



Department of Conservation
Te Papa Atawhai

Ministry for Primary Industries
Manatū Ahu Matua



Didymosphenia geminata in New Zealand: A national collaborative programme for didymo pest management and research

John Sanson (Ministry for Primary Industries) and Dr Philippe Gerbeaux (Department of Conservation)

Growing and Protecting New Zealand



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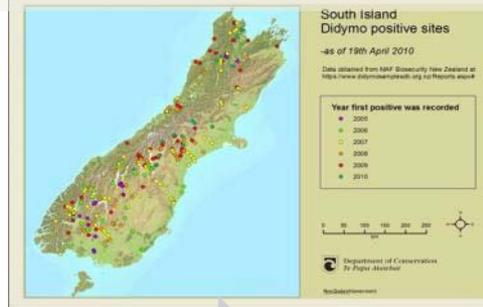
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Brief History: From Response to LTM



2004

- **October:** Incurion
- **November:** Response Initiated
- Delimiting surveys
- Research programme

2005

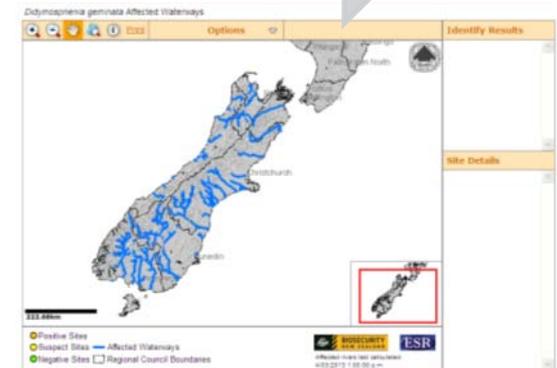
- Check Clean Dry Social Marketing Campaign launched to 'Slow the Spread'

2008

- Transition to **Long Term Management**
- Regular partner meetings
- Consistent coordination

Now

- Successful partnership
- National and Regional Advocacy
- Science that informs management decisions
- Focus on the pathway and the spread of other freshwater pests



National Partnership for LTM: a new approach for New Zealand



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Long Term Management Programme Objectives

Outcome

The impacts of didymo and freshwater pests reduced by organisations and individuals with a freshwater interest working collectively

Social Marketing Strategy Targets



% of high-risk users who always CCD

% of high-risk users who understand the relevance of CCD beyond didymo

Focus on maintaining or increasing vigilance amongst high-risk compliant freshwater users

Resources & Tools Developed



BETWEEN WATERWAYS

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Check, Clean, Dry National Campaign

PROTECT OUR WATERWAYS

STOP THE SPREAD OF FRESHWATER PESTS.

CHECK

Remove all plant material from items that have been in the water.

CLEAN

Soak or scrub all items for at least one minute in a 5% solution of detergent.

DRY

If cleaning is not practical, dry items completely and then leave for at least 48 hours.



Didymo May be present, even if not visible



Hydrilla Verticillata

See www.biosecurity.govt.nz/cleaning for more ways to Check, Clean, Dry.

New Zealand Government



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DO YOU HAVE ANY OF THESE ITEMS?



YOU ARE LEAVING A CONTROLLED AREA

Help stop the spread of didymo and other freshwater pests. Always:

CHECK CLEAN DRY

all gear that has been in South Island waterways before you enter waterways in the North Island.

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PROTECT OUR WATERWAYS



Didymo May be present, even if not visible



Hydrilla Verticillata

STOP THE SPREAD OF FRESHWATER PESTS.

CHECK CLEAN DRY

Remove all plant material from items that have been in the water.

Soak or scrub all items for at least one minute in a 5% solution of detergent.

If cleaning is not practical, dry items completely and then leave for at least 48 hours.

See www.biosecurity.govt.nz/cleaning for more ways to Check, Clean, Dry.

New Zealand Government



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THE SOLUTION TO PROTECTING WATERWAYS IS SIMPLE.



1 PART DETERGENT, 9 PARTS WATER.

1. Add sachet to a 250ml bottle and fill with water, or use 1 part detergent and 9 parts water.
2. **CHECK** your boots and remove any obvious debris.
3. **CLEAN** your boots by saturating them with this solution to let the detergent kill didymo, and greatly reduce the risk of spreading other freshwater pests.
4. **DRY** your boots thoroughly, if possible.
5. Enjoy your favourite tramping spots for years to come.

