



PROVINCE DES ÎLES LOYAUTÉ

# Biosecurity Plan for Ouvea Atoll, Loyalty Islands, New Caledonia

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# 1 EXECUTIVE SUMMARY

The atolls of Ouvea and Beautemps-Beaupre were included in the UNESCO World Heritage List in 2008. Becoming a World Heritage Site comes with an obligation of protecting and managing the site. Ouvea's customary landowners, represented under GDPL Bomene Tapu and the Province des Iles Loyauté (PIL) signed an agreement in 2007 for the co-management of the site and to protect its natural and cultural heritage. They developed a Management Plan for Ouvea and Beautemps-Beaupre Atolls (Imirizaldu *et al.* 2012). This plan specifically identifies the strengthening of biosecurity as a priority action to reduce the risk of new invasive alien species introductions. The most notable threats are the ship rat (*Rattus rattus*) and Norway rat (*Rattus norvegicus*) which have never established on Ouvea and would cause devastating impacts on the endemic and endangered Ouvea parakeet (*Eunymphicus uvaensis*), as well as agriculture (including culturally important crops such as yam and taro), property and the wellbeing of Ouvea's communities.

The purpose of this Biosecurity Plan is to protect Ouvea's biodiversity and socio-economic values by reducing the risk of new invasive alien species (including pests, weeds and diseases) arriving and establishing on the island.

This plan describes the recommended governance structure required to implement biosecurity risk reduction for Ouvea. This is followed by an assessment of the biosecurity risk and legislative framework (Part 1), a full description of biosecurity risk reduction measures that will be required and ongoing monitoring of the plan (Part 2).

## **Governance**

This Biosecurity Plan is to be integrated into the Management Plan for Ouvea and Beautemps-Beaupre Atolls. It is proposed that a Biosecurity Partnership Programme is established under the umbrellas of the Environment Code for the Loyalty Islands (in preparation) and this Biosecurity Plan.

The Biosecurity Partnership Programme will be led and coordinated by PIL with the intent of sharing the burden of protecting Ouvea with key stakeholders in biosecurity for Ouvea. The partnership programme will be in the form of signed agreements between PIL and each key stakeholder.

The implementation of the Biosecurity Plan will require a dedicated full-time coordinator at PIL. Stakeholders' engagement and the establishment and maintenance of the Biosecurity Partnership Programme are some of the key responsibilities of the coordinator. It is also required to appoint a biosecurity officer to be based on Ouvea and who will be responsible for inspection and auditing of pre and post border measures and other related biosecurity activities on the island.

## **Biosecurity Risk Assessment**

The biosecurity risk assessment (Part 1) summarises findings from a literature review, consultation with key stakeholders (Appendix 2) and visits to facilities in Noumea, Lifou and Ouvea that aimed to identify the values at risk from invasive alien species, risk organisms, risk pathways, the legislative framework which could be used to deliver internal biosecurity for Ouvea, current biosecurity practices and gaps.

### **Biosecurity Risk Reduction**

The second part of the plan (Part 2) details the recommended measures to reduce biosecurity risks. A system wide approach is adopted, spanning across pre-border (at the points of departure to Ouvea), the border (at the arrival points on Ouvea) and post-border (on Ouvea). The aim is to have as many lines of defence as possible to reduce the risk of introduction and establishment of new invasive alien species on the island.

### **On-going Monitoring and Funding**

It is recommended that an agency, independent of PIL, is engaged to monitor the implementation of the plan for the first three years. In addition the Biosecurity Plan is a living document and will require revision based on the implementation monitoring, success of the Biosecurity Partnership Programme and records of inspection and audit of the pre-border and border measures.

This Biosecurity Plan will be an on-going commitment and will require sustainable financing. PIL, as the lead agency, will need to identify long-term funding for the coordination and implementation of this Biosecurity Plan, in order to fulfil the aim of protecting Ouvea's natural and productive environments and its communities.

This Biosecurity Plan has been prepared as part of the project INTEGRÉ objective to strengthen biosecurity for Ouvea which is funded by the European Union and implemented by the Pacific Community (SPC). The goal of INTEGRÉ is to promote integrated coastal zone management and strengthen regional cooperation on sustainable development.

## 2 DEFINITIONS AND ACRONYMS

DEFINITIONS	
Invasive alien species	Introduced species that are destructive to the environment, agricultural or horticultural production systems and human interests. This includes weeds, invertebrate and vertebrate pests and diseases.
Risk organism	All organisms that have the potential to become invasive.
Biodiversity	The variety of different species of animal, plant and microorganism life within a specific environment or place.
Biosecurity	<p>Measures put in place to manage the risk of introduction and establishment of risk organisms that threaten human health and life, plant and animal health and life.</p> <p>Biosecurity benefits native biodiversity and ecosystems and economic sectors such as agriculture (including subsistence farming), forestry, human health and tourism.</p> <p>The aim is to put effective barriers in place along a continuum which covers pre-border, border and post-border.</p>
Freight	Freight includes all items and goods destined for Ouvea, and includes human and animal food, household goods and appliances, plant material, animals, cars and other vehicles, machinery, equipment, etc.
Incursion	The arrival of an invasive species into an area where it has not been previously present. In an incursion the invasive species may still be associated with the items or host that it arrived on or it may have escaped into the wild and started to establish a population.
Personal effects	All the luggage and items that accompany a traveller. These can include check-in and carry-on bags, ice boxes, hiking shoes and camping equipment.
Risk goods	Anything, living or not, that may harbour or contain a risk organism, e.g. freight, vehicles, machinery, animals, people, shoes, plants, soil, aircraft, vessels.
Risk pathway	The way in which an invasive species or risk organism may be transported into and within a country. Pathways include the transport of risk goods, material in which goods are packaged, containers, luggage via aircraft and vessels, and natural pathways such as wind and sea.
Surveillance	Surveillance is typically defined for biosecurity as targeted or passive surveys that aim to detect emerging pests, weeds or diseases with the intention of investigating them and responding to them.
Pre-border	We define pre-border as all ports or points of departure for Ouvea. The focus of pre-border biosecurity is prevention of introduction
Border	Border is defined as the ports or points of arrival at Ouvea. The focus of border biosecurity is prevention of introduction through inspection, auditing and interception

Post-border	Post-border is within Ouvea past the ports or points of arrival. The focus of post-border biosecurity is surveillance for early detection and incursion response.
<b>ACRONYMS</b>	
ASBO	Association de Sauvegarde de la Biodiversité d'Ouvéa (previously known as Association de Sauvegarde de la Perruche d'Ouvéa (ASPO))
CEN	Conservatoire des Espaces Naturels de Nouvelle-Calédonie
CI	Conservation International
GDPL	Groupement de Droit Particular, also known as GDPL Bomene Tapu (Sacred Island)
IAC	Institut Agronomique Néo-Calédonien
INTEGRE	Initiative des Territoires pour la Gestion Régionale de l'Environnement (Pacific Territories Initiative for Regional Management of the Environment)
IRD	Institut de Recherche pour le Développement
PIL	Province des Iles Loyauté
SIVAP	Service d'Inspection Vétérinaire, Alimentaire et Phytosanitaire, Direction des Affaires Vétérinaire, Alimentaire et Rurale (DAVAR)
SPE	Service de la Pêche et de l'Environnement Marin (SPE), Direction des Affaires Maritimes
UNESCO	The United Nations Educational, Scientific and Cultural Organization



### 3 INTRODUCTION

The inclusion of the atolls of Ouvea and Beautemps-Beaupre to the UNESCO World Heritage List in 2008 is a testament to their exceptional natural heritage. Becoming a World Heritage Site comes with an obligation for protecting and managing the site. In preparation for the listing, Ouvea's customary landowners and the Province des Iles Loyauté (PIL) signed an agreement in 2007, "la déclaration commune", for the co-management of the site which recognises the legitimacy of both parties in working together to protect its natural and cultural heritage. Customary landowners organised themselves into a group representing Ouvea's 20 Kanak tribes, "groupement de droit particulier (GDPL)" also known as GDPL Bomene Tapu (Sacred Island).

As a first step towards fulfilling the obligation for protecting and managing the site, GDPL in collaboration with PIL and with support from Conservation International, undertook a participatory process to complete the Management Plan for Ouvea and Beautemps-Beaupre Atolls (Imirizaldu *et al.* 2012). This plan acknowledges the seriousness of invasive alien species threats to these atolls' native species and ecosystems. It specifically identifies the strengthening of biosecurity as a priority action to reduce the risk of new invasive alien species introductions. The most notable threats to date are the ship rat (*Rattus rattus*) and Norway rat (*Rattus norvegicus*). Ouvea has never been invaded by these two species. However, if either or both species are introduced and allowed to establish on the island they will have devastating impacts on the endemic and endangered Ouvea parakeet (*Eunymphicus uvaeensis*), agriculture (including culturally important crops such as yam and taro), property and the wellbeing of Ouvea's communities.

The purpose of this Biosecurity Plan is to protect Ouvea's biodiversity and socio-economic values by reducing the risk of new invasive alien species (including pests, weeds and diseases) arriving and establishing on the island.

The approach adopted in the preparation of this Biosecurity Plan is based on the following principles:

1. Preventing the arrival of invasive alien species is the first and best line of defence: the focus is on reducing the risk at points of departure (i.e. pre-border) to Ouvea. In this situation PIL and Ouvea's customary landowners refuse the arrival of contaminated goods or vessels at Ouvea's shores. This means those wanting to send and transport goods to Ouvea will need to take biosecurity actions to maintain their service to the island.
2. The expectation that prevention could result in "zero risk" is not realistic. It is well known that even with the best pre-border prevention systems in the world, there are still invasive alien species that slip through the prevention net. Hence, there is a need for putting in place measures to reduce risk at the points of arrival on Ouvea (i.e. at the border) and on the island (i.e. post-border).
3. Managing risk pathways is more effective and efficient than managing individual risk organisms. Such an approach would reduce the risk from a wide range of organisms rather than focussing on a small number of specific risk organisms.
4. Engaging all stakeholders (within and outside Ouvea) is essential for maintaining biosecurity for the island. Biosecurity is about getting everyone involved to "do the right thing".

This plan is intended to provide PIL, GDPL Bomene Tapu and other partners with guidance for protecting Ouvea against invasive alien species threats. It sets out actions and requirements to reduce the risk of introduction and establishment of new invasive alien species.

The plan covers all invasive alien species including pests, weeds and diseases that pose a threat to biodiversity and socio-economic values on Ouvea Atoll.

This Biosecurity Plan for Ouvea is being prepared as part of the project INTEGRÉ objective to strengthen biosecurity for Ouvea. The project INTEGRÉ is a sustainable development project involving the four European Overseas Territories in the Pacific, namely French Polynesia, New Caledonia, Pitcairn Islands and Wallis and Futuna. INTEGRÉ is funded by the European Union and implemented by the Pacific Community (SPC). The goal of INTEGRÉ is to promote integrated coastal zone management and strengthen regional cooperation on sustainable development. Ouvea and Beautemps-Beaupre Atolls in the Loyalty Islands are one of the three pilot sites for INTEGRÉ in New Caledonia.

## **4 GOVERNANCE**

This Biosecurity Plan is to be integrated into the Management Plan for Ouvea and Beautemps-Beaupre Atolls. The Ecology Technical Group under the Governance structure of the Management Plan will also serve to provide support on Biosecurity as agreed by stakeholders during consultation.

The effective implementation of this Biosecurity Plan will require strong commitment and participation from a wide range of stakeholders. Therefore, it is proposed that a Biosecurity Partnership Programme is established under the umbrellas of the Environment Code for the Loyalty Islands (in preparation) and this Biosecurity Plan.

The Biosecurity Partnership Programme will be led and coordinated by PIL and will bring together all key stakeholders:

- GDPL, representing local communities on Ouvea
- Institutional partners, namely the provinces and relevant government and state agencies
- All agencies/companies providing transport, goods and services to the island
- Technical support and capacity development partners

The establishment of such a programme will allow Ouvea to share the burden of protecting itself from the risk of new invasive alien species introductions, by managing risk at points of departure to Ouvea and across biosecurity risk pathways. Moving the risk management focus as close as possible to the source of the risk (i.e. pre-border), will enable the application of biosecurity best practice and the apportioning of responsibility between relevant stakeholders. The Biosecurity Partnership Programme will also help address some of the challenges to the implementation of this Biosecurity Plan, namely lack of legislation for internal biosecurity within the territory, limited resources on the island and implementation across different jurisdictions. PIL's institutional counterparts, Province Sud and Nord, have the mandate through their environment codes to regulate invasive alien species at points of departure to Ouvea. Their participation in the programme is essential.

Partners to the programme will receive support with implementing the biosecurity measures that are related to their operations in the form of awareness and biosecurity training and the

provision of information materials. Partners will also be formally acknowledged by PIL for their contributions. Signing up as a partner could provide a competitive advantage to service providers, as PIL and GDPL will be able to influence local government, businesses and communities on Ouvea about which provider to use.

Shipping companies that opt not to participate in the Biosecurity Partnership Programme or infrequent or single visit commercial or pleasure sea vessels will still be obliged to meet biosecurity requirements for their operations. Landing on Ouvea for these types of vessels will be through a permitting system managed by PIL and if possible under PIL's regulations, paid for by applicants. Permits will detail biosecurity requirements for applicants.

The Biosecurity Partnership Programme would be in the form of signed agreements between PIL and each partner confirming their commitment to the effective implementation of the Biosecurity Plan for Ouvea and what is required of them. The agreement would outline the expectations for each type of organisation which may be in the form of separate biosecurity action plans that cover requirements for involvement in biosecurity awareness, biosecurity training, management of plant propagative material, management of personal effects, management of freight, port of departure hygiene and air and sea vessel hygiene, as relevant to individual partners. On-going coordination and maintenance of the partnership agreements by PIL, the lead agency should include scheduled and random compliance checks, with the intention of working with partners to maintain compliance and achieve the requirements laid out in the action plans.

The first step in the establishment of a Biosecurity Partnership Programme will require PIL to identify all potential partners. An initial list of potential partners that should be included in the development of the partnership programme to manage pre-border biosecurity risks to Ouvea is given below:

**Customary landowners:** GDPL

**Provinces:** Sud and Nord

**Government agencies:** Agence pour la Prévention et l'Indemnisation des Calamités Agricoles ou Naturelles, Chambre d'Agriculture de Nouvelle-Calédonie, Direction des Affaires maritime, Mairie de Ouvea.

**State agencies:** Direction du Service d'Etat de l'Agriculture, de la Forêt et de l'Environnement, Agence de l'Environnement et de la Maitrise de l'Energie, Direction Régionale des Douanes

**Port authorities:** Port Autonome de Noumea (Noumea and Lifou). Port of Mare is managed by PIL. Port authorities are also responsible for Marinas.

**Airport authorities:** Magenta and Lifou. Note: if flights between Mare and Ouvea are established, the airport authorities in Mare need to be included.

**Transport companies (freight and passengers):** CMI, STILES, Betico, Air Caledonia, and Air Loyauté and any other shipping companies that service the island.

