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## The 7th International Abalone Symposium Phuket Thailand July 19 – 24, 2009

### Important datelines

- Symposium:** 19-24 July, 2009
- Abstract submission:** 1 August, 2008-30 March, 2009  
(No abstracts will be accepted after March 30, 2009.)
- Early registration:** 1 August, 2008-31 December, 2009
- Regular registration:** 1 January, 2009-30 March, 2009
- Late registration:** 1 April, 2009-24 July, 2009

### Program Themes

Symposium sessions will focus on the following program themes; examples of topic area for presentation are as follows;

1. International abalone trade
2. Fisheries management
3. Aquaculture technology
4. Larval biology and settlement
5. Pathology and disease
6. Nutrition and feeding
7. Genetics
8. Physiology
9. Biochemistry
10. Ecology
11. Biotechnology
12. Harvests and processing
13. Other related topics

### Publications

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If you have an interesting **Photo, Story, Issue or Report** that you would like included in Abalone Stories send it to:  
[abalone@cbgconsultants.com.au](mailto:abalone@cbgconsultants.com.au) or Fax (03) 8660 2755

Papers from this symposium will be peer-reviewed and published in the Journal of Shellfish Research.

### Abstract Preparation and Submission

Instructions of the on-line (Web-based) preparation and submission of abstracts for oral and or poster presentations can be found at <http://www.mascats.org>. The abstract submission will start from September 1, 2008 and end on March 30, 2009. **No abstracts will be accepted after March 30, 2009.**

[http://www.mascats.org/mascats\\_7th/index.php?option=com\\_frontpage&Itemid=1](http://www.mascats.org/mascats_7th/index.php?option=com_frontpage&Itemid=1)

### Registration

In order to receive the discount rates as listed below; payment must be received by the date listed.

Registration fee	IAS member	Non-member
Early registration (1 Sep, 2008-31 Dec, 2008)	300 USD	350 USD
Regular registration (1 Jan, 2008-30 Mar, 2009)	350 USD	400 USD
Late registration (1 Apr, 2009-24 Jul, 2009)	450 USD	500 USD

[http://www.mascats.org/mascats\\_7th/index.php?option=com\\_frontpage&Itemid=1](http://www.mascats.org/mascats_7th/index.php?option=com_frontpage&Itemid=1)

<http://www.abc.net.au/science/articles/2008/09/16/2365807.htm?site=science&topic=latest>



## Australia in biosecurity 'hotspot'

Tuesday, 16 September 2008 Dani Cooper

ABC



Experts say Australia must help the region deal with potential outbreaks (*Source: Reuters*)

## Related Stories

- [Lack of scientists 'threatens biosecurity'](#), Science Online, 02 Jun 2008
- [Why bird flu doesn't spread between humans](#)
- [SARS probably originated in bats](#)

Australia is "encased by a ring of fire" with modelling by international experts showing Asia to be the most likely source of the next global infectious disease outbreak.

The panel of biosecurity and infectious disease experts also warn that a "fortress Australia" approach is not enough to stop bio-threats entering the country.

Instead Australia must also help develop the region's capacity to deal with and prevent infectious disease outbreaks, they say.

The presentation came ahead of today's launch, by the [Australian Biosecurity Cooperative Research Centre](#), of the Biosecurity Risk Intelligence Scanning Committee.

Committee chair Professor John Edwards, Dean of the [School of Veterinary and Biomedical Sciences](#) at [Murdoch University](#), says the group aims to predict emerging threats and inform research priorities.

"Australia has some of the best biosecurity systems in the world," Edwards says.

"But biosecurity is something you can never do well enough."

Edwards says greater attention needs to be given to animal viruses as up to 70% have zoonotic potential - can be passed to humans.

## Priority assessments

He says the new committee will as a priority assess the risk of bat-borne viruses such as the Hendra-like Nipah virus, the dengue-like Chikungunya virus and Bluetongue virus. The later is spread by a biting midge and causes serious disease in livestock, particularly sheep.

Dr Peter Daszak, executive director of the [Consortium for Conservation Medicine](#), says modelling of the likely areas where new viruses will emerge shows the region to the north of Australia to be most at risk.

"Australia is surrounded by the hotspot for emerging diseases and they are areas with incredibly low surveillance effort," he says.

