

# National Centre for Aquatic Biodiversity & Biosecurity

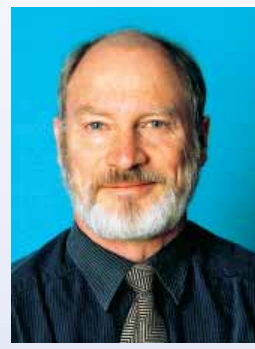
protecting our natural heritage

## NIWA and partners win new 'Outcome-Based Investment' for marine biodiversity & biosecurity

Human impacts on the marine environment, resulting in the loss of habitat, loss of biodiversity, and risks to many species, are one of the most serious issues facing the future health of our aquatic ecosystems. Related to this is the growing numbers of non-native invasive species that further threaten the integrity of these unique ecosystems and their associated productive industries.

In June, the Foundation for Research, Science & Technology announced the results of the Outcome-Based Investment (OBI) ecosystem research bidding process. NIWA had submitted a proposal for an aquatic biodiversity and biosecurity OBI, with Te Papa and Cawthron Institute. The Foundation has approved this approach for marine biodiversity and biosecurity funding for 12 years. The new OBI will address biodiversity and biosecurity issues for a wide range of ecosystems covering all marine habitats, from estuaries and coastal waters to ocean depths.

The OBI will provide research and information, services, and tools, identified within government strategies as necessary for effective marine policy implementation and management, so that New Zealanders can continue to enjoy the benefits of healthy, diverse, productive marine ecosystems. Over the next 12 years this OBI will address research challenges agreed by a range of stakeholders to help meet the marine goals of the New Zealand Biodiversity Strategy, the Biosecurity Strategy (Tiakina Aotearoa), and departmental strategies (e.g., the Department of Conservation's 'Science Counts', and the Ministry of Fisheries Marine Biodiversity Medium Term Research Plan).



Don Robertson  
General Manager, Biodiversity & Biosecurity



This native plant is good for pond edges.  
Photo: John Barkla, DOC.

Mazus radicans

## Practical plant guides for aquarium & pond owners

Aquarium hobbyists now have additional resources to guide them in selecting and culturing benign plants in the place of pest plants.

NIWA has worked with hobbyists, growers, the pet trade industry, and DOC to produce two pictorial plant guides for this purpose. One shows ten species that are at high-risk of becoming pests if introduced to New Zealand. The other outlines 54 alternative native or low risk plants to grow in their place.

The project was jointly funded by DOC's Terrestrial & Freshwater Biodiversity Information Systems Programme, and the Foundation for Research, Science & Technology.

Download the guides for free at: [www.niwa.co.nz/ncabb/tools/](http://www.niwa.co.nz/ncabb/tools/)



Ranunculus limosella

This native plant can be used as ground cover in aquariums.  
Photo: Trevor James, AgResearch.

## Saving farmed oysters from sea squirts

An invasive sea squirt has been smothering Pacific oyster cultures in Houhora and Parengarenga Harbours in the Far North. According to local oyster farmers, the sea squirt first appeared about two years ago, but seems to have been a growing problem since last October.

NIWA has advised oyster farmers to raise their rack level to above the extreme low water neap (the highest of the neap tides). This is because oysters grow best above that level and the amount of rack structure that the sea squirt can colonise will be minimised. We have provisionally identified the sea squirt as *Eudistoma elongatum*, possibly originating from eastern Australia.

This work was done for the Houhora Shellfish Farms Association and funded by Technology NZ's TechNet scheme.



Sea squirts are immobile marine invertebrates. *Eudistoma elongatum* is a colonial species made up of hundreds of tiny individuals in bag-like bodies attached to the underside of oysters and rack-rails. They extract food from water pumped through a branchial sac in their body cavity.

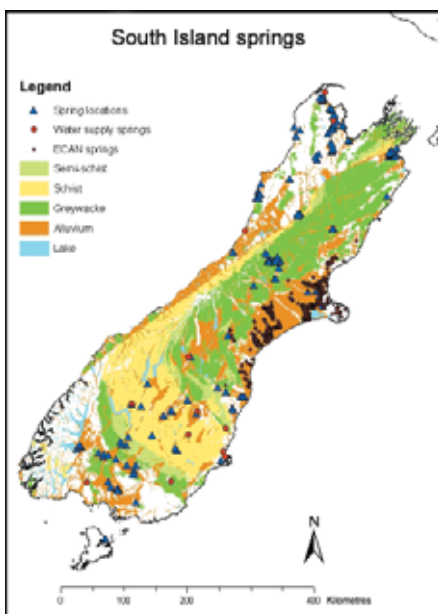
## Insight into cold-water springs

NIWA scientists have compiled a spatial database of New Zealand's cold-water springs. The database contains records of nearly 2000 springs, and links each with the geology, land-use, and climate of the area.



Over 100 of the springs have biological data linked to them, and work by a postdoctoral student at NIWA suggests that the main environmental factors driving the patterns of biodiversity in cold-water springs are height above sea level, and

land-use in the catchment. For example, low elevation springs tend to be dominated by crustaceans and molluscs, whereas high elevation springs tend to be dominated by insects.



The database will provide a resource to improve the conservation and management of biodiversity of spring habitats throughout New Zealand. The database and associated research was funded by DOC, with additional funding from the Foundation for Research, Science & Technology.

## Strategy for northern lakes

Northland has numerous lakes that lie behind sand dunes along the coast, or were dammed by past lava flows. They harbour rare and endangered native plants and fish, as well as some of the last remaining examples of native lake communities in the country.

We are helping the Northland Regional Council to identify values associated with the lakes in its region and to implement a lakes management strategy. Recently, NIWA and regional council staff surveyed 58 lakes to document their values, and establish baseline conditions of water quality for highly valued lakes. We used various techniques to check the ecological condition of the lakes, including NIWA's LakeSPI (Lake Submerged Plant Indicator) tool. We also looked for any biosecurity or other threats to the lakes.

The lakes will be ranked, and the strategy will spell out which lakes need to be monitored in the future, for what, and how often.

<http://lakespi.niwa.co.nz>



For more information on NIWA's National Centre for Aquatic Biodiversity & Biosecurity, contact:

Barb Hayden  
Centre Leader

[biodiversity-biosecurity@niwa.co.nz](mailto:biodiversity-biosecurity@niwa.co.nz)  
0-3-343 7878

or call free on

0800 RING NIWA  
(0800 746 464)