

VALUE ISLAND BIODIVERSITY

It's Our Life!



SPREP
Secretariat of the Pacific Regional
Environment Programme



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2010 International Year of Biodiversity



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 The Secretariat of the Pacific Regional Environment Programme (SPREP) is the intergovernmental agency charged with the protection and sustainable management of the Pacific island region's environment. SPREP's vision is for a Pacific environment, sustaining our livelihoods and natural heritage in harmony with our cultures. SPREP works at the forefront of regional efforts to address environmental concerns by providing national-level technical advice, programme support, human and institutional capacity building and coordinated regional responses to global issues and international agreements. The SPREP membership comprises 21 Pacific island countries and territories and Australia, New Zealand, France and United States of America. The work of SPREP is guided by a 5-year Strategic Plan (2011–2015) which was formally adopted at the 21st SPREP Meeting in Papua New Guinea in September 2010. For more information regarding SPREP and SPREP's contributions to conservation, resource management and sustainable development, please visit: www.sprep.org.

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Introduction

VALUE ISLAND BIODIVERSITY *It's Our Life!*



David Sheppard, Director, SPREP

The Pacific islands region swung into action with determination to observe 2010 as the International Year of Biodiversity (IYOB).

In 2009 following discussions with participants at the Nature Conservation Roundtable held in Solomon Islands, a draft framework for implementing the International Year of Biodiversity (IYOB) in the Pacific was circulated regionally for comment and input. Member countries and territories then endorsed the framework at the 20th SPREP Meeting held in Apia in 2009 and committed to taking action to observe a Pacific focused IYOB during 2010–2011. In February 2010 the Pacific islands region swung into action to celebrate the Pacific Year of Biodiversity (PYOB).

A significant aspect of the PYOB was the number of partnerships formed through goodwill commitments. Non-governmental organizations, the SPREP Secretariat, government agencies and local communities found ways of working together for a common purpose.

The Pacific nature-inspired logo, featuring different uses of nature within the outline of

a flower, was used to convey the over-arching message that we are all intertwined with nature.

The slogan, *Value Island Biodiversity – it's our life*, resounded well with many of SPREP's Pacific island members and was used extensively in correspondence and other publications, and on stickers and posters. We were proud to see that some of our members chose to develop their own national logos which were used to gain ownership and promote biodiversity conservation across communities.

The PYOB also sought to highlight links between aspects of biodiversity conservation and climate change resilience and adaptation that were produced by the Secretariat, building on the region's efforts during the 2009 Year of Climate Change. Several countries also chose to look at messages of food and nutrition, health and well-being in the context of biodiversity conservation.

The hive of activity across the region culminated at the 10th Conference of Parties to the Convention on Biological Diversity (CBD COP10) in Nagoya, Japan. The region's COP10 communication strategy, *The Pacific Voyage*, highlighted the unique biodiversity of the Pacific islands and showcased our PYOB activities to the world. The Pacific Voyage also served to enable the Pacific islands to be heard during negotiations and discussions as one voice. And we were successful! Issues of importance to the region – invasive species, climate change, coastal and marine biodiversity and financing – were placed firmly on the negotiating table and included in the final agreement.

This magazine showcases some of the highlights of the Pacific Year of Biodiversity and honours the conservation practitioners, scientists, donors, government officials, educators, journalists and Pacific island communities who continue to appreciate, respect and value our island biodiversity as an integral part of our lives.

Value Island Biodiversity – It's our life!

D Sheppard



The Pacific Biodiversity logo has been developed as part of the Pacific island region's input to the 2010 International Year of Biodiversity.

The Pacific Biodiversity logo seeks to convey the importance of biodiversity to the health, wealth, cultures and overall well-being of Pacific island people. The greens and blues highlight the link between our marine and terrestrial ecosystems while the overall shape tries to convey the aesthetic value of biodiversity. The images in each petal highlight the intricate links between humans and the environment.

The logo was used widely across the Pacific during the Year of Biodiversity to help bring biodiversity conservation to the forefront of development planning.

Organisations and institutions were encouraged to consider using the Pacific logo on their email correspondence to help promote awareness of biodiversity conservation.

During the International Year, the logo was used with the logo for the International Year of Biodiversity. SPREP encourages countries to continue using the logo during the Decade of Biodiversity (2011–2020).

The logo is downloadable from the SPREP website (www.sprep.org) with details on how to add it to your email template.



Pseudobulweria macgillivrayi



Pseudobulweria macgillivrayi or the Fiji Petrel, locally known as the *Kacau ni Gau* is an island endemic bird of Fiji. It is critically endangered. *Kacau ni Gau* is a sea bird, presumed to nest in burrows on high ridges in the interior of the Gau island and disperse to pelagic waters far from the island.

Main threats include feral cats, rats and feral pigs. Another threat to their survival are the mishandling of grounded birds and habitat destruction from humans. There is no ecological information available on this bird. It features in the Fijian \$50 note.

Image: Hadoram Shirihai; Text: Alefereti Naikatini
©South Pacific Regional Herbarium

Notopterus macdonaldi



Notopterus macdonaldi or the Fiji Blossom Bat (known locally in Fiji as *ikua*). It is native to Fiji and Vanuatu, although its population is considered to be vulnerable. It dwells in caves and roosts in large colonies. There are only four known roosting sites in Fiji, all on Viti Levu. The roosts are often disturbed by people, and this species is very sensitive to these disturbances. There is not much ecological information available for this species, thus further research is needed to allow for better management actions.

Image: M. Mason; Text: Alefereti Naikatini
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Acmopyle sahniana



Acmopyle sahniana belongs to an exceptional group of seed bearing plants, in the family Podocarpaceae, whose exclusive occurrence in the highly humid highlands of Namosi, Ra and Naitasiri on Viti Levu of the Fijian archipelago, is an important attribution to the unique biodiversity of the region. This species of flowering plant grows as a sub-canopy rainforest tree and is locally known as *kau tabua* or *drau tabua*. *Acmopyle sahniana* is listed as Critically Endangered on the IUCN Red list because of the very small known population, there are less than 150 trees to date. Its greatest threats are from mining and logging operations.

Images: Senilola H. Tuivawa & Hilda Waqa-Saketi
Text: Senilola H. Tuivawa. © South Pacific Regional Herbarium

Brachylophus bulabula



Brachylophus bulabula is a newly described iguana species from Fiji. It brings the total number of living Fijian iguanas to three. Their closest relatives are found about 8,000 miles in America, and it is believed that they arrived in Fiji at least over 10 million years ago.

Fiji names: Vokai, Saumure

Common name: Fiji banded iguana

Conservation Status: Critically endangered in the IUCN Red List. Declared as an endemic species in 2008. Found only on Fiji's volcanic islands of Viti Levu, Ovalau, Viwa (Tailevu), Kadavu, Gau, Vanua Levu, Qamea and Taveuni. Most of the islands in which they are found were found to be represented by at least one distinct iguana lineage.

Threats: The Pacific iguanas have been adversely affected by human presence.

Two species were eaten to extinction after people arrived nearly 3,000 years ago.

The three living *Brachylophus* iguanas face threats from habitat loss and modification, and from feral cats, mongooses and goats.



Image: Paddy Ryan; Text: Nania Thomas, Scott Keogh
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Pacific Year of Biodiversity LAUNCH

It's Our Life



Kosi Latu, Deputy Director, SPREP

No matter where we live on this planet, Biodiversity – the variety of life on earth – remains the foundation of all human life. Our physical, economic, cultural and social well-being is wholly dependent on what nature and natural systems can provide.

In the Pacific, as elsewhere on the planet, our entire cultures have been determined by our natural environment and the different plant and animal species in it. What we eat and how we live have been determined by what is available in our environment. Our traditional medicines have been derived directly from nature; and our songs and dances have been fashioned by our natural surroundings.

Today, although we can purchase food, music, clothing and pharmaceuticals from almost anywhere in the world, we cannot do any of it without fuel or money derived from our natural resources. Our entire national economies rely on our Biodiversity – whether we rely on agriculture, tourism, fisheries or forestry for our earnings. In fact, there is really no getting around it – Biodiversity really is our life!

2010 has been designated the International Year of Biodiversity by the United Nations. The Year recognises the internationally agreed "2010 Biodiversity Target", which aims to significantly reduce the rate of biodiversity loss by 2010. The 2010 Biodiversity Target was agreed to by world leaders at the World Summit on Sustainable Development in 2002.

Unfortunately, 8 years later, all reports are pointing to the fact that we may have actually increased the rate of loss of biodiversity across the planet. In the Pacific islands alone, the 2008 IUCN Red List of Threatened Species™ suggests that out of 3,769 species assessed, 123 are extinct, while another 1,060 are threatened with extinction. To put these numbers in perspective, using birds as an example, 1 in every 8 birds in the Pacific islands region will disappear forever if we take a business as usual approach.

While most of us might not be directly affected by the disappearance of a bird or two from our forests or wetlands, the knowledge that entire species are disappearing under our watch should certainly give us cause to contemplate our own actions and how our human species is treating its natural environments.

In many cases, disappearing biodiversity is a result of human activity – mass logging, unrestrained hunting and fishing, coastal and coral reef destruction and poor waste management are all ways in which we contribute to the gradual destruction of natural ecosystems and loss of biodiversity.

This year, Pacific island countries have committed to celebrating the Year of Biodiversity and recognising the value of our biodiversity to us as island dwelling people. Our slogan, 'Value Island Biodiversity, It's Our Life', says it all.

The Pacific region contains some of the most unique species on Earth, with large numbers of plants and animals occurring nowhere else on the planet. Papua New Guinea, for example, contains over 5% of the world's biodiversity concentrated in less than 1% of the world's total land area. The Western Pacific is acknowledged to have the highest marine diversity in the world with up to 3,000 species found on a single reef. Our region also has three globally recognised terrestrial biodiversity "hotspots" or areas of high biodiversity that are under threat. These hotspots

occur in the Melanesian islands, New Caledonia and Polynesia-Micronesia.

Despite our recognition of the uniqueness of our natural heritage, we in the Pacific have taken our biodiversity for granted, allowing many policies and practices which contribute to the loss of our biodiversity and deterioration of our natural environments.

This year, the Year of Biodiversity, is the Pacific's opportunity to turn things around. The Year will focus on encouraging the development and implementation of policies and systems to ensure the better long-term management and use of our natural ecosystems. Good practices in biodiversity conservation will be profiled to serve as models. Countries are also committing to developing and implementing their national biodiversity strategies and action plans and to integrating these into national development plans. Efforts will be made to raise awareness at all levels of the value of biodiversity – not just in economic or monetary terms but also valuing biodiversity for its intrinsic worth - to our cultural, physical and emotional well-being.

SPREP is partnering with governments, donor agencies, academic institutes and non-government organisations to ensure that our efforts across the region are well coordinated and will have significant impact in terms of bringing about the needed changes.

To highlight our commitment and our special Pacific partnerships, a logo has been developed to complement the International Year of Biodiversity.

The Pacific Biodiversity logo seeks to convey the message of the importance of biodiversity to the health, wealth, cultures and overall well-being of Pacific island people. The greens and blues highlight the link between our marine and terrestrial ecosystems while the overall shape tries to convey the aesthetic value of biodiversity.

We hope the logo will be used widely across the Pacific during and beyond the Year of Biodiversity to help focus our work and thinking as we strive toward harmony between our immediate human development needs and the long term sustainability of our people and our planet.

With these words, I am now pleased to unveil the logo and formally launch regional efforts for the 2010 International Year of Biodiversity.



Pacific getting ready to meet New Biodiversity Targets



© Jenny Bassett

Delegates to the 10th Conference of Parties to the Convention on Biological Diversity in Nagoya, Japan 2010 have responded positively with a new commitment to "Live in Harmony with Nature" by adopting the ambitious strategic plan of the CBD.

The plan, referred to as the "Aichi Target", includes a commitment to halve, and where feasible, bring close to zero the loss of natural habitats and also to protect 17 percent of terrestrial and inland water areas and 10 percent of marine areas, measures to control invasive species and to increase awareness of the values of biodiversity.

For the Pacific, preparations to meet new biodiversity targets have already begun.

"We are pleased to welcome the Aichi Target as a guide for our region to work towards," said David Sheppard, the Director of Secretariat of the Pacific Regional Environment Programme (SPREP).

Mr Sheppard added: "The targets are within our reach as the Pacific region has worked diligently to protect our unique biodiversity. We can boast the Phoenix Islands Protected Area (PIPA) in Kiribati - the largest marine protected area on earth - now a World Heritage Site. In our Pacific region we also have the Micronesia Challenge, a commitment by the Federated States of Micronesia, Marshall Islands, Palau, Guam and the Northern Marianas, to conserve at least 30% of the near-shore marine resources and 20% of the terrestrial resources across Micronesia by 2020. The "Aichi Target" will help us strengthen our conservation work across the Pacific."

Another key outcome from the conference was the adoption of the Nagoya Protocol covering the access to genetic resources and the fair and equitable sharing of benefits from their use.

As an example, and hypothetically, if a pharmaceutical company from Switzerland discovered a plant in the Solomon Islands which could lead to a drug which cured cancer, then that company would now be obliged to share the profits arising with the country.

This historic agreement is of great importance to the Pacific region. It ensures balanced access to genetic resources on the basis of prior informed consent and mutually agreed terms. The Nagoya Protocol also ensures the fair and equitable sharing of benefits while taking into account the important role of traditional knowledge.

It is expected the Nagoya Protocol will be in force by 2015. The Global Environment Facility has offered financial support to assist with the early entry into force of this Protocol.

"We have seen history in the making," said Fiji's Ambassador to Japan, H.E Mr Isikeli Mataitoga the Head of delegation for Fiji. He added: "The adoption of the ABS protocol is a major step forward in bringing equity and fairness in the sharing of the profits made by the developed world from the biodiversity resources of the developing world, including the small island developing states."

The current challenge for Pacific countries is to translate these key outcomes into national biodiversity strategies and to secure support from the international community for their implementation.

Many substantial commitments were made by countries at Nagoya, including a commitment by

the Government of Japan of US\$2billion to help developing countries protect their biodiversity.

"For us in this region, it means working towards identifying opportunities and innovative ways to take these outcomes forward. We have agreed to the Aichi Target and now we need to see how and where we can incorporate the different objectives into work we are doing at the national and regional level in the Pacific," said Easter Galuvao, the Biodiversity Adviser of SPREP.

Ms Galuvao said that in some cases the Pacific is on track with the targets. She added: "in other cases we need to work harder in a concerted and holistic manner as a region so that by 2020 the Pacific region can once again showcase to the world what we have accomplished as part of our contribution to save our biodiversity."

These are just several of the many achievements of the biodiversity conference in Nagoya.

There were many more for the Pacific region. Representation from the region ensured a strong Pacific presence was felt and heard as they were a vocal part of the negotiations.

A communications campaign - "The Pacific Voyage" - helped ensure Pacific visibility was high and our voices heard at the gathering of 18,000 participants with promotional materials and events which highlighted conservation successes in the Pacific as well as an event which promoted the different types of communication and awareness raising activities on nature conservation.

For SPREP the meeting has helped provide the guide for future work with the different member countries as the region strives to meet the Aichi Targets to help save global biodiversity.

Emerald of the Isles

Green Snails of Manus Island, Papua New Guinea

Jaive Smare



The Manus Green Snail, also known as the Emerald Green Snail, scientific name *Papustyla pulcherrima*, is large land snail that can only be found on the island of Manus in Papua New Guinea.

It is only found in certain parts of the island, especially in the larger, heavily forested and wet interior. It inhabits areas up to 112 meters above sea level.

The snail is known as the Kikui in the local Manus language. It feeds at night and in the early morning hours of the day on the moss and fungi that grows on the underside of tree bark and also on the bark itself. It is regarded by locals as a clean animal as it does not come down to touch the ground, choosing instead to move along tree branches, leaves and grass.

It hides during the day away from the heat. Its main predator is the Manus Friar Bird species, known as the Chauka. The shell of the snail is large and an extraordinary green. It is a popular shell used in jewellery.

The snail is under threat. Overharvesting due to the good prices Manus Green Snail jewellery fetches in the local markets is one threat. The price of one Green Snail earring is K25.00. Rainforest destruction and prolonged droughts that have affected the island have also impacted on snail populations.

This snail and its shell are protected under CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) and it is listed in the IUCN Red List. The snail is also the only foreign gastropod species listed as federally endangered in the United States since 2 June 1970.

Sadly, there has never been a conservation effort program to conserve and monitor the species' numbers, so the exact health of the population of green snails is difficult to attain. Nor can we predict its future.



Rare Giant Box Crab reappears in Fiji after almost 50 years

Randy Thaman



The Giant Box Crab is rare in most Pacific Islands. It is found in rocky and coral sand areas. It has two very distinct colour forms: one tan and one with many bright maroon or red spots.

