



Pacific Invasives Learning Network

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The monthly electronic newsletter of the Pacific Invasives Learning Network (PILN) – reporting on invasive news from PILN teams and the Pacific Invasives Partnership. Past issues are available online: <http://www.sprep.org/piln>

### Republic of Nauru – Pleasant Island



Limestone pinnacles add charm to the landscape of the island

Our PILN Soundbites for June has been compiled in the pleasant island of Nauru. SPREP, Conservation International and the Government of Nauru coordinated a rapid biodiversity assessment of the island to take stock of the diversity of life found in the marine and terrestrial habitats. A team of 12 scientists surveyed the island from 17-26<sup>th</sup> June, 2013 and preliminary findings have been presented to landowners, government and the media. A report will be made available in due course. Contact Bruce Jefferies

([brucej@sprep.org](mailto:brucej@sprep.org)) for further information and!



9th PACIFIC ISLAND CONFERENCE ON NATURE CONSERVATION AND PROTECTED AREAS

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## PILN TEAMS AND COUNTRY UPDATES

### Nauru a pleasant place to survey



There is a reason why Nauru has been called the Pleasant Island. The people are one of the nicest that you will meet. 100 years of phosphate mining has resulted in about 2/3<sup>rd</sup> of the island being denuded of native forests and biodiversity. A team of 12 scientists visited the island and undertook a mammoth task of documenting the island’s biodiversity and state of the environment. SPREP coordinated the mission in collaboration with Conservation International and the Nauru Government. Funding for this mission was provided through the Nauru Government’s allocation under the Global Environment Facility – Pacific Alliance for Sustainability. The scientists

focused on various biodiversity taxonomic groups including birds, insects, reptiles and plants (for land) and corals, fishes, economic macro-invertebrates and coral reef health (for marine). The preliminary findings below were presented to the Government and other stakeholders in Nauru.

### Nauru’s coral reefs in good condition



Marine scientists from Hawaii, Samoa and Australia assessed Nauru’s coral reefs and found them to be in top condition. Despite the low coral diversity (48 species recorded) the coral cover was near 90-100 per cent in most places. This compared favourably to places like the Great Barrier Reef Marine Park in Australia. The team also found some interesting new records including soft-corals and giant clams. The latter was thought to be extirpated from the island, with only fossil records. Fish diversity was fairly high with around 190 species but most of the fishes were grazers (fish that feed on algae and corals). The larger predatory fishes (groupers, snappers) were not so common indicating high fishing pressure of these groups.



### **Nauru's marine plants**

The marine flora of Nauru is comprised of four major groups – red, green, brown and blue-green. There are no seagrasses on the island and only the mangrove *Bruguiera gymnorhiza* was seen. Another mangrove *Rhizophora mangle* has been recorded from the island but was not found during the survey. The flora is typical of newly established habitats with mostly turf algae, lacking large marine plants. Only 40 species known so far but the number will increase following the BIORAP survey.



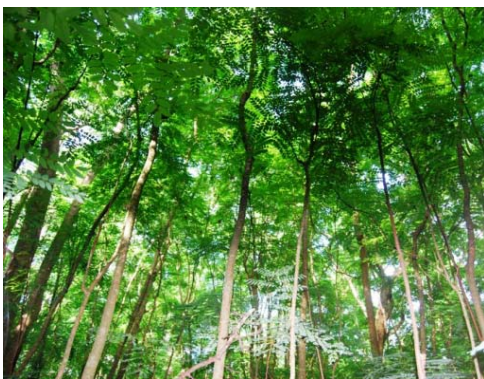
### **Nauru's reef flats survey**

The reef flats of Nauru were also surveyed and found to be similar throughout. The reef flat is narrow allowing for daily flushes of tide-pools. There is clear zoning of the reef flat with the upper intertidal area occupied by brown seaweeds. The mid-intertidal was found to be dominated by green seaweeds, and the low-intertidal area occupied by small turf in the red algal group. Introduced organisms typical in ports and harbours were found to be abundant and wide-spread throughout the reef flats of the islands. The reef crest (where the waves break) had a mixture of green, red and brown seaweeds. Sea cucumbers (*Holothuria atra*) were abundant.



