



Australian Government

Department of Agriculture, Fisheries and Forestry  
Bureau of Rural Sciences

# Community perceptions of aquaculture: Summary



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# Community perceptions of aquaculture: Summary

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## Introduction

Aquaculture is a growing, high-value industry. Its continued development depends on access to and the sustainable use of shared inland, coastal and marine resources. Many individuals and groups have an interest in how the industry uses these resources because they live close to aquaculture activities or belong to groups relevant to aquaculture (eg fishing professionals, conservation advocates, government staff). Most community interest in aquaculture today is in the environmental sustainability of the industry.



There are often different opinions about aquaculture's sustainability, which can lead to conflicts and negative impacts on the industry and communities. The challenge for governments and the aquaculture industry is to understand and anticipate these conflicts and develop policies and approaches that respond to people's concerns. This will help make the industry more sustainable and make its marketing, communications and consultation/engagement programs more effective.

The Community Perceptions of Aquaculture Project (CPAP) has provided important information about the different ways communities and other stakeholders view marine and coastal aquaculture. Funded by the Fisheries and Aquaculture Branch of the Australian Government Department of Agriculture, Fisheries and Forestry, the Bureau of Rural Sciences, and the Victorian Government Department of Primary Industries — Fisheries Victoria, CPAP also benefited from the support of the Department of Primary Industries and Resources South Australia.



The broad aim of the project has been to strengthen the long-term viability of aquaculture by helping government, stakeholders and communities to:

- ▶ understand the range of views of aquaculture
- ▶ help develop policies and programs that deal with people's concerns
- ▶ improve communication, consultation and engagement.



# What we did

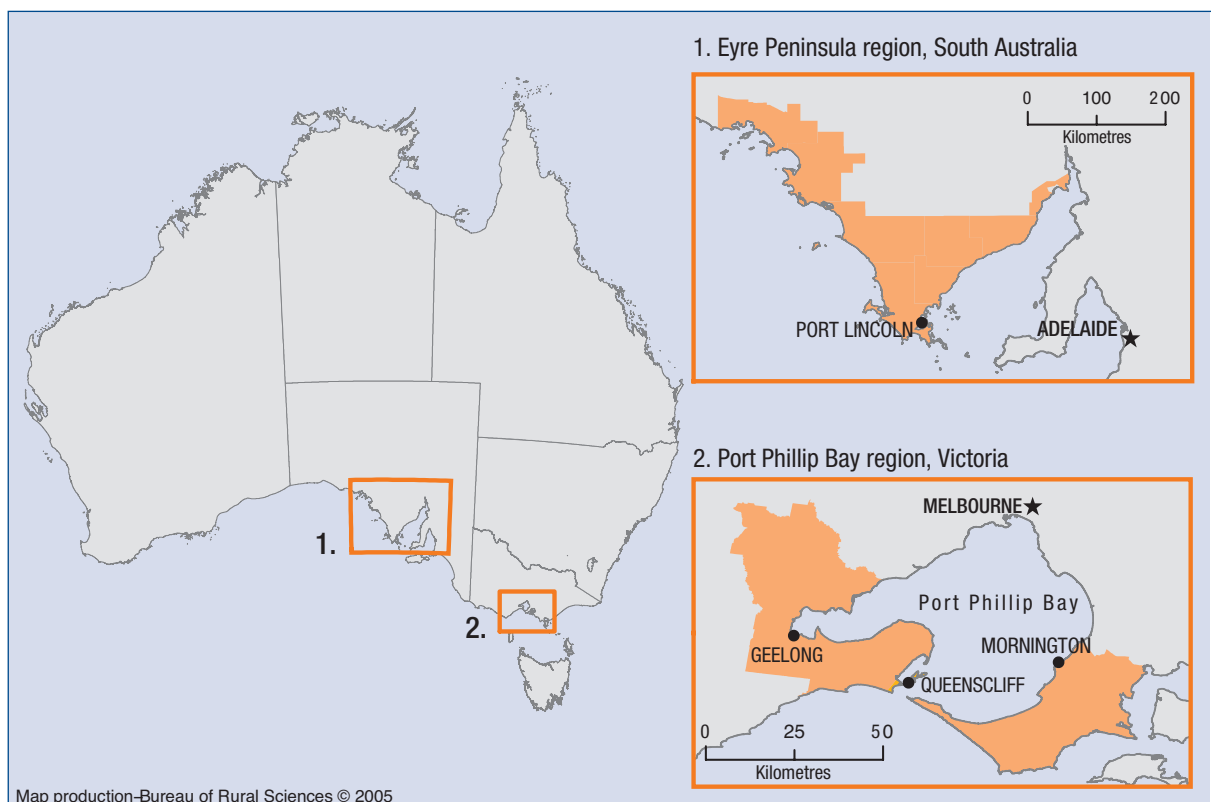
The CPAP involved a review of studies of public opinion about aquaculture and other natural resource industries and case studies of aquaculture in two key aquaculture regions: Eyre Peninsula (South Australia) and Port Phillip Bay (Victoria). Information was collected in the two regions through:

- ▶ in-depth interviews (66) with state and local government agency staff, aquaculture industry representatives, researchers, conservation organisations and community members
- ▶ mail surveys (500–700 households).

The CPAP findings are very useful for aquaculture in the two case study regions. These results are also relevant to and will benefit all other Australian aquaculture sectors and regions.

