

Guidelines for the Management of the Pest Animals of Manbarrum



Managing Pest Animals for Wildlife Conservation

Introduction

The plant and animal species found in an area can show whether the country is healthy for wildlife and being managed sustainably. We place particular value on some of these species because they are rare or threatened in the Northern Territory, Australia or worldwide, or are only found in a small area. Some are important because their presence shows that the special needs they share with a wide range of other species are being met.

Most land in the Northern Territory is already managed in a way that supports native wildlife, by avoiding clearing and loss of ground cover, and with few weeds or pest animals. However, a few native species can only flourish under active management, and these deserve special attention. Species that have become threatened usually depend on one or more elements of the environment that are sensitive to change. Restoring these elements will benefit a wide range of wildlife, and if the threatened species is present, their number should also recover. A diverse range of habitats is needed to support the diversity of wildlife. So a range of different management actions will be required to preserve all species.

Many of the management actions recommended can also improve the sustainability of pastoral production. Most adjustments needed are also considered best practice for pasture management, such as using moderate stocking rates and periodically spelling country, managing weeds and controlling feral animals. These practices help ensure healthy and productive native pastures. In very few cases, pastoral production is incompatible with the preservation of a particular threatened species. Management for these species necessitates removing stock and other grazing animals from key areas of habitat. Some species persist only under the lightest grazing pressure. This booklet explains how to manage grazing pressure across the property to make sure there is habitat for these species even on a production property.

Wetland and marine species face particular challenges associated with overfishing and pollution.

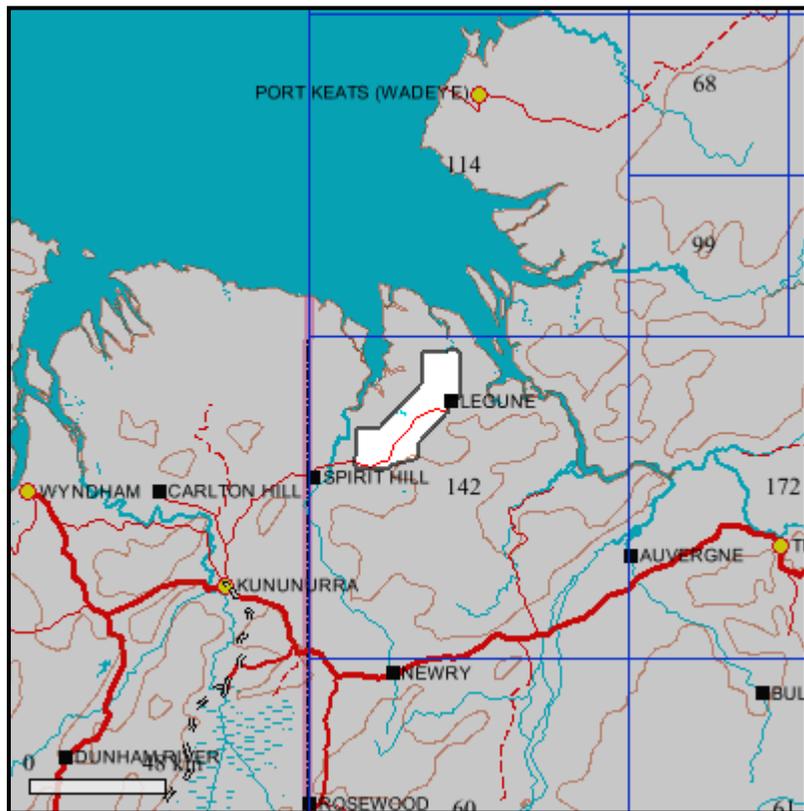
Using this booklet

This booklet provides information to help land managers control pest animals in the Northern Territory. Profiles of introduced species outlining their impacts on wildlife and production; and recommended methods of control are presented. Native animals that are considered pests in some situations are included in the pest list as species with pest potential. Profiles have not been developed for these species as a permit is required for their control and need to be considered on a case by case basis. Introduced animals in the list with small and highly localised distributions have also not had profiles developed.