"To understand the risk of new viruses we have to know what viruses wildlife carry, and of course we don't.

"We need to understand what makes them emerge and deal with that before they emerge."

## 'Hottest of hotspots'

Daszak says more than half of all emerging disease come from wildlife, yet estimates suggest 99.8% of viral diversity is unknown.

While it is hard to predict what the next pandemic will be, Daszak says "we can get a handle on where the next one will come from".

"The countries that border Australia are becoming the hottest of the hot spots," he says, adding we are "encased" by a biosecurity "ring of fire".

"The networks of trade and travel mean we are extremely connected to areas where diseases are emerging and therefore [Australia is] at high risk," Daszak says.

His view is supported by [World Health Organization](#) deputy regional advisor for communicable disease surveillance and response Dr Julie Hall.

Hall says the Asia-Pacific region has all the "drivers that enhance or create an environment" where new disease can emerge.

This includes high population density, significant poultry populations, and natural disasters and climate change causing large migrations of population.

### **'One new disease a year'**

Hall says 70% of new emerging diseases are expected to come from animals and globally during the past 30 years on average one new disease a year has emerged.

She says the emerging threats in the region at present come from vector-borne disease, spread by mosquitoes.

This includes Dengue fever and Chikungunya virus.

However, Hall warns the most serious threat to the nation's biosecurity is "influenza fatigue" where interest wanes in the field because the threatened pandemic does not arrive.

This would mean a cut in funding to safeguards and the erosion of systems that prevent the pandemics from occurring.

<http://www.media.tas.gov.au/release.php?id=24809>



**Rod Andrewartha**

Department of Primary Industries and Water

Wednesday, 17 September 2008

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## **Abalone Response Update**

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Abalone test results received so far today (Wednesday, September 17) have not added to the known areas of disease presence in Tasmania.

Chief Veterinary Officer, Dr Rod Andrewartha, said that wild samples from the King Island region returned negative results to DNA-testing for Abalone Viral Ganglioneuritis.

"Also negative were samples taken from a second southern processor which had reported suspect signs in abalone

held on the premises," Dr Andrewartha said.

"The fish tested from this processor came from both the West and East coasts.

"Further test results from the processor where AVG was first detected have become available. New fish placed in the known infected tank at the processor returned positive results. Another holding tank at the facility was negative for the virus.

"The facility has been destocked and is being cleansed under rigorous biosecurity protocols. This plant does not discharge into the sea.

"The initial processor and the second processor we tested have done the right thing in reporting suspect signs," Dr Andrewartha said.

Reports from divers do not indicate anything out of the usual in wild populations.

Dr Andrewartha said that results will continue to come in throughout the coming fortnight.

"Nothing received to date has firmed up or closed off any scenarios

<http://www.abc.net.au/news/stories/2008/09/17/2366685.htm?site=science&topic=latest>



## Virus sparks renewed calls for recreational diving ban

Posted September 17, 2008 09:42:00

The Victorian Abalone Divers Association has renewed calls for a ban on recreational diving around Port Campbell, after a similar ban in Tasmania.

Tasmanian authorities have closed the state's south-east coastline to divers, after the deadly virus, ganglioneuritis, was found in wild abalone there.

The virus has already devastated abalone populations in Victorian waters.

Vincent Gannon, from the Victorian Abalone Divers Association, says recreational divers can spread the virus.

He says Victorian authorities are not taking the threat seriously.

"This whole issue about human movement and not taking action and controlling access to these areas have been a major concern to us," he said.

"We've been calling for a long time to stop it and if this virus originated in Victoria it would be just devastating for the whole Australian industry I think."

The executive director of Fisheries Victoria, Peter Appleford, says banning diving does not stop the spread of the abalone virus.

He says all divers need to disinfect themselves and their boats after diving near affected waters.

"History around the world tells us that to stop the spread of these things occurring in the wild is basically not a task that we can do, we can't eliminate them from the wild either, we need to let them run their course at the moment," he said.

"The main thing we need to be aware of is that we don't have major translocations due to people and the best way to do that is to make sure that people have good biosecurity practices."

<http://www.abc.net.au/news/stories/2008/09/17/2367483.htm>



## Positive results for abalone industry

Posted Wed Sep 17, 2008 8:05pm AEST

Updated 30 minutes ago

There has been some good news Tasmania's abalone industry.

