



# New Caledonia's strategy for **invasive alien species**

that threaten **natural ecosystems**

SUMMARY - 2018



This document is a summary of New Caledonia’s Strategy for Invasive Alien Species that threaten natural ecosystems which was endorsed by the governing board of the Conservatoire d’espaces naturels (CEN) at the end of 2016. This summary was produced to raise awareness amongst New Caledonians and visitors of the priority actions that have been developed at the territory level and the urgent need for cooperative action to address this major threat to the country.

## Table of contents

- A biodiversity under threat ..... 2
- A concerted strategy adapted to the local context ..... 3
- A Four Pillar strategy ..... 4
  - Prevention ..... 4
  - Surveillance and rapid response ..... 6
  - Management of established IAS ..... 7
  - Taking action together ..... 10
- New Caledonia Regulatory Framework ... 11

## A biodiversity under threat

Given the size, island situation and the unique natural environment of the territory, the quality of New Caledonians’ life is here, more than anywhere else, highly dependent on **natural ecosystems** and the services they provide. Unfortunately, New Caledonia hasn’t escaped the threat of **Invasive Alien Species (IAS)**, a major cause of extinction of native species across the globe, and especially on islands. Indeed, according to the latest estimates of the IUCN Red list, IAS are a threat to nearly one third of the threatened terrestrial species in overseas countries and territories. Out of the **100** of the World’s Worst Invasive Alien Species, **36** are present in New Caledonia.



*Number of native, alien and IAS in different taxonomic groups (other than microorganisms) in terrestrial ecosystems in New Caledonia*

Biological group		Native species	Alien species	Main IAS impacting natural ecosystems in New Caledonian	No. of IAS on the 100 of the World’s Worst list
Vertebrates	Mammals	9	13	12	6
	Birds	144	14	4	2
	Reptiles	113	4	2	1
	Amphibians	0	1	1	0
	Fish	83	10	8	4
Invertebrates		> 6 000	> 518	22	7
Plants		> 3 300	> 2 000	58	16
		Total		107	36 / 100

In New Caledonia, the impacts and risks posed by IAS to the environment, human health and socio-economic activities have been acknowledged as being significant. Important resources of the order of **XPF 450 million** are invested annually to address this threat.



# A strategy adapted to the local context

The framework document of the strategy is available on the [CEN website](#)

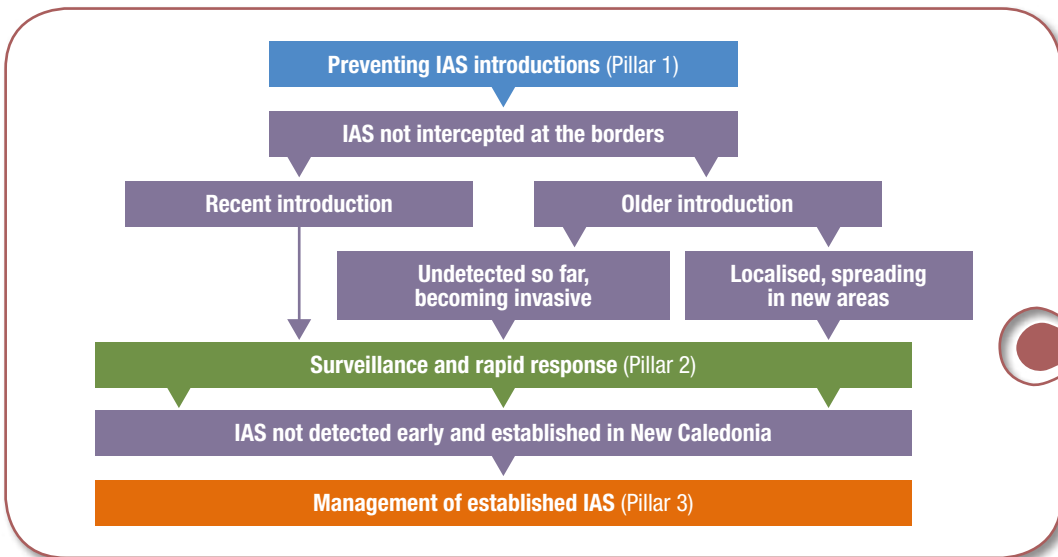
Awareness of the impacts and risks posed by IAS to New Caledonia has mobilised all concerned stakeholders to take action on this issue. This action resulted in the development of **New Caledonia's Strategy for Invasive Alien Species that threaten natural ecosystems** which was coordinated by the **Conservatoire d'espaces naturels** (CEN - Invasive Species Unit) and in close collaboration with all **local partners** (local authorities, practitioners, research institutions, associations, civil society, etc.). Support was also received from the Pacific Invasives Initiative (PII) and the IUCN French Committee.