### **Marine invasives in Nauru**

Survey of marine habitats that are likely to be inhabited by invasive species failed to find any serious invaders. This is interesting given the history of shipping on the island, starting with phosphate mining over 100 years ago. The bearded fireworm (*Hermodice carunculata*) is a native of the Caribbean and Atlantic Sea, was found to be very common near the Gabab Channel, which is a concern given that many young children play along this area. Barnacles were common on pilings but the lack of oysters (which is common hull-fouling species in other parts of the Pacific) is noted.



### **Invasive species of Nauru**

Nauru's isolation is by no means a barrier for invasive species. Survey has revealed that many of the forest areas are dominated by the red bead tree (*Adenanthera pavonina*). In newly established roads and paths, the bean tree (*Leucaena leucocephala*) dominated both sides of the road. The chain-of-love (*Antigonon leptopus*) was one of the few prominent creepers covering a big area. Rats, wild cats and dogs are serious pests for biodiversity and human health. Only feral pigeons are on the island and other major pests including cane toads, myna birds, bulbul, brown-tree snake and little fire ants are lacking. Biosecurity measures need to be boosted to protect the island.



### Flora of Nauru

The native flora of Nauru comprises 55 species of which 41 were found during the surveys. An additional 131 weedy species have been recorded of which 102 were found. An additional five weeds were reported for the first time from the island. Surveys, including transects, were made throughout the island. Old areas with forest cover are now dominated by the red-bead tree. Agriculture and mining over the last century have destroyed nearly the entire flora, leaving pinnacle scrub.



### Land birds

Survey of the Nauru land birds found the endemic Nauru reed warbler to be fairly abundant and widely distributed throughout. The Micronesian pigeon was found to inhabit the pinnacles, providing some refuge from hunting. The population remains small. The noddies (black and brown) are in a serious decline due to over-harvesting. Nauru is seen as a sink-area for noddies. Planting nesting trees and preserving current nesting trees is recommended.



### Nauru reptiles

Survey of the reptile fauna of Nauru revealed 6 species of lizards, 2 skinks and 4 geckos. Most of the geckos are introduced and the status of one of the skinks is not known. Blind snakes were also collected from a number of sites. The need to boost biosecurity measures to ensure that other serious invaders (cane toads, brown-tree snakes, etc.) are kept out is recommended.



### Insects and snails

Survey led by Dr Eric Edwards (NZ Department of Conservation) found many snails, complex of ant species, few moths and butterflies. The endemic bug of Nauru (*Corallocoris nauruensis*) was also collected after it was first reported in the 1960s. Nauru has only a few large bodied insects, and most of the species are widespread among oceanic Pacific islands. The terrestrial team concluded that the landscape of Nauru has been scarred but some parts are healing.

## French Polynesia update



French Polynesia implemented a long-term strategy for the management of its declared invasive species. Recently a multi-disciplinary team comprising of five persons have been tasked to spearhead the French Polynesia strategy. There are five major themes that the group will be addressing:

- Risk analysis for all the archipelago and key actions to be undertaken
- Baseline studies of all inhabited islands

- Mitigation strategies for each archipelago
- Creation of an alert network comprising of one representative of each island
- Awareness campaign for the public.

If you need any further information, feel free to contact Marie Fourdrigniez.

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## **Hawaii** (submitted by Josh Atwood)

Here are some Soundbites for Hawaii:

The Hawaii Invasive Species Council met on June 4 and approved three resolutions relating to state and federal invasive species issues. Once signed, the resolutions will be available on the HISC's new website: <http://hisc.hawaii.gov>

Resolution. 13-1: Supporting federal recognition of Hawaii's unique biosecurity needs and coordination between federal and state inspection agencies, including information sharing between federal and state inspection staff and the development of joint inspection facilities

Resolution. 13-2: Supporting the reauthorization of the Brown Tree Snake Control and Eradication Act of 2004

Resolution. 13-3: Supporting amendments to the list of injurious species under the Lacey Act

The HISC has a new support staff member, Emily Montgomery, who will be leading strategic and management planning initiatives for the HISC.

