BIOSECURITY
It’s importance to aquaculture


CLEVEDON COAST
Fresh Natural
OYSTERS

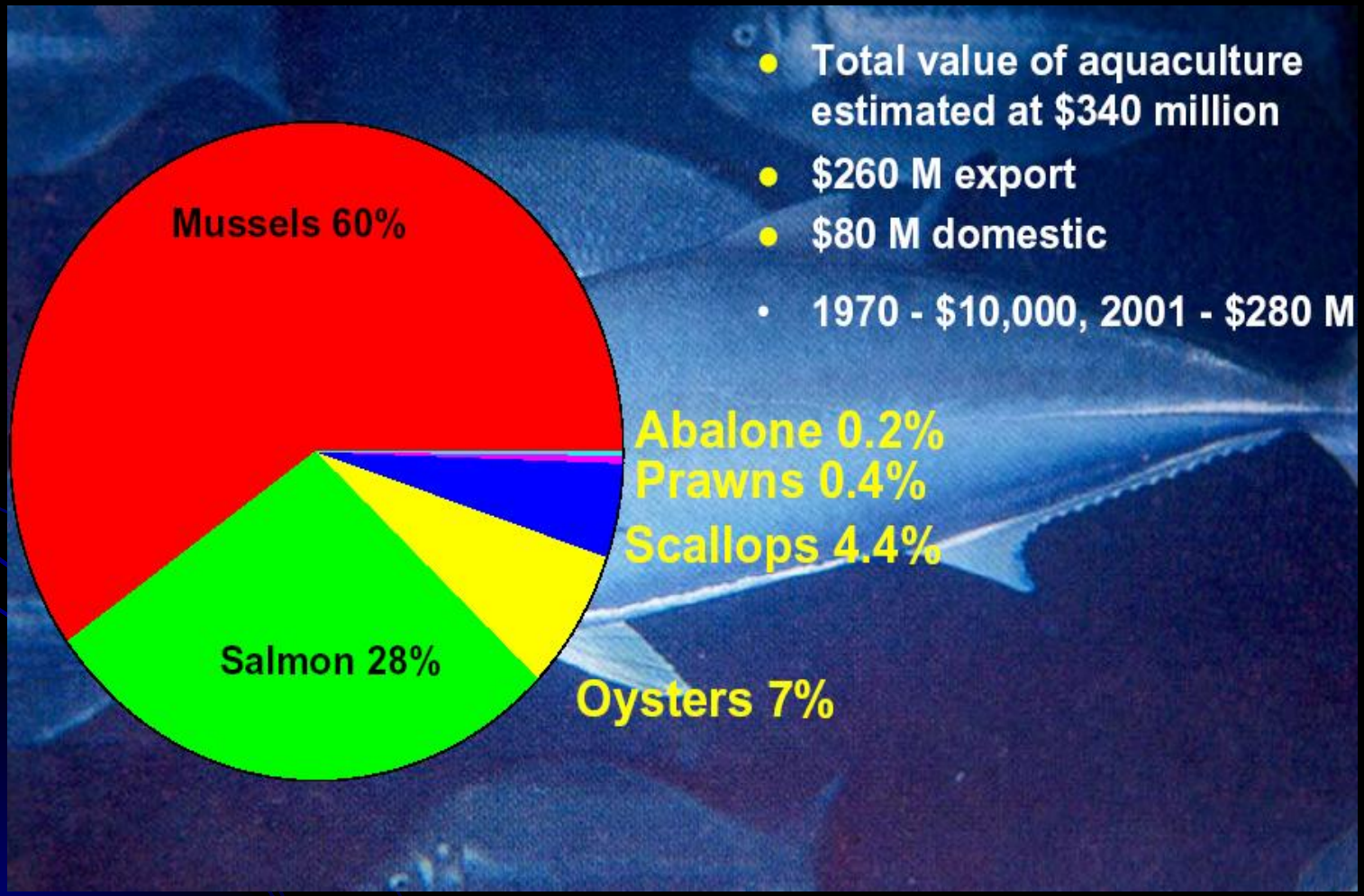
Introduction

- Aquaculture relies on healthy, clean coastal waters to maintain international reputation
- Aquaculture is vulnerable to biosecurity issues
- Industry faces threats from invasive organisms and gaps in the biosecurity defence of our coastal waters
- The industry has tools to ensure its own biosecurity responsibilities are met.
- It also has suggestions to build integrity to New Zealand's marine biosecurity.