The full research report for the CPAP can be found on the Bureau of Rural Sciences' website:

[www.brs.gov.au/social\\_sciences](http://www.brs.gov.au/social_sciences)



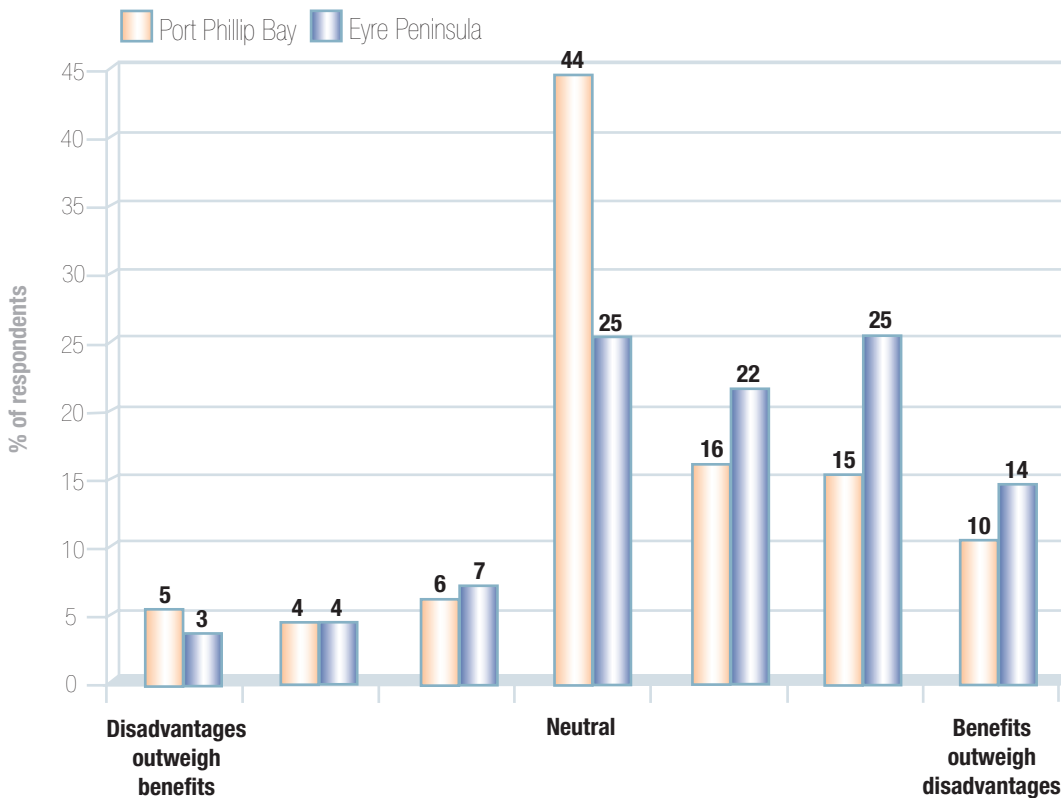
# What we found

## Support for aquaculture's general socioeconomic benefits

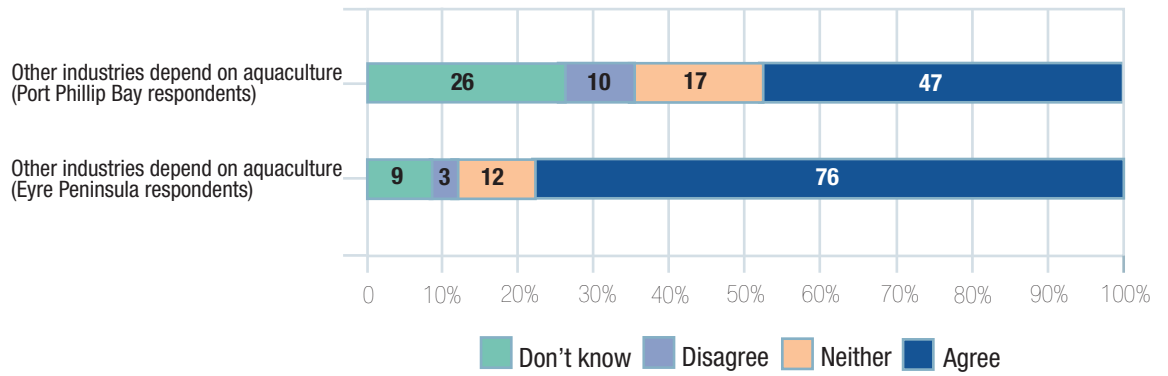
Most interviewees and mail survey respondents recognised aquaculture's socioeconomic benefits, such as its contribution to local economies in rural and remote regions. Eyre Peninsula interviewees recognised these benefits slightly more strongly than most Victorian interviewees, who focused mainly on the industry's environmental sustainability. Similarly, most Eyre Peninsula mail survey respondents rated aquaculture's benefits over its disadvantages (Figure 1) and agreed that aquaculture had flow-on benefits for the region (other industries, employment). In contrast, more Port Phillip Bay respondents were unsure about these matters (see Figure 2).

We found greater support for aquaculture's socioeconomic benefits and priorities from those mail survey respondents who were older, longstanding residents of the Eyre Peninsula, had direct contact with the South Australian aquaculture industry (site visits, social links) or had visited aquaculture sites in Victoria.