- Mobilising the different stakeholders has, in particular, enabled them to:
- focus the scope of the strategy to those IAS (other than microorganisms) that impact, or are a potential risk, to **natural ecosystems**,
  - organise the strategy along **"Four Pillars"** reflecting the collaborative work undertaken throughout the development of the strategy,
  - agree on the preparation and implementation of a first, **5-year action plan (2017-2021)** to be coordinated by CEN's Invasive Species Unit.

*IAS included in the strategy*



## The Four Pillars



**The objective of New Caledonia's Strategy for Invasive Alien Species** is to preserve the integrity of natural ecosystems by adopting a coordinated approach, fostering comprehensive and cooperative implementation of actions across the territory, and clarifying the roles of all involved. The aim is to prevent the introduction and establishment of new IAS in New Caledonia and to reduce the impacts of already established IAS on biodiversity and ecosystem services.

# A FOUR PILLAR STRATEGY

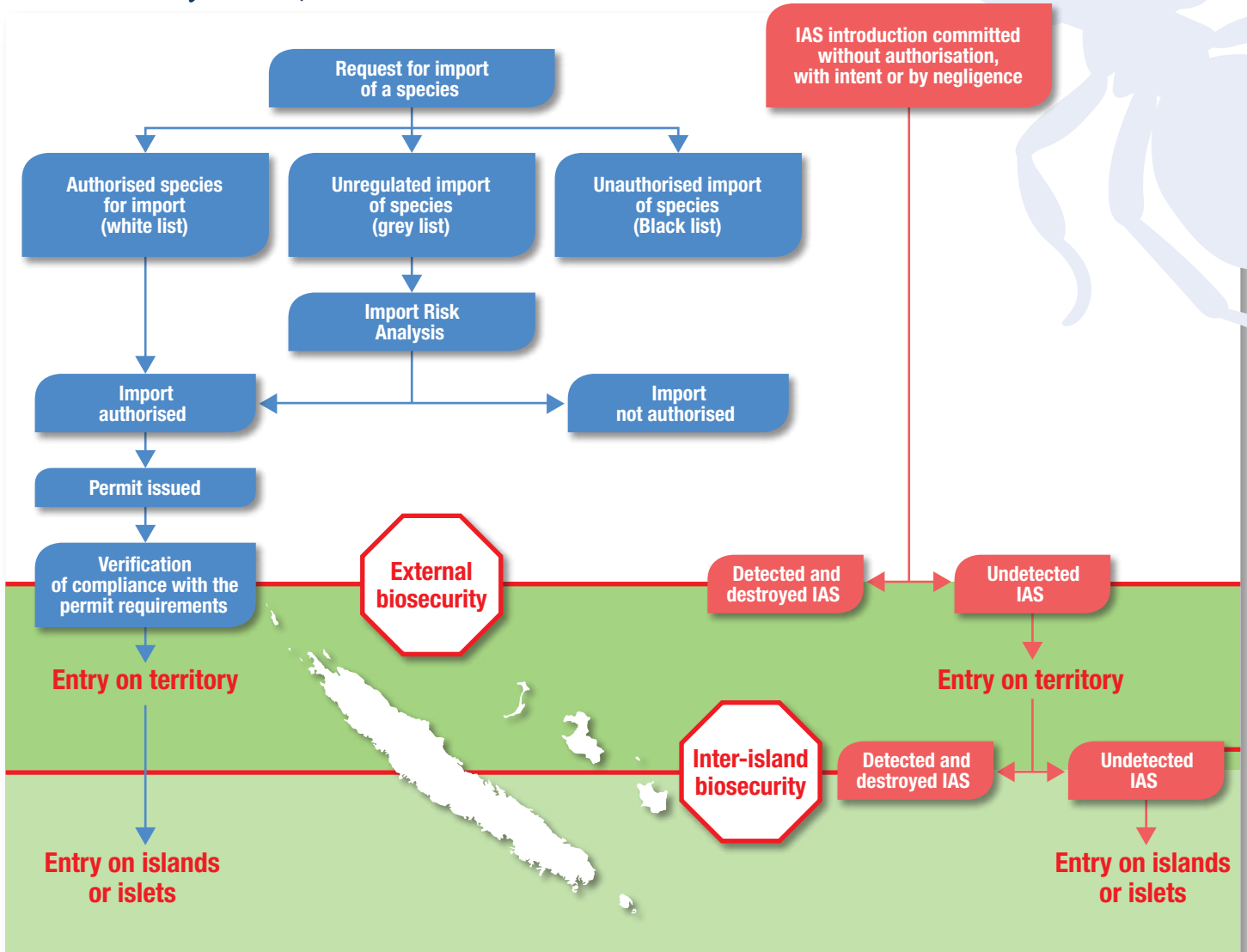
## 1 | Prevention

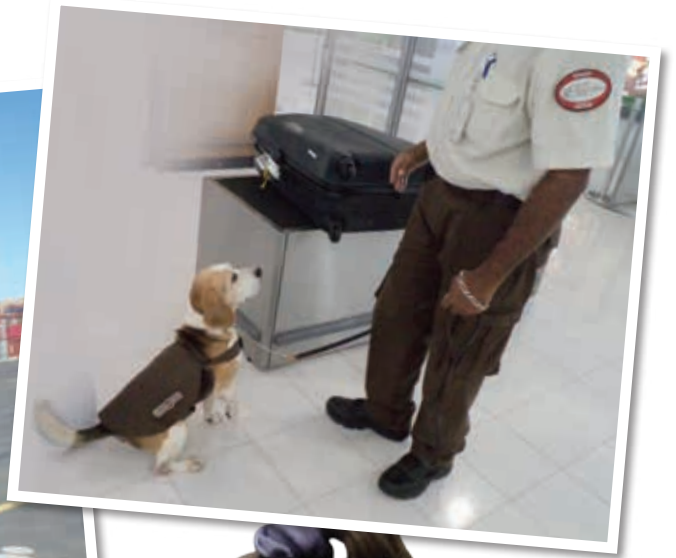
### Pillar 1 Preventing introductions

Preventing introductions (or biosecurity) is the first line of defence against IAS. It is the best and most cost-effective management option.

However, the situation is particularly complex in New Caledonia, given the necessity for **two levels of prevention: external biosecurity** (at the international borders) and **inter-island biosecurity** (between the different islands of the archipelago).

*The two levels of biosecurity*

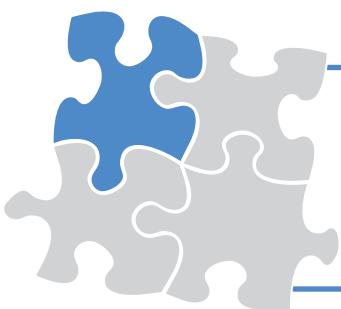




Prevention as defined in the present strategy, focuses on intentional and accidental introductions of any IAS posing **a risk to natural ecosystems**. It is integrated into the zoo-phytosanitary control system being implemented at the international borders by the Government of New Caledonia (see table p.11).