Samples of wild fish taken from waters near King Island have returned a negative DNA result to the deadly ganglioneuritis virus.

It follows confirmation on Monday the disease is present in wild abalone, after one fish from the D'Entrecasteaux Channel area was found to be carrying the virus.

Authorities responded by closing a section of the channel to commercial and recreational divers.

The state's Chief Veterinary Officer Rod Andrewartha says Geelong's Animal Health Laboratory is testing more abalone collected from Tasmanian waters.

"We've got a range of samples in the laboratory system from a number of areas around the state and as those results come in we'll be able to put together a much better picture of whats going on," he said.

<http://www.news.com.au/mercury/story/0,22884,24353275-5007221,00.html>



## Fishery closed after abalone virus found in wild

Article from: **MERCURY**

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DAMIEN BROWN

September 16, 2008 12:00am

**A WILD abalone taken from waters off southern Tasmania has tested positive to a potentially devastating virus.**

State chief veterinary officer Rod Andrewartha yesterday confirmed the wild abalone had abalone viral ganglioneuritis (AVG).

It has prompted the closure of a 229 square kilometre fishing area.

The seabed in the D'Entrecasteaux Channel between Port Esperance and Southport was closed to commercial and recreational abalone industries from midnight.

Surprisingly, Tasmanian Abalone Council chief executive officer Dean Lisson said the discovery was good for the industry.

"The results are 84 negative and one positive, which I believe gives further weight to the endemic theory," Mr Lisson said.

"Basically that means the virus exists in low concentrations in Tasmanian stocks, in a normal state, and only arises when they are put into areas of stress like a tank. If that is the case that is very easy for us as an industry to control and manage."

It could be several months before the endemic theory is proved as the DNA test is refined at the Geelong laboratories.

"We will be putting as much pressure as we can on the lab to ensure they speed up the results as best they can," Dr Andrewartha said.

"But this closure is really only a tiny fraction of the total catch area for us, making up less than one per cent."

Testing of wild abalone began after the discovery of the virus in fish at a processing plant last week.

Dr Andrewartha said three abalone from the Mornington processing plant had returned strong positive results to DNA-testing for the virus, one of which has also exhibited obvious signs of the disease.

He said a positive result from a DNA test had also been returned from one of 83 wild abalone taken from an area of interest off the southern channel.

However, he said no obvious signs of the disease were evident in the area or in tissue samples.

Dr Andrewartha said it was too early to draw any conclusions and further testing would be done.

"I will need to see a diversity of results, coupled with field observations, before drawing conclusions," he said.

"All that can be said is that the first batch of DNA-based testing on wild abalone indicates that one of these fish had been exposed to the virus in its natural habitat."

The biosecurity precautions already announced for the commercial fishery also remain in place.

These include processing abalone within the region they are caught and landed unless otherwise authorised, decontamination procedures for commercial divers moving between regions and a 24-hour break between diving in different regions.

Dr Andrewartha said various test results will come in throughout the remainder of this week and the weeks ahead, including many more wild samples and samples taken from a range of processors.

"This will help build up a body of knowledge. Until then, all scenarios remain open."

Opposition primary industries spokesman Rene Hidding has called for the suspect area to be closed to all forms of fishing until more information was available on the virus spread.

"In Victoria, it is thought the culprit for similar large leaps of the virus may have been the commercial craypot. It could also have been nets or diving equipment," Mr Hidding said.

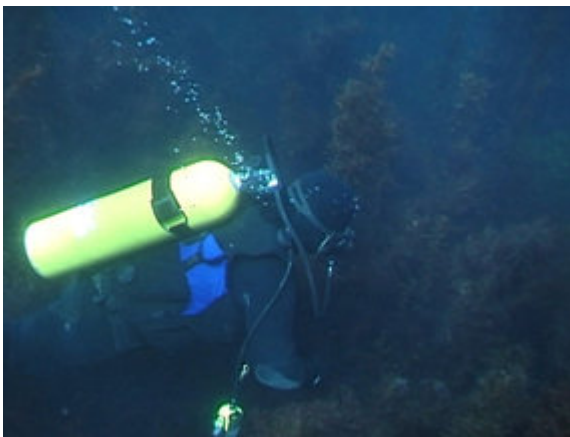
<http://www.abc.net.au/news/stories/2008/09/16/2365463.htm?section=business>

 ABC News

## Abalone divers on the frontline

Posted Tue Sep 16, 2008 8:00am AEST

Updated Tue Sep 16, 2008 8:56am AEST



Divers are being urged to comply with strict biosecurity measures. (ABC News)

- [Related Story: Virus found in wild abalone](#)

A large area of the D'entrecasteaux Channel has been closed to abalone divers as the industry deals with the news a wild fish has tested positive to a deadly virus.