**Figure 1 - Mail survey respondents' positions regarding the benefits and disadvantages of aquaculture**



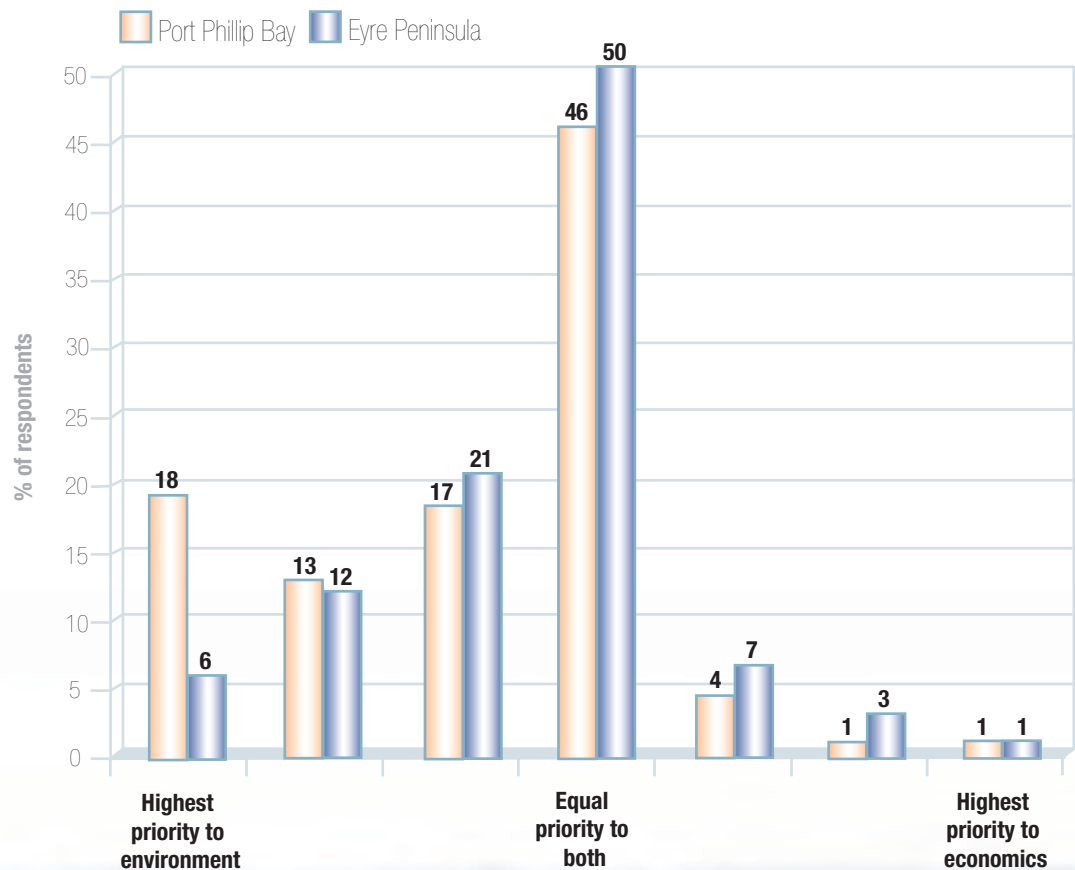
**Figure 2 - Mail survey respondents' perceptions of aquaculture's flow-on benefits**



## Strong interest in aquaculture's environmental sustainability

Most interviewees and mail survey respondents placed high value on the environment, particularly coastal and marine settings. Compared to their Eyre Peninsula counterparts, the Port Phillip Bay mail survey respondents placed greater importance on these values; more rated the environment as the most important general issue for their region; gave greater support to marine protected areas; and gave the environment a higher priority over the economy in coastal management choices (Figure 3).

**Figure 3 - Mail survey respondents' positions on trade-offs in coastal management**



Mail survey respondents in both regions rated environmental impacts as the most important aquaculture issue, followed by the industry’s economic contribution and its impacts on other users of coastal and marine resources. While a majority agreed that aquaculture generally provides a good or at least equally acceptable alternative to wild-caught seafood, there was some uncertainty — which rose considerably when respondents were asked more detailed questions. More Port Phillip Bay respondents were unclear about these matters than were Eyre Peninsula respondents (Table 1).

We found higher environmental concern among female mail survey respondents, those involved in groups with coastal management interests, and Port Phillip Bay respondents who were younger and who had higher levels of education.

**Table 1 - Mail survey respondents’ perceptions of aquaculture’s environmental sustainability**

Mail survey topics		% of responses		
		Disagree	Neutral/ Don’t know	Agree
Aquaculture is a good alternative to wild-catch fishing	Eyre	8	20	72
	P. Phillip	7	25	68
If the fish in sea cages or shellfish grown on racks/ropes are healthy, then aquaculture is not affecting the marine environment	Eyre	31	42	27
	P. Phillip	21	39	40
Farming fish in sea cages has a greater negative impact on coastal environments than farming shellfish does	Eyre	14	56	30
	P. Phillip	13	68	19
Farming shellfish helps coastal environments by removing nutrients from water	Eyre	29	61	10
	P. Phillip	17	64	19
Aquaculture has contributed to the ocean’s pollution and decline in health Aquaculture has contributed to the pollution in our seas, bays and estuaries	Eyre	41	39	20
	P. Phillip	21	67	12



## Varied levels of trust and perceived environmental risks

Interviewees in both regions had mixed opinions about, but used similar criteria to rate their trust in the aquaculture industry, including the:

- ▶ motivations and consistency of performance across different industry sectors
- ▶ adequacy of environmental regulations and their enforcement
- ▶ presence and intensity of environmental problems/issues.

