

Australian Government Department of Agriculture, Water and the Environment

Surveillance program for diseases of abalone Summary of results March 2021

What did we do?

- The national active surveillance program for disease agents of abalone with international and trade significance; abalone herpesvirus (AbHV), *Perkinsus* (e.g. *Perkinsus olseni* and *Perkinsus marinus*) and *Xenohaliotis californiensis* (causing withering syndrome), was conducted between April and December 2019.
- The program was designed as a one-off survey targeting wild and farmed abalone within Australia (in New South Wales, Victoria, South Australia, Western Australia and Tasmania) using molecular diagnostic methods.

What did we want to know?

• The program aimed to provide evidence to support Australia's freedom from exotic disease agents (*X. californiensis* and *Perkinsus marinus*), and evidence for market access for known endemic disease agents with restricted distribution (AbHV and *Perkinsus olseni*).

What did we find out?

Data supports Australia is free from withering syndrome

• 277 posterior oesophagus/digestive gland abalone samples were collected with all testing negative for *X. californiensis.* This data strongly supports that Australia is free from the exotic disease agent, *X. californiensis.*

Data supports infection with Abalone herpesvirus does not occur in tested wild and farmed abalone populations

 1598 pedal nerve/pleuropedal ganglion abalone samples were collected with all testing negative for AbHV. This data strongly supports that the study population (farmed or wild abalone)¹ that was sampled during the surveillance program was free from AbHV.

Data supports Australia is free from infection with Perkinsus marinus

• 2226 gill/mantle or gross lesion of pedal muscle of abalone samples were collected and tested for *Perkinsus*.

¹ Wild abalone from Tasmania were not sampled and tested.



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• The exotic parasite, *P. marinus*, was not detected in the study population (farmed or wild abalone). This data strongly supports that Australia is free from the exotic pathogen, *P. marinus*.

Data confirms infection with Perkinsus olseni occurs in known infected areas

- *Perkinsus olseni* detection by real-time qPCR was confirmed by nucleotide sequence analysis of conventional PCR amplicons in the abalone collected from three wild zones and one farm.
- *P. olseni* was generally only confirmed when moribund wild or farmed animals were tested.
- Molecular diagnostic methods for *P. olseni* will need to be reviewed as apparently healthy animals collected from known *P. olseni* infected areas generally did not confirm a suspected case, indicating that the test method used to confirm species of *Perkinsus* was not sensitive enough to detect the parasite in apparently healthy animals.
- Further investigation on populations where samples generated a suspect test result of *Perkinsus* spp. was not possible due to the available budget.

Improved national surveillance and diagnostic capabilities

- The program achieved, during peace time (i.e. not part of the Aquatic emergency animal disease response), improved national surveillance and diagnostic capabilities through designing nationally consistent sampling strategies and implementing inter-laboratory comparison programs among participating laboratories for endemic disease agents.
- Confirmatory diagnosis of any exotic disease agent needs to be conducted at the CSIRO Australian Centre for Disease Preparedness.

What were the other benefits?

- The national active surveillance program was successfully completed due to collaboration among the members who participated: state governments, their laboratories, the Australian Centre for Disease Preparedness, the Department of Agriculture, Water and the Environment, and the abalone farming and fishing industries around Australia.
- It delivered the common national objectives—improving early detection of exotic and endemic diseases of trade significance, and generating information to support trade and market access.

For more information, please contact: Aquatic Pest and Health Policy Section, Department of Agriculture, Water and the Environment (<u>aah@awe.gov.au</u>)