‘Growing and Crowing’

- Aquaculture is in it’s infancy
- Earning $321 million in 2004
- Aiming for $1 billion by 2020
- New species, seahorses, butterfish, grouper, kingfish, kina, seaweeds
- Sector Strategy underway, support of Industry, Iwi, Local & Central Govt.

New Zealand Aquaculture Exports



Greenshell ä Industry Snapshot

Relies on clean, healthy waters

605 Greenshell™ mussel farms.

Cover 4500 hectares.

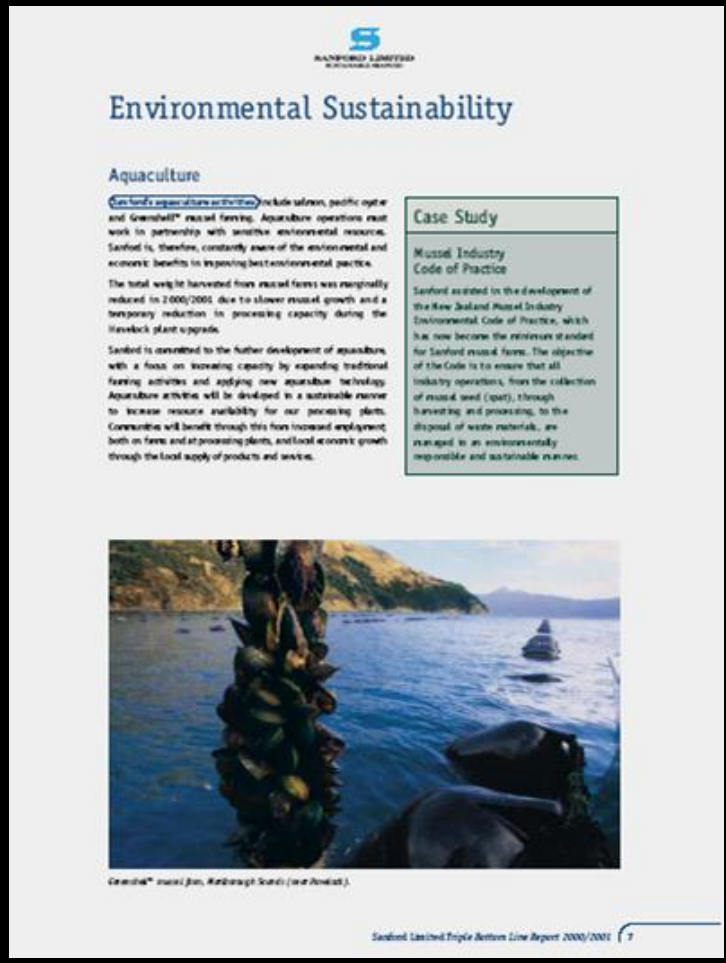
2nd most valuable seafood species in NZ.

Exporting to 60 countries.

Trade marked in 36 countries.

Environmental Management System
– Good reasons to have one

- Educates industry on **“best practice”.**
- Identifies **legal** obligations.
- Integrates with government **planning tools**.
- Gives participants a **competitive** advantage.
- Gains community **support.**



Environmental Sustainability

Aquaculture

Sanford's aquaculture activities include salmon, pacific oyster and Greenshell™ mussel farming. Aquaculture operations must work in partnership with sensitive environmental resources. Sanford is, therefore, constantly aware of the environmental and economic benefits in improving best environmental practice.

The total weight harvested from mussel farms was marginally reduced in 2000/2001 due to slower mussel growth and a temporary reduction in processing capacity during the Havelock plant upgrade.

Sanford is committed to the further development of aquaculture, with a focus on increasing capacity by expanding traditional farming activities and applying new aquaculture technology. Aquaculture activities will be developed in a sustainable manner to increase resource availability for our processing plants. Communities will benefit through this from increased employment, both on farms and at processing plants, and local economic growth through the local supply of products and services.