Mail survey respondents rated their trust in the industry and its environmental performance (Figures 4 and 5). The results show that:

- ▶ trust varied across industry sectors — more respondents trusted the South Australian shellfish and tuna sectors than trusted the South Australian kingfish and Victorian sectors
- ▶ there were high levels of uncertainty (one quarter to one half) about trusting the industry, with more uncertainty among Port Phillip Bay respondents
- ▶ nearly half the Port Phillip Bay respondents felt the industry could do more for the environment, while a similar percentage of Eyre Peninsula respondents supported the industry's environmental responsibility and response to controversy.

Mail survey respondents more likely to trust the aquaculture industry included those who had been to aquaculture farms and knew someone in the industry, and/or were longstanding residents of the Eyre Peninsula. However, Eyre Peninsula respondents with social links to the industry were less likely to trust the sea-cage sector of the industry. Other respondents less likely to trust the industry included women and those with higher levels of education, involvement in South Australian coastal groups or interest in recreational fishing in the state.



**Figure 4 - Mail survey respondents' level of trust in the decisions of different aquaculture industry sectors**

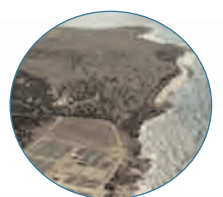
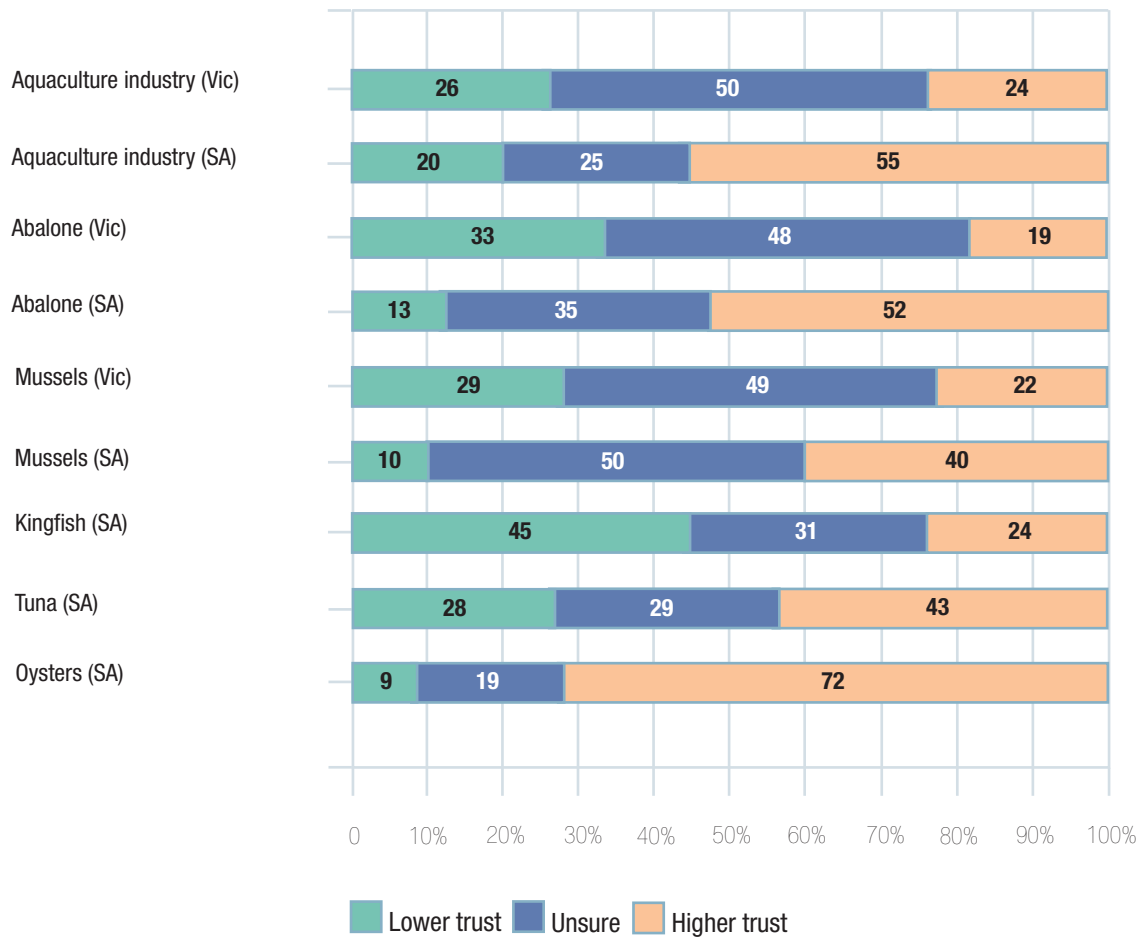
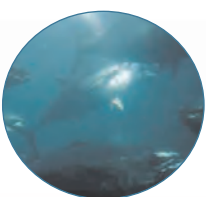
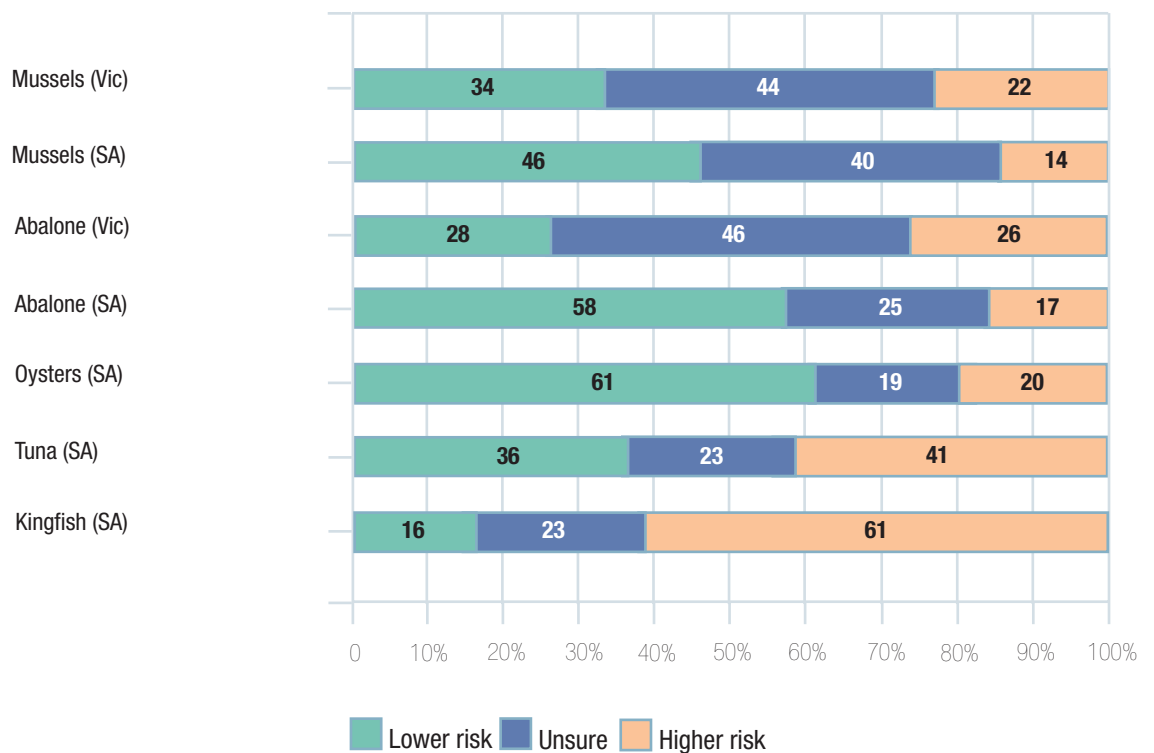


