act. And notes that the EPBC Act's "recklessness" test likely represents actions further along the irresponsibility scale than the South Australian Act's "reasonable care" defence. It is therefore likely that "recklessness" is more visible than "reasonable", the latter being more nuanced and requiring more investigation. It follows that if the EPBC Act is a relevant defence as "another act", it may be that there is not a need to refer recklessness investigations (to the Department of Climate Change, Energy, the Environment and Water, DCCEEW) without evidence suggesting this may have occurred and therefore no need to undertake routine investigations to determine "reasonableness" in the context of the South Australian Fisheries Act.

Benchmarking discussions with AFMA have confirmed that while reporting interactions, it does not routinely investigate TEP interactions (AFMA use the interchangeable ETP⁵ acronym) but would refer them to the DCCEEW if they believe there has been an offence that warrants further investigation of recklessness or intentional harm. A few AFMA-managed fisheries operate EM and if recklessness was suspected, footage would form part of any DCCEEW investigation. However, most AFMA-managed fisheries interacting with TEPs do not currently operate EM.

Further, AFMA and DCCEEW do not undertake routine necropsies of TEPs to determine "recklessness" even if such data might inform that judgement. This report finds it is inconsistent with other TEP mortalities that only dolphin bodies are required to be returned for necropsy.

11.3 TEP Benchmarking

The Commonwealth managed shark gillnet fishery experiences a similar situation when observers were placed on vessels and immediately noticed unexpected (previously not reported) interactions with Australian sea lions in waters adjacent to South Australia. Only a very small number of shots were observed (≈ 100) with around a dozen interactions observed. Estimates that extrapolated effort suggested that 250 interactions per annum (these are heavily disputed by industry). At that time ASL conservation status was EPBC Act *threatened/endangered*.

Significant foraging and colony closures were put in place in 2010 and 2012. Electronic monitoring was introduced in the fishery in 2015. Review of EM footage has shown that the fishery now experiences <1 interaction per annum. The fishery has made a significant move away from gillnets to hooks in waters off South Australia.

⁵ ETP is arguably more useful because it reminds the reader of the hierarchy of concern; Endangered, Threatened, Protected.

Review rates dropped from 10% to 5% in 2025 but EM costs remain stubbornly high at around \$10,000 per annum per vessel in the fishery. Following capitalisaiton, the EM review cost is driven by the review rate and time required to review the relevant portion of fishing operations.

In November 2025 the AFMA Commission reported on EM in their published minutes. [Error! Hyperlink reference not valid.](#) They noted that the roll-out of EM in other AFMA-managed fisheries is underway, via an open tender process to establish a panel of approved suppliers that industry can consider for service provision. AFMA has commenced detailed consultation with operators in some fisheries. The Commission noted plans to internalise footage review. And the confluence of a near-complete CSIRO AI algorithm and the new software is already showing potential to reduce footage review time in the Eastern Tuna and Billfish Fishery by a significant proportion.

This report expects that while human observer and human EM reviewer wages will rise, that AI will reduce EM review costs overall.

The Commission also welcomed AFMA's efforts to encourage other jurisdictions to cooperate with AFMA's program rather than developing bespoke EM systems and processes.

11.4 TEP Conclusions

PIRSA's investigatory approach to some protected species interactions within the *Sardine Fishery* seems at the higher end of potential responses. Consideration should be given to the EPBC Act as a defence (from the South Australian Fisheries Act) and to AFMA's response under the EPBC Act.

The necropsy of dolphin bodies seems also to be at the higher end of potential responses. This report's understanding is that there has never been evidence derived from necropsy to suggest "unreasonableness". However, statements within the *Sardine Fishery's* code of conduct (body to be returned, PIRSA to investigate) to some extent validate PIRSA's response because following the code of conduct is what a reasonable person would do and not doing so it likely acting recklessly.

Investigation into the fishery raises questions about the EPBC Act defence. And about whether compliance levies should be used to maintain social licence and reduce political risk.

RECOMMENDATION 9

This report suggests that compliance with the EPBC Act may be a defence under the South Australian Fisheries Act and that PIRSA should investigate this. If correct, PIRSA's routine investigation into the reasonableness of interactions should cease. This is particularly relevant to the *Sardine Fishery*.

RECOMMENDATION 10

South Australian and Australian regulations (including WTO conditions) around interactions with protected species are complicated. PIRSA conducts investigations into interactions with dolphins but does not appear to undertake the same investigations for seabirds, pinnipeds, and certainly not syngnathids. Higher conservation concern TEPs should receive more focus than low concern species such as dolphins.

RECOMMENDATION 11

PIRSA should not continue the necropsy of dolphins for compliance investigations noting this does not occur across protected species of equal, or higher, conservation concern. (Necropsies might form useful databases held for other purposes).

RECOMMENDATION 12

PIRSA's mindset should not be to cost-recover compliance costs designed to prevent reputational or political damage to the *Sardine Fishery*, including the development of industry codes of practice or mitigations. Industry (particularly the *Sardine Fishery*) should assume responsibility for codes of conduct aiming to mitigate TEP interactions because it is best placed to implement such strategies and has most at stake. Noting that significant progress has been made, industry must refocus their attentions and assume responsibility for TEP interactions given community expectations exceed the requirements of the applicable acts.



12 PRIMARY RECOMMENDATIONS:

12.1 Resourcing & Operational Recommendations:

- 1) PIRSA should reduce their compliance activities targeting the commercial sector significantly. The reduction proposed is more than one third but less than the 61% that would be required to reach the peer benchmark. This will reduce FTE compliance days charged to commercial fisheries from 3,626 to somewhere between 1,414 and 2,393. This reduction should lead to an allied reduction in compliance assets, their operational costs and will change the way in which overhead costs are applied. PIRSA will and should maintain a higher compliance level than the Australasian benchmark which, if well spent, will continue to place the fishery in good standing.
- 2) Although *Southern Ranger* costs seem reasonable and are largely immaterial, the *Southern Ranger* and other inspection vessels should only undertake at-sea inspections in fisheries passing three tests:
 - a) They are fishing in >1 regional quota zone and cannot be monitored using VMS.
 - b) There is a compliance advantage based on specific objectives from at-sea inspections (rather than in-port).
 - c) In the case of the *Southern Ranger*, smaller and less costly trailer vessels cannot be used.
- 3) Consider a range of enabling changes to management arrangements including:
 - The efficiency of stopping or changing corfing in the Northern Zone Rock Lobster Fishery
 - The need for both minimum weight and minimum shell length in the Western Zone Abalone Fishery (noting that the fishery wants both).
 - The potential for undersized fish to be returned to the water from the vessel.
 - Setting reasonable (higher) tolerance between beach/vessel and processor weights and lengths in several fisheries.
 - Confirm the term 'interaction' and educate fishers to report only TEP harm/stress interactions (i.e. not depredation events).
 - Review the use of two fishery officers for dockside and processor inspections as they might not necessarily require two fishery officers.

12.2 Digital Efficiency Recommendations:

- 4) VMS and eLogs should be implemented in all relevant fisheries (all other than Lakes and Coorong – Piji, Lakes and Coorong – Finfish and Vongole).
- 5) VMS should replace hail-in and hail-out requirements as spatial monitoring where implemented

- 6) Industry and PIRSA should work collaboratively to investigate the cost-effectiveness and practicality of EM as a tool to validate the accuracy of logbook reporting in the *Sardine Fishery*. A framework for declining review rate could be agreed so that if logbook vs EM reviewer congruence is strong, review rates decrease. PIRSA, AFMA and industry should work together to find efficiencies given AFMA's announcement that dual endorsed *SBT/Sardine Fishery* vessels are to receive EM.
- 7) The adoption of digital technology will alter traditional compliance service delivery. PIRSA should define its future technology-enabled compliance model before organisational redesign. The transition should progress through phased implementation starting with changed compliance services proposed in this report, then the development of a digital compliance and data strategy, a virtual fisheries control centre, and potentially forming a collaborative, technology-driven compliance partnership with other Australasian jurisdictions.

12.3 Planning Recommendations:

- 8) PIRSA should then zero all compliance budgets ("FTE officer days") and undertake a holistic review of the risk and catch all fisheries relative to each other. The ARCCC framework, or a similar framework, could be used to allocate the remaining days. This would align the allocation of compliance resources with the Risk-Catch-Cost philosophy. This should be reviewed periodically (perhaps at three-year intervals). This review requires re-calculation of relative compliance and catch risks.

12.4 TEP Recommendations:

- 9) This report suggests that compliance with the EPBC Act may be a defence under the South Australian Fisheries Act and that PIRSA should investigate this. If correct, PIRSA's routine investigation into the reasonableness of interactions should cease. This is particularly relevant to the *Sardine Fishery*.
- 10) South Australian and Australian regulations (including WTO conditions) around interactions with protected species are complicated. PIRSA conducts investigations into interactions with dolphins but does not appear to undertake the same investigations for seabirds, pinnipeds, and certainly not syngnathids. Higher conservation concern TEPs should receive more focus than low concern species such as dolphins.
- 11) PIRSA should not continue the necropsy of dolphins for compliance investigations noting this does not occur across protected species of equal, or higher, conservation concern. (Necropsies might form useful databases held for other purposes).
- 12) PIRSA's mindset should not be to cost-recover compliance costs designed to prevent reputational or political damage to the *Sardine Fishery*, including the development of industry codes of practice or mitigations. Industry (particularly the *Sardine Fishery*) should assume responsibility for codes of conduct aiming to mitigate TEP interactions because it is best placed to implement such strategies and has most at stake. Noting that significant progress has been made, industry must refocus their attentions and assume responsibility for TEP interactions given community expectations exceed the requirements of the applicable legislation.

13 SECONDARY RECOMMENDATIONS:

- 13) Consider attributing costs for transit and processor inspections to the processor and not the commercial fisher as per their cost recovery model to ensure costs are attributed to the body as defined in Part 3 of the Act.
- 14) PIRSA's compliance reports are on balance an excellent component of their compliance framework adding transparency to PIRSA's activities. They could be improved by homogenisation and a summary table containing metrics such as contacts, and various tiers of compliance response. The reports should also report on successful compliance rather than only non-compliance.

APPENDIX 1 ARCCC ANALYSIS BY FISHERY



APPENDIX 2 SUMMARY OF VIRTUAL, IN-PERSON & E-MAIL INTERVIEWS AND COMMUNICATIONS

Central Zone Abalone

The *Central Zone Abalone Fishery* has demonstrated consistently high compliance and effective self-regulation. Compliance risks are confined primarily to biosecurity issues, with no evidence of illegal harvesting or quota manipulation. Industry remains opposed to the implementation of Vessel Monitoring Systems (VMS) feeling there has been no discussion or agreement that it was required. Industry maintains its opposition regardless of any proposed timeframe, noting that it had offered for compliance officers to utilise the existing logger data system—a proposal declined by authorities on the grounds of alleged unreliability, a claim for which no evidence has been provided. Industry reports ongoing frustration with increasing compliance costs despite stable or declining activity levels. While PIRSA's engagement is generally professional, it is perceived as overly bureaucratic. Fishers continue to seek greater transparency and the application of a genuine risk-based model. Given the fishery's small fleet, short trip durations, and strict quota controls, it is regarded as a low-risk, high-compliance operation deserving of a reduced compliance burden.

Southern Zone Abalone

The *Southern Zone Abalone Fishery* was described as comprising of six active licences, operating under strong co-management through the association. VMS is fully implemented, and eLogs are being phased in. Compliance risk is negligible, as fishing is limited to short, traceable trips with strict quota and spatial controls. The association emphasised high compliance and professionalism among operators, with voluntary spatial management exceeding regulatory requirements. PIRSA's relationship is very good and collaborative, but compliance costs remain disproportionately high given the fishery's small scale and minimal risks. Despite efficiency gains from VMS, fees have not declined to the extent of the risks perceived. Operators value PIRSA's professionalism but call for a recalibration of service delivery to match actual compliance risk.

Industry Note: 2023/2024 season compliance days dropped from 100 to 60. PIRSA did this without a request from SZAM.

Western Zone Abalone

The *Western Zone Abalone Fishery* is described as a small, family-based operation of 22 licences, most of which are owner-operated, with deep generational stewardship and strong moral responsibility for sustainability.

The fishery operates under a long-standing Memorandum of Agreement (MOA), which for over a decade has enabled consistent industry-led spatial closures, seasonal



restrictions, and voluntary quota under-catching to rebuild stocks, making it one of South Australia's most self-regulated fisheries. ELogs are in place, and the sector is preparing for VMS introduction, though industry questions its necessity given the already proven compliance record and low risk profile. A bespoke digital app collects vessel tracks and catch data, providing near-real-time traceability and supporting local "paddock farming" of reefs.

PIRSA's relationship with the Western Zone Abalone Industry Association, is cooperative but strained by chronic cost recovery disputes and perceived over-servicing.

Compliance costs approach ~\$500,000 annually (~\$27,000 per licence), despite negligible risk and no recorded expiations from 609 inspections in 2023/24.

Most compliance effort targets processors rather than divers, and many "risks" are industry-initiated interactions, not detected breaches. Key issues include inconsistent enforcement of meat-weight limits, duplication of reporting obligations once VMS is active, and inadequate recognition of industry's proactive risk reduction.

The fishery faces genuine biosecurity challenges from AVG virus, so the industry is frustrated that resources that could be directed toward disease prevention are instead expended on low-yield at-sea checks.

Industry calls for a risk-based, proportionate compliance model, better transparency around FTE and program costings, and the retirement of redundant input controls once VMS and digital monitoring are operational

Overall, the *Western Zone Abalone Fishery* demonstrates exceptionally high compliance and stewardship, underpinned by digital innovation and self-management. Through voluntary reductions and effective management under the MOA, the fishery has achieved a strong rebuild, with Greenlip stocks reaching their target catch levels. However, the fishery continues to suffer from a mismatch between its low-risk profile and disproportionately high compliance charges

Blue Crab

The Blue Crab Fishery is a stable, low-risk operation characterized by consolidated ownership and strong self-regulation. Digital aids include eLogs and VMS, though the cost savings from these systems are perceived to have not been realised. The fishery was described as cooperative and professional, with a high level of internal governance between the two family groups controlling most licenses. Compliance risks are minimal, focused on quota management and spatial accuracy. PIRSA's relationship with the industry is positive but there are concerns about disproportionate cost recovery for the low level of risk. The fishery has no recent history of significant offences. Industry supports the compliance model but seeks greater transparency and scaling of costs to risk.

Charter Boat

The Charter Boat Fishery comprises about 80 licenses, with 50 active. It operates as a commercial fishery under South Australian law, a distinction unique among Australian states. Digital reporting transitioned from paper to eLogs in July 2025, improving timeliness but not reducing management costs as yet. There is no VMS or observer coverage, and inspections are mostly shore-based. Compliance risks are minor—mainly administrative lapses in reporting or spatial restrictions. The association described the compliance service as professional and non-punitive, though costly and disproportionate to risk. PIRSA's relationship with the sector is positive, but industry calls for a 'line-in-the-sand' reassessment of cost recovery to reflect actual activity levels. Operators view themselves as custodians of the resource, maintaining a high compliance culture and educating their customers who are fishing on their vessels.

Prawn – Gulf St Vincent

The industry association explained that the St Vincent Gulf Prawn Fishery has a long record of high compliance and co-operative management (operating under a formal co-management agreement). Operators employ eLogs and VMS but not EM. PIRSA maintains an open, trust-based relationship with the fleet, characterised by regular dialogue and problem-solving rather than enforcement. Compliance risks are limited to spatial closures and bycatch management, both well-controlled. The fishery benefits from long-term stewardship, clear harvest strategies, and strong internal accountability within industry structures. Industry considers the compliance service effective but questions the proportionality of cost recovery relative to the small number of active vessels. There is strong internal accountability within the industry and a preference for education over punishment. PIRSA's presence is viewed as appropriate, and the compliance framework is largely fit for purpose. The industry values education and communication from compliance officers.

Prawn – Spencer Gulf and West Coast

Industry associations have explained that both the Spencer Gulf and West Coast Prawn Fisheries operate under strong co-management through their industry association, with Spencer Gulf being MSC-certified and holding delegated authority for fishery openings and closures. Compliance is built around robust digital tools (VMS, eLogs) and close co-ordination between industry and PIRSA. The association stressed the high level of trust in Spencer Gulf, where real-time data and internal codes of conduct drive strong self-policing. On the West Coast, the smaller fleet (three vessels) faces greater environmental variability and reduced returns due to El Niño, yet compliance remains exemplary. Industry questions the value-for-money of compliance services and seeks a shift toward data-driven, risk-based models that rely less on costly at-sea inspections through the use of *Southern Ranger*, instead using a potentially lower cost solution.



PIRSA's engagement is positive and pragmatic, though industry urges improved transparency over service costs.

Rock Lobster – Northern Zone

The industry association explained that the fishery was smaller than the *Southern Zone* Fishery with around 25 active fishers. That digital systems are well-developed: eLogs, eCDRs, bin RFID tags and VMS are in use with the fishery differing from the *Southern* in that it did not use point-of-unload cameras.

