



**ON THE VERGE OF A BIOLOGICAL CRISIS:
the state of invasive species in the Pacific**



Sunset over Saipan

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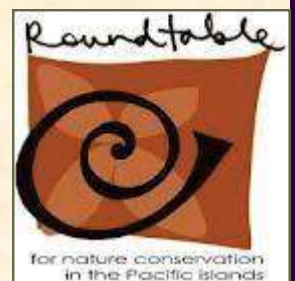




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Traditional canoe at dawn; Kairiru Island, PNG.



ON THE VERGE OF A BIOLOGICAL CRISIS:

FOREWORD

Our islands are on the verge of a biological crisis. This critical issue has fallen through the cracks of agencies and donor partners in the Pacific region. Nowhere else on this planet is the relationship between people and the environment more critical or apparent. Life on an island teaches us that everything that affects our environment, affects us. Our very existence is totally dependent on the resilience of the ecosystems that nurture and feed us.

Invasive species, (plants, diseases, insects and mammals) can completely change the very functioning of our island ecosystems – destroying them forever for us, and our children. Without immediate action, Pacific island communities risk becoming totally dependent on imported food, commodities, housing and medicine. Invasive species cut across every major issue facing our region; from climate change, ecosystem resilience, food security, cultural integrity and our way of life. We risk the continued existence of our homes, our culture and our children. Now is the time to act.

The impact of invasive species – whether already established or potential introductions, requires a coordinated approach that does not stop at border security. An effective strategy should address prevention, early detection, rapid response, ongoing management, outreach and research needs. These issues need to be addressed at regional, national and island scales. Invasive species are able to spread from location to location by hitching a ride with cargo, personal possessions and even people. Preventing this spread is largely the responsibility of the biosecurity or quarantine agencies of a country. However, the small size of many invasive species makes them difficult to detect at the border. Additionally, many Pacific island nations are made up of groups of islands and the political and cultural boundaries of nations are not always aligned. These factors complicate biosecurity efforts, making the movement of people and commodities between islands of the same jurisdiction difficult to regulate.

This report highlights some of the most serious invasive species in the Pacific region, focusing on an example from each of the six main groups: aquatic invasives, ants, vertebrate pests, weeds and insect pests.



**Josua Wainiqolo,
Chair, Pacific Invasives Partnership**



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Working Together

A regional strategy is the most effective and efficient approach to the invasive species challenges facing our islands.

Invasive species affect every nation and territory in the Pacific region. Invasive plants reduce native plant diversity, change soil fertility, alter nutrient and water cycling and increase soil erosion. These changes, in turn, affect native plants and animals that depend on native plants for shelter, food and reproduction. Invasive animal species such as rats, mice, mongoose, feral goats, deer, feral pigs, ants and pest birds further degrade our island ecosystems and impact our daily lives. Some invasive animals prey on endemic and native bird species; rats eat native flowers, fruits and seeds. Other invasive animals trample and degrade habitats. Ants sting, inhibit subsistence agriculture and threaten native fauna. Incursions of new introduced and invasive species continue. Of particular concern is the spread of invasive ants, especially the Little Fire Ant and the Red Imported Fire Ant. Recent incursions of mongoose on two islands highlight the need to strengthen Pacific island biosecurity systems and active participation of all stakeholders.

Lack of capacity is recognised as a major obstacle to implementing effective biosecurity and invasive species management in the Pacific Islands Countries and Territories (PICTs). This lack is also identified in the National Biodiversity Strategy and Action Plans of most Pacific island countries and further emphasised in the National Invasive Species Strategies and Action Plans developed to date. Underlying the lack of capacity for managing invasive species in the PICTs is geographic isolation, limited staff numbers dedicated to biosecurity and invasive species management, limited cooperation and coordination between agencies within countries and between countries, and limited access to legal and technical information, expertise and best practice tools that are necessary for achieving biosecurity and invasive species management goals.

As PICTs share many invasive species problems and similar emerging threats this warrants a regional approach to technical support and capacity development. A regional approach would ensure the much-needed coordination and pooling together of available resources and their deployment at the national and local levels.