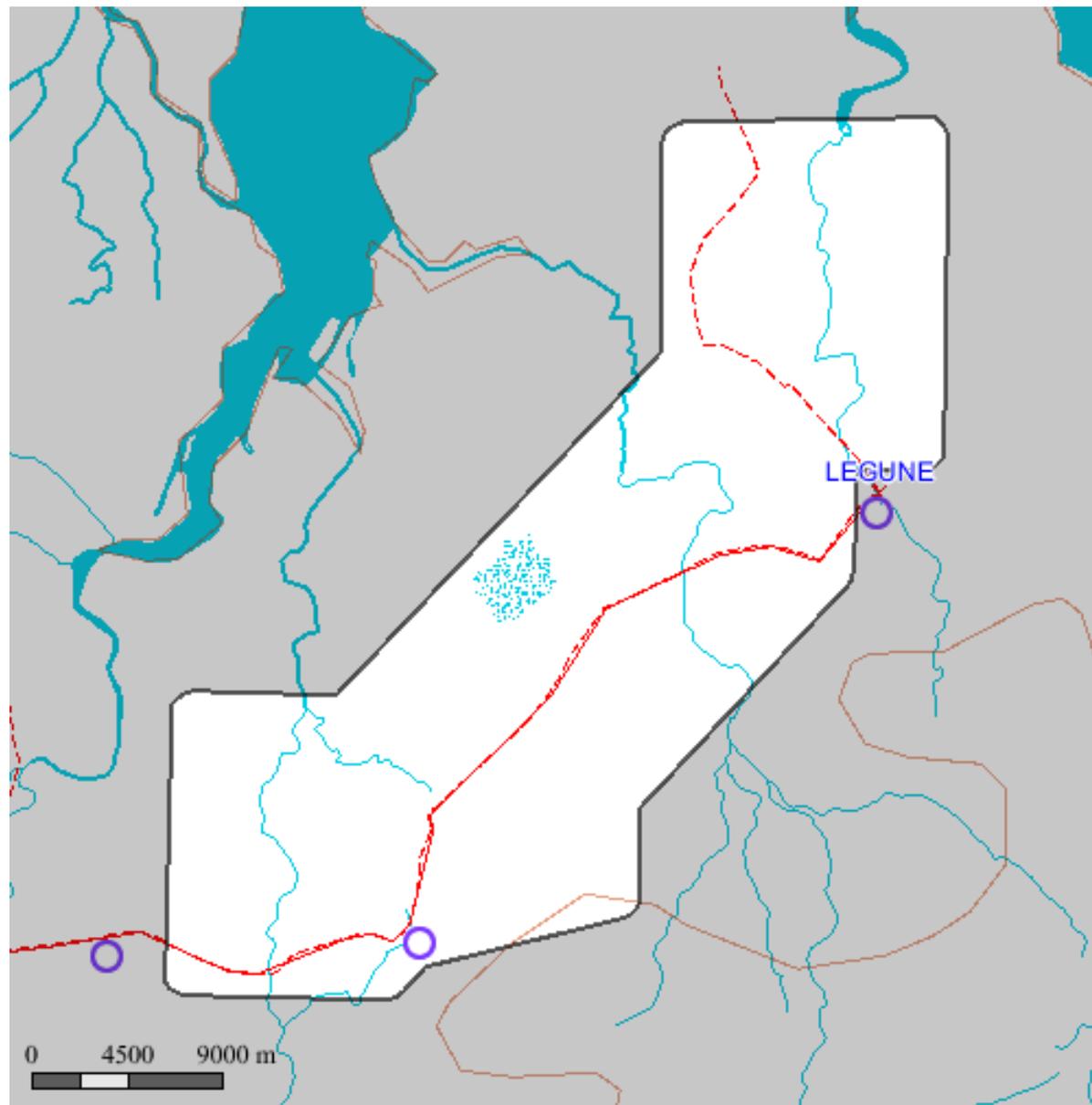
Databases kept by the Northern Territory Department of Land Resource Management (DLRM) were used to identify the pest animal species recorded within the bioregions that overlap the selected area. This list reflects the range of pest animals likely to be found in the selected area. If a species seems unusual for your selected area check the bioregional boundary from which the list was created as it may cover a larger area than you selected and include different habitats. Future booklets for this area may include additional species as databases are updated several times a year and new species may be recorded.

Additional threatened species booklets and information on natural resource values for this and other areas in the Northern Territory can be found on the Infonet (www.infonet.org.au), North Australian Land Manager (www.landmanager.org.au) and DLRM (<http://www.lrm.nt.gov.au/biodiversity-conservation/animals/feral>) web pages.

Location Map for Manbarrum



Species listed in the table below were recorded from all the grid cells shown above that overlap Manbarrum



Species List

Pest animals of the Manbarrum in the Northern Territory

Group	Common Name	Scientific Name	NT Status	National Status	ID	Info
Frogs	Cane Toad	<i>Rhinella marina</i>	P	.	183252	Info
Birds	Rock Dove	<i>Columba livia</i>	P	.	183336	
Birds	Red-tailed Black-cockatoo	<i>Calyptorhynchus banksii macrorhynchus</i>	N	.	223765	
Birds	Sulphur-Crested Cockatoo	<i>Cacatua galerita</i>	N	.	223772	
Mammals	Agile Wallaby	<i>Macropus agilis</i>	N	.	223786	
Mammals	Dingo / Wild dog	<i>Canis lupus</i>	N	.	183280	Info
Mammals	Cat	<i>Felis catus</i>	P	.	183259	Info
Mammals	Donkey	<i>Equus asinus</i>	P	.	183287	Info
Mammals	Pig	<i>Sus scrofa</i>	P	.	183329	Info
Mammals	Cattle	<i>Bos taurus</i>	P	.	183266	Info

* Click on the "Info" links on the right to go to the management related information on each species. Where the "Info" column is blank no management guidelines have been created. For further information on species without management guidelines go to www.landmanager.org.au/view/index.aspx?id=#### where #### is the ID number from the table above for the species of interest.