Case Study

Mussel Industry Code of Practice

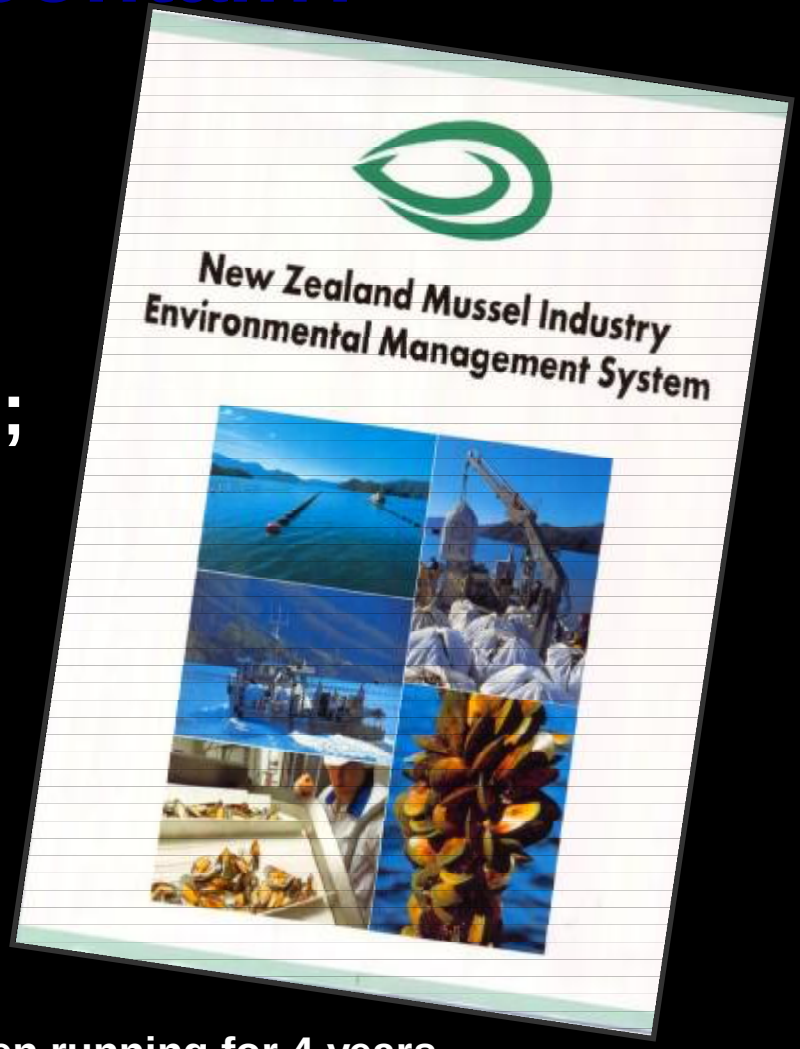
Sanford assisted in the development of the New Zealand Mussel Industry Environmental Code of Practice, which has now become the minimum standard for Sanford mussel farms. The objective of the Code is to ensure that all industry operations, from the collection of mussel seed (spat), through harvesting and processing, to the disposal of waste materials, are managed in an environmentally responsible and sustainable manner.

Greenshell™ mussel farm, Marlborough Sounds (near Havelock).

What does it contain?

Environmental Management System contains two parts;

- Environmental Policy
- Environmental Code of Practice



In mussel industry the programme has been running for 4 years, Oysters have just developed theirs.

Part 1
Environmental Policy

The policy clearly identifies industry's position on;

- **Energy use**
- **Sustainable management**
- **Sharing resources with all users**
- **Regulatory compliance**
- **Waste management**
- **Pollution**
- **Cultural values**

Part 2
Environmental Code of Practice

Aquaculture farming and harvesting

- Legislation and regulations
- Physical setting up of farms
- Spat collection and catching
- Seeding and harvesting
- Biosecurity
- Farm maintenance
- Boats and vehicles
- Contingency plans

Aquaculture processing activities

- Legislation - processors
- Discharges
- Chemicals and fuels
- Buildings
- Waste management
- Resource use
- Vehicles

Environmental objectives, management practices and performance indicators are identified in each section

