

# Invasive Alien Species Drivers of Ecosystem Degradation



Boris Fabres  
Caribbean Regional Director

**“Spread of invasive aliens is generally considered the greatest threat to native biodiversity of Caribbean Islands Hotspot, especially to its endemic species”**

**“Most damaging invasive aliens on islands are typically terrestrial vertebrates such as goats, feral cats, pigs, rats”**

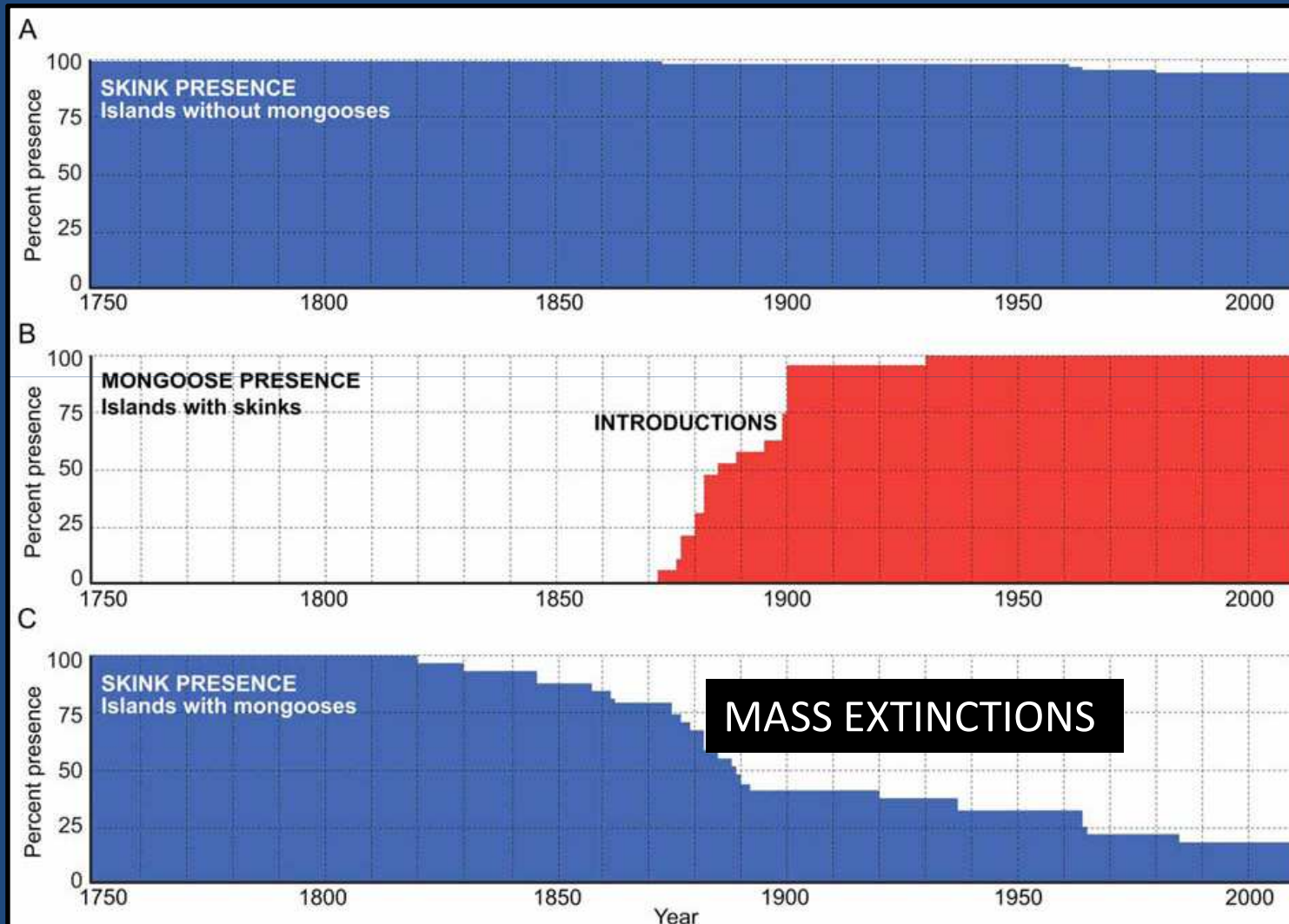
**Critical Ecosystem Partnership Fund (CEPF)  
Caribbean Islands Biodiversity Hotspot - Ecosystem Profile  
(2010)**

