A stylized landscape illustration featuring a range of mountains in shades of green and yellow against a blue sky. In the foreground, there is a body of water reflecting the sky and mountains. The overall style is flat and graphic.

**In the 2003/04 year MAF Quarantine inspected an estimated 23,000 aircraft, 3,500 vessels, 430,000 sea containers, 41,000 personal effects, 155,000 used vehicles, 3.8 million passengers and 54 million mail items**



**BIOSECURITY**  
NEW ZEALAND

# Marine Biosecurity

## Surveillance & Incursion Response

Slide 2

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AU1

Authorised User, 3/11/2004

# International Context

- Marine Biosecurity is in its **infancy globally**
- The threat to marine ecosystems posed by aquatic invasive species only gained international prominence in the **mid-1980's**
- The introduction of harmful aquatic organisms to new environments is now recognised as **one of the four greatest threats** to the worlds oceans.

# Marine Biosecurity in New Zealand

- Marine biosecurity identified as a discrete biosecurity outcome only in 1997.
- First substantial funding for marine biosecurity contained in the 2000 Budget: total baseline \$2.4m pa.
- Funding for increased marine biosecurity capability contained in the 2004 Budget: total baseline \$6.7m pa.
- Central Government marine biosecurity programme focussed on risk management at national level.

# Marine biosecurity in New Zealand

- Substantial challenges faced in developing a marine biosecurity system
  - Marine **borders are diffuse** so difficult to manage.
  - Our **knowledge base** of the marine species already in NZ waters is **poor**.
  - Our **capability to manage the risks** posed by shipping is **restricted** to available technologies and regulatory arrangements.
  - **Few tools for rapid detection** and identification at the border.
  - New Zealand **taxonomic capability is limited** in many marine groups.
  - **Tools for responding to invasive species are limited** in the marine environment.

# Marine Biosecurity in New Zealand

- Solid progress made in the last 5 years to build a marine biosecurity system.
  - **Surveillance programmes** in the main ports of entry for overseas shipping.
  - Contracts to support **taxonomic capability**.
  - Substantial programme of **research** underway to:
    - Improve our **knowledge base** of marine species in New Zealand.
    - Quantify the **risk posed by fouling** on ships.
    - **Ballast water exchange** compliance.
    - Explore **technologies** to manage the risks posed by ships.
    - Develop **tools** for responding to invasive species.

*NIKE* would say...



Just ~~Do it~~  
Kill it!

