FRDC
FISHERIES RESEARCH & DEVELOPMENT CORPORATION

Determining the risk that Southern Rock Lobster fishing and other recreational and commercial fishing activities could transmit Abalone Viral Ganglioneuritis (AVG)

Industry Companion Report

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Determining the risk that Southern Rock Lobster fishing and other recreational and commercial fishing activities act as a vector of transmission of the Abalone Viral Ganglioneuritis (AVG)
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In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.

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Project Overview

Abalone Viral Ganglioneuritis (AVG) is disease that devastates both aquaculture and wild fisheries abalone populations. AVG was first detected nearly 20 years ago in Victoria and has since spread to South Australia. It is sometimes detected in Tasmania caught abalone once they enter processing facilities.

FRDC recently commissioned some focused research to examine the risk of spreading AVG through certain fishing activities in Victoria and South Australia in order to recommend steps that can be taken to slow spread. The study looked at four fishing pathways that could spread AVG:

- Southern Rock Lobster fishing
- Recreational fishing and diving
- Commercial abalone fishing
- Commercial net fishing

The goal was to estimate the level of risk these pathways posed to the human-mediated spread of AVG to new areas where abalone are healthy and to make recommendations to manage these risks.

The research was a focused review, and did not include:

- New scientific research or experiments to allow better assessment of risks, though areas for future research were identified
- Assessing other ways AVG might spread, like through natural water movement

If natural spread is later found to be very important, this may downgrade the relative importance of these four fishing activities for spreading AVG and the risk mitigations identified for them, but it is too early to judge this. Further research on natural spread would be required to assess the relative importance of fishing activities verse natural spread. In the meantime a precautionary approach to fishing biosecurity is required.

Methods

The researchers used a few methods to assess the risk:

- A review of existing studies and information on AVG
- Discussions with experts from the fishing industry, government, and research
- A qualitative risk assessment to estimate the likelihood of AVG spreading through the four activities. This ranks risk of spread across pathways from negligible to high risks and allows risk mitigations for spread by pathways to be recommended.

Key Findings

The review and discussions with experts highlighted that there are still gaps regarding what we know about the spread of AVG. Therefore, the risk assessment was done using two different scenarios, based on two different possible situations.

- Scenario A: Assumes that the virus is easily removed from fishing gear and doesn’t survive for long outside of abalone.
- Scenario B: Assumes the virus is harder to remove and can survive for longer, making it easier to spread.

The estimated risk of spreading AVG varied between the two scenarios (Table 1). Scenario B generally showed a higher risk for most activities.

Table 1 Estimated risks for assessed pathways

Pathway	Estimated Risks	
	Scenario A	**Scenario B**
SRL pathway 1 - Lobster pots are reset in the same location	Very low	High
SRL pathway 2 - Lobster pots a reset in a new reef system	Very low	High
Recreational – Diving	Very low	High
Recreational – Line	Very low	Low
Commercial abalone fishing	Low	High
Commercial abalone fishing with shucking	Low	High
Commercial net fishing	Very low	Low

Implications

Due to uncertainty regarding how AVG spreads (i.e. is Scenario A or B correct?), Scenario B should be assumed, and careful fishing access rules are required.

These careful fishing access rules are that during an outbreak in a wider fishing region, wherever there are abalone reefs that are currently experiencing active cases (dead and dying abalone), it is recommended that fishing activities that interact with these abalone habitats cease.

However, once the extent of an outbreak is discovered in a region, fishing can continue in that region, as long as active outbreak reefs are avoided, and the following steps are met:

- fishers should not move from an outbreak area to a free area without decontaminating their equipment before moving.
- to decontaminate equipment requires that all fishing equipment must be removed from the water, washed with detergent and allowed to dry in the sun for several days before moving to an area free of AVG. These steps are outlined in the Victorian and South Australian AVG Codes of Practice and the Victorian Southern Rock Lobster Code of Practice.
- if decontamination cannot occur then fishing equipment cannot be used between different reef systems

Reef systems in this context are defined by the abalone fishing regulatory bodies.

Further research should occur to allow future decisions about whether Scenario A or B is correct, If Scenario A is correct, less onerous conditions may be possible.

Research Needs

The report recommends more research in several areas to better understand and manage the risk of AVG. By answering these research questions, the uncertainty impacting the risk assessments should be reduced, improving confidence in risk estimates:

- How mucus affects the spread of the virus – e.g. it is known that abalone mucus contaminated with virus is still infectious, but does that mucus protect virus on equipment out of the water and allow virus to persist.
- How to decontaminate equipment from AVG? At this stage it is assumed that detergent and physical action (e.g. scrubbing and hosing) to remove any biological material and drying are sufficient to

decontaminate equipment. Research may demonstrate simpler methods such as hosing and drying are sufficient.

- How quickly and far the virus moves through water (natural spread)
- How much of the virus is needed to cause infection
- How the virus enters abalone
- Improving communication about biosecurity measures
- Analysing the costs and benefits of monitoring for the virus
- Bringing researchers together to plan future studies