**Technical and capacity development partners:** SIVAP, GDSV, CEN, IRD, IAC, ASBO, Arbofruits, Bio Caledonia

**Commercial suppliers:** Goods, equipment, machinery, etc.

**Infrastructure and development partners:** ARBE, ETIK, SODIL.

**Suppliers of plant propagation material (plant nurseries)**

**Pest control companies:** Companies that service ports and suppliers warehouses.

**Tourism operators:** Companies or private individuals that organise travel to Ouvea.

The implementation of the Biosecurity Plan will require a dedicated coordinator who will be responsible for facilitating the establishment of the Biosecurity Partnership Programme, the development and delivery of awareness and training, auditing and compliance checking as well as overseeing the implementation of the plan. We recommend that PIL employs a full-time coordinator who is capable of working at the strategic level with all partners and has biosecurity/ecological experience of at least three years. On-going management of the Biosecurity Plan, following full implementation, will require a permanent part-time or full-time coordinator. It is suggested that a review of the position should be undertaken 6 months before the end of the three years to ascertain whether it should continue as a full or part-time position.

In addition, the implementation of border and post border biosecurity will require the appointment of a minimum of one fulltime biosecurity officer based on Ouvea. The biosecurity will be responsible for inspecting and auditing pre and border measures, coordinate passive surveillance and the operational delivery of targeted surveillance and response activities. He/she will be the PIL contact person for all biosecurity issues on the island.

Biosecurity is an on-going commitment and as such cannot be financed on a project-based basis and will require sustainable financing. It is recommended that PIL, as the lead agency, identify long-term funding for the coordination and implementation of this Biosecurity Plan to protect Ouvea's natural and productive environments and its communities.

## PART 1 – BIOSECURITY RISK ASSESSMENT

### 5 THE BIODIVERSITY AND SOCIO-ECONOMIC VALUES AT RISK

Ouvea is a raised coral atoll in the Loyalty Islands Archipelago. It consists of one main island, Ouvea, and several smaller, offshore islets (the Southern and Northern Pleiades), surrounding a lagoon. Ouvea Island has a total land area of 132 km<sup>2</sup> and is home to 4000 inhabitants. The majority are Kanak, living in 20 tribes and maintaining traditional social structures and lifestyles. The terrestrial and marine estate is under customary ownership.

The whole of Ouvea and Beautemps-Beaupre (including the marine and terrestrial buffer zones) are on the UNESCO World Heritage List as serial properties ([www.province-iles.nc/environnement/les-lagons-douvea-et-de-beautemps-beaupre-unesco](http://www.province-iles.nc/environnement/les-lagons-douvea-et-de-beautemps-beaupre-unesco)). Ouvea Island is also listed as an Important Bird Area by BirdLife International (BirdLife International 2015). The atolls are characterised by diverse marine and coastal habitats offering breeding, nursery, feeding or migration grounds for a number of iconic or endangered species such as seabirds, sea turtles and sharks (Imirizaldu *et al.* 2014). The land area supports significant stands of tropical moist forest, several vascular plants that are endemic to the Loyalty Islands and sites of exceptional natural heritage (including the only mangrove in the Loyalty Islands) (Butaud 2015). It is also home to the endemic and endangered Ouvea parakeet and other restricted-range bird species, flying foxes, land snails (locally known as bulimes, endemic to New Caledonia) and coconut crabs. Ouvea also has important stands of sandalwood. These natural resources and places play a crucial role in the culture of Kanak communities. Traditional uses of natural resources include medicinal plants, customary rituals, fibre to build traditional buildings (les cases), food, etc.

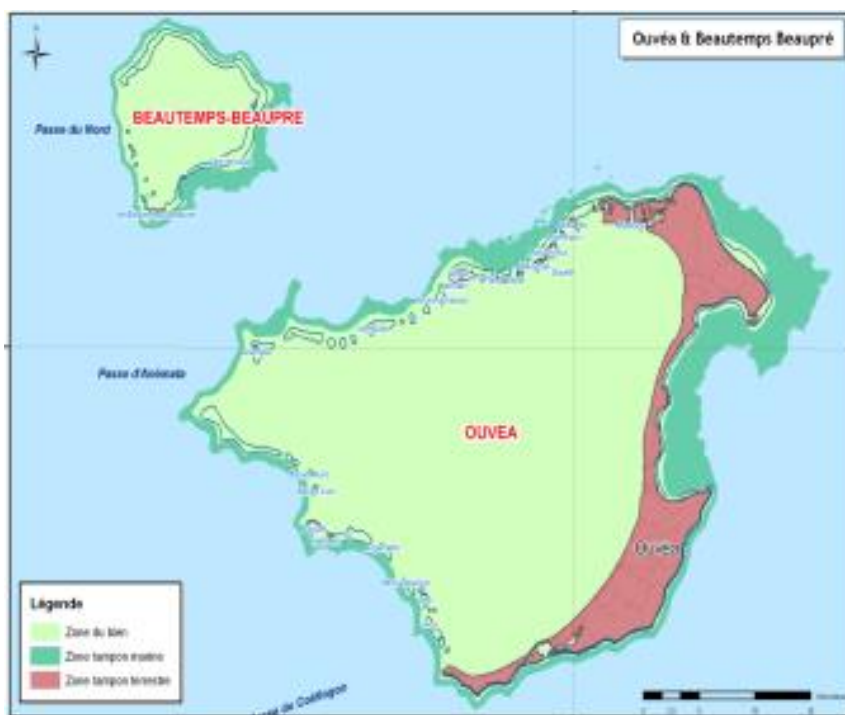


Figure 1. Ouvea and Beautemps-Beaupre

The economy of the island is based on copra production, vegetable and fruit growing and fishing ([www.province-iles.nc/decouvrir-les-iles/ouvea#ci](http://www.province-iles.nc/decouvrir-les-iles/ouvea#ci)). There is also developing sandalwood production, beekeeping and vanilla growing. It was hoped that having Ouvea on the UNESCO List will contribute to the development of the island through increased tourism. There is already a small tourism industry and there are plans to develop ecotourism in the southern district of Mouli through the INTEGRE project. Ouvea's outstanding natural heritage is perceived as its most marketable resource as far as tourism is concerned.

Staple foods such as yam, taro and cassava are grown on the island. Other foods and goods are mainly purchased from suppliers in Noumea and transported to Ouvea by sea or air. To enable better access by sea, a new port is currently being built at Hwadrilla with a new wharf (to replace the current one), a passenger terminal, an area for unloading containers, storage space, etc. Other development projects planned on Ouvea include a new desalination plant, a photovoltaic plant and a housing estate.

Ouvea's biodiversity and socio-economic values are at risk from a suite of invasive alien species (including pests, weeds and diseases) threats. The giant African snail, feral goats, coconut grasshopper (endemic to Grande Terre), little fire ant, pluchea and strawberry guava are some of the threats currently present on Ouvea. The introduction, whether intentional or accidental of further invasive alien species could lead to a wide range of negative impacts on native plants and animals, agriculture and subsistence crops, human health and cultural natural resource use. As mentioned above, the most notable threats to date are the ship and Norway rats. If introduced and subsequently allowed to establish, they will have severe impacts on the island's native biodiversity including terrestrial birds (especially the Ouvea Parakeet), reptiles, snails, plants and seabirds. Their impacts will be very detrimental to agriculture and copra production. They can also be a nuisance around dwellings, cause damage to property and contaminate water tanks with urine and faeces. They can also vector diseases such as leptospirosis to people.

The Association for the Protection of the Ouvea Parakeet (which became known as the Association for the Protection of Ouvea's Biodiversity in 2012 (ASBO) has since the 1990s been undertaking prevention and surveillance for ship and Norway rats at the wharf at Hwadrilla. This is the point of arrival of sea vessels and freight and hence, a high risk location. In 2012, a rodent Biosecurity Plan was prepared which expanded the geographic scope of the prevention/surveillance effort to other high risk locations in addition to the wharf at Hwadrilla. ASBO also introduced the use of bait stations in addition to traps. The association also works at enhancing awareness within Ouvea's communities so they can assist with passive surveillance.

## **6 LEGISLATIVE FRAMEWORK**

Biosecurity at the international borders of New Caledonia is governed by Act no. 238 which was adopted by the Congress on 15 December 2006 as well as by its application decree no. 2014/333 of 13 February 2014. The latter does not specifically refer to invasive alien species, but it explicitly refers to risk species and goods that pose a threat not only to human, animal and plant health and the economy of New Caledonia but also to its environment. Currently there is no legislation for internal biosecurity (i.e. within New Caledonia including between islands).

Decree no. 2014-333/GNC is administered by the Directorate of Veterinary, Food and Rural Affairs (DAVAR or Direction des Affaires Vétérinaire, Alimentaire et Rurale). At the international borders, DAVAR's Veterinary, Food and Phytosanitary Inspection Service (SIVAP or Service d'Inspection Vétérinaire, Alimentaire et Phytosanitaire) works in tandem with French Customs (who have the mandate to act at the international border) on clearance of passengers, goods, vessels and mail and related biosecurity measures. Post-border (New Caledonia wide) SIVAP is responsible for animal and plant post-border quarantine, diagnostics, surveillance and incursion response for high priority pests and diseases such as fruit flies and banana bunchy top virus.

Post-border, the mandate for invasive alien species that are solely a threat to the environment becomes that of the provinces. Note that some environmental invasive alien species may also impact other sectors such as human health and agriculture. In these situations, responsibility is shared between various government agencies. The Environment Codes of Province Sud and Province Nord comprise regulations for invasive alien species within their respective jurisdictions. The articles on invasive alien species are suitable for internally managing specific invasive alien species but not risk pathways and risk goods (e.g. soil, cut flowers and nursery stock). The provinces have provisions in their Environment Codes for restricting movement of specific invasive alien species, however they do not have powers to inspect, or to enforce movement control, or impose penalties for non-compliance directly. To carry out such actions they rely on the assistance of customs, police or gendarmerie.

Province des Iles Loyauté is currently going through the process of developing its Environment Code which will include biosecurity. We recommend that Province des Iles Loyauté include biosecurity provisions for management of high risk pathways (Table 2) and risk goods along with priority invasive alien species (see Table 1).

The Invasive Alien Species Strategy for New Caledonia currently being developed should include the establishment of a framework for internal biosecurity and clarification of roles and responsibilities for its delivery at the territorial, provincial and site levels.

## **7 RISK ORGANISMS**

Table 1 describes priority invasive alien species that have been identified by stakeholders during the consultation process as posing a high risk to Ouvea's biodiversity and socio-economic values. However, the invasive alien species listed in Table 1 are only a subset from a wide range of risk organisms that can cause harm to Ouvea, many of which may not yet be identified.

It is well established that risk organisms can move between locations by various means or pathways; as hitchhikers on plants or animals, or on non-living objects such as heavy machinery (see Table 2 for risk pathways to Ouvea). A suite of risk organisms can be associated with a single pathway. For example, potted plants can carry ants, snails, nematodes, worms, fungi, weed seeds, etc. For this reason, a pathway approach to prevention is recommended as it addresses a wider range of risk organisms rather than focussing on a small number of specific invasive alien species.

**Table 1. Priority invasive alien species that pose a threat to Ouvea.**

Group	Common Name	Species name	Presence in NC	Risk Pathways	Impacts	Reference
Vertebrate	Black rat, ship rat	<i>Rattus rattus</i>	Grande-Terre, Lifou, Entrecasteaux	Highly invasive. High risk from originating ports in New Caledonia	Significant threat to the Ouvea parakeet and other birds, reptiles, molluscs and amphibians. Pest of crops and food stores. Vector of human diseases.	Beauvais <i>et al.</i> , GISD, Guide ONCFS
Vertebrate	Brown rat, Norway rat	<i>Rattus norvegicus</i>	Grande-Terre, Lifou	High risk from originating ports in New Caledonia	Threat to birds, reptiles, molluscs and amphibians. Vector of human diseases.	Beauvais <i>et al.</i> , GISD, Guide ONCFS
Vertebrate	Red vented bulbul	<i>Pycnonotus cafer</i>	Grande-Terre	Highly invasive. Risk of nesting or roosting birds on sea vessels from originating ports in New Caledonia	Bulbul's damage fruit, flowers, seeds and vegetable crops. They are aggressive to other bird species and spread weed seeds (e.g. lantana and miconia).	Beauvais <i>et al.</i> , GISD, Guide ONCFS
Vertebrate	Common mynah	<i>Acridotheres tristis</i>	Grande-Terre	Risk of nesting or roosting birds on sea vessels from originating ports in New Caledonia	Mynah birds damage fruit crops, compete with native birds for food and nest sites and can vector harmful human pathogens and mites.	Beauvais <i>et al.</i> , GISD, Guide ONCFS
Vertebrate	European rabbit	<i>Oryctolagus cuniculus</i>	Grande-Terre, Ilot Lepredour	Risk of deliberate introduction or escape.	Impact on vegetation and soil erosion.	Beauvais <i>et al.</i> , GISD, Guide ONCFS
Vertebrate	Rusa deer	<i>Cervus timorensis</i>	Grande-Terre and nearby satellite islands	Risk of deliberate introduction.	Forest damage and potential for crop damage and spread of weeds.	Beauvais <i>et al.</i> , GISD, Guide ONCFS



Invertebrate	Flatworm	<i>Platydemus manokwari</i>	Grande Terre, Maré	. Risk of unintentional introduction.	Significant threat to endemic and indigenous molluscs (snails and slugs).	GISD
Invertebrate	coconut rhinoceros beetle	<i>Oryctes rhinoceros</i>	No	Long history of invasion of other pacific islands, not known from New Caledonia. Risk of transfer from Fiji.	Causes crown damage and reduces nut yield. ISSG states it is one of the most damaging insects to coconut palms.	GISD
Invertebrate	red imported fire ant	<i>Solenopsis invicta</i>	No	RIFA has invaded other parts of the Pacific and is under management in Queensland which is a source of many goods for New Caledonia.	"Of all the ant species in the Pacific region, the red fire ant, along with the little fire ant, is the greatest threat to quality of human life and biodiversity"	Beauvais <i>et al.</i> GISD
Invertebrate	Queensland fruit fly	<i>Bactrocera tryoni</i>	Grande-Terre	Long distance spread of fruit flies is generally human assisted by transporting infested fruit.	Fruit fly is an economically damaging fruit crop pest and can have significant impacts on home grown fruit.	NZ Ministry for Primary Industries, DAVAR
Invertebrate	vanilla scale	<i>Conchaspis angraeci</i>	Tiga, Lifou, unknown from other Loyalty Islands, unknown from Grande-Terre	This scale is easily moved on plant material and may be assisted by human movement of vanilla plant material and pods and a wide range of other plant hosts.	This scale is a serious threat to vanilla production on the Loyalty Islands. It causes damage to leaves and stems which weakens the vine and eventually lead to its deaths.	Les Cahiers No. 4 Juillet 2012; Bulletin de Santé Végétal, Ed. No.4, Avril 2015

Pathogen	banana bunchy top virus	BBTV	Grande-Terre	BBTV is spread plant to plant by aphids (small sucking insects) and long distance by movement of infected plant material. Plants retain the virus once infected and should be destroyed.	Banana production can be seriously impacted by this disease.	GISD
Plant	huisache	<i>Acacia farnesiana</i>	Grande Terre, Lifou, Maré?	Movement of cattle and other pasture feeding animals, seeds transported in soil and compost.	Thorny invasive shrub of pasture land and can shade out native plants.	GISD, CABI
Plant	rose apple	<i>Syzygium jambos</i>	Grande Terre, Lifou, Maré	Movement of fruit, seeds transported in soil and compost. Also, seeds vectored by rats.	A small tree, forms dense thickets. Can shade out native plants and cause soil erosion.	GISD, CABI
Plant	devil's backbone	<i>Kalanchoe daigremontiana</i>	Grande Terre, Lifou, Maré	Seeds transported in soil and compost. Also, intentionally as an ornamental.	Small aggressive succulent toxic to wildlife and domestic animals. Forms dense thickets and outcompetes native plants	CABI
Plant	Barbados gooseberry	<i>Pereskia aculeata</i>	Grande Terre	Movement of plant parts and seeds transported in soil and compost. Also, seeds vectored by rats and birds.	A leafy, spiky, climbing shrub, forms dense clumps over large areas and outcompetes native plants.	Environmental Weeds of Australia for Biosecurity Queensland

## 8 RISK PATHWAYS

Ouvea can be accessed by sea or air; with the main arrival ports being the wharf at Hwadrilla and the airport. There is also a temporary landing site at Lekine for barges because the current wharf is not structurally sound for unloading large freight items such as building material and heavy machinery . A new port infrastructure is currently being built which will include a new wharf, suitable for barges and ships and a passenger terminal.