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20ml

PLANT BASED CONCENTRATE DISHWASH LIQUID

NO NASTY* CHEMICALS
 *NO toxic petrochemicals, NO phosphates, NO nitrates, NO EDTA, NO sodium lauryl sulphate, NO TEA, NO synthetic dyes or perfumes.

YOUR BODY LIKES IT
 Reduce exposure to unhealthy chemicals. Many synthetic chemicals are known to be harmful to our health and can cause skin irritation or eczema. We use plant based ingredients, simple mineral salts and essential plant oils for effective results.

OUR EARTH LIKES IT
 What's good for our health is also good for the earth. Our products are highly biodegradable and contain earth safe ingredients from sustainable resources. pH balanced ecostore dishwash liquid is grey water safe for gardens, lawns and trees.

OUR INGREDIENTS
 Plant based non-ionic and anionic surfactants, mineral hydroxide, natural citrus oil. Although we use plant based ingredients, still take care and keep out of reach of children. Avoid eye contact. If contact with eyes occurs, flush with water and seek medical advice. If swallowed, give fluids and seek medical advice on 0800 764 766.

A LITTLE WORD FROM US
 We stand behind our products and are committed to offering you the best in eco science.



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Cleaning Guides and Sampling Protocol

Cleaning DVD



Event organiser's interactive PDF



Sampling protocol



Pocket cleaning guide

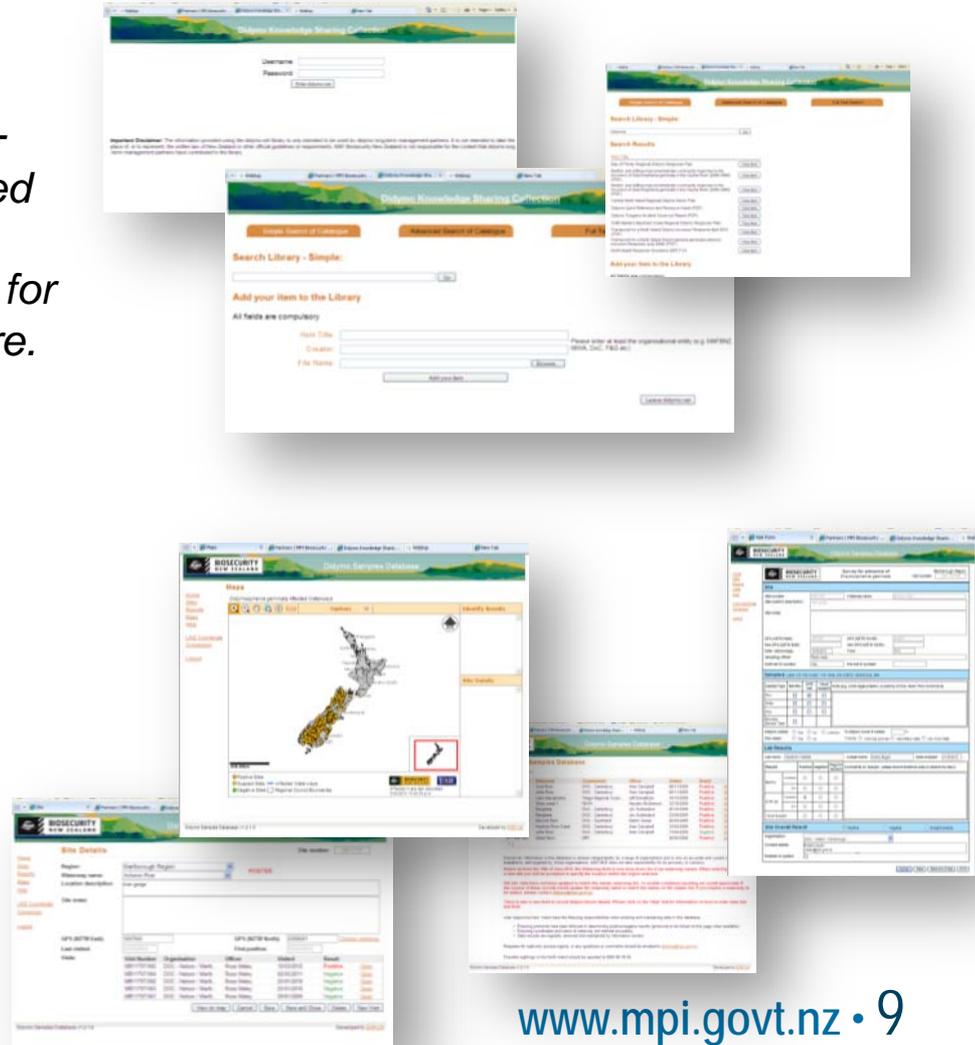


Web based resources

- Didymo.net