PIRSA–industry relations are stable, though industry questions the proportionality of cost recovery. The fishery put forward a number of points relating to the relativity of their compliance costs including the highest number of contacts per vessel, that compliance cost per vessel was three times the *Southern Zone*, that 5.5% of the fishery's revenue was expended on compliance levies, and that on average each vessel fished for around 100 days per annum but received 20 fully-costed fishery officer days.

Compliance service quality is regarded as excessive for the low level of risk and that there are too many inspections for a high-compliance fishery. Industry calls for recalibration of cost and effort to actual risk.

Industry believes that its compliance culture is strong, aided by high-value product, consolidated quota ownership, and effective co-management.

Rock Lobster – Southern Zone

The Southern Zone Rock Lobster Fishery was described by the industry association as a mature, high-value, and significantly digitalised operation using eLogs, eCDRs, and scheduled to have VMS implemented. Compliance risk is very low, with breaches largely administrative. PIRSA's relationship with the South East Professional Fishermen's Association is cooperative but strained by perceptions of over-servicing with compliance costs very high relative to risk. Industry argues that cost recovery should reflect the fishery's exceptional compliance culture and capacity for self-management. Compliance officers are regarded as fair and professional, though industry questions the need for frequent inspections. The fishery exemplifies a well-run, low-risk, digitally integrated sector requiring proportionate service adjustment. Industry calls for recalibration of cost and effort to actual risk and is not yet supportive of the implementation of VMS.

Lakes and Coorong – Finfish

The Lakes and Coorong Finfish Fishery is a small, multi-species operation of 36 licences, 32 of which are active. It is co-managed through the Southern Fishermen's Association, representing the finfish component alongside the adjacent Pipi (Cockle) sector. The fishery has a long history of sustainable management and strong local

stewardship but faces growing tension over disproportionate compliance costs and low-value service delivery.

Digital reporting transitioned from monthly paper returns to daily eLogs (as of July 2025), replacing a legacy system that drove unnecessary enforcement over late paperwork. There is no VMS, no formal observer program (although scientists regularly are on vessels to conduct research), and fishing occurs entirely within State waters.

PIRSA maintains a constructive relationship with the Association, but compliance officers are perceived as administrative rather than risk-focused, often engaging in low-yield activities such as calling fishers about missing returns rather than targeting material risks. The fishery's main compliance risks—occasional undersized fish, use of unregistered or excess gear, and fishing in closed areas—are all rated “moderate” or lower. Illegal sales once associated with interstate “laundering” of golden perch have now been eliminated. Black-market risk remains a concern, but industry notes that PIRSA devotes minimal resources to recreational or illegal trade enforcement due to funding constraints.

The sector pays roughly \$60,000 annually in compliance levies—about \$2,000 per active licence—for around 50 recorded interactions per year, equating to approximately \$1,500 per inspection. Industry questions the value of this service, given near-perfect compliance and negligible biological or sustainability risk.

Seals have reduced catches and profitability, yet reporting of interactions has fallen because industry feels “nothing happens” in response.

Overall, the Lakes and Coorong finfish fishery exhibits high compliance and strong stewardship but faces a mismatch between its low-risk profile and the cost, proportionality, and focus of PIRSA's compliance program.

Lakes and Coorong – Pipi

The Lakes and Coorong Pipi Fishery is a small, low-risk, quota-managed fishery comprising 11 licences, 10 of which are active, producing a premium, MSC-certified product. Approximately 70% of the sector's catch is marketed through *Goolwa Pipico*, a vertically integrated business coordinating quota pooling, processing, and branding, while the remaining operators are represented through the Southern Fishermen's Association.

Compliance systems are highly developed: eCDRs, app-based reporting, and prior “hail in/out” notifications have replaced paper logbooks. As of July 2025, all fishers are transitioning to full electronic daily reporting, moving from a monthly paper-based model.

PIRSA's relationship with industry is cooperative but strained by perceptions of disproportionate compliance costs.

A key reform this year replaced the long-standing “deemed 20 kg bag weight” system with certified scales to ensure precision and consistency across fisheries, following a minor discrepancy (bags averaging 21–22 kg). Compliance risks are limited to minor grading or undersize issues (typically 1%), now addressed through certified graders and proposed materiality thresholds to avoid penalizing trivial deviations. Enforcement activity remains high with 43 inspections last year, with no breaches. This creates frustration over value-for-money and duplication. Industry also questions the balance of compliance focus, noting attention to black-market or recreational take may be disproportionate to risk, given the perceived level of non-compliance on the recreational beach.

The fishery’s robust digital monitoring, transparent quota management, and cooperative governance indicate very high compliance and stewardship, yet compliance costs remain out of proportion to actual risk or enforcement need. Industry calls for a risk-based, efficiency-focused compliance model, recognition of its MSC certification, and consistency across comparable shellfish fisheries.

Marine Scalefish

The *Marine Scalefish Fishery* is a complex, multi-species fishery that underwent significant reform in 2021, reducing licences from over 300 to around 190. Digital tools including logs and VMS which are being implemented. eLogs are not perceived to be reducing compliance costs. PIRSA’s relationship with the two key representative bodies, SAPFA and the Marine Fishers Association, is generally constructive but marked by tension over cost recovery and proportionality. Compliance risks are low, with most breaches being administrative (e.g., reporting delays). Associations report a low offence rate, yet the fishery contributes roughly \$1.4 million annually in compliance levies. Industry is critical of inefficient service delivery under fixed Service Level Agreements that allocate compliance effort by days rather than risk. Operators report limited officer visibility despite high costs. Key risks are limited to accurate reporting, rather than deliberate non-compliance. Industry seeks a risk-based model aligning effort with risk and improved transparency over how compliance time and vessel costs are charged.

Sardine Fishery

The South Australian *Sardine Fishery* presented itself as highly professional and well-managed, with strong observer coverage and industry-driven sustainability initiatives. eCatch i and VMS are in use (eLogs are under development), and discussions are underway about expanding electronic monitoring (EM). The Association raised concerns that EM may be misused as a compliance tool rather than a scientific monitoring aid, risking loss of trust between PIRSA and industry. The primary compliance focus is on interactions with TEP species, including common dolphins. Though incidents are infrequent (reported as fewer than ten per year across ~1,000 net sets), each triggers a full investigation, which industry views as disproportionate. The PIRSA relationship is



respectful but strained by these investigations and perceived over-reach. Compliance risk is very low, supported by quota management, certified bin systems, and over/under-catch rules that promote accuracy. Industry calls for risk-based proportionality and access to its own VMS data to enhance transparency and efficiency.

Vongole

The Vongole Fishery was described by the industry association as being at a small scale with 12 licences, of which seven are active, landing about 70 tonnes annually.

It employs digital reporting via an app and daily declarations of fishing activity. The fishery believes that VMS is of no use in such a small and localised fishery.

PIRSA's relationship with the Vongole Fishers Association (VFASA) is constructive, but concerns are expressed about the perception of flat compliance costs that do not reflect declining effort.

Compliance risks are described minimal, given the single species, short fishing days, and single processor. The fishery is highly traceable, and enforcement activity is limited. Industry believes the service is 'light but costly' and calls for cost recovery reform to recognise low-risk fisheries - they support regulation but seeks right-sizing of effort. The fishery's strong self-regulation and limited entry underpin very high compliance.

The Compliance Review Team gave particular focus to investigating the issue of enabling legislation around drip loss between the beach and processor. Additional interviews occur with fishers some of whom expressed genuine concern and feelings of hopelessness about continued investigations into drip loss explaining that over-reporting of catch is not allowed while accurate reporting at the beach often drew significant compliance focus if processor weights varied slightly.

The Team and fishery representatives also discussed the high level of compliance contacts per active fisher and subsequent compliance cost per active fisher. The per capita compliance fee is below average, and ARCCC analysis shows that this focus is not misplaced, but for such a small fishery these costs are significant with compliance levies consuming 4.5% of revenue.

APPENDIX 3 COMPLIANCE BUDGET BY FISHERY

Table 9 PIRSA Compliance Levies by Fishery

PIRSA Compliance Costs						
Fishery	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
CZ Abalone	221,850	175,140	165,880	173,810	137,800	142,072
SZ Abalone	135,900	130,500	133,108	85,992	88,626	17,049
WZ Abalone	665,550	450,360	459,360	481,320	496,080	511,458
Blue Crab	76,995	73,809	75,284	78,883	81,302	83,822
Charter	141,308	128,860	131,440	137,732	141,920	146,320
Giant Crab	15,660	15,012	15,312	16,044	16,536	17,049
Lakes & Coorong (Pipi)	65,250	62,550	63,800	66,850	68,900	71,036
Lakes & Coorong (Finfish)	52,200	50,040	51,040	53,480	55,120	56,829
Miscellaneous	31,320	30,024	30,624	32,088	33,072	34,097
Marine Scalegfish	1,309,191	1,250,067	1,275,052	1,336,013	1,376,956	1,419,642
Vongole	49,590	47,538	48,488	50,806	52,364	53,987
Northern Zone Rock Lobster	839,700	807,300	823,434	729,106	751,433	774,727
Southern Zone Rock Lobster	1,529,460	1,466,172	1,495,472	1,566,964	1,615,016	1,665,081
Gulf Saint Vincent Prawn	26,100	25,020	25,520	26,740	27,560	28,414
Spencer Gulf Prawn	120,520	107,282	109,432	114,674	118,146	121,809
West Coast Prawn	23,582	20,956	21,376	8,680	23,078	8,983
Sardines	185,182	172,265	175,712	264,341	272,409	280,854
Total	5,489,358	5,012,895	5,100,334	5,223,523	5,356,318	5,433,229



APPENDIX 4 MANAGEMENT ARRANGEMENT MATRIX

Table 10 Management arrangements and other traits of South Australian fisheries

		Abalone - Central Zone	Abalone - Southern Zone	Abalone - Western Zone	Blue Crab	Charter Boat	Prawn - Gulf St Vincent	Prawn - Spencer Gulf	Prawn - West Coast	Rock Lobster - Northern Zone	Rock Lobster - Southern Zone	Lakes and Coorong - Finfish	Lakes and Coorong - Plipi	Marine Scalefish	Giant Crab	Sardine	Vongole	TOTAL
FISHING GEARS	Hand collection, Hookah & Scuba Pots	●	●	●	●	●				●	●				●			
	Bait & Other Nets				●					●	●							
	Rod & Reel (recreational methods)					●					●							
	Demersal Trawl						●	●	●					●				
	Longline													●				
	Purse seine													●		●	●	
	Various (nets, rakes, spears, hand harvest, electrofishing)									●	●	●	●	●			●	
ECONO-METRICS	Catch (BDO 22/23 unless specified) tonnes	79	131	252	597	?	146	1,578	50	279	1,318	951	453	2,142	9.3	46,362	71	54,418
	TAC (2022/23)	144	132	258	1,000	NA	150	1,000	NA	296	1,320	NA	450	955	21	51,000	71	56,797
	Stock Status (PIRSA)	D/S	D	S	TR	S	S+	S+	S+	S+	S	D/S	S	D/S	D↓	S	S	
	Key Stock Status (relative) NEW RAW SCORE	3.3	1.5	2.3	1.5	?	1.8	1.0	2.5	1.5	1.3	2.8	1.3	3.3	3.5	1.0	1.5	2.0
	Key Stock Status (relative) NEW	4.6	2.1	3.2	2.1	?	2.5	1.4	3.6	2.1	1.8	3.9	1.8	4.6	5.0	1.4	2.1	2.8
	Number of licences	6	6	22	9	80	10	39	3	63	180	36	11	197	1	14	12	689
	Number active licences	6	6	19	7	50	4	39	3	25	140	32	10	184	1	11	7	544
	Licence latency	0%	0%	14%	22%	38%	60%	0%	0%	60%	22%	11%	9%	7%	0%	21%	42%	21%
	Fishery Coastline (kms)	442	334	711	465	5067	155	310	228	3500	400	195	179	5067	496	240	127	17916
	Average price per kg [calculated]	\$ 63	\$ 31	\$ 40	\$ 17	\$ 10	\$ 19	\$ 16	\$ 19	\$ 50	\$ 54	\$ 6	\$ 17	\$ 10	\$ 52	\$ 1	\$ 17	\$ 4.0
	Value Rights (per capita , quota+access) (BDO 2022/23) \$m	6.5	6.5	6.5	6.7	0.0078	1.5	4.1	?	2.7	5.2	2.6	2.6	0.61	?	6.8	?	39.0
	ROI (BDO 2022/23)	3.0%	3.0%	3.0%	6.0%	-7.4%	-3.0%	0.0%	?	0.0%	1.7%	17.0%	-4.0%	2.5%	?	9.2%	?	2.4%
	Revenue (BDO 22/23 unless specified) \$m	5.0	4.0	10.0	10.0	3.4	2.8	26.0	1.0	14.0	71.0	5.6	7.7	22.0	0.5	31.0	1.2	215
	CDRs 2023 (unless stated)	208	163	772	811	?	?	?	?	850	9466	?	531	12,498	55	875	269	26,498
25/26 Cost Recovery Compliance \$m (gross subsidy)	0.14	0.02	0.51	0.08	0.22	0.03	0.12	0.01	0.77	1.67	0.06	0.07	2.45	0.02	0.29	0.05	6.5	
Cost Recovery Compliance as % of Revenue	2.8%	0.4%	5.1%	0.8%	6.4%	1.0%	0.5%	0.9%	5.5%	2.3%	1.0%	0.9%	11.1%	C	0.9%	4.5%	3.0%	
ECONOMETRICS	Total Levies (\$m)	0.50	0.27	1.38	0.36	0.36	0.17	1.01	0.09	1.69	3.78	0.47	0.41	2.86	0.05	2.45	0.10	15.95
	TAC latency (2022/23) % caught	55%	99%	98%	60%		97%	100%		94%	100%		100%	76%	44%	91%	100%	96%
	Compliance Levies as % of Total Levies	29%	6%	37%	23%	60%	17%	12%	10%	46%	44%	12%	17%	76%	32%	12%	52%	41%
	Processor contacts	53	0	138	12	0	0	0	?	161	42	58	16	457	?	0	5	942
	Transit contacts	2	0	8	0	0	0	0	?	5	0	0	0	31	?	0	2	48
	At sea contacts (boat)	7	2	27	7	20	1	25	?	34	12	3	0	90	?	12	3	243
	Landing contacts (boat)	11	6	30	20	64	2	8	?	90	414	9	12	382	?	27	25	1100
	TOTAL CONTACTS (processor, transit, at-sea, landing)	73	8	203	39	84	3	33	?	290	468	70	28	960	?	39	35	2333
	Compliance cautions & expiations	1	0	2	2	3	1	2	?	36	4	4	2	99	?	5	3	164
	Caution/expiation (non-compliance) rate (inspections)	1%	0%	1%	5%	4%	?	6%	?	12%	1%	?	7%	10%	?	13%	9%	7%
	Cost Recovery per tonne catch \$	\$ 1,798	\$ 130	\$ 2,030	\$ 140	NOT APP	\$ 195	\$ 77	\$ 180	\$ 2,777	\$ 1,263	\$ 60	\$ 157	\$ 1,143	\$ 1,833	\$ 6	\$ 760	\$ 120
	Harm/stress TEP Interactions (excl. depredations & sygnathids)	0	0	0	0	0	0	1	0	0	0	32	0	3	0	157	0	193
	Southern Ranger cost-recovery					SR		SR		SR				SR		SR		
	Annual vessel compliance contacts per active participant	3	1	3	4	2	1	1	0	5	3	0	1	3	0	4	4	2
	Compliance Cost Recovery per active participant	\$ 23,679	\$ 2,842	\$ 26,919	\$ 11,975	\$ 4,368	\$ 7,104	\$ 3,123	\$ 2,994	\$ 30,989	\$ 11,893	\$ 1,776	\$ 7,104	\$ 13,302	\$ 17,049	\$ 26,231	\$ 7,712	\$ 11,961
	Compliance Cost Recovery per CDR	\$ 0.6830	\$ 0.1046	\$ 0.6625	\$ 0.1034	?	?	?	?	\$ 0.9114	\$ 0.1759	?	\$ 0.1338	\$ 0.1958	\$ 0.3100	\$ 0.3298	\$ 0.2007	\$ 0.2456
	Compliance Fee per CDR	3.7	0.6	3.6	0.6	?	?	?	?	5.0	1.0	?	0.7	1.1	1.7	1.8	1.1	1.3
	Compliance Fee per active patricipant	3.8	0.5	4.3	1.9	0.7	1.1	0.5	0.5	5.0	1.9	0.3	1.1	2.1	2.8	4.2	1.2	2.0
	RISK INDICATORS	Risks:																
High product value		5.0	2.4	3.1	1.3	0.8	1.5	1.3	1.5	4.0	4.3	0.5	1.3	0.8	4.1	0.1	1.3	2.08
Reported TEP interactions (excl. depredations & sygnathids)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.1	0.0	5.0	0.0	0.38
TEP interactions of conservation concern		0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	2.0	0	
Typical company structure (degree of integration)		1	1	4	1	0	4	4	4	0	0	4	1	2	1	5	1	2.06
Number ports		?	?	?	?	?	0.6	0.6	0.5	1.7	1.3	0.8	0.8	5.0	?	0.5	1.0	1.28
Complexity of arrangements		2	2	2	1	2	2	1	1	2	2	4	4	5	2	3	1	2.25
Participants		0.4	0.4	0.7	0.5	1.7	0.4	1.3	0.3	0.8	2.5	1.0	0.6	5.0	0.3	0.6	0.5	1.06
Fishery coastline		0.7	0.6	1.3	0.8	5.0	0.3	0.5	0.4	1.7	0.6	0.4	0.4	5.0	1.0	0.5	0.3	1.21
WTO conditions requiring compliance		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	5.0	0.0	0.47
Quota constrained		0.4	1.0	0.8	0.5		0.7	5.0		0.6	1.3		5.0	0.5	0.4	0.6	5.0	1.67
Compliance performance		0.6	0.4	0.5	0.7	0.6	?	0.8	?	2.5	0.5	?	1.0	1.7	?	5.0	1.3	1.29
"Potential" TEP presence of conservation concern		0	0	0	0	0	3	3	3	3	2	1	0	1	0	1	0	1.06
Mitigations																		
Demonstrable Industry Stewardship		-3.0	-3.0	-2.5	-2.0	-1.0	-4.0	-5.0	-4.0	-3.0	-3.0	-2.0	-2.0	-1.0	0.0	-2.5	-2.5	-2.53
Credible 3rd party accreditation/review		0.0	0.0	0.0	0.0	0.0	0.0	-5.0	0	-2.5	-2.5	0.0	-5.0	0.0	0.0	-2.5	0.0	-1.09
TEP Mitigations (inverse)		0	0	0	0	0	-1	0	0	-1	0	0	0	0	0	-3	0	-0.31
Profitability BDO ROI		1.5	1.5	1.5	1.2	5.0	4.2	3.5	?	3.5	3.1	0.4	4.6	2.7	?	0.8	?	2.57
Value Rights		0.6	0.6	0.6	0.4	5.0	1.7	0.7	?	0.8	0.6	1.3	1.3	2.5	?	0.4	?	1.25
Digital technologies	3	2	3	2	5	2	2	2	2	1	2	2	2	2	2	5	2.44	
Observer coverage	5.0	5.0	5.0	0.6	5.0	0.4	0.5	0.5	0.5	0.5	5.0	5.0	5.0	?	0.3	5.0	2.87	
RAW SCORE	17.2	13.9	20.0	8.0	29.1	15.8	15.2	9.2	16.5	14.0	20.3	20.0	40.8	10.8	23.7	18.9	1.11	
RISK SCORE [calculated]	2.1	1.7	2.5	1.0	3.6	1.9	1.9	1.1	2.0	1.7	2.5	2.4	5.0	1.3	2.9	2.3	2.25	
INDUSTRY STEWARDSHIP	User guide	●	●	●	●		●	●	●	●	●			●		?		
	Co-management			●		●	●	●	●					●				
	MSC									●	●		●			●		
MANAGEMENT ARRANGEMENTS	Codes of practice (industry)	●	●	●		●	●			●	●	●	●	●		●		
	ITQ (TAC, TACC)	●	●	●	●		●			●	●	</						

