

## Victorian Abalone Case Study for Bio-Security 14-5-08


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Click for Details

**Key - Minimum Sizes**

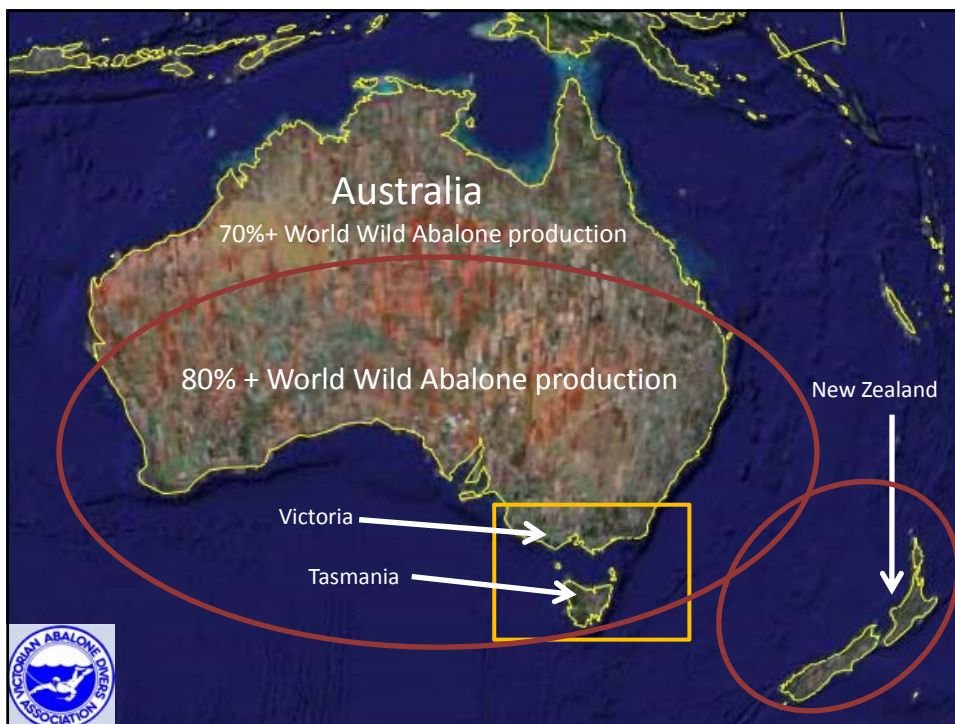
- 112 mm
- 115 mm
- Recreational
- Marine Parks

