# INVASIVE SPECIES

Invasive species are one of the biggest threats to biodiversity and agriculture in Tasmania. They have the potential to harm not only our environment but also our economy, lifestyle and even human health. Invasive species currently cost the state millions of dollars each year in lost production and management costs, and have far reaching impacts across all sectors of the community.

Currently Tasmania is free from many invasive species that, on mainland Australia, damage crops, spread disease, threaten the survival of native animals and disturb ecosystems. Without community action, the situation in Tasmania could change rapidly and we need to be vigilant and prepared to rapidly respond to the threat posed by new and emerging invasive species. We also need to work together to manage the impacts of invasive species already established in Tasmania.

The Australian Pest Animal Strategy identified that 11 of Australia's major invasive animal species "are conservatively estimated to have impacts valued at over $720 million annually".

Feral Cat

Photo: D. Marshall
Courtesy of Invasive Animals CRC

The number of naturalised species that become pests (those species that pose a threat to human health, primary production and/or the natural environment) and environmental pests (those pests that specifically impact on environmental values) in Tasmania, 2001 is shown in Table 1 on page 2. *The State of the Environment Report* notes that "Not all naturalised species become pests and not all pests become environmental pests."

## TABLE 1: EXAMPLES OF THE IMPACT OF SOME OF THE MAJOR & POTENTIAL INVASIVE SPECIES IN TASMANIA

The table below gives examples of the impact of some of the major & potential invasive species in Tasmania

| INVASIVE SPECIES | ENVIRONMENTAL /ECONOMIC IMPACTS |
|---|---|
| *LAND* | |
| European Red Fox | Predation of native mammals and ground nesting birds. Many marsupials are already extinct due to fox predation on mainland Australia. The economic losses of livestock from fox attacks could equate as a much as $20 million per annum in Tasmania's sheep industry alone (wool and slaughter). Foxes are a major contributor to Australia's world highest extinction rate. |
| Feral Cat | Prey upon native mammals, birds, reptiles (particularly skinks), frogs, fish and invertebrates. Economic losses of livestock through disease. |