Figure 5 shows how mail survey respondents rated the risk that different aquaculture sectors would have some kind of negative environmental impact in the next 5-10 years. Generally, more respondents had concerns about environmental risks from sea-cage sectors (eg kingfish, tuna) than from the shellfish sectors (eg mussels, abalone, oysters). Overall, there were high levels of uncertainty about aquaculture's future impacts. More Port Phillip Bay respondents were unsure about aquaculture's environmental risks than the Eyre Peninsula respondents, although both groups were equally unsure about the mussel sector.

**Figure 5 - Mail survey respondents' perception of the risk of future environmental damage from aquaculture**

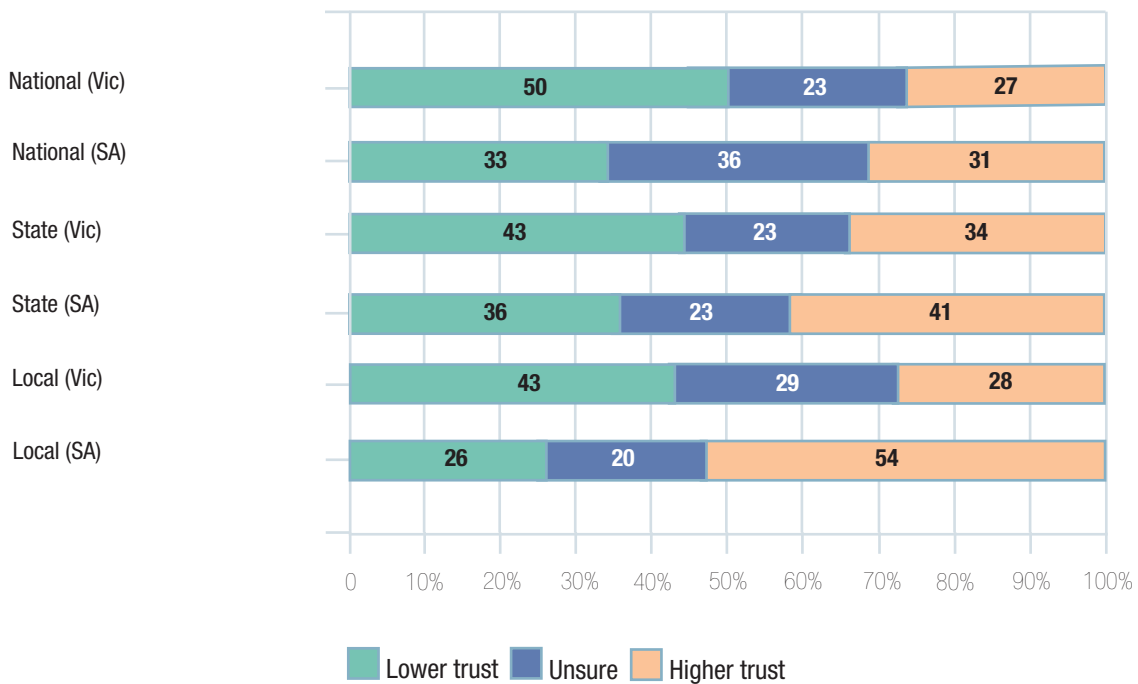


When rating their trust in governments' aquaculture-related decisions, interviewees from both regions made judgments on the perceived impartiality of decision makers, their accessibility, and how responsive they were to different interests and environmental problems related to aquaculture.