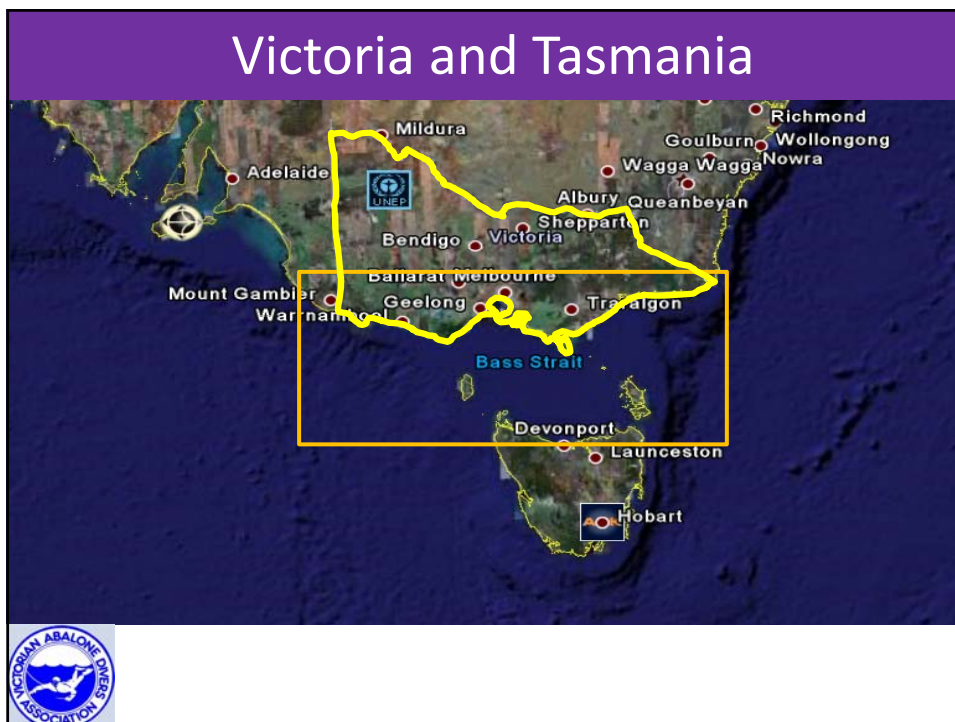
All Greenlip in the Central Zone 150 mm



Victorian Abalone Divers Association Inc

Map labels include: Black Rock (Sewerage outfall Building), TORQUAY, Point Danger, Portsea, Last Bluff east of the Divide, Gynsarmatta Surf Club, SE end of Royal Beach, Cape Scaevola (base of steps), Picnic Point, Simmens Bay sandy beach, Cairns Bay (Tea Tree Ck.), 10.01, 11.02, 12.03, 11.17, 12.04, 12.05, 12.06, 13.01, 13.02, 13.04, 13.05, 13.06.