Knowledge transfer – “As part of long-term management, the Ministry created a website, *didymo.net*. This brought together reports, and other resources for response partners to access and share. This ensures that those interested in combating didymo, who are widely geographically dispersed, have the latest information.” (OAG Report)

- Didymo Samples Database





Supporting Regulation



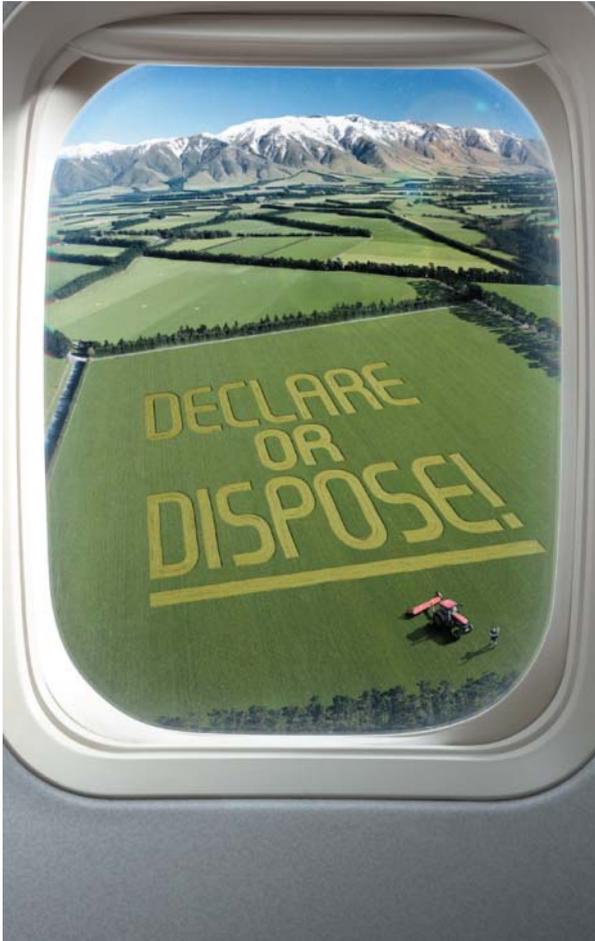
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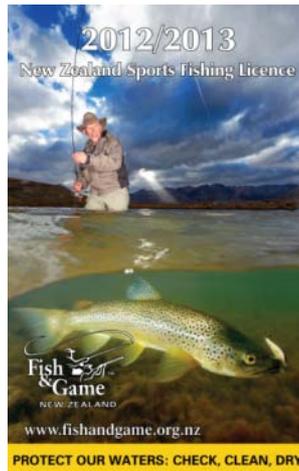
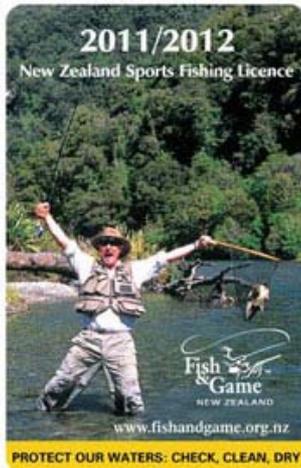
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MPI's Import Health Standard



“Are you bringing into New Zealand...biosecurity risk items, including: Equipment used with animals, plants or water, including for beekeeping, fishing, water sport or diving activities?”

Partner Regulations



Notice of Restrictions on Fishing – Fiordland National Park

Due to the threat of *Zygodontobrycon geminatus*, pursuant to Section 202Z of the Conservation Act 1987, the Director-General of Conservation hereby imposes restrictions and conditions on sports fishing in certain rivers of Fiordland National Park.

Rivers covered by the restrictions and conditions will be:
 All rivers and lakes of the Fiordland National Park excluding the Eglinton River, Hollyford River, Claddou River and their respective tributaries, also lakes Te Anau, Manapouri, Monowai and Haurongo. The Upper Waiau River and the Monowai River are outside Fiordland National Park and are excluded from restrictions and conditions of this notice.