In Vanua Navakavu, just west of Suva, Fiji, the tan form is known as *Burebure matatolu* and the spotted form as *Burebure tavutonotono*. It used to be considered one of their most delicious seafoods. It, however, disappeared after the 1953 tsunami devastated the coastal area. Finally, in January 2009, both colour forms were finally rediscovered by master fisher Asakaia Balawa and his family. This was after the establishment of a marine protected area in 1997. Hopefully, the beautiful giant boxcrab will become common enough to once again grace the tables of Navakavu and other areas of the Pacific Islands!



PACINET is a partnership to promote and build the Pacific Islands region's capacity and capability in taxonomy, through the training of Pacific Islanders in taxonomy and revitalising vernacular taxonomic knowledge to work in parallel with science for conservation and sustainable development. For more information contact Dr Posa Skelton: skelton_p@usp.ac.fj or posas@spc.int.



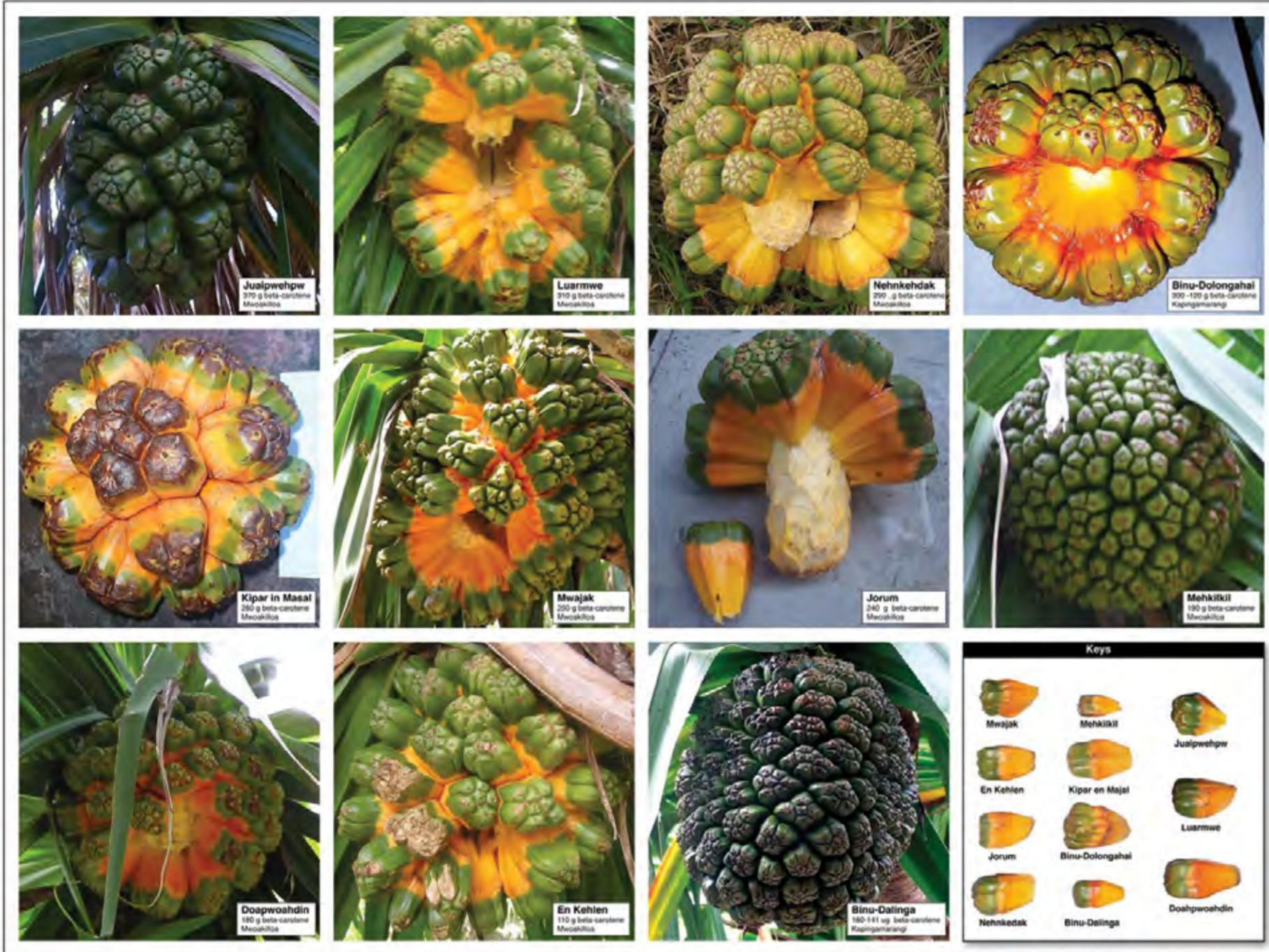
TOP: The spotted form - *Burebure tavutonotono*.
CENTRE: *Burebure matatolu* the tan form of the *Calappa calappa* reappeared in 2009.
BOTTOM: Master fisher, Asakaia Balawa shows the two forms.

MICRONESIA'S Go Local



Eat more healthy locally grown food

POHNPEI PANDANUS KIPAR/DEIPW EN POHNPEI/HELEHEU CAROTENOID-RICH VARIETIES



Grow and eat deep-colored pandanus varieties to help protect against:

- Cancer
- Heart disease
- Diabetes
- Vitamin A deficiency disorders (night blindness and infection)
- Anemia

Rice 0 µg
Beta-carotene/100g

Poadukidi oh kang kisin mwenge poh oangoahng kan pwe ren sewese perehdi:

- Kanser (cancer)
- Soumwahuen mohngiong
- Soumwahuen suke
- Souitar en Paidamhn A (vitamin A)
- Souitar en nta

Federated States of Micronesia's "Go Local" campaign encourages its island communities to eat more healthier, locally grown food as a step towards preventing excess weight and obesity.

The "Go Local" campaign is in line with biodiversity for food and nutrition and the island country's continuous effort to promote local food stock.

Biodiversity is essential for food security and nutrition and offers key options for sustainable livelihoods by providing a variety of plant and animal foods. In the Pacific, biodiversity is an element of traditional food knowledge systems. For generations, traditional knowledge of food storage, seasons for growing, preparation, the right growing conditions, and factors that influence the nutritional components of foods, have helped to sustain Pacific Islanders. These traditional foods have remained the best means to achieve a healthy balanced diet, rich in vitamins, minerals and fiber.

Dr Lois Englberger, from the Island Food Community of Pohnpei (IFCP), who attended an international symposium on "Biodiversity and Sustainable Diets: United Against Hunger" from November 3rd to 5th 2010, gave a presentation titled "Revisiting the Vitamin A fiasco: Going local in Micronesia." The symposium aimed to

mainstream biodiversity and nutrition as central to the development of sustainable diets.

Dr Englberger highlighted work done on identifying banana varieties rich in Vitamin A and carotenoid-rich foods. Her presentation also included composition work on Karat, Utin lap and other banana varieties as well as varieties of giant swamp taro, breadfruit (seeded) and pandanus, all rich in pro-vitamin A carotenoids.

Pacific Indigenous Food posters featuring photos of Pohnpei foods, people and places, was a major highlight at the meeting.

The Kaselehlie Press of Micronesia dated Monday 15th November 2010 reported Dr Englberger as stating that these foods could be promoted to alleviate vitamin A deficiency, anemia, cancer, heart disease and diabetes.

One major health problem that seems to overwhelm Pacific Islanders is obesity and excess weight.

The World Health Organisation (WHO) reported that a major reason for the rising obesity rates was an increase in imported foods. WHO stated that, in at least ten Pacific countries, more than fifty percent of the population is overweight. WHO also estimated that about forty percent of almost ten million people who live in Pacific Island countries have health disorders related to diet and nutrition.

In an effort to encourage all Pacific Islanders to start eating local foods, a regional food summit was held in Vanuatu in early May 2010. The gathering attracted well over 170 participants coming from over 20 Pacific Island countries and territories as well as stakeholders. Issues of food security were discussed.

Dr Englberger described a case study in Pohnpei, in the Mand Community, Madolenihmw, in a global health study on traditional food systems, supported by the Centre for Indigenous Peoples' Nutrition and Environment (CINE), and how the community achieved dietary improvements after a two year program of awareness, agriculture and other activities. She also explained how the Mand Community recently banned soft drinks in their community functions for health reasons.

Biodiversity links to dietary diversity, nutrition and health. A diversity of foods from plants and animals remain the best means to achieve a balanced diet, and the preferred choice for human health. Nutritional status and child growth improve with the consumption of a greater food diversity, and available research suggests that their health benefits from varied diets, particularly those high in fruits and vegetables. Although precisely identifying optimal dietary requirements remains difficult, eating a wide range of foods provides a safeguard against nutritional deficiencies. In this way, diverse diets can help in the fight against problems of under-nutrition and obesity in both developing and developed countries.



A project of the Island Food Community of Pohnpei (IFCP) with support by the Pohnpei Cancer Coalition, Global Environment Facility (GEF) Small Grants Program, Sight and Life, Centre for Indigenous Peoples' Nutrition and Environment, Australian Embassy (ANZEPF Pacific Community Response Project).
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Eventualist work by the IFCP Medical Centre.
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Note: µg (microgram) is a weight unit (one millionth of a gram). After beta-carotene is consumed, it may be changed into vitamin A (VA) in the body. Of all provitamin A carotenoids, beta-carotene contributes the most to VA status. Beta-carotene and other carotenoids develop with ripeness. The data here are for beta-carotene content of samples of ripe raw pandanus analyzed for Mwoakilloo and Kapingamarangi Atolls.

Effects of climate change on Pacific Islands

Pacific islands are extremely vulnerable to climate change. The most substantial impacts of climate change include losses of coastal infrastructure and land, more intense cyclones and droughts, failure of subsistence crops and coastal fisheries, losses of coral reefs and mangroves, and the spread of certain diseases. Climate change will affect the Pacific way of life and the sustainable development of our islands in profound ways:

Ice melting, sea rising

The polar ice caps are melting. As the ice caps melt, and the sea temperatures increase, the oceans expand, and sea levels rise. Sea level rise will affect coastal communities, particularly in many low-lying islands found in the Pacific, as well as affecting the level of freshwater available on those islands.

Extreme weather events

Climate change will intensify extreme weather events, such as storms, cyclones, floods, droughts and heat waves. In the last decade, there were three times more weather-related natural catastrophes, mostly floods and windstorms, in the world than in the 1960s.

Water shortages

Rises in sea level, and storm surges will result in saltwater entering freshwater supplies (saline intrusion), which means that there will be less water available to drink and to grow plants and food. Climate change may also alter rainfall patterns.

Increase in drought

The changes in climate will lead to more extreme weather patterns, meaning that some places will receive more rainfall, and in other areas, less rainfall, or more intense rainfall but of a shorter duration which will result in droughts. Droughts for a long period can have other effects such as placing forests at high risk from fires. Droughts will also harden the soil, thus making it less able to absorb rain when it eventually comes.

Health issues

Climate change will affect the health of Pacific Islanders. The changes in the climate, and the effects of climate change such as the increases in temperature, flooding,



Immersion of coastal areas at high tide is an increasingly common occurrence throughout the Pacific, as here in Tagua, Vanuatu.

and contaminated water, will increase the level of water-borne and vector-borne diseases, such as cholera, typhoid, malaria and dengue.

Production of food

Tropical cyclones (its increase in frequency and intensity), irregular rainfall patterns, flooding in low lying and coastal areas, saline intrusion, coastal erosion and increased rates of coral bleaching mean higher demands and unstable levels of food production. This will affect diet, income generating activities for communities and economies - in essence the food security of the Pacific Islands.

Affecting unique Pacific biodiversity

The impacts of climate change, including cyclones and changes in temperature due to drought, can lead to changes in the habitats of plants and animals, and as they die out, may result in destructive invasive species taking their place in the ecosystem. It is also likely that there will be changes in overall tuna stocks and changes to tuna migratory patterns as was seen in 1997-98 El Nino, a decrease in other fish stocks as well as an increase in ciguatera poisoning outbreaks.

Erosion

Flooding of lowland and coastal areas, and severe coastal erosion will impact on coastal infrastructure. The increased rainfall will wash soil away if not managed carefully, limiting the food and plants that can be grown, as well as affecting the health of the coral reef through sedimentation. Forestry can play an important role in watershed manage-

ment and erosion control.

Future development of Pacific Islands

The impacts of climate change will affect the sustainable development of the Pacific islands by affecting industries such as agriculture and tourism. Each year, millions of tourists visit the region for its 'Pacific paradise' image. The effects of climate change on tourism will likely include loss of beaches, degradation of the coastal ecosystems, saline intrusion and damage to critical infrastructure.

Adapting to the effects of climate change in the Pacific

Adaptation can be defined as actions or activities that people undertake to accommodate, cope with or benefit from the effects of climate change. This means highlighting what actions need to be undertaken at national and community levels to reduce its impacts.

Pacific islands are in a constant process of adapting to environment, social and economic factors. However, the rapid pace of climate change is unprecedented in comparison to past adaptation. The impacts of climate change may heavily affect the access to and use of natural resources that underpin Pacific life. Given this reliance on natural resources, it is important to strengthen the environment to cope with the impacts of climate change. Solutions must be found that respond to the climate change challenges faced by the communities, while at the same time being socially and culturally acceptable to the community.

SPREP's climate change initiatives

One of the greatest challenges to sustainable development in the 21st century is climate change. While the international community has initiated steps under the United Nations Framework Convention on Climate Change (UNFCCC) to stabilize greenhouse gases in the atmosphere and promoted carbon trading to assist with this overall objective under its Kyoto Protocol, progress has been slow.

The Secretariat of the Pacific Regional Environment Programme (SPREP) is an intergovernmental organisation working with Pacific island countries and territories to strengthen environmental management and promote sustainable development. SPREP works with 21 Pacific countries and territories as well as Australia, France, New Zealand and USA. SPREP members have identified four

main areas of work in climate change:

1. Strengthen meteorological and climatological capacities of Pacific island countries and territories to plan and respond to climate variability and extreme weather events
2. Strengthen understanding of climate variability, climate change and sea level rise through information, research and systematic observation, and clearinghouse mechanisms. Research needs to identify and assess vulnerabilities as well as impacts.
3. Support adaptation to climate change and mitigation options and coordination. This includes sourcing adequate assistance to assess and implement feasible options and access funds for implementation of activities.
4. Provide technical and legal advisory services to assist Pacific Island Parties implement the UNFCCC, to negotiate a more robust post-Kyoto framework, with environmental integrity preserved, and to ensure consistency with other international processes.

SPREP's specific climate-related activities include the Pacific Climate Change Roundtable (PCCR), Pacific Islands GCOS Programme and Implementation Plan (PI-GCOS), Pacific Adaptation to Climate Change (PACC) Project, and the Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP). For more information on these programs, visit the SPREP Climate Change Portal online at www.sprep.org/climate_change/.

Climate change facts

- The Earth's surface temperature will rise between 1.1 and 2.9 degrees celcius by the end of the 21st century (IPCC AR4, WG 1, 2007).
- A mean sea level rise of between 25-58cm is projected by mid 21st century along the coastlines of Pacific island countries.
- Higher sea surface temperatures will result in bleaching of coral reefs and retreating of mangrove wetlands, which means less diversity of fish and other animals.

THE BIODIVERSITY BUS

An innovative approach by Fiji's Department of Environment to promote biodiversity conservation



A passenger bus slowly makes its way along the serene and picturesque Suva to Nausori corridor in Fiji. Its bright orange bodywork proudly shows off messages about saving Fiji's unique and pristine biodiversity. Along its route, the bus attracts attention from young and old who ponder the messages and images stylishly printed on its side. But what is so unique about this bus is that it is environmentally friendly. The bus runs on clean-burning bio-fuel and, for the first time in this island nation's public transport industry, the bus will carry a rubbish bin during its runs.

The Biodiversity Bus, launched by the Department of Environment (DOE) at the Fiji Museum on 21st October 2010, was part of the country's year-long International Year of Biodiversity campaign. Fiji's Minister for Local Government, Housing, Urban Development and Environment, Colonel Samuela Saumatuva, launched the campaign. Colonel Saumatuva stated that the launch was a testament to his Ministry's commitment to raising awareness of biodiversity and to the fight against global warming.

He said the bus will help boost the promotion of biodiversity and also raise awareness among people living in Suva and Sausori. Col. Saumatuva was quoted in [Fijilive.com](http://fijilive.com): "This is a bold step taken by my Ministry in taking this national campaign to another level."

There are also plans to launch similar buses for the Nadi-Lautoka route and the Labasa-Nabouwalu stretch in Vanua Levu. DOE has reported that the overall plan was to take the environment awareness campaign to another level between 2010-2014. This included increasing its visibility campaign on issues such as environmental conservation, pollution prevention and a cleaner environment, which would lead to a cleaner and healthier Fiji.

The brightly coloured bus was the initiative of several local non-governmental organizations, the Government of Fiji and the Tebara Bus Company, which donated the bus to this cause.