Biosecurity Threats to NZ Aquaculture

- Pests
- Current Knowledge Gaps
- Regulatory Issues

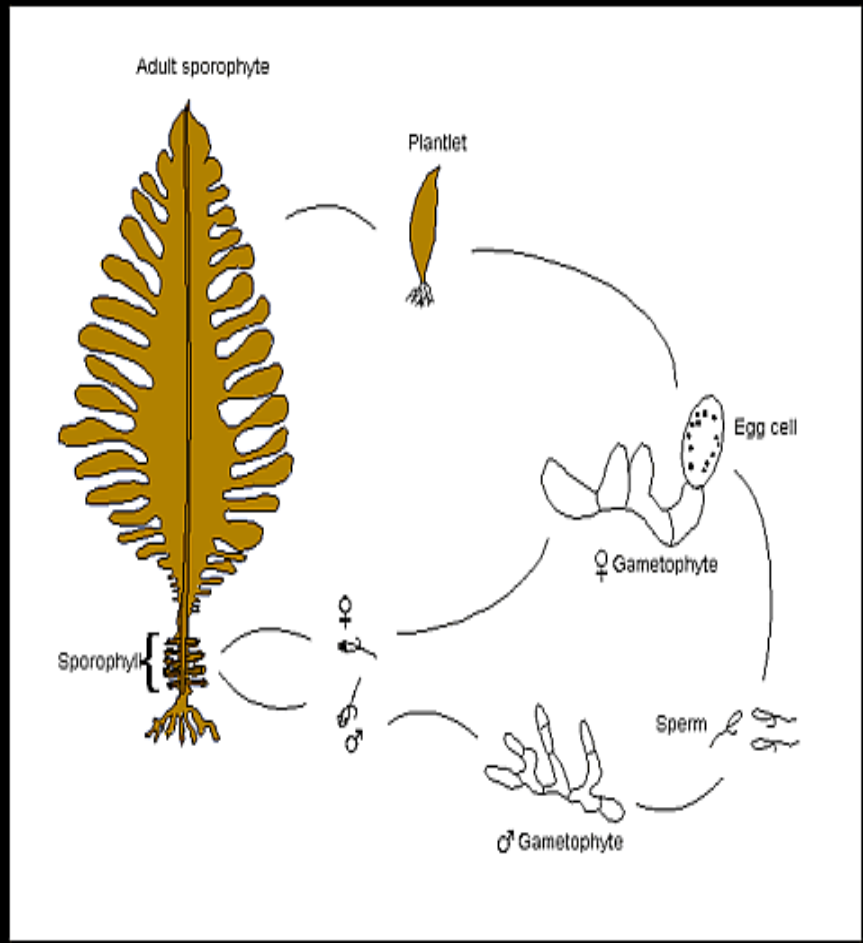
Which Pests?

- Specific threats
  - Parasites
  - Diseases, including human
  - Sanitary status of growing waters
- Especially
  - High profile marine pests (e.g. Styela clava, Northern Pacific Seastar; Asian Date Mussel; Asian Swimming Crab)
  - New or unusual species
  - Harmful micro-organisms
  - Toxic phyto plankton

  Have the potential to devastate aquaculture

Example - *Undaria*

- Initially in ports (eg Wellington, Lyttelton, Oamaru, Moeraki, Dunedin, Napier, Gisborne and Auckland.)
- Spread by recreational and commercial vessels.