The bulk of the freight arriving at Ouvea is sent through the Port Autonome in Noumea with relatively smaller amounts through the ports of Lifou and Mare. The freight includes a wide range of goods sourced from suppliers on Grande Terre, Lifou or Maré. Goods sourced internationally undergo quarantine clearance at the Port Autonome in Noumea and are then passed on to shipping companies for transport to Ouvea.

A small quantity of goods, 30% of which is of perishable goods, is transported by air to the island.

The majority of people travel to and from Ouvea by air either through Magenta or Lifou airports. Some people arrive on the island on private local or foreign yachts, charter or small fishing boats from several departure locations in New Caledonia. Foreign yachts must obtain clearance at dedicated ports on Grande Terre (i.e. Noumea, Koumac, Touho, Hienghene) or at Lifou.

Table 2 briefly describes the main pathways of introduction for invasive alien species into Ouvea. Note that new risk pathways may arise in the future. These will need to be added to the list below and risk reduction measures included. An example is the cruise ship pathway, if cruise ship visits to Ouvea are resumed.

**Table 2. Description of the main pathways of introduction for invasive alien species into Ouvea.**

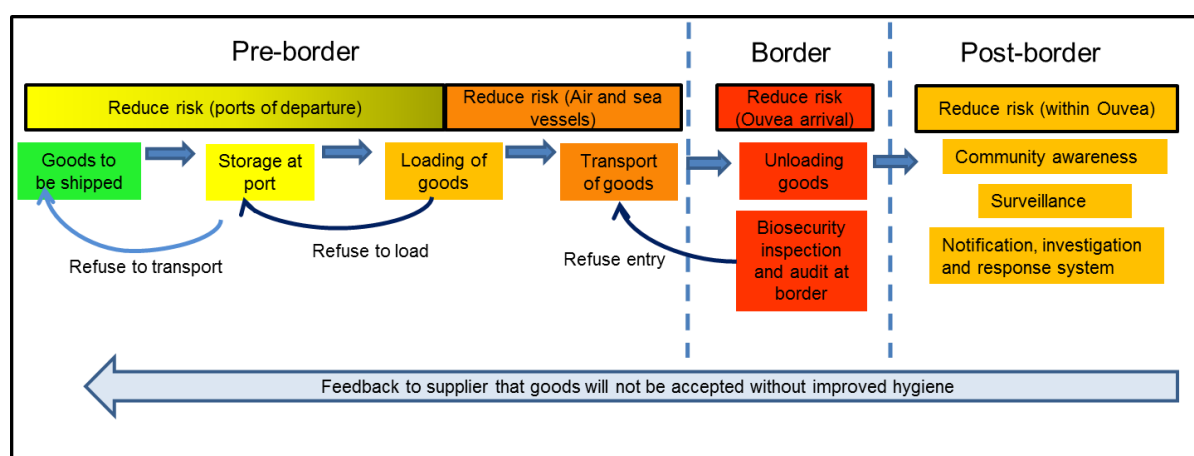
Mode of transport	Source location	Types of cargo/people	Frequency	Volumes/ numbers	Comments
Sea vessel: ISAN (Compagnie Maritime des Iles - CMI)	Port Autonome de Nouvelle Calédonie, Nouméa	All types of freight, including live animals, heavy equipment, cars, cement, concrete blocks, wood (mainly from New Zealand), small amounts of gravel, imported compost in sealed bags.	1/week	300 tons/week	No soil or sand. Transports nursery stock to the other loyalty Islands but not to Ouvea.
Sea vessel: LAURA III (Société de Transport des îles – STILES)	Port Autonome de Nouvelle Calédonie, Nouméa	All types of freight			
Sea vessel: BETICO 2 SUDILE	Port Autonome de Nouvelle Calédonie, Nouméa	Freight and passengers	1/week		Plan to restart passenger transport to Ouvea in 2017.
SCORPIO					SCORPIO were not available for consultation. They remain an important stakeholder and need to be engaged in the discussions on the Biosecurity Partnership Programme.
Barges	Port Autonome de Nouvelle Calédonie, Nouméa	Building material and heavy equipment	3/year		Unload at a temporary wharf at Léline (lagoon side)
Local private yachts	Marinas in: on Grande Terre (Several in Noumea & other locations), Lifou.				
International private yachts				600-700 yachts/year	Yachts arriving from overseas can get clearance at: Noumea, Koumac, Touho, Hienghene and Lifou.

					All yachts are cleared by the local SIVAP inspector on arrival including at Lifou. Marine biofouling is not assessed other than via visual inspection from the wharf.
Small fishing boats Size : 5 to 6 m	From several locations on the NE of Grande Terre				Visit Beautemps-Beaupre (Imirizaldu <i>et al.</i> 2012))
Charter boats	Noumea	Tourists	Unknown	Unknown	Tour operators from Grande Terre bring tourists to spend a few days on Beautemps-Beaupre (Imirizaldu <i>et al.</i> 2012)
Air New Caledonie	Magenta Airport, Noumea	Passengers: Majority local people and small number of tourists. Freight: 30% perishable goods (including flowers), kava, personal items, furniture, kitchen items, mail.	3 flights/day  Similarly for Mare, Lifou and Ile des Pins	1800 tons/year (total for all islands)	Packages do not exceed 30 kg.
Air Loyauté	Lifou Airport	Passengers, personal items, perishable goods	2 flights/day		

## PART 2 - RISK REDUCTION

### 9 INTRODUCTION TO RISK REDUCTION

This plan follows a biosecurity system wide approach which spans across three areas of intervention: 1) pre-border (at the points of departure to Ouvea), 2) the border (at the arrival points on Ouvea) and 3) post-border (on Ouvea). The aim is to put in place as many lines of defence as possible to reduce the risk of introduction and establishment of new invasive alien species on the island (Figure 2).



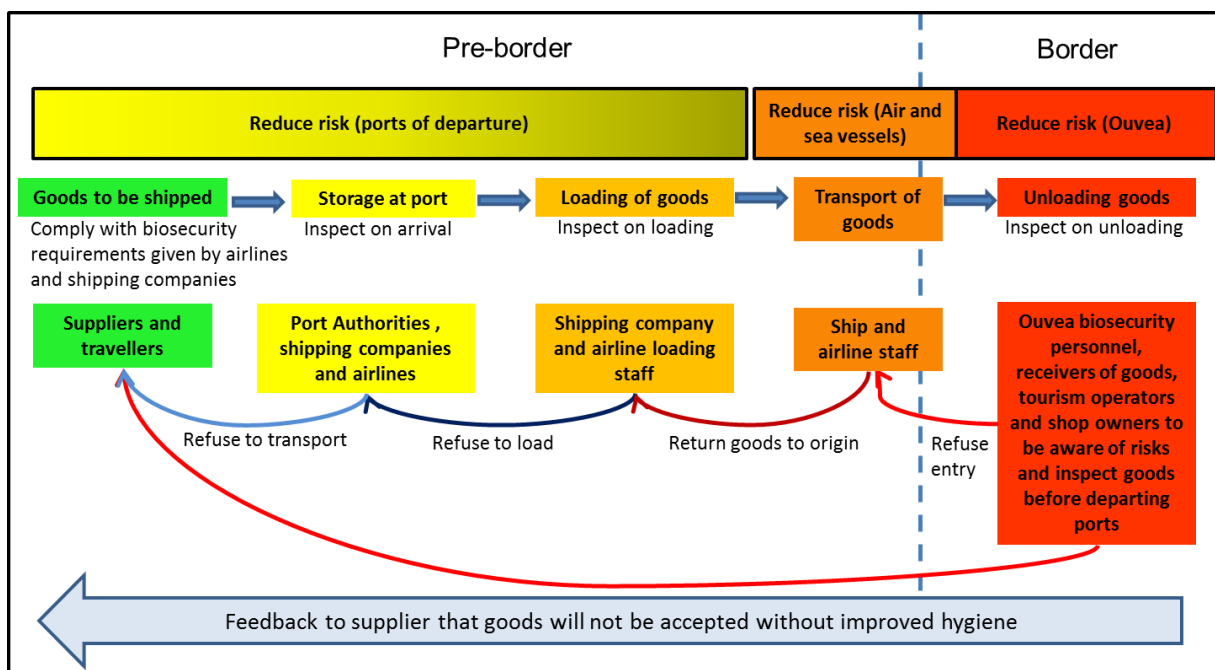
**Figure 2. Lines of defence – An overview of the whole biosecurity system, indicating each of the areas where biosecurity risk can be managed.**

The objectives of the pre-border and border parts of the biosecurity system are respectively, to reduce the risk of arrival and introduction of invasive alien species to Ouvea (Figure 3, sections 10 and 11). While, the objective for the post-border part of the system (section 12) is to reduce the risk of establishment of invasive alien species that do manage to escape the pre-border and border control measures.

The effectiveness of the biosecurity system should be checked through regular auditing. PIL is responsible for setting the auditing requirements, the frequency of audits (initially every 3 months) and identifying a suitable agency or agencies to undertake auditing. Selected agencies must develop processes along with supporting tools to undertake audits (e.g. operating procedures, checklists, and guidelines on how to look for pest presence, etc.). Auditing agencies must also provide biosecurity training for their staff. They must also document audit findings and make recommendations for amendments to biosecurity measures.

### 10 PRE-BORDER RISK REDUCTION

There are several points of control for pre-border management of risk goods to prevent and detect contaminants. These are when preparing goods for shipment and during storage, loading and transport of goods (Figure 3). At each point there is an opportunity for feedback on any issues detected to the owner, supplier or transporter of the goods so that the biosecurity system is continually improved.



**Figure 3. Points of risk detection and reduction pre-border and at Ouvea's border.**

Goods to be shipped to Ouvea are inspected for biosecurity risks by shipping or airlines companies at drop-off, and if any risks are found, they are refused transport. Goods are also checked during loading to ensure they have not become contaminated during storage, and are not loaded if a risk is present. On arrival at Ouvea goods may be inspected for biosecurity compliance and if any biosecurity risks are detected then goods will be refused entry, requiring the transport company to reshipe the goods back to their origin. At each point in the system feedback will be given to goods suppliers/owners/transporter to reinforce the message that only 'clean' goods will be accepted on Ouvea and to help them become compliant.

The authority to inspect goods and vessels and to refuse entry or request cleaning is provided by PIL's Environment Code and this Biosecurity Plan. The Biosecurity Partnership Programme is the main mechanism to deliver pre-border biosecurity. It will be in the form of signed agreements between PIL and each partner, detailing what is required of them.

In addition, for shipping companies that opt not to participate in the Biosecurity Partnership Programme or for infrequent or single visit commercial or pleasure sea vessels, the authority to inspect goods and refuse entry or request cleaning will be included in landing permits. The latter will detail specific biosecurity measures that are applicable to each vessel and the risk they pose. If possible under PIL regulations, the cost of issuing permits should be recovered from applicants especially, when a border inspection is required under the permit (see Table 6 and section 10.5.2).

Pre-border risk reduction will involve:

- Management of risk goods
- Port of departure hygiene
- Air and sea vessel hygiene

- Enhancing awareness for pre-border biosecurity
- Building capacity for pre-border biosecurity

## **10.1 Management of risk goods**

Aim: To reduce the risk of transporting risk goods carried as personal effects and risk goods carried as freight (commercial and private goods, equipment and machinery) that may be infested, infected or harbour biosecurity risk organisms to Ouvea.

Biosecurity risks associated with personal effects are to be managed through increased awareness by passenger transport providers (see section 10.5.1 1) and voluntary compliance. This was the preferred option by stakeholders during consultation.

Biosecurity risks associated with risk goods carried as freight are to be managed under the Biosecurity Partnership Programme agreements between PIL and each partner (see section 10.1).

Detailed requirements for each type of partner are provided in text and then a summary in tables indicating who is responsible for implementing a measure and which agencies will be potential support agencies. Implementing agencies are those agencies that will be required to actively make changes to their operations to ensure that the measure is undertaken. Support agencies have a role in assisting in the implementation of a measure (e.g. providing biosecurity awareness and inspection training) and/or on-going monitoring and auditing of the measures.

### **10.1.1 Transport partners risk goods management**

Managing risk pre-border under the Biosecurity Partnership Programme will enable the transport partner to refuse to carry risk items unless they are made compliant. If suppliers and customers are aware of the hygiene requirements and the reasons for complying with these (i.e. to protect biodiversity and socio-economic interests) they are more likely to proactively manage their risk.

Transport partners will be able to inspect and refuse to store and transport risk goods that are not compliant (as they currently do with hazardous goods). PIL Environment Code and this Biosecurity Plan provide the mandate to undertake inspections and refuse carriage. In addition, the Province Nord and Province Sud Environment Codes provide the mandate to refuse to transport invasive alien species.

Transport partners will commit to only use ‘clean’ vessels and only transport ‘clean’ goods to Ouvea (using awareness, inspection and refusal to carry items that present a biosecurity risk).

Partners will need to introduce processes to meet the requirements of the programme which should include:

- A booking process that clearly states that all items destined for Ouvea are to be subject to an inspection to check for health and safety and for biosecurity risk items as part of their terms and conditions of carriage. More detail on awareness options are given in section 10.5.
- A process to inform suppliers or customers of the cleanliness requirements of personal effects and freight (PIL will need to provide them with a visual guide indicating what



is acceptable), how to clean common items and the consequences of non-compliance i.e. refusal to carry goods or to board vessel.

- A process for inspecting goods prior to loading to check that customers are following the hygiene requirements. Non-compliant goods will be refused transport until they meet these requirements. Some transport companies may choose to provide cleaning facilities so that customers can clean their goods to become compliant.
- Inspection requirements are based on the SIVAP clearance inspection procedures and are detailed below:
  - At the port of departure all items (including containers) should be inspected inside and out to ensure:
    - No priority invasive alien species (see Table 1) or items that could transport risk organisms (e.g. banana plants, bee hives and used beekeeping equipment) are present.
  - And;
    - Goods, equipment, machinery and personal effects are free of soil, plant material, material of animal origin, and pests,
  - Or;
    - Live plants and plant material (including, fruits and vegetables) are free from live insects and disease symptoms.
    - Live plants and plant material are free of soil (roots must be washed free of soil prior to transport),
  - Or;
    - All potted plants (with soil) must come from a certified high health nursery with control programmes in place for weeds, ants, plant pests and diseases.
- In addition, all freight needs to be managed as detailed in Table 3.