APPENDIX 5 COMPLIANCE ACTIVITY BY FISHERY

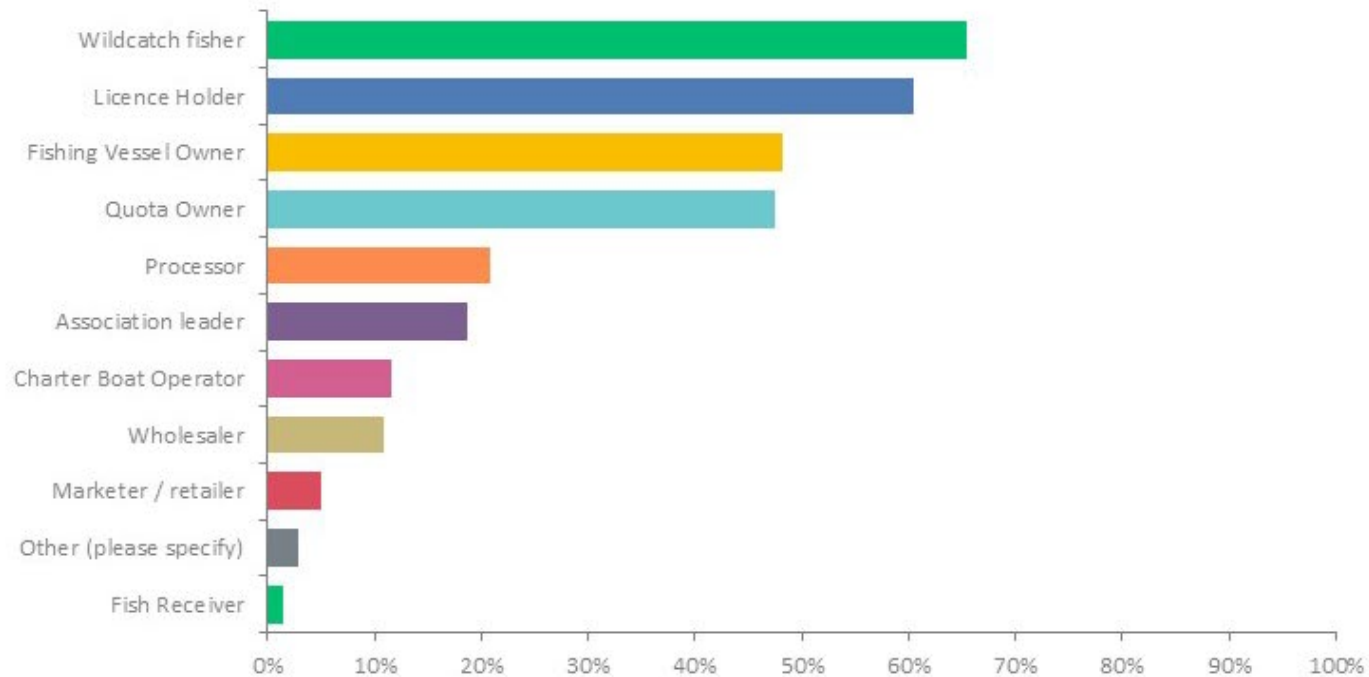
Table 11 2024/25 Inspections by Fishery

Fishery	Inspections				Non-Compliance Outcomes			
	At Sea Inspections	Landing Inspections	Transit Inspections	Processor Inspections	Education	Caution	Expiations	Brief/ Prosecution
<i>Southern Zone Abalone Fishery</i>	2	6	0					
Central Zone Abalone Fishery	7	11	2	53	0	1	0	0
<i>Western Zone Abalone Fishery</i>	27	30	8	138	42	2	0	0
<i>Northern Zone Rock Lobster</i>	34	90	5	161	0	24	12	1
<i>Southern Zone Rock Lobster</i>	12	414	0	42	0	3	1	0
Blue Crab	7	20	0	12	0	2	0	0
Charter	20	64	0	0	0	2	1	0
Giant Crab								
Lakes & Coorong Pipi	0	12	0	16	0	1	1	0
Lakes & Coorong Finfish	3	9	0	58	0	2	2	0
Marine Scalefish Fishery	90	392	31	457	0	82	17	0
Vongole	3	25	2	5	0	3	0	0
Spencer Gulf Prawn	25	8	0	0	0	1	1	1
West Coast Prawn								
Gulf St Vincent Prawn (23/24)	1	2	0	0	0	1	0	0
Sardines	12	27	0	0	21	5	0	0
Totals	243	1,110	48	942	42	130	35	2

APPENDIX 6 ONLINE SURVEY SUMMARY

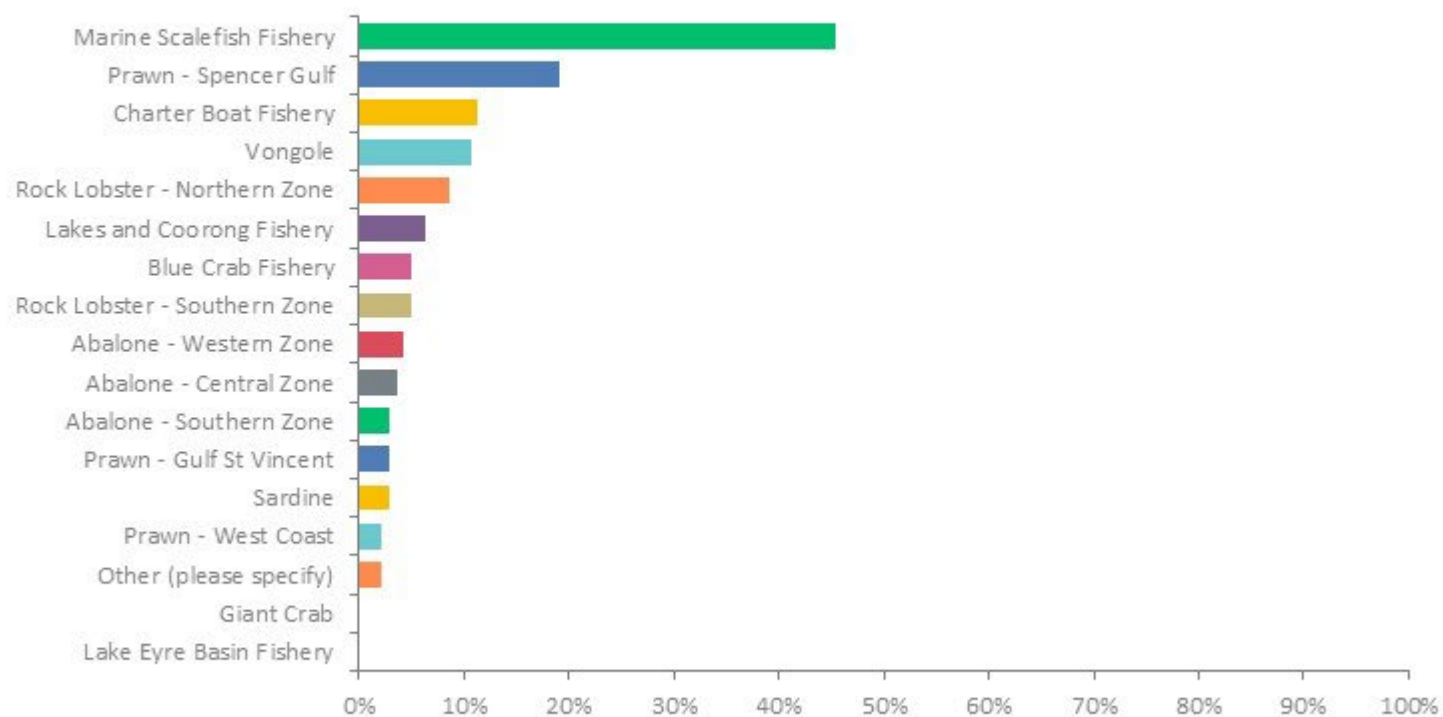
Q1: What is your involvement in the industry?

Answered: 139 Skipped: 2



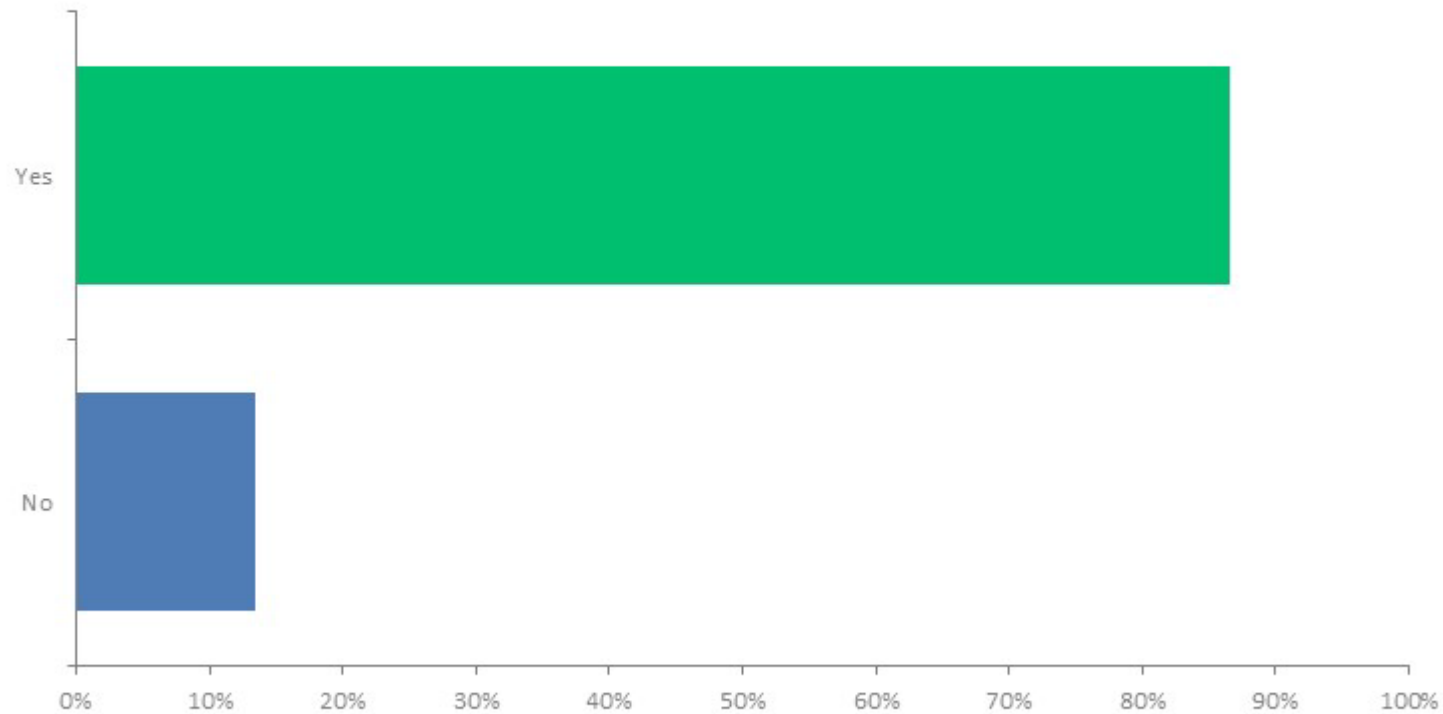
Q2: What fishery are you mainly involved in?

Answered: 141 Skipped: 0



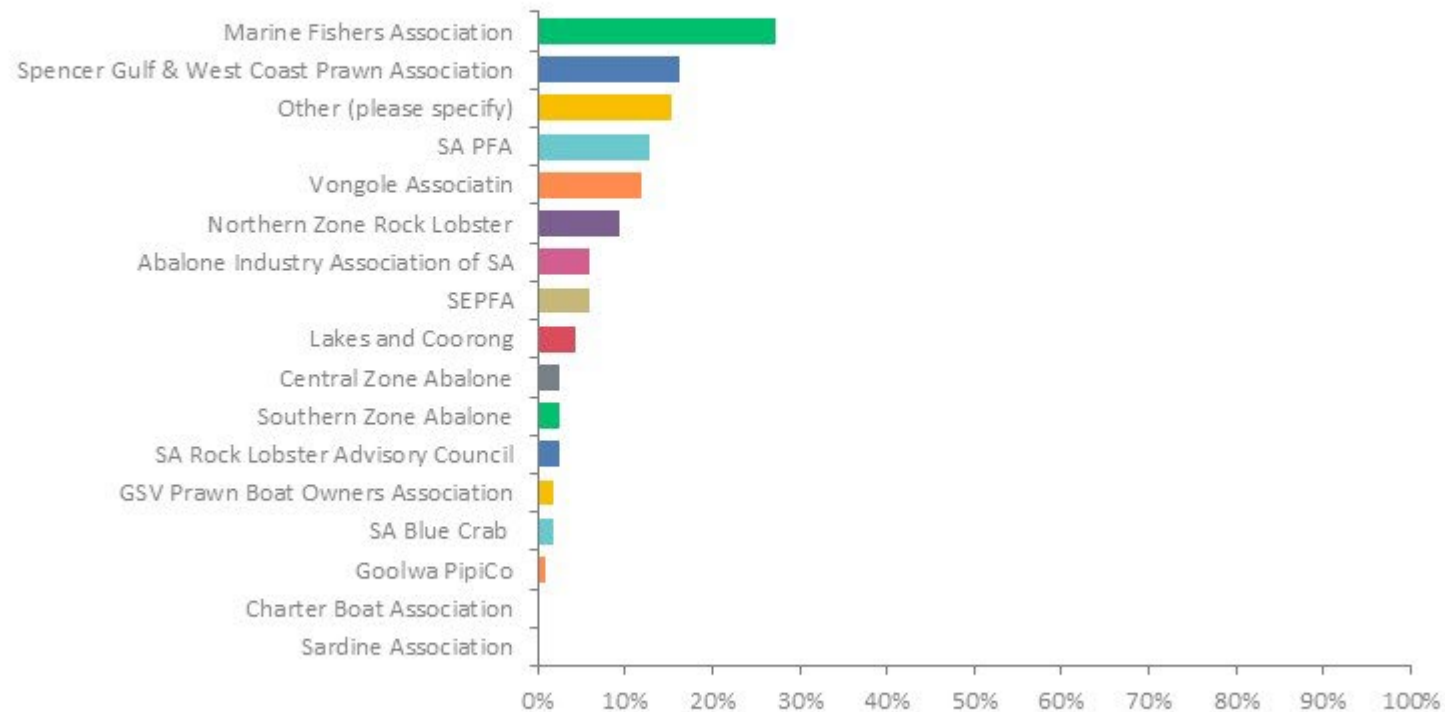
Q3: Are you a member of an industry association?