Restrictions and Conditions – the Fiordland rivers

1. Duration of restrictions and conditions
 The restrictions and conditions in this Notice for the Fiordland Rivers commence on 1 November 2012 and expire at the end 31 October 2013.

2. Season
 The fishing season for those Fiordland Rivers not draining to the Tasman Sea commences on 1 November 2012 and ends on 31 May 2013. Those rivers draining to the Tasman Sea are open all year.

3. Conditions

- (1) All persons fishing in the waters specified in this notice must clean their fishing gear (including but not limited to fishing rod, reel and line, lure, footwear and landing nets) and obtain a certificate from an approved cleaning station (listed at the foot of this notice) certifying that the gear has been cleaned no more than 40 hours before each Fiordland fishing trip.
- (2) Only persons holding a current sports fishing licence are eligible to obtain the Clean Gear Certificate.
- (3) Approved dilute cleaning kits must be produced before persons are eligible to obtain the Clean Gear Certificate. The cleaning kit must include a bucket (minimum size of 20L), scrubbing brush, spray bottle, cleaning solution and a measuring cup.
- (4) Any such certificate that states the gear has been cleaned is valid only for the duration of the trip specified and the waters specified in the certificate.
- (5) Any such certificate must be carried for the duration of the trip specified in the certificate.
- (6) Approved cleaning stations are listed at the foot of this notice.
- (7) Polished waders or footwear incorporating or having attached a sole of felted, matted or woven fibrous material are not permitted in Fiordland National Park.
- (8) It is an offence to breach any of the restrictions or conditions imposed by this notice and offenders may be liable on conviction to a fine not exceeding \$1000.

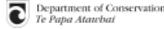
Approved Cleaning Stations
 Tapanui Service Station, Borland Lodge, Manapouri Motors, Outside Sports Te Anau, Department of Conservation Visitor Centre – Te Anau, Fish & Game Te Anau and Invercargill and Bill's Sports Gore.

Sarah Hanson
 Conservation, Southland Conservancy pursuant to an Statement of Delegation from the Director-General of Conservation.

Contacts:
 Department of Conservation
 PO Box 29, Te Anau 9640
 Ph 03 349 7024

High and Game NZ, Southland Region
 PO Box 66, Te Anau 9640
 Ph 03 349 8249

Or:
 High and Game NZ, Southland Region
 PO Box 29, Invercargill 9640
 Ph. 03 252 9337



DOC Clean Gear Certificates



Ban on felt soled waders enforced by DOC and Fish and Game NZ



How do we know we are succeeding?



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Measuring Success: Audience Research

2012 research - a quick snapshot:



Those who always Check, Clean, Dry between waterways
Awareness of didymo and other pests
Awareness of the phrase Check, Clean, Dry

Most visible/effective CCD activities – Waterway signs, brochures, bumper stickers



Measuring Success: Audience Research

Most recognised pests



Hydrilla

Average total awareness 49%.
Highest amongst kayakers / rafters
Sth & Nth I. awareness similar.



Hornwort

Average total awareness 41%.
Highest amongst kayakers / rafters and anglers.
Nth I. awareness slightly higher.



Didymo

Average total awareness 100%.
Highest amongst kayakers / rafters,
boaters & anglers.
Sth I. exposure much higher.



Koi carp

Average total awareness 88%.
Highest amongst anglers.
Nth I. awareness slightly higher.