The virus was first detected in three abalone taken from a southern processing plant.

Now it has been found in one of 83 DNA samples taken from the southern D'Entrecasteaux Channel area.

The state's Chief Veterinary Officer, Rod Andrewartha, says 300 square kilometres of seabed in the channel has now been closed to commercial and recreational fishers.

"We will just have to monitor the results as they come in and keep reviewing the situation on a daily basis," he said.

Greg Woodham from the Tasmanian Abalone Council says the closure will have some impact on the industry, but it is a necessary precaution.

"We've been planning for this scenario for some time," Mr Woodham said.

The industry is confident it will not go the way of the Victorian industry which has been decimated by the deadly Viral Gangliio Neuritis.

More test results are expected throughout the week.

Tasmanian Liberal Senior Eric Abetz has accused the Federal Government of lacking a national response to the virus.

However, during question time, Senator Nick Sherry, representing the Fisheries minister, outlined the federal fisheries department's role.

"I am aware the Federal Department is working closely both with Victoria and Tasmania now and it continues to work closely with abalone fishers and both wild caught fishers as well as fish farms," Senator Sherry said.

<http://www.stuff.co.nz/stuff/4694812a11.html>

**stuff.co.nz**

Tuesday, 16 September 2008

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ANDREW GORRIE/Dominion Post

RESCUE LEADS TO COURT: Tulo Tuala and his friend Moevao Neti spent all night out off the Makara Coast in a motorised dinghy after the motor failed to start. Neti was banned from fishing at the time and Tuala was charged with launching an unseaworthy vessel.

## Banned fisherman in court after ill-fated trip

**A banned fisherman has been sentenced to community work after an ill-fated fishing trip, which saw him and a friend spend a night adrift in Cook Strait after the engine failed on their inflatable boat.**

Moevao Neti and Tulo Tuala went fishing on June 16 last year and lost power while checking their nets off the coast of Makara on Wellington's southwest coast.

They called police on a cellphone at 3.50am on June 17, and were rescued at 8.45am, about six nautical miles west of Mana Island.

The Mana Coastguard, Westpac rescue helicopter and a commercial vessel were hindered in searching for the men by winds gusting up to 50kmh, rain and 1.5m swells.

The air temperature on the night was zero degC.

Neti appeared in Wellington District Court today for sentencing on one charge of fishing in contravention of the order banning him from fishing.

Neti, a stay-at-home-dad from Wellington, has previous fishing convictions and was sentenced to one year in prison in 2004 for paua poaching.

On October 4, 2006 he was banned from fishing for three years for taking excess paua.

The ban was still in effect when he and Tuala were rescued on their fishing trip.

He denied the charge but was found guilty in a defended hearing.

Judge Stephen Harrop today sentenced him to 300 hours community work.

In his sentencing remarks Judge Harrop said the victims in fisheries crimes were both "human and fish" and Neti's continued denial of wrong doing was concerning.

"It's not just the fishing that's the problem, but you are saying to the court that you don't care about the order (ban).

"You were lucky to survive and the whole thing must have been very scary for you."

He said the sentence needed to send a message to would-be fisheries offenders because their crimes were hard to detect and the New Zealand coastline vast.

"The fact it was an unsuccessful fishing trip doesn't make it any less of a fishing tip.

"The inflatable boat was in an appalling state and you were very fortunate that you were able to survive in it," he told Neti.

Tuala was also charged over the incident, including with launching an unseaworthy vessel.

At the time of the incident Tuala told The Dominion Post newspaper they were lucky to be alive.

"We thought we'd never see land again."

The pair were found with the help of Vodafone staff, who worked out how far they were from the nearest cell tower, and in what direction.