Fiji officially launched the 2010 International Year of Biodiversity (IYB) celebrations on 21st May. Focusing on the theme, "Protect Island Biodiversity- It's Our Life" these celebrations reflected on the importance of Fiji's biodiversity to its

people's livelihood, culture and the economy. The country's plant and animal species vary and have contributed immensely to the services that the ecosystems provide and to the nation's development. DOE had the overall responsibility of preparing a National Biodiversity Strategy and Action Plan (NBSAP) for the country. In order for the Year of Biodiversity to be effective, a communications planning workshop was held, which generated the idea of a 'Clearing House' mechanism for communication materials.

All partners to the plan already had their own biodiversity-related communication materials, which included posters, stickers, t-shirts and brochures that they had previously distributed independently to target audiences with varying degrees of success. However, during the course of the workshop, participants agreed that DoE would act as a library for all of these communication materials and would coordinate their distribution when opportunities arose.

The year-long International Year of Biodiversity campaign included the production of material that went a long way in stating that Fiji is serious about protecting the country's biodiversity. These included: International Year of Biodiversity t-shirts, posters, Biodiversity TV spot, Biodiversity CD productions, art work exhibition, biodiversity float march during Hibiscus Day, and a monthly newsletter that captured activities of all partners to the International Year of Biodiversity Action Plan.

For Fiji, the future looks promising for environmental conservation as the Department of Environment, NGO's and various stakeholders make sure that their island biodiversity is preserved.



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Pacific Ocean for your children and all of us

The Pacific Ocean 2020 Challenge needs a body like the Pacific Ocean Commission to achieve its goals.



Photos © Stuart Chape

The point was raised by H. Elisekeli Mataitoga, Ambassador of Fiji to Japan, during a side event at the 10th Meeting of the Conference of the Parties (COP10) on the Convention of Biological Convention (CBD) at the Nagoya Congress Centre.

"You need a body that can bring together all the issues under sustainable development," Mr Mataitoga said.

"One that will run and keep this important challenge in the forefront of politicians and senior democrats in the region. This body should be able to front up to politicians and say, look guys, the Pacific Ocean is for your children, your children's children and for all of us and we need to keep it sustainable. It won't be a Pacific Ocean if it is not sustainable in the long term."

The Ambassador said the Pacific Ocean 2020 Challenge also needs a framework that's going to make everybody happy.

"But there will be obstacles," he warned. "There are regional frameworks that already exist in law and practice that may be considered in the long term but that has to take its shape and provision from the CBD because it is the only convention at the UN level that has a wide acceptance in this point of time."

Bernard O'Callaghan, Regional Programme Coordinator of the International Union for the Conservation of Nature (IUCN) said part of the challenge is the fact the Pacific Ocean is big.

"It's the biggest geographical feature in the world. Governments have a number of interests.

The bigger challenge is getting on the agenda of the larger countries," he said.

"The Pacific Ocean is under resourced. People tend to use it for transport, for fish. It's all about extracting resources from the Pacific."

The Pacific Ocean 2020 Challenge sets out to protect the Pacific Ocean.

"There are a whole lot of endangered species [in the Pacific Ocean]," he said. "Tuna is vitally important for the community, vitally important for the economies of the Pacific islands. Appropriate attention needs to be paid to ensure these tuna stocks stay viable for the long term."

"The Pacific Ocean is very important to the world. Two out of three fish in the world come out of the Pacific ocean so it's important that the Pacific

Ocean is managed sustainably for the long term," said Mr O'Callaghan.

The challenge involves working with a number of governments in the Pacific region where they are asked to work together to manage the ocean.

"This is so we can firstly share good long-term sustainable governance for the Pacific Ocean, share research, share education, share training, identify additional financial resources for co-operation," said Mr O'Callaghan. "Some of these changes take time; it's not going to happen very quickly. We need to build momentum over the next two to three years."

The Challenge was discussed at the Pacific Islands Forum this year. According to the Challenge's website, The Pacific Ocean 2020 Challenge aims to forge partnerships with sectors of ocean users who have not previously been fully engaged in ocean governance initiatives, and spanning geographic areas beyond the traditional 'Pacific region'.

Working with Pacific Ocean-wide coalitions for action will enable the Challenge to complement and enhance stakeholder-engaging activities already established by intergovernmental agencies and NGOs around the region, thus avoiding duplication of activities. In doing so, it is envisioned that a holistic and practical approach to ocean governance in the region will become a reality, and that the region will have a sustainable and healthy Pacific Ocean by 2020.

According to the Pacific Ocean Synthesis report, the Pacific Ocean is faced with major threats of "pollution, habitat destruction, overfishing and harvesting, and climate change."

The Pacific Ocean accounts for half of our planet's total ocean area and a full one-third of the planet's surface, making it the largest single geographic feature on our planet. This vast region supports many complex ecosystems and ocean-based economies, producing a wealth of resources for local and global consumption. However, sustainably managing these natural and economic resources presents an enormous challenge.

Island Wear Biodiversity + Fashion



It was a night of celebrations as designers in Samoa put on their creative caps to stage the first ever Vibrant Environment Wearable Fashion Arts competition. The event, held at the Manumea Hotel in early 2010, saw six entrants showcase their designs.

Based on the theme "Our vibrant environment," the entrants were awarded points based on design, creativity, natural fibres and recyclable materials. Not only did the event coincide with the 2010 International Year of Biodiversity celebrations, it also acted as a timely assistance to the Cook Islands cyclone relief efforts by the Cook Islands Community in Samoa.

Entrants were encouraged to use only natural fibres and recyclable materials in designing their wearable art pieces. There were three main awards given out. These were Our Vibrant Environment theme award, People's Choice and the Natural Fibres and Recyclable Materials award.

"We had wearable art pieces made from vines and leaves, crushed bottle caps, rubbish bags, coconuts leaves, bubble wrap and even a dress made from cans which were crushed and cut," said Ms Nanette Woonton, of the Cook Islands community in Samoa in the Samoan Observer dated 20 April 2010.

She said the creativity of the designers was amazing, adding that the audience was in awe of all the stunning creations, which took a lot of time and effort to put together.

At the end of the night, creative 11 year-old, Brianna Fruean's "Baby Blossoms" design took out the 2010 Ultimate Design award. She also won the "People's Choice" award as well as the "Our Vibrant Environment" theme award. The Natural fibres and recyclable materials award went to Jasmine Heather.



Jasmine Heather – This piece was designed by Jasmine Heather and created with help from her sisters. This won the Natural Fibres and Recycle Materials Award.



Baby Blossom – This won the 2010 Ultimate Design award, People's Choice Award and the Natural Fibres and Recycle Materials Award. It was designed by 11 year old Brianna Fruean.



Vivrodicive – This piece was created by Dane Fabricus. He produced it within a period of a week! Stunning piece using bottle tops and plastics, along with coconut leaf spines.



Flower Bomb – The design was submitted by Lau Couture – it's a beautiful piece made out of foam and rubbish bags



Spirit of the Forest – This amazing piece was created out of vines and leaves. The breast was woven twigs – it was created from goods found in the garden and was called the spirit of the forest. It was modeled to a piece read by Olga Keil, such a beautiful piece.



Vili Chan – Vili designed a halter neck dress made out of used cans – the inner of the dress is bubble wrap and the bottom parts are made of trash. It was a very beautiful entry.



New Regional Plan to Conserve Pacific Wetlands

A new draft three-year action plan has been developed outlining activities, responsibilities and targets that seek to promote and strengthen the wise use and conservation of wetlands in the region.

The new Regional Wetlands Action Plan for the Pacific Islands follows on from the original Regional Wetlands Action Plan endorsed by members of the Secretariat of the Pacific Regional Environment Programme (SPREP) in 1999. The new action plan covers the period 2011-2013 and is expected to be finalised this month.

The three-year action plan was developed during a regional workshop, which was held in August in Noumea, New Caledonia, to review the implementation of the 1999 Regional Wetlands Action Plan. It preceded a series of training sessions on implementation processes of the Ramsar Convention on Wetlands for contracting parties and accession procedures for non-contracting parties. A total of 13 Pacific island countries and territories participated.

The Ramsar Convention on Wetlands is an international agreement that commits parties to the conservation and wise use of their wetlands. There are currently five Pacific island countries that are parties to this Convention - Fiji, Marshall Islands, Palau, Papua New Guinea and Samoa. Tonga, Niue and Kiribati are expected to join very soon.

In the Pacific, wetlands are critical to the livelihood of families and communities. They have an immense value in providing fish and other foods, as well as supplying a vast range of products such as building materials, handicrafts, medicines, cosmetics and ornamentation for Pacific peoples. For our region, the conservation

and wise use of wetlands is also of global significance given that they contain among the largest variety of plants and animals in the world.

This important three-year action plan to conserve our wetlands will be circulated widely once it is finalised and the implementation of this plan will be carried out through coordination between national governments, SPREP and its regional and international partners.

While the new three-year action plan was the key outcome of the workshop, there were also other benefits that arose from the gathering. There was the sharing of experiences and exchange of information between participants on national issues, and challenges and priorities relating to the conservation and sustainable use of wetlands. There is also now a better understanding of the benefits and required steps for joining the Ramsar Convention, as well as a better understanding of implementation issues, processes and procedures for the contracting parties to the Ramsar Convention on Wetlands. Further to that the participants attending were also able to learn about conservation measures, lessons and initiatives in New Caledonia and could make new contacts with French experts working in this field.

Pacific Wetlands Conservation

FACT SHEET



The Ramsar Convention on Wetlands

The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.



There are presently 158 Contracting Parties to the Convention. As of January 2009, some 1,828 wetland sites, totalling 169 million hectares, are designated for inclusion in the Ramsar List of Wetlands of International Importance.

Seven SPREP Members are Parties to Ramsar: Australia, Fiji, Marshall Islands, New Zealand, Palau, Papua New Guinea and Samoa. A number of other SPREP Members are in the process of joining, including Kiribati and Nauru.

The Ramsar Secretariat is based in Gland, Switzerland.

The Ramsar-SPREP partnership facilitates regional and national activities aimed at promoting the wise use and conservation of wetlands in the Pacific region.

The Ramsar Regional Officer based at SPREP provides support and advice for the Pacific Island Countries in joining the Convention, but also in implementing the "wise use" principle of the Convention.

What are the key issues for Ramsar in the Pacific?

- Conservation and wise use of coral reefs, mangroves, freshwater lakes and other freshwater ecosystems.
- Maintaining the ecological functioning of wetlands and ensuring their cultural and traditional use is maintained for the benefit of present and future generations.

- Managing wetlands and minimizing actual and perceived threats to their ecological character.

Why is the Pacific important?

The South Pacific region has been a long-term priority for the Ramsar Convention.

Our region shelters many of the most endangered wetland ecosystems on the planet, including coral reefs (among them the Great Barrier Reef), mangroves, sea-grass meadows (a vital ecosystem for the survival of the dugong) and rare island wetlands.

Yet, the Pacific is currently the most under-represented region to the Convention. Of the 158 parties to the Ramsar Convention, only 7 are from the Convention's Oceania Region. The region, as defined by Ramsar, contains 29 eligible nations and territories.

World Wetlands Day

Every year, on 2 February, the world celebrates the anniversary of the signing of the Ramsar Convention as World Wetlands Day.

Since 1997, people from all sectors of society have undertaken actions aimed at raising public awareness of the value of wetlands and the importance of the Ramsar Convention.

The Ramsar Secretariat sponsors a wide range of activities, including children's art contests, lectures, nature walks,

Some concepts as defined by the Convention

Wetlands occur where the water table is at or near the surface of the land or where the land is covered by water. These areas can be natural or human-made, and represent (according to the definition above and including some coastal areas in some countries), an estimated 1.3 billion hectares. That's around 12% of the Earth's land surface!

Wise Use Principle is the Ramsar Convention's approach for integrated management. It recommends a "big picture" approach to ecosystems management, including not only ecological aspects, but also human, social, economic, institutional and cultural factors. The wise use principle seeks to find a balance between human needs and the conservation of biodiversity to achieve sustainable development.

and the launch of new national programmes. It also provides posters, brochures, activity kits and other promotional materials to parties to help promote the day and assist in coordinating activities.

World Wetlands Day activities are held throughout Ramsar member countries in the Pacific, with SPREP sponsoring a number of wetlands day events at the regional level.

For more information on World Wetlands Day, visit: http://www.ramsar.org/www/wwd_index.htm



Life Changing Water Pipes



By Mari Moertvedt

"I always feel tears coming, when I talk about this project. We are very happy, because people now can go out on their doorsteps and turn on the taps to get water. Some of us even have a shower," says Chief Esau of Ekiye village on North Efate Island in Vanuatu.

Ekiye village has gone through a great change in the last year as a Global Environment Facility (GEF) Small Grant Programme (SGP) project, implemented by the United Nations Development Programme (UNDP), has helped the village install running water. Located only 40 minutes drive from the developed capital Port Vila, this village was without running water for a very long time, and they are grateful that the project was initiated to help them.



Many local communities in Vanuatu use springs as their water sources, but for Ekiye it was especially challenging because their source was threatened by sea level rise. They also had to wait for low tide to collect their water and there would often be too little for them to be able to do their domestic duties like cooking, washing and bathing kids.

"I have 5 children and it used to be hard before when I had to go and collect water to bath and cook for them. Now it is a lot easier because I have a water sealed toilet and bathroom for my family to use," says Marie, one of the women in the village. "We go to the market in Port Vila to sell and we often come back late. Before we had to collect water far away after this, but it is better now, because we have water close to our homes."

A big change

Seventy five (75) households now have water taps in their home and this also encourages the villagers to build more secure houses to be prepared for cyclones and other natural hazards.

"At the moment many of us are starting to build



houses with bricks, because we can use our water and mix it with the sand. Before we had no idea about any of this," Chief Esau said.

The GEF-SGP project implemented by UNDP also receives technical assistance from the New Zealand International Aid and Development Agency (NZAID). The villagers have also learned how to manage project funds and through NZAID have been trained in plumbing to be able to build bathrooms and toilets for their homes.

"They were trained to do basic plumbing systems and also with the funding it has assisted them to help manage the funds of the project. Now they are generating income through water fees to help them sustain their water for a long time," Ms Leah Nimoho, National Coordinator SGP Vanuatu, explains.



Water is a human right

One of the targets of the seventh Millennium Development Goal on Environmental Sustainability is to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation and this is an aspect of the project in Ekiye.

"Access to clean water is a human right and the Ekiye community has a need to get clean water for the people that are living in this village. That is why the programme here is assisting them to provide them with this," Ms Nimoho said.

The Pacific Islands



21 Island Countries and Territories spanning 30 million sq. km. of the Earth's surface

One Ocean

21 Island Countries and Territories

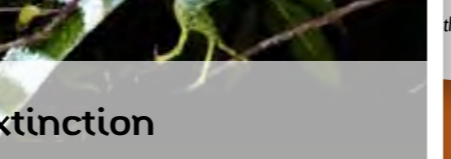
Spanning 30 million sq. km. of the Earth's surface

Containing a total land mass of 550,500 sq. km.

Providing 60% of the World's tuna fisheries

Supporting over 1/2 of the World's whale species

National Marine Mammal Sanctuaries totalling over 10.9 million sq. km.



The Pacific: responding to climate change through our biodiversity

Many People



9.8 million inhabitants growing daily by 506 people

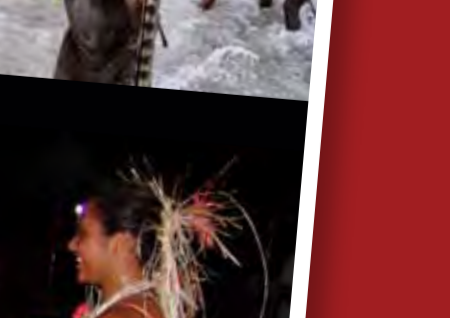
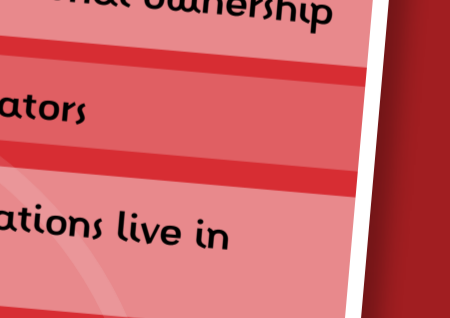
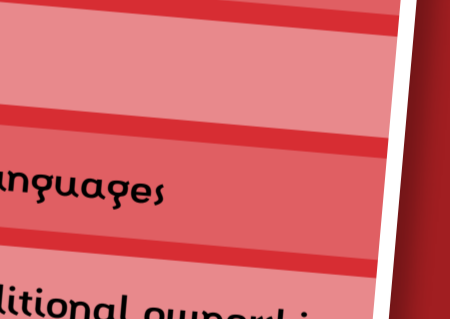
Diverse cultures

At least 1,000 distinct languages

90% of land held in traditional ownership

Skilled seafarers and navigators

40% of some island populations live in urban areas



Unique Plants and Animals



More endemic species than anywhere else on Earth

Almost 7% of the Planet's biodiversity is in Papua New Guinea, in just 0.6% of global land area

Over half of the 69 reptile species found across Micronesia, Fiji and Polynesia are endemic

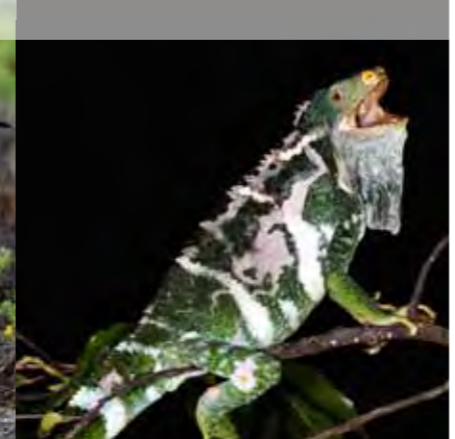
Contains 1/4 of the World's endangered birds

Over 4,200 described fish species are found across the Pacific islands region

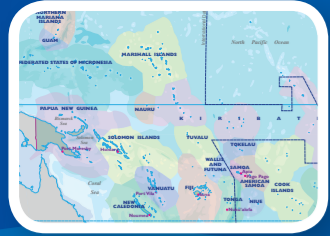
1060 species known to be threatened with extinction



Unique plants and animals: the Pacific



1060 species known to be threatened with extinction



Polynesia, Melanesia challenged

The Micronesian Challenge is a shining example of a growing movement around the world to protect marine resources, vital to everyday life. And Micronesia's friends in the South Pacific, Polynesians and Melanesians, have been invited to join.

