Helping Islands Adapt

A Workshop on Regional Action to Combat Invasive Species on Islands to preserve biodiversity and adapt to climate change

A GLOBAL ISLAND PARTNERSHIP EVENT

‘Far too many governments have failed to grasp the scale of the threat from invasive species.’

Achim Steiner, UN Environment Programme Executive Director[1]

Helping Islands Adapt: A Workshop on Regional Action to Combat Invasive Alien Species on Islands to Preserve Biodiversity and Adapt to Climate Change highlighted successes, deepened connections within regions and facilitated the exchange of experiences across regions. While discussions outlined significant obstacles to invasive alien species management[2] on islands, they also showcased how targeted successes have led to major gains for conservation and development. Collaboration across developmental and environmental sectors and sustained support are critical to success in this field. Exciting new initiatives are developing to demonstrate large-scale management of invasive alien species across island regions. Next steps to accelerate and expand national, regional and international action and successful outcomes were agreed. The workshop outcomes will help drive effective management of invasive alien species threats to island livelihoods and biodiversity at local, national, regional and international levels.

Aerial view of Kmekumer, Rock Islands, Republic of Palau, Palau, Asia Pacific.

Common lionfish (*Pterois volitans*), invasive species from Indo-Pacific. Shot in Exuma Cays Land and Sea Park, Bahamas. The Nature Conservancy works closely with partners such as the Bahamas National Trust and the Government of the Bahamas to protect the marine habitat of the Exuma Cays and achieve the goal for the long-term protection of national parks through the Caribbean Challenge.
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Workshop background

The workshop was held from 11 to 16 April 2010, in Auckland, New Zealand. Hosted by the Government of New Zealand with support from a number of partner organisations and countries[3], the meeting was 'welcomed' in Decisions under the Convention on Biological Diversity (CBD) relating to invasive alien species and island biodiversity[4], and builds on efforts under the Cooperative Islands Initiative, a partnership launched at the World Summit for Sustainable Development and the CBD's 6th Conference of the Parties in 2002[5]. Eighty-two participants from 24 countries and territories, and 29 national, regional and international organisations attended the workshop, which focussed on four major island regions—the Caribbean, the Coral Triangle[6], the Indian Ocean and the Pacific—as well as on international support by organisations and networks.

The workshop aimed to identify and strengthen mechanisms that enable effective, adaptive and sustainable invasive alien species management for island nations. Outcomes included:

1. **Lessons** from regional collaboration and coordination.
2. **Actions** to strengthen invasive alien species management.
3. **Networks** and resources to facilitate learning and implementation.
4. **Key steps** within international processes to catalyse and support regional efforts.

Impacts on islands

Fire ant (*Solenopsis invicta*) feeding on okra bud.
© Bastiaan Drees, Texas Fire Ant Applied Research and Education Program

Invasive alien species are recognised as one of the major drivers of biodiversity loss worldwide.[7] They also have significant, direct impacts upon many other sectors, including economic development, health, agriculture, tourism and trade. Pimentel et al. (2001) estimated that the global cost of invasive alien species impacts (including plants, mammals, birds, reptiles, amphibians, fish, arthropods, molluscs, livestock diseases, and human diseases including HIV Aids and influenza) totals around US$1.4 trillion annually—representing 5% of the world economy at the time.[8]

There are over 180,000 islands worldwide, which cover the full range of habitats. These span small island nations, archipelagic countries and countries with islands. Together, islands cover only 5% of the Earth's land surface, yet they are home to approximately 20% of all known terrestrial species and almost half of all endangered species. While highly diverse, island ecosystems are particularly fragile and vulnerable due to their small size, relative isolation and disproportionate susceptibility to the overharvesting of resources, natural disasters and other major drivers of biodiversity loss, such as climate change and invasive alien species. In fact, 70–95% of the world's terrestrial species extinctions have occurred on islands[9], and most of these (55–67%) were directly caused or facilitated by invasive alien species[10,11]. Assessments also show that only 16% of the world's marine ecoregions for which we have available data are invasive-free[12]; the major pathways for invasive species introduction are ballast water, hull fouling and aquaculture introductions.

Island biodiversity is also under serious threat from another major driver of biodiversity loss—climate change—which will interact with biological invasions and other processes in complex ways.[13] Observed impacts such as sea level rise and rainfall changes threaten to damage ecosystem health and may accelerate species loss[14], undermining conservation efforts worldwide. Biodiversity can also be an important asset in addressing climate change through ecosystem-based mitigation and adaptation.[15] For example, there is strong evidence that healthy ecosystems are more resilient to the impacts of climate change, thereby helping to buffer resident communities from such impacts.[16] By fostering ecosystem health, invasive alien species management represents an effective form of Ecosystem-Based Adaptation (EBA) to climate change.