*Objectives and actions of Pillar 1*

Objectives	Actions
Prevent the introduction of IAS at New Caledonia's international borders ( <b>external biosecurity</b> )	<ul style="list-style-type: none"> <li>• Facilitate the assessment of import applications</li> <li>• Assist with import risk analyses</li> <li>• Build capacity for border control</li> <li>• Enhance biosecurity measures (e.g. post-entry quarantine for introduced plants)</li> <li>• Monitor and evaluate the biosecurity system</li> <li>• Strengthen regional cooperation</li> </ul>
Prevent the introduction and spread of IAS between the islands ( <b>inter-island biosecurity</b> )	<ul style="list-style-type: none"> <li>• Identify priority species for surveillance</li> <li>• Define the system to adopt for inter-island biosecurity</li> <li>• Identify and control inter-island IAS pathways</li> </ul>
Prevent the introduction of IAS in <b>marine ecosystems</b>	<ul style="list-style-type: none"> <li>• Initiate consultation on biosecurity in marine ecosystems</li> <li>• Enhance awareness on biosecurity in marine ecosystems</li> <li>• Improve knowledge</li> </ul>
Carry out training, raise awareness and promote <b>good practices</b>	<ul style="list-style-type: none"> <li>• Train border control staff and biosecurity advisers on IAS identification</li> <li>• Raise awareness, train and encourage practitioners to apply good practices</li> <li>• Strengthen awareness amongst the general public to prevent introductions and encourage good practices</li> </ul>



Preventing introductions is everyone's responsibility: **every New Caledonian or visitor** is encouraged to participate by being informed **on regulations** in place and by complying with biosecurity rules (see table p.11).