## **Kosrae Invasive Species Strategic Plan unveiled**



The Kosrae Invasive Species Taskforce is proud to unveil its 3-year Invasive Species Strategic Plan 2013-2015.

The plan was endorsed by the State Governor Lyndon Jackson last month. Governor Jackson noted that invasive species introduced to Kosrae and Micronesia threaten native biodiversity. The Governor also noted that as global climate patterns shift, so will be the distribution of invasive species, making our islands susceptible. The involvement of partners and being part of the Micronesia Regional Invasive Species Council is recognised as important in the efforts to control invasive species impacts.

The plan identifies 6 major themes: funding, public awareness, commitment, capacity building, coordination and policy and legislation. Of species of concerns the plan identifies *Chromolaena odorata*, *Clerodendrum quadriloculare* and *Leuceana [leucocephala] spp.* as of concern. The plan identifies Crown-of-thorns (*Acanthaster planci*) and the Pacific oyster (*Crassostrea gigas*) as two marine invasives for control.

The SAP establishes goals, objectives, activities, collaborators, timeframes, sources of funding, and estimated costs for control of these species. Work plans have been developed to address these terrestrial plants and marine species, linked to the KIST mission, and implemented through to the end of 2015.

## Samoa National Invasive Species Task-Team



Awareness flyer for the Water Lettuce

The Samoa National Invasive Species Task-Team (SNITT) held their second meeting on 11 June, 2013 at the Ministry of Natural Resources and Environment conference room. Important issues discussed included:

- A Cabinet submission to strengthen banning of introduction of invasive species. Highlighted the importance of enforcing existing legislation, especially the Biosecurity Act. Further highlighted the need for effective communication between the environment and agricultural ministries. Agreed the need to develop a national invasive species database, including species that are not yet in the country but may be brought in.
- GEF-PAS Invasive Species Project – appointment of a coordinator for the project is in its final stages. Activities under GEF-PAS are now underway.
- Water lettuce (*Pistia stratiotes*) awareness materials are near completion.
- Giant African Snail continues to be a problem. Request for an Agriculture representative to provide an update in a special meeting in the coming months.

## Samoa revisit invasive tree trial plots post Cyclone Evan



Talie Foliga, National Parks Manager points out a dead rubber tree

The PILN Coordinator joined local MNRE National Parks rangers in a brief survey of invasive trees that were part of a government and PII research trial prior to cyclone Evan slamming into the island in December, 2012. The results were mixed with some of the rubber trees being killed, whereas others were lost due to land-slide. Talie Foliga, the National Parks manager noted that some of the trees were washed down to the river and probably ended up near the beach (some 10 km away). There is hope that the trial will be continued.

## Tonga - First steps towards a NISSAP (source: David Moverley)



Tongan GEPAS Coordinator Viliami Hakaumotu surveys Toloa Rainforest, one of the last stands of native vegetation on the island of Tongatapu, and likely a focus of the GEPAS project.

The first workshop for stakeholders engaged and charged with determining priorities for invasive species management in the Kingdom of Tonga took place on the 18<sup>th</sup> and 19<sup>th</sup> of June 2013. This will be Tonga's first National Invasive Species Strategy and Action Plan (NISSAP) to be developed and stakeholders were present from the Tongan ministries; (MELCCNR) Environment, Land, Climate Change & Natural resources (hosts) Quarantine, Forestry, Agriculture and Fisheries, and Infrastructure. Private organizations and NGO's.

The creation of the NISSAP is being funded under the GEF-PAS "Prevention, control and management of invasive alien species in the Pacific Islands", a programme involving 10 Pacific countries focusing on the completion of objectives under the "Guidelines for Invasive Species Management in the Pacific".