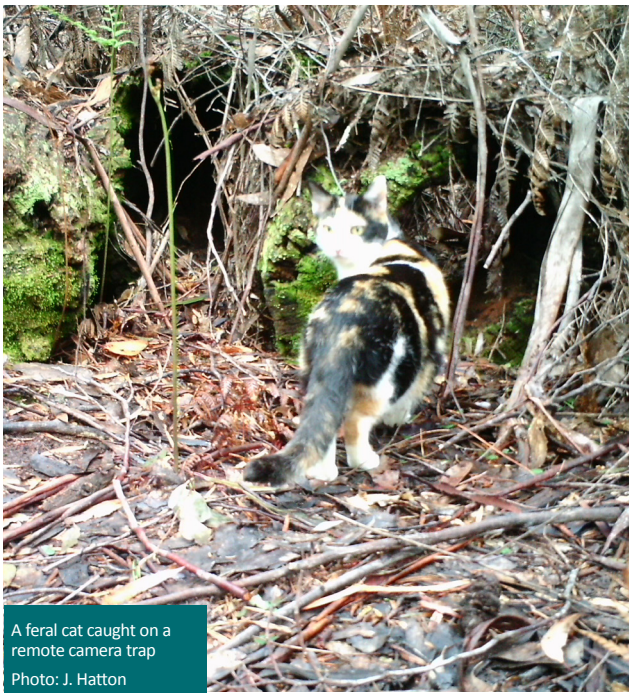
| INVASIVE SPECIES | ENVIRONMENTAL /ECONOMIC IMPACTS |
|---|---|
| | *LAND* |
| Rat | Prey upon native birds, reptiles (e.g. skinks) and invertebrates. They have the potential to introduce disease. They have particularly devastating impacts on smaller sea bird populations (e.g. fairy prions and diving petrels) as they predate on the eggs, babies and adults. |
| Ferret | Ferrets are very successful predators. They prey on for example ground nesting and burrowing birds and native mammals. They also have the potential to introduce disease. |
| European Rabbit | Over-grazing, changes to vegetation structure, habitat losses to flora and fauna, soil erosion from burrows. |
| European Starling | Occupy and degrade nesting hollows needed for breeding of native birds, such as the already threatened orange-bellied parrot. |
| European Wasp | Prey upon many native invertebrates with as yet unstudied consequences. |
| | *INLAND WATERS* |
| European Carp | They destroy fragile water plants, destablise banks resulting in habitat loss for native fish and trout. Do not predate on native fish. However, they predate on invertebrates, thus competing with native fish for food. |
| Goldfish | Do not predate on native fish. However, they predate on invertebrates, thus competing with native fish for food. |
| Eastern Gambusia | The eastern Gambusia is listed as a controlled fish under the *Inland Fisheries Act 1995*. They out compete native fish especially in degraded systems and attack small native fish. |
| Mainland Yabby | They impact native habitats as they destroy aquatic vegetation, destablise banks resulting in habitat loss for native fish and troutand have the potential to introduce disease. Due to their burrowing nature they also damage farm dams, which may cause leakage problems. |
| Freshwater turtles | Tasmania has no native freshwater turtles and any freshwater turtle spotted in Tasmania is an invasive species. It is also illegal to import or keep turtles as pets in Tasmania and severe penalties apply. DPIPWE's Wildlife Management Branch has responsibility for managing the response to sightings of freshwater turtles in the wild in Tasmania. |
| Didymo | Didymo, also called rock snot, is a freshwater algae that is widespread in the Northern Hemisphere and New Zealand. Although not currently in Australia, it is highly invasive and is considered a significant risk. Didymo poses a significant threat to Tasmania because of the potential transfer from NZ via contaminated fishing and boating equipment. |

SOURCE: *State of the Environment Tasmania (2003), Animals Pests*

## CATS *FELIS CATUS*

Cats are known to prey on at least 50 Tasmanian species including 15 threatened species. The cat competes directly with native carnivores and impacts on wildlife through predation, competition and the spread of diseases such as Toxoplasmosis. Toxoplasmosis can be transmitted to humans and other mammals; it kills native animals and can cause abortions in sheep and goats.

It is believed that the population is rising in response to the decline in population of the Tasmanian devil through the Facial Tumour Disease. New legislation came into effect on July 1st 2012 which permits only registered breeders to breed cats. "Cats sold or given away must be more than eight weeks old, desexed and microchipped."



A feral cat caught on a remote camera trap
Photo: J. Hatton

## CATS *FELIS CATUS (CONT)*

*The Cat Management Act 2009* came into effect of 1 July 2012 to helps landowners better manage the impacts of feral cats and regulate breeding of domestic cats. The Act provides statutory powers for primary producers, land owners and land managers to trap, seize or humanely destroy stray and feral cats in certain circumstances. Councils can also declare cat management or prohibited areas in their municipality after a public notification process.

It is important that the domestic cat population does not provide a source of recruitment for the feral cat population and, with responsible pet ownership, this can be achieved. Microchipping and desexing domestic cats not only helps prevent unwanted kittens from becoming feral cats but also has important animal welfare benefits. Desexed cats are less likely to wander and be injured in traffic or fights; microchipping a cat allows more rapid return to the owner if a cat has wandered (reducing the stress on cat and owner alike). Cat owners can further assist in reducing the environmental impact of their cats by confining them to their properties, particularly if they live near bushland.

Further details about cat management can be found on the invasive species section of Department of Primary Industries, Parks, Water and Environment website or by contacting your local council.


Factsheets Courtesy of Department of Primary Industries, Parks, Water and the Environment

## EUROPEAN RABBIT *ORYCTOLAGUS CUNICULUS*

With the ability for a pair of rabbits to produce 30-40 offspring in a year, the population of rabbits can increase rapidly when conditions are right.