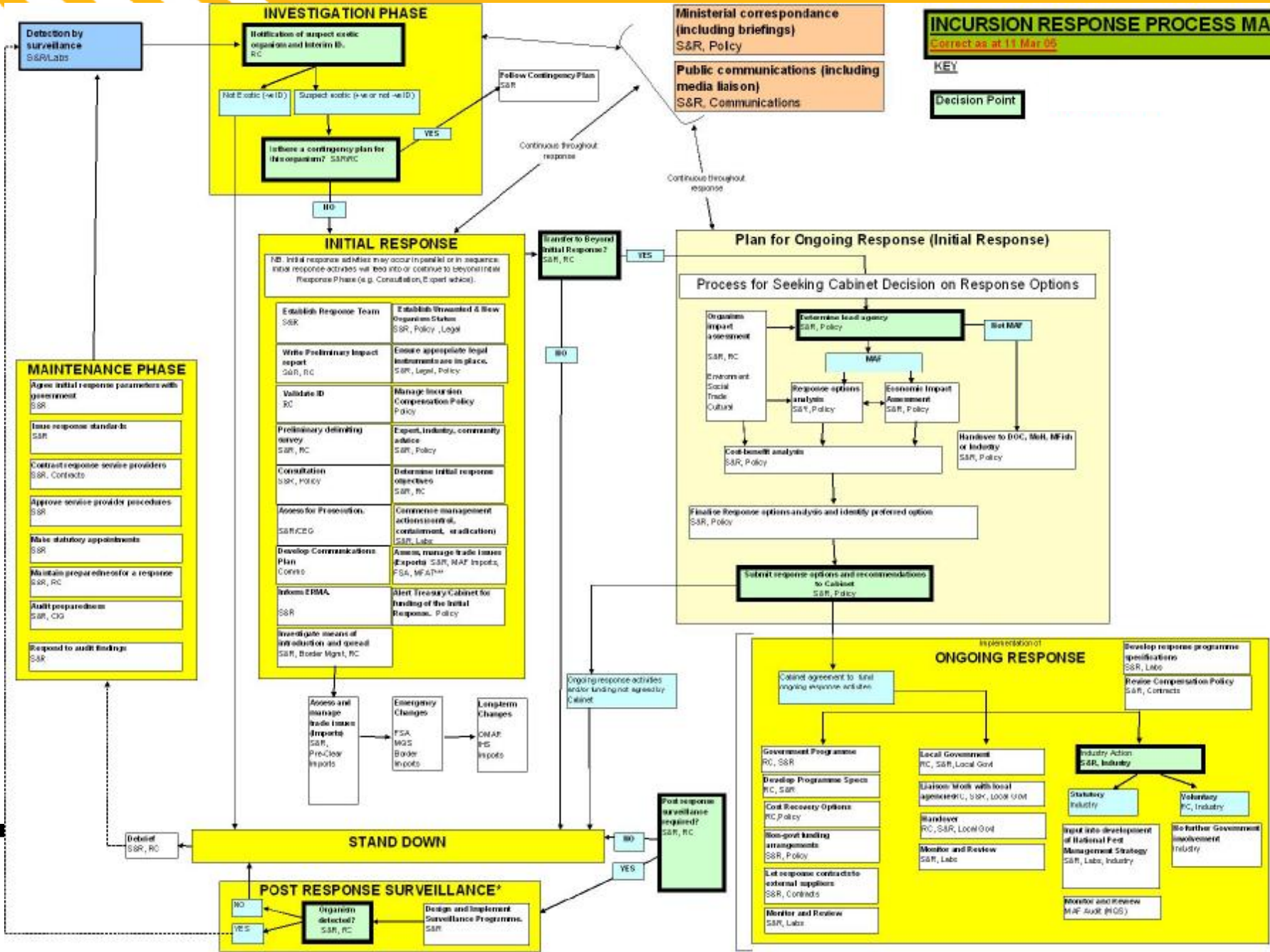


# INCURSION RESPONSE PROCESS MAP

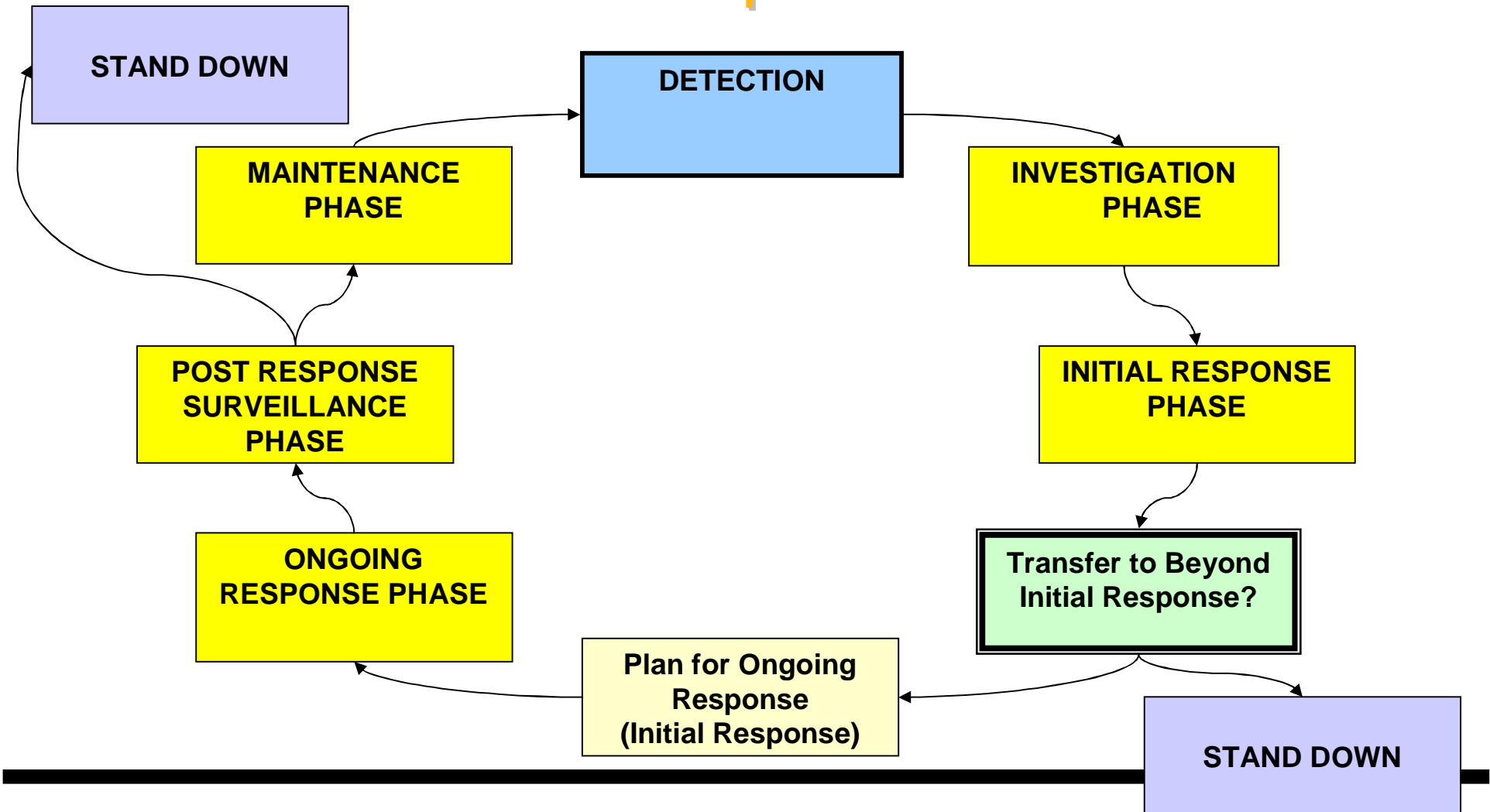
Correct as at 11 Mar 05

KEY

Decision Point