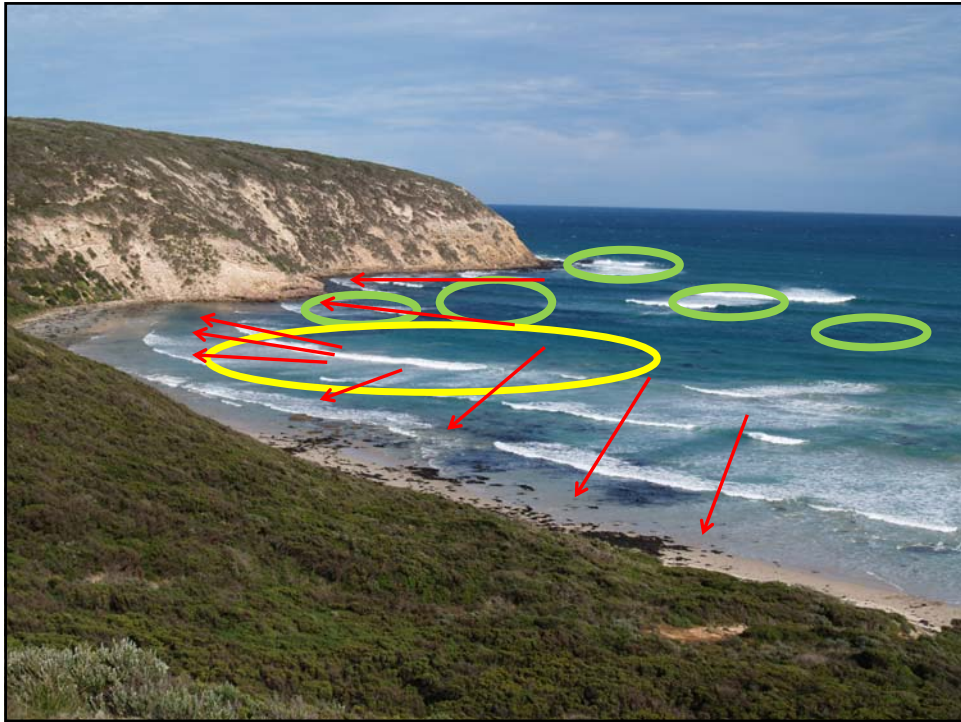


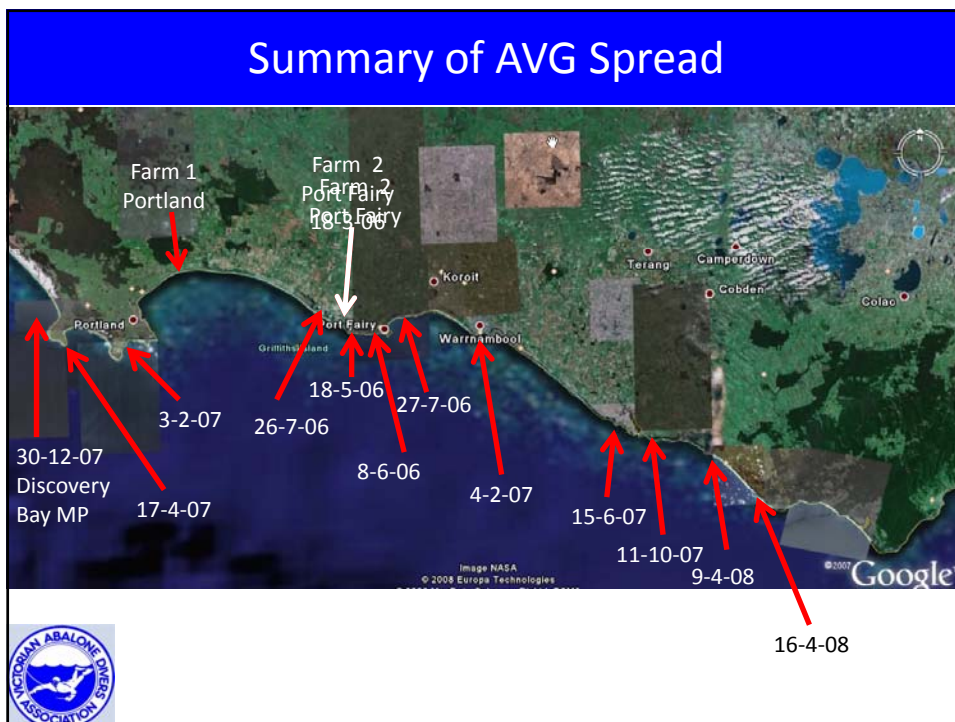
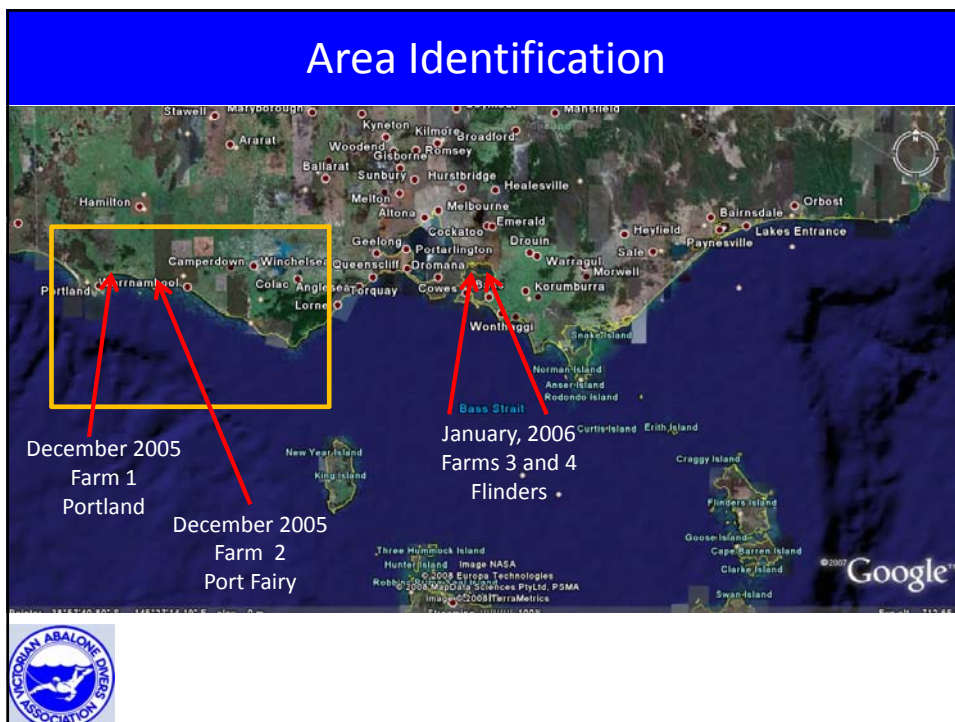
## What is Abalone Viral Ganglioneuritis?