**Table 3. Requirements for the management of freight (commercial and private).**

FREIGHT MANAGEMENT MEASURES	REASON	IMPLEMENTING AGENCY	SUPPORT AGENCIES	COMPLIANCE AUDIT	DELIVERY MILESTONES
ALL freight should be inspected on arrival at the port of departure	Check for compliance to ensure only 'clean' goods are transported.	Shipping companies, Air Caledonia, Air Loyauté.	Port Autonome de Nouvelle Calédonie, Lifou and Mare Ports, Magenta and Lifou Airport authorities.	Audits should be 3 monthly initially, with highly compliant sites reduced to annual audits.  PIL has a role in ensuring implementation and on-going audit for compliance under the Biosecurity Partnership Programme. This can be done with assistance from support agencies.	
Freight should be re-inspected prior to loading if it is stored at a port of departure for more than 24 hours.	To ensure that it has not been contaminated while in storage.	Same as above.	Same as above.	Same as above.	

Transport partners, in addition to managing risk goods, are also required to:

- Develop and implement port of departure hygiene procedures for their own areas of operation as detailed in section 10.2.
- Develop and implement hygiene procedures for their vessels as detailed in section 10.3.
- Train their staff in biosecurity as described in section 10.6.

### **10.1.2 Infrastructure and Development Partners**

- Infrastructure and development partners will commit to only using ‘clean’ materials, equipment and machinery.
- All infrastructure and development partners should be required to join the Biosecurity Partnership Programme.
- The Environmental Impact Assessment process for all infrastructure and development projects on Ouvea must include an assessment of biosecurity risks associated with such projects.
- All contracts for building or maintaining infrastructure on Ouvea should have a contractual requirement under the partnership programme to:
  - Train staff in biosecurity awareness.
  - Only use building materials, equipment and machinery that are free of biological contamination and soil.
  - Comply with biosecurity inspections, audits, and any treatments that may be required.
- PIL has a role in ensuring implementation and on-going audit for compliance in the partnership programme. Audits should initially be conducted every 3 months with highly compliant partners reduced to annual audits.

### **10.1.3 Plant Nursery Partners**

To ensure that Ouvea can access horticultural propagation material for economic development they should have access to material that is certified clean and free of weeds, pests and diseases by PIL or a delegated partner.

We recommend that PIL should implement a certification programme and identify nurseries that are willing to participate in the Biosecurity Partnership Programme and adhere to the following biosecurity requirements:

- Horticultural propagation material destined for Ouvea is free from live insects and disease symptoms using inspection and testing protocols.
- Implement nursery-wide ant and weed control to reduce the risk of transporting ant colonies or weed seeds in potted plant soil for plant species that cannot be transported to Ouvea free of soil.
- Train their staff in biosecurity as described in section 10.6.

## 10.2 Ports of departure hygiene

Aim: To reduce the risk of contamination (including cross-contamination) of vessels, goods, equipment, personal effects and machinery at the ports of departure.

Where: Ports of departure include the shipping ports in Noumea, Lifou and Maré, domestic airports (Magenta and Lifou) and marinas (on Grande Terre, Lifou and Maré).

Hygiene measures that are recommended to reduce the risk of contamination at ports of departure are detailed in Table 4.

**Table 4. Requirements for the management of risks associated with ports of departure.**

PORT OF DEPARTURE HYGIENE MEASURES	REASON	IMPLEMENTING AGENCY	SUPPORT AGENCIES	COMPLIANCE AUDIT	DELIVERY MILESTONES
Maintain effective rodent and invertebrate control programmes	To prevent target species entering vessels or infesting freight awaiting transport to Ouvea.	Port Autonome de Nouvelle Calédonie (Ports of Noumea and Lifou)  Airport Authorities (Magenta, Lifou)  PIL (Marina of Lifou and Port of Maré)  Authorities responsible for other Marinas (private)	Shipping companies; Air Caledonia; Air Loyauté  SIVAP	Audits should be 3 monthly initially, with highly compliant sites reduced to annual audits.  PIL has a role in ensuring implementation and on-going audit for compliance under the Biosecurity Partnership Programme. This can be done with assistance from support agencies such as SIVAP.	

<p>Remove overhanging vegetation within port of departure boundaries.</p>	<p>Weeds and other vegetation provide food sources and habitats for risk organisms and should be managed within and immediately adjacent to the port environment.</p>	<p>Port Autonome de Nouvelle Calédonie (Ports of Noumea and Lifou)</p> <p>Airport Authorities (Magenta, Lifou)</p> <p>PIL (Marina of Lifou and Port of Maré)</p> <p>Authorities responsible for other Marinas (private)</p>	<p>SIVAP</p>	<p>As above.</p>	
<p>Control all grass areas to well-maintained lawn or replace with concrete, tar-seal or compacted gravel if maintenance is not feasible.</p>	<p>Grasses and associated weeds provide food sources and habitats for risk organisms and should be managed within and immediately adjacent to the port environment.</p>	<p>Port Autonome de Nouvelle Calédonie (Ports of Noumea and Lifou)</p> <p>Airport Authorities (Magenta, Lifou)</p> <p>PIL (Marina of Lifou and Port of Maré)</p> <p>Authorities responsible for other Marinas (private)</p>	<p>SIVAP</p>	<p>As above.</p>	

<p>Provide waste bins with tight-fitting lids for all waste items (particularly food wrappers and drink containers) and empty weekly.</p>	<p>Loose waste material such as food and wrappers and soft-drink cans provide an excellent food source for rodents, pest invertebrates (especially exotic ants), reptiles and birds.</p>	<p>Port Autonome de Nouvelle Calédonie (Ports of Noumea and Lifou)</p> <p>Airport Authorities (Magenta, Lifou)</p> <p>PIL (Marina of Lifou and Port of Maré)</p> <p>Authorities responsible for other Marinas (private)</p>	<p>Shipping companies; Air Caledonia; Air Loyauté</p> <p>SIVAP</p>	<p>As above.</p>	
<p>Place all items to be shipped to Ouvéa on clean hard surfaces (i.e. concrete, tar seal or compacted gravel) &gt;15m away from any vegetation or soil and well isolated from items destined to other places with no biosecurity requirements.</p>	<p>To ensure a low risk of weed seeds or risk organisms contaminating the goods in storage and to prevent cross-contamination from goods destined elsewhere.</p>	<p>Shipping companies; Air Caledonia; Air Loyauté</p>	<p>SIVAP – audit?</p>	<p>As above.</p>	

<p>Keep the doors closed on all stored containers.</p> <p>All containers used to transport freight to Ouvea must be of high quality and able to be fully sealed i.e. rat proof.</p>	<p>Rodents and other pests may use containers as a refuge.</p>	<p>Shipping companies</p>	<p>SIVAP – audit?</p>	<p>As above.</p>	
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### 10.3 Air and Sea vessel hygiene

Aim: To reduce the risk of contamination (including cross-contamination) of goods, equipment, machinery and personal effects on vessels servicing the Loyalty Islands.

Hygiene measures that are recommended to reduce the risk of contaminated items and vessels travelling to Ouvea are detailed in Table 5 for airplanes and Table 6 for sea vessels.

**Table 5. Requirements for the management of risks associated with airplanes.**

<b>AIRPLANE HYGIENE MEASURE</b>	<b>REASON</b>	<b>IMPLEMENTING AGENCY</b>	<b>SUPPORT AGENCIES</b>	<b>COMPLIANCE AUDIT</b>	<b>DELIVERY MILESTONES</b>
Maintain effective rodent and invertebrate control programmes on all Air Caledonia and Air Loyauté planes that travel to Ouvea	To remove target species once they enter a plane and so prevent infestation of luggage and freight while on board. This will also prevent target species escaping from the plane onto Ouvea Airport.	Air Caledonia; Air Loyauté	Civil aviation agency	Audits should be 3monthly initially, with highly compliant airplanes reduced to annual audits.  PIL has a role in ensuring implementation and on-going audit for compliance under the Biosecurity Partnership Programme. This can be done with assistance from support agencies.	



**Table 6. Requirements for the management of risks associated with sea vessels.**

<b>SEA VESSEL HYGIENE MEASURES</b>	<b>REASON</b>	<b>IMPLEMENTING AGENCY</b>	<b>SUPPORT AGENCIES</b>	<b>COMPLIANCE AUDIT</b>	<b>DELIVERY MILESTONES</b>
Maintain effective rodent and invertebrate control programmes on all commercial sea vessels travelling to Ouvea.	To remove target species once they enter a vessel and so prevent infestation of goods, equipment and machinery while on board. This will also prevent target species escaping from the vessel onto the wharf on arrival at Ouvea.	Shipping companies	PIL, SPE	Audits should be 3 monthly initially, with highly compliant vessels reduced to annual audits.  PIL has a role in ensuring implementation and on-going audit for compliance under the Biosecurity Partnership Programme. This can be done with assistance from support agencies.	
Physically isolate all items on board that are destined for Ouvea from other items destined for locations with no biosecurity requirements.	To prevent cross-contamination.	Shipping companies	PIL	As above.	

If possible, vessels serving the Loyalty Islands, travelling to Ouvea should travel directly there first and then on to other Loyalty Islands.	This reduces the time for cross-contamination of freight to occur and also reduces the risk of rapid transfer of risk organisms from Lifou port directly to Ouvea port.	Shipping companies	PIL		
Avoid scheduling sea vessel departures to Ouvea at dusk or after dark.	To avoid any hitchhiking night active insects that may be attracted to the vessel's lights.	Shipping companies	Port Autonome de Nouvelle Calédonie	As above.	
Undertake an inspection of the vessel for roosting birds and bird nests prior to departure. Scare off any roosting birds and destroy any nests (including eggs and chicks).	There is a risk of transferring invasive birds (which are commonly found at the Noumea port) via sea vessels. Destruction of nests should discourage adults from returning.	Shipping companies		As above.	
Maintain a high level of hygiene on board vessels. Keep food leftovers in the fridge or other sealed containers. Keep waste in sealed bins with tight fitting lids.	To eliminate access to food and shelter for risk organisms such as rodents and ants.	Shipping companies	PIL, SPE	As above.	

Raise the gangway from dusk to morning and place rat guards on all mooring lines.	To prevent rats from entering vessels.	Shipping companies	Port Autonome de Nouvelle Calédonie	As above.	
Introduce a permit system for all ships, boats and yachts intending to land at Ouvea that are not part of the Biosecurity Partnership Programme.  Note: Similar to the New Zealand pest free islands system (APPENDIX 1).	Biosecurity requirements in the permit system will reduce the risk of rodents and marine invasive species being transported on vessels destined for Ouvea. The vessels must meet the permit requirements (i.e. rodent control programme in place, clean goods and free from visible biofouling on the hull).	PIL	Port Autonome de Nouvelle Calédonie; Marinas; Lifou Port, Maré Port, yachting organisations, SIVAP, Customs	Permits could be issued for single passage trips (e.g. pleasure craft) or for multi-journeys with a regular inspection and re-permitting programme in place (as per auditing above).	

## 10.4 Management of intentional new species introductions

No intentional new species introductions should be allowed into Ouvea, unless approved by PIL through a permit system. The approval process will require a risk assessment to be carried out for all proposed intentional new species introductions. Permits for the introduction of a new species may contain specific biosecurity requirements in addition to existing requirements for risk goods.

## 10.5 Raising awareness for pre-border biosecurity

Aim: To reduce the risk of contaminated vessels, goods, equipment, machinery and personal effects reaching Ouvea by raising awareness amongst the target groups (below) about the importance of biosecurity, actions they can take to minimise the risk and any restrictions that are in place to protect the island.

Target groups:

- Port Authorities (Maré, Lifou and Noumea)
- Commercial shipping/ferry companies staff (freight, barge, passenger)
- Airport staff (freight and passenger)
- Passengers (ferry and aircraft)
- Commercial suppliers of goods, equipment or machinery to the island
- Private freight customers for Air Caledonia, Air Loyauté and shipping companies
- Pest management controllers at warehouses for goods and at the ports of departure.
- Contractors undertaking infrastructure work on Ouvea
- Tourism operators taking visitors to Ouvea
- Private yacht captains and crew – domestic and international

### 10.5.1 Enhancing awareness for pre-border biosecurity

- Transport partners should add hygiene or cleanliness requirements to confirmation of freight or passenger bookings. They should publish these requirements on their websites. They should also ensure that customers have fully understood the biosecurity requirements by including a tick-box or question in the online, telephone and ticket office booking systems such as:
  - \_\_\_ I understand that it is prohibited to take biological risk items to Ouvea and agree to ensuring that my goods, vehicles, personal effects, checked-in and carry-on luggage are free of biosecurity risk as below:
    - Goods, equipment, machinery and personal effects must be free of soil, plant material, material of animal origin, and seeds, live plants must either be free from live insects, disease symptoms and soil (roots must be washed free of soil prior to transport) or, potted plants must come from a certified high health nursery with programmes in place for plant pest and disease control and for ant control.
  - \_\_\_ I agree that my goods, vehicles, personal effects, checked-in and carry-on luggage may be inspected to confirm they are free of any biosecurity risks and that if they do not comply they will be refused entry onto the vessel/aircraft.

- Passengers must be asked at check-in, if they are carrying any biosecurity risk items such as plants, food, flowers, tubers (e.g. yam, taro), camping equipment, etc. If they answer yes, they must be asked if they are aware of the biosecurity requirements and have they complied with these. This is to check that awareness is being effective and resulting in voluntary compliance.
- Provide a small cleaning station if possible for passengers to clean items if required (e.g. washing the soil off plant roots, remove soil from vehicles or machinery, clean shoes, etc.).
- Provide bins at passenger departure points with high visibility signage to allow non-compliant goods to be disposed of prior to boarding.
- Raise biosecurity awareness amongst passengers using on-board broadcast equipment as an addition to the existing safety messaging. This message should include the requirement for declaring any biosecurity risks that may be in their possession and instructions on how to arrange inspection or where to dispose of items on arrival to Ouvea (amnesty bins).
- Include information on biosecurity for Ouvea on key websites including, PIL, Air New Caledonia, Air Loyauté and shipping companies servicing Ouvea.
- Provide awareness signs and leaflets for international and local private boats/yachts at common anchorage areas and at Lifou, Noumea, Hienghène, Touho and Koumac marinas.

### **10.5.2 Management of vessels not in the Biosecurity Partnership Programme**

This includes international and local private boats/yachts and commercial vessels. Use a permit system to manage the landing of ALL private sea vessels that specify:

- The biosecurity requirements that must be met.
- Time of arrival to allow inspection and checking of permit.
- Where the vessel is permitted to anchor on arrival to Ouvea.
- How long they may stay in Ouvea (this will be related to the risk of biofouling organisms dispersing into the lagoon).
- Prepare a biosecurity leaflet for travel to Ouvea in French and English, targeting the yachting community both in New Caledonia and internationally. The leaflet should focus on permit requirements and why it is important to maintain biosecurity for Ouvea and what is required of them to assist with this.
- Distribute an electronic copy of the leaflet to key international sailing information service providers and request that they publish it on their websites (e.g. [www.noonsite.com/Countries/NewCaledonia](http://www.noonsite.com/Countries/NewCaledonia)).
- Distribute an electronic copy of the leaflet to key sailing agents in New Caledonia who provide assistance with completing clearance formalities to international yachts visiting New Caledonia (e.g. <http://www.cruising-newcaledonia.com/marinas-new-caledonia.html>, <https://newcaledoniasuperyachtagent.com/new-caledonia-entry-formalities.html> and <http://www.noumeayachtservices.com/authorities-pre-arrival/>).
- Provide a copy of the leaflet to all international yachts clearing biosecurity in New Caledonia in Lifou, Noumea, Hienghène, Touho and Koumac. SIVAP could distribute the leaflet to yacht crews while carrying out clearance.
- Ouvea's students attending the secondary school in Lifou could be involved in increasing awareness of international yacht crews by delivering the leaflet to yachts moored at the marina.