P = Prohibited species

N = Native species with pest potential

Introduction

Pest animals pose a major threat to wildlife and habitats throughout the Northern Territory. Different pests are a concern in different regions, and not all directly impact on threatened species. Cats, rats, mice, horses and wild dogs are found throughout the Northern Territory; foxes and rabbits in the southern half; and water buffalo in the north. Camels are most common in the south, but occasional animals make their way into the Victoria River District. Pigs are most abundant in the north, but outlier populations occur in the centre. The Cane Toad is still spreading, but in the Northern Territory, is unlikely to establish populations outside the Top End. Mosquitofish are spreading through the waterways of the arid centre. Domestic grazing animals can also be a problem for threatened species when they become feral or occur in unsustainable numbers.

Pests that occur in localised areas or low numbers can also be a threat to some species by altering habitat or competing for food and resources. These include banteng, barbary dove, feral pigeon, house sparrow, sambar deer and spotted turtle dove. These species are not currently considered as problematic as the species discussed above. The European honeybee is also a pest species which competes with native pollinators for nectar and with native animals for tree hollows. They may also promote the growth of weeds as they tend to favour the nectar of weed species over native species. To date, there has been no research on the impact of the European honeybee in the Northern Territory, but the species has the potential to adversely affect native wildlife and threatened species which depend on nectar and hollows.

Impacts

There are several ways in which pests can be a problem for threatened species. Many introduced animals graze, browse, dig up, trample or push over plants. In doing so, they may also expose, disturb or compact soil, cause erosion and foul wetlands and waterways. Feral grazing animals also impose pressure on pastures over and above that of commercial livestock. Controlling them improves both production values and conservation values. Native grazing animals (such as wallabies and kangaroos) can also reach population sizes where they degrade the ground layer. Restricting their access to water points is the most effective means of controlling numbers of wallabies and kangaroos. Native herbivores have not been identified as posing a risk to threatened species.

Another class of pest that threaten native wildlife are predators, the most problematic of these being cats and foxes. They are certainly implicated in the extinction of several small and medium-sized mammals. Wild Dogs may be a problem in some situations, such as on islands. However, Dingoes have been shown to regulate the populations of smaller predators and goats, and so can be a benefit to threatened species. Cane Toads pose a different kind of threat, by poisoning the animals that eat them.

Invasive ants also threaten biodiversity, and their impact has been highlighted on Christmas Island. There are several exotic ants in the Northern Territory that could cause serious environmental damage. However, ants have not been identified as a current threat to any threatened species in the Northern Territory. Many aquatic species are threatened by invasive fish, and Australia has been identified as one of the top hotspot areas for invasive fish species, but only the mosquitofish has so far been identified as a problem for threatened species in the Northern Territory.

Pest animals can harbour diseases that affect threatened species. Diseases carried by Cats and Rats may be one factor contributing to the collapse of native mammal populations across northern Australia in recent years.



Photo: © Gabriel Crowley

Feral animals often congregate in the most sensitive habitats, such as rainforests and wetlands, seeking the same resources, such as shade and water, as the threatened species they displace

www.landmanager.org.au/view/index2.aspx?id=646630

Profile written by Gabriel Crowley

Last updated April 2011

Introduced herbivores are also major contributors to the spread of weeds due to their transportation of weed seeds in dung and fur and the soil disturbance they create that facilitates germination of those seeds.

Control

When controlling feral animals, there are a few principles worth consideration:

The aim of a control program should be to produce a significant reduction in the impact of the species, as a result of the control method. With most pest animals, it is necessary to reduce populations by at least 95% in a single year otherwise the population rapidly recovers to pre-existing numbers. Monitoring the signs of impact is just as important as monitoring the actual number of feral animals in the population. A program controlling Water Buffalo in freshwater springs in Arnhem Land combined Indigenous and Scientific knowledge to develop signs of Buffalo impact for monitoring. The results showed how culling can improve the condition of the springs, and provided evidence to show other land managers about how Buffalo were affecting their country.

Hunting animals as a recreational or commercial exercise rarely results in control, but may be a useful addition to a more strategic control program.