For more information: <https://davar.gouv.nc>

# 2 | Surveillance and rapid response

## Pillar 2 Surveillance and Early Detection - Rapid Response

Implementing a comprehensive biosecurity system can reduce the number of introductions but not prevent them altogether. In addition, some already established species, in localised areas or until now not detected, can suddenly become invasive.

It is crucial to have the capacity to **detect as early as possible** and to assess the risks linked to these new invasions to enable **rapid response**.

Early detection enhances the chance of success and limits the cost of actions, particularly eradication. **ED-RR** (Early Detection-Rapid Response) constitute the second line of defence against IAS.

The priority is to implement the three key components of the **ED-RR** system:

- an **ED-RR unit**, to coordinate partners' efforts and ensure consistency across the whole system,
- **surveillance networks** for IAS in natural ecosystems that are efficient and operational, while promoting collaboration across sectors (in particular, agriculture, health and industries),
- **priority IAS lists** for surveillance.

### From Early Detection to Rapid Response



### Objectives and actions of Pillar 2

Objectives	Actions
Establish the <b>ED-RR unit</b>	<ul style="list-style-type: none"> <li>• Formalise the functions of the ED-RR unit</li> <li>• Establish an emergency response fund to ensure that the unit can react without delay</li> <li>• Share information on surveillance reports</li> </ul>
Define <b>surveillance approaches</b>	<ul style="list-style-type: none"> <li>• Establish formal, functioning and effective surveillance networks</li> <li>• Establish the procedure for identifying detected species</li> <li>• Formalise cooperation with other sectors (agriculture, health, industries)</li> </ul>
Evaluate <b>risk</b>	<ul style="list-style-type: none"> <li>• Define risk analysis protocols</li> <li>• Carry out risk analyses for all IAS recently detected in natural ecosystems</li> </ul>
Plan and implement a <b>rapid response</b>	<ul style="list-style-type: none"> <li>• Establish the procedure for rapid response</li> <li>• Implement and monitor rapid response operations carried out in New Caledonia and leverage results</li> </ul>
Test the <b>ED-RR system</b>	<ul style="list-style-type: none"> <li>• Undertake simulation exercises to test the system</li> <li>• Evaluate these exercises and use feedback to improve the system</li> </ul>



The surveillance of IAS is everyone's responsibility: **every New Caledonian** is encouraged to participate and **report any invasive species or suspected IAS** to the ED-RR unit on **75 30 69** or at [www.cen.nc/signaler](http://www.cen.nc/signaler)



# 3 | Management of established IAS

## Pillar 3 Management of established IAS

While the focus of rapid response is on one or a few newly detected individuals of an IAS, the management of established IAS deals with more abundant IAS populations.

Management of established IAS must consider at least the technical/social feasibility and cost. However, it is not possible to manage the **more than 250** IAS established in New Caledonia, or even the **107** main IAS impacting natural ecosystems (p.8-9).

**Management efforts** then need to be **targeted** to where action is both essential and likely to be more effective and beneficial.

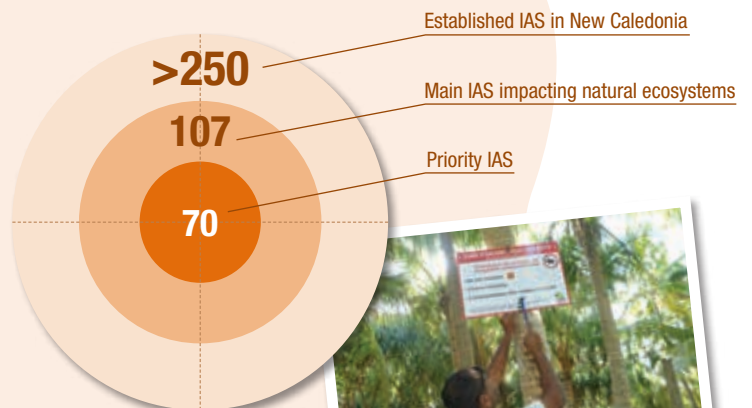
The strategy's stakeholders have collaboratively developed a list of **70 established IAS which are a priority for management at the territory level**, based on 4 priority categories (p.8-9 and [Poster](#)). The majority of these species are regulated under the provinces environmental codes (see [table p.11](#)).