Much of the necessary framework is already in place. Compared with other island regions, the Pacific is at the forefront with regards to established infrastructure for technical support and capacity development at the regional level. This infrastructure comprises the CROP agencies (SPREP, SPC and USP), two regional programmes (Pacific Invasive Initiative (PII) and Pacific Invasives Learning Network (PILN) and other members of a coordinated regional network of agencies working on invasive species in the region, the Pacific Invasives Partnership (PIP).



The majority of Pacific Island Countries and Territories have ratified the Convention on Biological Diversity. Under this convention, parties have agreed to meet a set of biodiversity-related targets by 2020, known as the Aichi Targets. Strategic Goal C aims to improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity, Target 9 relates to invasive species: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated and measures are in place to manage pathways to prevent their introduction and establishment. Meeting this Target will remain a challenge for most countries in the region.

The Pacific Invasive Species Capacity Development Strategy

A Capacity Development Strategy for Invasive Species Management in the Pacific was endorsed by SPREP member countries at their 24th Annual Meeting in September 2013. This calls for increased effort to be placed on securing new donor funds to continue the considerable gains in capacity that have been achieved in invasive species management (including biosecurity). Fundraising efforts should promote the benefits of a programmatic long-term approach to capacity development in the region and, in particular, the need for adequate funding for technical support and mentoring, to build on and sustain the impressive contributions already made by PII, PILN and other PIP members.

The PISCDS will assist in the implementation of the “Guidelines for Invasive Species Management in the Pacific”. This is a valuable document that contributes to ongoing efforts to curb the negative environmental, social and economic impacts of invasive alien species to Pacific Island Countries and Territories. The PISCDS identifies 13 key strategic recommendations for capacity development providers and recipients, and outlines opportunities to strengthen existing regional capacity development programmes.

This strategy will contribute to implementation of the 2012 Pacific Islands Forum Leaders Communique, which reaffirmed the importance of dealing effectively with invasive species at both national and regional levels and requested SPREP and SPC to increase their efforts in this area. The Strategy will support Pacific countries commitments to the Convention on Biological Diversity (Aichi Biodiversity Target 9) and the review of the National Biodiversity Strategic Action Plans.

At the SPREP Meeting 2013 in Apia, members approved the Pacific Invasives Species Capacity Development Strategy (PISCDS), to give support to building Pacific Islands capacity to manage invasive species. They also encouraged members, partners and donors to support its implementation. To help accomplish this, the members directed SPREP to develop a regional terrestrial and marine invasive species project for submission to GEF6. The approved directive included the strengthening of SPREP’s regional support infrastructure through greater technical support and advice, and to create standard operating procedures and training to support countries to increase their capability and capacity in invasive species management.



Training events and workshops not only build capacity, but extend networks and promote regional collaboration



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Safeguarding Our Oceans

Invasive aquatic species are one of the greatest threats to global marine biodiversity and ecosystems, and are also a significant threat to coastal economies and public health. Global economic impacts from invasive aquatic species, including through disruption of fisheries, fouling of coastal industry and interference with human amenity, are estimated to exceed 100 billion US dollars per year. These impacts are set to increase in coming years as global economic activity and therefore the movement of goods and materials around the world increases.

Pacific Island countries are at particular risk as they are totally dependent on imported goods, mostly transported by ships. These ships are the major vectors of invasive aquatic species, either attached to hulls or carried in ballast water. The islands that make up Pacific nations are often located adjacent to major trans-oceanic shipping lanes and are favoured destinations for cruising yachts. A number of introduced species in the region are becoming or are threatening to become invasive, including the barnacle *Chthamalus proteus*, several macro-algae species, harmful planktonic algal species and the Black Striped Mussel (*Mytilopsis sallei*) from the Gulf of Mexico and the Caribbean.

The serious threats posed by introduced invasive aquatic species, combined with the extremely high value and significance of coastal and marine resources to the people of the Pacific, highlights the importance of vigilance and controls against marine introductions.