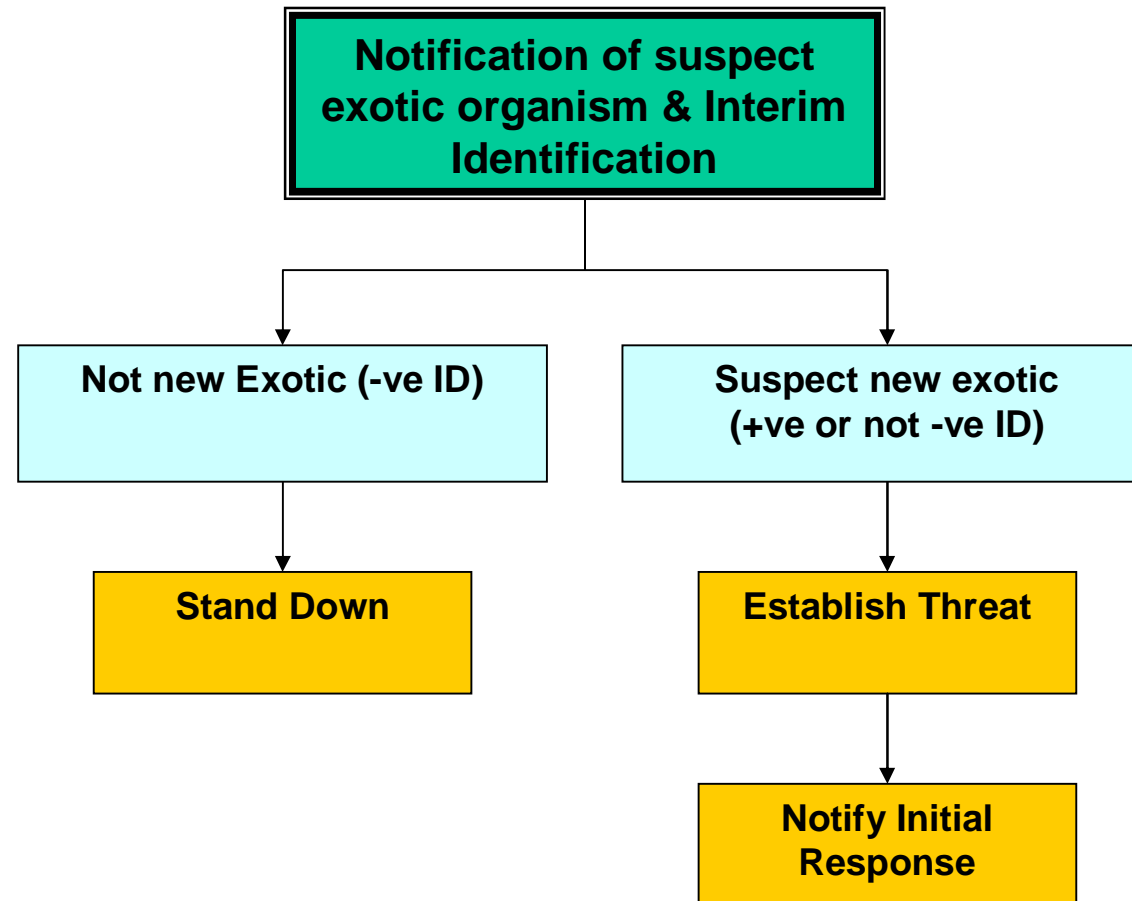
# General Incursion Response Process



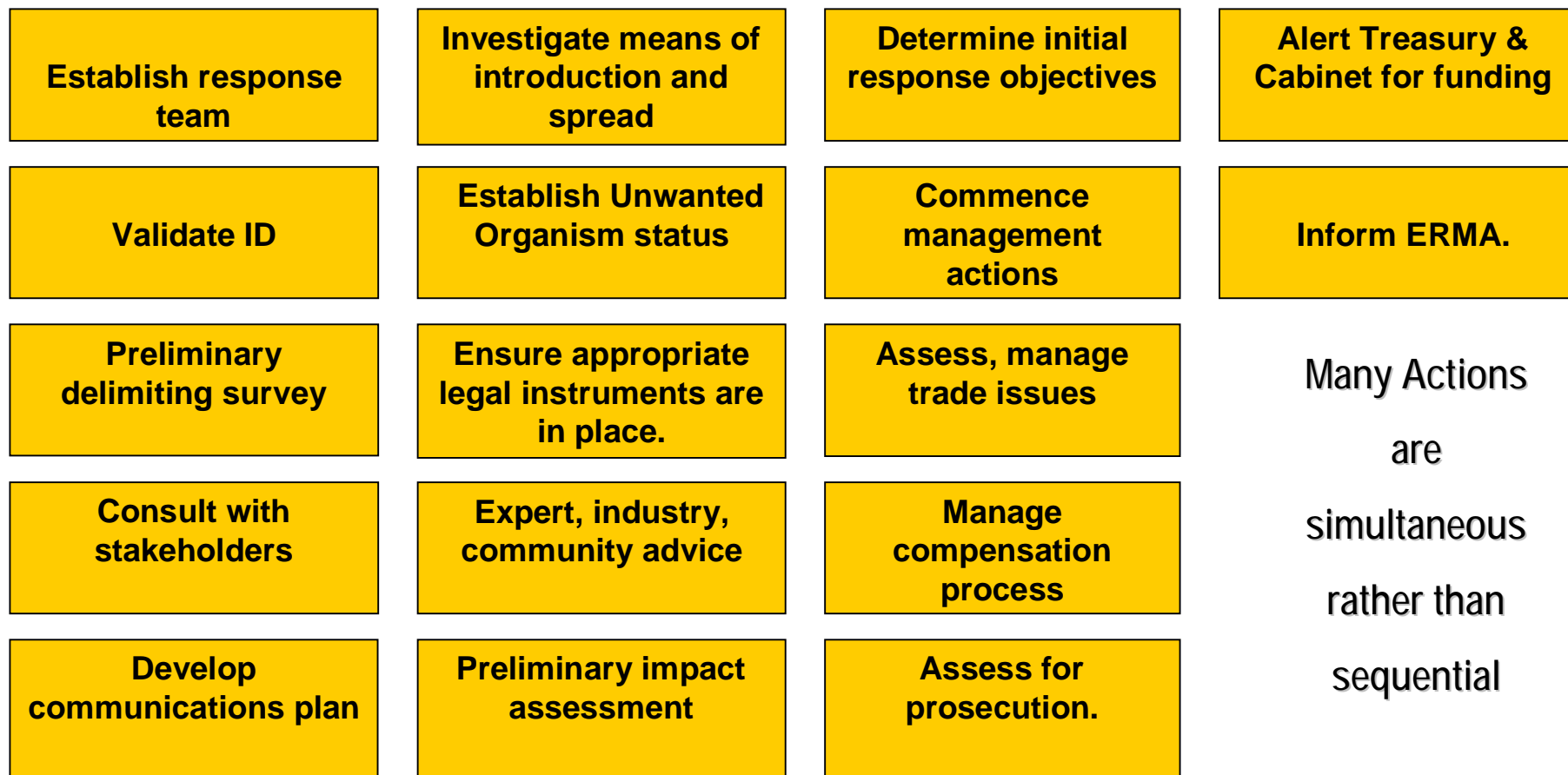
Sea Change – November 2005