The objective is to develop and implement coordinated **territory-wide action plans** for these **70 IAS**. However, the initial focus will be on the **7 IAS** with the highest impacts and/or risks to natural ecosystems (**category 1**).

Note that at the local level, other IAS not listed amongst these 70 priority species are being managed.



Number of established IAS in New Caledonia



### Objectives and actions of Pillar 3

Objectives	Actions
Develop <b>country-wide action plans</b> for priority species	<ul style="list-style-type: none"> <li>• Develop basic action plans to be validated by managers</li> <li>• Develop territory-wide action plans (APs)</li> </ul>
Implement and/or monitor <b>management actions</b>	<ul style="list-style-type: none"> <li>• Implement the APs</li> <li>• Monitor management actions related the AP framework</li> <li>• Monitor management actions implemented at the local level, outside the AP framework</li> </ul>
Build on, share, <b>raise awareness and carry out train</b>	<ul style="list-style-type: none"> <li>• Leverage the results of the management actions</li> <li>• Share experiences, raise awareness and carry out training</li> </ul>



The management of established IAS is everyone's responsibility: **every New Caledonian** is encouraged to contribute by **participating in actions**, coordinated by associations (e.g. removing invasive plants from sites, hunting-controlling ungulates, etc.).

For more information, contact CEN on **44 14 23** or visit the website at [www.cen.nc](http://www.cen.nc)

# List of the 107 main IAS impacting natural ecosystems in New Caledonia

Classification  
of the 70  
priority IAS

## 49 Animals (of which 48 are on the list of the 70 priorities)

Mammals	Rusa deer - <i>Rusa timorensis russa</i>	1
	Feral pig - <i>Sus scrofa</i>	1
	Feral cat - <i>Felis catus</i>	1
	Feral horse - <i>Equus caballus</i>	4
	Feral goat - <i>Capra hircus</i>	2
	Feral dog - <i>Canis familiaris</i>	3
	European rabbit - <i>Oryctolagus cuniculus</i>	1
	Polynesian rat - <i>Rattus exulans</i>	2
	Black rat - <i>Rattus rattus</i>	2
	Brown rat - <i>Rattus norvegicus</i>	2
	Feral cattle - <i>Bos taurus</i>	3
	House mouse - <i>Mus musculus</i>	4
Birds	Red-vented bulbul - <i>Pycnonotus cafer</i>	1
	Common mallard - <i>Anas platyrhynchos</i>	4
	Common myna - <i>Acridotheres tristis</i>	4
	Indian peafowl - <i>Pavo cristatus</i>	4
Reptiles	Common house gecko - <i>Hemidactylus frenatus</i>	
	Red-eared slider - <i>Trachemys scripta elegans</i>	3
Amphibian	Green and golden bell frog - <i>Litoria aurea</i>	4
Fish	Black bass - <i>Micropterus salmoides</i>	4
	Goldfish - <i>Carassius auratus</i>	4
	Common carp - <i>Cyprinus carpio carpio</i>	4
	Snakeskin gourami - <i>Trichogaster pectoralis</i>	4
	Guppy - <i>Poecilia reticulata</i>	4
	Southern platyfish - <i>Xiphophorus maculatus</i>	4
	Mozambique tilapia - <i>Oreochromis mossambicus</i>	4
	Green swordtail - <i>Xiphophorus hellerii</i>	4
Invertebrates	Carniolan honey bee - <i>Apis mellifera carnica</i>	4
	Italian bee - <i>Apis mellifera ligustica</i>	4
	European dark bee - <i>Apis mellifera mellifera</i>	4
	Giant African snail - <i>Achatina fulica</i>	3
	Whitefly - <i>Aleyrodicus dispersus</i>	4
	Tortoise beetle - <i>Aspidimorpha quinquefasciata</i>	4
	Orchid weevil - <i>Orchidophilus aterrimus</i>	4
	<i>Pulvinaria urbicola</i>	4
	Pink wax scale - <i>Ceroplastes rubens</i>	4
	Striped mealybug - <i>Ferrisia virgata</i>	4
	Rosy wolfsnail - <i>Euglandina rosea</i>	3
	Little fire ant - <i>Wasmannia auropunctata</i>	1
	Yellow crazy ant - <i>Anoplolepis gracilipes</i>	4
	Big-headed ant - <i>Pheidole megacephala</i>	3
	Red imported fire ant - <i>Solenopsis geminata</i>	3
	Yellow paper wasp - <i>Polistes olivaceus</i>	4
	Paper wasp - <i>Polistes stigma townsvillensis</i>	4
	Rose beetle - <i>Adoretus versutus</i>	4
	Tropical leatherleaf - <i>Laevicaulis alte</i>	4
	Termite - <i>Coptotermes grandiceps</i>	4
Powderpost termite - <i>Cryptotermes brevis</i>	4	
New Guinea flatworm - <i>Platydemus manokwari</i>	3	