Case study: *Eucheuma* undermines coral reefs in Hawai'i

The seaweed *Eucheuma denticulatum* was introduced into Kaneohe Bay, Ohau, Hawai'i in the 1970s for aquaculture purposes. The seaweed is a fast growing species and rapidly covered 80 per cent of the reefs in the bay. It spreads by vegetative means and grows between crevices of coral reefs undermining the integrity of reefs. The seaweed competes and eventually overwhelms live corals allowing it to dominate the bay. During strong storms, seaweeds are dislodged and are dumped along the coastline producing a foul smell and an eye-sore for coastal communities, visitors and tourists.



Fishing from canoes, Wewak PNG.

© C. Vanderwoude, 2006



SOLUTIONS

The Pacific Islands Regional Oceans Policy, Oceans Framework & Oceanscape

The Pacific Regional Oceans Policy (PIROP) was endorsed by the Pacific Island Forum Leaders in 2002. The Oceans Policy provides the framework and strategy for regional coordination, integration and collaboration on ocean issues with the overall goal of improving ocean governance and sustainable use of ocean resources. Marine invasive species are a critical component covered in the Oceans Policy. Under theme 4 of maintaining the health of the Ocean - it calls on all to address threats from introduced and invasive species through a coordinated approach at both regional and national levels. It further encourages improving understanding and raising awareness of the threats posed by invasive species and management options. The Pacific Oceanscape provides a catalyst for the implementation of the PIROP through six strategic priorities ranging from governance, sustainable development and adapting to a changing environment. The Pacific Islands Regional Oceans Policy needs reviewing and implementation.

Shipping-Related Introduced Marine Pests in the Pacific - (SRIMPPAC)

The SRIMP-PAC strategy was approved at the 17th SPREP members meeting in 2006 in Noumea, New Caledonia. Its aim is to maintain, protect and enhance the quality of coastal and marine environments by preventing, minimizing and controlling the introduction of shipping-related marine pests to Pacific Island Countries and Territories (PICTs). There are four key objectives of the Strategy:

- i. Assess and monitor the current and potential risks of shipping-related Introduced Marine Pests (IMPs) in the Pacific islands region.
- ii. Assist PICTs to develop better capacity to effectively prevent and respond to shipping-related IMPs,
- iii. Provide a financing and sustainability plan, which allows effective implementation of SRIMP-PAC actions and activities.
- iv. Provide a framework and mechanism for regional cooperation, coordination and harmonization of IMP management activities, including links with similar activities that address non-shipping vectors, both within the region and with Pacific-Rim countries.

The Strategy contains a detailed workplan that focuses on a number of thematic areas including institutional arrangements, communication and awareness, risk assessment, surveys and monitoring, legislation, capacity building and information management. This Strategy is currently not funded.



Eucheema can smother inshore reefs, damage fish nurseries and foul beaches.



Black Striped Mussels can smother entire harbors, eliminating all other ocean life.



Aquaculture operations sometimes promote and import invasive fish species which can escape and damage local fisheries



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INVASIVE ANTS

Impacts: sustainable development, human health, food security, ecosystem resilience

BACKGROUND

It is not possible to imagine the impacts that a single invasive ant species can have on a small community living in this region. Of the 15,000 or so ant species known to science, only a dozen or so are thought of as harmful. Sadly, many of the most damaging ant species are already present here, and some are spreading from island to island at an alarming rate. Thankfully, other species have not yet become established.

Pacific islands are especially vulnerable to invasive ants and have few natural defenses against their arrival and spread. These ants can over-run entire islands, weakening the resilience of island ecosystems, destroying agriculture, stinging people, pets and domestic animals, and preventing exports. Once a particular species becomes established within the region, it can spread very quickly from island to island. A coordinated prevention and response strategy would protect regional borders; provide technical expertise, training and information sharing.