Marine surveillance & Incursion Response

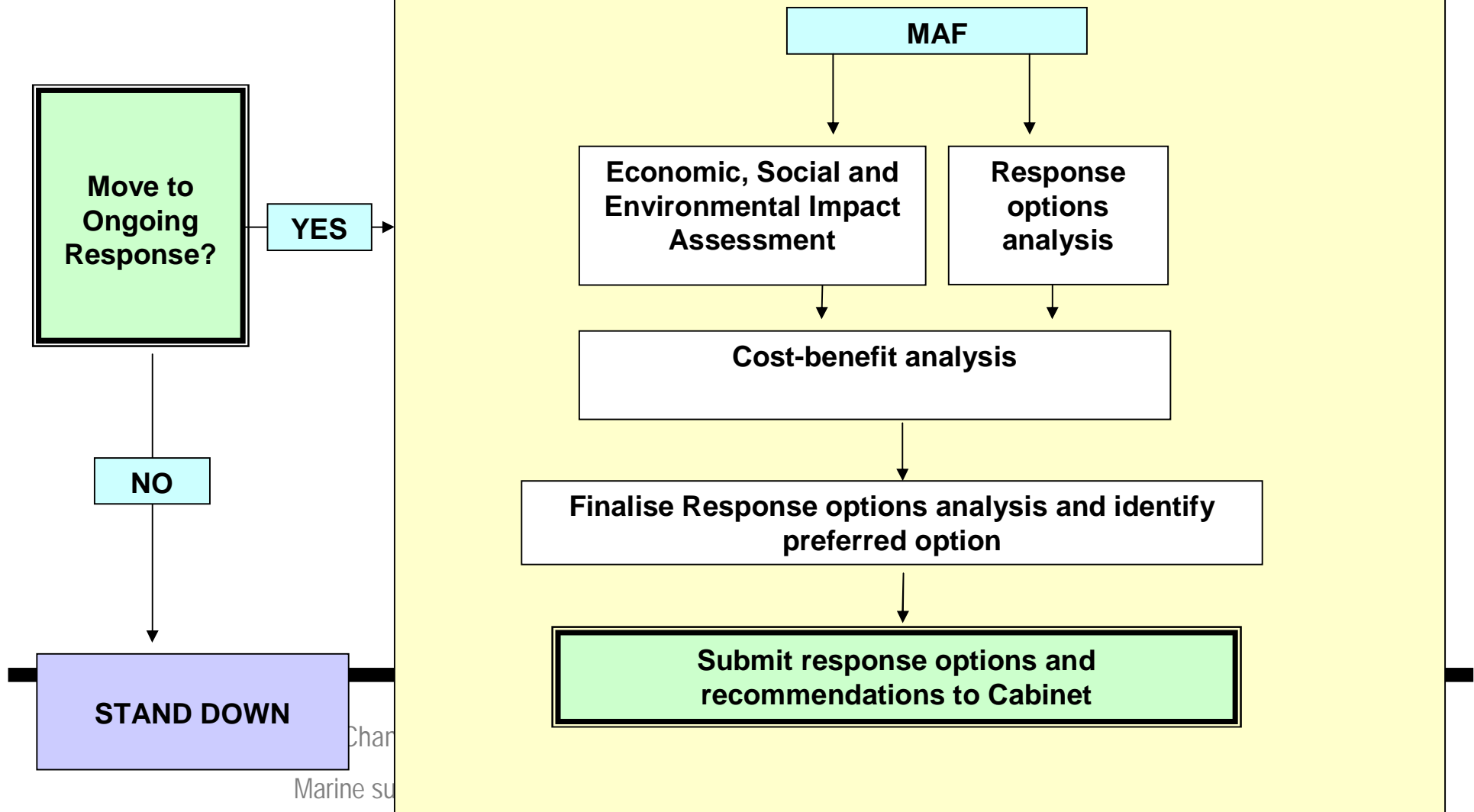
# Investigation Phase



# Initial Response Phase



# Planning for Ongoing Response