**- NZPA**

## Abalone crisis escalates in Tasmania

Tuesday, 16/09/2008

Parts of Tasmania's southern fishing zone have been closed after the detection of viral ganglioneuritis in the wild.

One fish from a sample of 83 abalone has tested positive to the virus, although it showed no clinical signs of the deadly disease.

Three abalone removed from a southern Tasmanian abalone processor tested positive to the disease last week.

Tasmania's chief vet, Rod Andrewartha, says Tasmania's south-east coastline from Port Esperance to Southport has been closed to commercial and recreational abalone divers.

He says more closures will be considered as further test results become available.

"It's important that we identify what is going on as quickly as possible, because there is a pocket of infection where it's been recently introduced," he says.

"We need to find it as quickly as we can, so we can take appropriate actions."

The Federal Opposition says the Government should step in and help state governments tackle the abalone virus, now confirmed in both Victoria and Tasmania.

The Coalition says there's a real danger the virus could spread to South Australia and New South Wales.

Opposition fisheries spokesman, Nigel Scullion, says the Government should coordinate a national response, instead of leaving it to individual states.

"In any other disease of this type, obviously the Commonwealth would step in and have a significant role in ensuring that we understand more about the epidemiology of the virus and that the states are sufficiently resourced to ensure that they can deal with the virus and find out exactly what's causing the spread."

<http://www.stuff.co.nz/stuff/4694890a12855.html>



## Man pleads not guilty to paua poaching

Tuesday, 16 September 2008

**The alleged leader of a paua poaching ring has pleaded not guilty to illicitly harvesting and trading the shellfish.**

Saravusi Mao was remanded on bail at Wellington District Court this afternoon to reappear on October 6.

He was one of more than 70 people arrested in May in a massive crackdown targeting poaching and trading paua from the Wellington coast.

The offences carry maximum penalties of a \$250,000 fine and five years in jail.

- NZPA

<http://www.media.tas.gov.au/release.php?id=24803>



**ALEX SCHAAP**

General Manager Biosecurity and Product Integrity Department  
of Primary Industries and Water

Tuesday, 16 September 2008

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## AVG Update

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After being hampered for several days by bad weather, a dive crew from the Tasmanian Aquaculture and Fisheries Institute (TAFI) today collected abalone samples from the east coast site that was the source of fish infected with the disease Abalone Viral Ganglioneuritis (AVG) reported last week.

The General Manager of Biosecurity and Integrity Division, Department of Primary Industries and Water, Alex Schaap, said that these new samples will be given high priority for testing at both the DPIW Mt Pleasant laboratory and the Australian Animal Health Laboratory at Geelong as soon as they can be processed.

“Staff have been busy today managing sample collections, dealing with industry enquires and implementing the movement and fishing restrictions introduced over recent days,” Mr Schaap said.

“No further findings have been made today with no DNA test results coming in today from Geelong and no positive findings from histological examinations of samples at Mt Pleasant.

We expect further test results to come in during the course of the week and hope to have enough results by Friday to discuss with industry and make a more informed decision about any ongoing management measures.”

<http://www.media.tas.gov.au/release.php?id=24790>



**ROD ANDREWARTHA**

Chief Veterinary Officer

Monday, 15 September 2008

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## First Batch of DNA-test Results on Wild Abalone Received: Closure of Part of

## Fishery

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Chief Veterinary Office Rod Andrewartha says it is too early to start drawing conclusions on the nature of the Abalone Viral Ganglioneuritis (AVG) presence in Tasmania.

However, DNA test results received today have prompted the closure of a section of the seabed off southern Tasmania to commercial and recreational abalone harvesting.

Dr Andrewartha said that the current situation is:

- Three abalone at a southern processing facility returned strong positive results to DNA-testing for the virus, one of which also exhibited obvious signs of the disease;
- A positive result from the DNA-test now has been returned from one of 83 wild abalone samples taken from an area of interest off the southern Channel. No obvious signs of the disease are evident in the area or in tissue samples.

He said that significant numbers of samples from wild abalone are being processed according to a priority sampling list.

“I will need to see a diversity of results, coupled with field observations, before drawing conclusions,” Dr Andrewartha said.

“All that can be said is that the first batch of DNA-based testing on wild abalone indicates that one of these fish had been exposed to the virus in its natural habitat.”