Speaking during a press conference at the 10th Conference of the Parties to the Convention on Biological Diversity (CBD COP10) in Nagoya, Japan, Willy Kostka, of the Micronesia Conservation Trust, said there has been some interest from Polynesia, especially Samoa. "We have provided information about the Micronesian Challenge to our colleagues in the South," he said.

"I think there is interest in Samoa and American Samoa to do what's called the two Samoa initiative and one of the things we're going to be doing as part of our work with the Pacific islands management protected community is to increase that interest by providing more information."

Mr Kostka said there is a grant available which will allow for the exchange of information between the two Samoas and the Micronesia region so they can start the two Samoa initiative.

At the press conference, achievements for the Micronesian and Caribbean Challenges were highlighted. They include:

- Recognition of the Caribbean Challenge's Caribbean Biodiversity Fund, a US\$40 million regional endowment created as part of the 8 country Caribbean Challenge;
- The leadership, financing and partnerships for implementation which have seen significant progress since 2006 in the Micronesia Challenge, a five-country protected areas and livelihoods commitment.
- Efforts towards a Western Indian Ocean Partnership at COP 10 involving the East Coast of African and the islands of the Western Indian Ocean.

Mr Kostka said the Micronesian Challenge was inspired by Fiji's declaration that 25 per cent of their marine resources would come under effective management. "But because Fiji was just one nation, maybe they didn't get as much exposure," he said. "Perhaps if they had collaborated with nations of the South Pacific in Polynesia and Melanesia, they could get more profile for their initiatives there."

Kate Brown, Coordinator of the Global Island Partnership (GLISPA), said the Micronesian and Caribbean challenges have political leadership and momentum behind them. This has come about because "political leaders have finally realised that this is really important, particularly in terms of livelihoods in their countries.

"So it's much, much bigger than programmes or projects that currently happen between countries. There is nothing to stop Polynesia or Melanesia doing exactly the same thing, working together with Micronesia on a similar type of initiative. It's really going to come from within the countries themselves."


Rob Weary, of the Nature Conservancy, Caribbean Programme, agrees. "The countries have stepped forward and identified what their financial needs are to meet these goals that they have set for themselves," he said. "They have gone beyond what the initial CBD goal was of 10 percent realising their livelihoods depend on it."

Jason Spensley, Life Web programme officer, applauded the initiatives. "One of the most exciting things about these challenges is the fact these aren't just relatively isolated challenges in corners of the world but this really is increasingly becoming a movement," he said.


"There is a challenge in the Indian Ocean, Western Africa is talking about a challenge, so this is a movement we truly see as catalyzing the implementation of the convention in general

and I think it is truly and inspirational prospect for the convention."

The Micronesia Challenge is a commitment by the Federated States of Micronesia, the Republic of Palau, Guam, and the Commonwealth of the Northern Marianas Islands to preserve the natural resources that are crucial to the survival of Pacific traditions, cultures and livelihoods. The overall goal of the Challenge is to effectively conserve at least 30 per cent of the near-shore marine resources and 20 per cent of the terrestrial resources across Micronesia by 2020. The challenge exceeds goals which call for countries to conserve 10 per cent of terrestrial and marine resources. The event was attended by Pacific leaders at COP 10.





Degeneria vitiensis



Celebrating Fiji's Unique Biodiversity

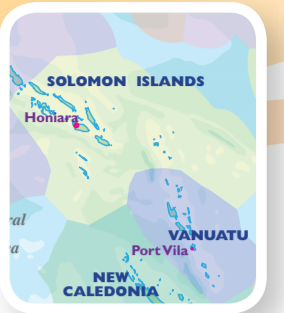
Degeneria vitiensis is a relic of one of the oldest flowering plant families of Gondwanaland – a continental piece predating the dinosaurs. Its restricted distributions from the coasts up to the mountain ranges of Fiji's three largest islands, Viti Levu, Vanua Levu and Taveuni, is an important contribution to Fiji's unique biodiversity. *Degeneria vitiensis* is a common large tree that on the southern parts of Viti Levu is referred to as masiratu and other parts of Fiji as vavaloa. It is a local timber species that can potentially be used as an ornamental plant. The clearance of forest trees for agriculture and human habitation are two of the greatest threats to this species and it is listed as Vulnerable on the IUCN Red list. The flower of *D. vitiensis* is illustrated on the Fiji \$5 note.

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pacificnet

Images & Text: Senilolia H. Tutuawa
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Biodiversity for Development and Poverty Alleviation



For the Solomon Islands, the theme for their IYB campaign was "Biodiversity for Development and Poverty Alleviation." Celebrations were held in Honiara on Friday 21st May 2010, the International Biodiversity Day, through music, games and educational presentations for all Solomon Islanders to learn about the importance of biodiversity. Throughout the year some of their campaigns looked at living things, including humans, and their dependency on each other for survival.

Rence Sore, Permanent Secretary for the Ministry of Environment, Conservation and Meteorology, said the Solomon Islands was well known for its high level of biodiversity.

He said: "Solomon Islands has a very rich biodiversity with many unique animals and plants living in our lagoons, oceans, rainforests and mangroves. Many Solomon Islanders rely on their natural environment for their livelihood – they fish in the sea for food, grow crops to eat, use plants for medicine and harvest trees for building and fuel. Our biodiversity is under threat from things like logging, over-exploitation and pollution."

The Solomon Islands has a vast diversity of animals and plants, some of them found nowhere else on the planet. One particular species is the Solomon Islands skink, one of the largest skinks in the world. Due to its low reproductive rate, this species is also at risk due to pet trade, losses caused by predation by introduced species and extensive loss of forests. The skinks rely heavily upon trees for food and shelter.

Reported in the Solomon Star dated Thursday 20th May 2010, Solomon Islands rainforests were included in the top 200 in the globally outstanding list for rainforests in 2008, but the irony is that it is also listed as one of the

10 most threatened forest ecosystems in the world.

Officials from UNDP, on the day, pointed out that UNDP is working closely with the Government to promote sustainable livelihood and protection of vulnerable marine and terrestrial areas, to achieve the targets with the Millennium Development Goals.

The country's marine ecosystems were also facing impacts as a result of rapid population growth, unsustainable fishing practices, damage from pollution and the impacts of climate change.

Pacific Island Forum Fisheries Agency's Director General N.F. Tanielu Su'a was pleased to support the celebrations in the Solomon Islands stating that biodiversity was very relevant to FFA's work at their regional headquarters here in Honiara. He added: "Tuna is a very important species for our economies, biodiversity, food security and culture here in the Pacific Islands. FFA helps countries sustainably manage, control and develop their tuna fisheries. We must take care of our fish, which are also our future."

As one William Atu, Program Manager for SI's The Nature Conservation (TNC) put it, "Biodiversity is our life. It is our investment bank. It is nature's greatest gift," sentiments which were shared by all in the Melanesian island country in their campaign throughout the year 2010.



Left top to bottom: Children answer questions about biodiversity for a special children's quiz.

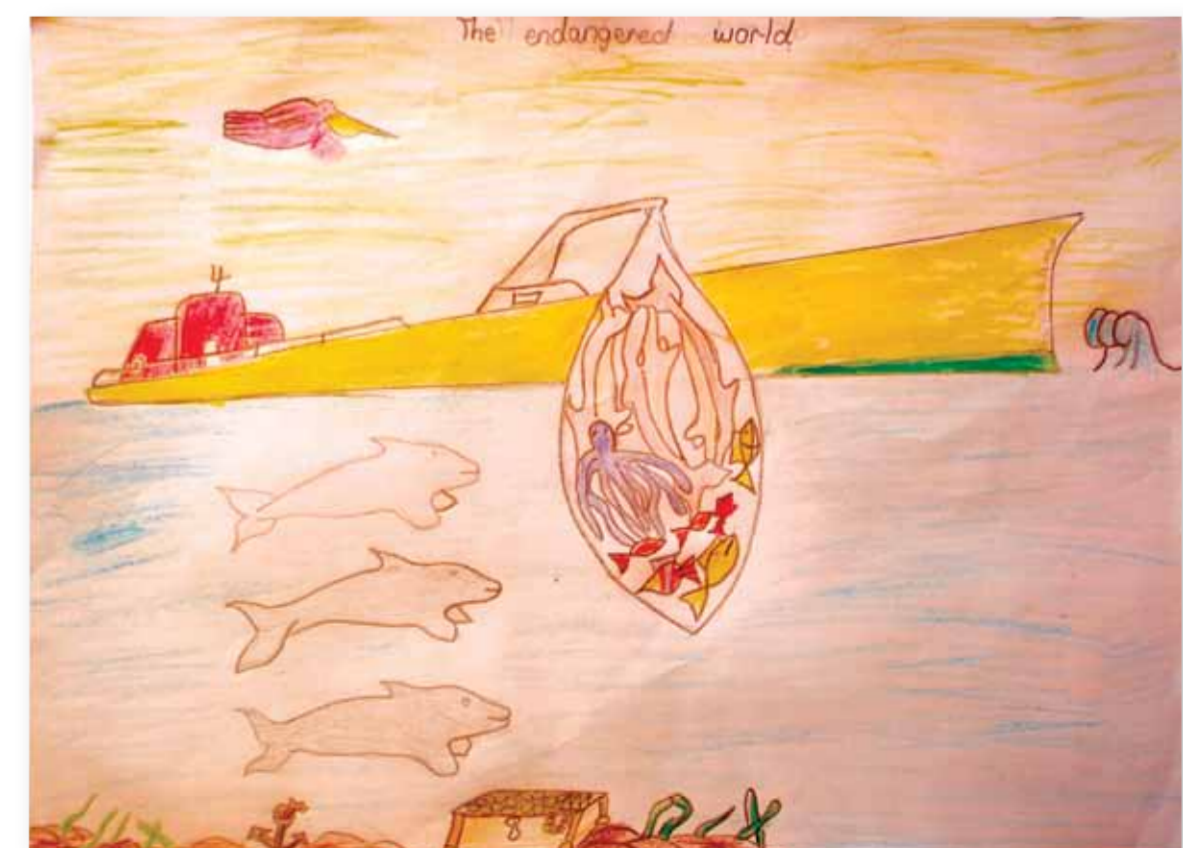
One News Television films the educational presentations to schoolchildren in Honiara.

Observer Officer Ambrose Orianiha'a described the different fish species fished and eaten in the Solomon Islands.

A winner in the biodiversity quiz accepts her prize.

Children visit the FFA stall to learn more about marine biodiversity.

Right: One of the many entries in the schoolchildren art prize for best art highlighting the importance of biodiversity for our life.





The Pacific Voyage at the 10th Conference of the Parties (COP10) to the Convention on Biological Diversity (CBD)

Easter Galuvao, SPREP Biodiversity Advisor

The 10th Meeting of the Conference of the Parties to the Convention on Biological Diversity was held from the 18th to the 29th October in Nagoya, Japan. About 15,000 delegates representing parties, UN Agencies, NGOs, Inter-Governmental Organizations, indigenous and local communities, private sector, and academia attended the meeting.

The Pacific delegation to COP10 included 13 Pacific Island State Parties: the Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Republic of the Marshall Islands, Nauru, Papua New Guinea, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu. A total of about 49 participants represented the Pacific at COP10, which included Ministers, Ambassadors, senior government officials, CROP agencies and NGOs.



PNG Environment and Conservation Minister, Benny Allen opening the Pacific High Level Breakfast Meeting

Key Outcomes

COP10 was considered to be one of the most successful meetings in the history of the CBD particularly with the adoption of the ABS Protocol which has been under negotiation for some years. Key outcomes adopted at COP10 were:

- **Strategic Plan 2011–2020 Living in Harmony with Nature**
- **Strategy for Resource Mobilization**
- **The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization**

The Pacific Voyage media team at COP10

Meet two Pacific journalists who have been tremendous as part of SPREP's media team to the CBD COP10.



They are Ms Bernadette Carreon, Editor and Senior Reporter of the *Palau Horizon*, a weekly newspaper in Palau and Mr Mata'afa Keni Lesa, Editor of the *Samoa Observer*, a daily newspaper in Samoa. Without the two dynamic Pacific reporters, the success of the Pacific Voyage media campaign at COP10 would not have been possible. Both are go-getters, straight forward and determined individuals whose commitment to provide daily coverage of the events taking place were unmeasurable.



Both reporters attended a two day media training coordinated by the CBD Secretariat, which helped provide them with insights into the issues at the conference. It was also planned the experiences learnt at the CBD COP10 be shared with their fellow media colleagues upon return to their own countries. Ms Nanette Woonton, SPREP's Public Relations and Communications officer, said: "what was achieved by the journo's was amazing, they did a great job and the amount of publicity and interest generated by the Bionesian blog was immense. We can only build on these achievements in the years to come."

UNESCO funded Ms. Bernadette Carreon to attend the CBD COP 10 as part of a partnership with SPREP that involves further capacity building in several Pacific Island countries. Mata'afa Keni Lesa was funded by the CBD Secretariat at part of a project undertaken by them. He agreed to work with SPREP on the Pacific Voyage campaign.

We would like to congratulate them for a job well done.



Left: Delegations from Papua New Guinea;

Below, left to right: A youth from the Go 4BioDiv, an international youth forum showcasing some of their work as delegates watch on; Papua New Guinea delegate chairing the Pacific Voyage side event; Question and answer session during the Pacific Voyage side event.

Pacific Highlights

ONE PACIFIC VOICE:

Speaking as One Pacific Voice at COP10 gave the Pacific tremendous publicity, visibility and recognition. Country delegates took turns to voice issues from the Pacific on a number of key topics such as climate change and biodiversity, where the Pacific was very firm on its position for the application of precautionary measures on the issue on "geo-engineering". Best practices and successes from the Pacific were also highlighted during interventions by Pacific delegates to demonstrate commitment and achievements by Pacific Island Countries to biodiversity conservation.

PACIFIC VOYAGE:

All the Pacific COP10 activities were implemented as part of the Pacific Voyage which was a concept that came out of the COP10 preparatory meeting to portray the vision and commitment of the Pacific to maintain, pre-

serve and sustainably manage its natural environment while at the same time develop and implement appropriate and effective solutions to address key conservation challenges and threats. Activities included Pacific daily meetings, Pacific focused side events, an information booth displaying Pacific biodiversity and conservation information, coordination of Pacific statements and media and web-based outreach activities.

MEDIA AND OUTREACH CAMPAIGN:

SPREP, in partnership with UNESCO, funded one female journalist from Palau who joined the Pacific Voyage Media Team and helped with the media coverage. Additionally, a second journalist from Samoa was funded by the CBD Secretariat to work with their media team and he also provided assistance with the Pacific Voyage Media outreach. One

of the key highlights of the media outreach campaign was the Bionesian Blogspot which was created by SPREP to post daily updates from the COP10 including interviews with Pacific delegates, new items and releases from the different side events and meetings where the Pacific participated. The blogspot was one of the popular Pacific Media activities at COP10 and it can be accessed on www.bionesian.blogspot.com

EFFECTIVE COORDINATION:

SPREP took the lead role in coordinating the Pacific Voyage in close consultations with the various Pacific Island Country Parties and also in collaborations with key partners, which consisted of CROP agencies, NGOs, individual experts, and GLISPA. The support and commitment of all those involved was incredible and this is a key lessons which should be continued in the future.

The Pacific successes and achievements at COP10 were possible because of the commitment and dedication of all those involved. Funding to implement the Pacific Voyage was provided by the EU ACP MEA Capacity Building Project, Fonde Pacifique, UNESCO and the CBD Secretariat. Technical advice and support were provided by SPREP and our collaborating partners.