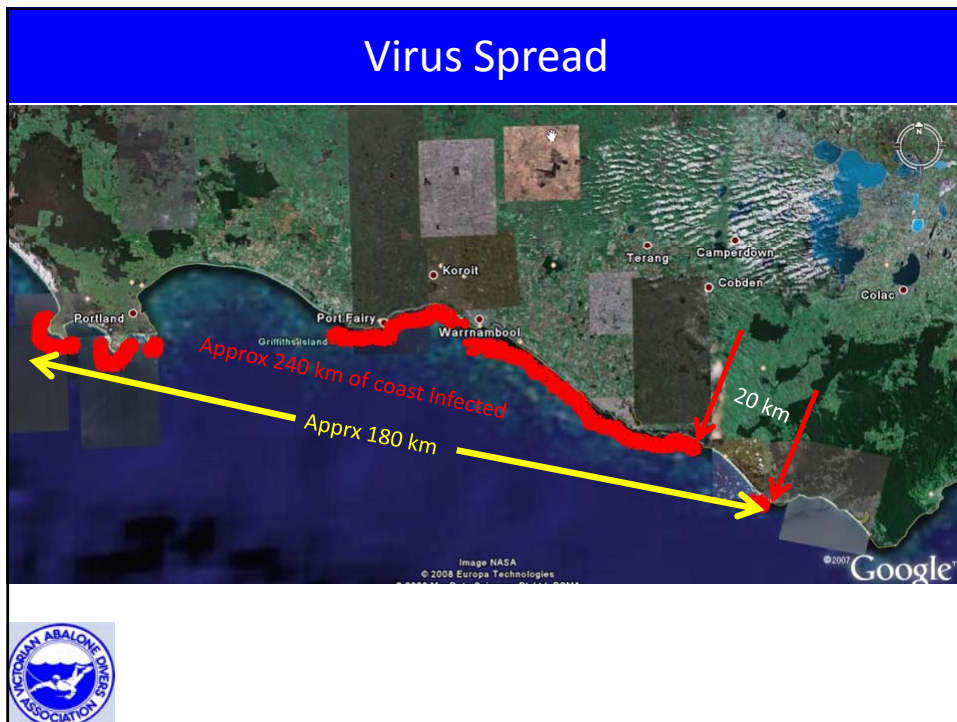
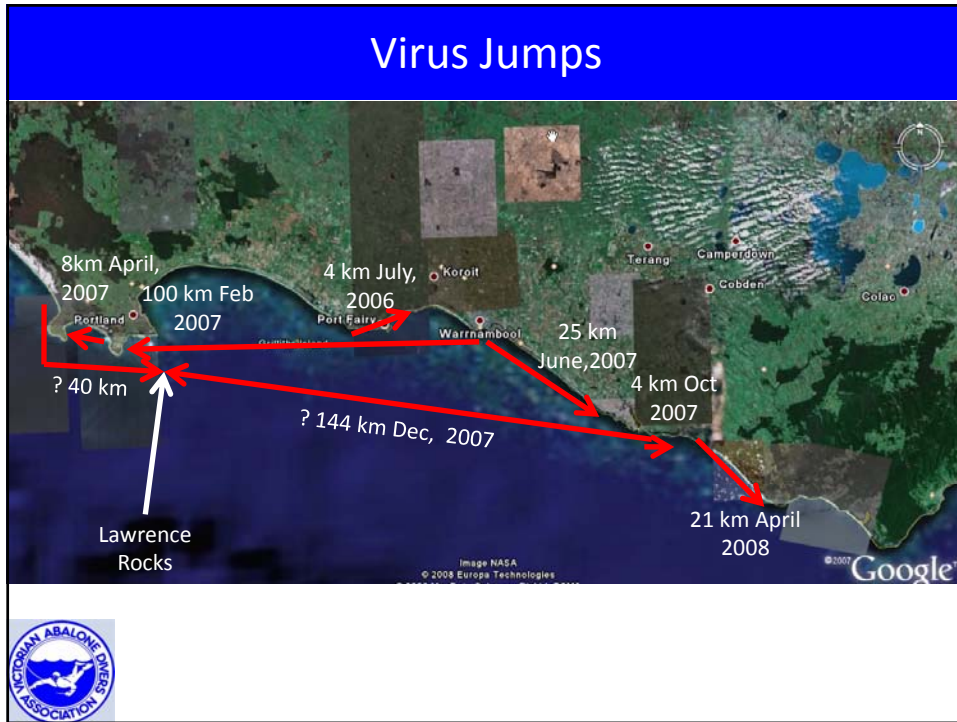
- It is a viral disease that appears to only infect abalone
- The disease causes nerve damage to tissues, resulting in death with 2 to 6 days.
- Studies suggest the virus can be transmitted by the water column and contact by sick animals
- Visually (not in all animals) AVG results in curvature of the foot and swelling of the mouth.
- Kills 50 to 90% of abalone in wild
- Affects Greenlip, Blacklip and Hybridized abalone
- There are no known or likely threats to human health.