- Distribute an electronic copy of the leaflet to key information providers in New Caledonia that service local yachts and request that they publish it on their websites.
- Engage with the New Caledonia yachting association and seek their assistance in raising awareness amongst the yachting community in New Caledonia.

## 10.6 Building capacity for pre-border biosecurity

Aim: To reduce the risk of contamination of goods, equipment, personal effects and machinery by increasing the biosecurity knowledge and skills of pre-border partners.

Biosecurity training should be short (1 day) and practical with only 4 key points for participants to remember. Those four points are:

- The most important risks to Ouvea (invasive alien species and risk goods that may transfer risk organisms).
- The consequences of invasive alien species establishing in Ouvea.
- How to audit and inspect for risk organisms and risk goods (on location practical training).
- Actions that they can take to stop the introduction of risk organisms and risk goods to Ouvea (cleaning, refusing entry).

The training needs to include practical, on location inspection and cleaning training which could be delivered by SIVAP, the provinces and/or CEN (Espèces Exotiques Envahissantes).

Target groups for biosecurity training are:

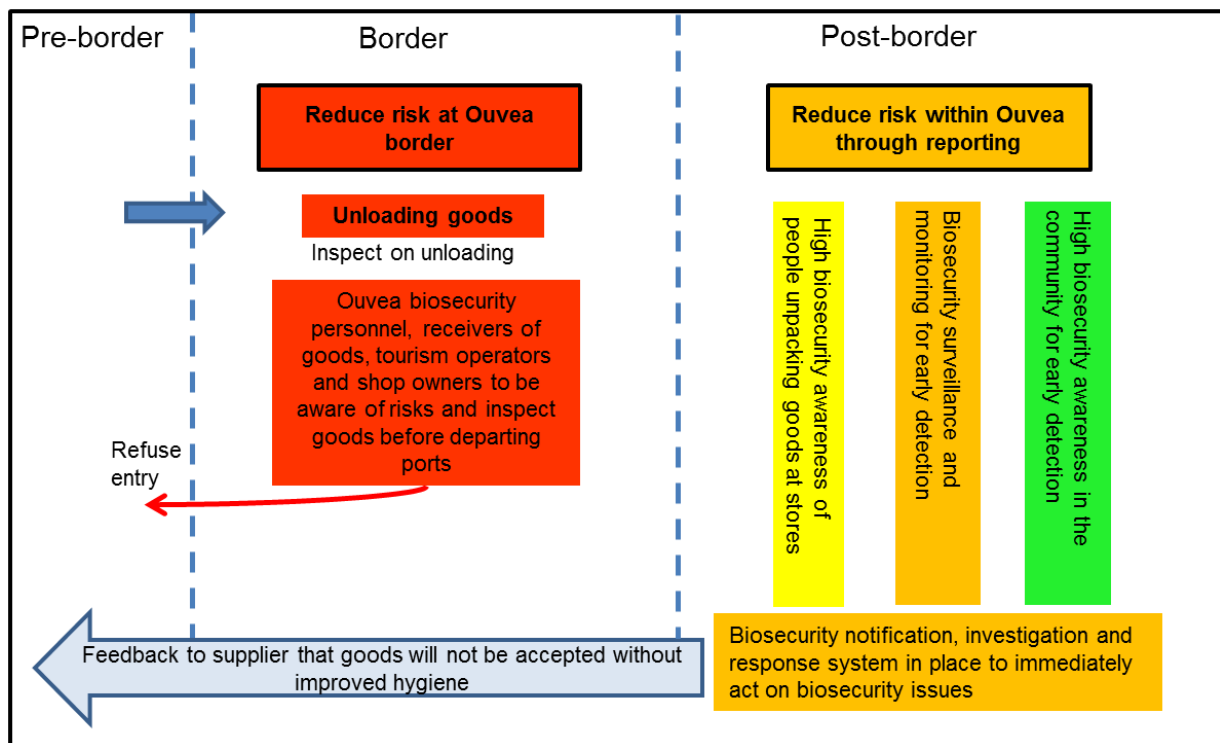
- Port Authorities (Maré, Lifou and Noumea)
- Commercial shipping/ferry companies staff (freight, barge, passenger)
- Airport staff (freight and passenger)
- Pest management controllers at warehouses for goods and at the ports of departure.
- Contractors undertaking infrastructure work on Ouvea
- Tourism operators taking visitors to Ouvea

**Table 7. Requirements for building pre-border biosecurity capacity.**

<b>ACTION</b>	<b>IMPLEMENTING AGENCY</b>	<b>COMPLIANCE AUDIT</b>	<b>DELIVERY MILESTONES</b>
Increase knowledge and skills in biosecurity by delivering short and simple biosecurity training material in a one day format.	SIVAP, CEN	Target of >80% of staff from the <b>TARGET AUDIENCE</b> have had biosecurity training in the last 24 months.	1 day training material developed and presented; repeat the course annually for new staff or to refresh existing staff of Biosecurity Partnership Programme partners.

## 11 OUVEA BORDER RISK REDUCTION

An effective biosecurity system is focussed on reducing the risk of invasive alien species and other risk organisms arriving, as detailed in the pre-border section of this plan. However, it is very important that vigilance is maintained at the border of Ouvea to ensure that the pre-border risk reduction is working and to intercept risk organisms that slip through the pre-border prevention system. It is also necessary to have post-border systems in place to detect and manage risk organisms that slip through the border and these are discussed in the next section. Border and post-border actions are closely aligned and are illustrated in Figure 4.



**Figure 4. Points of risk organism detection on risk goods and actions that could be implemented at the Ouvea border and post-border to further reduce risks.**

Border risk reduction will involve:

- Raising awareness
- Building capacity
- Risk goods audit, inspection and management of risk
- Port of arrival hygiene and monitoring

These requirements are detailed in sections 11.1, 11.2, 11.3 and 11.4.

### 11.1 Raising awareness for border and post-border biosecurity at Ouvea

**Aim:** To reduce the risk of contaminated goods, equipment, machinery and personal effects leaving Ouvea's port or airport by increasing awareness amongst local communities and visitors about the unique values of the island which are at risk from a wide range of risk organisms threats and the importance of biosecurity to safeguard these values. To inform local

communities and visitors on what actions they can take to help minimise the risk to the island and inform them of any restrictions in place to protect it.

Target groups:

- Port staff (freight and passenger)
- Local communities
- School children
- GDPL
- Farmers
- Airport staff (freight and passenger)
- Passengers (ferry and aircraft)
- Store owners
- Tourism operators
- Importers of equipment or machinery
- Private freight customers of Air Caledonia, Air Loyauté and shipping companies
- Pest management controllers on Ouvea
- Service providers undertaking infrastructure work on Ouvea
- Private yacht captains (and crew) – domestic and international
- Associations, NGOs and technical teams working on Ouvea.

#### **11.1.1 Options to increase border awareness**

- Local community leaders are the best people to deliver biosecurity awareness messages to members of their communities especially around the importance of biosecurity and what actions they can take to minimise the risk to their island and to inform them of any restrictions in place to protect the island. Developing resources to assist this should be a priority.
- Community meetings provide a good opportunity to increase biosecurity awareness.
- A biosecurity awareness programme for school children (for primary schools on Ouvea and for the secondary school on Lifou) should be developed to increase awareness and to encourage wider dissemination of information.
- Signs in key areas on Ouvea can be used to maintain awareness.
- Radio and print media (newsletters, newspapers) can also be used to increase/maintain community awareness.
- Large signs reminding importers of goods, equipment or machinery of what to look out for and who to contact if they find anything should be placed at the port entrance and exit points.
- Transport partners have an opportunity to remind passengers of biosecurity requirements prior to disembarking, using on-board broadcasting equipment. The message is:
  - Goods, equipment, machinery and personal effects must be free of soil, plant material, material of animal origin, and seeds, live plants must either be free from live insects, disease symptoms and soil (roots must be washed free of soil prior to transport) or, potted plants must come from a certified high health nursery with control programmes in place for plant pest and diseases and ants.
- This messaging should include instructions on where to dispose of risk items on arrival at Ouvea (amnesty bins).



- Provide amnesty bins at Ouvea's Port and Airport with high visibility signage.
- The possibility of inspection on arrival and the consequences of failing to comply with biosecurity requirements need to be included in the awareness material.
- Community members should be empowered to pass on biosecurity awareness messages to travellers if they notice biosecurity risks.

## **11.2 Building capacity for border biosecurity at Ouvea**

Aim: To reduce the risk of contaminated goods, equipment, machinery and personal effects leaving the port of arrival by increasing the biosecurity knowledge and skills of PIL's assigned biosecurity officer and staff of key border partners.

Biosecurity training should be short (1 day) and practical with only 4 key points for participants to remember. Those four points are:

- The most important risks to Ouvea (invasive alien species and risk goods that may transfer risk organisms).
- The consequences of invasive alien species establishing in Ouvea
- How to audit and inspect for risk organisms and risk goods (on location practical training)
- Actions that they can take to stop the introduction of risk organisms and risk goods to Ouvea (e.g. audit inspection, cleaning, refusing entry).

The training needs to include practical on location inspection and cleaning training which could be delivered by SIVAP.

Enhanced biosecurity awareness, inspection, surveillance, investigation and response training will be required for the biosecurity officer, other PIL staff involved in biosecurity, managers and key decision makers at PIL and GDPL.

Target partner groups for biosecurity training:

- Community leaders
- GDPL
- Mairie d'Ouvea
- Province des Iles Loyauté environment, development, health and tourism staff
- ASBO, Arbofruit, farmers, BioCaledonia
- People who may be required to do biosecurity audits or inspections
- Large store owners and staff and receivers of high volumes of goods.
- Port staff (freight and passenger)
- Airport staff (freight and passenger)
- Pest management controllers
- Service providers undertaking infrastructure work on Ouvea
- Tourism operators
- School teachers
- Enforcement agencies (gendarmerie)

**Table 8. Requirements for building border biosecurity capacity.**

ACTION	IMPLEMENTING AGENCY	COMPLIANCE AUDIT	DELIVERY MILESTONES
Increase knowledge and skills in biosecurity by delivering short and simple biosecurity training material in a one day format.	SIVAP	Target of >80% of staff from the TARGET AUDIENCE have had biosecurity training in the last 24 months.	1 day training material developed and presented; repeat the course annually for new staff or to refresh existing staff of Biosecurity Partnership Programme partners.

### 11.3 Risk goods audit, inspection and management of risks

Transport of risk goods requires compliance with pre-border risk reduction measures. In order to confirm compliance with these measures a process to audit or inspect freight on arrival is required. If risks are detected, then risk reduction actions such as cleaning or refusal to unload will be needed. The Province des Iles Loyauté will provide regulations to enable inspection, management and audit for risk goods under the Environment Code.

#### 11.3.1 Vessels

- Audit inspections are required for sea vessels in the Biosecurity Partnership Programme to ensure that rodents, birds, invertebrates and significant biofouling are not visibly present, especially if the vessel is to remain in port for more than 6 hours.
- Vessels, both air and sea (including private yachts) should have effective rodent and invertebrate control. The audit process for this should include confirmation on arrival that a control programme is in place and is being regularly maintained (either by visual inspection or auditing of maintenance records).
- Rat guards should be securely fitted on all the mooring lines of sea vessels upon arrival to Ouvea. Usually rat guards are fitted to stop rats getting onto a vessel, in this case, it is to deter them from using the mooring lines to land on the wharf.
- Gangways should be lifted from sunset to sunrise on sea vessels overnighing at the wharf to reduce the risk of hitchhiking risk organisms such as rodents escaping onto the wharf.
- The frequency of compliance audits should be based on risk profile. Records of compliance by the biosecurity officer are used to develop risk profiles for different vessels. This information is then used by PIL to set the frequency for the compliance audits. Initially, compliance audits should be undertaken every 3 months until risk profiles have been developed.
- For vessels with a landing permit, inspection of the vessel and goods is undertaken when required by the permit, or at the discretion of the biosecurity officer. Inspection is to ensure that they meet the permit requirements (i.e. rodent control programme in place, clean goods and free from visible biofouling on the hull).

### 11.3.2 Port of arrival

The hygiene measures required for Ouvea port and airport (see section 11.4) should be audited regularly by PIL or a delegated partner to ensure that they are being met.

### 11.3.3 Freight (goods, equipment, vehicles and machinery)

Freight arriving by air or sea should have been inspected prior to loading to ensure that they are compliant with pre-border biosecurity requirements:

- No priority invasive alien species (see Table 1) or items that could transport risk organisms (e.g. banana plants, bee hives and used beekeeping equipment) are present.

And;

- Goods, equipment, machinery and personal effects are free of soil, plant material, material of animal origin, and pests,

Or;

- Live plants and plant material (including, fruits and vegetables) are free from live insects and disease symptoms.
- Live plants and plant material are free of soil (roots must be washed free of soil prior to transport),

Or;

- All potted plants (with soil) must come from a certified high health nursery with control programmes in place for weeds, ants, plant pests and diseases.

There were three options for border management of freight put forward for consultation:

1. Rely on voluntary compliance with the biosecurity requirements and inspection at the port of departure.
2. Undertake an audit inspection of a sample of freight on arrival
3. Inspect all incoming freight at the border (i.e. at port of arrival).

It was agreed that option 2 be implemented as it is the most flexible and resource efficient and is the best risk based approach under the Biosecurity Partnership Programme. Table 9 details the advantages and disadvantages of each option considered.

**Table 9. Options for freight inspection and auditing at ports of arrival.**

	Advantages	Disadvantages
Option 1	<ul style="list-style-type: none"> <li>- No resource requirements</li> <li>- No delays in freight being released</li> <li>- No impact to vessels turnaround time</li> </ul>	<ul style="list-style-type: none"> <li>- Complete reliance on compliance with pre-border biosecurity measures</li> </ul>
Option 2	<ul style="list-style-type: none"> <li>- Balances cost and benefit</li> <li>- Less resources than Option 3</li> <li>- Less delays in freight being released than Option 3</li> <li>- Less impact to vessel turnaround times than Option 3</li> </ul>	<ul style="list-style-type: none"> <li>- Not all freight is inspected</li> </ul>

Option 3	<ul style="list-style-type: none"> <li>- Maximises the likelihood of interception of biosecurity risks</li> </ul>	<ul style="list-style-type: none"> <li>- Resource intensive</li> <li>- Can create significant delays in freight being released</li> <li>- Extended vessel turnaround times</li> </ul>
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Under a sample-based freight audit and inspection programme, it is recommended to:

- Inspect a set amount (to be determined by PIL) of containerised items (e.g. 1 in every 10 containerised items) to ensure that compliance is occurring. The volume of items inspected will be based on the record of compliance for each vessel or company and may be increased or reduced over time to best manage risk.
- Inspect all vehicles, heavy machinery and heavy equipment.
- Additional inspection may be undertaken at the discretion of the biosecurity officer if he/she has concerns about any items.
- Non-compliant goods should be refused entry into Ouvéa and reshipped to the port of origin at the expense of the sender.
- Where reshipment would cause undue hardship (e.g. personal vehicles) and if cleaning is possible then the owner may be allowed to clean the item while still within the port as long as risk material (e.g. dirt, soil, plant material, etc.) is contained and either treated (with salt water or diluted bleach) or is bagged up and returned to the port of origin.
- If an invasive alien species is detected on inspection then treatment should be applied where possible prior to reshipment to ensure that the invasive alien species cannot escape and cause harm to the place of origin (e.g. live rats, invasive ants).