In his opening address the CEO of MELCCNR, Asipeli Palaki, noted that invasive species were now a priority for Tonga and he welcomed the GEF-PAS project and participants to a fruitful workshop. Tonga is ahead of most countries in implementing their GEF-PAS project and as such have been the "trialists" for several systematic regional initiatives.

The NISSAP for Tonga is the first to utilise a desktop survey supplied by the Invasive Species Specialist Group's Shyama Pagad. The survey compiles all the published and acquired information from various databases to provide a starting point for stakeholders to decide priorities for their country. Not only does the survey summarise the biodiversity and

invasive species issues but it also encourages a safe place for this important data to be stored.

The NISSAP is being created in direct reference to the “Guidelines for Invasive Species Management in the Pacific” by using the thematic areas and objectives within a logical frame construct. This ensures that invasive species management in Tonga is structured in line with the “guidelines” and activities such as those being completed under the GEF-PAS project are directly aligned.

By completing these two initiatives it is hoped that Viliami Hakaumotu (local GEF-PAS Coordinator) can coordinate the many activities necessary to protect Tonga’s biodiversity, people and economy.

Bill Nagle and Natasha Doherty from the Pacific Invasives Initiative were contracted to facilitate the workshops and draft the NISSAP. David Moverley (SPREP’s Invasive Species Adviser) was in country at the time and assisted in the process. A special thanks to Asipeli, Viliami and Losana for providing exceptional Tongan hospitality during the visit.

## PACIFIC INVASIVES PARTNERSHIP (PIP) – NEWS

### SPREP and FAO meet



Food and Agriculture Organization  
of the United Nations



The SPREP Director General, David Sheppard met with the FAO Sub-regional coordinator for the Pacific (Gavin Wall) recently to discuss areas of collaboration. There were a number of areas that naturally lend themselves for closer collaboration and joint-partnership between the two-organisations. Both organisations currently administer two GEF-PAS projects (FAO focusing on forestry and SPREP focusing on integrated island biodiversity) and it was agreed to progress effort to ensure alignment and partnership. The PILN was also suggested as a model of island network for FAO and efforts to work together with PILN will be explored in the coming months. PILN is very pleased to assist FAO should they be establishing multi-sector agency teams to address important island issues, such as invasive species.

### Invading the 12<sup>th</sup> Pacific Science Inter-Congress

The 12<sup>th</sup> Pacific Science Inter-Congress will be held on the second week of July at the University of the South Pacific, in Suva, Fiji. The Conference Programme is out and it looks like there will be plenty of opportunities to discuss and hear about excellent research and activities on invasive species. Here are some of the topics that will be presented:

- Invasive potential of two non-native plant species in Fiji – AR Macanawai
- Release of cytoplasmic incompatible *Aedes polynesiensis* male mosquitos on Tetiaroa, French Polynesia – LK Hapairai
- New papaya disorder found in Fiji – MF Lomavatu
- Risks of shipping in the Pacific Islands – E. Anderson & B Judson
- The land snail fauna of Rotuma & Cicia Islands (Fiji): conservation and biosecurity imperatives – G. Brodie
- A regional biosecurity plan for northern Micronesia and the US State of Hawaii – J. Stanford, M. Seniloli.
- Distribution, damage and management of coconut stick insect pest in selected islands of Fiji – AD Deesh
- Tomato leafminer and its natural enemies: diversity, abundance, and damage in sprayed and unsprayed fields at Koronivia, Fiji. RR Devi
- Distribution and susceptibility of Chinese Red Hibiscus to *Erineum* mite pest in Upolu and Savaii Islands, Samoa – M Mua
- Climate change and Weed Invasions – S Taylor
- Weed invasions and biodiversity hotspots – L Kumar
- Potential of the problematic weed *Abrus precatorius* to control invasive *Coptotermes gestroi* termite in Fiji. R. Prasad
- Natural solutions – non-climate change related threats to biodiversity and ecosystems. B. Jefferies
- Isolation of potential insect biocontrol agens from Fiji soils. S Kour & UR Khurma.
- A soil seed bank study to investigate the impact of African tulip tree (*Spathodea campanulata*) infestation in the high rainfall region of Viti Levu, Fiji. R. Lagi.