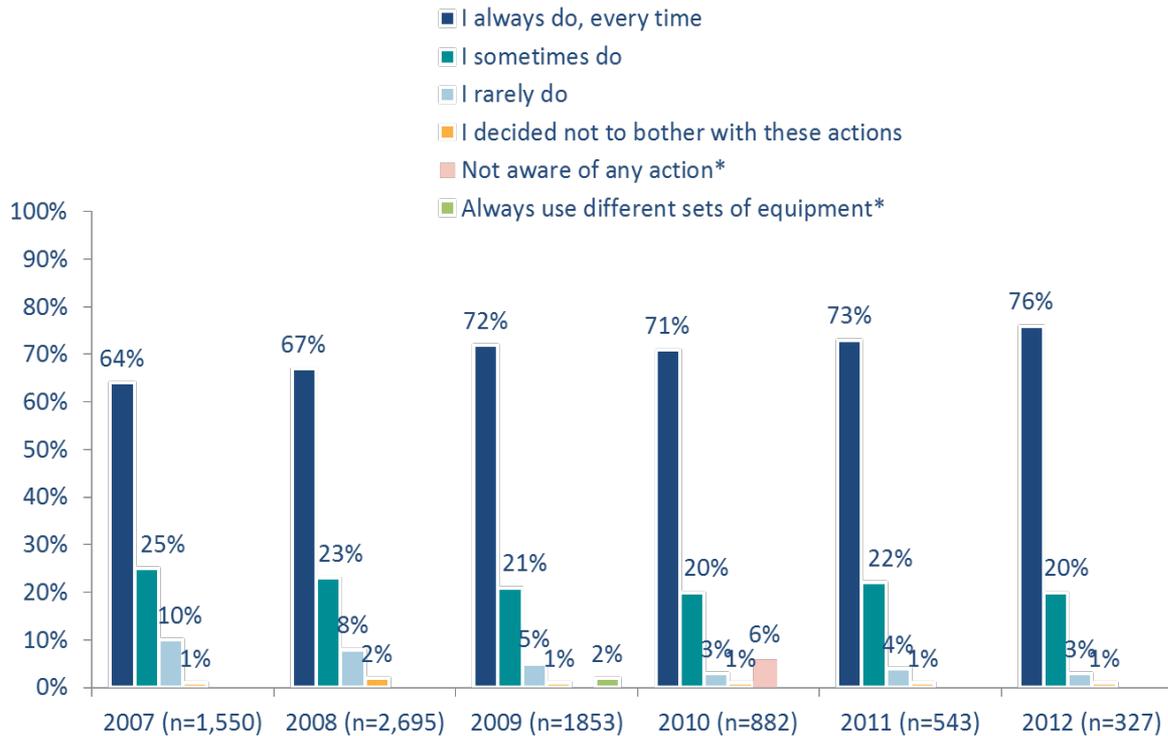


Lagarosiphon

Average total awareness 80%.
Highest amongst boaters.
Sth & Nth I. awareness similar.

Measuring Success: Audience Research

Anglers have become more diligent over time



Measuring Success: Impacts & Benefits Assessment

Sector Impacts

- tourism a significant earner > NZ\$7 billion (5% of GDP)
- hydro power station outage costs NZ\$100k+ per day
- Hydro power station weed screens cost NZ\$1 million

Economic impact of didymo

- without government intervention estimated at between NZ\$58 and NZ\$285 million from 2004/05 – 2011/12

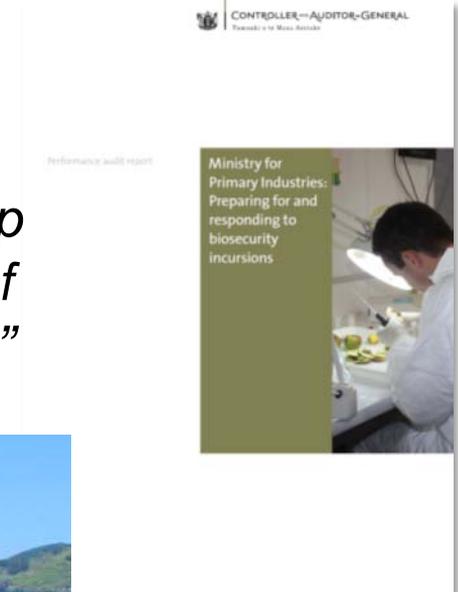
Benefits of programme

- \$1 invested in programme = \$4 benefit for NZ (didymo only)
- Benefits greater when include other freshwater pests and will grow over time

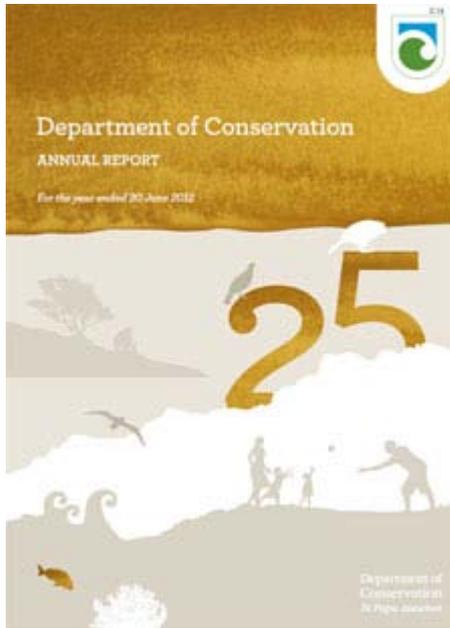
Measuring Success: Independent Auditor Report

Office of the Auditor-General (March 2013):

“Those who dealt with didymo describe their relationship with the Ministry as one of high trust, attributing much of this to the joint work since the response began in 2004.”