The most effective approaches combine control methods, such as poison baits and warren ripping for Rabbits, or target control to when animals are under environmental stress, such as when dry conditions reduce Pig populations and concentrate them around a few watering places. Control needs to be ongoing to be effective.

Some methods for controlling pest animals can be used against several species, and removal of a single pest may simply allow other pests to take its place. Cat predation is known to increase if foxes are controlled in isolation. Pigs may get into paddocks from which Cattle and Water Buffalo are excluded and do just as much damage. If undertaking control for a single species, consider the outcome you are seeking and whether it might be worth expanding your target species. Aerial shooting can target a range of large herbivores. Different baits may be required for different species, but the effort used to distribute them may make targeting two species economically viable. Fencing is an approach where it is worth considering all problem species, and weighing the costs and long term benefits of different styles of fencing.

Animal welfare should be considered at all times. It may be necessary to kill animals for conservation, but there is no reason to make them suffer in the process. There are both rules and codes of practices that should be followed.

Finally, make sure that any control program does not adversely affect non-target species. This can be as simple as ensuring farm-dogs are chained up when 1080 baits are laid, or making sure that poisons are delivered in baits that are attractive only to the target species.

For further information:

Read

- + Australian Pest Animal Strategy. www.environment.gov.au/biodiversity/invasive/publications/pubs/pest-animal-strategy-brochure.pdf
- + Ens E.-J., Cooke P., Nadjamerrek R., Namundja S., GarIngarr V. and Yibarbuk D. 2010. Combining Aboriginal and Non-Aboriginal Knowledge to Assess and Manage Feral Water Buffalo Impacts on Perennial Freshwater Springs of the Aboriginal-Owned Arnhem Plateau, Australia. *Environmental Management* 45, 751-758.
- + Fisher A., Hunt L., James C., Landsberg J., Phelps D. Smyth A. and Watson I. 2004. Management of total grazing pressure. Managing for biodiversity conservation in the rangelands. Desert Knowledge CRC, Tropical Savannas CRC. Department of the Environment and Heritage. www.environment.gov.au/land/publications/rangelands-grazing.html
- + Northern Territory Feral Animal Profiles www.nt.gov.au/nreta/wildlife/animals/feral
- + Woinarski J.C.Z., Mackey, B, Nix, H. & Traill, B. 2007. The Nature of Northern Australia: Natural values, ecological processes and future prospects. ANU E-Press, Canberra. epress.anu.edu.au/nature_na/pdf_instructions.html

Visit

Department of Natural Resources, Environment, The Arts and Sport - Exotic Animals Page www.nt.gov.au/nreta/wildlife/animals/exotic/index.html

Invasive Animals CRC www.invasiveanimals.com

Pest Animal Control CRC www.feral.org.au

Australian Government Invasive Species Publications www.environment.gov.au/biodiversity/publications/index.html#invasive

Introduction

Cane Toads were introduced to Queensland in the 1930s as a biological control agent for Cane Beetles. They had little impact on this pest and spread extensively through northern Australia, reaching the Queensland/Northern Territory border in 1982 and the Northern Territory/Western Australian border in 2009. Sensitive to both desiccation and overheating, Cane Toads thrive in the northern savanna regions, but do not occur in Central Australia.

Impacts

Cane Toads are recognised as a Key Threatening Process to biodiversity in Australia. They have poison glands on the sides of their necks, and are lethal to most animals that eat them. When Cane Toads first arrive in an area, predators of other cold-blooded animals also recognise Cane Toads as food. Many are poisoned when they try to eat the toads, so their populations decline. Declines following the arrival of toads have been recorded in Northern Quolls and several snakes and lizards, including the Yellow-spotted Monitor and Mertens' Water Monitor. Although some Freshwater Crocodiles die if they eat Cane Toads, surveys undertaken both before and after the arrival of the toads showed their populations were unaffected. There is no evidence that Cane Toads displace native species of frogs by competing with them for food.

Through eastern Australia, distributions of most affected species have recovered a decade or more after the toads first arrived. This is because they have adapted to the presence of toads by learning not to eat them, turning them over before feeding from their bellies to avoid the poison glands, or even evolving a different body shape to prevent the ingestion of toads big enough to provide a lethal dose. Yellow-Spotted Monitors appear to be the species most sensitive to toads, with few individuals recorded once toads have established. Northern Quolls have persisted only in low numbers in some areas where toads now occur.

Control

There is little that can be done to control toads once they are established. Prevention of spread is the best approach, and most feasible for islands. Use strict quarantine procedures to ensure that Cane Toads (and other pests, such as rats and cats) are not inadvertently transported beyond their current range by boat, car or truck.