#### 11.3.4 Personal effects

There were two options for managing the biosecurity risks associated with personal effects (luggage, carry-on bags, etc.) put forward for consultation:

1. Rely on public awareness being effective and resulting in full compliance with the biosecurity messaging that is given during purchase of airfares and ferry tickets, on board vessels (airplane or ferry) and during inspection prior to departure.
2. Inspect all personal effects for compliance at the border (i.e. at port of arrival). If this is undertaken then it should be focussed on fruit and vegetables, plants and camping equipment to make sure that they meet the biosecurity requirements:
  - a. Personal effects must be free of soil, plant material, material of animal origin, and seeds. Live plants must either be free from live insects, disease symptoms and soil (roots must be washed free of soil prior to transport) or, potted plants must come from a certified high health nursery with programmes in place for plant pest and disease control and for ant control.
  - b. Items that do not meet the requirements could be seized and destroyed or sent for cleaning at the port of arrival. It is recommended that there is no charge for cleaning of personal effects as this could lead to a lack of self-reporting or hiding of potential risks.

It was agreed that option 1, using high public awareness and voluntary compliance, was the most acceptable approach to managing personal effects, however biosecurity officers should undertake an inspection of personal goods if they have specific concerns or are alerted to a potential biosecurity risk.

### **11.3.5 Record keeping**

A simple reporting system should be used at the ports of arrival to record compliance, auditing and inspection results. Reshipment, treatment and cleaning actions should also be recorded. This can then be used to inform the frequency of which vessels, suppliers, etc. should be audited. Where there is excellent compliance and low biosecurity risk, the audit frequency can be reduced. However where there is some non-compliance regular audits should occur and where vessels or goods are often non-compliant or they pose a high risk, full inspection audits should occur for every arrival.

A record keeping system will also provide information to enable review of the Biosecurity Plan over time. Review of the plan will ensure that measures are effectively reducing risk. It will also indicate any risks goods or pathways that are not well managed and where changes or further measures may be required.

## 11.4 Port of arrival hygiene and auditing

Aim: To reduce the risk of risk organisms being able to find food or to establish or survive within the port environment.

Where: Ouvea port, airport and current barge landing site.

Hygiene measures that are recommended to reduce the risk of risk organisms establishing in Ouvea are detailed in Table 10.

For each measure we indicate who is responsible for implementing a measure and which agencies will be potential support agencies. Implementing agencies are those agencies that will be required to actively make changes to their operations to ensure that the measure is undertaken. Support agencies have a role in assisting in the implementation of a measure and/or on-going auditing of the measures.

**Table 10. Requirements for managing risks associated with the ports of arrival.**

<b>PORT OF ARRIVAL HYGIENE MEASURES</b>	<b>REASON</b>	<b>IMPLEMENTING AGENCY</b>	<b>SUPPORT AGENCIES</b>	<b>COMPLIANCE AUDIT</b>	<b>DELIVERY MILESTONES</b>
Maintain effective rodent and invertebrate (e.g. ants, fruit flies) control programmes at Ouvea's port and airport.	To remove target species that may arrive on vessels or freight and escape within the port or airport environment.	Ouvea's Port and Airport	ASBO, Arbofruits	Audits should be 3 monthly initially, with highly compliant sites reduced to annual audits.  PIL has a role in ensuring implementation and on-going audit for compliance under the Biosecurity Partnership Programme. This can be done with assistance from support agencies.	
Remove overhanging vegetation within the ports of arrival and up to 15m	Weeds and other vegetation provide food sources and	Ouvea's Port and Airport	PIL	As above.	

beyond boundaries.	habitats for risk organisms and should be managed within and immediately adjacent to the port environment.				
Control all grass areas to well-maintained lawn or replace with concrete, tar-seal or compacted gravel if maintenance is not feasible.	Grasses and associated weeds provide food sources and habitats for risk organisms and should be managed within and immediately adjacent to the port environment.	Ouvea's Port and Airport	PIL	As above.	
Provide waste bins with tight-fitting lids and encourage port staff and visitors to use these when disposing of any rubbish. These should be used for the disposal of used dunnage, packaging, sweepings or any other waste that might pose a biosecurity risk. Empty waste bins at least weekly or as required.	Rubbish can provide food and habitat for rodents, ants, snails, spiders, reptiles etc.	Ouvea's Port and Airport	PIL	As above.	
Provide a dedicated area at the port, away from vegetation (up to 15m) for	To enable detection of any hitchhiker risk organisms.	Port of Ouvea	PIL	As above.	

<p>inspecting containers, palletised goods and machinery. This area needs to have a safe method for inspecting the undersides of items such as a container stand.</p>					
<p>Provide a clean, enclosed and well-lit area for inspection of goods.</p>	<p>To enable detection of any hitchhiker risk organisms.</p>	<p>Ouvea's Port and Airport</p>	<p>PIL</p>	<p>As above.</p>	
<p>Refuse entry of infested goods and order their return to the port or airport of origin at the expense of the carrier or owner.</p>	<p>Fumigation of infested goods is not currently an option, therefore refusal and re-shipment of the goods is the only option to stop infestation being transferred on to the island.</p>	<p>PIL</p>	<p>GPDL</p>	<p>As above.</p>	
<p>IF treatment is required provide a dedicated cleaning facility at the port where treatment may be applied and gross contamination may be safely removed and collected into an enclosed sump for treatment.</p>	<p>Using a high pressure water blaster will remove most contamination including hitchhiking ants, snails and other invertebrates, seeds and soil.</p>	<p>Port of Ouvea</p>	<p>PIL</p>	<p>As above.</p>	



Place amnesty bins at the passenger arrival terminals at Ouvea's port and airport. Use high visibility signage to request incoming passengers to declare or dispose of any biosecurity risk items.	This is an additional measure to discourage passengers leaving the border while still in possession of biosecurity risk items	Ouvea's Port and Airport	PIL	As above.	
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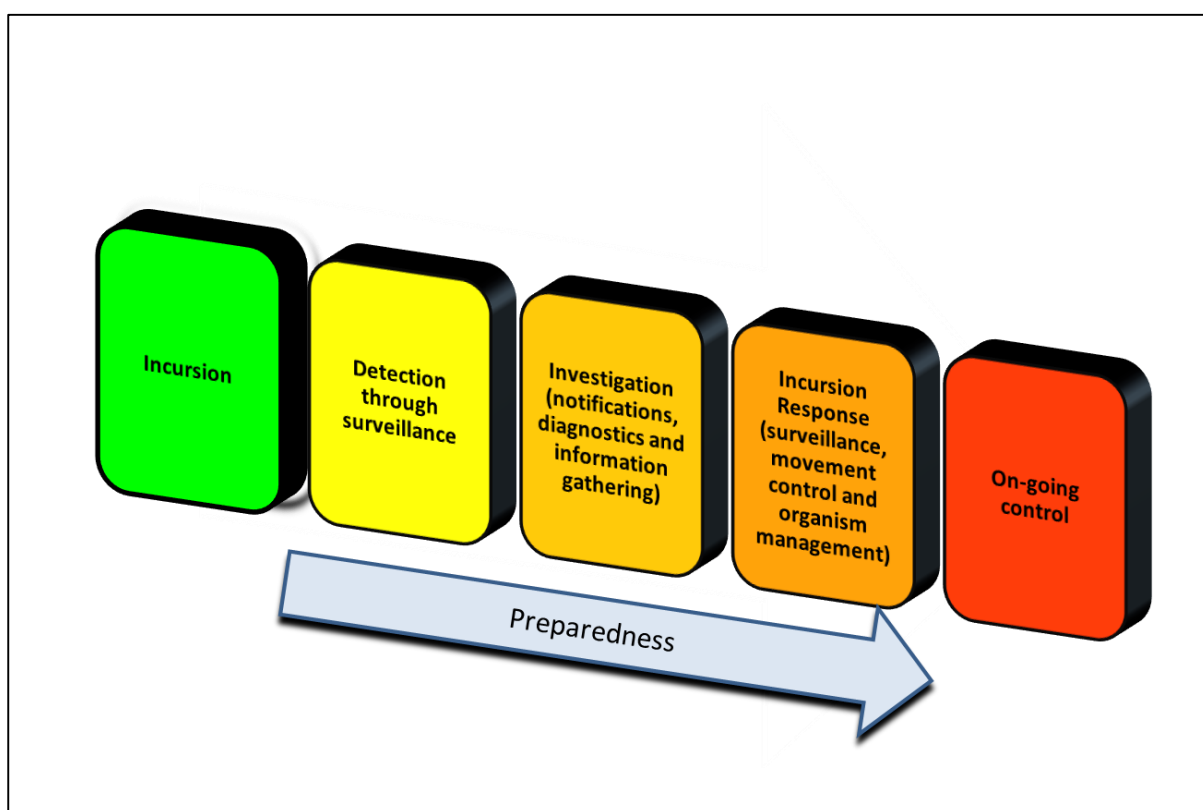
## 12 POST-BORDER RISK REDUCTION

Preventing the arrival (i.e. pre-border risk reduction) and introduction (i.e. border risk reduction) of invasive alien species to Ouvea is the first and best line of defence for the island. However, it is unrealistic to expect that pre-border and border biosecurity risk reduction measures will be 100% effective. For example, New Zealand has a sophisticated biosecurity system in place and still deals with approximately 30 serious new invasive alien species every year (Froud and Bullians, 2010). For this reason, biosecurity risk reduction measures must be extended post-border to address those risk organisms that have escaped through the prevention net.

Post-border risk reduction will involve:

- Surveillance
- Investigation
- Incursion response
- Response preparedness

Below is a diagram of the phases of arrival, detection, investigation and response (Figure 5).



**Figure 5. Components of post-border biosecurity.**

Post-border biosecurity comprises surveillance, investigation and response. Surveillance aims to detect incursions of risk organisms as early as possible and while eradication is still feasible. Investigation aims to determine if the reported incursion is relating to an organism that is likely to become invasive on Ouvea and to ascertain the extent of the problem. Incursion response aims to stop the establishment and spread of an invasive alien species once introduced. This is

achieved through actions such as delimiting surveillance, movement controls to stop further spread and the management of the organism in order to eradicate the invasive alien species. If response actions do not result in eradication then the last phase is on-going management of an invasive alien species, if still feasible. Preparedness is being ready to undertake surveillance, investigation and response actions in an effective and timely manner.

## **12.1 Surveillance**

Surveillance is required for the early detection of invasive alien species when the opportunity to eradicate is still available and the cost to eradicate is comparatively low. Surveillance programmes typically have passive and targeted/active surveillance components which are described below.

### **12.1.1 Passive surveillance – awareness and education**

For most risk organisms an active surveillance programme is not feasible, however engaging local communities and professionals working on Ouvéa such as agricultural extension officers to conduct passive surveillance can be very effective. This is based on a high level of awareness of biosecurity risks and an easy notification process that is rapid and responsive.

Awareness of risk items is included in the border awareness programme. To be effective the people of Ouvéa need to be on the lookout for new pests (rodents, invertebrates, birds), diseases and weeds and they need to report them as soon as possible to PIL or a delegated point of contact on the island. It is recommended that PIL contract Arbofruits or one of the science agencies to develop awareness factsheets for the priority invasive alien species in Table 1. The existing banana bunchy top awareness programme could be used as a model for the other priority species. In addition, an awareness programme on looking out for unfamiliar plants, pests or diseases should be implemented to assist in early detection of risk organisms that are not on the priority list.

### **12.1.2 Targeted surveillance**

It is recommended that active surveillance is aligned with existing surveillance programmes led by GDSV, PIL, ASBO and any future surveillance programme that may be established under the Invasive Alien Species Strategy for New Caledonia. Targeted surveillance should be maintained and/or enhanced for the following invasive alien species:

- Ship and Norway rats (revise current programme, and expand to stores, hotels, campground, bakeries, airport, market and rubbish dump).
- Invasive ants (same areas as above)
- Fruit flies (enhance current programme)
- Bee diseases (e.g. varroa mite, American foulbrood (AFB))

Specific targeted surveillance training is required for the following groups:

- PIL
- Arbofruits
- ASBO
- Biocalédonia

Potential providers of training include SIVAP, CEN and ASBO.

Early detection and rapid decision making can improve response outcomes for eradication and reduce costs associated with on-going management of invasive alien species incursions. Figure 6 shows how the population of an invasive alien species increases over time following arrival and establishment. Effective surveillance systems could enable detection early in the population growth of the species when eradication is still feasible. The failure to either detect an incursion early, or make eradication decisions in a timely manner, allows the population to increase to a level where eradication is no longer feasible. In this situation, the burden of controlling or living with the invasive alien species is mostly borne by the community.

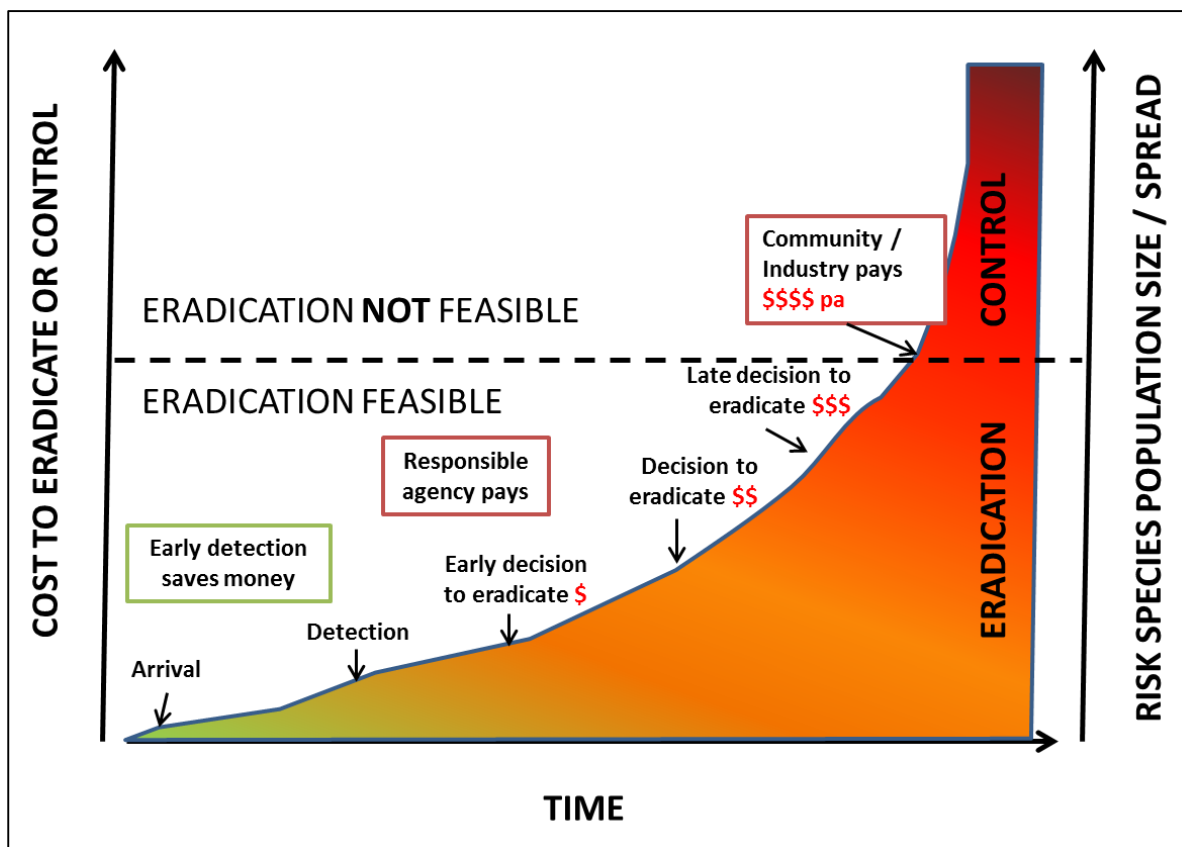


Figure 6. Phases of an invasion.