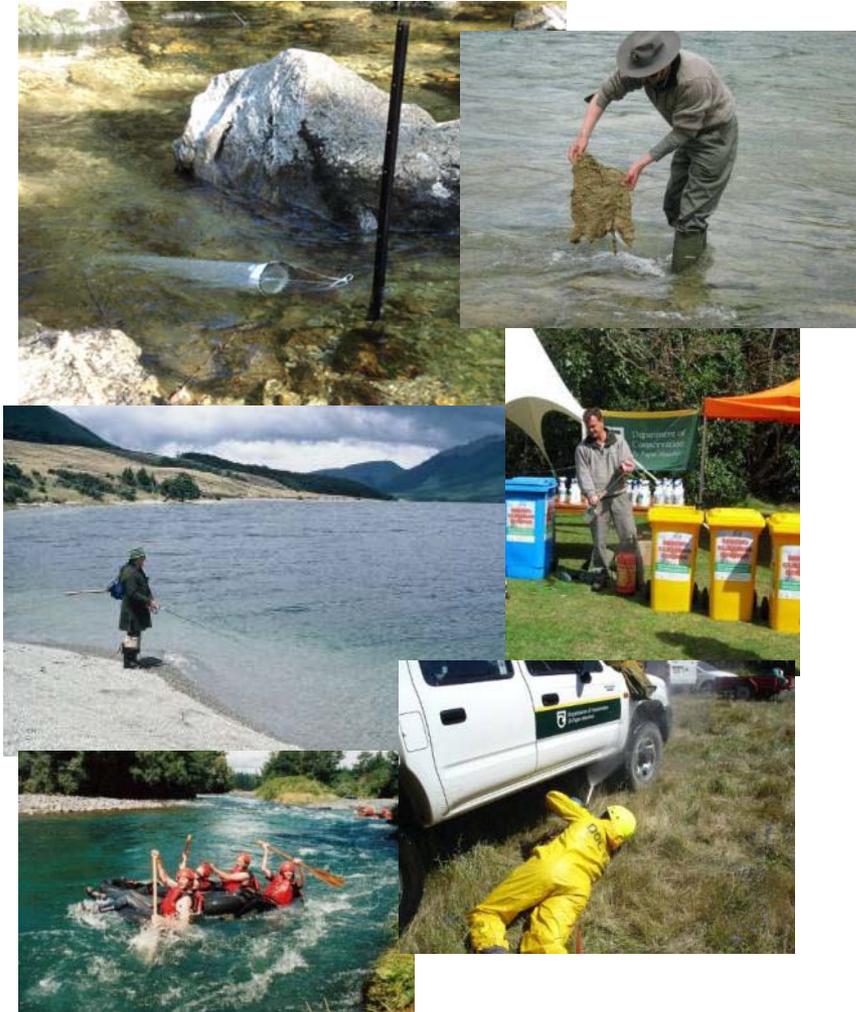
Who is DOC?



- Serving conservation and visitors for 25 years
- Leading conservation research and science
- A freshwater/wetland team with 14 technical and science advisors



Why DOC's commitment to the Didymo National Partnership?



- A network of highly motivated rangers heavily involved since the early stages of the invasion
- The threat that didymo poses to freshwater biodiversity and visitors quality experience
- Managers of high value sites
- Experience at the operational, technical and scientific levels
- Our collaborative approach to science, biodiversity and visitors management

Frameworks and guidelines: tools for internal awareness



Didymo operations framework

DOC operations framework for the long-term management of *Didymosphenia geminata* (didymo) 2009–2014