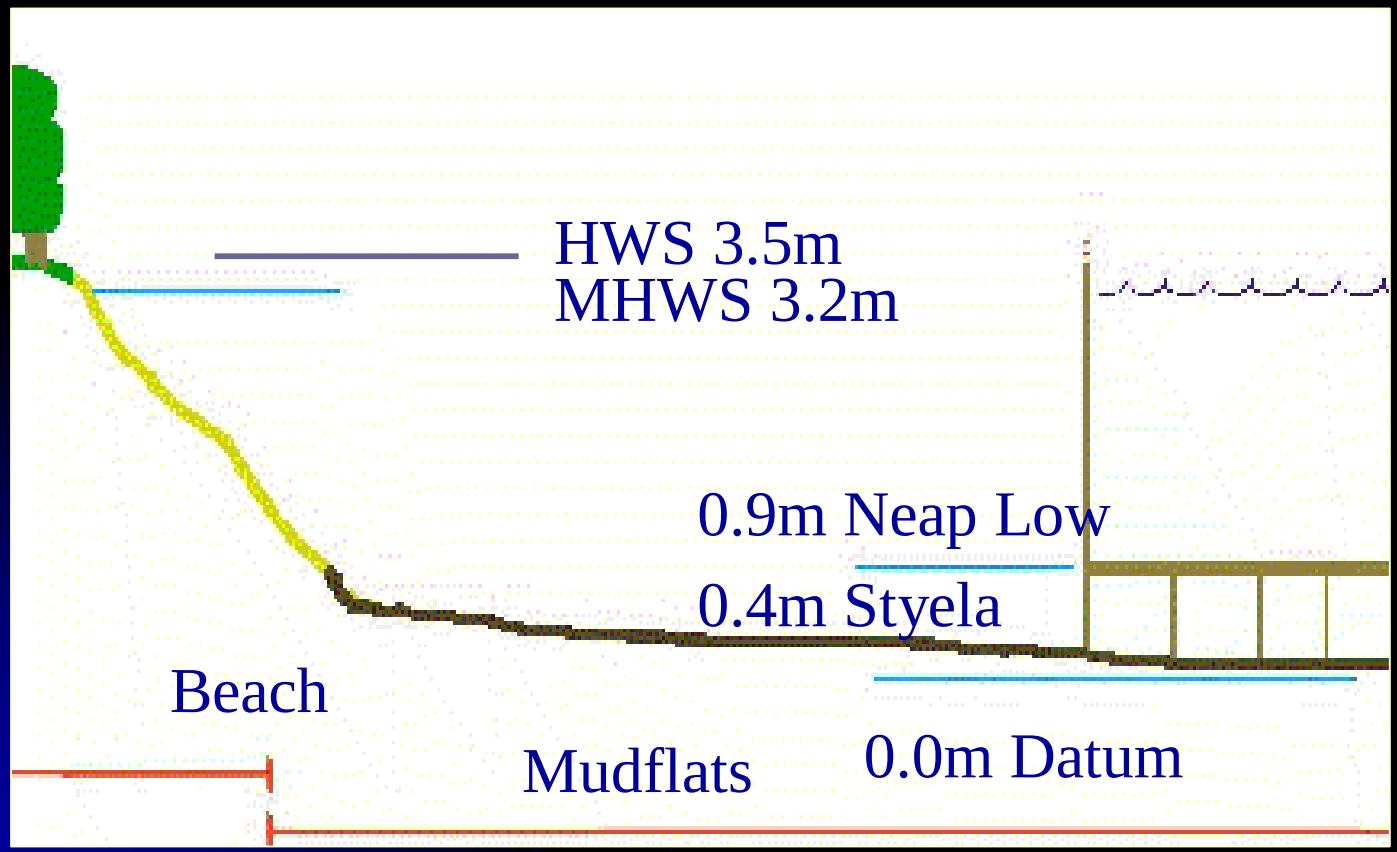


Example - *Didemnum*

- *Didemnum vexillum* discovered in New Zealand (Oct 2001).
- Transferred to Queen Charlotte Sounds on a derelect barge.
- A threat to aquaculture because of its smothers and survives better on artificial structures i.e. sea cages, mooring lines, vessel hulls.

Example – *Styela clava*

Hauraki Gulf



Styela Clava The Clubbed Tunicate

MARINE PEST GUIDE

Pyura pachydermatina

***Styela Clava* The Clubbed Tunicate**

What looks similar to it?

Pyura pachydermatina – a native species that occurs throughout New Zealand waters and could be confused with *Styela clava* because it also has a stalk. **BUT** the stalk of *pyura pachydermatina* is much longer – 2/3 to 3/4 the overall length of the organism, and it is often white/purple-red in colour.

If you have any doubt about what you're seeing, take a sample for analysis and/or alert Biosecurity New Zealand.

Why are we concerned about the clubbed tunicate?

The clubbed tunicate is a significant threat to New Zealand's aquaculture operations. In numbers, it blankets oyster and mussel lines, suffocating growing shellfish and competing for food.

Where else is the pest globally?

The clubbed tunicate originated in Asia and the North-West Pacific but is now known to be in the cooler waters of southern Australia, Canada (Prince Edward Island), USA and parts of Europe.