For further information:

Read

- + Australian Government Profile: Cane Toads *Bufo marinus*. <http://environment.gov.au/biodiversity/invasive/publications/cane-toad/pubs/cane-toad-fs.pdf>
- + Threat Abatement Plan for the biological effects, including lethal toxic ingestion, caused by Cane Toads <http://www.environment.gov.au/biodiversity/threatened/publications/tap/cane-toads.html>
- + Australian Government Policy on Cane Toads <http://www.environment.gov.au/biodiversity/invasive/ferals/cane-toads.html>
- + Northern Territory Government Feral Animal Profile: Cane Toad <http://www.lrm.nt.gov.au/biodiversity-conservation/animals/feral/canetoad>
- + Queensland Government Pest Animal Risk Assessment: Cane Toad http://www.daff.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Cane-Toad-Risk-Assessment.pdf



Photo: © Ian Morris

Large reptiles and quolls are the species that have suffered most from Cane Toad poisoning

www.landmanager.org.au/view/index2.aspx?id=183252

Profile written by Gabriel Crowley

Last updated Jan 2013

+ Western Australian Government: Cane Toad Information http://www.agric.wa.gov.au/PC_91730.html

Visit

+ Frogwatch www.frogwatch.org.au

Introduction

There is perhaps no animal in Australia that arouses such mixed emotions as does the Dingo. A relatively recent arrival to the country, Dingoes, along with Wild Dogs, can inflict much damage on livestock. Dingoes mainly feed on native mammals, and are likely to have driven some native species to extinction soon after they were brought to northern Australia from eastern Asia around 5,000 years ago. Native wildlife that remains in Australia today has either adapted to the Dingo's hunting pressure, or escaped their attention - being too small or too difficult to make worthwhile prey. Dingoes commonly occur through most of the Northern Territory, but only sparsely through the western and south-eastern deserts. Wild Domestic Dogs and Wild Dog/Dingo crosses are most abundant near human settlements, but are also found anywhere Domestic Dogs have been lost or abandoned.

Impacts

While Dingoes hunt wallabies and kangaroos, they also provide a protective effect to many native species. By controlling numbers of exotic predators (foxes, cats and pigs), they reduce predation pressure on many small native mammals. Dusky Hopping-Mouse is one threatened species that has healthy populations where Dingoes are abundant and fox and cat numbers are low. Dingoes also help control numbers of exotic herbivores, especially rabbits and goats. Keeping these feral grazing animals at low numbers, helps reduce the degradation of the habitat of several threatened species.

Not all impacts are beneficial. Wild Dogs or Dingoes are known to raid the nests of marine turtles, to the extent that their control has been necessary on some nesting beaches. Wild Dogs also had to be eliminated from Marchinbar Island, where their diet included animals from the Northern Territory's only remaining population of Golden Bandicoot.

Not all impacts of Dingoes on pastoral enterprises are negative either. Research shows that the diet of Dingoes on pastoral properties is dominated by kangaroos and rabbits. Dingoes thus help to regulate the populations of these species; where Dingoes are controlled, kangaroos and rabbits can proliferate. Pasture condition is often demonstrably better where Dingoes are allowed to persist.

Cross-breeding with Wild Dogs reduces the genetic integrity of the Dingo. Wild Dogs and Dingo are potential reservoirs and vectors of disease, including hydatids, heartworm and parvovirus.

Control

Where Wild Dogs or Dingoes are a significant problem to a threatened species, targeted control should be undertaken. As Dingoes are protected in the Northern Territory, any control must be undertaken with a permit. Consider whether it is sufficient to eliminate an individual animal or whether population reduction is necessary. Fencing of key habitat of threatened species can be an effective measure against Wild Dog predation.



Photo: © Tissa Ratnayake

Dingoes offer a protective effect to threatened wildlife

www.landmanager.org.au/view/index2.aspx?id=183280

Profile written by Gabriel Crowley

Last updated April 2010



Photo: © Tissa Ratnayake

Wild dogs are common close to urban centres, but are also found anywhere Domestic Dogs have been lost or abandoned

For further information:

Read / Visit

- + de Blas, A. 2009. The dingo's role revitalised. *ECOS* 147, 12-13. www.ecosmagazine.com/?paper=EC147p12
 - + Northern Territory Feral Animal Profile: Wild Dog <http://irm.nt.gov.au/biodiversity-conservation/animals/feral/dingo>
 - + Queensland Government Pest Animal Profile: Dingo
http://www.daff.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Dingoes-Qld-PA9.pdf
 - + Western Australian Government Pest Animal Profile: Wild Dog Dingoes and Foxes
http://www.agric.wa.gov.au/PC_93060.html
 - + NT Government 2006. A Management Program for the Dingo (*Canis lupus dingo*) in the Northern Territory 2006-2011.
http://irm.nt.gov.au/__data/assets/pdf_file/0019/10765/dingo_management.pdf
 - + Pest Smart Factsheets: Dingoes and Wild dogs <http://www.feral.org.au/pestsmart/wild-dogs/>
-

Introduction

Cats arrived in Australia with European settlers, and quickly became established through the continent. They are common and widespread throughout the Northern Territory, with the only exceptions being a few off-shore Islands. Cats obtain the majority of their moisture requirements from their prey; this reduces the need to drink water, thus they even survive in deserts, where they prefer dense cover.