Answered: 141 Skipped: 0



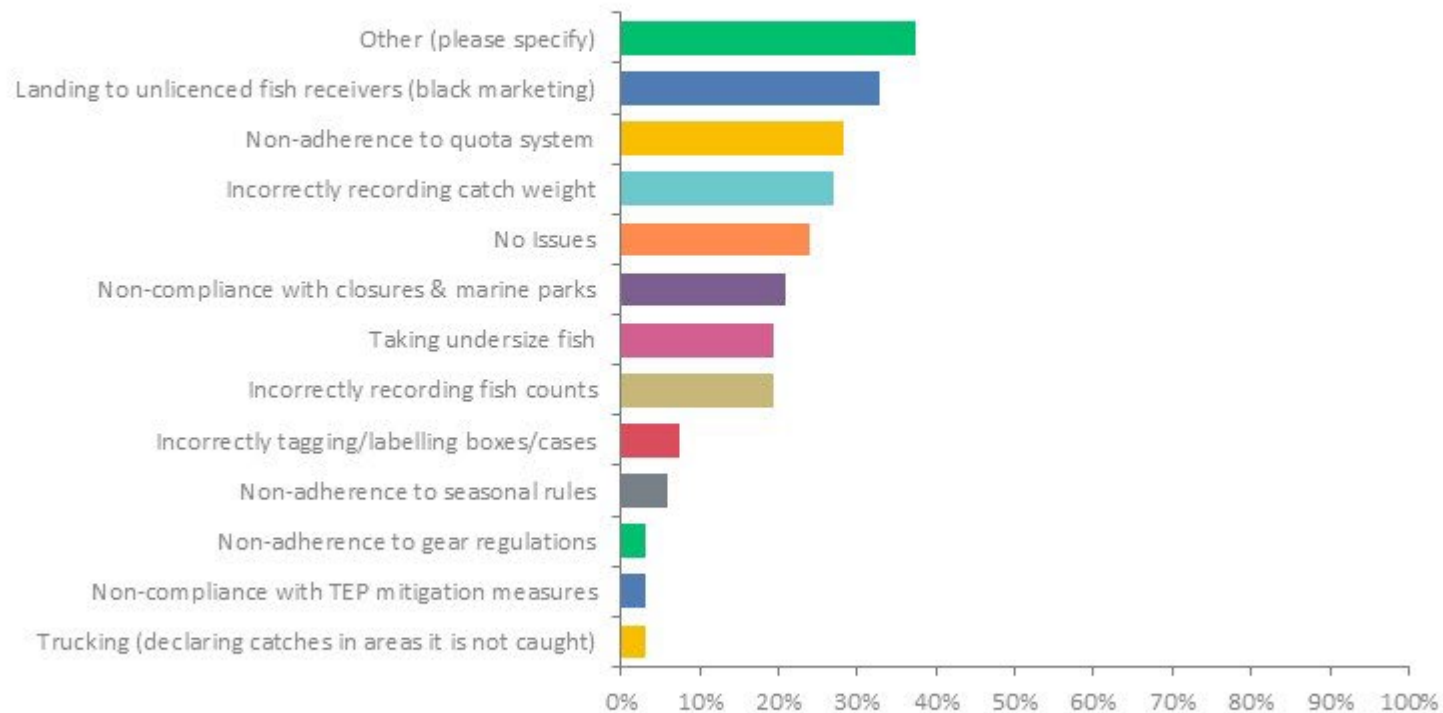
Q4: What industry association are you involved in?

Answered: 118 Skipped: 23



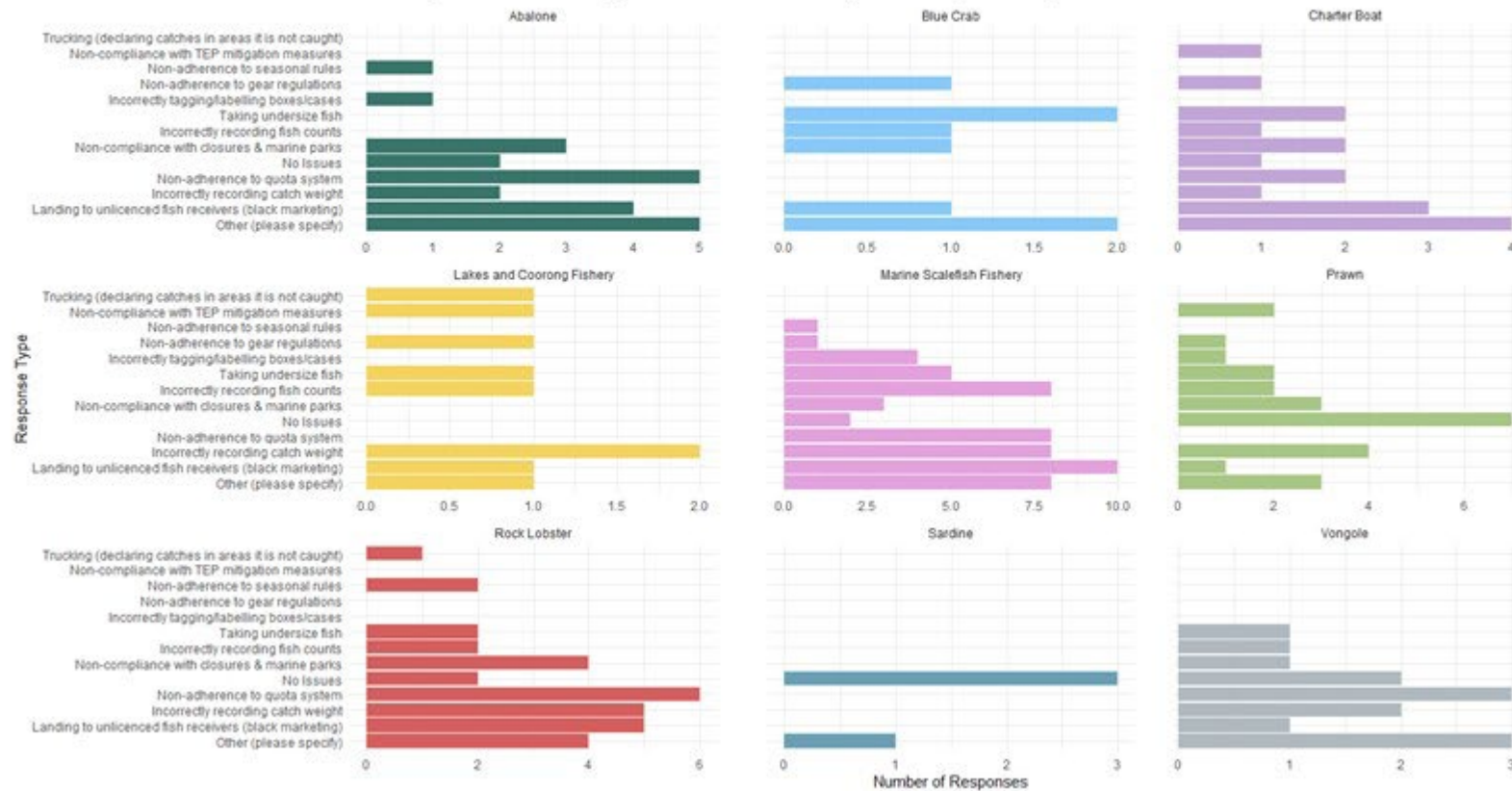
Q39: Top three compliance risk activities to fishery sustainability?

Answered: 67 Skipped: 74



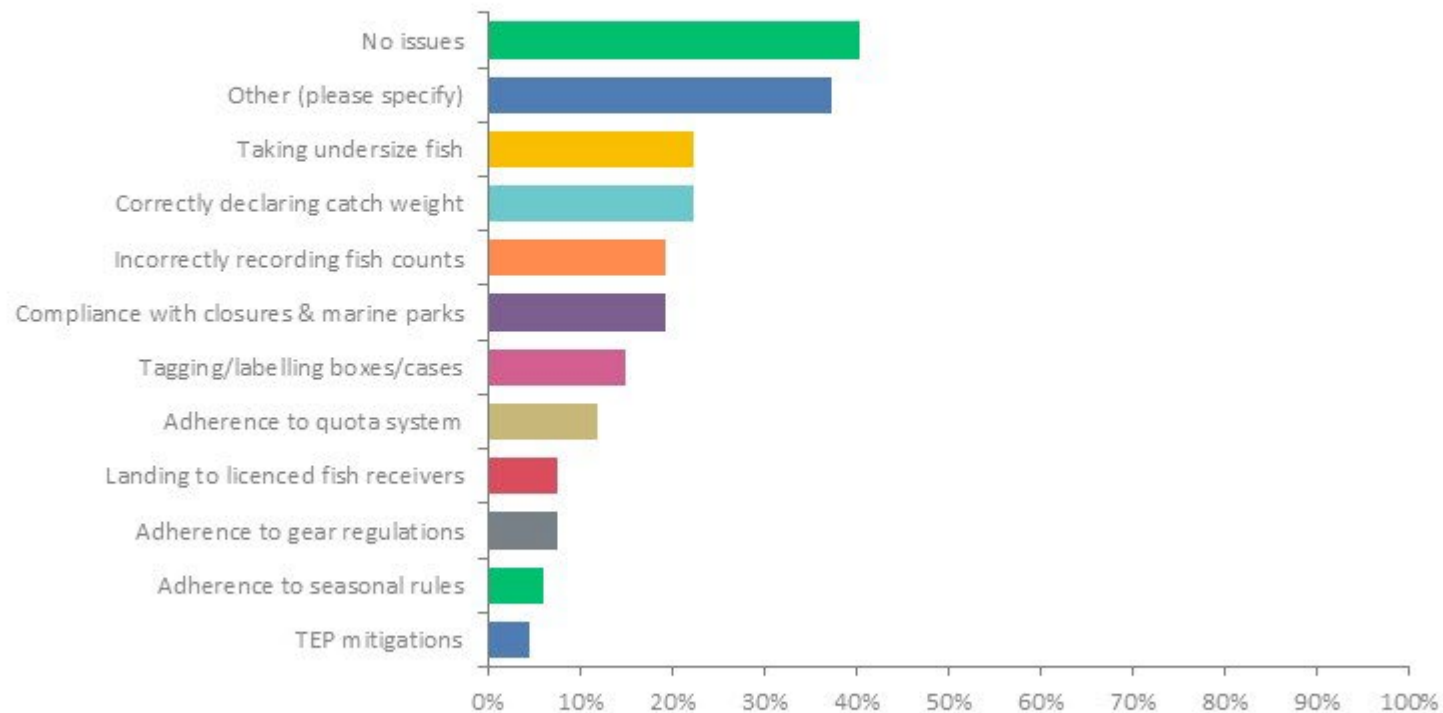
Q39: Top three compliance risk activities to fishery sustainability?

Answered: 67 Skipped: 74



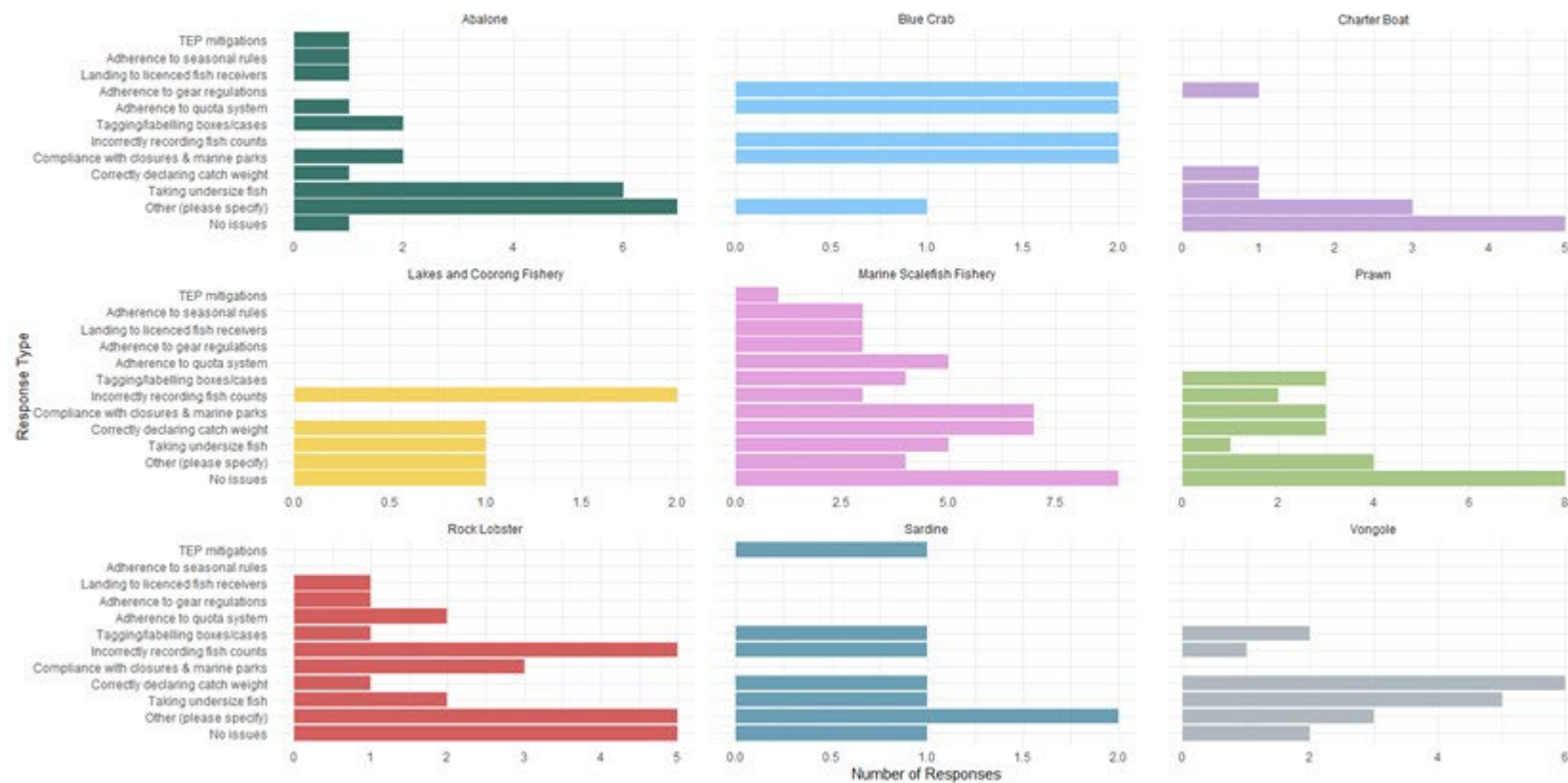
Q40: Most difficult regulations to comply with?