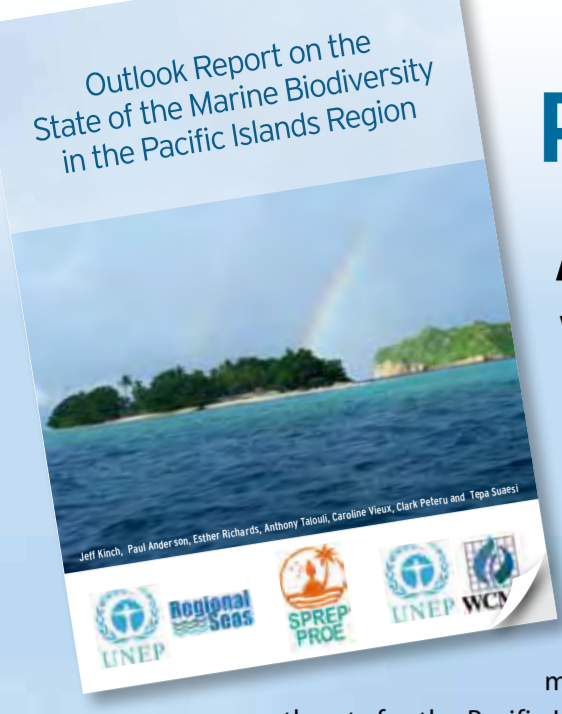
The next major challenge for the Pacific is start to plan for the implementation of the outcomes of COP10. SPREP will continue to play a key coordinating role in close collaboration with partners and the Pacific Island Country Parties to implement the key outcomes of the COP10 and achieve the Strategic Plan targets by 2020.



Left: Posa Skelton and Seema Deo taking time out to pose for the camera.

Below, left to right: H.E. Carlos Sali, Ambassador to German from Palau, Bilung Gloria Sali and Tiare Holm, PEW Palau; Davd Sheppard, SPREP Director, launching the case study on the Ocean Voices Lessons from the Whales for the CBD during the Pacific Voyage Side Event.





Pacific Marine Biodiversity Report

An Outlook Report on the State of the Marine Biodiversity in the Pacific Islands Region is now available. The report provides a clear overview of key areas of the marine ecosystems contained within a combined Regional Exclusive Economic Zone of approximately 29 million square kilometres.

Major marine environmental issues identified in the Pacific islands region include impacts from environmental change, habitat loss and the effects of coastal modification, invasive species, fishing pressure as well as land based marine pollution.

The Pacific islands report provides a summary of pressures, state and responses to these threats for the Pacific Islands region as well as the responses by our Pacific islands countries and territories.

Published by the Secretariat of the Pacific Regional Environment Programme (SPREP), it is hoped that by identifying a common set of indicators in this report we could see the replication of positive responses and approaches utilised by different regions in addressing these issues.

"The report has been prepared by SPREP for the UN Environment Programme (UNEP) and the UNEP World Conservation Monitoring Centre as part of a global assessment by the UNEP Regional Seas Programme. It is a very concise overview of the available data on a number of indicators that reflect the current state of regional marine biodiversity," said Stuart Chape, Programme Manager - Island Ecosystems, SPREP.

"It looks at the pressures on our marine biodiversity, the current state of key areas and the response that is being undertaken at all levels – in our community as well as on a national and regional level."

The report concludes that the lack of human, technical, institutional and financial capacity in the Pacific Island Countries and Territories is a key factor in environmental management. Lack of capacity leads to poor monitoring and highlights the need to build capacity and provide appropriate resources and funding for data collection, management and analysis for environmental monitoring in the Pacific Islands region.

"The 2010–2015 SPREP Strategic Plan identifies Environmental Monitoring as a strategic priority for SPREP and the region over the next five years," said Mr Chape. "We are aware of the importance of marine biodiversity to the Pacific way of life, including livelihoods. In order for SPREP to strengthen the role of Environmental Monitoring in our region, securing appropriate funding and other resources are top priority."

The contents of the report include a chapter on "Pressures" which covers Fish Stocks, Nutrient Loading, Port Activity, Sea Surface Temperature and CO2 Flux. The second chapter on State encompasses information on Mean Tropic Index, Marine Fauna – Red List and Acidification. The responses to these issues lies in the Chapter on Response which covers the Fish Stock Agreements, Global Programme of Action (GPA) Implementation, National Adaptation Programmes of Action for Climate Change, Marine Protected Area establishment and Ballast Water Regulations.



Mangroves in the Pacific

FACT SHEET

What are mangroves?

Mangroves are amazing trees which live halfway between the land and the sea. Unlike other plants, mangroves grow with their roots in an alternating environment of sea water and fresh water runoff from the land.

Mangroves usually grow in flat muddy ground through which it is hard to walk. Many think of mangroves as insect-ridden areas hardly worth saving. As a result, mangrove areas are sometimes used as rubbish dumps or their trees are cut down and the land filled in for housing or other development.

But, mangroves play an essential role in many coastal environments. As well as providing food and shelter for a large number of birds and marine animals, mangroves protect and build up coastlines.

Why are mangroves important?

Mangroves provide an important source of food for fish and other marine creatures

Mangroves take up nutrients (dissolved food material) through their root systems. Many of these nutrients are dissolved in water running off the land. Like other plants, mangroves convert the nutrients to plant material by using sunlight in a process called photosynthesis. Parts of the mangrove, such as fallen leaves, rot to form decomposed material called detritus.

About 10 tonnes of mangrove leaves are produced each year by one hectare of mangrove trees (about four tonnes per acre).

The decaying leaves and detritus form a constant supply of food for crabs, prawns and some fish. Many large fish live in, or visit, the mangroves to feed on these smaller creatures. Much valuable organic material is "exported" to other areas such as nearby seagrass beds and coral reefs.

Mangroves are a valuable and renewable resource for coastal people

Mangroves are used to provide dyes, or colouring material, and wood for cooking and building. They can continue to

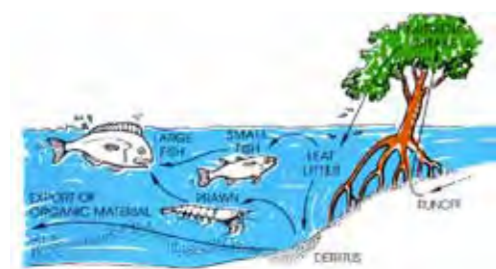


be used this way forever, as long as the quantity of mangroves cut down is no more than can be replaced by natural growth. This quantity is called the sustainable yield.

Mangroves provide a home for many marine species used by people as food

Many important food species use the mangroves for at least part of their life-cycle. Mangroves provide:

- permanent homes for some species such as oysters (which grow on mangrove roots) and mud crabs;
- nursery areas (areas where the young grow up before moving out to deeper water) for animals such as prawns. Some fish such as the mangrove mullet stay in mangrove nursery areas for three to four years before moving out to the sea to spawn; and
- feeding areas for larger fish (like the black-spot sea perch) which visit mangrove areas to feed on smaller fish and other creatures.



Mangroves protect and build up shorelines

Mangroves form an underground network of roots which hold the earth together and prevent it from being washed away. Above the ground the roots act like a comb by trapping particles and sediment. In these ways mangroves build up and extend shorelines. Mangrove seedlings grow in the newly-formed ground as the mangrove front advances toward the sea.

Mangroves provide shelter for plants, animals and birds

Like the mudskipper, a small fish which can climb trees. The mudskipper is just one of many unusual creatures living in mangrove areas.

Ways of protecting mangroves

Mangrove areas have been used as rubbish dumps or places to fill in and use for housing development. This destruction is usually called reclamation – the claiming back of useless wasteland. But, as we have seen, mangroves are certainly not wasteland!

Mangroves are also destroyed by indirect human activities – activities which alter the environment in which mangroves live. The mangroves in the diagram below have been killed by the construction of a coastal road. The road has cut off the flow of freshwater runoff from the land. As a result, the water to the left of the road is too salty while the water to the right of the road contains too much fresh water.



The mangroves in the above example could have been saved by building the road inland behind the mangroves, or perhaps by burying pipes under the road to allow the flow of tidal sea water and freshwater runoff.

Mangroves are particularly affected by climate change; changes to the tidal flow or salinity of the water in which they live; construction, which causes sediment to build up

or to be washed away from mangrove root systems; and pollution from chemicals, oil or sewage in the water.

We should regard mangroves as a vital part of the coastal environment. Mangrove areas can be managed by cutting down no more than the sustainable yield and by designating some areas as protected reserves.

Mangrove species and distribution in the Pacific

The word "mangrove" is used to refer to over 90 different types of trees, many of which are unrelated.

Mangroves occur throughout the Pacific region with a general decrease in species diversity as one moves from west to east. There are some 33 different species of mangrove in Papua New Guinea, 8 in Fiji, and only 3 in American Samoa (the easternmost limit of indigenous mangrove occurrence in the region).

Three broad types of mangroves often found in the Pacific are:

- White mangrove (*Avicennia*)**
This mangrove has underground cable-like roots growing from the trunk. Slender, pencil-like roots called pneumatophores grow up from the ground.
- Red mangrove (*Rhizophora*)**
This mangrove has stilt roots which grow like arches from high up in the tree. The stilt roots enable it to survive changes in the level of the mud and sand.
- Orange mangrove (*Bruguiera*)**
This mangrove has buttress roots – thick vertical slabs – growing around the trunk. Knee-like pneumatophores grow up above the surface of the ground.

2010 Vision Pasifika Media Award

Winners

Pacific Journalists have been commended by the Secretariat of the Pacific Regional Environment Programme (SPREP) with the announcement of the winners of the 2010 Vision Pasifika Media Awards. These awards are a tribute towards recognising the role of Pacific reporters in raising awareness of environment issues.

- **Ms Rachna Nath** of Fiji TV has won the Television Category for her news piece titled – *"Lomawai Coastal Village Conservation"* which was broadcast on Fiji One.
- **Mr Rajan Sami** won the Print Category for his piece titled – *"Making Conservation Fun"* which was printed in the Air Pacific Volume 4 In Flight Magazine.
- **Ms. Maggie Boyle** was awarded the journalism student category for her piece titled – *"Saving a Landmark"* that was featured in the *Wansolwara* publication.
- **Wansolwara**, the USP Journalism student publication, was awarded winner of the "Overall" category as well as receiving a special commendation for their role in helping to develop environmental journalism in the Pacific.

"Congratulations to the award winners for 2010," said Ms. Nanette Wootton, Media and Public Relations officer for the Secretariat of the Pacific Regional Environment Programme.

"We received a lot of excellent entries and we are encouraged by the environment reports coming from the region. This award was launched to ensure Pacific reporters were honoured for the important role they play in helping to raise awareness as to the importance of our environment."

The theme of the 2010 Vision Pasifika Media Award was – "Value Island Biodiversity – it's our life" in commemoration of the International year of biodiversity. SPREP was overwhelmed by the amount of entries received and are pleased by the strong interest in this award, however for the past two Vision Pasifika Media Awards, no Radio entries have been submitted.

"We understand the powerful role of Radio in our Pacific region and we encourage radio producers to submit entries for the next Vision Pasifika Media Award."

The *Wansolwara*, University of the South Pacific Journalism Student Publication was awarded a special commendation for their role in helping to develop environmental journalism in the region. It is also the second consecutive time that USP Journalism has won the SPREP Vision Pasifika Media Awards.

Head of USP Journalism, Shailendra Singh said the award recognises USP Journalism and *Wansolwara* for commitment to and excellence in environmental reporting. The award was result of teamwork by a number of students, he said.

"Instilling an appreciation and understanding of the environment is part of the journalism curriculum at USP. We work closely with organisations like SPREP, WWF and SeaWeb to educate and empower students in environmental reporting. We want them to take their skills and knowledge to the newsroom and organisations they work for."

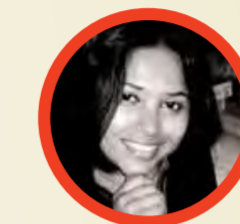
SPREP would like to acknowledge and thank all Pacific reporters that submitted their entries for the Vision Pasifika Media Award 2011 and to acknowledge the role of the judging panel.

"We know the judging panel would have had a difficult time given the high caliber of entries, and we are grateful for the time they took to judge this award. We had a member from the Biodiversity area of SPREP, Conservation International Pacific Islands Program and PACNEWS. Thank you very much for your time," said Nanette Wootton of SPREP.

Each category prize was USD 500 each. The launch of the Vision Pasifika Media Award for 2011 will be announced next month.

MEET THE AWARD WINNERS:

MS. RACHNA NATH Award winner of the Television Category



Rachna is a Television Journalist, News Presenter and Current Affairs Producer with Fiji Television, having joined the station in 2006. She was recently awarded the Pacific islands News Association Award for the Young Pacific Television Journalist Award in 2009 and the PINA Media Summit in Vanuatu, winning an internship with Television New Zealand.

"I have naturally developed a passion for the environment and that is displayed through the environmental conservation stories I have done over the years covering areas of Climate Change Adaptation, Biodiversity, Wetlands, Forestry and Marine Conservation by portraying the stories of struggle, survival and adaptation in Pacific Island Countries. I'm very glad and honoured to receive this award on behalf of Fiji TV, and I dedicate the award to my hardworking news and current affairs team."

MR RAJAN SAMI Award winner of the Print Category



"My passion for writing stems from a childhood love of reading and words. Growing up, my parents refused to buy a TV but I could pick a new book each week. I continued the love affair by working in magazines and have recently made the leap from lifestyle media to developmental communications, taking a writer and sub-editor role with the Secretariat of the Pacific Community in Fiji in January. Besides words, I love food, travel and nature-based activities." **SEE ARTICLE P.24**

MS. MAGGIE BOYLE Award winner of the Journalism Student Category



Maggie completed her journalism major last year and is currently working towards finishing her major in Politics. Over the last couple of years she has juggled student life and full time work as for the last four and a half years she has held the position of a multimedia journalist working for national and regional broadcaster, Fiji TV. In this role she covered stories from headlining news to regional documentaries such as the World Press Freedom Day. Last year she moved into a regional communications role with the Australian Agency for International Development, AusAID, based in Suva.

"As a journalist, persistence to get a balanced, fair and accurate story has been an invaluable quality. It's a quality I recommend to any student aspiring to journalism. When it comes to climate change stories, persistence needs to pay off when you're racing against the clock for entire communities particularly in the Pacific." **SEE ARTICLE P.25**

USP Journalism Student Publication **WANSLOWARA** Award winner of the Overall Category and Special Commendation



Wansolwara has won several Environmental Journalism awards, including the SPREP 'Vision Pasifika: Media Awards' 2009, and the coveted Journalism Education of Australia (JEA) award for a story on Fiji Water covered from an environmental angle. USP won the JEA award against competition from top journalism schools in Australia and NZ. Last year *Wansolwara* ran a cover story calling on regional governments to ban shark finning last year. Recently Hawaii banned shark finning "We have been advocating all these issues for a number of years and we will continue to do so," said Head of USP Journalism Shailendra Singh.



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Photo by Stuart Chape.

Making Conservation FUN

By Rajan Sami, Winner of the 2010 Vision Pasifika Media Award – Print Category
Published in *Air Pacific* Vol.4 2010 pp 83–87



At Shangri-La's Fijian Resort & Spa on Fiji's Coral Coast, kids, their parents, as well as members of the surrounding communities learn how to preserve the country's biggest resource – its unspoilt natural environment.

"When I grow up, I want to be a coral gardener," writes young Christopher Guirguis from New South Wales in the Yanuca Island Marine Centre's guestbook. He is one of the many children who pass daily through the brightly-coloured educational centre at Shangri-La's Fijian Resort & Spa on Fiji's Coral Coast.

It is here where they meet Mereoni Mataika or "Oni" as she is better known, their guide to all things green and beautiful in the tropics. As Marine Sanctuary Manager, thirty-year old Oni makes a passionate advocate for Fiji's natural environment.

Hailing from Nairai Island in the Lomaiviti archipelago in the country's east, she got her start in environmental conservation at an early age. "As a child, I was always trying to save animals, plants and trees," she says.

Inspired by Greenpeace's anti-whaling efforts during her childhood, she gained an environmental science degree before volunteering and working at a number of green not-for-profit organisations including WWF and Partners in Community Development Fiji (PCDF). It was during her stint at PCDF that Oni attended a two year development programme

with the Seattle-United States-based Earth-Corps, a non-profit organization for young adults who teach best practices in conservation techniques. This experience proved to be an eye-opener for the young Fijian.

"We were digging drains, doing river restoration work and getting our hands dirty," she says.

It dawned on her that for many of the kids from developed countries such as the United States, touching the soil wasn't an everyday occurrence, "unlike in Fiji, where we basically roll around in the mud," she says.

"The experience made me go into environmental education and working with children."

that touch on this theme and which includes a visit to the marine centre. "During Earth Day Thursday, we run activities that children can learn from such as nature scavenger hunts, making origami or other crafts using recycled paper and learning more about coral reefs. Children are always fascinated with sea creatures and are eager to come back with their parents to take them on a tour of the centre, as well as participate in the activities provided," Oni says.

Besides providing the resort guests with a more enriching holiday experience, the marine centre works closely with local communities towards a more sustainable future for generations to come.

an opportunity to not only learn about conservation but also be actively involved in activities that help the environment."