Case study: Little Fire Ants in Papua New Guinea

In 2001, a young police officer returned to his village in west Yangoru district of Sepik Province in Papua New Guinea. As he often did, he brought with him a gift for his mother – some beautiful orchid plants he had acquired while on duty in Bougainville. Unknown to him, the plants harbored a small colony of Little Fire Ants (*Wasmannia auropunctata*). The ants found Bonihitaim village much to their liking and over the next five years spread throughout the village and surrounding jungle. The residents of Bonihitaim quickly realized that this “*anis nogut*” (bad ant) was no ordinary ant. Some of the village dogs and pigs developed cloudy eyes rendering them partially blind. The ants over-ran all of the houses, stinging families while they slept or went about their daily tasks. The ants farmed mealybugs and scale insects in the village cocoa plantation. The trees became unhealthy and cocoa production was cut in half. The wildlife in the jungle surrounding the village disappeared. Birds, bandicoots, lizards and other insects were no longer to be seen. Hunters now had to walk several miles to find animals to hunt. Village life had changed forever.



Images (from top to bottom):

- 1 Village meeting to discuss Little Fire Ants
- 2 Cocoa crop affected by LFA tending mealybugs
- 3 Village dog blinded by LFA
- 4 Elderly man stung nightly in his home
- 5 Blinded pig with rash due to LFA
- 6 Children watching treatment activities



The Pacific Ant Prevention Programme

In 2003, The Pacific Ant Prevention Plan (the PAPP) was developed at a regional workshop attended by technical experts and representatives from many Pacific nations. The plan, was prepared in response to multiple requests for assistance from Pacific Islands Countries and Territories (PICTs) to address the increasing impacts of invasive ants and the risk of invasion by new species such as the Red Imported Fire Ant. The global Cooperative Initiative on Invasive Alien Species on Islands initiated the PAPP in partnership with PII, SPC, SPREP, NZ Ministry for Foreign Affairs and Trade (MFAT), MPI (previously, MAF Biosecurity New Zealand), USDA and other partners.

The goal of the programme is “to protect biodiversity, livelihoods and lifestyles in the Pacific islands through the effective management of invasive ants”. A central theme is to build capacity within the region to prevent, detect and manage invasive ant species and provide a coordinated approach to the provision of technical expertise as needed. The programme has been institutionalized at SPC’s Land Resource Division following endorsement of the plan by its member countries. And the Pacific Plant Protection Organization. However, it is currently not funded. With sufficient resources to implement the Pacific Ant Prevention Programme, the region will avoid considerable economic and biodiversity loss and hardship for countries and communities in the region. Invasive Ants can serve as a biosecurity “flagship” for all invasive insect pests, and strategies that prevent their entry and spread will likewise prevent many other invasive insect pests.

Some components of the plan have been delivered with the assistance of donor agencies such as the New Zealand Ministry for Foreign Affairs and Trade, the United States Forest Service, USDA APHIS and others.

In the ten years since the Pacific Ant Prevention Programme was drafted, Little Fire Ants have spread to six new locations: French Polynesia (Tahiti and Moorea), Guam, Papua New Guinea (Sepik and Madang province) and Hawai’i (Maui and Oahu).



Images (from top to bottom)

1. Noni fruit destroyed by Little Fire Ants
2. LFA feeding at a bait
3. person stung by Little Fire Ants
- 4 Cat blinded by LFA



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Invasive weeds

impacts: sustainable development, food security, ecosystem resilience.

Background

Non-native plant species are often introduced to new areas by human intervention. Many of these enhance the quality of life (for example the introduction of food plants). Some are visually appealing and are introduced for aesthetic reasons. Yet others are accidentally introduced through human commerce. In most cases, these newly introduced species are not especially damaging and cause no noticeable impacts. Some newly introduced species, released from the forces that regulate them in their home environment, multiply rapidly and displace native species that occupy the same habitats. They threaten all ecosystems with wide-ranging consequences: agriculture becomes more difficult and costly, native biodiversity is lost, hydrological cycles are altered affecting water supplies and land stability, lagoons and reefs become degraded by herbicide run-off and sedimentation. These undesirable plants are often referred to as “invasive weeds”. Species such as Mile-a-Minute (*Mikania micrantha*) and Miconia (*Miconia calvescens*) are two examples found on many Pacific islands.

Once a weed has become established, eradication is extremely difficult and expensive. One solution is to find a biological control for the weed. Scientists identify a natural enemy or predator in the weed’s native range and introduce that enemy to where the weed has invaded. This is a difficult process because extensive testing is needed to make sure that the natural enemy does not affect native plants also. However, once the biological control agent is released, it attacks the target weed, sometimes to the point of virtual extinction, but more usually controls the weed and reduces its impacts to below threshold levels. Additionally, once a biocontrol agent has been identified, only a small amount of additional testing is usually needed to implement the same process in another Pacific island, saving both time and resources.