Lessons from island regions

Invasive water-hyacinth (*Eichhornia crassipes*) at the New Savannah Bluff Lock and Dam, which is just southeast of Augusta, Georgia, on the Savannah River.
© Mark Godfrey/TNC

Participants openly shared the successes and challenges experienced in the coordination and implementation of invasive alien species management in their respective regions. In spite of the geographic, cultural, political and economic differences across islands and island regions, many common themes emerged:

- **Regional and global collaboration and initiatives**—These play an important role in building capacity and supporting national implementation to address the threat of invasive alien species to island biodiversity. Cooperation and information sharing within and across regions can serve as a valuable mechanism for South–South (developing country) cooperation.
- **Multi-sectoral concern**—Management of invasive alien species is an issue that needs to be framed across all major sectors—biodiversity, agriculture, tourism, fisheries, forestry, trade and health. It affects environmental and development priorities, as well as cultural values. The interdependence of such sectors calls for greater mainstreaming of invasive alien species management on islands.
- **Integration of invasive alien species in biodiversity, climate change and development plans**—Prioritisation in regional frameworks and national legislation can create an enabling environment to support and empower existing management potential on islands.
- **Messaging and engagement of communications professionals**—Improved messaging and engagement of communications professionals are needed to raise awareness and generate support for the importance of invasive alien species management and social values around the resources they threaten.
- **Economic, environmental, social and cultural costs**—Analyses of the costs of invasive alien species on islands can help decision makers to identify management priorities.
- **Champions**—These are needed to advance management efforts on islands, and to catalyse further support at the regional and international levels.
- **Challenges**—Numerous challenges to regional collaboration and national action on invasive alien species and islands were identified, including human and financial resources; coordination across sectors; border security and enforcement; community engagement; and enabling policy and legal frameworks, especially for Small Island Developing States (SIDS), overseas territories, dependencies and other insular jurisdictions.
- **New initiatives**—Several initiatives with potential to demonstrate large-scale management of invasive alien species across island regions were identified, including the multi-agency Pacific Invasives Partnership; the new Caribbean GEF project on *Mitigating the Threats of Invasive Alien Species in the Insular Caribbean*; the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security; the comprehensive Micronesia Biosecurity Plan; and the Western Indian Ocean Challenge.
- **GISP and GLISPA**—Invasive alien species on islands are a top priority for the Global Invasive Species Programme (GISP) and the Global Island Partnership (GLISPA), which are working together to provide countries and regions with global support, guidance and assistance with implementation.

Actions

'... each participant identified actions he or she would undertake ...'

Overall, the regional and global working groups identified six major actions that are critical to helping islands combat invasive alien species and adapt to climate change, and that require immediate attention:

- Increase coordination and integrated action on invasive alien species across key sectors through national, regional and global networks and partnerships, including within climate change adaptation plans and sustainable development plans.
- Engage public and private sector leaders to champion invasive alien species management on islands.
- Build public support through effective communication of the impacts of invasive alien species on island economies, people and environments.
- Improve biosecurity systems to address the full range of invasive threats to islands.
- Accelerate the use of successful invasive alien species approaches through the exchange of experience, skills, information, taxonomy, data and tools between islands.
- Increase sustained funding and capacity to implement invasive alien species activities.

Working groups identified more specific actions to dramatically improve invasive alien species management in their respective regions. Additionally, each participant identified actions he or she would undertake to advance this work.

Female kaka (*Nestor meridionalis*) mauled on nest by stoat (*Mustela erminea*).
Crown copyright: Department of Conservation Te Papa Atawhai, *New Zealand.*

Implementation

Workshop participants identified mechanisms and supporting structures that would help implement the actions outlined on the previous page. These included:

- Briefing delegates attending relevant international fora on the workshop outcomes, and highlighting the importance of invasive alien species management in relation to both islands and climate change. Fora include the CBD, the Commission on Sustainable Development (CSD), the UN General Assembly (UNGA), the UN Framework Convention on Climate Change (UNFCCC), and the International Plant Protection Convention (IPPC).
- Taking advantage of upcoming regional and international meetings to follow up on actions identified at the workshop (e.g. CBD's inter-agency meeting with other international conventions and organisations, Pacific Invasives Partnership meeting).
- Identifying and engaging key champions in international and regional organisations and national governments to represent the issue of invasive alien species management.
- Establishing or strengthening mechanisms to share lessons learned within and across regions and government departments, including learning exchanges, inventories, reports and online portals.
- Engaging civil society organisations including national, regional and international NGOs to help carry messages and raise the profile of invasive alien species management.

Kudzu (*Pueraria montana*), originally used to combat soil erosion, has spread out of control, smothering native plants and uprooting trees. It can grow as fast as a foot a day.
© Barry Rice/sarracenia.com

Pustules and blisters formed following fire ant stings on arm.
© Texas Fire Ant Applied Research and Education Program.