## 12.2 Post-border investigation

Investigation is the process of receiving a report of a suspected risk organism and undertaking actions to confirm that an incursion has occurred. Training of biosecurity personnel in how to investigate a report is necessary, along with the development of procedures to receive notifications, arrange for diagnostics from experts, gather information on how an organism may have arrived and where else it may have spread and make recommendations for further actions if an incursion is confirmed. A template for an incursion investigation report is included in Appendix 4.

### 12.2.1 Notification process

A simple notification process is required where a dedicated phone number is used to receive suspected biosecurity reports from the port; airport; from people undertaking targeted

surveillance and also from community members reporting possible new organisms through passive surveillance. The biosecurity officer should be the point of contact.

### **12.2.2 Diagnostics**

In order to confirm a risk organism (especially invertebrates, weeds and diseases), some diagnostics may be required. It is recommended that a procedure for submitting samples is developed and that the funding for this procedure is assigned by PIL. Funding should be available to have samples collected and delivered to diagnostic service providers. There are several organisations that showed an interest in being partners to the Ouvea Biosecurity Plan which may be able to provide diagnostics as a contribution to its implementation. Agencies that have diagnostic capability include SIVAP, IRD, IAC, CEN, ASBO, Arbofruits and Laboratoire de Nouvelle-Calédonie (veterinary laboratory). There may be others that have not been identified.

### **12.2.3 Gather information and make recommendations**

The person investigating the incursion (once confirmed) should also gather information from the people involved (e.g. landowners, etc.) in order to identify how the organism may have arrived, how long it may have been present and where else it may have spread. This person should also make recommendations for response actions based on the results of their investigation.

## **12.3 Post-border response**

The mandate to respond must be made clear to all lead and support agencies (PIL, GDPL, SIVAP, Chamber of Agriculture) and the process to inform the lead agencies and pass on investigation results needs to be developed into a procedure (e.g. for risk organisms posing a threat to agriculture contact XXX, for species posing a threat to the environment contact XXX). PIL being the lead agency for the Biosecurity Plan, it is ultimately responsible for post-border response and will need to work in partnership with relevant stakeholders. For example, if the incursion is a species that threatens agriculture, PIL would work with the Chamber of Agriculture to respond to this incursion. In addition, GDPL would be involved in getting assistance from local communities for planned response actions. All agencies that may be involved in a response to an invasive alien species detection in Ouvea should undertake biosecurity incursion response training (The Pacific Invasives Initiative has developed incursion response training).

The process for post-border response should include:

- Procedure for obtaining technical expertise on the target invasive alien species to enable the development of options for further surveillance, movement control and organism management.
- Clarity on which agency is responsible for funding response actions (i.e. surveillance, movement control and organism management) and how funds should be obtained in a timely manner and while eradication is still possible.
- Which agencies are available and could be responsible for delivering field operations (surveillance, movement control, organism management).

- The establishment of a technical advisory group from the partner agencies for responding to risk organisms on Ouvea.

A template for a response situation report is included in Appendix 5. Post-border response actions are detailed below.

### **12.3.1 Movement control**

Movement controls aim to stop or slow down the detected invasive alien species from spreading further while information is being gathered (including surveillance) and decisions are made regarding eradication or control. Movement controls are maintained throughout the eradication operation, and can include restrictions on moving soil, animal or plant material or other items that may transport the target invasive alien species.

### **12.3.2 Delimiting surveillance and tracing**

The purpose of delimiting surveillance is to detect all areas where the invasive alien species is located and also identifying where it is not yet present. This will assist in determining the infested/invaded area; identifying where to put in place movement controls and plan for eradication (if still feasible) or control.

### **12.3.3 Organism management**

Organism management is the actions required to eradicate the invasive alien species or control it to minimise its impacts and further spread to new areas.

## **13 THE CASE OF THE PLEIADES AND BEAUTEMPS-BEAUPRE ATOLL**

Not all the biosecurity measures outlined for Ouvea are relevant to the Pleiades and Beautemps-Beaupre Atoll. The main biosecurity risk pathways for these sites are related to visiting yachts and small local boats. They receive a limited number of visitors, comprising local people from Ouvea, fishermen from Ouvea and other parts of New Caledonia, tourists, conservation workers, and scientists.

Customary landowners regulate visits to the Pleiades and Beautemps-Beaupre via an authorisation system. However, some visitors do not follow this system and land on these sites without permission. There have even been reported cases of yachts originating from Vanuatu, mooring at the Pleiades without clearing quarantine at one of the dedicated port of call in New Caledonia or permission from customary landowners on Ouvea. Because of the remoteness of the Pleiades and Beautemps-Beaupre, it is difficult to monitor such infringements. This is compounded by the unavailability of a patrol vessel on Ouvea.

### **13.1 Biosecurity measures for the Pleiades and Beautemps-Beaupre**

Biosecurity measures for the Pleiades and Beautemps-Beaupre should be integrated into the existing authorisation system, preferably using the same permit process that is used for landing at Ouvea outside the Biosecurity Partnership programme. The authorisation to visit document should include biosecurity measures that may apply to the Pleiades and Beautemps-Beaupre

(as detailed in Table 6, sections 10.5.2 and 11.3). This would be in addition to existing customary measures that are required to be adhered to when visiting these sites.

Targeted surveillance for the Norway and ship rats, as well as invasive ants, should be extended to the Pleiades and Beautemps-Beaupre. In addition, if the eradication attempt on the Pacific rat on Beautemps-Beaupre is determined to be successful following monitoring then targeted surveillance for this species should also be initiated on the atoll.

Biosecurity awareness should be targeted at groups that are most likely to visit the sites especially, those that land directly from Grand Terre such as fishermen and tourism operators. In addition, international yachting websites should be targeted to reduce the risk of landing at the atoll without first clearing customs and quarantine and without obtaining authorisation from customary landowners.

Biosecurity training should be made available to the customary landowners to enable the identification of potential risks when processing access requests and enforcement of biosecurity measures.

## 14 RESPONSE PREPAREDNESS

Preparedness is planning in advance to make sure that an agency or group of agencies know what their responsibilities, roles and actions will be in a biosecurity event. **Error! Reference source not found.** Preparedness is required across all phases of a biosecurity response system from detection until eradication (Figure 5).

We recommend that for all organisms where targeted surveillance is undertaken there should be a pre-agreed simple and brief response preparedness plan which details:

- The lead agency and any support agencies that will deliver on the ground actions (i.e. movement control, surveillance and organism management) that will make up an incursion response team.
- The resources, procedures and equipment that will need to be made available to the incursion response team for:
  - Surveillance / Diagnostics
  - Movement control
  - Organism management

A template for a response preparedness plan is included in Appendix 6. It is recommended that response preparedness plans are developed collaboratively with those agencies likely to be involved in the response. An efficient way to develop a plan is via a facilitated workshop.

Note that SIVAP has developed contingency plans for high impact invasive alien species such as fruit fly. PIL should coordinate with SIVAP to ensure that work is not duplicated.

## **15 IMPLEMENTATION MONITORING AND REVISION OF THE PLAN**

We recommend that an independent agency monitors the implementation of the plan for the first three years.

This Biosecurity Plan is a living document and will need to be revised as necessary based on the monitoring results and records of inspection and audit. It is important to periodically check how well the plan is being implemented, the effectiveness of the measures put in place and areas for improvement. The latter may include further engagement with key stakeholders as most of the biosecurity measures are dependent on the willingness of those involved to do the right thing. Key considerations for planning the reviews are to be decided by PIL.

## **16 ACKNOWLEDGEMENTS**

We would like to acknowledge and thank the individuals and agencies that have contributed to the development of this Biosecurity Plan during the consultation and review process (see Appendices 2 and 3). Special thanks to Yolaine Bouteiller, Luen Iopué and Antoine Barnaud for their valuable insights into the context for this plan and their assistance with stakeholder consultations and our visits to Noumea, Lifou and Ouvea in July 2015 and Ouvea and Noumea in February 2016.



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## 18 APPENDIX 1. DEPARTMENT OF CONSERVATION PEST FREE WARRANT

Pest-free islands in the Hauraki Gulf Marine Park provide a safe haven for New Zealand's endangered species. This means more opportunities for visitors to enjoy a fantastic wildlife experience close to Auckland City. However, with popularity and open access comes the increased risk from boats and visitors who may accidentally bring stowaway pests.

# Treasure islands

Check for stowaways



Rats, mice, insects (particularly the Argentine Ant) and weed seeds are all potential stowaway items at risk of being taken to pest-free islands by people either in boats, on dothing or in gear. Once ashore, these pests have the ability to reverse all the great restoration work that's happening in the Gulf.


To help protect the Gulf, the Department of Conservation (DOC) and the Auckland Council have set up a compulsory biosecurity accreditation system for commercial vessel operators and concessionaires visiting these pest-free islands. There is also an awareness campaign advocating similar precautions for non commercial vessels/visitors.

*We're here to help*

We all enjoy the Hauraki Gulf and we all need to take responsibility to help look after it. Please don't hesitate to contact us about the Pest-free Warrant process and how we can help you to help keep pests off our precious island sanctuaries.

# Pest-free warrant

For commercial vessel and Concession Operators visiting pest-free islands in the Hauraki Gulf




**For further information, contact one of the following biosecurity staff:**


For Rangitoto, Motutapu, Motukorea (Browns) and Motuihe please contact  
**Carol Manning - Ranger, Island Biosecurity**  
 Department of Conservation  
 Auckland Area Office  
 Ph 09 445 9263 Mobile 027 240 5069  
 Email [cmanning@doc.govt.nz](mailto:cmanning@doc.govt.nz)


For Tiritiri Matangi, Motuora and Te Houtuoro-Toi/Little Barrier Islands please contact  
**Jenny Heath - Ranger, Island Biosecurity**  
 Department of Conservation  
 Warkworth Great Barrier Area Office  
 Ph 09 425 7812  
 Email [jheath@doc.govt.nz](mailto:jheath@doc.govt.nz)


For Rakino, Kawau, Great Barrier Island/Aotea and other Hauraki Gulf islands please contact  
**Jeff Cook - Biosecurity Advisor, Hauraki Gulf**  
 Auckland Council  
 Ph 09 367 4286 Mobile 027 555 3451  
 Email [jeff.cook@aucklandcouncil.govt.nz](mailto:jeff.cook@aucklandcouncil.govt.nz)



Ship rat eating fruit on the nest.  
Photo: David Wudge.







### The benefits

- Reducing the risk of pest invasion on pest-free islands and protecting the animals and plants that live there.
- Achieving a standard that is clear, simple and applicable to a range of commercial activities.
- A single system for all islands in the Hauraki Gulf.

Your commercial operation will be on the Biosecurity Approved list, which will be promoted via [www.treasureislands.co.nz](http://www.treasureislands.co.nz).

### The warrant

The warrant will assess whether the required biosecurity standards and behaviours for visiting pest-free islands are being followed.

If the standards and behaviours are being met, the commercial vessel operator or concessionaire will become 'accredited' or approved, creating a distinct commercial edge over other operators.

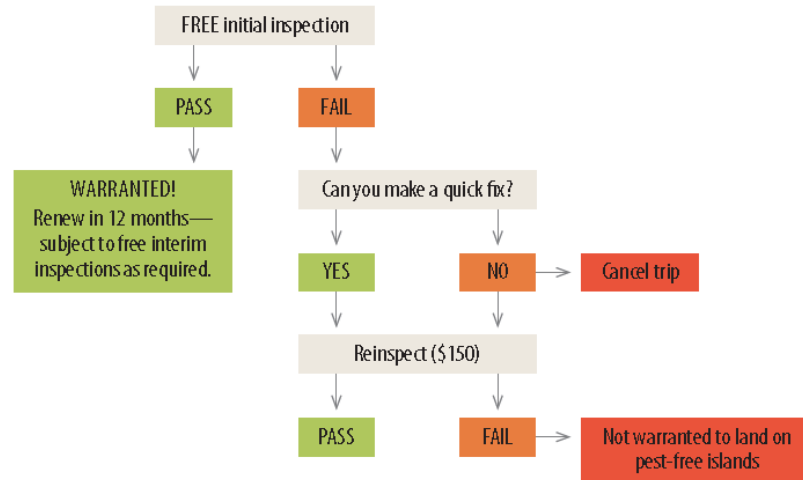
There are 2 standards to be met:

- One for managing a vessel
- One for managing the visitors and luggage/cargo being transported to the islands

In some cases, both standards will be met by one operator. However, the two standards are separated so that a concessionaire may charter an accredited vessel. In this case, the responsibilities for vessel and people management are separate. Both operators are also responsible for ensuring that the other has a current accreditation.



### The warrant and inspection process



### An explanation

An initial warrant inspection of commercial vessel operators/ concessionaires will be undertaken by a Biosecurity Officer/Ranger at a pre-arranged time.

- If the commercial vessel operator/concessionaire successfully meets all biosecurity requirements at their initial Pest-Free Warrant inspection (free), they will receive a warrant for 12 months. Note that the warrant is subject to free interim inspections as required.
- If the first warrant inspection is failed, commercial vessel operators/ concessionaires will be inspected again within the month to ensure the failed standards have been addressed. This re-inspection will incur a \$200 (GST inc) fee. Note that enough time needs to be allowed to ensure that an initial inspection and a possible re-inspection can be carried out prior to any trip/s to a pest-free island going ahead.

- If the standards have been addressed, a warrant will be issued for 12 months from this second inspection date.
- If the standards have not been addressed, a further (third) inspection will need to be undertaken, incurring another \$200 (inc GST) fee.
- Should a commercial operator/concessionaire fail this third inspection, they are not warranted to land on any pest-free islands in the Hauraki Gulf until a further successful warrant inspection is completed.