Case study: Invasive weeds in the Cook Islands

In the short period of time since the first Europeans arrived in the Cook Islands, many new plant species have been introduced and some have escaped into natural areas and agriculture. These new plant species (333) already outnumber native ones (287). Some of these have become serious invasive weeds. For example, the Te Kou land snail (*Tekoulina pricei*) is now critically endangered, if not already extinct due to invasive weeds that have destroyed its habitat. Moreover, on some islands, including Rarotonga, invasive vines such as Balloon Vine (*Cardiospermum grandiflorum*) and Mile-a-Minute (*Mikania micrantha*) are smothering trees. The native trees die, causing massive deforestation leaving only impenetrable vine thickets. Rarotonga is totally dependent upon surface water and if nothing is done to stop these vines, the native vegetation will be devastated and fresh water supplies could dwindle. This will have a massive impact on the economy and quality of life for the people of Rarotonga.

The Pacific Biocontrol Strategy

The Pacific Biocontrol Strategy was formulated by experts and practitioners from throughout the Pacific region. The strategy recognizes that many invasive weeds have a broad distribution throughout the region and a regional approach to identifying and testing biocontrol agents is the most cost-effective solution to invasive weeds. Its inception included: 1) identifying common target weeds within the three primary epicenters for Pacific wide biological control of weeds, New Zealand, Australia, and Hawaii, in the Pacific; 2) identifying other Pacific Island Countries and Territories that may have these weeds and identifying the status of those weeds; and 3) leveraging funding in one or more areas to implement appropriate programmes.

This strategy served as a template for a smaller scale plan, the Cook Islands Weed Biocontrol Programme. Developed in 2012, it included a prioritisation exercise conducted at a regional workshop attended by technical experts and representatives from the Cook Islands. This resulted in identification of the 15 highest priority invasive weeds and a 5-year plan was prepared to address seven of these species. The plan was funded by MFAT (New Zealand Partnerships for International Development Fund). The goal of the programme is to use imported biocontrol agents to sustainably control/suppress the priority invasive weeds in the Cook Islands archipelago. Suppression of these invasive weeds will increase the availability of productive land for agriculture, lead to reduced use of chemical herbicides, and reduce potential threats to Rarotonga's water supply.

The Cook Islands Weed Biocontrol Programme serves as a case study and demonstrates the effectiveness of a regional approach to these issues. Presently, the Pacific Biocontrol Strategy is not funded.



Merrimya peltata is a damaging weed on many Pacific islands



Mikania can quickly smother native forests



Miconia is a fast growing closed forest tree that rapidly transforms forests into almost pure stands to the exclusion of native species



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Rats and other rodents

Impacts: biodiversity, sustainable development, human health, food security, ecosystem resilience.

Background

Few vertebrates have had greater impact on the biodiversity of islands than introduced rats. Three species widespread throughout the Pacific are all originally from Asia, the Pacific rat; introduced by the earliest Pacific voyagers, and the other two species unwittingly transported on ships in the last two-hundred or so years. As a consequence rats are now found on almost every Pacific island. The impacts of these more recent arrivals and especially the Black Rat (*Rattus rattus*) are particularly acute. In addition to their well-documented impacts on island biodiversity, rats represent an on-going threat to human health spreading bacteria such as leptospirosis and result in millions of dollars of damage to agricultural crops and food supplies wherever they occur.

Rats prey on a wide range of plants, insects and larger animals, such as seabirds. Globally, the Black Rat is one of the chief causes bird extinctions on Pacific Islands. Five species of birds disappeared from Taukihepa Island, New Zealand, after the arrival of the Black Rat. On **Lord Howe Island**, Australia, five endemic bird species became extinct following the arrival of rats from a shipwreck. In the Pacific a number of bird species survive only where intensive rat control operations occur, or on islands free of Black Rats.