Tricolored heron (*Egretta tricolor*) chick being attacked by fire ant workers.
© Bart Drees, Texas Fire Ant Applied Research and Education Program.

Ship rat (*Rattus rattus*) invading a fantail (*Rhipidura fuliginosa*) nest.
Courtesy Nga Manu Images.

Rock Islands, Republic of Palau, Palau, Asia Pacific.
© Jez O'Hare

'Focus on invasive species as drivers of biodiversity loss ...'

The Super Sucker in Kaneohe Bay, Oahu. The Nature Conservancy has partnered with the State of Hawai'i and the University of Hawai'i to create the Super Sucker to remove fast-growing, alien algae (Hawai'i's worst invasive species problem) from coral reefs. The Super Sucker is a barge containing a large suction pump with long tubes that divers use to suck water and hand-collected algae off the reef and onto a sorting tray. The water drains out of the tray, and sorters then remove the native species that were inadvertently collected and deposit them back on the reef. The collected alien algae is then bagged and distributed to local taro farmers as fertilizer.
© The Nature Conservancy

Recommendations

The workshop identified priorities for consideration by international fora including the CBD, CSD, UNGA and the UNFCCC. Suggested actions called for were:

- Recognition of the inter-linkages between climate change and invasive alien species, and their combined impacts on island biodiversity, as well as the role of invasive alien species management in mitigating the effects of climate change by enhancing ecosystem resilience and adaptation.
- Enhanced political, financial and technical support for regional collaboration and initiatives addressing invasive alien species, to facilitate implementation of national obligations on protecting island biodiversity and ensuring sustainable livelihoods.
- A mechanism or process to facilitate the sharing of experiences and lessons learned on invasive alien species management within and across island regions, particularly as a means to enhance South–South (developing country) cooperation.
- Improved linkages to overseas territories, dependencies and other insular jurisdictions, with a view to strengthening management efforts and effective funding instruments.
- Analysis of progress and lessons learned on regional island cooperation to manage the threat of invasive alien species for consideration under the CBD's review of the Island Biodiversity Programme of Work scheduled for the 11th meeting of the Conference of Parties (COP11) and further work on the Mauritius Strategy for implementation of the Barbados Programme of Action (BPOA) for Small Island Developing States.
- Focus on invasive species as drivers of biodiversity loss in the CBD Strategic Plan and post-2010 targets, as well as on significant funding to address invasive alien species and other major direct drivers of biodiversity loss on islands.

Endnotes

[1] BBC, 13 April 2010. Counting the costs of alien invasions (http://news.bbc.co.uk/2/hi/science/nature/86155398.stm).

[2] Management includes prevention, control and eradication.

[3] Financial and technical support for the workshop was provided by the Governments of New Zealand, Australia, France, Germany, Italy, Spain and the United Kingdom; the Secretariat of the Convention on Biological Diversity; the Nature Conservancy; the Pacific Invasives Initiative; the Global Island Partnership; the Global Invasive Species Programme; IUCN; and CarbonZero (Landcare Research).

[4] CBD Decisions IX/4 and IX/21.

[5] COP 6 Decision on CII (VI/23-19).

[6] The Coral Triangle includes Indonesia, Malaysia, the Philippines, Timor-Leste, Papua New Guinea and the Solomon Islands.

[7] Millennium Ecosystem Assessment 2005: Ecosystems and human well-being: Synthesis. Island Press.

[8] Pimentel, D.; McNair, S.; Janecka, J.; Wightman, C.; Simmonds, C.; O'Connell, C.; Wong, L.; Russel, J.; Zern, T.; Aquino, T.; Tsomondo, T. 2001: Economic and environmental threats of alien plant, animal, and microbe invasions. *Agriculture, Ecosystems and Environment 84*: 1–20.

[9] Donlan, C.J.; Wilcox, C. 2008: Diversity, invasive species and extinctions in insular ecosystems. *Journal of Applied Ecology 45*: 1113–1123.

[10] Island Conservation/Conservacion de Islas (http://islandconservation.org/why/# and http://islandconservation.org/slideshow/).

[11] IUCN 2009: IUCN Red List of Threatened Species (http://www.iucnredlist.org).

[12] Molnar, J.L.; Gamboa, R.L.; Revenga, C.; Spalding, M.D. 2008: Assessing the global threat of invasive species to marine biodiversity. *Frontiers in Ecology and the Environment 6*: DOI: 10.1890/070064.