Answered: 67 Skipped: 74



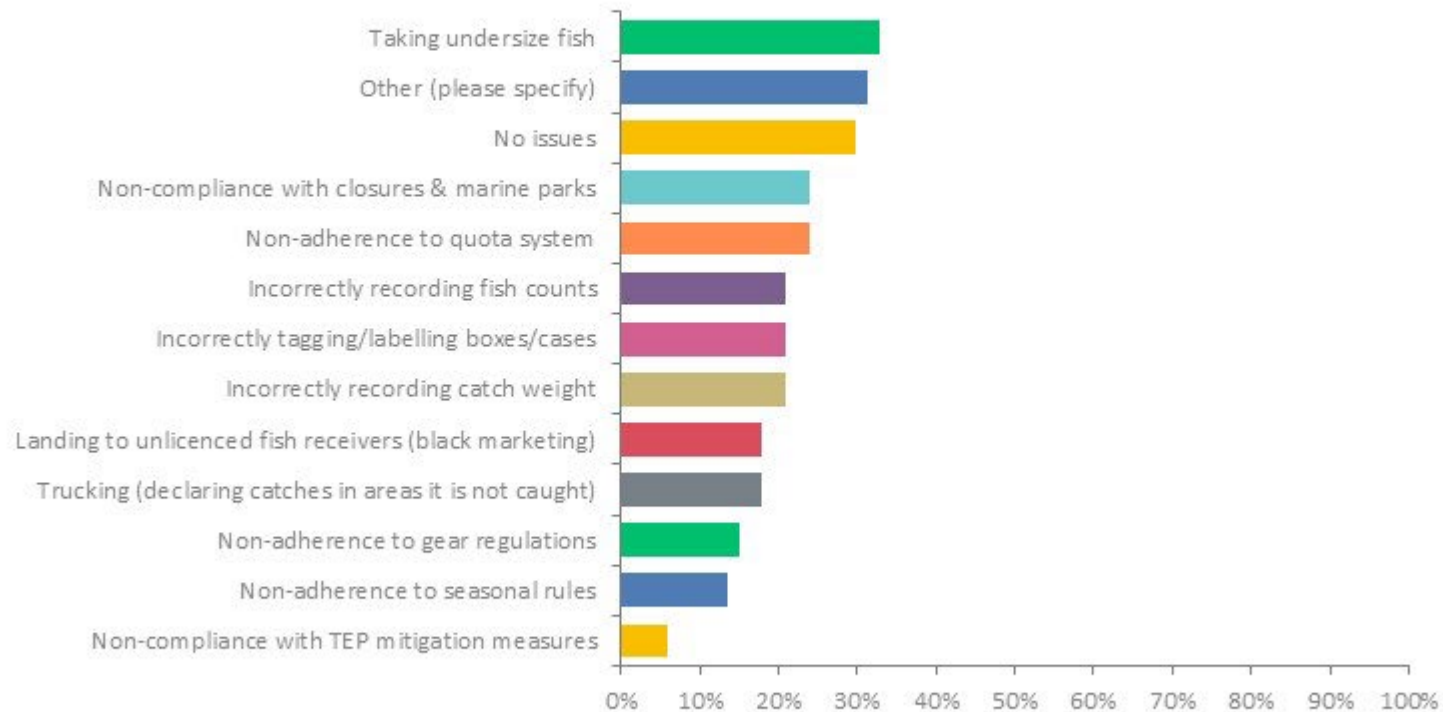
Q40: Most difficult regulations to comply with?

Answered: 67 Skipped: 74



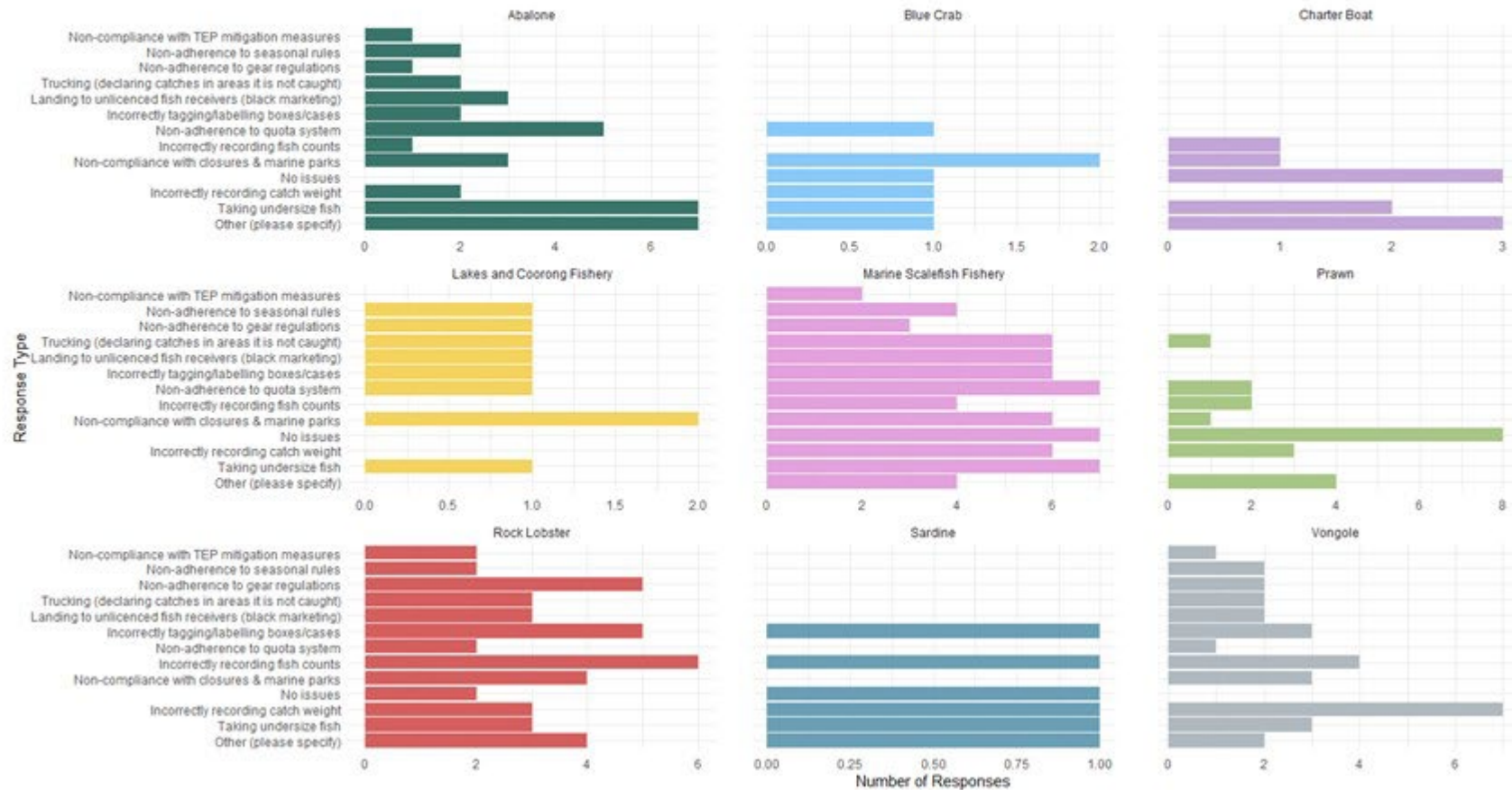
Q41: Low risk compliance issues?

Answered: 67 Skipped: 74



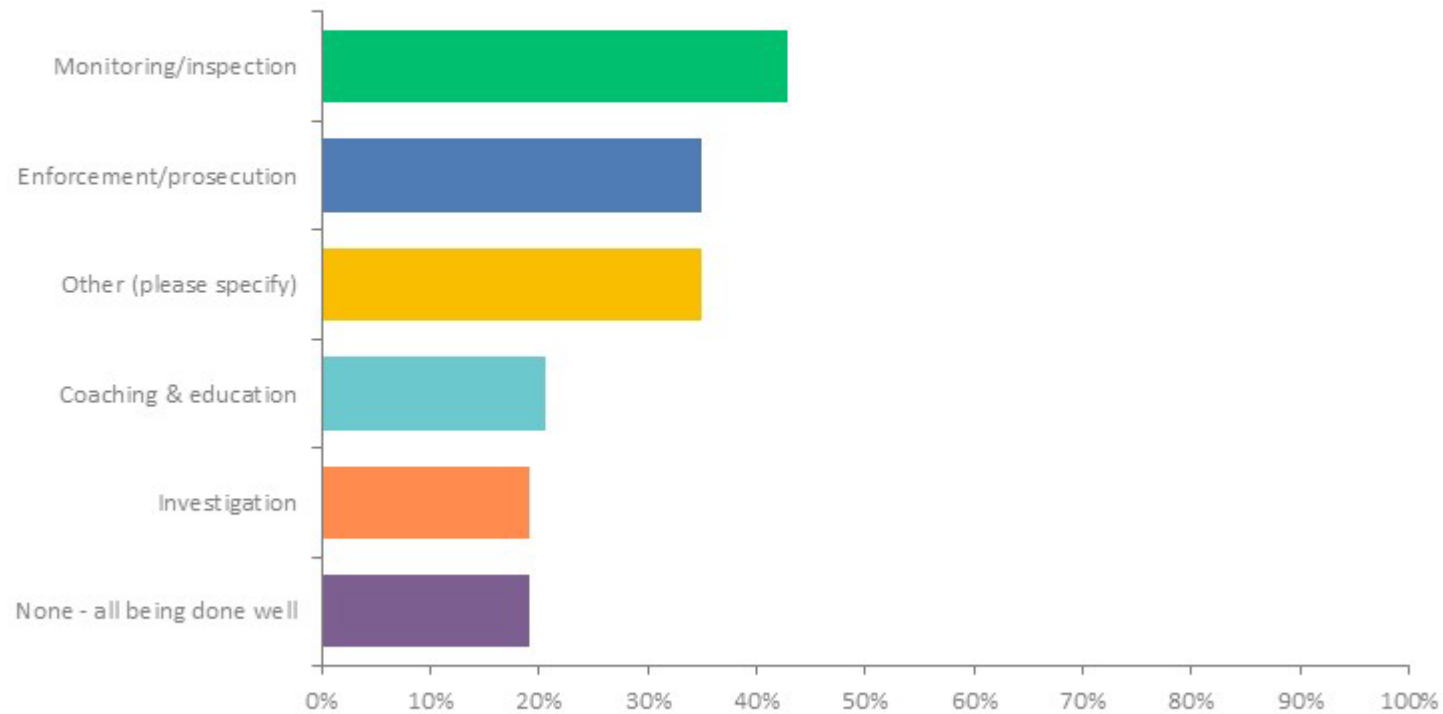
Q41: Low risk compliance issues?

Answered: 67 Skipped: 74



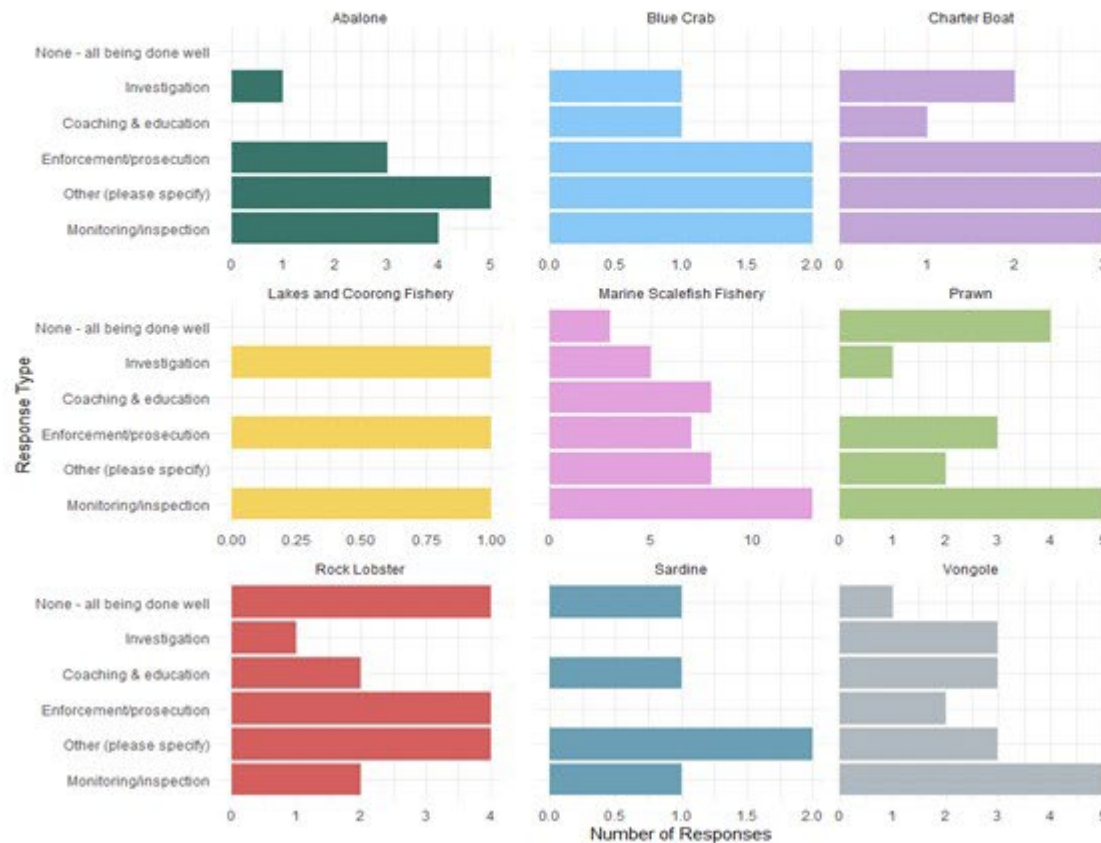
Q42: Compliance services not being delivered in an efficient manner?

Answered: 63 Skipped: 78



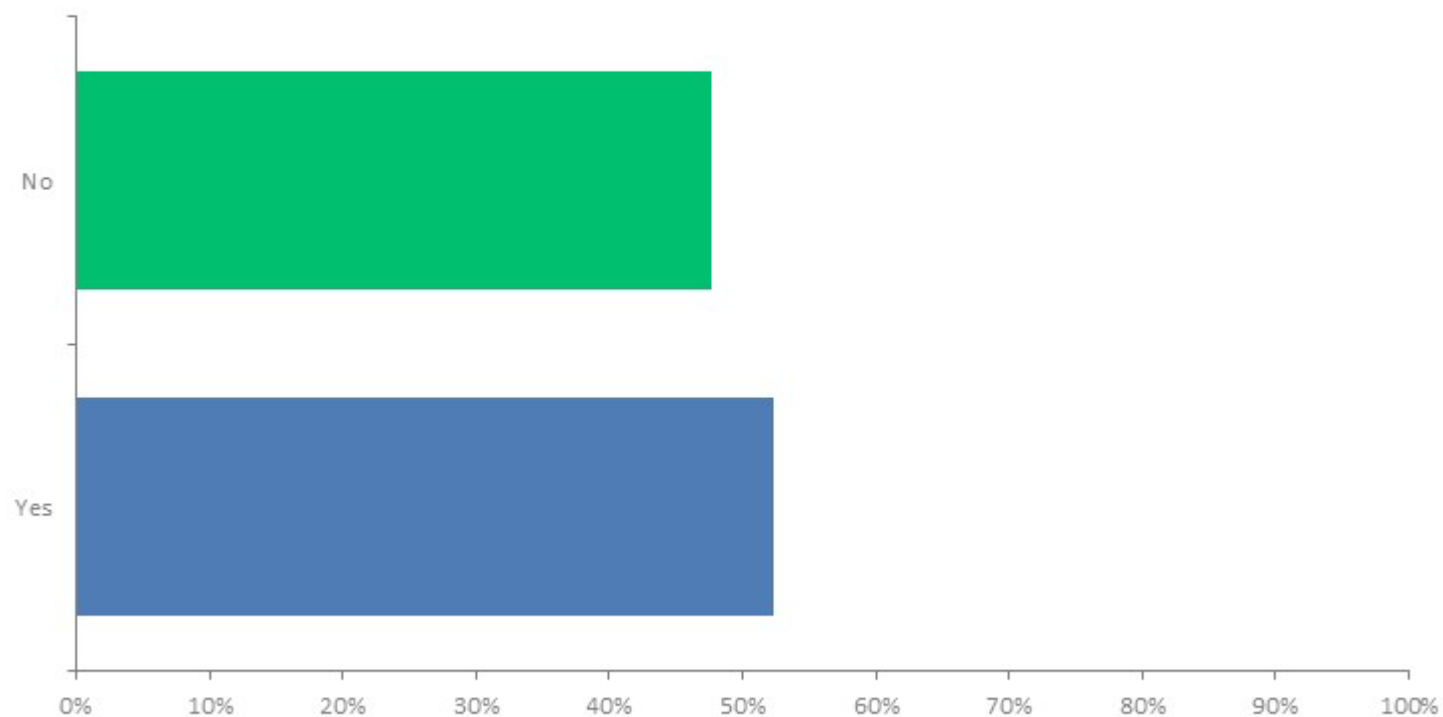
Q42: Compliance services not being delivered in an efficient manner?

Answered: 63 Skipped: 78



Q44: In your sector, is there someone responsible for industry training of fishers about management and compliance rules?