On farms they compete with livestock for pasture (8 rabbits can eat the equivalent pasture of 1 sheep), impact on native vegetation and can change the composition of the vegetation communities. At high levels they can eat the grass down to bare soil, leaving it open to erosion and weed infestation.

High population levels also result in a rise in predator numbers which allows populations of species such as the feral cat to increase with a flow on effect on wildlife from higher predation levels and spread of disease.

Control measures for rabbits should aim to reduce the resident population by more than 90% otherwise, with the rabbits breeding rate, the population will return to pre-control levels within one breeding season. Usually several methods are required to make an impact on the population. Where rabbit numbers are excessive and causing significant impacts, DPIPWE can advise landowners on management options.

## EUROPEAN STARLING *STURNUS VULGARIS*

European Starling

Photo: B. Lukins
Courtesy of Invasive Animals CRC

Released in the 1880s to control insect pests eating European and pasture plants, the European starling is now so common in Tasmania it is hardly noticed any more.

It will compete with native birds for food, will destroy habitat and competes with native hollow dependent fauna for nest sites. It is known to "directly impact on Orange-bellied Parrots by using tree-hollow nest sites and by killing incubating females at nest" (*State of the Environment Tasmania 2009*). Starlings build nests in a wide range of sites including roof spaces, protected areas in wood piles, old guttering and pipes, hollows in trees as well as nesting boxes put up for native fauna.

## MAINLAND YABBY *CHERAX DESTRUCTOR*

Hardy and quick maturing, the Mainland Yabby will start breeding from 6 months of age (compared to 14 years for female Giant Freshwater Lobster) and can spawn 2-4 times a year (every 2 years for giant freshwater lobster).

Tolerant of higher temperatures and able to burrow to survive drought, this species will outcompete native species, displacing endangered burrowing crayfish, reducing water quality, encouraging algae blooms, eroding stream banks and damaging dam walls. It may also carry diseases and parasites to which our native species have no resistance. Mainly found in farm dams at present, the Inland Fisheries Service needs community support to eradicate this species before it invades all our natural waterways.well as nesting boxes put up for native fauna, are used by these birds.

## FERRET *MUSTELA FURO (POLECAT)*

The Ferret is another species to be alert for - a few small populations are known in Tasmania. It is a ferocious hunter of anything small enough to tackle (small ground-dwelling birds, reptiles, amphibians, mammals and invertebrates).

## EUROPEAN RED FOX *VULPES VULPES*

Tasmania has a long history of fox introductions, with foxes being introduced for recreational hunting in the 1800s.

More recently, a range of evidence indicating fox activity in Tasmania triggered the start of an eradication effort aimed at ensuring that foxes were not able to establish in the state.

As at July 2014, no evidence of fox activity has been collected in Tasmania since July 2011, which is a positive sign that establishment has been prevented.

However, the presence of large numbers of foxes on mainland Australia means that the threat from fox incursions remains. Ongoing vigilance for fox activity is needed to ensure Tasmania does not risk suffering the same impacts from foxes as mainland states.

Foxes are a significant factor in the decline and extinction of many small and medium-sized mammal species in Australia. They also prey on many bird species. 78 species of native vertebrates (birds, mammals, frogs and reptiles) would potentially be impacted in Tasmania, not to mention the impact foxes would have on farming and the economy. Foxes may also compete with Tasmania's native carnivores and occupy niches usually held by quolls or the Tasmanian Devil.

Biosecurity Tasmania monitors for foxes in Tasmania through a strategic vertebrate pest monitoring program that searches for evidence of threats using a variety of measures, including scat (animal poo) collection surveys with the use of scat detector dogs.

European Red Fox

Photo: C. Cox
Courtesy of Invasive Animals CRC

It is important that all members of the public are vigilant and report fox sightings or any possible evidence of fox activity to DPIPWE's Invasive Species Branch.