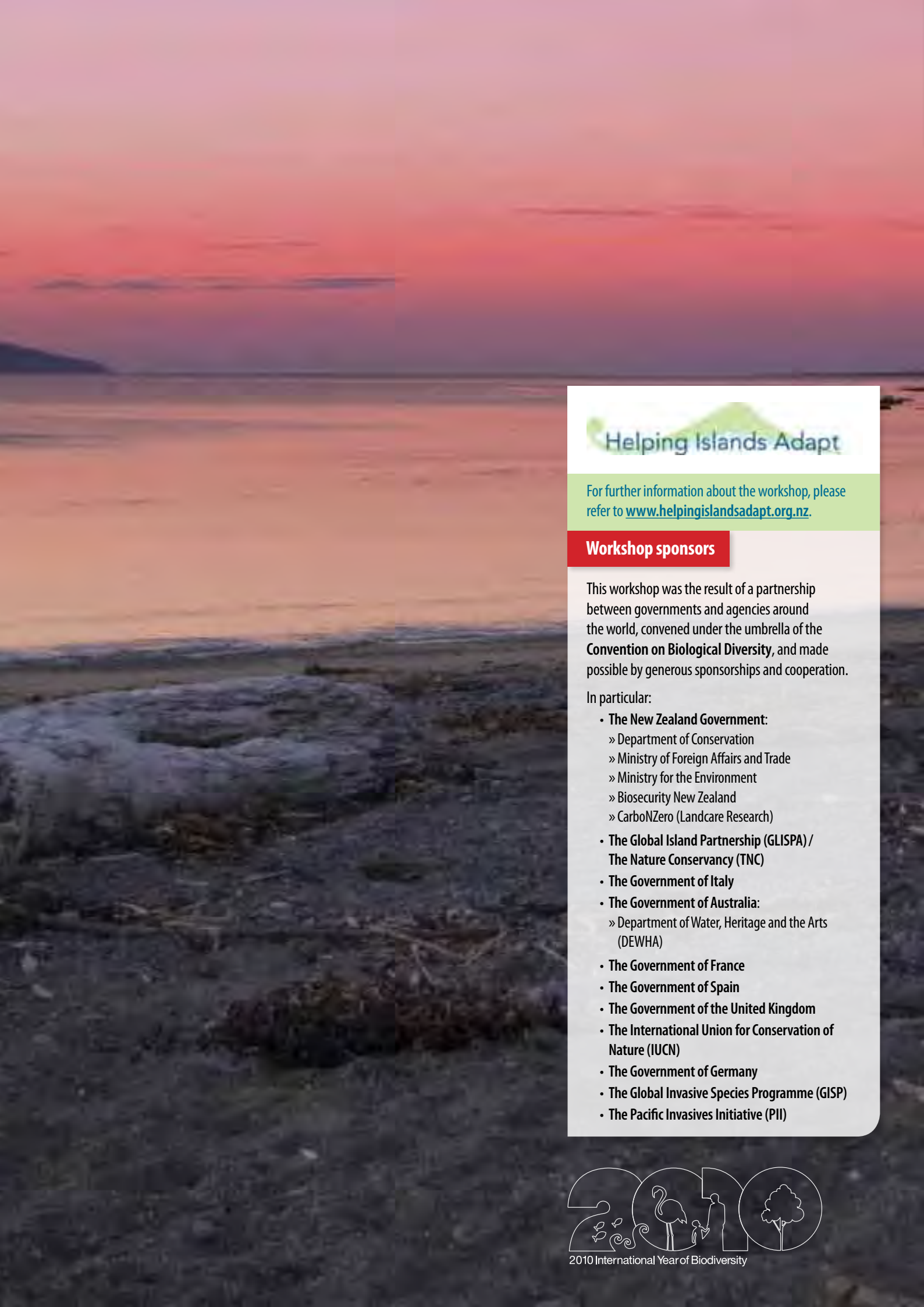
[13] Secretariat of the Convention on Biological Diversity 2009: Connecting Biodiversity and Climate Change Mitigation and Adaptation: Report of the 2nd Ad Hoc Technical Expert Group on Biodiversity and Climate Change. *Technical Series No. 41*.

[14] New Zealand Climate Change Centre 2010: Climate change adaptation in New Zealand: future scenarios and some sectoral perspectives.

[15] World Bank 2009: Convenient solutions to an inconvenient truth: ecosystem-based approaches to climate change.

[16] Dudley, N.; Stolton, S.; Belokurov, A.; Krueger, L.; Lopoukhine, N.; MacKinnon, K.; Sandwith, T.; Sekhron, N. (eds) 2010: Natural solutions: protected areas helping people cope with climate change. IUCN-WCPA, TNC, UNDP, WCS, The World Bank and WWF.

View of Kapiti Island from Pukerua Bay, Wellington, New Zealand.
© Sam O'Leary



Helping Islands Adapt

For further information about the workshop, please refer to **www.helpingislandsadapt.org.nz**.

Workshop sponsors

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In particular:

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