Answered: 63 Skipped: 78



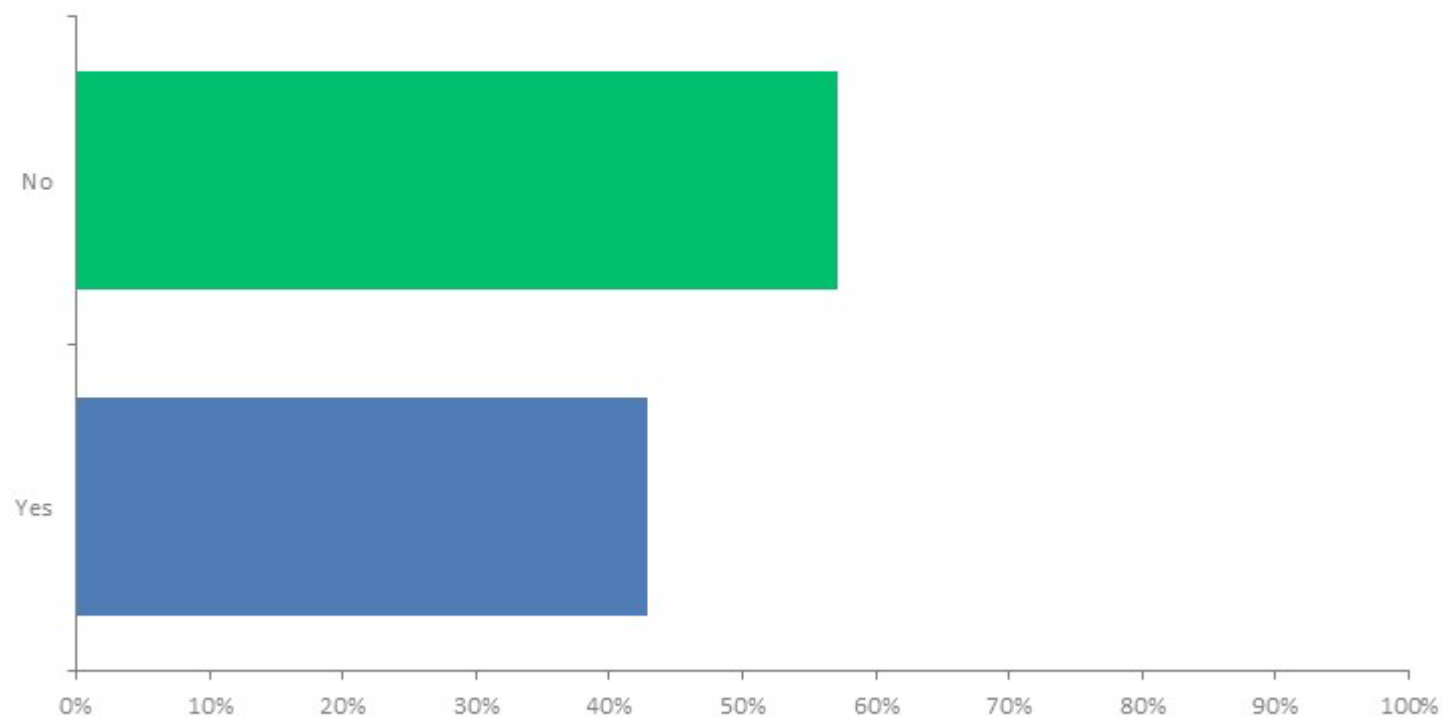
Q44: In your sector, is there someone responsible for industry training of fishers about management and compliance rules?

Answered: 63 Skipped: 78



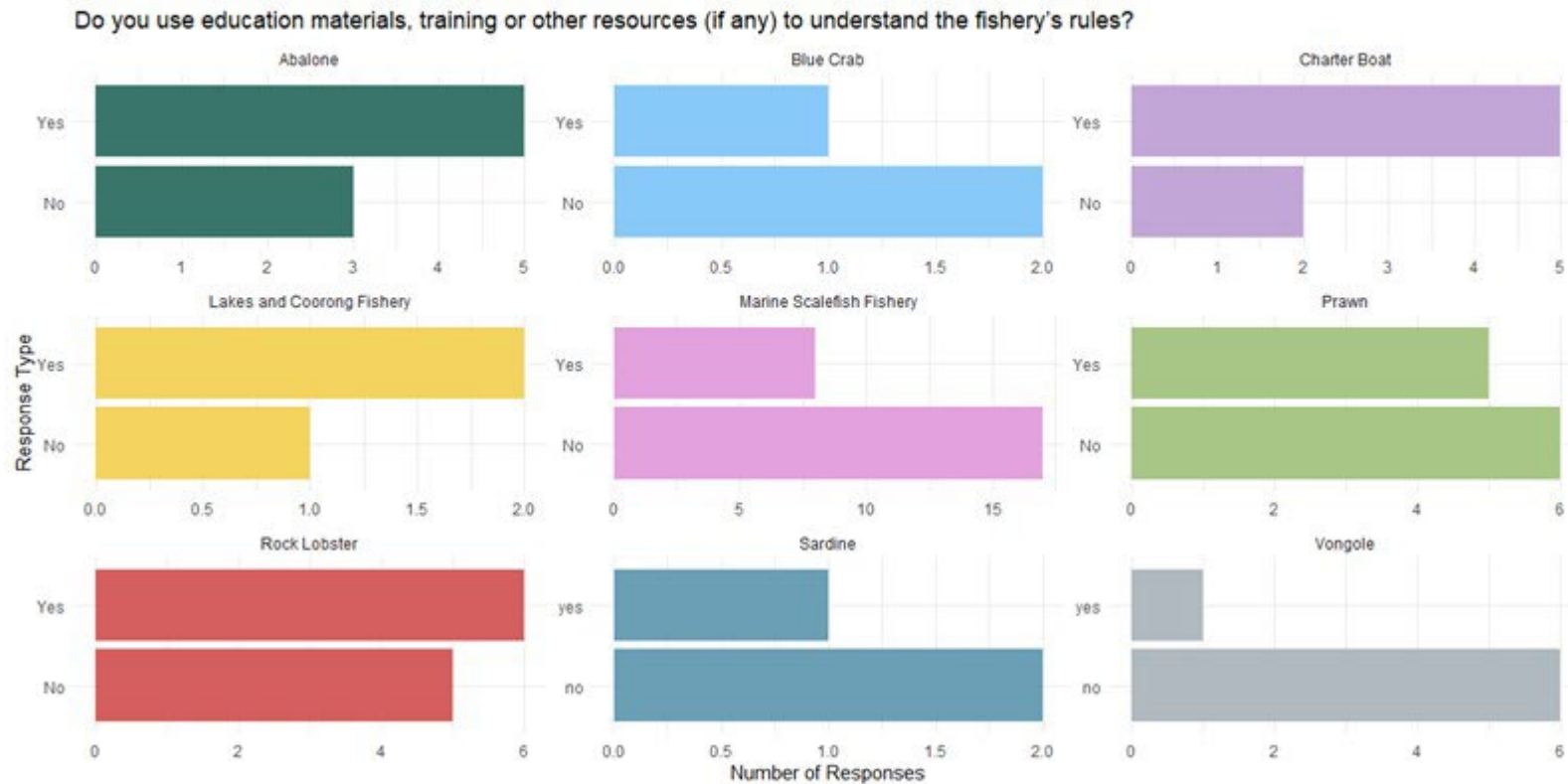
Q45: Do you use education materials, training or other resources (if any) to understand the fishery's rules?

Answered: 63 Skipped: 78



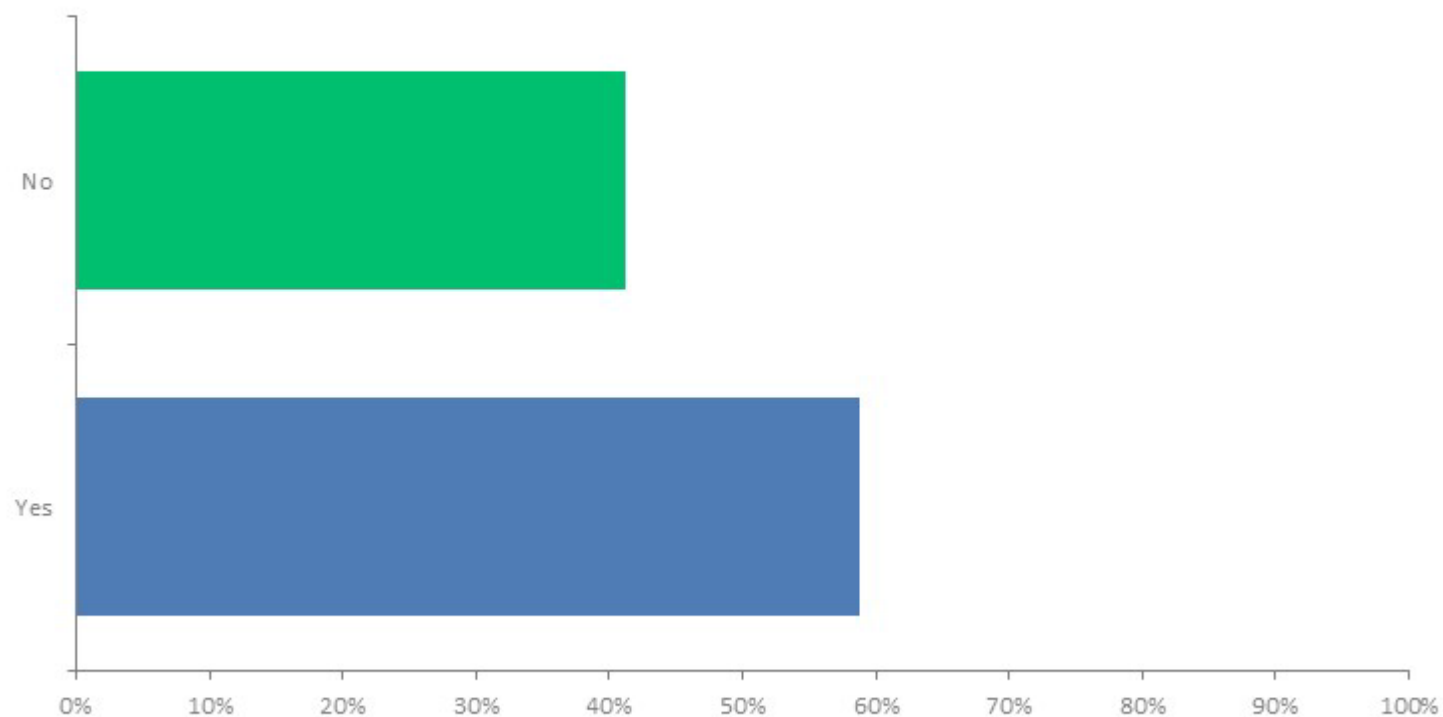
Q45: Do you use education materials, training or other resources (if any) to understand the fishery's rules?

Answered: 63 Skipped: 78



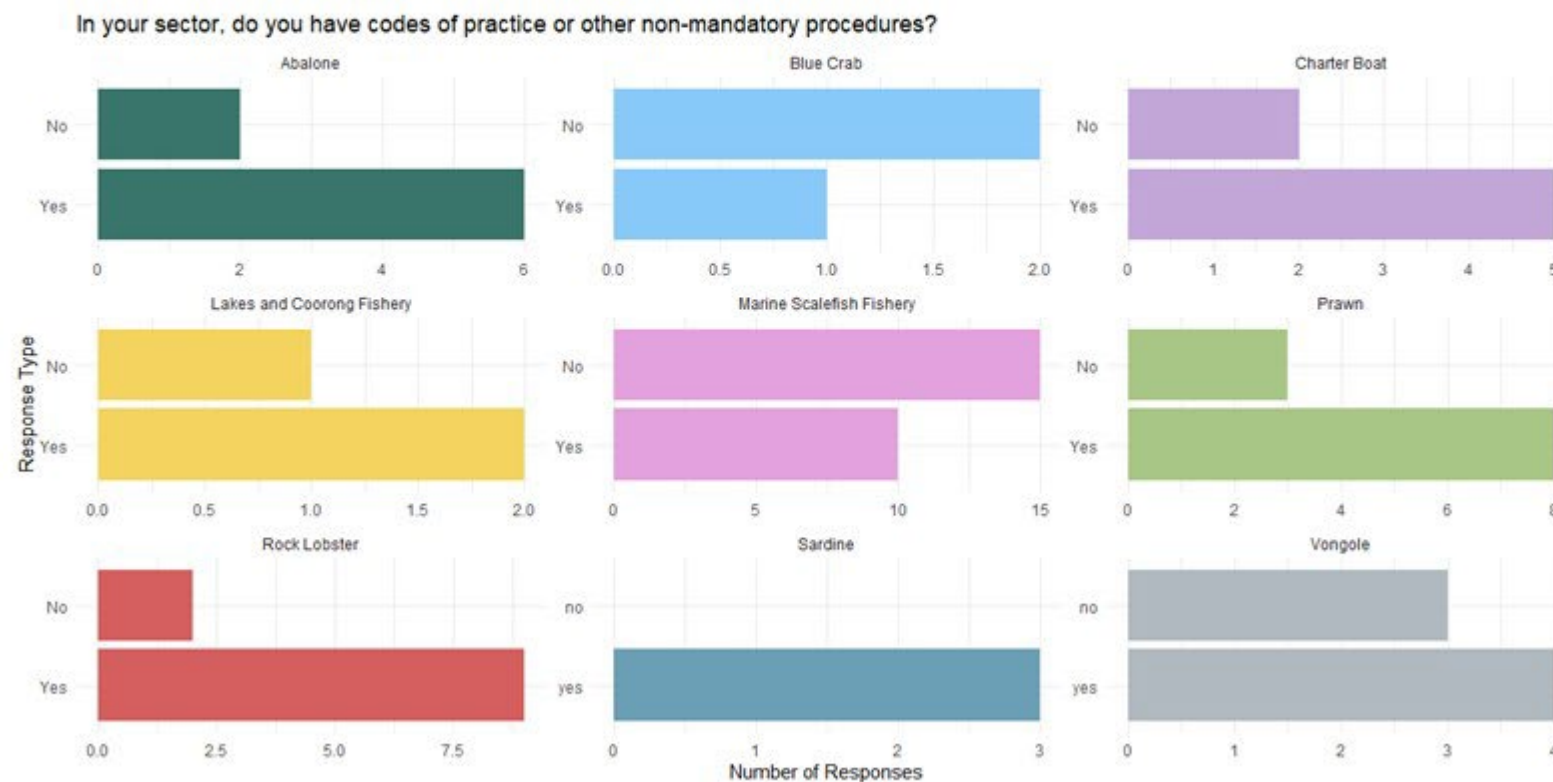
Q46: In your sector, do you have codes of practice or other non-mandatory procedures?

Answered: 63 Skipped: 78



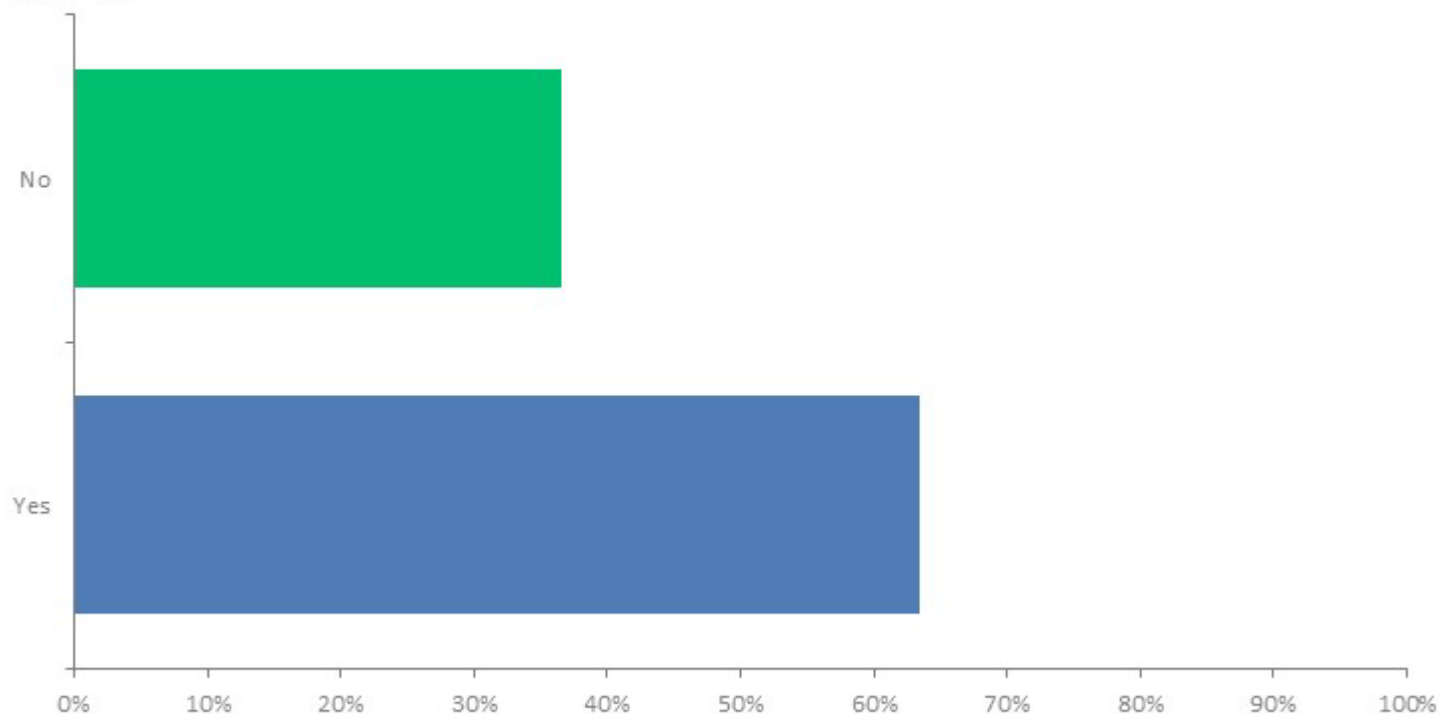
Q46: In your sector, do you have codes of practice or other non-mandatory procedures?

