NIWA – working around the world

PERSGA

NIWA's Dr Graeme Inglis (centre) with biosecurity workshop delegates in Hurghada, Egypt.

Building biosecurity capacity in the Middle East

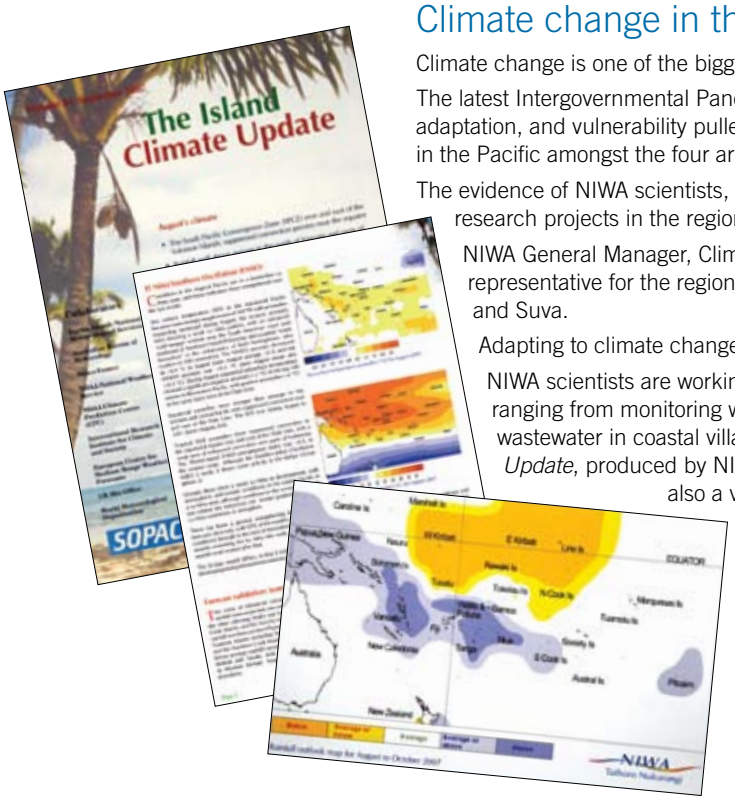
NIWA has assisted with biosecurity capacity-building in far-flung places, including Vietnam, the Seychelles, and Egypt.

Most recently, NIWA scientist Dr Graeme Inglis was invited to give a training workshop on port surveys and marine pest surveillance for Middle Eastern scientists and government representatives.

The 3-day workshop was hosted by the Red Sea Marine Emergency Mutual Aid Centre in Hurghada, Egypt, in May and was attended by 16 delegates from Egypt, Jordan, Saudi Arabia, Yemen, Sudan, and Djibouti.

Bordered by the Suez Canal and several of the world's major oil producers, the Red Sea and Gulf of Aden contain one of the busiest shipping routes in the world, amid some of its most spectacular and unique marine environments. The workshop raised awareness in the region of the spread of unwanted marine organisms by shipping, and provided theory and practical hands-on training in marine pest surveys.

Dr Inglis was invited by the International Maritime Organisation's Global Ballast Water Management Programme and the Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden.



Climate change in the Pacific

Climate change is one of the biggest challenges facing Pacific Island nations.

The latest Intergovernmental Panel on Climate Change (IPCC) report on impact, adaptation, and vulnerability pulled no punches when it positioned small islands in the Pacific amongst the four areas most vulnerable to climate change.

The evidence of NIWA scientists, who have carried out various climate-related research projects in the region, contributed to the report.

NIWA General Manager, Climate Change, Dr David Wratt (IPCC bureau representative for the region) discussed the findings at forums in Rarotonga and Suva.

Adapting to climate change is a challenge for many small islands.

NIWA scientists are working with Pacific Island communities on projects ranging from monitoring water quality in the Cook Islands to treating wastewater in coastal villages in Fiji. The monthly *The Island Climate Update*, produced by NIWA in collaboration with others in the Pacific, is also a valued resource in the region.

From Mauritius to the mid Pacific

It's been described as 'a revolution in ocean observing'. The international Argo programme is creating a network of high tech floats monitoring conditions in the world's oceans.

Argo floats measure ocean currents, and profile upper ocean temperature and salinity, transmitting data via satellite for public access within hours of collection. The unprecedented level of information is starting to bring results. Argo recently helped Australian scientists discover a 'super-gyre' connecting southern hemisphere oceans, with implications for the climate and marine ecosystems.

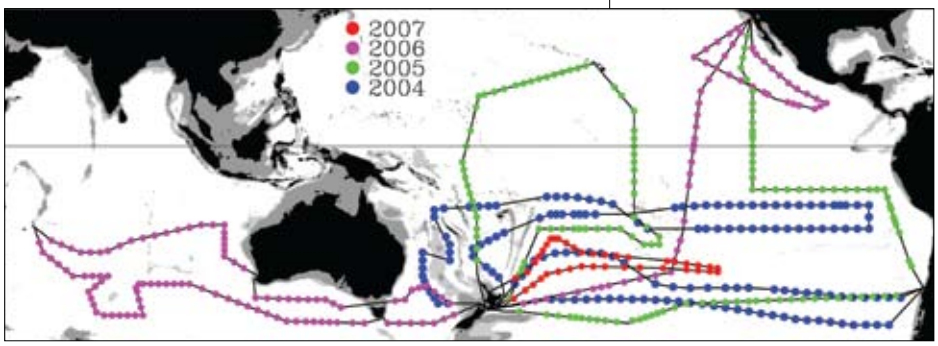
With 23 countries involved, Argo is a cumulative, global effort, but NIWA's contribution is singularly impressive. Our 28 metre research vessel *Kaharoa* holds the world record for the largest number of Argo deployments, filling in gaps in remote parts of the oceans.

This year, *Kaharoa* completed two Argo voyages. The first went south of Australia to Mauritius; the second to the mid Pacific in prolonged bad weather. Said the Second Mate: "I was just glad I wasn't the cook!"

Funding of *Kaharoa's* Argo voyages is shared between NIWA and US Argo (University of Washington and Scripps Institution of Oceanography, funded by the National Oceanic and Atmospheric Administration through the National Ocean Partnership Program).

Craig Macaulay, CSIRO

Australian Argo project leader Dr Susan Wijffels presents Captain Evan Solly with a plaque recognising Kaharoa *'s contribution to 'seeding' the oceans with more than 400 Argo floats (below).*



Managing wastewater in the Pacific

The health of Fijian villagers, and the coral reef ecosystems they depend on, is being promoted in a NIWA-led wastewater management project being carried out for NZAID in collaboration with ESR, ecoEng, and the University of the South Pacific.

Rising coastal populations, the use of flush toilets and modern water-demanding appliances, and small-scale piggeries have altered the effectiveness of traditional waste management approaches. Using ongoing research to develop sustainable natural treatment systems, overburdened septic tanks are being upgraded and effluents channelled through a communal gravel-bed wetland treatment system. Household greywaters are being treated on-site using recycled plastic drums filled with coconut husks that are buried in coarse rock seepage beds.

The NIWA workshops have merged into village life, involving residents personally in the project as they need to be able to understand and maintain the new systems. "Once proven, we hope such systems will be able to be replicated in similar situations around the Pacific," says project leader Dr Chris Tanner.

Chris Tanner, NIWA