# Options analysis

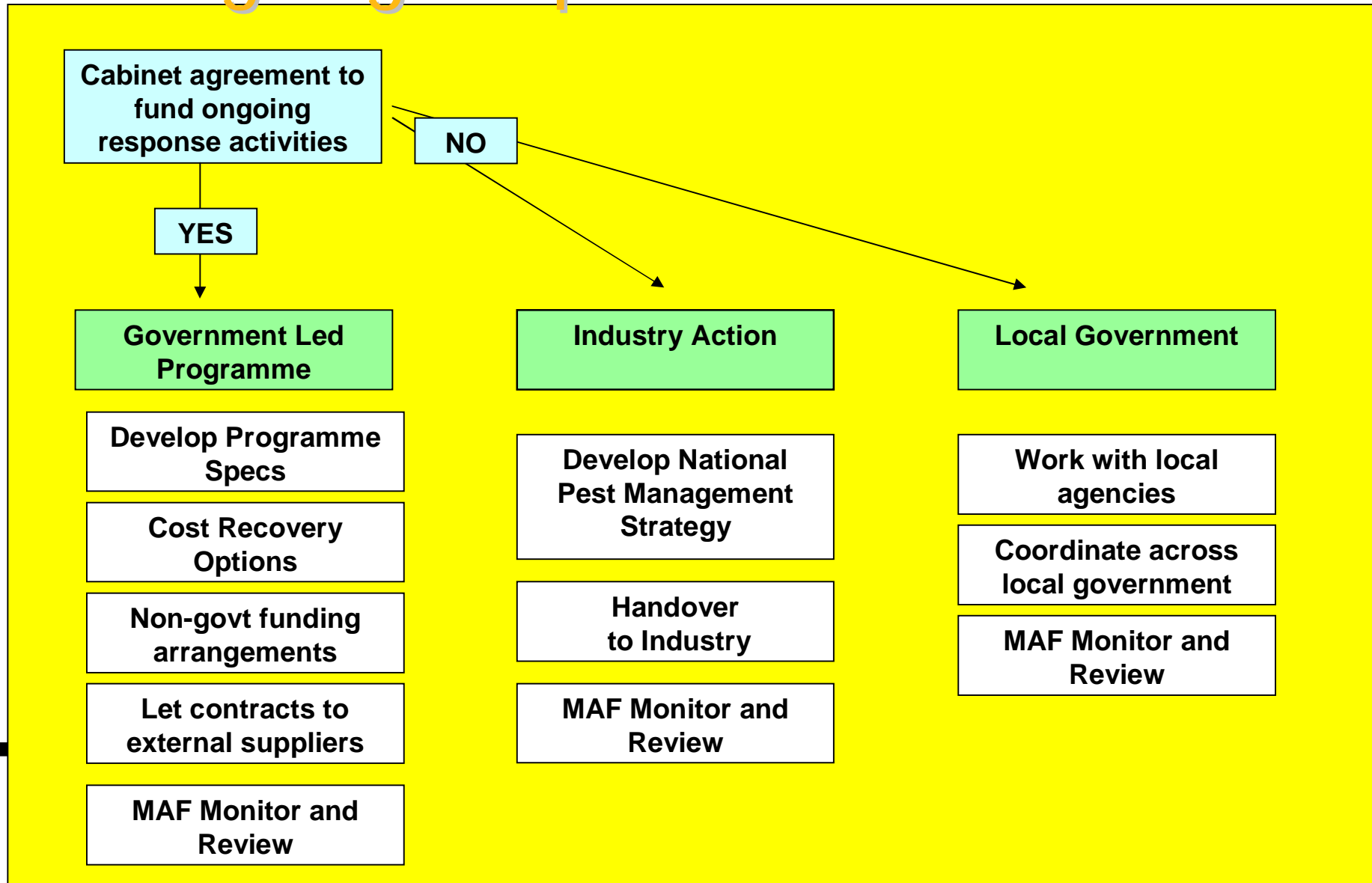
Criteria	Option 1	Option 2	Option 3	Option 4	Option 5
Goal	Eradication	Eradication	Containment	Long-Term Management	Uncontrolled Spread
Technical	6	7	5	8	-
Practicality	3	9	4	8	-
Benefit-cost	6	8	2	4	1
Strategic	7	7	3	3	1
Acceptability	5	9	3	6	2
Total	27	40	17	29	4