## VACANCY AND OTHER OPPORTUNITIES

**The Rapid Response Facility (RRF)** invites small grant applications for UNESCO inscribed natural World Heritage sites, and tentative sites facing emergency threats to their biodiversity. The RRF is a unique small grant programme jointly operated by Fauna & Flora International and UNESCO World Heritage Centre. With a target processing time for grant applications of just 8 working days, the RRF provides rapid support to enable conservation practitioners to respond quickly and effectively to emergencies in some of the world's most important sites for biodiversity. For more information from – [www.rapid-response.org](http://www.rapid-response.org)

### **Craig S. Harrison Conservation Grants – Pacific Seabird Group**

The objective of the Conservation Fund is to advance the conservation of seabirds by providing funds or supplies to individuals from developing countries as well as those from elsewhere working in those developing countries primarily in or bordering the Pacific Ocean, (1) for conservation and restoration activities that benefit seabirds in the Pacific Ocean; and (2) to help develop within-country seabird expertise in developing countries within or bordering the Pacific Ocean.

- Send an email to Verena Gill ([verena.gill@gmail.com](mailto:verena.gill@gmail.com)) and Craig Harrison ([charrison@hunton.com](mailto:charrison@hunton.com)), briefly explaining what you want to propose and where you want to do the work. That way, you can get a rapid determination from them of whether your proposal is eligible for consideration for funding.
- (2) If they determine that your study is eligible, then fill out and send the application form, the proposal/budget, and the letter of reference, as described below, to Verena Gill and Craig Harrison. If you have questions about the Application Form, please see the Example Form that has been filled out.

Please note that applications/proposals may be submitted at any time—there is no fixed deadline for submission. All applications/proposals will be evaluated whenever they are submitted.

### **SPREP**

SPREP has a number of vacancies and tender opportunities available. Please check out the SPREP's Job Vacancies page for further information. <http://www.sprep.org/Human-Resources/Job-Vacancy/>

### **Save Our Species – Call for Proposal**

The Third SOS – Save Our Species Call for Proposal for Threatened Species Grants is now open until 17:30 (Central European Time) on 15 July 2013.

Those eligible are welcome to apply for an SOS grant for one of the following Strategic Directions:

- Threatened cycads and conifers
- Threatened sharks and rays
- Threatened Central and Western African vertebrates

SOS - Save Our Species is a joint initiative of IUCN, the Global Environment Facility and the World Bank supported by the Fonds français pour l'environnement mondial (FFEM) and Fondation Segré. Its objective is to ensure the long-term survival of threatened species and their habitats. If you are interested in obtaining more information and applying for a SOS grant, please click on to the website <http://sospecies.us6.list-manage1.com/track/click?u=26992f6c7995b36cd3b432382&id=9bc1578b0f&e=8ed35d0c9d> to learn more and download the relevant documents including the detailed Call for Proposals and Instructions for Applicants.

## INVASIVE NEWS GLOBAL

### **IUCN**

Out of 65,518 species currently assessed by The IUCN Red List of Threatened Species™, 1,173 are Extinct or Possibly Extinct and 20,219 are threatened

IUCN/ISSG has started a new series of 'Invasive Species of the Week' that will focus on extinctions in which invasive alien species were one of the major causes. The first one was on the predatory rosy wolf snail (*Euglandina rosea*)- see below for information

This week we feature the Sea Lamprey *Petromyzon marinus*

[http://www.issg.org/pdf/inv\\_of\\_week/petmar.pdf](http://www.issg.org/pdf/inv_of_week/petmar.pdf)