**VERY WIDE GAP**

**High IAS Threat (CEPF Analysis) ----- Low IAS Perceptions (OECS Study)**

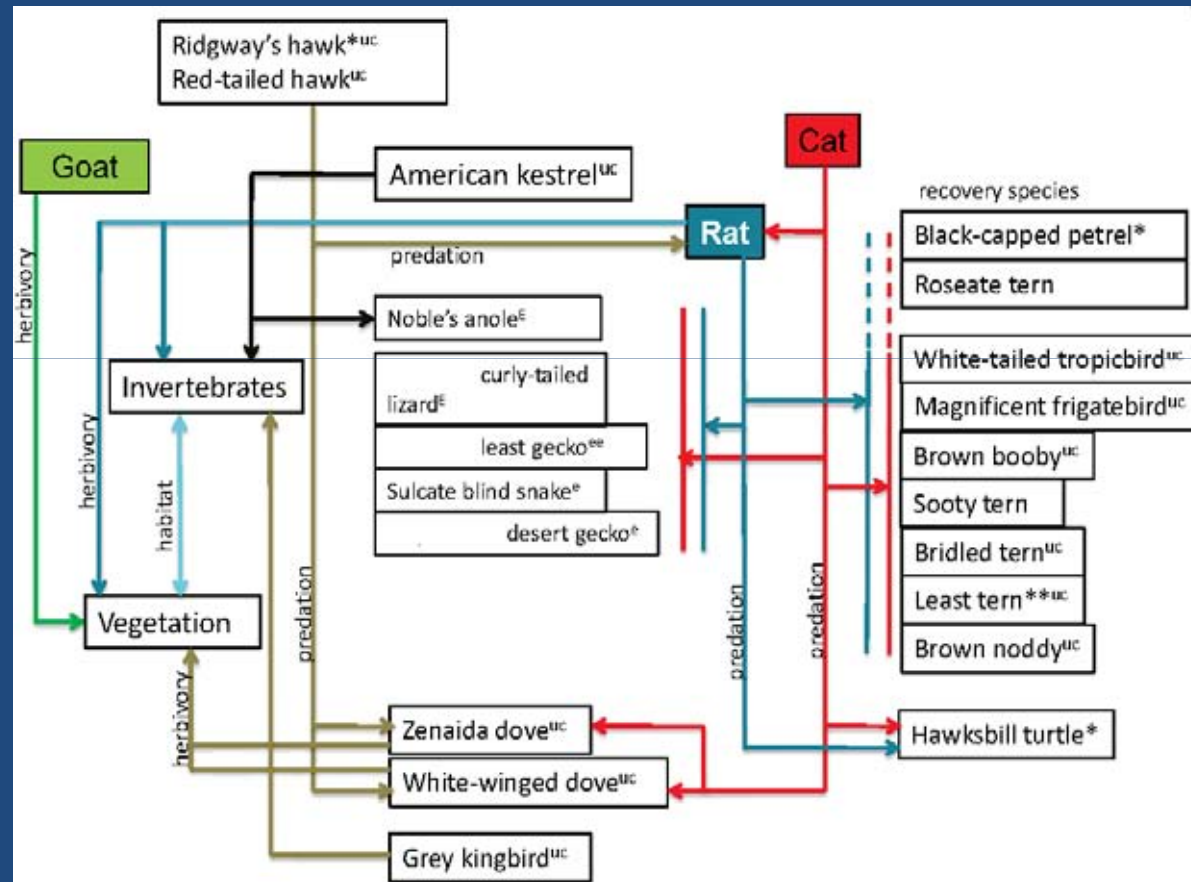


# Mongoose Impacts on Caribbean Skinks



Source: Hedges & Conn (2012) Zootaxa 3288

# Food Web Impacts of Invasive Species



Alto Velo Island -- Dominican Republic

# Ecosystem Island Impacts – Invasive Species

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**Predation (Cats):** 248 species , 175 endangered vertebrates

