

# Using Rainforest Research

## The bad, the worse and the ugly: Pest animals in the Wet Tropics

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The Wet Tropics World Heritage Area is a hotspot of biodiversity. The region's inhabitants include more than a third of all Australian mammals, half of its birds, around 150 reptiles, over 50 frogs and 80 freshwater fish. Unfortunately, not all of these animals belong there and some of them actually pose significant threats to those that do. Rainforest CRC researchers Debra Harrison and Brad Congdon undertook a study of the impacts of animal pests and produced a Wet Tropics Vertebrate Pest Risk Assessment Scheme (WTVPRAS). This is a management tool which measures the extent of the threat a pest animal represents to the plants and animals that belong in the Wet Tropics.

### Measuring the impact of a pest animal

Four crucial factors are considered to arrive at an overall status for each pest. Two pertain to the current and potential impacts of the animal itself, and two to the detrimental effects and difficulty of any measures used to control the animal. Specific information about the impact the pest and its control measures have on the environment is scored to represent the intensity of each particular impact. Both impact and control scores are then



The cane toad (*Bufo marinus*)  
Number three on the Top Ten

### Top Ten Vertebrate Pests of the Wet Tropics (as defined by WTVPRAS)

Pigs (*Sus scrofa*)  
Cats (*Felis catus*)  
Cane toads (*Bufo marinus*)  
Dogs / Dingoes (*Canis familiaris*)  
Gambusia (*Gambusia holbrooki*)  
Tilapia (*Tilapia marari*)  
Tilapia (*Oreochromis mossambicus*)  
Guppies (*Poecilia reticulata*)  
Rabbits (*Oryctolagus cuniculus*)  
Swordtails (*Xiphophorus hellerii*)

totalled to give an overall pest status for each animal. Information required to generate scores is:

**Current impacts** - details of where the animal presently exists, in what numbers, any effects it has already had upon native plants and animals and any interaction it has with endangered or vulnerable species.

**Potential future impacts** - an account of any impacts the animal is known to have had elsewhere, how it reproduces, how well the young survive and how easily or quickly it can spread beyond its current boundaries and the types of impacts it is likely to have on the environment.

**Difficulty of control** - catalogues the susceptibility of an animal to control measures, the seasons and times it is most vulnerable, its likely rate of recovery following control measures and its potential resistance, the costs, effectiveness, efforts required and ease or difficulty of implementing current control methods.

**Detrimental impact of control** - describes the type and duration of the negative effects of control measures on habitat, native animals and other pest species.

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### What makes a pest a pest?

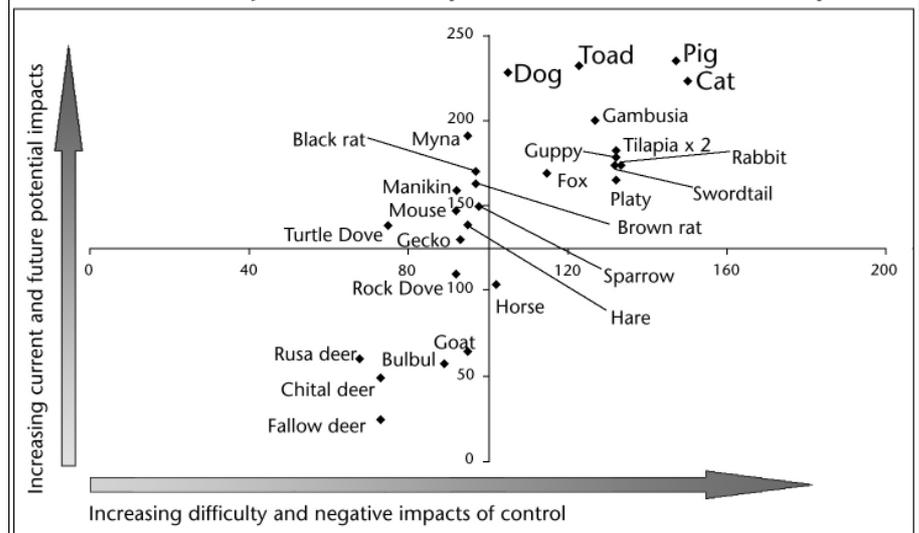
Not all vertebrate pests become so for the same reasons. In environmental management, the presence of a pest animal can require anything from urgent attention to incidental monitoring, depending upon the extent of their current and potential impacts and whether or not they can be easily controlled. Three different pest types have been identified in the WTVPRAS, and all three types are on the Wet Tropics top ten list of vertebrate pests.

#### High Scorers

Pigs, cats, dogs/dingoes and cane toads belong to this group which cause high current and potential impacts and are difficult to control. Pigs modify the natural habitat significantly, compete directly with native species for resources and carry and transmit disease and parasites.

Cats are well known for decimating ground dwelling bird and small mammal populations. Cane toads threaten quolls, monitors and native frogs, and dogs and dingoes prey on both native and other pest species. Pigs and cats are listed with Environment Australia as threatening processes at the national scale.

### Current major animal pests of the Wet Tropics



Assessment of current and potential impacts versus control difficulty and impacts. Each of the four regions contain species having similar pest status. The relative pest status increases towards the upper right hand corner of the graph.

#### Sleepers

Exotic fish, foxes, black rats, Indian myna birds and rabbits pose the greatest unrealised potential threat to Wet Tropics biodiversity. They have lower current impact scores but are equally difficult to control and could easily become major pests in the future.

#### Moderates and Low Scorers

Brown rats, goats, nutmeg mannikins, house mice, house sparrows, brown hares and spotted turtle-doves fall into a less threatening group. These also have lower current impact scores but are much easier to control.

#### Management Implications

Pests are a prime concern to the land managers of the Wet Tropics. This Risk Assessment Scheme will enable management to understand which pests present the greatest threat to the native plants and animals in their area, and to allocate resources accordingly to get best value for any time and money expended.

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