Sea Change – November 2005

Marine surveillance & Incursion Response



# Ongoing Response



# Increasing certainty of eradication response

- Effective detection
- Robust impact assessments
- Established response plans with clear response options
- Technical feasibility
- Material net benefit
- Public vs club benefit
- Stakeholder support/participation





# Summary

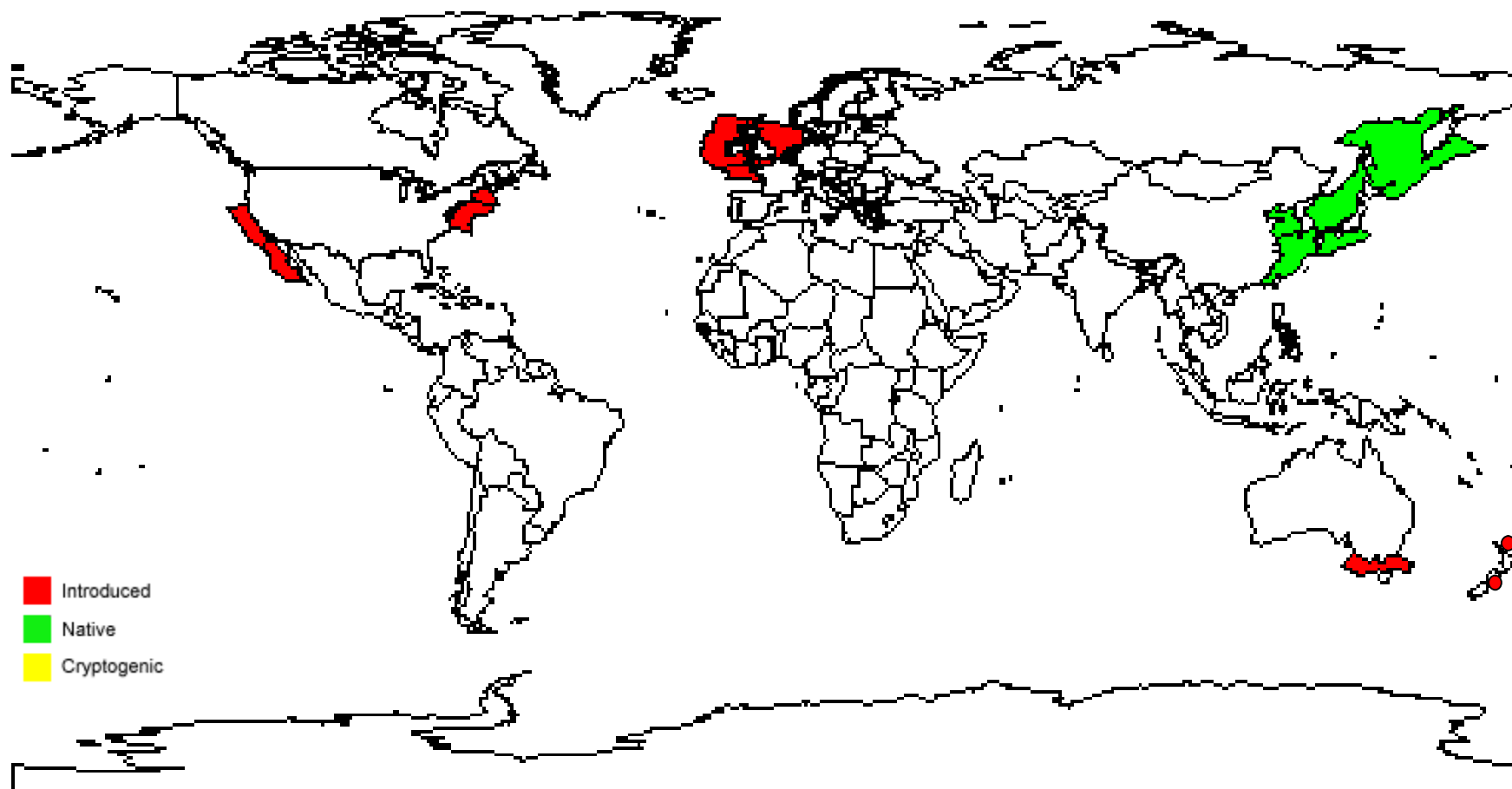
- Biosecurity risk is increasing.
- Management of marine biosecurity risk is improving.
- Improving baseline knowledge of marine organisms.
- Some early detection surveillance for known high impact organisms.
- Expect to find more new exotic organisms.
- No pre-prepared marine specific response plans.
- Control tools being researched.