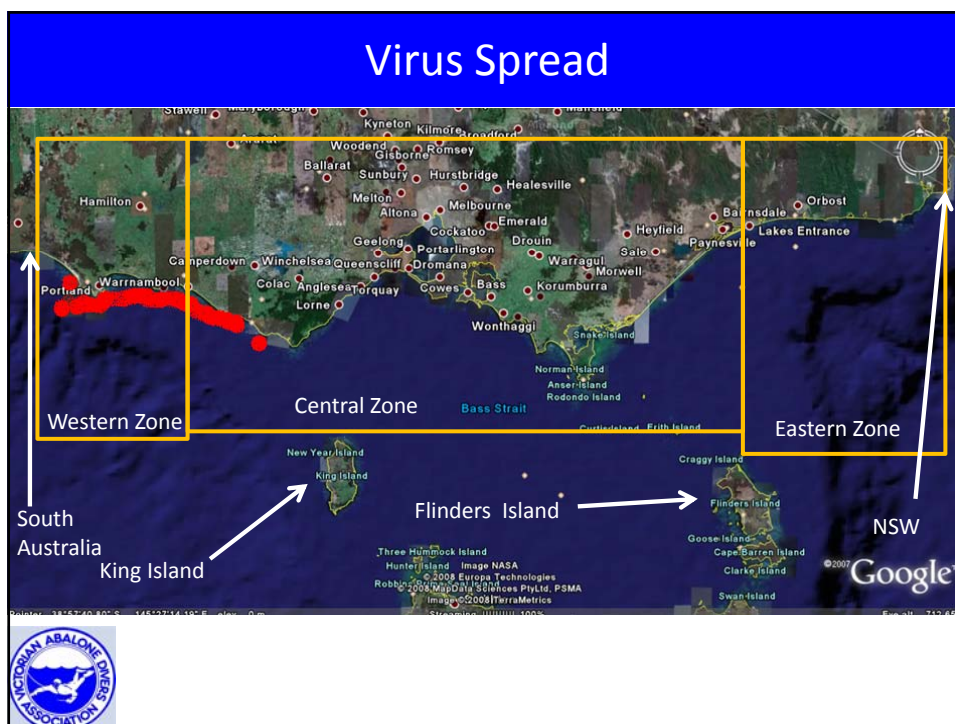












## Overview of Victorian Abalone Industry 2004

### WAS:

- Total 1,328,000 kilograms
- 2 Commercial Species of Abalone
- *Haliotis rubra* (Blacklip) 99.9%
- *Haliotis laevigata* (Greenlip) small amount but increasing (Historically up to 200,000 kg)
- 3 Management Zones
- Eastern "23 Divers, 460 units, total 488,000kg
- Central "34 Divers, 680 units, total 619000kg
- Western "14 Divers, 280 unit, Total 221,000kg
- With Flow on effects, 500 jobs, many in rural Victoria
- Export Value of approximately \$80 Million