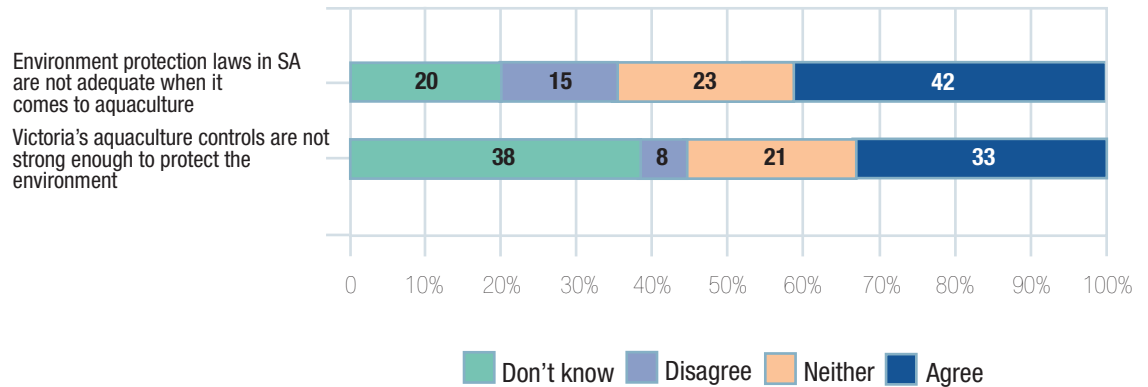
Mail survey respondents also had varied trust in the national, state and local governments' aquaculture-related decisions and procedures (Figure 6). More Eyre Peninsula respondents than Port Phillip Bay respondents had high trust in government, particularly in local and state governments, while a quarter to a third of respondents in both regions were 'unsure'. There was greater uncertainty in both regions about the adequacy of aquaculture's environmental regulations, with more Port Phillip Bay respondents being dissatisfied than their Eyre Peninsula counterparts (Figure 7).

Mail survey respondents less likely to trust governments' aquaculture decisions were females, those involved with South Australian coastal groups, and people who attended aquaculture public meetings in Victoria.

**Figure 6 - Mail survey respondents' trust in governments' aquaculture decision making**



**Figure 7 - Mail survey respondents' perceptions of state governments' aquaculture regulations**



## Varied levels of awareness of aquaculture

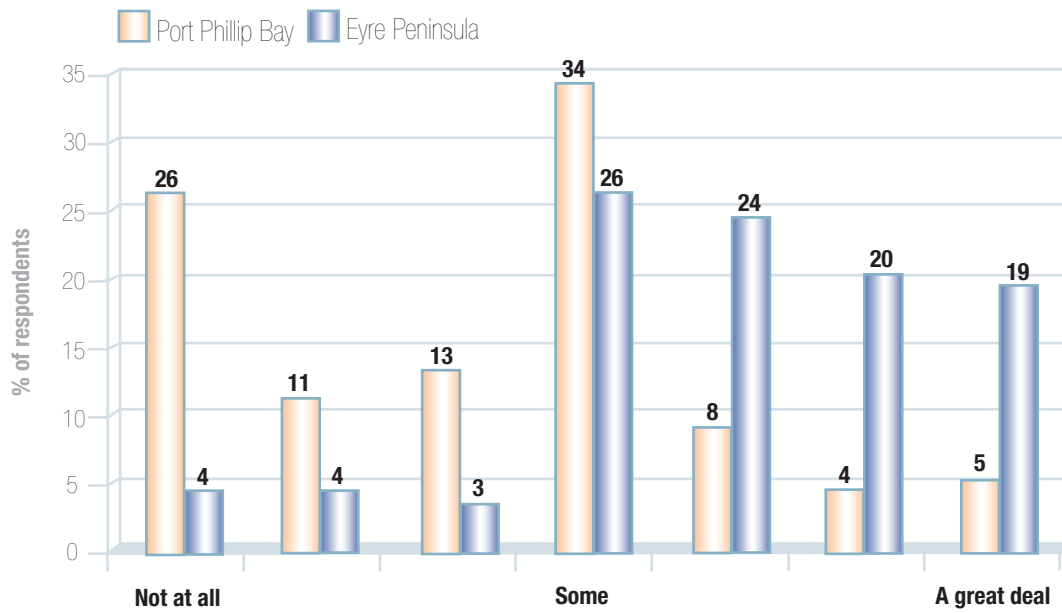
Interviewees were those people in the regions who had a particular interest in aquaculture and were likely to be more informed about it.