Answered: 63 Skipped: 78



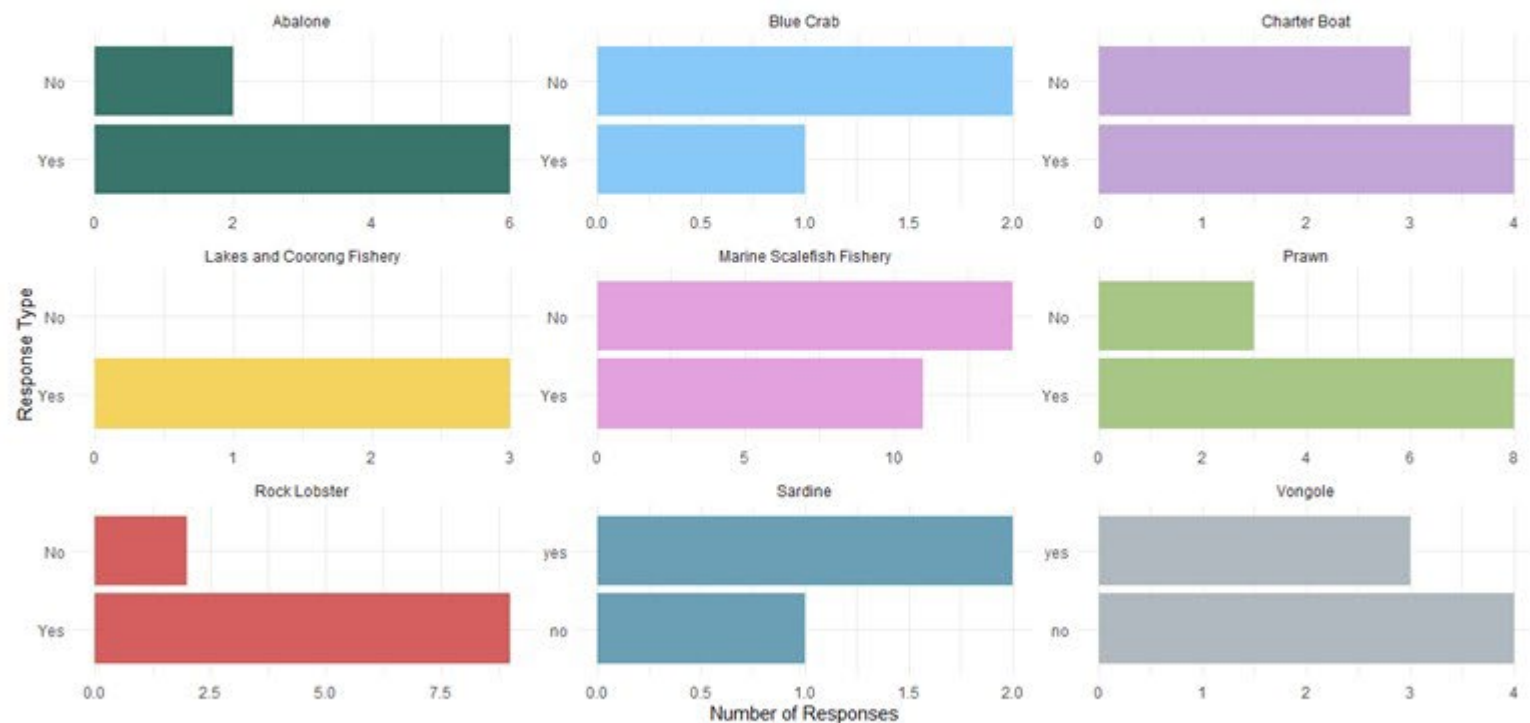
Q47: Does your sector, or your business, operate any technology or processes that mitigate compliance risk? (i.e. pre-sailing briefings, buffer zones, electronic reporting, internal camera system, company training, other)

Answered: 63 Skipped: 78



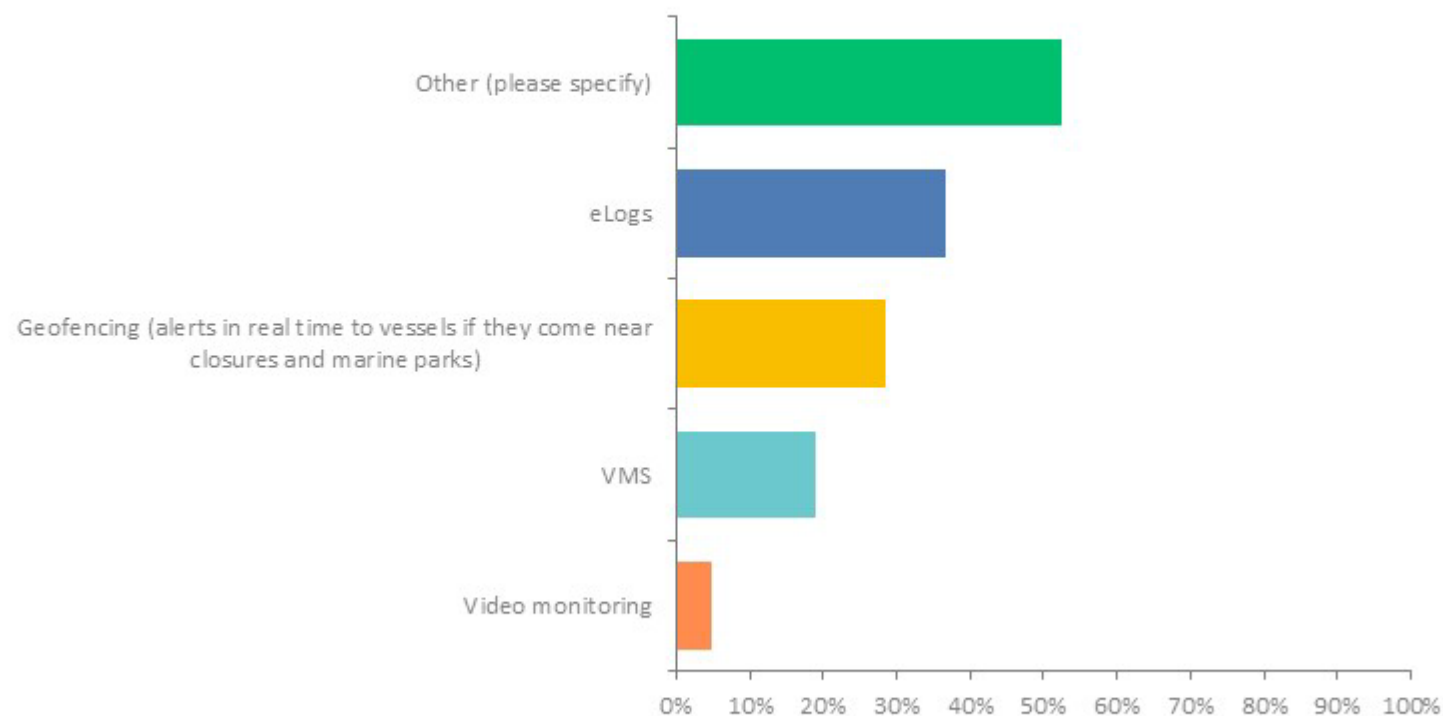
Q47: Does your sector, or your business, operate any technology or processes that mitigate compliance risk? (i.e. pre-sailing briefings, buffer zones, electronic reporting, internal camera system, company training, other)

Answered: 63 Skipped: 78



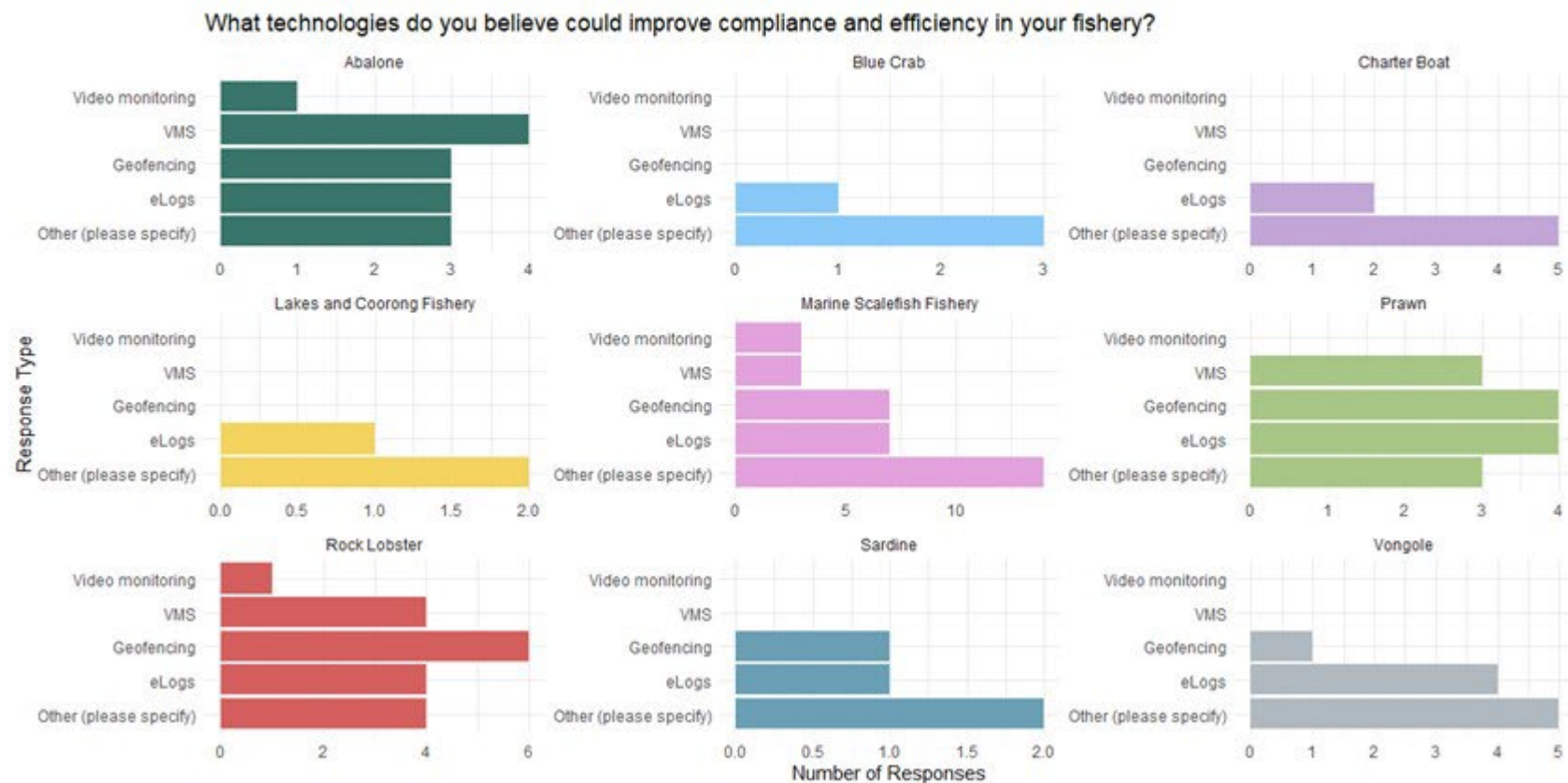
Q48: What technologies do you believe could improve compliance and efficiency in your fishery?

Answered: 63 Skipped: 78



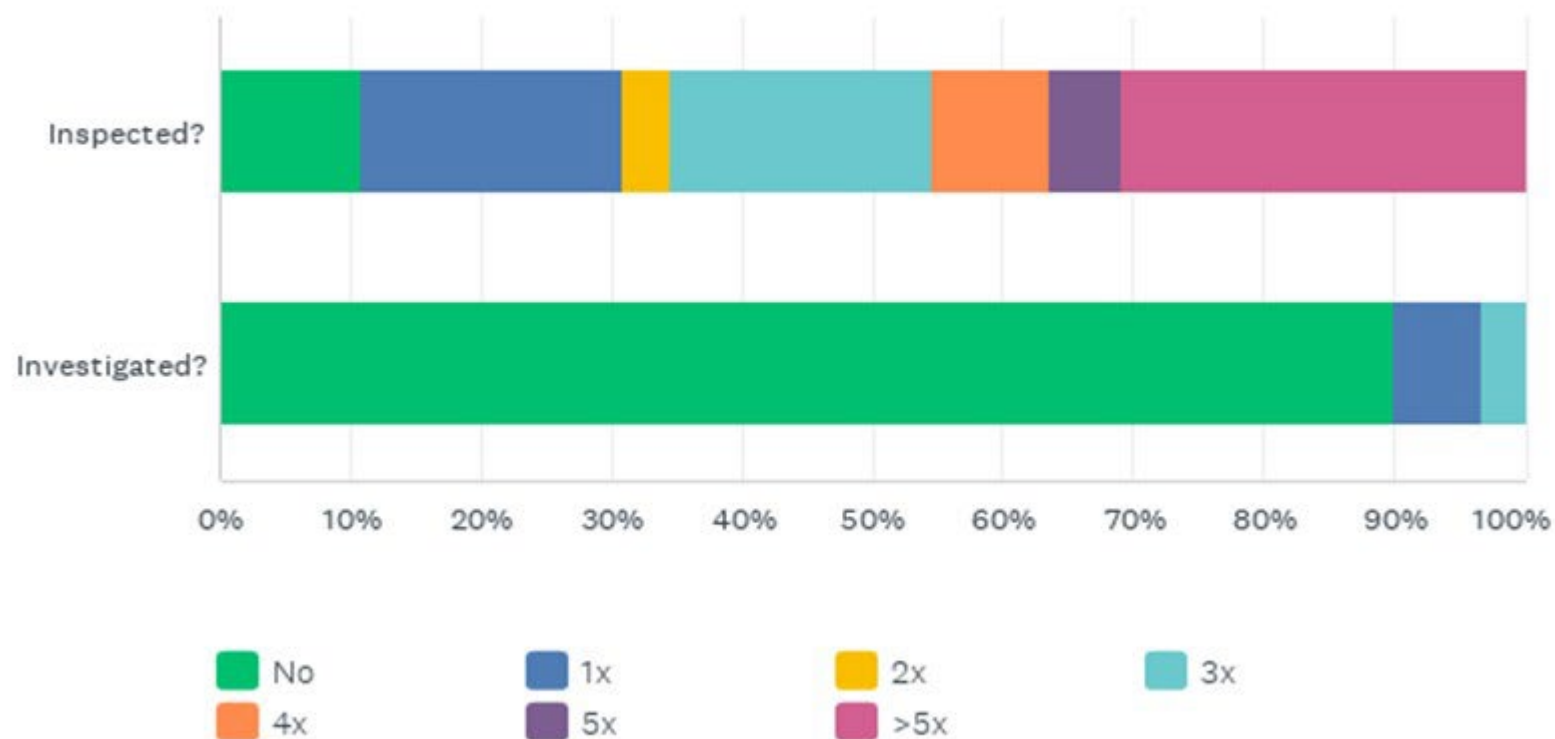
Q48: What technologies do you believe could improve compliance and efficiency in your fishery?