including the priority level of the **70 IAS** among 4 categories (see [Poster](#))

**58 Plants** (of which 22 are on the list of the 70 priorities)

Classification  
of the 70  
priority IAS

Classification  
of the 70  
priority IAS

Acacia concinna	
Big-leaf mahogani - <i>Swietenia macrophylla</i>	
Cigar box cedar - <i>Cedrela odorata</i>	3
Barbed-wire cactus - <i>Acanthocereus tetragonus</i>	
Gum arabic tree - <i>Acacia nilotica</i>	
Silk oak - <i>Grevillea robusta</i>	4
Octopus tree - <i>Schefflera actinophylla</i>	4
Soft bollygum - <i>Litsea glutinosa</i>	
Dropping timber bamboo - <i>Phyllostachys flexuosa</i>	
Lebbek tree - <i>Albizia lebbek</i>	
Logwood - <i>Haematoxylum campechianum</i>	
Giant reed - <i>Arundo donax</i>	4
Cassie flower - <i>Acacia farnesiana</i>	
Cayenne cherry - <i>Eugenia uniflora</i>	
Japoneese honeysuckle - <i>Lonicera japonica</i>	
White angel trumpet - <i>Brugmansia suaveolens</i>	
Florida elodea - <i>Hydrilla verticillata</i>	3
Leafy elodea - <i>Egeria densa</i>	
Molucca albizia - <i>Falcataria moluccana</i>	
Prickly solanum - <i>Solanum torvum</i>	
Leucaena - <i>Leucaena leucocephala</i>	4
Brazilian pepper tree - <i>Schinus terebinthifolius</i>	
Prickly pear - <i>Opuntia ficus-indica</i>	
Erect prickly pear - <i>Opuntia stricta</i>	4
Australian tree fern - <i>Sphaeropteris cooperi</i>	
Common guava - <i>Psidium guajava</i>	
Strawberry guava - <i>Psidium cattleianum</i>	2
Green aloe - <i>Furcraea foetida</i>	4
Bank's grevillea - <i>Grevillea banksii</i>	

Cat claw vine - <i>Macfadyena unguis-cati</i>	4
Para grass - <i>Urochloa mutica</i>	
Hymenachne - <i>Hymenachne amplexicaulis</i>	
Blue morning glory - <i>Ipomoea indica</i>	
Water hyacinth - <i>Eichhornia crassipes</i>	3
Jambolan plum - <i>Syzygium cumini</i>	
Winter jasmine - <i>Jasminum polyanthum</i>	
Water lettuce - <i>Pistia stratiotes</i>	3
Common lantana - <i>Lantana camara</i>	
Ruber vine - <i>Cryptostegia grandiflora</i>	4
Ceara ruber tree - <i>Manihot carthagenensis glaziovii</i>	
Merremia - <i>Merremia peltata</i>	4
Miconia - <i>Miconia calvescens</i>	1
Corky passionflower - <i>Passiflora suberosa</i>	
Caribbean pine - <i>Pinus caribaea</i>	2
Sweetscent - <i>Pluchea odorata</i>	4
Rose apple - <i>Syzygium jambos</i>	
Wild tobacco - <i>Solanum mauritianum</i>	
Madras thorn - <i>Pithecellobium dulce</i>	
Yellow bells - <i>Tecoma stans</i>	
Trumpet vine - <i>Thunbergia grandiflora</i>	4
Laurel clock vine - <i>Thunbergia laurifolia</i>	
Natal grass - <i>Rhynchelytrum repens</i>	
African tulip tree - <i>Spathodea campanulata</i>	3
Glen wood grass - <i>Sacciolepis indica</i>	
Giant salvinia - <i>Salvinia molesta</i>	3
Indian pluchea - <i>Pluchea indica</i>	4
Madeira vine - <i>Anredera cordifolia</i>	4
Chinese fever vine - <i>Paederia foetida</i>	