Adults living close to aquaculture activities were targeted for the mail survey in order to test their awareness and knowledge of aquaculture matters. Generally, mail survey respondents in both regions rated their knowledge as 'low', and they knew least about state and local governments' role in aquaculture and Indigenous communities' interest/involvement in the industry. Levels of awareness differed between the regions:

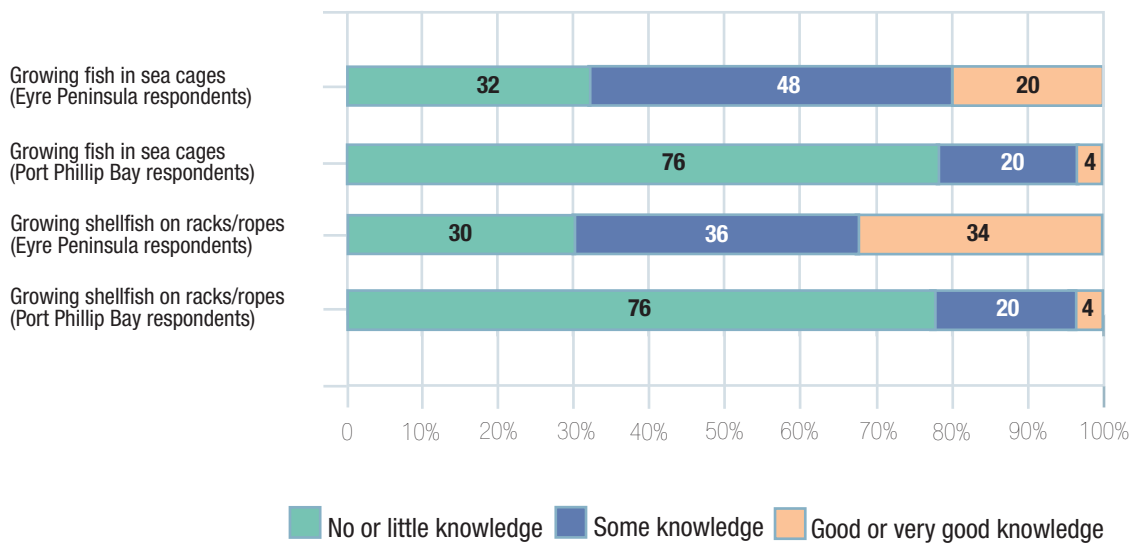
- ▶ four times as many Eyre Peninsula respondents as Port Phillip Bay respondents said they had thought about aquaculture issues (Figure 8)
- ▶ far fewer Eyre Peninsula respondents than Port Phillip Bay respondents gave themselves low ratings for knowledge about governments' roles in aquaculture and about aquaculture industry sectors and practices (Figure 9)
- ▶ claims of knowledge about aquaculture's specific environmental impacts and benefits were higher among the Eyre Peninsula respondents
- ▶ claims of knowledge were highest for both sets of respondents in relation to aquaculture impacts on coastal recreation, stormwater impacts on aquaculture, and marine ecology.

Mail survey respondents used varied sources to obtain information about aquaculture. Other research and the Port Phillip Bay case study show that sources rated most important often receive lower credibility ratings (eg media, governments), while sources used less frequently receive higher credibility ratings (eg universities/research centres, the aquaculture industry, libraries, the internet, personal experience).

