

OUR ENVIRONMENT OUR HERITAGE

IMPACTS OF INVASIVE SPECIES IN SAMOA

The Ministry of Natural Resources & Environment (MNRE) commemorated National Biodiversity Day on the 21st May with the focus on "Reducing the Impacts of Invasive Species". The presentations presented on the day highlighted the following: Plant Invasive Species Management Programmes, Myna Bird Control Programme and Marine Invasive Species. The following highlight some of the key information extracted from Mr. James Atherton's presentation:

GLOBAL IMPACTS OF INVASIVE SPECIES

- Worldwide 67,000 pest species attack crops - 9,000 insects and mites, 50,000 pathogens and 8,000 weeds.
- Up to 70% of them are introduced.
- Global food production is reduced by around 50-60%

IMPACTS OF INVASIVE SPECIES IN SAMOA

Human Health Impacts

- (a) *Disease epidemics*
- Pathogens (eg typhoid, dengue fever and other viruses)
 - Parasites (eg tapeworm, filarial worm (mumu), hookworm etc)
 - Vectors for disease (eg Namu, Sisi Aferika etc)

(b) *Pesticide poisoning*

- Pesticide to control pests and weeds cause illness and death

(c) *Food Security*

- loss of food security from crop diseases and predation of crops by pests (eg Myna birds, Giant African Snail, Bugs etc)

Economic Impacts

- Economic impacts of invasive species in Samoa have not been quantified
- Likely to be very significant
- Consider taro leaf blight : Lega (Phytopthera colocasiae)
Taro blight introduced accidentally in 1993
Taro production: 1993 = US \$3.2 Million tala
1994 = US 53,000

Giant African Snail- Sisi Aferika (*Achatina fulica*)

- First introduced accidentally to Samoa in 1982 and was successfully eradicated
- Arrived again in January 1993 but eradication attempts failed and has now established on both Upolu and Savai'i
- Also a carrier of human disease
- Uncosted economic impacts on agricultural crops, garden ornamentals and native biodiversity
- Flatworm introduced to control it (*Platydemus manokwari*) but may be impacting native snails

What about economic impacts of other invasives such as wood termites, shipworm, rhinoceros beetle? etc

- 24% of Samoa's forest is secondary regrowth forest
- Perhaps 50% of the remaining lowland native forest is dominated by Merremia vines (fue lautetele)

Environmental Impacts

- Islands are more at risk - 20% of earth's animal species are restricted to islands, but 75% of recorded animal extinctions since 1600 have occurred on islands, 36% due to the effect of introduced animals:

- 57% of mammal extinctions
- 80% of mollusc extinctions
- 90% of bird extinctions

HOW INVASIVE CAUSE ENVIRONMENTAL IMPACTS

- Predate and compete with native species
- Alter ecosystem structure and function (eg increase fire risk, disrupt native species distribution, degrade watersheds and ecosystem services)
- Island species are particularly vulnerable:
 - Islands have low species diversity, but higher % endemism than continents
 - Island species tend to have evolved in the absence of predators
 - Island endemics have small populations with restricted distributions

Introduced Species in Samoa by taxonomic group

Life Form	Native Species	Introduced Species	% of all Introduced Species	% of Native Species Threatened
Flowering Plants	540	500	48%	25%
Land Birds	33	4	11%	42%
Land Mammals	3	13	81%	67%
Reptiles	4	11	73%	100%
Ants	30	7	19%	?
Land Snails	64	14	18%	20%?

(Information from James Atherton's presentation - Conservation International Pacific Islands - Biodiversity Awareness Day - 21 May 2008)

SO WHAT'S BEEN DONE ABOUT IT?

A Draft National Invasive Species Action Plan (NISAP) have been developed which establishes the framework and identifies the key actions to manage invasive species in Samoa by MNRE and partners.

It includes actions under four key elements:

1. Preventing the introduction and establishment of potential invasive species;
2. Developing a strategic approach to the management of established invasive species;
3. Improving the knowledge and understanding of key stakeholders and the wider public of invasive species and their impacts; and
4. Fostering regional and international cooperation and collaboration

WHAT CAN YOU DO ABOUT INVASIVE SPECIES?

We are not helpless in dealing with invasive species! Here are some practical steps everyone can take:

- Learn about what is native and what isn't and about what is invasive and what isn't
- Take care when traveling within Samoa and to/from overseas not to spread or import invasive species by accident (especially if you go to Pago!)
- Alert MNRE if you see unusual plants or animals
- Never release unwanted pets (eg cats or dogs) or fish into the environment
- Don't plant invasive plants in your home garden and especially not in your plantation areas
- Tell your friends and family why managing invasive species is important!



Biodiversity Awareness Day Official Opening

Produced by the Ministry of Natural Resources and Environment