Please report any suspected finds of the clubbed tunicate to Biosecurity New Zealand on: 0800 80 99 66

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www.biosecurity.govt.nz

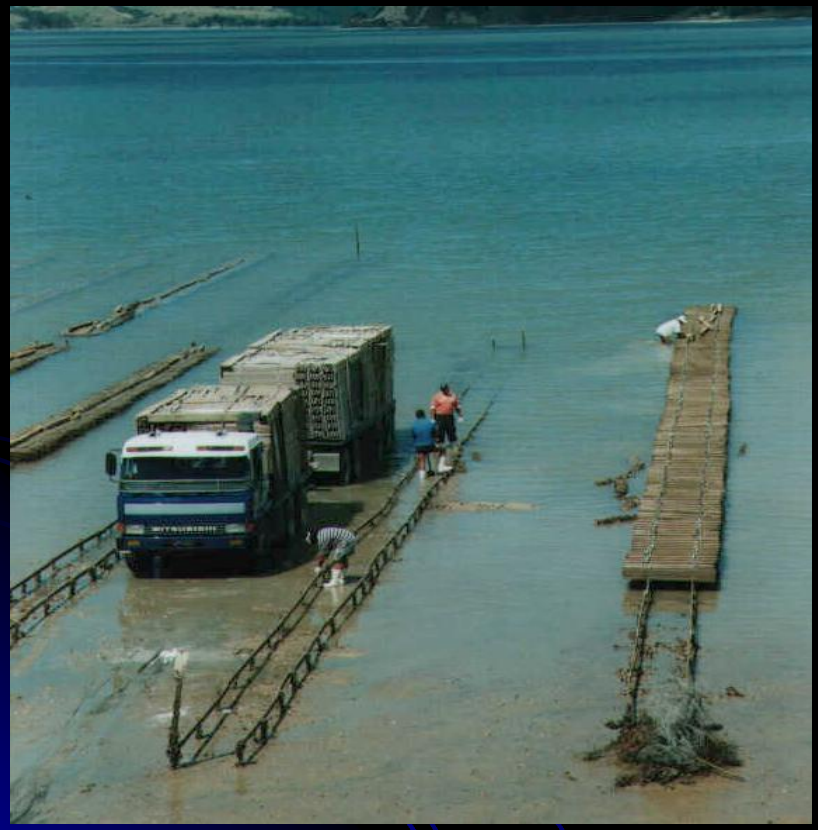
0800 80 99 66

BIOSECURITY NEW ZEALAND

Industry Biosecurity Opportunities

- Industry biosecurity programmes
- Industry research
- Lobbying for robust national biosecurity programmes

Industry Biosecurity Programmes



- Environmental Management System
  - Spat Transfer Programme
  - Seed Transfer Code of Practice
- Biosecurity Risk Management Plan
- Marine Fouling Organisms Guides
- Exotic Disease Response Plan
- National Biotoxin Management Programme

Seed Transfer Code of Practice

- **An industry developed voluntary programme**
- **Must be realistic and workable to mitigate the transfer of unwanted organisms**
- **Developed as concern for implications of organism transfer between regions**
- **Currently targeted at *Ciona*, *Undaria* and blue mussels, but *Styela* being developed**
- **Initially developed to stop the spread of *Gymnodinium catenatum from the NI's West Coast.***

Marine Fouling Organisms Guide

- Increase awareness of fouling organisms and the risk to marine farming.
- Identification guide to compare living specimens seen by workers.
- Day to day monitoring of adult fouling populations.
- Living document, added to as more organisms are identified

Biotoxin Management Programme

- Algal blooms are a natural and are experienced worldwide
- Growing waters regularly monitored for algal blooms
- Doesn’t harm shellfish but can be harmful to humans and strict precautions are observed.
- Both phytoplankton and flesh toxin tests are carried out
- New Zealand researchers are world leading in the area of biotoxin management

Building a National biosecurity framework

- **Recognise importance of marine biosecurity to NZ's future**
- **Information gathering and sharing**
- **Responsibilities of government and stakeholders clearly agreed and outlined**
- **Sensible, cost effective and timely programmes introduced**

Goals of the National Biosecurity Framework:

1. Prevention and Exclusion.
2. Surveillance and Response.
3. Pest Management.

Summary:

- Biosecurity issues crucial to aquaculture industry
- Industry undertakes programmes that combine to form a framework of environmental responsibility
- Marine environment is not like land – you can't contain your operation in a closed system
- Industry relies on the National Biosecurity Programme, which needs to be responsible, responsive and pragmatic