**Figure 8 - How much mail survey respondents had thought about aquaculture issues before being surveyed**



**Figure 9 - Mail survey respondents' knowledge about aquaculture growing techniques**

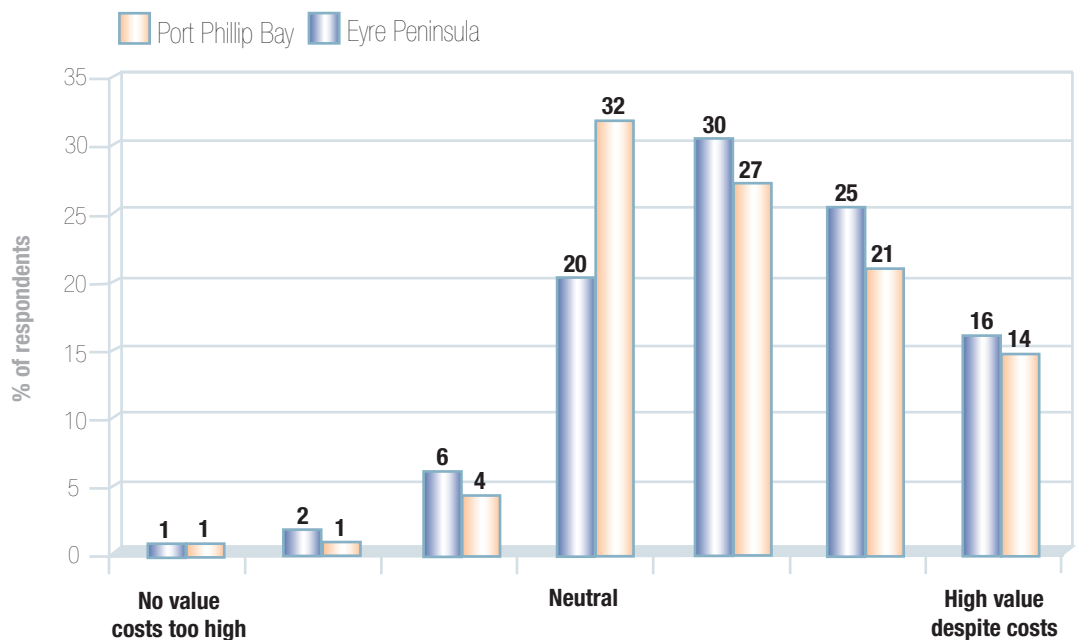


## Strong support for better dialogue

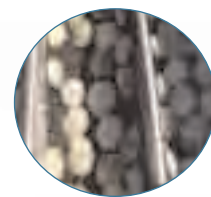
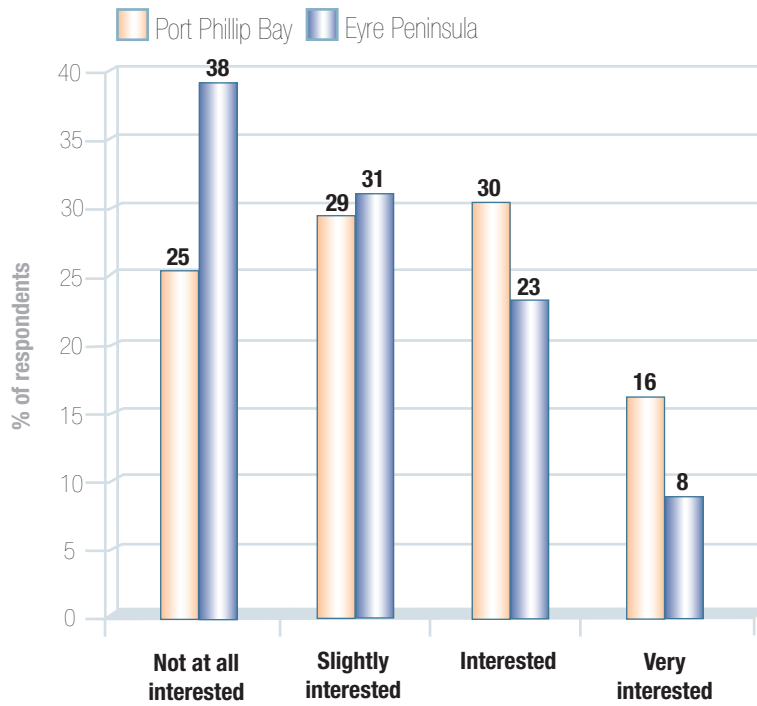
Interviewees in both regions wanted to see improved relations between governments, the aquaculture industry and communities through greater governmental transparency and coordination, firm regulations, clear and accessible information, and more inclusive dialogue with communities.

Mail survey respondents also supported public input into aquaculture planning decisions (Figure 10), with a third interested in being directly involved (Figure 11). There was stronger support for more interactive ways of participating. Respondents showed greater interest in activities providing direct industry contact and lowest interest in activities like making written submissions.

**Figure 10 - Mail survey respondents' positions on the value of community participation in aquaculture planning/management**



**Figure 11 - Mail survey respondents' interest in being involved in aquaculture planning**



# Conclusions

## Informed decisions will avoid delays and conflicts and build public trust

Comprehensive and timely information on aquaculture's social dimensions is needed to increase the efficiency and effectiveness of decision making and to build public understanding and support. There is a need for continued and expanded use of social research and assessments, including:

- ▶ more frequent and systematic use of the full range of social assessment tools earlier in aquaculture decision making, including consistent and extensive social criteria to complement the biophysical criteria used in resource assessments, project feasibility studies and development approvals
- ▶ stocktakes and evaluations of governments' and the aquaculture industry's use of social assessment and community consultation to identify best practice principles
- ▶ regular monitoring of public opinions about aquaculture, tracking changes with the baseline information and key indicators used in this study
- ▶ additional case studies of aquaculture regions, with a particular focus on preventing social conflict and on management strategies
- ▶ an education and training inventory to identify knowledge and skills required to understand aquaculture's social dimensions, which could then be incorporated into curriculums, competency standards and accreditation schemes for employees, consultants and trainers in the industry.

## Knowing communities is invaluable in building a viable aquaculture industry

### Dealing with risk and uncertainty requires caution

It will be increasingly important to understand the different ways societal groups perceive risk, particularly the risk that aquaculture might harm the environment or human health. Lack of appreciation of the differences between 'expert' and 'lay' risk perceptions can often lead to over-reliance on older communication models. In these cases, 'experts' use increasing amounts of technical information to try to convince the 'lay' public that the risk is negligible or under control and rely on one-way information delivery. This approach invites public suspicion.



### **Negative stereotypes should be disproved**

Key messages and activities to build public trust will also need to disprove some of the more commonly held negative ideas about governments and industries. They must clearly demonstrate:

- ▶ the aquaculture industry's transparency, and concern and care for the public interest and for environmental protection
- ▶ governments' commitment and ability to reduce negative environmental (and social) impacts and to respond to a wide range of interests.

### **Public information about aquaculture should be accessible and credible**

Easy access to credible information is another key component in building the public's trust in aquaculture. It would be valuable if governments and the aquaculture industry further investigated ways to:

- ▶ increase the use of those information sources seen as more credible, such as ABC radio, direct contact with the aquaculture industry, and universities and research centres
- ▶ selectively use important but less credible sources, such as the mass media
- ▶ improve the use and credibility of governments' aquaculture information.

### **Communities should be engaged**

More innovative participatory strategies and forums are needed to complement existing community consultation. This will avoid social conflicts and costly delays and changes to projects, and will build public trust. These initiatives should:

- ▶ be more inclusive
- ▶ occur earlier in decision making
- ▶ match methods to clearly stated objectives
- ▶ be delivered at the regional and local level by people with credibility and expertise in community engagement
- ▶ offer genuine opportunities to influence decisions.

### **Targeted communications should meet the interests of varied audiences**

Some parts of the public are more or less likely to support or oppose aquaculture, depending on the sociodemographic features of communities, people's experiences, the aquaculture industry sectors involved and their practices, and other factors. For example, interest-based communities like the ones identified in this project are likely to be more informed and interested in being involved in decisions. Communicating about aquaculture — whether by simply providing information or by involving the public in decision making — will be more effective when it is tailored to differing audiences.

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