**Habitat Damage:** Over-grazing by ungulates

## **Competition**

- Food : with native species
- Habitat : limits bird nesting, parental care, settlement

## **Plant Dispersal**

- Disrupts Seed Dispersal Systems in native plants
- Disperses Invasive Plants: predating animals & direct consumption



**St. Martin**

# Tiritiri Matangi, New Zealand



**WITH RATS**



**RATS ERADICATED**

Introduced  
foxes



Seabirds



Marine Productivity



Predators  
(Land birds, Spiders)



Herbivores  
(Slugs)



Terrestrial Plants  
(Elymus Grass)



Nutrients from  
Guano



Introduced  
foxes



Predators  
(Land birds, Spiders)



Herbivores  
(Slugs)



Terrestrial Plants  
(Empetrum Shrub)



Nutrients from  
Guano

Seabirds



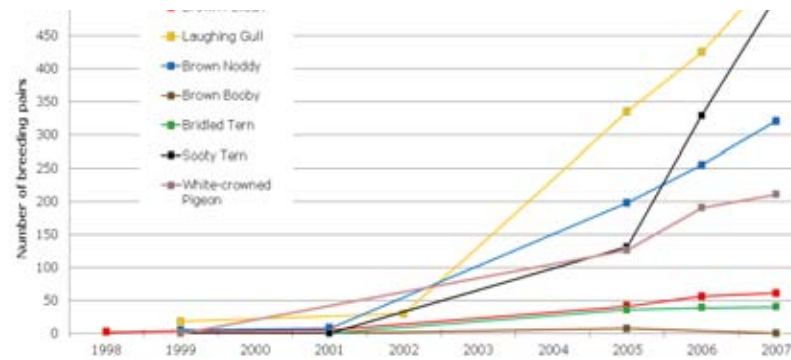
Marine Productivity



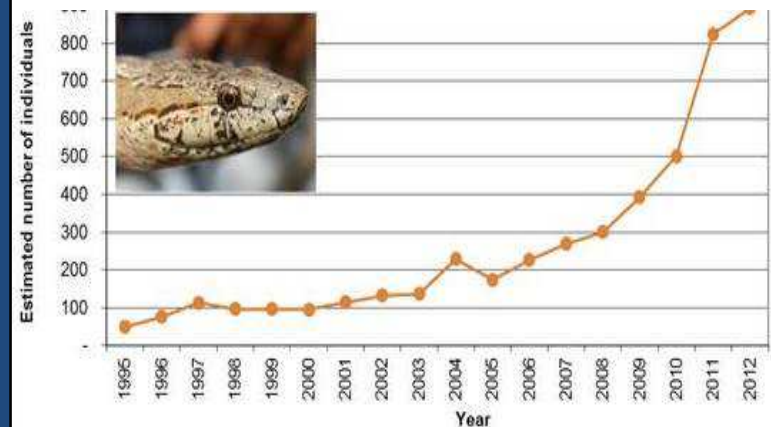
# Antigua & Barbuda



## Breeding Pairs of Birds: Rabbit, Redhead, Lobster Islands



## Antigua Racer Snake



# Case Study – Dominican Republic

Jaragua-Bahoruco-Enriquillo Biosphere Reserve (UNESCO)  
Ramsar Site & BirdLife International Important Bird Area (IBA)

## Invasive Vertebrates Feral Donkeys, Cats, Cattle

1. Over-graze and Trample Native Flora
2. Increase Soil Erosion & Spread Introduced Weeds
3. Degrade Iguana Habitat by Preventing Plant Regeneration
4. Destroy Iguana nests & Compete for Food Resources
5. Predate Young Iguanas & Native Fauna