In accordance with a planned response framework, the area will be closed to commercial and recreational fishers as a precautionary measure, effective from midnight tonight.

The relevant areas are blocks 14A, 14B, 14C and 14D which total 299 sq km of sea bed. The area is the D’Entrecasteaux Channel extending approximately between Port Esperance and Southport.

“The biosecurity precautions already announced for the commercial fishery also remain in place. These include processing abalone within the region they are caught and landed unless otherwise authorised, decontamination procedures for commercial divers moving between regions and a 24-hour break between diving in different regions.

“These disease control measures make sense regardless of whether we are dealing with either a new incursion or whether the virus is endemic here in some parts of the State but not in others.”

He said that no reports are being received that morbidity or mortality among Tasmania’s wild abalone is varying from the usual historic pattern.

“Various test results will come in throughout the remainder of this week and the weeks ahead, including many more wild samples and also samples taken from a range of processors.

“This will help build up a body of knowledge. Until then, all scenarios remain open.”

<http://www.abc.net.au/news/stories/2008/09/15/2364565.htm?section=business>



## Abalone exports still stable

Posted 5 hours 4 minutes ago

Updated 4 hours 10 minutes ago



Mr Lisson says overseas buyers are confident the issue is being dealt with. (ABC News)

The discovery of a deadly abalone virus in three fish at a Hobart processing factory last week has not affected the state's exports.

The president of Tasmania's Abalone Council Dean Lisson says some overseas buyers are aware of the discovery but are confident the matter is being dealt with properly.

The Tasmanian industry accounts for a quarter of the world's catch, making it the largest wild abalone fishery.

It is not yet clear if the ganglioneuritis virus is present in the wild.

Tasmania's Department of Primary Industries is anxiously awaiting test results from Victoria.

More than 60 samples from wild populations in south east Tasmania have been sent for testing.

Mr Lisson says has told ABC Local Radio they will know more when they receive test results back from Victoria.

"It's really just a case of business as usual and were waiting to get information back from the animal health laboratory in Geelong," Mr Lisson said.

"We've sent a whole range of samples over for priority testing and as we get those samples back they'll each, in each case, add a little bit more of piece to the jigsaw puzzle and hopefully we can work out what's going on."

Mr Lisson said strict control measures will help stop the potential spread of the disease.

"There are a couple of dozen guys who are working pretty much around the clock to try and come up with some answers to what's happened.

"The measures that were recently introduced on processing facilities and divers were thrashed out late on Friday afternoon and that involved industry.

"Whilst it may inconvenience some of our members it's a necessary step to take," Mr Lisson said.

<http://www.news.com.au/mercury/story/0,22884,24346815-3462,00.html>

## Abalone conspiracy claim

Article from: **MERCURY**

MERYL NAIDOO

September 15, 2008 12:00am

**THE TASMANIAN Abalone Council has attempted to quash surfacing conspiracy theories about the arrival of the abalone viral ganglioneuritis disease in the state.**

Three blacklip abalone from the Tas Live Abalone processing plant at Mornington returned positive DNA results for the AVG virus on Wednesday.

An abalone industry insider of 15 years, who did not want to be named said: "The timing is a bit fishy -- we know they the industry wanted more government funding to help with biosecurity and then this happens just a week before a National Abalone Convention where the spotlight will now be firmly on Tasmania."

The fourth National Abalone Convention will be held in Port Lincoln, SA, from September 17 to 19.

Abalone Council chief executive Dean Lisson said everyone was entitled to their view.

"But I don't believe there is any conspiracy theory here," he said. "It's sickly coincidence that this AVG has happened a week before the convention."

Some believe it is suspicious that only a few diseased fish were found in a processing plant full of abalone.

"Depending on test results from the next few weeks, we will get all sorts of theories put forward," Mr Lisson said.

"People may think its environmental sabotage, someone has come down from Victoria and purposely planted it here.

"People speculate and all sorts of theories will come forward about where it has come from and how it got here.

"All I can deal with are the facts."

He said there are no signs of sick or dying abalone in the wild or any other processing facility. Authorities said it was too early to determine whether the disease came from the wild or was isolated to the processing plant.

They also speculated the virus could be endemic in Tasmanian abalone and only manifested when the shellfish were under stress, such as when held in tanks.