The Black Rat is also a threat to island people and economies. Throughout the world, vast quantities of agricultural crops and food supplies are consumed or despoiled by rats each year. In **Tonga** it was estimated in one study that 20% of the coconut crop was lost due to rats.



Case Studies

The Tuamotu Archipelago in French Polynesia is the home of many bird species such as the Polynesian ground-dove and Tuamotu Sandpiper (*Kivi Kivi*). The continued existence of these species is threatened by rats that predate on the birds, chicks and eggs. In 2015 Birdlife International and its local partner Société d'Ornithologie de Polynésie (MANU), together with Island Conservation plan to eradicate rats from 6 atolls and small islets in the Acteon and Gambier island groups of the Tuamotu Archipelago.

The Malau (Polynesian Megapode) is a critically endangered bird native to the Kingdom of Tonga. Ongoing survival of this species is severely threatened by rats, and although it is not feasible to eradicate rats from the entire Kingdom, it may be possible to eradicate them from some of their critical habitat such as Late Island. This planned eradication, coupled with translocation of breeding birds from nearby island, can potentially save this iconic species from extinction.

In cases where eradication is currently not deemed feasible for reasons such as cost or the presence of vulnerable non-target species, specific actions can be taken to protect native species at risk. These may include intensive control of rats and other predators. The Raratonga Monarch, for example, has been brought back from the brink of extinction through rat and cat control, and the transfer of 30 young birds to Atiu Island (known locally as the Land of Birds) in 2001-2003.

Solutions

There are many projects in the Pacific region ready to be funded that would reduce the impact of rats on island biodiversity and people. Fortunately, the tools and techniques necessary to reduce the impact of rats on islands have advanced considerably in the past 20 years. Since the 1960s, rats have been successfully eradicated from over 300 islands, and the number increases every year. The impetus of these past successful eradications must be maintained to continue the battle to save the unique Pacific fauna and flora. An essential part of the eradication process is ongoing biosecurity which is paramount in the fight to ensure that rat-free islands are not re-invaded after successful eradication.



The Black Rat (*Rattus rattus*) is one of the most damaging rodent species in the region,

Image: Australian Department of Agriculture, Forestry and Fisheries



The Pacific Rat (*Rattus rexulans*) is found across the Asia-Pacific region

Image: Hector J. Claudio



The survival of the Tuamotu Sandpiper (top) and the Polynesian Megapode (bottom) are both threatened by rats.

Image Peter Morris, Birdquest (top) and SPREP (bottom)

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Other Insect Pests

Impacts: food security, sustainable development, biosecurity, human health, ecosystem resilience

Background

Insect pests dramatically impact all forms of agriculture. Left un-managed, introductions of new pests can result in serious declines in crop productivity, often leading to increased reliance on pesticides to mitigate their impacts. In other instances, insects can affect human health by being a vector for diseases caused by bacteria, parasites and viruses.

Biosecurity activities are the front-line defense against the entry of new insect pests. However, as trade and movement of people between the world and Pacific nations increases, existing biosecurity systems are no longer able to adequately manage these risks. Preventing the entry of new invasive species is the front-line defense against their impacts. A regional strategy that prevents the entry and movement of insect pests and other invertebrates is needed to stem the flow of new pests and diseases.

Case study: Coconut Rhinoceros Beetle

Coconut palms are an iconic symbol of the Pacific region. Also known as the “tree of life”, they provide people with food, drink, thatch and wood, erosion control, and beach stability. The Coconut Rhinoceros Beetle (CRB) (*Oryctes rhinoceros*) is a serious pest of coconut palms throughout its native south-east Asia range and introduced locations throughout the Pacific region. Adult beetles bore into the trunks and feed on developing leaves of coconut and other palms, causing extensive damage to leaves which often results in the death of the parent plant. The beetles have caused the extinction of coconuts on some islands.

To date Hawai'i has been free of this pest; however, adult beetles were detected in December 2013 at Joint Base Pearl Harbor Hickam, Honolulu. Ongoing delimiting surveys may identify more infested sites. Adults and larval stages of Coconut Rhinoceros Beetles are difficult to control with pesticides. Their large size and well-developed cuticle appear to serve as defense to pesticides applied at conventional dosages.