# 4 | Taking action together

## Pillar 4 Governance and communication across sectors

IAS management is a complex issue, involving many stakeholders from both the public and private sectors. The effective implementation of the management strategy therefore relies on:

- the **coordination** of actions being implemented locally
- the mobilisation of adequate **financial resources** to meet the strategy's objectives and challenges,
- the implementation of **cooperative actions** at the national, regional and international levels, to share experiences, knowledge and expertise.



*Sculpture symbolising cooperation in the fight against IAS*



### Objectives and actions of Pillar 4

Objectives	Actions
Coordinate <b>partners' actions</b> at the local level	<ul style="list-style-type: none"> <li>• Seek consistency of actions in relation to legislation and policy</li> <li>• Encourage exchanges between local partners by providing shared tools and meeting platforms</li> <li>• Implement a communication and awareness campaign adapted to different audiences</li> </ul>
Monitor and evaluate the <b>effective implementation of the strategy</b> and revise the strategy	<ul style="list-style-type: none"> <li>• Monitor and evaluate the implementation of the strategy</li> <li>• Ensure the availability of adequate financial resources for effective implementation</li> <li>• Revise the strategy as required</li> </ul>
Strengthen <b>cooperation</b> at the national, regional and international levels	<ul style="list-style-type: none"> <li>• Strengthen the role of CEN within the national, regional and international networks and programs</li> </ul>



Raising awareness and mobilising **all New Caledonians** is **essential** for the **successful** prevention, surveillance and management of IAS. CEN and its partners are therefore developing tools and documents for all: [www.cen.nc/documents](http://www.cen.nc/documents)



# New Caledonia Regulatory Framework



## ● Preventing introductions (Government of New Caledonia)

The general provisions relating to **biosecurity** at the international borders of New Caledonia come under the responsibility of the Government of New Caledonia (GNC). At present, they are defined by a deliberation in Congress. The requirements for importing animal or plant species, as well as any animal or plant product, minerals and risk related objects (e.g. equipment, machinery, packages and containers, parcels, luggage, supplies, waste from aircraft and vessels, etc.) are defined in an Order.

## ● Environmental Codes of the three provinces

Are **prohibited** (except where otherwise provided),

for all invasive alien species listed in the provincial environmental codes:

- the introduction of listed IAS in a natural ecosystem, if it is committed with intent, recklessly or by negligence,
- the production and possession of listed IAS,
- the transportation of listed IAS,
- the offer, the sale or the purchase of listed IAS.



### WHAT YOU SHOULD DO



**Respect** regulations  
**Report** any invasive species you may come across in the wild.  
**Participate** in the fight against invasive species.

### WHAT YOU SHOULD NOT DO



**Do not introduce** invasive species into New Caledonia (when travelling, postal parcels).  
**Do not release or spread** invasive species into the natural environment.



## The CEN (Conservatoire d'espaces naturels de Nouvelle-Calédonie)

is a Public Interest Grouping (PIG) created in 2011, as the result of an initiative from France and local authorities. CEN's governing board includes: France; the French Biodiversity Agency; New Caledonia; the three Provinces; the Customary Senate; the two associations of mayors; the two NGOs, Conservation International and WWF; and the local association, Ensemble Pour La Planète.

CEN acts as a mechanism for **cooperation**, **consultation** and **coordination** in support of environmental strategies defined by New Caledonia's authorities regarding 3 priority areas: Dry forests, Marine Heritage and IAS.



# Let's stop Invaders!

## Let's fight against Invasive Alien Species to protect our natural ecosystems

For further information

Conservatoire d'espaces naturels de Nouvelle-Calédonie

Invasive Species Unit

BP 10 - 98860 Koné

Tel. : 44 14 23

[www.cen.nc](http://www.cen.nc)



CEN NC Espèces Envahissantes