A disease-control headquarters has been established at Hobart's Marine Board Building, with 16 experts working to establish the possible source.

AVG was the key issue at the convention well before the virus hit Tasmania. Keynote speakers and topics were organised many months ago. AVG is a potential threat to the whole national industry not just Tasmania, Mr Lisson

said.

"To suggest the main discussion at the convention will be altered in light of what's happened in recent days is complete rubbish," he said.

<http://www.abc.net.au/cgi-bin/common/printfriendly.pl?http://www.abc.net.au/stateline/tas/content/2006/s2363421.htm>



## ABC Online

### Stateline Tasmania

[This is the print version of story <http://www.abc.net.au/stateline/tas/content/2006/s2363421.htm>]

Transcript

### Abalone latest

Broadcast: 12/09/2008

Reporter: Airlie Ward

[Print](#) [Email](#)

**AIRLIE WARD:** Tasmania's \$100 million abalone industry is holding its breath after confirmation the deadly virus ganglioneuritis has been found in Tasmanian abalone. Three fish at a local processing plant have tested positive to the disease. But so far there's been no signs of illness in the wild.

The virus has wiped out the fishery in other jurisdictions and Tasmania's home to the world's largest catch. It will be top of the agenda at a national abalone conference in South Australia next week.

**AIRLIE WARD:** Tasmania jealously guards its lucrative abalone industry. Poachers are constantly being pursued. Victorian poachers have even tried to outrun police in open ocean chases. Illegal fishers have been jailed and the courts have handed out multi-million-dollar penalties to deter the black trade.

Now the industry faces a more invisible insidious threat, a deadly virus. Viral ganglioneuritis is 100 per cent fatal and has devastated the Victorian fishery.

**ABALONE EXPERT:** Two classic findings there - the foot is curling in and the mouth part of the abalone there is quite prominent.

**PETER RONALD, ABALONE DIVER:** It's a revolting site to see these animals just simply being paralysed and dying on the sea floor, rotting to the point where other marine life won't eat them.

**MICHAEL TOKELY, ABALONE COUNCIL:** If it hits Tasmania it will be absolutely catastrophic.

**AIRLIE WARD:** This week the news the Tasmanian industry has been dreading.

ROD ANDREWARTHA, CHIEF VETERINARY OFFICER: We've actually got laboratory confirmation early this afternoon that they've confirmed the virus is present in the samples taken from the processing plant.

HOWARD JOHNSON, TAS LIVE ABALONE: Our factory manager noticed a number of the abalone had died and as a result of that, notified the Department of Primary Industries of the fact.

AIRLIE WARD: Tasmania has the largest wild abalone fishery in the world, providing a quarter of the annual natural harvest.

MARK WEBSTER, RALPH'S SEAFOOD: We export around 350 tonne a year of live abalone and we do around another 150 tonne a year in processed product.

As far as live goes, we are the biggest exporter of live abalone out of Australia and arguably live wild abalone in the world with that sort of volume. So we've got a significant investment.

AIRLIE WARD: With a turnover of tens of millions of dollars year, Mark Webster is on tenter hooks after the discovery of the deadly virus at another processing plant.

MARK WEBSTER: We're extremely concerned obviously. It's got some long-term effects, it's very hard to gauge at this point in time. Our market for our live product and the canned product already know there's a disease scare in Tasmania.

AIRLIE WARD: The virus has wiped out abalone fisheries internationally but it wasn't discovered in Australia until December 2005, at two farms in Victoria.

One theory is that effluent from an infected farm led to the spread into the wild, a few months after the discovery at a farm the disease was found in nearby wild stocks and has since left a trail of destruction along the Victorian coast.

Strict quarantine and surveillance measures were quickly introduced to prevent its spread to Tasmania but there has been concern they've not been stringent enough after a Victorian diver landed in Tasmania with minimal checks earlier this year.

ALEX SCHAAP, PRIMARY INDUSTRIES DEPARTMENT: I can recall some concern about that. Certainly on that particular occasion our records show that that a boat did come in on that day and that it was inspected and found to be clean.

But I guess the point worth making is since then our quarantine staff have undergone some quite intensive training with our veterinary staff about how to undertake those boat inspections. So I think the inspections we undertake now are a good deal more rigorous than perhaps we were doing then.