The Coconut Rhinoceros Beetle is present in Guam, Hawai'i, Palau, Tonga, Papua New Guinea, American and Western Samoa,



The Coconut Rhinoceros Beetle is one of the greatest insect threats in the region. The damage and eventually kill coconut palms and allied species.

images courtesy of Dr Ross Miller and Aubrey Moore, University of Guam



The Regional Biosecurity Plan for Micronesia and Hawaii

The Regional Biosecurity Plan for Micronesia and Hawai'i (RBP) – previously known as the MBP (Micronesian Biosecurity Plan) is a regional strategy that aims to strengthen biosecurity systems for the Islands of Micronesia in partnership with Hawai'i as the U.S. Department of Defense (DoD) prepares to deploy additional forces in the region. The U.S. DoD has provided over \$3,700,000 of funding for the development of this plan to proactively address terrestrial, freshwater and marine invasive species risks to Micronesia and Hawai'i. Jurisdictions to be covered by the RBP are: the Federated States of Micronesia, the Republic of the Marshall Islands, the Republic of Palau, the U.S. Commonwealth of the Northern Mariana Islands, the U.S. State of Hawai'i, and the U.S. Territory of Guam. This unprecedented effort will help address both invasive species threats to the U.S. military mission and invasive species concerns raised by the Micronesian Chief Executives and regional partners. The development of the RBP has been a multi-year effort involving local, regional, and global experts and stakeholders.

Implementation of the plan will harmonize and strengthen the quarantine strategies of each country and minimize risks of spreading invasive species such as the Coconut Rhinoceros Beetle, Brown Tree Snake, and Little Fire Ant into and within the region. The RBP was endorsed by the Chief Executives of Micronesia at their Summit meeting (the 20th MCES) in June 2014. The Chief Executives have made a firm commitment to seek and mobilize funding for implementation of the plan, including a commitment by Palau's President of \$1.4 million of Palau's country allocation under the Global Environment Facility for invasive species action. Similar commitments of resources are expected by the other members of the RBP, but additional support will be needed from development partners if the goals of the RBP are to be fully realized.

The RBP is a vital component of the region's overall invasive species strategy. It will strengthen the biosecurity capacity of all Pacific nations, helping reduce threats from a broad range of invasive species such as the Brown Tree Snake, mongoose, varroa mite, Red Imported Fire Ant and many others.



The Brown Tree Snake is an invasive snake present on Guam, the "hub" port of the western Pacific. It threatens the entire region.

images Wikipedia.org.



The Small Asian Mongoose, present on Hawaii and Okinawa, is a generalist predator of birds and other small vertebrates. It can devastate bird populations on Pacific islands

image: Wikipedia.org



The Red Imported Fire Ant (*Solenopsis invicta*) is an aggressive and highly invasive ant species. Currently present on Okinawa, it threatens the entire region.

image:



The Pacific Invasives Partnership

COMPOSITION:

The Pacific Invasives Partnership (PIP) is the umbrella regional coordinating body for agencies working on invasive species in more than one Pacific island country. PIP members are regional organizations, regional programmes, international conservation NGOs, research institutions and agencies of the New Zealand and US governments.

MISSION:

To promote coordinated planning and assistance to meet the invasive species management needs of the Pacific Island Countries and Territories.

STRATEGY:

PIP is dedicated to ensuring the successful implementation of the Guidelines for Invasive Species Management in the Pacific. It facilitates coordination and cooperation between agencies working on invasive species issues in the region and assists Pacific Island Countries and Territories address their invasive species priorities. PIP also provides support and guidance to two major regional programmes: the Pacific Invasives Initiative (PII) and the Pacific Invasives Learning Network (PILN).

SUSTAINABILITY:

Coordination of PIP is an integral part of the remit of the Invasive Species Officer at the Secretariat of the Pacific Regional Environment Programme. This permanent position ensures sustainability of PIP coordination. The PIP Chair rotates amongst partners and PIP conducts its business through an annual meeting, regular email discussions, teleconferences and other opportunities as they arise. Members' participation is at their own expense.