One such activity is the fish house building exercise where families make structures out of concrete and dead coral, which is then placed along the shore to help regenerate fish and coral populations.

"The fish houses are pretty special as it gives guests a reason to come back and see their progress. We made three fish houses. We feel great. Thank you," wrote the Osborne family from Sydney in the centre's guestbook.

Another weekly feature is Earth Day Thursday when the resort focuses on activities



Best in the world

At the marine centre, guests of the popular family resort learn about coral reef conservation, a hot topic for Fiji, which is home to some of the best snorkelling and diving in the world.

"We make an effort to involve our immediate in-house guests and especially the children of our Little Chiefs Club," says Oni. "It's a place where guests and interested community members can find out more about the different ecosystems that exist on most islands in the Pacific and how forest, mangrove and coral reef ecosystems are interconnected. Through our marine centre, we hope that families that visit our resort have

Saving a Landmark

By Maggie Boyle, Winner of the 2010 Vision Pasifika Media Award – Student Category



Published in *Wansolara* June Issue 2010 p14

Once known as the "Pool of God," Nubukalou Creek is a stinking rubbish-infected eyesore. But it can be saved.

The Hudson, the Thames, even Venice's canals are renowned landmarks that give their metropoli a landscape envied the world over. So what does that have to do with Fiji? Well, Fiji's capital Suva has a waterway running through it.

While not much comparison can be made in terms of size, (the Hudson is 507 kilometres long; the Thames 346 kilometres) Nubukalou Creek, which runs through Grieg Street, Thomson Street, Renwick Road and Stinson Parade, is a landmark on its own right, with a rich history behind it.

The waterway may not be much to look at now, but it was once admired and revered. Literally translated, Nubukalou in Fijian means Spiritual Pool or Pool of God—"Nubu" meaning pool and "Kalou" referring to a spiritual authority or god.

Linguist Dr Paul Geraghty, an authority on the Fijian language, wrote about Suva's famous creek in the early 1990s. "The ford across the Nubukalou is or was till lately marked by a blasted stump just above the bridge; the reason probably of the crossing being so low down was that it was convenient in the old days as it was a favourite fishing ground of the Fijians."

Dr Geraghty traces the first native settlers of a Melanesian Suva against the backdrop of European settlers. He writes that the creek was not only a popular fishing ground but also a centre of attraction as a scenic addition to the sprawling Suva Township in 1839.

Sadly, centuries after its beauty defined its legacy, Nubukalou Creek is nowadays more commonly referred to as an eyesore and a stink. Neglected and abused, what was once an environmental asset has been relegated to a dumping ground of all sorts, including raw sewage.

In 1990, calls were made to cover up the creek. The Suva City Council (SCC) at the time moved the motion that the creek be covered up with concrete and turned into a pedestrian space. That motion was supported by a local architect who suggested comprehensive landscaping of the area, with the establishment of an entertainment space and business outlets to complement it. The proposal was abandoned after strident opposition from some Suva residents.

Robin Palmer, a member of the Fiji Institute of Engineers, is among those vehemently opposed to covering the creek. Last year Palmer made a presentation to the Suva City Council (SCC) about turning the whole of Cumming Street into a pedestrian mall based on his experience with pedestrian areas in the United Kingdom. This was

the result of research done years before by the council in its attempt to improve Suva's congested traffic and adopt sound environmental practices. Palmer told *Wansolara* that while a pedestrian area is a good idea, there is no need to cover up Nubukalou Creek.

"The creek is a natural feature. Granted, it doesn't look very good at present, but it should be preserved. The cost to keep the creek is in my opinion a lot less than the cost of covering it up and maintaining it," said Palmer.

"We have a natural feature; use it and with careful architectural design make it work to our advantage. Look at Venice as an example of how attractive it can all be, not to mention how it would go miles towards putting Suva and in that respect Fiji on the map," said Palmer.

Recently the creek's retaining wall collapsed. The local government special administrator for Suva and Lami at the time, Marica Hallacy, said that restoration works were progressing in two phases.

"At a cost of \$220,000, the first phase will be the new retaining wall. The second phase will involve landscaping the back of the wall and the footpath on Terry Walk," said Hallacy.

She expressed concern about the lack of civic pride that led to the downfall of Nubukalou Creek. The myriad of shops and cafes lining the creek dump their waste straight into the creek. Which is why, on any given day, the landmark is strewn with rubbish. People and businesses have rarely, if ever, faced prosecution for dumping rubbish into the creek so much so that it has become an accepted practice, with no one batting an eyelid when it occurs.

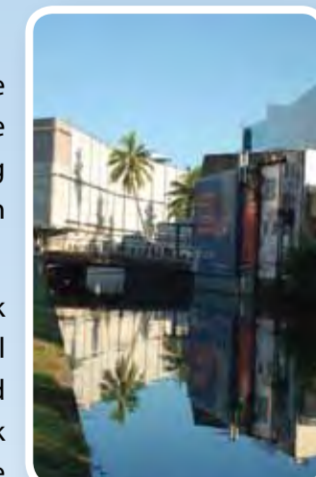
Hallacy reveals that the waters of the creek have been tested and the results confirm high levels of organic pollution or human faeces. The levels of organic pollution in the creek suggests that Suva has, in effect, an open sewer running across it. This could explain the disappearance of marine life from waters that were once teeming with such organisms. A writer to *The Fiji Times*, recalling the creek's glory days, said recently: "Huge schools of daniva (sardines) congregated upstream,

followed by predatory fish. When the water was clear, we could spot huge trevally coming upstream in search of prey. Some fish still make it upstream. Sometimes they can be seen floating belly up downstream, overcome by the pollution. Even the hardy qitawa, which used to congregate in their hundreds lower down at the Metropole during low tide, have all but disappeared."

According to the SCC, the Fiji Ports Corporation is responsible for the management of the water in the creek. But when *Wansolara* contacted the Fiji Ports Corporation, the general manager for Technical Services, Waqa Bauleka, said that the corporation only looked after the water around ports.

"It's not our responsibility to clean the creek, it's the council's. We are only responsible for the water past Stinson Road and that's what we look after," said Bauleka.

Hallacy is, nevertheless, hopeful that restoring the glory of the creek is within reach. "Notices have been served, in particular to the Water Authority of Fiji to stop the discharges into the creek. An alternative to re-divert them into the sea needs to be considered" she says.



We want to consider the waterway for sports recreation. There has been interest expressed before to provide boat rides as well as to have another floating restaurant."

But while there seems to be some action in tackling the pollution and restoring the waterway, Hallacy admits that the financial commitment goes beyond what the council can afford.

"The council would really like to have business houses make financial contributions for this development. At present the council is funding all these works on its own."

Conserving this natural waterway, restoring it to its rightful glory isn't just about expressing civic pride in the capital. It's about honouring the past, representing the city and country's history through well-preserved national landmarks.

Something the great leader Ghandhi said about how humankind treats forests are very much applicable to Nubukalou Creek: "What we are doing to the forests of the world is but a mirror reflection of what we are doing to ourselves and to one another."

Ocean Voices

Lessons from the Whales for the CBD

Humpback Whales in Oceania

Humpback mother and calf in Tonga 2009. Photo: Doug Allan.



Photo: Doug Allan

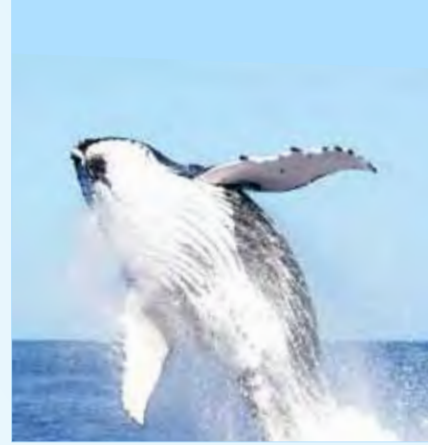
The humpback whales (*Megaptera novaeangliae*) of Oceania, and their story from whaling to whale watching, illustrates the changes in society's values and a shared responsibility for their recovery. Importantly, lessons from Oceania's humpback whales illustrate the commitment and investments needed to ensure trends of biodiversity loss are reversed in line with CBD goals; and the appropriate time scales for this to take place for such long-lived species.

The sixth Conference of the Parties to the Convention on Biological Diversity adopted the Strategic Plan for the Convention in Decision VI/26. The Decision says "Parties commit themselves to a more effective and coherent implementation of the three objectives of the Convention, to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth."

Whales and dolphins hold a special cultural significance throughout Oceania but their stocks have been depleted largely due to over-exploitation. Many large whales are seasonal visitors, migrating from Antarctic feeding grounds each summer to over-winter and breed in the waters of Pacific Island Countries and Territories (PICTs). In the 20th Century, at least 200,000 humpback whales were killed in the Southern Hemisphere. Many of these were Pacific island-born humpback whales killed on their feeding grounds in the Southern Ocean, in particular over a four-year period between 1958 and 1962.

Although they did not generally profit from the exploitation of the whale stocks in the 19th and 20th Centuries, whale-watching now provides a significant economic benefit for many Pacific countries. Greater knowledge of the economic value of whales, combined with strong cultural ties, is motivating efforts to ensure their conservation in many Pacific islands. The Secretariat of the Pacific Regional Environment Programme (SPREP) puts forward this paper as an example of stakeholder collaboration and commitment aimed at the conservation and protection of humpback whales in the Pacific Islands region.

The highly migratory behaviour of humpback whales requires active partnerships between governments, inter-governmental organisations, non-government organisations, communities and tourism and fisheries sectors to achieve effective conservation. In 2000, Parties to the CBD committed to the reversal of the global trend of biodiversity loss. Pacific island governments have responded to this call by taking a range of national and regionally collaborative actions to protect their remaining cetacean populations.



Collaborative Conservation Measures Taken by PICTs

PICTs have recognised that they need to take urgent and coordinated action in a number of ways for the conservation and management of humpback whales in the region. In addition to their support for the IWC's global moratorium on whaling (through the Forum Leaders' Meeting in 1998), the countries and territories of the Pacific Islands have taken a number of steps to collaborate in the conservation and recovery of depleted populations of humpback whales and other cetaceans.

(A) SANCTUARIES IN THE PACIFIC ISLANDS REGION

Since 2001, the following SPREP members have declared whale sanctuaries in their waters:

Australia, Cook Islands, Fiji, French Polynesia, New Caledonia, Niue, Papua New Guinea, Samoa, American Samoa, and Vanuatu.

In April 2010, Tokelau also announced its intention to declare a marine sanctuary within the Tokelau Exclusive Economic Zone (EEZ). The sanctuaries together total over 11 million square km of ocean.

Although significant progress has been made on conservation of cetaceans at a national level, gaps in protection measures exist. PICTs that have declared whale sanctuaries and/or developed a management plan for their national sanctuary are limited in their ability to implement them. This is not due to a lack of commitment or skill, but to insufficient capacity and funds. Consequently, these initiatives often lack the management framework and resources to maximise their conservation value.

(B) CETACEANS AND NATIONAL BIODIVERSITY STRATEGIC ACTION PLANS (NBSAPS)

Whales and dolphins are frequently mentioned in National Biodiversity Strategic Action Plans (NBSAPs) of Pacific island countries. While NBSAPs fulfil member country commitments under the CBD, for most countries, the plans are general and non-binding.



Marine Mammal Sanctuaries in national waters in the Pacific Islands

(C) CMS MEMORANDUM OF UNDERSTANDING FOR THE CONSERVATION OF CETACEANS AND THEIR HABITATS IN THE PACIFIC ISLANDS REGION

Most of the Pacific Island states whose waters are overwintering grounds for humpback whales are not members of the IWC, which was essentially established to facilitate whaling. They have instead, looked to the Convention on Migratory Species (CMS) as the framework for an international conservation instrument for the protection of whales and dolphins in their waters. CMS addresses many of the other threats to whales and dolphins than hunting, and has proved to be an attractive vehicle for PICTs in cetacean conservation.

The CMS Memorandum of Understanding for the Conservation of Cetaceans and their Habitats in the Pacific Islands Region, which took effect when it was opened for signature at the annual SPREP Meeting in September 2006, has now been signed by thirteen Pacific countries, one territory and seven collaborating organisations.

Signatories to the MoU have adopted an Action Plan that is based on the Pacific Whale and Dolphin Action Plan 2008-2012, developed and endorsed by all SPREP governments. The Action Plan is focused on mitigation of the numerous human-induced threats to cetaceans in the region.

(D) PACIFIC WHALE AND DOLPHIN ACTION PLAN

SPREP has coordinated the development and implementation of a series of plans for the conservation of marine mammals since the early 1990s and the SPREP Whale and Dolphin Action Plan 2008-2012 is the current iteration. The Plan, which is part of SPREP's Marine Species Programme, guides the activities of government agencies and NGOs in 21 countries and territories over an area of more than 30 million square kilometres and has been endorsed by all SPREP members.

(E) OCEANIA HUMPBACK WHALE RECOVERY PLAN

In 2009, in collaboration with the South Pacific Whale Research Consortium, SPREP proposed the development of an Oceania Humpback Whale Recovery Plan (OHWRP), to provide a framework for a coordinated effort to ensure recovery of this species within the Oceania region through appropriate science-based management. The OHWRP aims to contribute to implementation of eight of the nine key theme areas of the SPREP Whale and Dolphin Action Plan 2008-2012, and is also intended to enhance capacity building across the Pacific island region. Current and potential threats to humpback whales in the region have been outlined and prioritised. This proposal has been endorsed by SPREP member governments, and work is underway.

Pacific Island countries and territories have taken significant actions at regional level, e.g., by endorsing the SPREP Whale and Dolphin Action Plan; at international level, e.g., CMS Pacific Cetacean MOU; and in many cases at national level, e.g., establishing EEZ whale sanctuaries to conserve and manage cetaceans, including humpback whales. These measures have demonstrated some success but clearly need more resources for implementation over a realistic timeframe for recovery of these long-lived species.

Whale and Dolphin Watching and Economic Benefits for the Pacific Islands

Whale and dolphin-watching is a good example of the economic benefits that can be gained from conservation. In 2006, worldwide expenditure on whale and dolphin watching was estimated to be more than US\$1,500 million. Despite the extreme depletion of humpback whale populations in the Pacific Islands, whale-watching is booming. A recent review of whale-watching tourism in the region describes a 45% annual growth in the number of whale-watchers between 1998 and 2005. It is estimated that in 2005 the total economic benefit from whale and dolphin watching tourism in the Pacific Islands region exceeded US\$21 million.

Whale-watchers come to the Pacific Islands region to enjoy both its cetaceans and its natural beauty. Of the 21 PICTs, 14 are engaged in some form of whale- or dolphin-watching, including the Cook Islands, French Polynesia, Guam, New Caledonia, Niue, Papua New Guinea, Samoa, the Solomon Islands, and Tonga. Seventy percent of inbound tourists say that humpback whales play a major role in selecting Tonga as their holiday destination.

There are concerns, however, over the potential adverse impacts of repeated exposure of humpback whales to boats, particularly in critical calving and resting areas. Recognising the value of whale-watching to several PICT economies, and the need for a precautionary approach, SPREP and key NGO partners have advocated for well-managed and sustainable whale-watching throughout the region. In 2008, at a workshop convened by SPREP and NGO partners, the Pacific Island Regional Guidelines for Whale and Dolphin Watching were developed for application throughout the Pacific Islands region. These guidelines provide a regional consistency in the management of whale watching to best practice international standards.

Whale and dolphin watching tourism is increasing in the region. Pacific Island states and communities are still paying the price for past unsustainable whaling, which limits the economic opportunities from this form of tourism.

The Legacy of Commercial Whaling

Although early whalers in sailing vessels were unable to catch faster-swimming baleen whales such as humpback whales, it is clear that the impact of these early whalers on slow-moving sperm and southern right whales was profound. Even now, nursery grounds of female and juvenile sperm whales are rarely reported from Pacific breeding areas such as Kiribati, where hunting was particularly intense. However, by the early 20th century, the use of explosive harpoons and motorised catcher boats saw even the largest and fastest whale species being hunted. The development of factory ships resulted in whalers extending their range to newly-discovered Southern Ocean feeding grounds of the great whales. Carcasses could now be processed at sea without the need for land stations.

More than two million large whales were killed in the Southern Hemisphere between 1904 and 2005. This includes around 725,000 fin whales, 360,000 blue whales, 400,000 sperm whales and at least 200,000 humpback whales. The Southern Ocean feeding grounds for most of the Pacific Island great whales were established as a sanctuary by the International Whaling Commission (IWC) in 1946. However, when their protection was removed in 1954, whaling fleets took unsustainably large catches, many of them illegally, particularly of humpback whales during the years 1958-1962.

The introduction of whaling technology to Tonga in 1899 led to the development of a subsistence hunt for humpback whales, mainly the slower moving mothers and calves. International and local concern at the decline in humpback whales and the importance of Tonga as a breeding ground for this species led then King Taufa'ahau Tupou IV of Tonga to ban all whaling in Tongan waters in 1978. Today, all cetaceans in Tonga are fully protected under law.