## Overview of Victorian Abalone Industry 2008

**Currently:** May Change down during season depending of Virus Movement:

- Total 943,000 kilograms
- 2 Commercial Species of Abalone
- Total 16 Abalone Processors Spread over the 3 Management Zones
- Total direct employees 350 to 400.
- 3 Management Zones
- Eastern “23 Divers, 460 units, total 490,000kg
- Central “34 Divers, 680 units, total 437,000kg
- Western “14 Divers, 280 unit, Total 16,000kg
- Export Value of approximately \$50 Million

## History Effects on Industry

- First located in Wild 18<sup>th</sup> of May, 2006
- Boarder of Central Zone 4-2-07
- CZ voluntary closes area 13-2-07 to stop or slow spread.
- In 10 months, Western Zone lost 50% TACC or 110 tons.
- In 22 months WZ lost 90 % of quota or 200 tons
- In 12 months CZ lost 8% quota or 50 tons

### What We Know

- 45 years of in water observations
- No public health or food safety
- January, 2001 – Australian Abalone Disease Review – Shows no Viral Disease.
- 2003 to 2005 – Similar Abalone Viral Ganglioneuritis Disease outbreak in Taiwan, China
- November 2005 - No known abalone viral diseases in Australia
- Similar presentation to Taiwan and China Abalone Virus. (Lancaster 2006)

### What We Know

- Virus spread through Direct Contact
- Virus spread through water column
- 100% Mortality of infected abalone
- Still 100% mortality with reduced dilution (0.1% dilution)
- Mortality rapid less than 6 days
- Affects Greenlip, Blacklip and Hybridized Abalone
- Only diagnose Disease by pathological change. (Appearance)
- PCR test getting closer

## Current Situation

- 240 km of coast covered
- 60 to 95 % mortality, (One area 90 % in 2 weeks).
- Areas with higher densities of abalone, appear to be are harder hit by the virus
- Now have known 2 virus fronts 21 kilometres apart
- 400 metres East of Port Campbell
- Eastern Boundary of 12 Apostils marine Park
- No reports of further westerly spread since December, 2007.

## What We Don't Know

- Where the Virus originally came from.
- How long the virus stays active in the environment
- Do surviving abalone have some resistance or are they lucky
- There is no known source of the virus;
- Possible Sources Include:
- Endemic disease. (Never been seen 45 years)
- Bring in Locally resistant broods Stock from another location
- Hybridisation of virus due to genetic breeding program
- Virus jumped from another species to abalone
- Importation of Feed from Taiwan
- Importation of other Haliotis products

## Needs

- Slow or stop the progression of the virus along the coast
- Active monitoring of virus and localised impacts on stocks
- Urgent baseline samples need to be collected
- Development of PCR test.
- Additional Abundance Surveys before and After virus impacts
- Early indications of full recovery time (if at all) is greater than 10 to 20 years
- Are surviving abalone resistant or lucky
- How long does the virus survive in the marine environment
- Where did the virus come from,
- Is it genetically similar to Taiwan virus

## Issues Learnt

- Every day bio-security practises, absolutely necessary
- Very difficult to stop a disease once its in the environment
- Don't leave disease response open to individual interpretations
- Immediate action need as soon as outbreak occurs
- Need mandated action plans, triggers and Responses
- A lot easier to develop the bio-security and the plans when you don't have a problem

## Issues Learnt

- Under no circumstances should diseases have any opportunities to escape into the environment
- Re-circulation or part recirculation and Treating effluent outfalls should be mandatory
- Quote Dr. Peter Appleford Executive Director Fisheries Victoria Sunday Age 27-4-08
  - "It is impossible to remove a virus like this once it is in the wild, unless we nuke hundreds of kilometres of coastline,.....We'd have to kill everything on the reefs..... “
  - **Best Action is to ensure that diseases don't escape!**