Sea lampreys have contributed to the collapse of commercial fisheries in the Great Lakes and are partially responsible for the extinction of three native cisco species- salmonid fish of the genus *Coregonus* - Longjaw cisco (*Coregonus alpenae*), Deepwater cisco (*C. johanna*), and Blackfin cisco (*C. nigripinnis*). Sea lamprey predation is listed as one of the causes of the severe decline in populations of the Critically Endangered (CR) and 'Possibly Extinct' Shortnose Cisco (*C. reighardi*)

Species that belong to the genus *Coregonus* (family Salmonidae) are commonly known as whitefish. Of the 61 species of *Coregonus* that have been assessed and listed on the IUCN Red List of Threatened Species nine are known to be Extinct (EX) and five are CR (two of which are listed as 'Possibly Extinct')...

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Of the 795 species that are known to be Extinct (EX) on the IUCN Red List, 324 (just over 40%) are Molluscs (281 Gastropods and 29 Bivalves). Of the 63 species that are Extinct in the Wild (EW) 14 are Gastropods.

The majority of Mollusc extinctions have taken place on Oceanic Islands and a third of them most likely to have been caused by the introduction of the predatory rosy wolf snail. Partulid snails (Polynesian tree snails) from French Polynesia have suffered the most losses with more than 50 species classified as EX and EW, most population declines occurring after the introduction of the rosy wolf snail to French Polynesia in the 1970's. The predatory rosy wolf snail is one of the significant threats to the survival of the Critically Endangered (CR) Oahu tree snails (*Achatinella* spp). Of the 39 *Achatinella* species assessed on the IUCN Red List 15 are listed as EX and 24 CR. The other threats include habitat degradation due to the spread of invasive alien plant species such as Grevillia, strawberry Guava, Lantana etc.

[http://www.issg.org/pdf/inv\\_of\\_week/eugros.pdf](http://www.issg.org/pdf/inv_of_week/eugros.pdf)

### **European Union funded Invasive ALIEN Species (IAS) Project - Assumption exceeds 7000 introduced birds**



The Assumption introduced bird eradication reached the 7000 bird mark in early June 2013. This total includes almost 90% of the Red-whiskered Bulbul population and approx. 65% of the Madagascar Fody population, as estimated by the first island-wide survey in October 2011. A team of nine staff have been stationed on the island for the last month, using a combination of continued mist-netting and increased use of firearms to target the birds. Despite the declining populations of both species the dual approach led to an increased catch rate. Both species have started breeding again after a short break but there are now estimated to be less than 1000 introduced birds left on the island. The South East trade winds are in full swing, which will make the next few months more difficult for catching efforts. A team of five will be stationed there until at least October to continue the eradication programme and bring it closer to the final phase.

### **INVASIVE SPECIES PUBLICATIONS**

- Invasive Animals Cooperate Research Centre's June edition of its Feral Flyer issue 237 is now available for reading. Some interesting bytes include: search for Australia's finest feral photos | survey on pest animals and weeds | feralscan mapping goes mobile | wild dogs in peri-urban areas | meeting announcement | predator control field day | new cane toad identification app | innovation grants funding announced | and more.
- Burgman, M. A., Yemshanov, D. (2013), Risks, decisions and biological conservation. Diversity and Distributions, 19: 485–489. doi: 10.1111/ddi.12060
- Hester, S. M., Cacho, O. J., Dane Panetta, F., Hauser, C. E. (2013), Economic aspects of post-border weed risk management. Diversity and Distributions, 19: 580–589. doi: 10.1111/ddi.12053