# INTRODUCED WASPS

*VESPULA GERMANICA (EUROPEAN WASP)*
*VESPULA VULGARIS (ENGLISH COMMON WASP, YELLOW JACKET)*

Accidental introduction, probably of hibernating queens to Tasmania in 1959 for the European Wasp and 1995 for the English Wasp.

These species can cause major economic losses in vineyards and orchards, and will also actively hunt invertebrates. They are thought to be implicated in the decline of the Ptunnara Brown Butterfly found in native grasslands. They are known to rob beehives, kill bees and fledgling birds, and will compete with native birds and bees for nectar. With a painful sting, which can cause allergic reactions in some, the wasps can deter people from enjoying outdoor activities where they are at high densities.


Factsheets
Courtesy of Invasive Animals CRC

# NATIVE PESTS

*MACROPUS RUFOGRISEUS RUFOGRISEUS - BENNETTS WALLABY*

*THYLOGALE BILLARDIERII - PADEMELON*

*TRICHOSURUS VULPECULA FULIGINOSUS - BRUSHTAIL POSSUM*

The Pademelon and Bennetts Wallaby (and Brushtail Possum in some areas) are abundant in Tasmania and their numbers and distribution have expanded over the past 30 years.

Land clearance in conjunction with improved pastures and water supply, along with reduced hunting pressure, have provided ideal conditions for increasing populations of these species.

Land clearance has resulted in a mosaic of pastures and remnant bushland which has provided ideal habitat enabling wallabies to feed at night on improved pasture and retreat to adjacent bushland to shelter by day. Studies have shown an average of 65% of pasture production is lost from rested paddocks near bushland (and within 20 metres of bush, up to 90% of pasture production can be lost) to wildlife browsing. If the landholder believes that there is a problem with wildlife browsing, this can be quantified by measuring pasture loss using exclusion cages as outlined in the Measuring Pasture Loss to Browsing Animals sheet (See References). If the losses are confirmed there are a few options to reduce the problem.

Wallaby-proof fencing has been shown to be one of the most successful methods to control browsing, however this is expensive and should be planned in conjunction with neighbouring properties so that the problem isn't merely shifted or populations isolated. Reducing the population before fencing remnant bush can avoid high-density wallaby populations impacting on the understory

Bennetts Wallaby

A permit is required to "take" (which covers to kill, injure, catch, damage, destroy or collect) wallabies and Brushtail Possums, which are classified as "Partly Protected Wildlife" under the Wildlife Regulations 1999 of the *Nature Conservation Act 2002*. Game Management Services Unit (See References) will assist in developing a Property-based wildlife Management Plan with control options which include using wallaby proof fencing as a control measure.

# FURTHER INFORMATION

**Traveller's Guide to Tasmanian Quarantine - What You Can and Can't Bring into Tasmania:**
http://dpipwe.tas.gov.au/biosecurity/quarantine-tasmania/what-you-can-cant-bring-into-tasmania

**Feral animals of Tasmania - how you can help control the State's worst pest animal species (2008):**
http://dpipwe.tas.gov.au/Documents/Feral-Deck_Feral-Animals-of-Tasmania.pdf

**Inland Fisheries Services: Reporting Phone: 1300 463 474 Info:** http://www.ifs.tas.gov.au/

**Invasive species management in Tasmania:** www.dpipwe.tas.gov.au/invasivespecies

**Reporting potential fox sightings:** Invasive species hotline 1300 369 688

**Information on pest species and Pestsmart Toolkit:** http://www.feral.org.au/

**Living with Kangaroos and Wallabies, Wallaby Proof Fencing, Monitoring and Measuring Pasture Losses to Wildlife, Property based management planning:** http://dpipwe.tas.gov.au/wildlife-management/living-with-wildlife/living-with-kangaroos-and-wallabies

**For more information please refer to NRM South's Healthy Farming & Environment Reference Guide:** http://www.nrmsouth.org.au/

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