AIRLIE WARD: So how did it get here? The infected fish were caught in waters off southern Tasmania, that's a long way from Victoria. And so far there's been no signs of disease in wild fish.

ALEX SCHAAP: It's a very difficult question to answer. It's certainly has the same effect on abalone in terms of the cell structure as the Victorian virus. It tests positive to the same DNA probe as the Victorian virus. It doesn't necessarily mean it is exactly the same virus. There could be a collection of viruses of that nature. So it's even possible that perhaps it's an endemic virus that has been here all the time and may not have been introduced from Victoria. We simply don't know the answer to any of those questions yet.

AIRLIE WARD: Since the out break of the disease in Victoria, researchers at the CSIRO at Geelong have been working to create a quick diagnostic test.

MARK CRANE, CSIRO ANIMAL HEALTH LABORATORY: Until now, the tests used only look at

changes in the tissue of the abalone and it takes several days to process the tissue and actually to come up with a diagnosis and it's actually a non-specific diagnosis.

The virus causes abalone viral ganglioneuritis, which is inflammation of nerves, but that could be caused by any number of things. This molecular tests detect actually detects some specific sequence in the virus DNA.

AIRLIE WARD: Head of Geelong's Fish Diseases Laboratory Dr Mark Crane says previously abalone have had to be dying or dead before they could be diagnosed.

MARK CRANE: The test that we have developed is a far more rapid test that can detect the virus in less than 24 hours, once the samples have been sent to the laboratory.

The basis of the test is to detect viral DNA or its genetic material and so our collaborators at DPI Victoria sequenced the DNA of the virus.

AIRLIE WARD: It's this DNA technology which has returned positive results for the Tasmanian fish this week but it's still early days. It is hoped the test will mean the virus can be detected before abalone show signs of infection.

MARK CRANE: Validation is going on right at this moment. We anticipate rolling this test out to diagnostic labs around the country before the end of September.

What we hope this test will provide is a tool that will detect the virus not only in abalone and maybe healthy abalone that don't show the disease but also possibly in other aquatic animals and may give us a lead to where this virus came from.

AIRLIE WARD: The abalone industry around Australia has been collecting abalone samples for some time waiting for the test to be developed.

ALEX SCHAAP: So we have a bunch of fish that we've been collecting for surveillance purposes that have not shown any symptoms but which may still carries a virus and that could be detected by the DNA testing.

If it's is there and not showing any disease, then we can learn about what conditions what would precipitate disease.

AIRLIE WARD: There's belief in the industry that the virus may be endemic but lies dormant.

So if abalone test positive and the virus is widespread, but the shell fish don't show any signs of the disease, what triggers it?

There's a school of thought that it only develops under intensive farming practices and when fish are stressed.

MARK CRANE: That's the theory that most diseases of aquaculture, the agents will come from the wild. And it's only when you put those agents in an intensive farming condition that diseases precipitated and you get possibly mass mortalities, which occurred in this case with the abalone herpes-like virus.

AIRLIE WARD: If that's the case, it may require a change to farming and processing practices. The abalone at the centre of the scare in Tasmania, were in the processing plant for seven days.

MARK CRANE: When we do experimental infections, we can expose healthy abalone to this virus and you will get abalone dying within two days of exposure and 100 per cent mortality within seven to nine days.

AIRLIE WARD: Dr Crane doesn't believe the virus is becoming more virulent.

MARK CRANE: It's a DNA virus, so it won't mutate and change at a very great rate. So I don't think what we're seeing in the wild is due to mutation of the virus. I think it may be that there are larger amounts of the virus now in the wild.

AIRLIE WARD: He says there have been parallels.

MARK CRANE: There was a herpes virus outbreak in pilchards in 1995 and 1998 where it caused similar devastations, specifically to pilchards and that's one of the characteristics of the herpes virus that they tend to be species specific. That disease in pilchards has not been seen since 1998.

AIRLIE WARD: Infected abalone came from near Southport off the South Coast. An examination of tissue samples on about 60 abalone taken from the area have today come back negative to the virus. But two of those that later tested positive from the affected processor also returned negative tissue tests.

DNA results won't be known until next week. The other area off the south-east is yet to be sampled and divers are waiting for conditions to improve. But samples are also being sent for analysis from processors and commercial divers.

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