INTERNAL DOCUMENT
VERSION 1.0—JUNE 2009



Management of didymo at sporting events

GUIDELINES FOR THE MANAGEMENT OF DIDYMO AT SPORTING EVENTS ON PUBLIC CONSERVATION LAND

VERSION 0.9—MAY 2009

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Te Papa Atawhai



Determining high value freshwater sites—interim national guidelines

VERSION 1.0—OCTOBER 2007

 Department of Conservation
Te Papa Atawhai

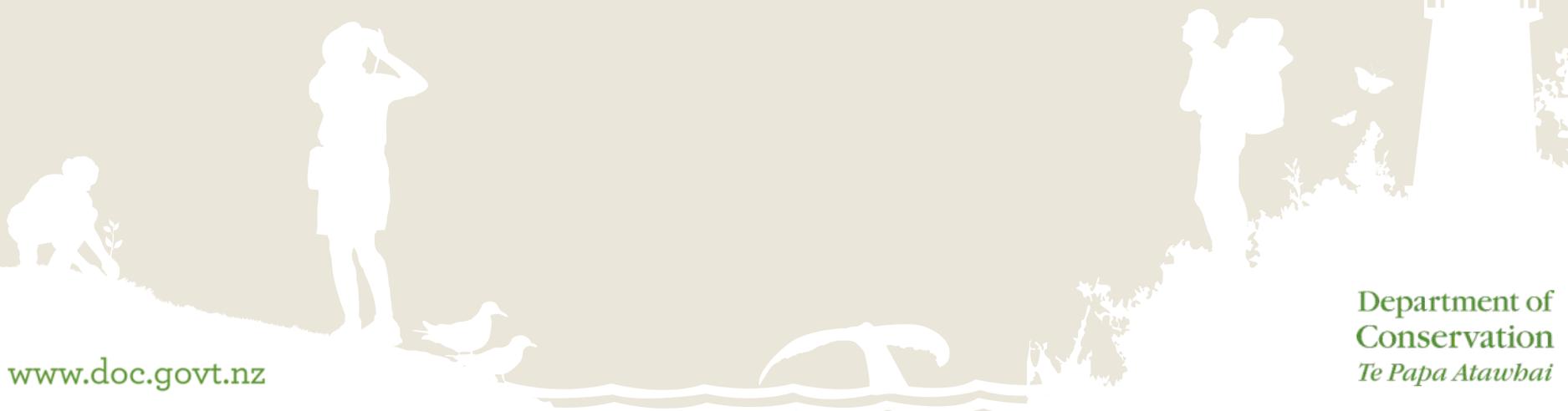
The NZ Didymo Research Programme: some of our best kept secrets...

- Mobilisation of key stakeholders towards supporting and funding research (Fish and Game, Energy companies)
- A research gap analysis enabling to prioritise research actions through active involvement of the LTMP steering group
- A strong collaborative spirit among Didymo New Zealand Science providers and beyond...
- International collaboration (Max, Phoebe)





Collaboration is not a single sharing of information...it creates new identities and interests around this didymo challenge.





The meaning and purpose of a problem seem to lie not in its solution but in our working at it incessantly ! (C.Jung)





Lessons Learned and Future Innovation



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Lessons Learned

Raising awareness is a viable alternative to regulation to gain compliance, but...

- it takes long term investment to make a significant change
- avoid communications material being too technical
- getting the public to treat every waterway as if it was infected was a major change - people still react to signs at rivers

Partners highlighted the organic approach as important factor in allowing the programme to evolve and adapt

A national programme requires

- partnership – use collective capability
- passionate champions & advocates



Future Innovation

- Social media and phone apps
- National pathway plan
- Promote reporting of other freshwater pests and diseases
- Research – didymo, social
- Template for other sectors

A screenshot of the Interislander 'Look and Book' website interface. The page has a blue header with the Interislander logo and the text 'Look and Book'. Below the header, there are several form fields for booking a ferry. The 'From' field is set to 'Wellington'. The 'Departing' field is set to '1 Tuesday' and the 'Month' is set to 'March 2013'. The 'Passengers' section has a dropdown menu set to 'Adult' and a 'Passenger ID' field. There are also checkboxes for 'Vehicle' and 'Motorcycle'. A 'Continue' button is at the bottom of the form.

Further Information

Ministry for Primary Industries

- www.biosecurity.govt.nz/didymo (refer to 'research reports' for economic impact assessment and other key reports)
- john.sanson@mpi.govt.nz

Department of Conservation

- www.doc.govt.nz/didymo
- pgerbeaux@doc.govt.nz