# Achieving Multiple CBD Aichi Targets

## Cabritos Island, Dominican Republic



### Aichi Targets

**5** Loss of natural habitats

**9** Invasive alien species eradicated

**12** Extinction of threatened species prevented

**14** Ecosystems are restored

**19** Capacity Strengthening

	Donkey	Cow	Cat
5	✓	✓	
9	✓	✓	✓
12	✓	✓	✓
14	✓	✓	✓
19	✓	✓	✓



# Human Health: Rodent Zoonoses (The Philippines)

DISEASE	2008		Jan-Oct 2009	
	CASES	DEATHS	CASES	DEATHS
HIV/AIDS	528	4	629	1
LEPTOSPIROSIS	<b>832</b>	<b>41</b>	<b>2777</b>	<b>161</b>

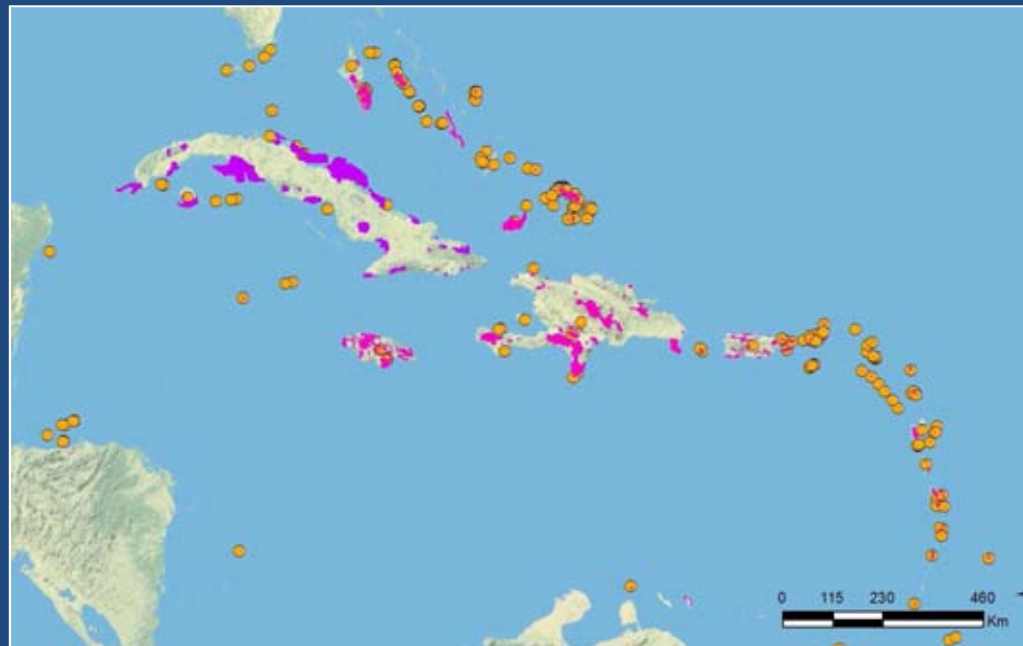
Source: Singleton et al. (2010) Impacts of rodent outbreaks on food security in Asia. *Wildlife Research* 37: 355–359.




# Priorities

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- Address Data Gaps and Prioritization
- Quantify Costs: National → Personal
- Quantify Restoration Benefits
- Linkages: Climate Change, Tourism  
: Animal & Plant Invasives
- Biosecurity: collaboration
- Mainstream in NBSAPs, NRs. MEA reports
- **Educate Donors**

# Prioritizing Actions



-  Caribbean Key Biodiversity Areas
-  Important Bird Areas
-  TIB Islands



threatened  
island  
biodiversity  
database

<http://tib.islandconservation.org>

**DIISE**

Database of Island  
Invasive Species  
Eradications

<http://diise.islandconservation.org>

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**Total Number of  
persons  
in the IUCN  
Iguana Specialist Group**

**84**

**Number of Caribbean SIDS  
persons  
in the IUCN  
Iguana Specialist Group**

**4**

# Celebrating Invasive Species ?



# Island Conservation



1. Scientific & Technical advice
2. Joint eradications
3. Develop proposals, source financing
4. Develop National Strategies, Prioritizations



# Many Thanks



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