In 1982, the IWC agreed by a three-quarters majority to implement a ban on commercial whaling. This moratorium remains in place and has been largely effective in halting the decline towards extinction of several southern hemisphere whale species, though numbers of whales seen in the Pacific Islands region today still remain low.

Pacific Island people and states were once the stewards of abundant and diverse whale populations. Unsustainable and illegal whaling, by non-Pacific island states means that whale populations, including Oceania's humpback whales, are a mere remnant of what they once were.



Current Threats to Whales in the Pacific Islands Region

Although the Pacific islands region is relatively remote and sparsely-populated, the highly migratory behaviour of whales and the global impacts of industrialisation have exposed cetaceans to a whole range of new human-induced threats. Pacific island countries have responded to these threats by developing strategies and tools to mitigate these impacts, including the SPREP Whale and Dolphin Action Plan 2008-2012, and the CMS MoU on Pacific Island Cetaceans.

WHALING

Oceania humpback whales are currently listed as a target for scientific whaling under Japan's JARPA II. The proposed hunting on feeding grounds for Oceania humpback whales, a population recognised as Endangered by IUCN (Red List 2009).

BY-CATCH AND ENTANGLEMENT

One of the most significant current causes of mortality for many cetaceans is by-catch from fisheries interactions. Although specific data are not available for the Pacific Islands region, gill nets, made of very fine yet strong nylon twine, and tuna purse-seiners are known to be responsible for the unintentional deaths of various cetacean species worldwide. Interaction with fishing gear outside the Pacific Islands region is also a significant problem. Over the last few years, humpback whales have arrived in the waters of a number of Pacific Islands entangled in fishing nets, long-line gear and cray-pot rope, which they may have carried for many months and over several thousand kilometres. Entanglement can result in blood poisoning or starvation. Plastic makes up 60-80% of all marine litter found both on beaches and in the ocean and also poses risks to cetaceans through entanglement and ingestion.

PERSISTENT ORGANIC POLLUTANTS

Very high levels of persistent organic pollutants (POPs) and heavy metals can be found in long-lived top predators such as whales and large pelagic fish. High levels of these substances may result in impaired reproduction, indirect mortality through immuno-suppression and direct mortality from poisoning. The effect of POPs pollution on Pacific island humpbacks is unknown.

Increasingly the conservation management of cetaceans needs to address a larger number of threats beyond whaling. Research and monitoring investments are needed to understand and mitigate these threats where possible in order to foster the continued recovery of these species. Clearly, a combination of resumption in whaling and these additional threats will jeopardise species recovery.

NOISE

All cetaceans, but baleens, in particular, are vulnerable to anthropogenic noise in their environment. Different species are likely to be affected by different types of noise pollution. Some mass strandings of beaked whales have been linked to the use of mid-frequency sonar (2-10kHz) in military activities. Large scale exploration for hydrocarbons and other minerals occurs in several PICTs, notably Papua New Guinea, New Caledonia, and French Polynesia, but there are currently no data to assess the impacts of such activities.

VESSEL STRIKE

Large ships travelling faster than 14 knots pose the greatest threat to whales, although small boats are also known to cause threat. Large whales including humpback, minke and Bryde's whales have been involved in suspected fatal collisions in Tonga, Hawaii and New Zealand, while several large whales have reportedly been struck by high speed ferries in French Polynesia.

CLIMATE CHANGE

Global climate change has already resulted in a rise in oceanic water temperatures and a further rise is predicted. The effects are likely to be most severe at the poles, with predicted changes in oceanographic processes, such as upwelling events. Like the other large baleen whales, humpbacks feed almost exclusively on krill (*Euphausia superba*), a small crustacean found in the high latitudes of the Southern Ocean, which has a close relationship with Antarctic sea ice. There has been a 20% reduction in Antarctic sea ice since 1953, and as a result critical foraging habitats for species such as humpbacks, are likely to be reduced. This is compounded by the growing commercial fishery for krill (now being used in pharmaceuticals and as feedstock for fish farming), which may further reduce its availability for baleen whales.

Because of its role as a carbon sink, the relative acidity of oceanic waters increases with a rise in atmospheric carbon dioxide. Crustaceans such as krill may be especially vulnerable to such change, because it may affect their ability to form their body shells. This may change the structure and biodiversity of high-latitude ecosystems and have direct consequences for humpbacks and other Pacific Island whales dependent on the Southern Ocean as their feeding ground.

Status and Trends of Humpback Whales in Oceania

Every year, humpback whales return to over-winter in the same Pacific island groups, where they are often found close to shore. Here they can be studied far more easily than on their feeding grounds in the remote and often hostile Southern Ocean. Each whale can be individually identified by the pattern of markings on the underside of its tail fluke and by its genetic make-up. Other large whale species generally remain further offshore than humpbacks and are therefore not as easily studied.

For over a decade, research on humpback whales has been conducted by members of the South Pacific Whale Research Consortium, who have provided advice to SPREP and Pacific Island governments. This research on known breeding grounds across the Pacific Islands region indicates that in 2005, at best, the population of humpback whales in the Pacific Islands region numbered only 3,500. Even this optimistic estimate represents a decline of over 70% from estimated former levels. Humpback whales in Areas IV and V of the Antarctic (which could include whales over-wintering in the Pacific Islands) are still listed as potential targets for Japan's whaling programme, JARPA II.

Research can now provide with reasonable confidence data on the population and trends for humpback whales in both eastern Australia and Oceania. The eastern Australian sub-population of humpback whales numbers between 7,000 and 8,000 animals with an estimated 10% increase per annum. By comparison, the Oceania population assessed across all Pacific island breeding areas, from New Caledonia to French Polynesia, shows a much lower trend in recovery rate (and in some areas, no discernible trend at all). It remains unclear why Oceania humpbacks are showing lower rates of recovery. Figure 1 shows a comparison of the trends for the two populations.

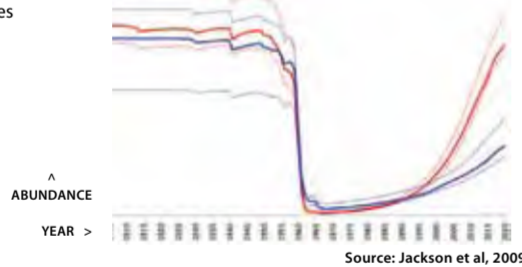
If CBD goals for biodiversity recovery are applied to these whale key questions can now be answered:

How many humpback whales prior to whaling?
 • Eastern Australia: 22,000-25,700 • Oceania: 17,800-20,600

How fast are these populations growing?
 • Eastern Australia: 10.4-10.5%/year • Oceania: 5.1-6.4%/year

What is the current level of recovery?
 • Eastern Australia: 44-46% • Oceania: 21-30%

How long to 'ecological' recovery? • 2061 (50 years)



Source: Jackson et al. 2009

At least another 50 years are needed for Oceania's humpback whales to recover enough to fill the ecological role they had prior to whaling, and biodiversity commitments need to recognize this. In cases like this, the dynamics of different populations of the same species need to be understood in order to foster recovery.

The Outlook for Pacific Island Whale Populations

Populations of large whales over-wintering in the Pacific Islands region were over-exploited during the last two centuries by whaling fleets mostly operating on their summer feeding grounds in the Southern Ocean. For most species, there is insufficient information on their current status and trends to know whether CBD goals are being achieved. For humpback whales, however, it is now clear that the recovery is both patchy and slow - to such a degree that IUCN in 2008 reclassified the Oceania humpback population from Vulnerable to Endangered. Even these small and endangered populations, however, are demonstrating that conservation can provide sustainable economic benefits to coastal communities. But many PICTs are limited in such opportunities because of past unsustainable and illegal whaling that devastated their local whale populations.

At a time of increased international concern about the potential impacts of climate change and other human-induced stressors on whales, increased investment is warranted to secure the future of its humpback whales and other cetacean species for the enjoyment of future generations of Pacific Islanders.

This document summarises a more comprehensive report available directly from SPREP.

For this report or further information contact:
 Marine Species Officer, SPREP LuiB@sprep.org
www.sprep.org



The Way Forward...

The Pacific Islands region is vast, the economies are small, and the development and implementation of the regional action plans and associated mechanisms such as the CMS MoU would not be possible without the partnerships between governments and IGOs and the continued support of NGOs to complement and support national actions. Over the past decade, important and productive partnerships have been developed between national governments, SPREP, and various NGOs, including the International Fund for Animal Welfare (IFAW), Whales Alive, the South Pacific Whale Research Consortium (SPWRC), World Wide Fund for Nature (WWF), the Whale and Dolphin Conservation Society (WDCS), Conservation International (CI), and the Pew Environment Group.

In association with local communities in the Pacific Islands region, and with the support of donor countries, these partnerships have collaboratively developed and implemented a number

of successful research programmes and management measures for the conservation of humpback whales and other cetacean species. In the future, funding from sources such as the Global Environment Facility (GEF) will be needed to deliver targeted capacity-building and resourcing to allow for the implementation of ambitious programmes for the conservation of whales and dolphins in the region.

Since the CBD commitment in 2002 to reverse biodiversity loss, the measures put in place at national, regional and international level for whales in the Southern Ocean have, for the most part, fostered recovery.

However, whales and other oceanic species face an ever-increasing array of threats.

The story of Oceania's humpback whales illustrates important lessons for CBD parties in biodiversity conservation.

Most notably these include:

- The need for long term commitment and investment to foster recovery
- Investments and commitments at local, national, regional and international levels are fundamental to success
- Economic benefits from conservation of species like humpback whales can clearly accrue over time.

The Convention on Biological Diversity offers a chance to reflect on these lessons and build long-term commitment for the conservation of biodiversity, including cetaceans.



Pacific Mangrove Initiative

In an effort to strengthen the conservation and management of mangroves throughout the Pacific region, the International Union for the Conservation of Nature (IUCN) and the Secretariat of the Pacific Regional Environment Programme (SPREP) has embarked on the Pacific Mangrove Initiative.

This partnership will help Pacific Islands Countries to invest in mangroves and other coastal ecosystems to help bring about improved livelihoods, strengthen coastal resilience and biodiversity conservation.

Mangroves play a significant role in the Pacific region. It is estimated that the annual economic value of mangroves is between USD 200,000 to 900,000 per hectare, a value determined by the cost of products and services the mangroves provide.

While the Pacific region is home to only three per cent of the world's mangroves, they are vital for their role in supporting Pacific livelihoods in three key ways – sustaining food security, coastal protection and traditional practices. Mangroves act as a nursery for fish, supporting the seafood that is important to the diets of Pacific islands people, they promote the protection of coral reefs and seagrass growth, protect coastlines and development from coastal hazards and are used

to make dyes for printing tapa, the traditional cloth.

The Pacific Mangrove Initiative will provide assistance throughout the region to bring about regional coordination, strengthen governance, knowledge generation and management and also help empower communities to manage mangroves for their benefit.

One work area of the initiative is to help countries access and manage financial and other resources to support programs and activities that will ensure that their priority needs of strengthening mangrove conservation and management are met.

There will also be coordination and collaboration on joint programmes on mangrove-related activities that are important for countries.

Worldwide, roughly 50% of the global mangrove area has been lost since 1900 with 35% lost in the last 20 years. Mangroves are indigenous in 16 countries and territories in the Pacific region with over 70% of the region's mangroves supported in

Papua New Guinea alone. However the survival of Pacific mangroves is under threat from stresses associated with rises in the sea level. Some other key threats include pollutants, clearing of mangrove vegetation and displacement of native species by alien invasive species.

The Pacific Mangrove Initiative will help countries develop national plans of action on mangroves and managing coastal ecosystems that are in line with their national development goals. It will also see both organisations providing technical assistance to Pacific Islands Countries in their efforts to conserve and manage mangroves and other coastal ecosystems for biodiversity livelihoods and climate change adaptation.

Pacific Islands Countries and Territories that do not have mangroves can focus on other associated coastal ecosystems such as coral reefs. They can also target environment issues which have an impact upon the coastal ecosystem, such as solid waste pollution.

Environmental Ambassadors



Apart from taking part in the revival of traditional ocean voyaging using the navigational and sailing methods of their forefathers, these Va'a crew of the Samoan Voyaging Society are also keen environmental Ambassadors. They are currently on a voyaging expedition that will take them right throughout the Pacific going onwards to North and South America before heading back to Samoa. One of their roles is to also do awareness campaigns with island communities on the importance of conserving their environment.

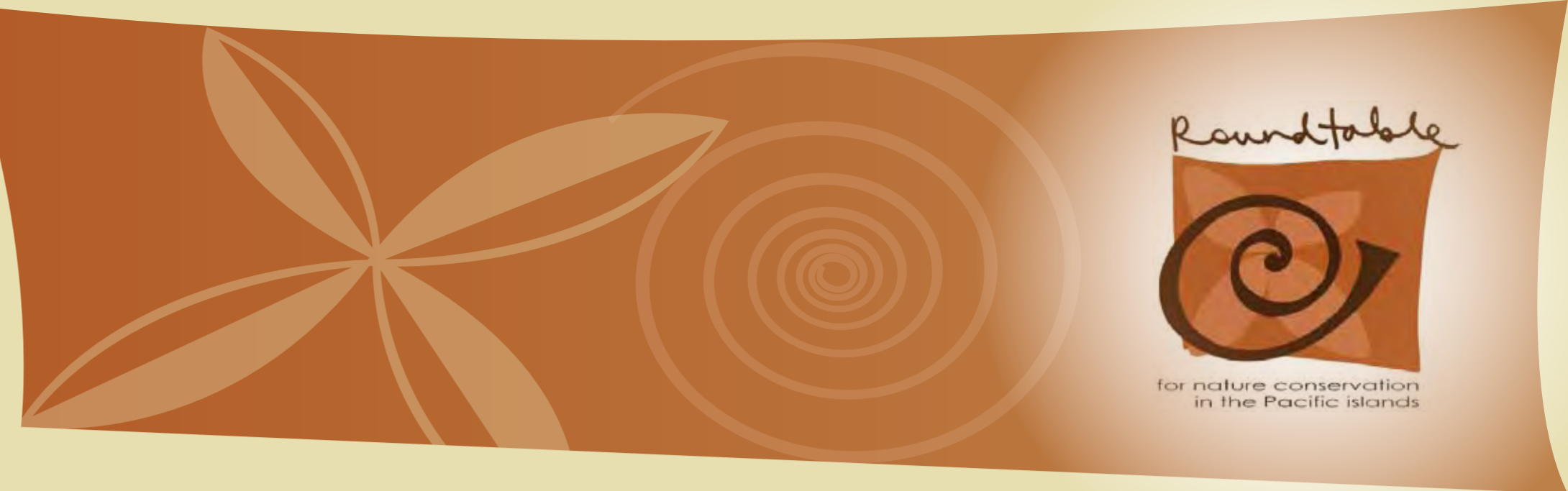
In a report titled "Voice from the Va'a; the birth of the Samoan Voyaging Society" dated April 17, 2011, captain of the Va'a Marc Gondard said: "As they develop their own understanding and feelings for the environment, these young people will in turn be able to bring the message to their own communities with the appropriate references from their context and culture. The experience of the voyage also builds pride in themselves and their country and there is potential for the crew to promote the traditional values which are tending to disappear."

The report also stated: "Overall, the entire crew has become more sensitised to environmental issues and are focusing on practical ways in which they can improve their natural environment. With assistance from the Secretariat of the Pacific Regional Environment Programme (SPREP) and Conservation International

(CI), the crew received training on environmental issues facing the Pacific islands. This included issues relating to rubbish/waste, coral reefs, marine species (whales, dolphins, turtles), fishing practices, biosecurity and general "good living" practices.

The training with SPREP was the first time for the majority of the crew members to reflect on environmental issues as being of relevance to their own lives, and served as an important transition point for many of the crew in terms of developing their interest in this area.

The training spurred them on to carrying out small-scale observations during the voyage and to focus on their waste management practices at sea and on land. Their own experiences at sea have been largely responsible for their ongoing interest in environmental conservation and related issues."



The way forward for Pacific Islands Roundtable for Nature Conservation

The Pacific Islands Roundtable for Nature Conservation calls upon Pacific Island countries to commit to investing in natural solutions to reduce the impacts of environmental and climate change as a matter of urgency.

This was one of the outcomes of the 13th gathering of the Roundtable, which met in Samoa last week.

The meeting brought together close to 100 nature conservation practitioners and stakeholders who are committed to working together for effective conservation action in the Pacific region.

"Natural Solutions to Environmental and Climate Change in the Pacific" was the theme of the gathering that resulted in a number of outcomes, one of which is a collective commitment to identifying innovative approaches to finance natural solutions, particularly through climate change adaptation funding.

The conference identified key specific areas which it needs to strengthen, such as capacity building, communication mainstreaming, climate change and natural resource economics. Natural solutions which lead to the conservation and sustainable use of our island biodiversity are imperative to preparing the Pacific for the uncertainties of environmental and climate change.