Impacts

Predation by Cats is recognised as a Key Threatening Process to biodiversity in Australia. Cats are one of the most effective and widespread predators on the continent. They are believed to have contributed to the extinction of a range of arid zone mammals, and are implicated in the decline of several other mammals, including the Golden Bandicoot, Greater Bilby, Mala, Kowari and Golden-backed Tree-rat. Predation by Cats could also be a significant threat to Northern Brush-tailed Phascogale, Brush-tailed Rabbit-rat, Plains and Water Mice, several species of Dunnart and Rock-Rat, and the Canfield Rat. Cats killed a high proportion of tagged Northern Quolls in Kakadu National Park, and may have contributed to the decline of this species. Cats are known predators of the Malleefowl. Other birds that nest on or near the ground, such as the Partridge Pigeon, Australian Bustard, Night Parrot, Plains-wanderer, Purple-crowned Fairy-wrens and a range of Grasswrens, are also particularly vulnerable to predation by Cats. Despite the Cat's impact on mammals and birds, a Cat's diet is largely composed of small lizards. This makes Cats a likely threat to VRD Black-Soil Ctenotus, Great Desert Skink, Arnhem Land Egernia, Slater's Egernia and Yellow-snouted Gecko. The impact of cats on the abundance of prey may also be a threat to the Oenpelli Python. Ongoing exclusion of cats from islands occupied by Arafura Snake-eyed Skink may be essential for this species' survival. Cats also carry diseases, especially Toxoplasmosis, that may affect both native mammals and humans.

Control

Cat control is a great challenge, and until recently there has been no really effective method. Trials using a combination of cat calls, ERADICAT® and Pongo are showing promising results. Baits should be laid in the densest vegetation at about 30 baits per km². Eradication from some islands has been achieved, but prevention of invasion is simpler and more effective. A combination of control methods, including trapping, shooting and baiting is recommended. Cat exclusion fencing is possible, but extremely expensive, so only suitable for intensive management in a conservation area.

For further information:

Read / Visit

- † Abbott I. 2002 Origin and spread of the cat, *Felis catus*, on mainland Australia, with a discussion of the magnitude of its early impact on native fauna. *Wildlife Research* 29, 51-74. <http://dx.doi.org/10.1071/WR01011>
- + Australian Government Profile: Feral Cat *Felis catus* <http://www.environment.gov.au/biodiversity/invasive/publications/pubs/cat.pdf>
- + Australian Government Threat Abatement Plan <http://www.environment.gov.au/biodiversity/threatened/publications/tap/cats08.html>
- † Moseby K.E., Stott J. and Crisp H. 2009. Movement patterns of feral predators in an arid environment - implications for control through poison baiting. *Wildlife Research* 36, 422-435. <http://dx.doi.org/10.1071/WR08098>



Photo: © Greg Calvert

Cats are a significant predator of native animals

www.landmanager.org.au/view/index2.aspx?id=183259

Profile written by Gabriel Crowley

Last updated Dec 2012

- + Northern Territory Feral Animal Profile: Feral Cat – NT Government Internet Site <http://lrm.nt.gov.au/biodiversity-conservation/animals/feral/cat>
 - + Sir Edward Pellew Islands Feral Cat Project – NT Government http://lrm.nt.gov.au/biodiversity-conservation/programs/feral_cats
 - + Queensland Government Feral Animal Fact Sheet: Feral cat ecology and control http://www.daff.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Feral-Cat-Ecology-PA26.pdf
 - + Richards J. and Algar D. (2008) Controlling feral animals in the rangelands. *Landscape* 28, 53-58.
 - + Woinarski J.C.Z. and Ward S. 2009. Under the radar? The occurrence, impact and management of feral cats and black rats in Kakadu www.landmanager.org.au/all/downloads/RATCAT_2.pdf
-

Introduction

Donkeys were introduced into Australia as pack animals, and have been feral in northern Australia since the early 20th century. Surveys estimate there to be around 165,000 Donkeys in the Northern Territory. Donkeys are widespread through the Victoria River District and Gulf region, and have scattered populations through central Australia. Donkeys have spiritual significance in some indigenous communities because of their association with the birth of Christ.