## 19 APPENDIX 2. LIST OF STAKEHOLDERS CONSULTED IN JULY 2015

Name	Organisation	Position	Email	Location/Date consulted
Mael Imirizaldu	Conservation International	Responsable du Programme Marin	<a href="mailto:mimirizaldu@conservation.org">mimirizaldu@conservation.org</a>	15/07/2015 (via Skype)
Philippe Lafleur	Port Autonome de Nouvelle Calédonie	Directeur	<a href="mailto:phlafleur@noumeaport.nc">phlafleur@noumeaport.nc</a>	Noumea: 20/07/2015
Arnauld Leques	Compagnie Maritime des Iles (CMI)	Directeur	<a href="mailto:arnold.cmi@lagoon.nc">arnold.cmi@lagoon.nc</a>	Noumea: 20/07/2015
Frédéric Gimat	Service d'Inspection Vétérinaire, Alimentaire et Phytosanitaire (SIVAP)	Chef de Service Adjoint, Pôle Biosécurité	<a href="mailto:frederic.gimat@gouv.nc">frederic.gimat@gouv.nc</a>	Noumea: 20/07/2015
Aurélie Chan	Service d'Inspection Vétérinaire, Alimentaire et Phytosanitaire (SIVAP)	Responsable de la Section Protection de Végétaux	<a href="mailto:aurelie.chan@gouv.nc">aurelie.chan@gouv.nc</a>	Noumea: 20/07/2015
Jean-Nicolas Dominici	Air Calédonie	Responsable Fret et Marchandises Dangereuses, Airport de Magenta	<a href="mailto:jndominici@air-caledonie.nc">jndominici@air-caledonie.nc</a>	Noumea: 20/07/2015
Regis Ballu	SAS SUDILES	Executive Director	<a href="mailto:directeur.sudiles@betico.nc">directeur.sudiles@betico.nc</a>	Noumea: 21/07/2015
Nicolas Rinck	Direction pour l'Environnement, Province Sud	Chargé de Projets pour le Développement Durable	<a href="mailto:nicolas.rinck@province-sud.nc">nicolas.rinck@province-sud.nc</a>	Noumea: 21/07/2015
Christophe Fonfreyde	Service de la Pêche et de l'Environnement Marin Direction des Affaires Maritimes	Directeur	<a href="mailto:christophe.fonfreyde@gouv.nc">christophe.fonfreyde@gouv.nc</a>	Noumea: 21/07/2015
Patrick Barrière	Conservatoire D'Espaces Naturels De Nouvelle-Calédonie (CEN), Pôle "Espèces Envahissantes"	Coordinateur	<a href="mailto:CoordPEE@CEN.nc">CoordPEE@CEN.nc</a>	Noumea: 21/07/2015
Herve Jourdan	Institute de Recherche pour le Développement	Entomologiste	<a href="mailto:herve.jourdan@ird.fr">herve.jourdan@ird.fr</a>	Noumea: 21/07/2015
Christian Mille	Institut Agronomique Néo-Calédonien	Entomologiste	<a href="mailto:mille@iac.nc">mille@iac.nc</a>	Noumea: 21/07/2015

Fabrice Brescia	Institut Agronomique Néo-Calédonien	Responsable des recherches en écologie animale	<a href="mailto:brescia@iac.nc">brescia@iac.nc</a>	Noumea: 21/07/2015
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Georges Kakué	Province des Îles	Chef du Service de l'Environnement	<a href="mailto:g-kakue@loyalty.nc">g-kakue@loyalty.nc</a>	Lifou: 22/07/2015
Sylvain Tuahu	STILES	Capitaine, Laura III		Lifou: 22/07/2015
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Faysen Wéa	ASBO	Coordinator		Ouvea: 23/07/2015
Alibi Ouaiegnepe	Mairie d'Ouvéa	Président de Commission Environnement et Développement Economique	<a href="mailto:a-ouaiegnepe@loyalty.nc">a-ouaiegnepe@loyalty.nc</a>	Ouvea: 24/07/2015
Celine Touët	Mairie d'Ouvéa ASBO	Responsable des ressources humaines Trésorière	<a href="mailto:celine.touet@mairie-ouvea.com">celine.touet@mairie-ouvea.com</a>	Ouvea: 24/07/2015
Anna Baouma	Magasin, "Chez Raymond"	Gérante		Ouvea: 24/07/2015

## 20 APPENDIX 3. LIST OF STAKEHOLDERS CONSULTED DURING THE REVIEW OF THE PLAN IN FEBRUARY 2016

Name	Organisation	Position	Email	Location/Date consulted
Luën Iopué	DDE / Service Environnement / Province des Iles Loyauté	Chargé d'Etude Biodiversité	<a href="mailto:l-iopue@loyalty.nc">l-iopue@loyalty.nc</a>	Ouvea: 22-24 February Noumea: 25 February
Haocas Christophe	Province des Iles Loyauté	Chef de Service Ports et Aéroports	<a href="mailto:c-hoacas@loyalty.nc">c-hoacas@loyalty.nc</a>	Noumea: 25 February
Cître Basile	Province des Iles Loyauté	Président, Commission Développement Durable	<a href="mailto:b-citre@loyalty.nc">b-citre@loyalty.nc</a>	Noumea: 25 February
Albert Ouaiégnepe	Mairie d'Ouvéa	Président, Commission Environnement et Développement Economique	<a href="mailto:a-ouaiegnepe@loyalty.nc">a-ouaiegnepe@loyalty.nc</a>	Noumea: 25 February
Jacque Adjouhgniope	ASBO	Président	<a href="mailto:jacques.adjouhgniope@educagri.fr">jacques.adjouhgniope@educagri.fr</a>	Ouvea: 22-24 February Noumea: 25 February
Faysen Wéa	ASBO	Coordinateur	<a href="mailto:asbo.direction@gmail.com">asbo.direction@gmail.com</a>	Ouvea: 22-24 February Noumea: 25 February
Faysen Adjouhgniope	ASBO	Responsible for the Biosecurity at the wharf at Hwadrilla		Noumea: 25 February
Antoine Barnaud	Province des Îles Loyauté ASBO	Vétérinaire Secrétaire	<a href="mailto:a-barnaud@loyalty.nc">a-barnaud@loyalty.nc</a>	Ouvea: 22-24 February Noumea: 25 February
Séa Adgougniope	GDPL Bomene Tapu	Coordinateur	<a href="mailto:gdplbomenetapu@gmail.com">gdplbomenetapu@gmail.com</a>	Ouvea: 22-24 February Noumea: 25 February
Cyril Ouaiégnepe	GDPL Bomene Tapu	Mandataire	<a href="mailto:cyrilouaiegnepe@yahoo.fr">cyrilouaiegnepe@yahoo.fr</a>	Noumea: 25 February
Manina Tehei	Direction de l'Environnement , Province Sud	Chargée d'Etudes Ecosystèmes d'Intérêt Patrimoniaux	<a href="mailto:manina.tehei@province-sud.nc">manina.tehei@province-sud.nc</a>	Noumea: 25 February
Aurélié Chan	Service d'Inspection Vétérinaire, Alimentaire et Phytosanitaire	Responsable de la Section Protection de Végétaux	<a href="mailto:aurelie.chan@gouv.nc">aurelie.chan@gouv.nc</a>	Noumea: 25 February
Christine Fort	Conservatoire D'Espaces Naturels De Nouvelle-Calédonie, Pôle	Assistance de coordination et Responsable de la cellule de veille	<a href="mailto:assistantpee@cen.nc">assistantpee@cen.nc</a>	Noumea: 25 February

	"Espèces Envahissantes"			
Didier Pastou	Chambre d'Agriculture	Chargé de Mission GDSV	<a href="mailto:dpastou@can.nc">dpastou@can.nc</a>	Noumea: 25 February
Alexandre Bercion	ARBE	Résponsable HSE	<a href="mailto:alexander.bercion@arbe.nc">alexander.bercion@arbe.nc</a>	Noumea: 25 February
Philippe Gontard	Biocaledonia	Membre du Conseil d'Administration	<a href="mailto:direction@biocaledonia.nc">direction@biocaledonia.nc</a>	Noumea: 25 February
Yolaine Bouteiller	CPS	Coordinatrice INTEGRE pour la Nouvelle-Calédonie	<a href="mailto:yolaineb@spc.int">yolaineb@spc.int</a>	Ouvea: 22-23 February Noumea: 25 February
Jean Le Den	Port Autonome de Nouvelle Calédonie	Commandant de Port	<a href="mailto:jleden@noumeaport.nc">jleden@noumeaport.nc</a>	Noumea: 25 February
Jean-François Butaud	Conservation International	Botanist	<a href="mailto:jfbutaud@hotmail.com">jfbutaud@hotmail.com</a>	Noumea: 25 February
Jean-Baptiste Marre	CPS	RESCUE, Chargé de Projet	<a href="mailto:jean-baptistem@spc.int">jean-baptistem@spc.int</a>	Noumea: 25 February
Kuin Wetewea	Arbofruits	Agent	<a href="mailto:ouvea@arbofruits.nc">ouvea@arbofruits.nc</a>	Ouvea: 23 February

## 21 APPENDIX 4. INVESTIGATION REPORT TEMPLATE

### INVESTIGATION REPORT



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Suspect invasive species: **[Name of suspect invasive species]**

Date: **[Date report written]**

Author: **[Name]**

Contact: **[Phone/email]**

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*Note: This tool is used to inform decisions; it can be quickly filled in, or used to remind you of the important information to collect.*

#### 1. Situation

*Invasive species, Detection details, Location*

#### 2. Map/drawings

*Draw a rough map of the area of infestation with major buildings, important features, location of incursion, etc.*

#### 3. Is it an invasive species?

*To help with identification take photos (preferably showing different parts of the species) and collect samples. Ensure photos and samples are well labelled. Describe the identification process and outcome.*

#### 4. Is it, or can it, cause harm?

*Where it is and what is it doing? Is it a known invasive species or closely related to one? Is it becoming a problem?*

#### 5. How long has it been here?

*Can you work out the likely time period of arrival? Estimate days, months or years.*

#### 6. Risk to environment

*What is at risk from it, describe the environment it is in and the potential impacts on this environment if it were to establish without any controls put in place?*

#### 7. Actions to date

*What actions (if any) have been taken to manage the risks?*

#### 8. Recommended actions

*What actions (if any) are recommended to manage the invasive species, it is OK to list multiple recommendations or to simply suggest a response team be put in charge and a planning meeting occur.*



## 22 APPENDIX 5. RESPONSE SITUATION REPORT TEMPLATE

### RESPONSE SITUATION REPORT



---

SitRep: [Number]

Issued: [Date]

Report period: [Date]

From: [Name]

Contact: [Phone/email]

To: [Group]

Incursion: [Name of incursion event]

---

*Note: This tool is used to inform others; it can be quickly filled in, or used to remind you of the important information to give in a verbal briefing.*

1. **Situation**

*Organism, Notification details, Location, Risk description (what is currently known)*

2. **Actions to date**

*What actions (if any) have been taken to manage the risks*

3. **Actions to be completed**

*What actions are currently underway or already planned to manage risk*

4. **Risks / issues and opportunities**

*What is worrying us about the situation, who else needs to know, who can help*

5. **Recommendation**

*What did we decide were the most important things to do from the response planning*

6. **Map/drawings**

*Draw a rough map of the area with major buildings, important features, location of incursion.*

## 23 APPENDIX 6. RESPONSE PREPAREDNESS PLAN TEMPLATE

### RESPONSE PREPAREDNESS PLAN



Preparedness for: [Country, Island or Region]

Date: [Date]

Author: [Name]

Contact: [Phone/email]

*Note: This tool is for use in an invasive species incursion, it should be brief and easy to find.*

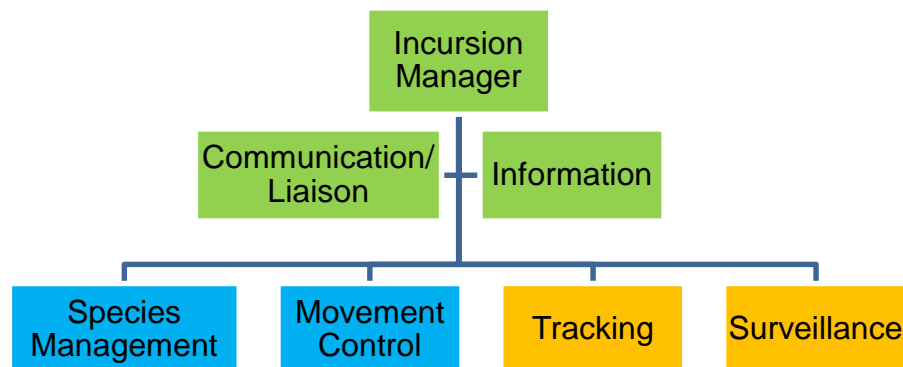
#### A. INVASIVE SPECIES LEAD AGENCY

The lead agency is the organisation (if any) who has legal responsibility for managing invasive species in your Country, Island or region.

- **Lead agencies** (include contact details)

- **Legislation to manage invasive species**

#### B. PREPAREDNESS INFORMATION FOR INCURSION RESPONSE ROLES AND WORK AREAS



#### 7. Incursion Manager

- **Role description**

Responsible for building a team (if more than one person required to manage the incursion), leading the team to plan each work area, resolving issues, reporting to senior officials or managers, oversight of all work areas.

- **Potential role holders**

## **8. Communication / Liaison**

- **Role description**

Responsible for developing the communication/liaison plan for the team (if more than one person required to manage the incursion), helping the team to plan each work area, spokesperson for the team with officials and community, should have some technical knowledge of the incursion.

- **Potential role holders**

- **Who should be informed when an invasive species is detected?**

Rank them in order of who to contact first and provide contact details

- **Who should be consulted when making decisions?**

- **What options do we have for communicating with affected people, landowners and the community?**

## **9. Information**

- **Role description**

Responsible for finding out about the invasive species, provides technical information to assist other team members to plan for communications, surveillance, tracking, movement control and species management. Contact experts and manage diagnostics. Obtain information about legal requirements for team work areas. This person may be asked to do mapping and report writing.

- **Potential role holders**

- **Information sources (internet etc)**
- **Experts in invasive species** *(include contact details)*
- **Other experts (e.g. pest control, mapping, surveillance)**

## **10. Species Management**

- **Role description**  
Undertake or arrange urgent control of the invasive species (if possible). Provide technical information to assist other team members to plan. Develop control options to manage invasive species, including costs and resources. Provide control information to help with decision making.
- **Potential role holders**
- **Control operators**
- **Important issues to consider for species management in your country/Island/region (e.g. Legislation, toxin free islands, waterways)**
- **Equipment providers**
- **Resources**
- **Funding**

## 11. Movement control

- **Role description**

Responsible for planning and putting in place controls to manage the movement of risk items that could spread the invasive species to new areas such as soil, pot plants, supplies. Work on communication and use legislation (if available) to get the agreement of community and affected people to manage risk movements. Provide technical information to assist other team members to plan.

- **Potential role holders**

- **Legislation?**

- **Risk pathways**

## 12. Tracking

- **Role description**

The tracking work area is responsible for identifying risk movements that could have spread the invasive species to new areas. For example the movement of soil, pot plants, waste material and food supplies. Provide information to movement control to help manage pathways. Determine the likely time at risk (using expert advice if necessary) and interview land owners to determine if any risk movements occurred during the risk period. Decide if the risk movements are **likely** to have moved the invasive species and provide surveillance with the information. Provide technical information to assist other team members to plan.

- **Potential role holders**

- **Legislation**

- **Resources/ experts to determine time at risk** (e.g. nest age, rat reproductive stage)

## 13. Surveillance

- **Role description**

The surveillance work area is responsible for planning and undertaking surveillance to determine 1) the extent of the natural spread of the invasive species from where it was

detected, 2) to follow up any high risk movements into new areas from human assisted spread and 3) to work with the community to get them look out for the invasive species. Contact and work with experts to design the surveillance plan (if needed). Provide results to all other team members to help manage the invasive species (particularly species management). Work with tracking to determine the likely time at risk. Work with communications to get community support.

- **Potential role holders**
  
- **Surveillance design experts**
  
- **Surveillance equipment**
  
- **People resources**
  
- **Diagnostics providers**
  
- **Funding**