The discussions over the week looked at how better management of our environment can help us adapt to the impacts of climate change. "I think it's the realisation or the reaffirmation that the work we are doing to conserve biodiversity is important for adaptation," said Taholo Kami, Chair of the Pacific Islands Roundtable for Nature Conservation and IUCN Oceania Regional Director.

"Healthy ecosystems are critical for adaptation in small Pacific Island countries and what we are doing now needs to be done better in terms of investing in biodiversity, investing in conservation and trying to keep relatively intact ecosystems."

The world is in a biodiversity crisis. Even as the global community celebrates the International Year of Biodiversity it is clear that we have failed to meet the global 2010 target to halt the rate of biodiversity loss.

In the Pacific, the region works together on nature conservation under the guiding principals of the 2008 – 2012 Action Strategy for Nature Conservation and Protected Areas in the Pacific Islands Region. The Strategy charts a five year course for concerted action to protect the species and ecosystems that form the foundation of Pacific culture and livelihoods, and serves as the guiding framework for member organizations of the Pacific Islands Roundtable for Nature Conservation.

Over the course of the past week, the Working Groups of the Roundtable looked at a range of nature conservation issues including Protected Areas, Invasive Species and Marine Conservation. The thematic Working Groups are the implementing mechanism of the Roundtable ensuring on-ground activities that support national conservation priorities. There were also specific working groups to look at strengthening links

with regional initiatives such as the Coral Triangle Initiative and Pacific 2020, as well as a country-specific working group for capacity building in PNG.

Government representatives from Fiji, Federated States of Micronesia, Kiribati, Papua New Guinea, Solomon Islands, Tonga and Vanuatu were also present at the meeting as part of the peer review learning on the Programme of Work on Protected Areas.

"The Roundtable is a great idea that provides a mechanism for keeping the energy of the Nature Conservation Conference alive," said David Sheppard, Director of the Secretariat of the Pacific Regional Environment Programme (SPREP), which hosted the 13th Meeting of the Roundtable.

"The meeting nurtures networking and friendships while providing a forum for good technical discussion". He added that the involvement of non-government and government in a neutral forum was very positive for building innovative solutions for conservation and adaptation.

"The next steps will be to take some of the key recommendations from this meeting to the SPREP annual general meeting in September and also to link it with other processes. All this will lead up to the next four-yearly Nature Conservation Congress on 2012 and follow through to on-the-ground actions addressing national priorities and needs", he said.

The next Pacific Islands Roundtable for Nature Conservation Meeting will be in 2011, which the French Marine Protected Area Agency has offered to host.



Celebrating Pacific Biodiversity

Pacific island countries celebrated the International Year of Biodiversity in style. Each nation's IYB campaign was celebrated differently ranging from awareness campaigns to festivities highlighting the uniqueness of Pacific Island biodiversity. Without doubt the Pacific is home to many unique animal and plant species that are found nowhere else in the world. These species are often adapted to specialized habitats and limited to only a small part of a few islands and are especially vulnerable to extinction from habitat destruction, introduction of invasive species, pollution and overharvesting.

COOK ISLANDS

The Cook Islands theme for the International Year of Biodiversity was "e Tango Maori te Ao Ora Natura: Our Biodiversity Our Foundation." With an effective strategy for the 2010 biodiversity campaign, Cook Islands, through their National Environment Service, embarked on an awareness drive that highlighted the importance of their island biodiversity. They also highlighted other issues closely connected to biodiversity in Raui and Protected Areas, and the Eradication of Invasive Species. Posters and pamphlets were developed and the media, both newspaper and TV, were utilised to bring the message across to the people.

SAMOA

The theme for Samoa's 2010 year of biodiversity campaign is "Value Biodiversity of Samoa - It's our Life." Efforts were channeled into the coordination of an official launching and public awareness raising programme, spearheaded by the Ministry of Natural Resources and Environment, on 17th May 2010. The event invited stakeholders from all sectors and saw fruitful contributions from intergovernmental organisations and local non government organisations, including schools and village communities. Some of the issues discussed were terrestrial biodiversity, marine biodiversity, impacts of Climate Change and Tsunami on biodiversity, and National Parks Management. There was also a field tour and a tree planting ceremony.

Minister of Natural Resources and Environment, Honourable Faumuina Tiatia Liuga, at the launching said Samoa has been promoting the conservation and sustainable management of biological diversity since becoming a signatory to the convention on biological diversity.

In his opening speech to launch the 2010 Year of Biodiversity Minister Liuga said; "the government through the Ministry of Natural Resources and Environment, in collaboration with its development partners and various funding agencies, has also completed a number of studies and has put in place national strategies and policies for the protection of biological diversity in our country." He added that at the national level, studies and surveys have been completed of the various biological diversity species close to extinction and endangered, which included the butterflies of Samoa, bats and flying foxes, Samoa freshwater species, Samoa lizards and cetaceans (whales and dolphins).



TUVALU

For two weeks, Tuvalu came alive with festivities that highlighted the importance of preserving biodiversity. The programme's, celebrated from the May 25th to June 5th 2010, main objectives were to raise public awareness on protecting and conserving biodiversity and were targeted towards youth groups and children as they would be future leaders of Tuvalu.

The programmes implemented would produce biodiversity icons that included a song portraying the value of biodiversity to life; a traditional beauty queen advocating on biodiversity issues and a passionate planter promoting the importance of indigenous species.

These issues were highlighted through various festivities such as the Church Youth Program, Biodiversity Music Program, Biodiversity Music Festival, Terrestrial and Marine Awareness programmes, Eco-Tourism and Biodiversity, and Biodiversity Queen Beauty Pageant, culminating in a biodiversity dinner ball.



FIJI

Fiji's IYB celebrations were officially launched on May 21st, 2010, by the Minister of Local Government, Housing, Urban Development & Environment, Mr Samuela Saumatua.

Focusing on the theme "Protect island Biodiversity - it's our life", the launch marked the beginning of a 12-month IYB Campaign for the Department of Environment and its conservation partners.

The celebrations reflected on the importance of Fiji's biodiversity to the people's livelihood, culture and Fiji's economy. Their campaign highlighted the importance of their biodiversity on their personal health, and the health of their economy and human society. Their main communication's aim of the International Year was to raise awareness about the importance of biodiversity, including for human well-being, and the role of the Convention in ensuring its conservation and sustainable use and the equitable sharing of the benefits from its use.

KIRIBATI

Kiribati is one country moving to conserve biodiversity, recently becoming a global conservation leader by establishing the world's largest marine protected area. In August 2010, Phoenix Island was listed as a world heritage site. Kiribati's Phoenix Islands Protected Area (PIPA) consists of eight coral atolls and two underwater reefs, and is home to unique marine and seabird species. The Phoenix Islands provide a remote refuge for nesting seabirds, but rats and rabbits have had detrimental impact on seabirds and plant life. After a successful rat eradication campaign there have been increases in bird population on the island. Since its inception, there have been significant changes. Threatened seabirds have expanded their nesting areas over the island's improved habitat and there is also an increasing number of juvenile birds indicating nesting success.

TONGA

Tonga's Ministry of Environment & Climate Change conducted a variety of activities to mark the International Year of Biodiversity 2010 in Tonga. The National Environmental Awareness Week, celebrated nationally in the first week of June of every year, coincided with World Environment Day on the 5th June 2010. This year's National Environmental Awareness Week was from 31st May - 5th June 2010.

Activities conducted included visits to several primary schools around Tonga and the presentation of biodiversity talks, and an Ozone Depleting Substances presentation. We also got the school children to plant trees around their school grounds to mark the importance of biodiversity. The staff of the Ministry did not miss out in planting some trees to remind themselves of the vital role biodiversity has for themselves and the environment.

The planting of trees was not just limited to inland areas, we also planted mangroves along the low lying inundated villages in Tonga. This served two purposes: to increase biodiversity and increase adaptation to climate change.

We held a cleanup day where the city coastal area was cleaned by picking up rubbish to prevent it from flying into the nearby sea and damaging the marine biodiversity! We held an "Open Day" where a tent was erected in the beachfront and all biodiversity related Government Ministry's and Civil Society Organisations were asked to join and display their work. Included Government agencies were Ministry of Agriculture, Forestry, Food and Fisheries, the Waste Authority Limited, and Ministry of Lands, Survey and Natural Resources. There was also a "Face Painting" booth at the Open Day where biodiversity images were painted on the faces of young children to add a "fun element" to the day.

ACHIEVEMENTS DURING IYB CAMPAIGN 2010

Through the Action Plan, government stakeholders together with non-government organizations had ongoing commitments each month corresponding to the different monthly themes detailed in the IYB Action Plan. The launch of the campaign marked the production of the following communication materials: IYB t-shirts; posters; Biodiversity TV spots and CD production; an art exhibition; Biodiversity float march; monthly newsletters; and the launch of a Biodiversity bus.

Many activities were conducted throughout the Pacific Region with each country coming up with their own National Biodiversity Strategy and Action plan.





Celebrating 2010 Year of Biodiversity, Fiji



Preparing for the IYB in Fiji



Fijian's closing ceremony of the International Year of Biodiversity



Addressing the issue of Food Security in Atolls



Conservation education in action



Addressing the issue of Food Security in Atolls



Float preparation at the IUCN Conference room - Department of Environment Awareness officers, Fiji



Biodiversity float



Marching for biodiversity



Pacific country delegates hard at work at the implementing the Nagoya Outcomes - Review and Planning Meeting 16-20 May 2011



Above: Official closing of Fiji IYB Campaign, Thursday 19 May 2011. From left to right - SPREP's Island Ecosystem Programme Manager Stuart Chape, Haruko Okusu from UNEP, Fiji's Minister for Local Government, Urban Development, Housing and Environment, Colonel Samuela Saumatua and IUCN's Bernard O'Callaghan.



Sustaining the country's rich ethnobiological traditions



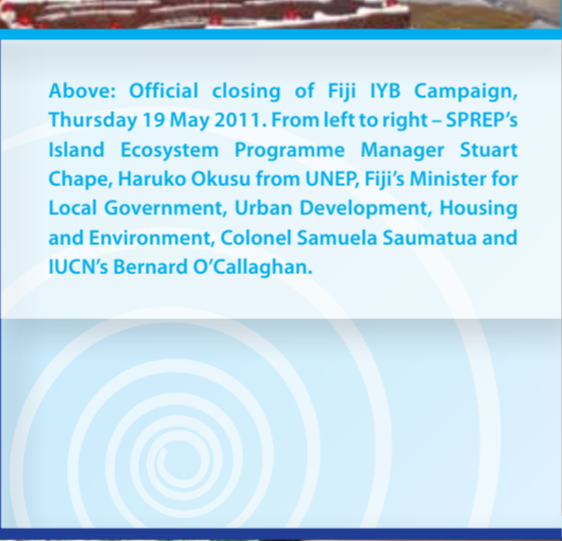
Building local capacity



The Va'a crew receiving training at SPREP on environmental issues



Networking and utilizing local experts



Building local capacity



The Va'a crew carrying out environmental awareness campaigns to school children across the Pacific. Pictures courtesy of Samoan Voyaging Society



Pictures courtesy of Micronesia Challenge and support team partners.

SPREP'S WORK IN 2010

Apart from a hectic and successful Year of Biodiversity Campaign across the Pacific, SPREP staff, in particularly the Island Ecosystem Programme, have been hard at work. Throughout the year, in one way or another, their work also contributed towards protecting the unique biodiversity of the Pacific. They too were part of the Pacific voyage for the 2010 IYB.

FEBRUARY 2010 Dealing with Invasive species: During 2010, final preparations were made for a US\$3 million Global Environment Facility project on invasive species management. A workshop was held in February at which participating countries determined the activities that each will carry out using the GEF Funds. This resulted in a project document that covers 80 separate activities in the 10 SPREP member countries. These include awareness campaigns, strategic planning and staff training, improvement of quarantine services, biological control of weeds and the eradication of fire ants, weevils and mynah birds.

MAY 2010 The Ramsar Oceania officer assisted Niue with its preparation to join the Ramsar Convention. A country visit raised awareness and clarified the benefits and costs of joining Ramsar. Potential sites were identified and assistance given with the preparation of a cabinet briefing paper on Ramsar accession, for consideration by the Niue Government.

2 WEEKS IN AUGUST Ecological Assessment in the Chesterfield Islands: A group of 15 scientists and a film crew sailed to the remote islands of the Chesterfield Group counting birds, bony fishes, sharks and invertebrates, they trapped rodents, searched for whales and dolphins, recorded coral health and coral species, tagged tiger sharks and baited for great white sharks.

2-6 AUGUST 2010 Workshop to review implementation of the Regional Wetlands Action Plan for the Pacific Islands; seeks to engage relevant government officers from the Pacific Island Ramsar Contracting Parties, other Pacific Island countries and Territories and other partners to review the implementation and update the 1999 Regional Wetlands Action Plan for the Pacific Islands (RWAP)

22 AUGUST 2010 SPREP meeting in Madang, Papua New Guinea.

30 AUGUST-3 SEPTEMBER 2010 CNMI and Guam PILN meetings

10-14 SEPTEMBER 2010 U.S. Coral Reef Task Force Meeting – provided an opportunity for SPREP to share coral conservation efforts from the region and US Pacific Island Territories. This year the CCA working group requested a representative from SPREP to help inform the meeting participants on regional climate change initiatives and specific projects SPREP is engaged in.

29 NOVEMBER-13 DECEMBER 2010 – Community Marine turtle workshops, turtle nesting surveys and turtle satellite tagging in Fiji
Establishment of a Marine Turtle Community Monitoring Network involving several communities on Vanua Levu

Turtle satellite tagging conducted during the year included:

- In Fiji three loggerhead turtles (foraging and three green turtles (one foraging and two nesting) were satellite-tagged, a first for loggerhead turtles and green turtles in Fiji
- In Tuvalu one nesting green turtle was satellite-tagged, the first time for any marine turtle in Tuvalu

6-9 DECEMBER 2010 Inception meeting of the IUCN project on Mangrove Ecosystem for Climate Change and Livelihood (MESCAL)

14 MARCH 2011 Launch of the 2011 International Year of Dugong

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

FEBRUARY 2010 Global Helping Island Adapt meeting: was attended by representatives from all major oceanic regions including six Pacific Island countries and territories.

2 FEBRUARY 2010 World Wetlands Day

JULY 2010 13 Pacific Island Roundtable for Nature Conservation meeting: Over 70 participants from conservation NGOs, CROP agencies, government representatives and development partners attended the roundtable called on government representatives and development partners to find creative and practical solutions through innovative programmes, funding and technical assistance for protecting the Pacific threatened natural environment

26-27 OCTOBER 2010 First symposium on Sea turtles in French Polynesia

27-29 OCTOBER 2010 Implementing Ecosystem Approaches to Fisheries Management in the Coral Triangle, Philippines

27 OCTOBER 2010 CBD COP10 Nagoya, Japan

9-11 NOVEMBER 2010 Regional Training on Mangrove monitoring in the Pacific Islands

13 NOVEMBER-15 DECEMBER 2010 – Marine Turtle workshop and satellite tagging in Tonga

27 NOVEMBER 2010 Marine Sector Working Group New Caledonia

19-21 JANUARY 2011 Inception Workshop: Micronesia Project

2 FEBRUARY 2011 World Wetlands Day

16-20 MAY 2011 Implementing the Nagoya Outcomes: Review and Planning Meeting

2010

2011

HIGHLIGHTS

Assisted its partner organizations develop projects that assess the local costs of invasives and the economic benefits of managing them in the region.

Other initiatives include managing invasives project in Kiribati (invasives management and conservation work mainly on Kiritimati Island) and Samoa (rat eradication and ant research on the Aleipata Islands). Both were support by the Critical Ecosystem Partnership Fund (CEPF).

Invasives network strengthened – The Pacific Invasives Learning Network (PILN) received a boost during the year with the appointment of a full-time coordinator. PILN is a professional, information and skill-sharing network for invasives workers in Pacific countries and territories. PILN links to the Pacific Invasives Partnership (PIP), which comprises agencies working on invasives issues in multiple countries of the region. PIP member agencies are thereby informed of country priorities and needs and the PIP member agencies are enabled to provide services to countries more effectively and with better cooperation.



Respect and Protect Dugongs and the Coastal Environment!

Dugongs are a treasured and unique part of our Pacific marine heritage. Many dugong populations are declining due to excessive and illegal hunting, drowning in gillnets and boat strikes. The seagrass beds on which they depend for food are also under threat from uncontrolled coastal development, pollution and natural disasters.



Some things we can do:

- ✓ Know and obey the law with respect to dugong protection;
- ✓ Stop excessive and illegal hunting;
- ✓ Prevent uncontrolled coastal development;
- ✓ Don't dump rubbish or chemicals in rivers and the sea; (they poison seagrasses and other marine life);
- ✓ Avoid catching, and release dugongs caught in gillnets;
- ✓ Control boating where dugongs occur;
- ✓ Stop the use of destructive fishing methods like dynamite;
- ✓ Support work on dugongs and conservation effort.



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Our Vision is a Pacific environment, sustaining our livelihoods and natural heritage in harmony with our cultures