Impacts

Donkeys graze grass and browse woody vegetation, so can significantly reduce regeneration of native trees and shrubs, including that of threatened species. Their trampling and removal of vegetation cover can cause massive habitat degradation and soil erosion, particularly in hilly country. Their impact is most evident around waterholes, where they cause sedimentation erosion and fouling of the waterhole, but they can also cause damage a long way from permanent water. Donkeys are considered a threat to Central Australian Cabbage Palm and Waddy-wood. Donkeys also compete with native herbivores and domestic stock for forage and water, and contribute to the spread of weeds.



Photo: © Catherine Nano

Donkeys are a threat to Central Australian Cabbage Palm

Control

Control of Donkeys is equally important for conservation and pastoral production. Shooting of Donkeys from the air is the most effective control method, and can be undertaken as a specific project or in combination with the control other feral animals. However trapping and mustering are also useful in some situations.

For further information:

Read

- + Australian Government Profile: Feral Horse *Equus caballus* and Feral Donkey *Equus asinus* <http://www.environment.gov.au/biodiversity/invasive/publications/feral-horse.html>
- + Fisher A., Hunt L., James C., Landsberg J., Phelps D. Smyth A. and Watson I. 2004. *Management of total grazing pressure. Managing for biodiversity conservation in the rangelands*. Desert Knowledge CRC, Tropical Savannas CRC. Department of the Environment and Heritage. www.environment.gov.au/land/publications/rangelands-grazing.html
- + Savanna Explorer: Donkeys, Horses and Cattle <http://www.savanna.org.au/all/donkeys.html>
- + Northern Territory Feral Animal Profile: Feral Donkey <http://www.lrm.nt.gov.au/biodiversity-conservation/animals/feral/donkey#.UOTwVeSE3gV>



Photo: © Andrew Johnson

Shooting donkeys from the air is an effective control measure

www.landmanager.org.au/view/index2.aspx?id=183287

Profile written by Gabriel Crowley

Last updated Jan 2013

Introduction

Pigs are abundant in the Top End, with highest numbers in the Darwin-Daly region and western Arnhem Land. They are also common in parts of the Barkly and Gulf regions. Though less numerous in Central Australia, if not eradicated, Pigs could become a problem for wildlife in the MacDonnell Ranges.

Impacts

Pigs are a recognised Key Threatening Process to biodiversity in Australia. They are a threat to any plant growing in seasonally flooded or shallow wetlands. When in high numbers, Pigs methodically turn over swamp edges as these dry out. Their potential to destroy whole populations of restricted orchids or the habitat of Howard Springs Toadlet should not be underestimated. Pigs digging in the moist soil of rainforests may prevent the recruitment of rainforest plants, such as *Xylopia* and Native Walnut. They dig up Armstrong's Cycad and eat their seeds. A taste for succulent Cockatoo Grass basal shoots makes them a threat to the Gouldian Finch, which rely on the seed of this species when other seeds are scarce.

Pigs are also significant predators. They take the eggs of turtles, significantly reducing nest success of marine Green Turtles, Hawksbill Turtles, Olive Ridleys and Flatback Turtles, as well as the freshwater Gulf Snapping Turtle. Degradation of wetlands by Pigs may locally threaten Australian Painted Snipe.

In addition to land degradation, Pigs disturb seed banks and soil structure and promote the spread of weeds. Pigs are also implicated in transmission of disease such as lung worm and tuberculosis.

Control

Pigs can be controlled using baiting, trapping, hunting or exclusion fencing. Poison baiting is most effective, and 1080 is currently considered the most humane poison to use. Shooting from the ground is rarely effective, as animals rapidly scatter. If visibility is good, shooting from the air may be more successful. Trapping can be used for local control or to remove the last animals in an area. Small areas with high wildlife values may need to be fenced using Pig-exclusion wire.

The best time to control feral Pigs is during dry periods, such as at the end of the dry season or after several dry years. In dry conditions, Pigs congregate around waterholes, where they are easy to target with baits and traps. Management of feral Pigs on Melville Island should be a high priority, as this island was thought to be free of Pigs up until about 2003, and their impact is still minimal. Because Pigs are sought after as a bush meat by many communities, control of feral Pigs can be contentious. Community consultation and support is therefore important in any Pig control program. Support for Pig control programs is likely to be more forthcoming when information about the impact of Pigs on bush foods, other resources and significant wetlands is provided.