# *Styela clava* response

- **Sea-squirt (Ascidian)**
- **Solitary, but can form dense fouling communities of up to 1500 per square metre**
- **Tough leathery animal, clubbed shaped, can grow up to 160mm long**
- **Potential impacts**
  - Biodiversity
  - Aquaculture
- **Initial detections:**
  - Viaduct Harbour (8 Sept 05)
  - Port of Lyttelton (3 Oct 05)



# Global distribution



Sea Change – November 2005

Marine surveillance & Incursion Response

# Actions to date

- **National Response Centre established**
- **Response Steering Committee established**
- **Declared an Unwanted Organism (10 Oct 05)**
- **Targeted delimitation Surveys undertaken**
  - Waitemata Harbour,
  - Port of Lyttelton,
  - Waikawa Marina
- **Public awareness campaign**
  - Mainstream media
  - Advertisements
  - Fact sheets

# Current and future actions

- **National Surveillance programme (NIWA)**
  - 25 high risk sites (underway)
- **Ecological Impact Assessment (BNZ)**
- **Economic Impact Assessment (NZIER)**
- **Treatment and control trial (Cawthron)**
- **Movement controls investigated (BNZ)**
- **TAG members identified (BNZ)**
- **Investigating current impacts on Aquaculture activities (BNZ)**
- **Awareness campaign – key messages (BNZ):**
  - Report suspected non indigenous marine organisms
  - Clean vessel hulls before moving to a new location



# Where in New Zealand

## Confirmed detections

- **Hauraki Gulf**
- **Firth of Thames**
- **Coromandel (Wilson's Bay)**
- **Lyttelton Harbour**
- **On vessel in Waikawa Marina - Picton**

## Not detected

- Whangarei (Town Port, Marsden Point, Town Basin Marina, Portland Wharf)
- Mangawai Harbour
- Wellington Port
- Marlborough (Port of Picton, Picton Marina, Havelock)
- Nelson, Golden bay (Port of Nelson, Tarakohe harbour)
- Akaroa
- Dunedin (Port Otago, Port Chalmers)
- Bluff
- Greymouth
- Napier

## Pending

- **Opua Marina, Tutakaka, New Plymouth, Whitianga, Whakatane, Tauranga, Waikawa Marina (Picton)**

# Working with industry and regional councils

- **Early notification of findings and media releases**
- **Distribution of awareness material (fact sheets)**
- **Conference call updates**
  
- **Aquaculture industry**
  - Implemented a passive surveillance system, moving to a more formal surveillance system
  - Developing a code of practice for service and harvest vessels
  - Aquaculture industry liaison group established