Answered: 63 Skipped: 78



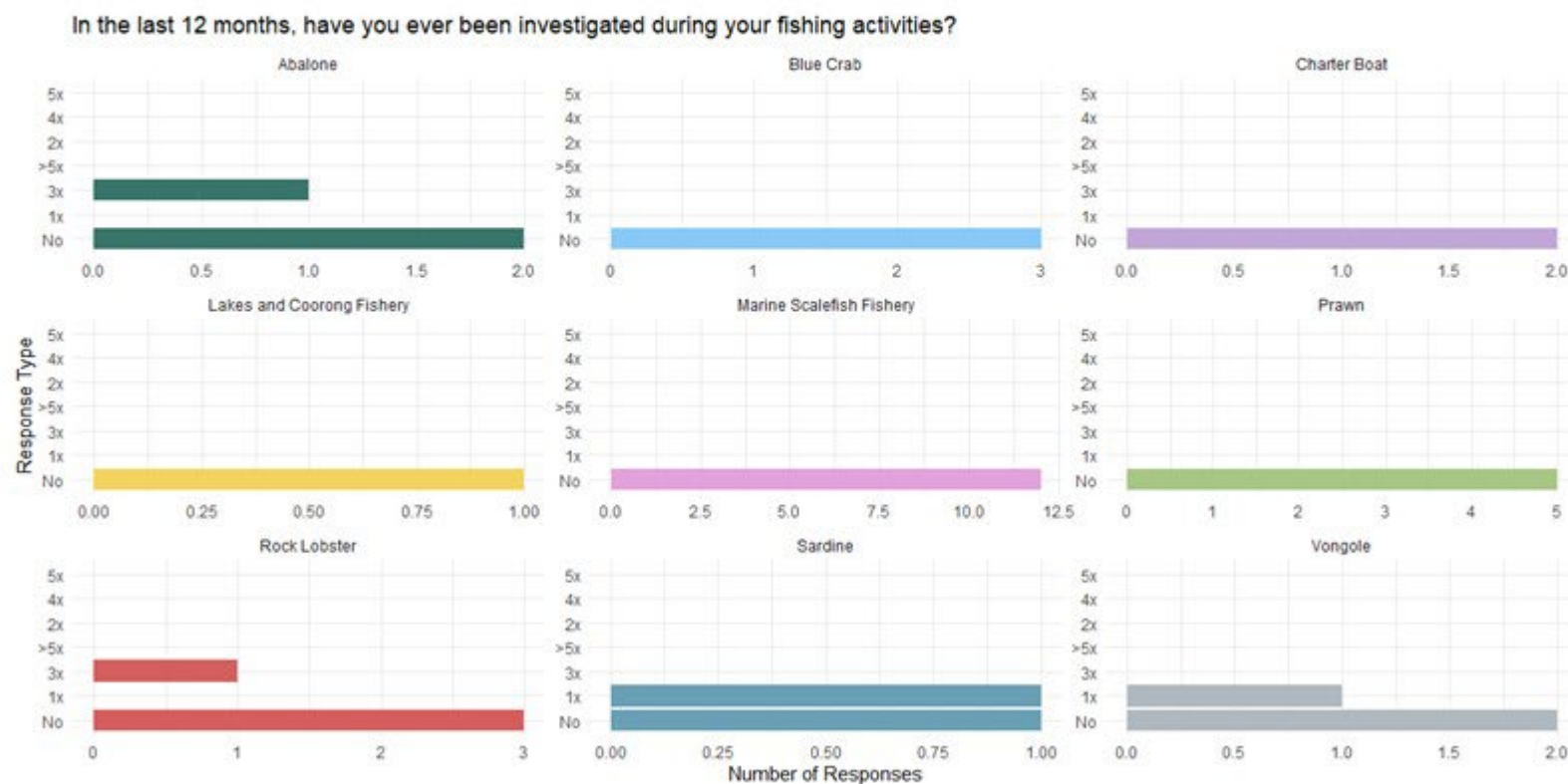
Q49: In the last 12 months, have you ever been inspected or investigated during your fishing activities?

Answered: 63 Skipped: 78



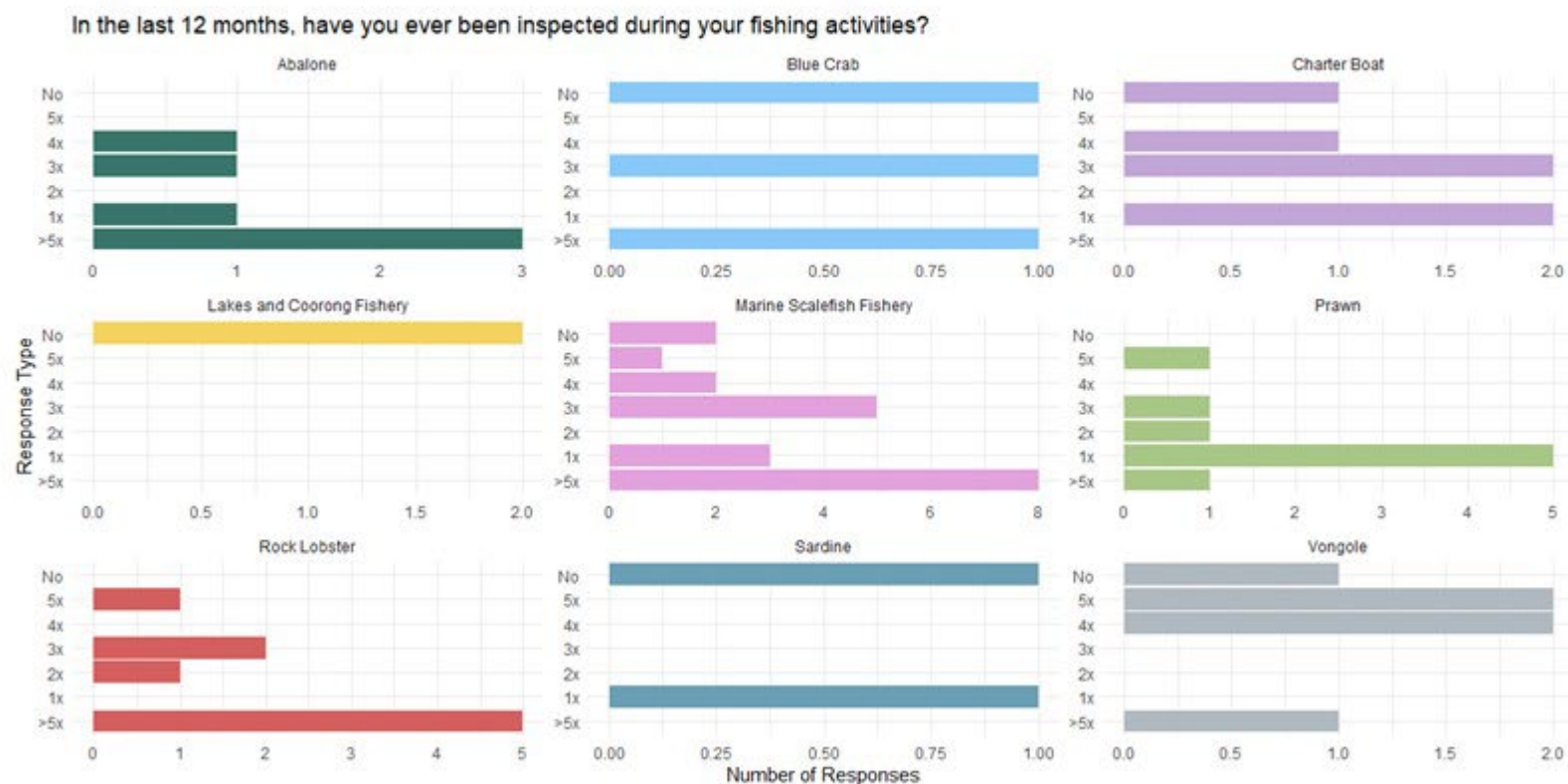
Q49: In the last 12 months, have you ever been inspected or investigated during your fishing activities?

Answered: 63 Skipped: 78



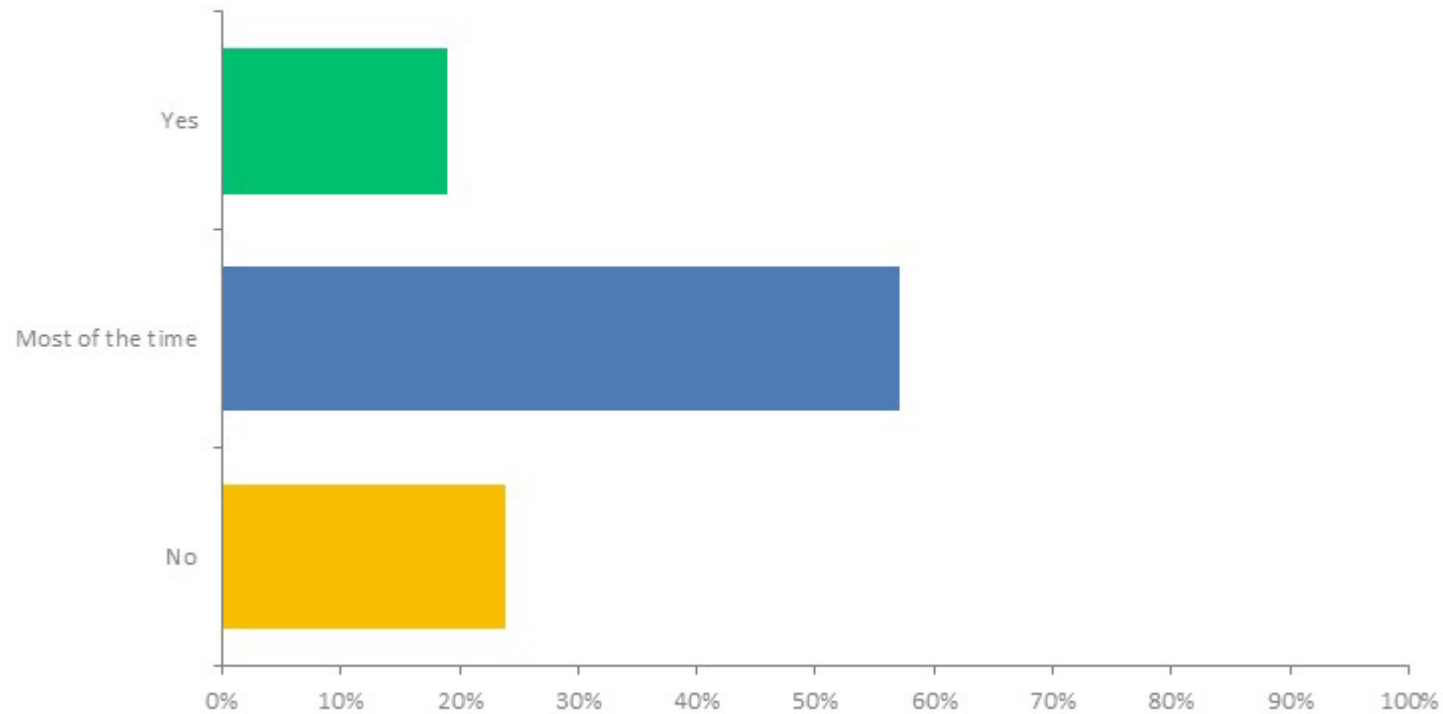
Q49: In the last 12 months, have you ever been inspected or investigated during your fishing activities?

Answered: 63 Skipped: 78



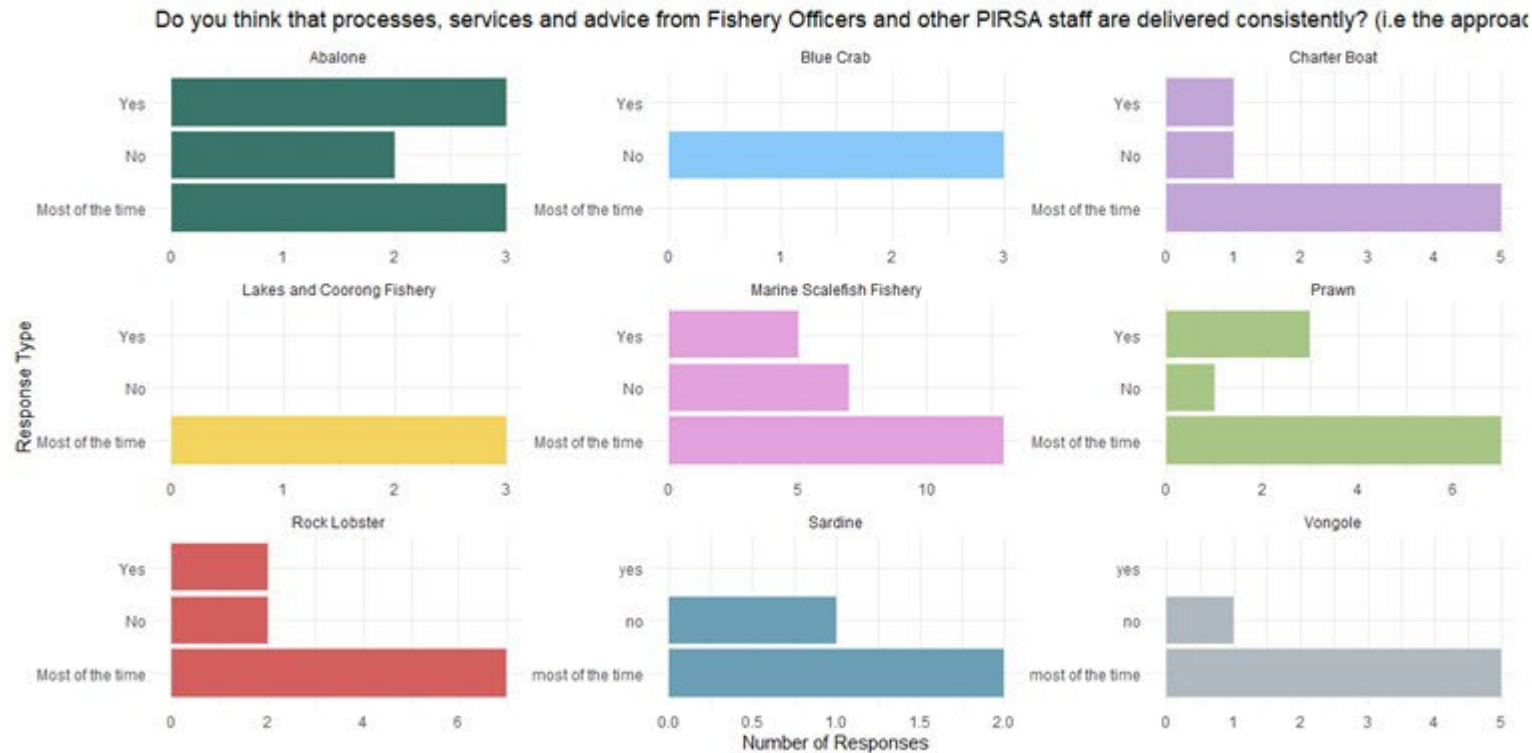
Q50: Consistant PIRSA / Fishery Officer processes, services and advice?

Answered: 63 Skipped: 78



Q50: Consistant PIRSA / Fishery Officer processes, services and advice?

Answered: 63 Skipped: 78



APPENDIX 7 COMPLIANCE BENCHMARKING TEAM

Simon Boag

MBA, Grad Dip. (Applied Science Fisheries), B. Ed (Env Sc).

Simon's 30-year career spans international operations, fisheries management, and consulting. After postgraduate fisheries studies at the *Australian Maritime College*, he began with *Sealord New Zealand*, managing deep-sea vessels including Ross Sea longliners. He later managed large vessels in the *Southern-most town in the world* Ushuaia, Argentina, gaining first-hand insight into operating in high-risk, low-compliance jurisdictions.

Returning to Sealord, Simon advanced into senior strategy roles, delivering major cost-savings with *Proudfoot Consulting* and supporting joint-venture operations at *Westfleet*. In 2009, he founded *Strategic Advantage Management*, which became *Atlantis Advisory* now Australia's largest MSC service provider. 'Atlantis' undertakes work for a variety of fishing industry associations, is involved a numerous MSC certifications, undertakes fisheries data extraction for the Australian Government and contributed to the *Futures of Seafood* initiative.

Simon sits on multiple fishery advisory bodies and has authored industry contributions, including a chapter of CSIRO's book on marine parks: *Big, Bold & Blue*.

Combining corporate and entrepreneurial experience with an MBA in strategic achievement, Simon offers a unique perspective on risk reduction, compliance, and industry leadership.

Dr Chantel Foord

PhD (Applied Biology 2024), B.Sc. (Hons), B. Com (Marketing & Public Relations),

Chantel transitioned from multinational marketing roles to marine science, earning her PhD while working part-time at *Atlantis*. In just three years, she has delivered 30+ shared-marine-space projects for oil, gas, and offshore wind sectors, helping clients understand fisheries interactions. She authored detailed fishery and aquaculture profiles for the *Futures of Seafood* project.

Her multidisciplinary expertise, investigative rigour, and strong writing/presentation skills make her a highly effective project lead. Chantel brings scientific insight and a structured approach to complex stakeholder engagement.

Dean Baigent

Officer of the New Zealand Order of Merit, MPhil, Post Grad Dip (Strategy and Asian Studies)

A former Colonel awarded the *NZ Order of Merit*; Dean served as Director of Compliance at *NZ Ministry of Fisheries*. He led development and implementation of the Integrated Electronic Monitoring & Reporting System (IEMRS), including cameras, e-reporting, and GPS.

Dean was one of the architects of the *VADE Compliance Delivery Model*, aligning fisher attitudes with compliance responses, and is internationally recognised for his expertise in compliance theory, intelligence-led strategies, and cost-recovery frameworks.

Richard Wells

B.Sc. (Fisheries Technology) distinction. NZ SITO Certificate - Level 5 Fisheries Compliance

Richard's 35-year fisheries career spans hands-on operations, senior executive management, and environmental innovation. After graduating from the *Australian Maritime College*, he joined Sealord, progressing to General Manager overseeing deepwater/coastal fleets and aquaculture. He later led *Moana Pacific's* Inshore Division.

As founder of Resourcewise, he worked with NZ's *Deepwater Group and Fisheries Inshore*, developing environmental risk plans, compliance frameworks, and co-designing NZ's Benthic Protection Areas (2005). He is a recognised expert in marine mammal and seabird mitigation, collaborating internationally, including with AFMA's Marine Mammal Bycatch Group.