For further information:

Read

- + Australian Government Profile: Feral Pig *Sus scrofa* <http://www.environment.gov.au/biodiversity/invasive/publications/pubs/pig.pdf>
- + Fisher A., Hunt L., James C., Landsberg J., Phelps D. Smyth A. and Watson I. 2004. Management of total grazing pressure. Managing for biodiversity conservation in the rangelands. Desert Knowledge CRC, Tropical Savannas CRC. Department of the Environment and Heritage. www.environment.gov.au/land/publications/rangelands-grazing.html
- + PestSmart Factsheet: Feral Pig: <http://www.feral.org.au/pestsmart/feral-pigs/>



Photo: © Stuart Blanch

Pigs damage wetland environments

www.landmanager.org.au/view/index2.aspx?id=183329

Profile written by Gabriel Crowley

Last updated Jan 2013

- + Queensland Government Pest Animal Factsheet: Feral Pig: http://www.daff.qld.gov.au/4790_8280.htm
 - + Northern Territory Feral Animal Profile: Feral Pig *Sus scrofa* <http://www.lrm.nt.gov.au/biodiversity-conservation/animals/feral/boar>
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Introduction

Cattle were introduced into the Northern Territory early in the 19th century in order to establish a pastoral industry. Most pastoral properties were largely unfenced, and many animals went wild. Despite the Brucellosis and Tuberculosis eradication program aimed at eliminating feral Cattle and Water Buffalo in the 1980s and 90s, about 100,000 Feral Cattle remained in the Northern Territory in 1990, and there are still around 10,000 between the Kimberley and the Gulf. Feral Cattle hinder the productive management of pastoral properties, increasing grazing pressure and bringing in unwanted genetic stock and possibly diseases. Rarely a problem on more intensively managed properties, they are more likely to occur on minimally fenced pastoral properties or non-pastoral lands.

Impacts

When uncontrolled, Feral Cattle pose a significant a threat to wildlife. They compact the soil; eat, trample and push over plants; and remove ground cover, exposing the soil to erosion. Trampling by Feral Cattle, combined with the removal of vegetation cover and leaf litter, has degraded the habitat used by Bronzback Snake-lizards in Central Australia. On the Tiwi Islands, trampling may also threaten the Cognate Land Snail. Cattle's trampling also destroys soil structure in black soil plains, where soil cracks are used as sheltering sites by VRD Blacksoil Ctenotus.

Ground layer plants, such as Tobermorey Melon, and seedlings of plants such as the threatened Darwin Palm and Waddy-wood, are vulnerable to grazing and/or trampling, while larger plants may be damaged when Cattle rub up against them. Cattle remove vegetation cover needed for nesting and sheltering habitat by many animals, including the threatened Purple-crowned Fairy-wren and Yellow Chat.

Cattle trampling and grazing in wetlands can render them unsuitable as habitat for a range of wetland species, notably the Australian Painted Snipe. Across the broader landscape, removal of food resources and/or habitat degradation is likely to have an adverse affect on several animals, including the threatened Central Rock-Rat, Black-footed Rock Wallaby, Brush-tailed Rabbit-rat, Gouldian Finch, Tiwi Islands Hooded Robin, Crest-tailed Mulgara and Common Brushtail Possum.

Feral Cattle pose additional indirect threats to wildlife through the spread of weeds and competition with native herbivores for forage and water. Feral Cattle also compete for resources with domestic stock, and are potential reservoirs and vectors for disease and parasites.

Control

It may be possible to fence Feral Cattle out from key areas of sensitive habitat. Maintaining boundary fences in good condition is also necessary to prevent the spread of Cattle outside pastoral properties. Mustering combined with bull-catching offers an economic return to the control of Feral Cattle, but may need to be followed up by aerial shooting away from pastoral properties. In more remote areas with rugged terrain, aerial shooting may be the only solution.



Photo: © Kerry Shephard

Control of feral Cattle benefits pastoral production and biodiversity conservation

www.landmanager.org.au/view/index2.aspx?id=183266

Profile written by Gabriel Crowley

Last updated Jan 2013



Photo: © Doug Adams Australian Wildlife Conservancy

Control of Feral Cattle will help maintain the habitat of the Purple-crowned Fairy-wren

For further information:

Read

- + Fisher A., Hunt L., James C., Landsberg J., Phelps D. Smyth A. and Watson I. 2004. *Management of total grazing pressure. Managing for biodiversity conservation in the rangelands*. Desert Knowledge CRC, Tropical Savannas CRC. Department of the Environment and Heritage. www.environment.gov.au/land/publications/rangelands-grazing.html
 - + Northern Territory Feral Animal Profile: Feral Cattle <http://www.lrm.nt.gov.au/biodiversity-conservation/animals/feral/cattle>
 - + Invasive Animals CRC, 2007. *Managing Feral Animals and Their Impacts: Managing Biodiversity in the Rangelands* <http://www.environment.gov.au/land/publications/pubs/rangelands-feral-book-hires.pdf>
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