- Whittle, P. J. L., Stoklosa, R., Barrett, S., Jarrad, F. C., Majer, J. D., Martin, P. A. J., Mengersen, K. (2013). A method for designing complex biosecurity surveillance systems: detecting non-indigenous species of invertebrates on Barrow Island. *Diversity and Distributions*, 19: 629–639. doi: 10.1111/ddi.12056
- Gutierrez, Andrew Paul; Ponti, Luigi. 2013. Eradication of Invasive Species: Why the Biology Matters. *Environmental Entomology*, Volume 42, Number 3, June 2013, pp. 395-411(17).
- Michael Bode, Karl E. C. Brennan, Kate Helmstedt, Anthony Desmond, Raphael Smia, Dave Algar. 2013. Interior fences can reduce cost and uncertainty when eradicating invasive species from large islands. *Methods in Ecology and Evolution* DOI: 10.1111/2041-210X.12072
- Everman, E., Klawinski, P. (2013), Human-facilitated jump dispersal of a non-native frog species on Hawai'i Island. *Journal of Biogeography*. doi: 10.1111/jbi.12146
- Blackburn TM, Monroe MJ, Lawson B, Cassey P, Ewen JG (2013) Body size changes in passerine birds introduced to New Zealand from the UK. *NeoBiota* 17: 1–18. doi: 10.3897/neobiota.7.4841
- Invasion Ecology. 2nd edition by Lockwood, Hoopes and Marchetti (2013) 450 pp. published by Wiley Blackwell
- BirdLife's Global Seabird Programme – Sea Change newsletter now available to download: [http://www.rspb.org.uk/Images/sea\\_change\\_newsletter\\_tcm9-347908.pdf](http://www.rspb.org.uk/Images/sea_change_newsletter_tcm9-347908.pdf). Issue 9 features the usual update from the Albatross Task Force teams (including some exciting new work in Humboldt Current fisheries), emerging action plans on seabird bycatch in New Zealand and the EU, a piece on the recently published global review of gillnet bycatch, as well as tufted puffins and penguins (and much more)!
- Pacific Invasives Initiative News June 2013 is now out. Contents include: PIP Annual Meeting | CEPF Conference | Up-skilling | NISSAP Workshop | and more. Contact PII for a copy (pii@auckland.ac.nz)

## UPCOMING EVENTS

2013	Event	Participating Partner
<b>July</b>		
4-5th July	Biodiversity and Integrated Pest Management – Working Together for a Sustainable Future (Manado, North Sulawesi, Indonesia)	
8-12 July	Climate Change and Disaster Risk Management meeting, Nadi, Fiji	SPREP/SPC
8-12 July	12th Pacific Science – Inter-Congress. University of the South Pacific, Suva, Fiji.	<a href="http://www.psi2013.usp.ac.fj">www.psi2013.usp.ac.fj</a>
16-18 July	21st Annual Hawaii Conservation Conference, Honolulu, Hawaii Islands, USA.	
31 July – 2 Aug	NZ Biosecurity Institute National Education and Technology Seminar (NETS). Greymouth, NZ.	
<b>August</b>		
1-2 August	Workshop to identify invasive polychaetes. National Museum, Sydney. Australia.	
12 August	International Youth Day (United Nations)	
16 <sup>th</sup> August	Final date to receive conference materials from Working Groups	
20-22 August	8 <sup>th</sup> International Conference on marine bioinvasions. University of British Columbia, Vancouver, BC, Canada.	<a href="http://www.icmb.info/">www.icmb.info/</a>
<b>September</b>		
2-6 Sept	44 <sup>th</sup> Pacific Islands Forum. Majuro, Marshall Islands.	
16-20 Sept	SPREP 23 <sup>rd</sup> Meeting . Apia, Samoa	
21 Sept	International Coastal Cleanup Day (Ocean Conservancy)	
22-26 Sept.	12 <sup>th</sup> International Conference – Ecology and management of alien plant invasions. Pirenopolis, Brazil.	Pirenopolis, Brazil <a href="http://www.emapi2013.org/index.php/br/en/">http://www.emapi2013.org/index.php/br/en/</a> <a href="http://www.evpmc.org">www.evpmc.org</a>
22-27 Sept	9 <sup>th</sup> European Vertebrate Pest Management Conference. Turku, Finland.	
23-27 Sept	World Maritime Day (IMO). 2013 Theme: Sustainable Development: IMO's contribution beyond Rio+20	
26 Sep	Fiji Invasive Species Taskforce Meet	
27 September	World Tourism Day (UNWTO)	

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