

Australian Capital Territory

Nature Conservation (Eastern Quoll) Conservation Advice 2019

Notifiable instrument NI2019–318

made under the

Nature Conservation Act 2014, s 90C (Conservation Advice)

1 Name of instrument

This instrument is the *Nature Conservation (Eastern Quoll) Conservation Advice 2019*.

2 Commencement

This instrument commences on the day after its notification day.

3 Conservation advice for the Eastern Quoll

Schedule 1 sets out the conservation advice for the Eastern Quoll (*Dasyurus viverrinus*).

Arthur Georges
Chair, Scientific Committee
17 May 2019

Schedule 1

(see s 3)



ACT
Government

Environment, Planning and
Sustainable Development



ACT Scientific
Committee

CONSERVATION ADVICE

EASTERN QUOLL

Dasyurus viverrinus

CONSERVATION STATUS

The Eastern Quoll *Dasyurus viverrinus* (Shaw, 1800) is recognised as threatened in the following jurisdictions:

International	Endangered , International Union for Conservation of Nature (IUCN) Red List
National	Endangered , <i>Environment Protection and Biodiversity Conservation Act 1999</i> Endangered , <i>The Action Plan for Australian Mammals 2012</i>
ACT	Endangered , <i>Nature Conservation Act 2014</i>
NSW	Endangered , <i>Biodiversity Conservation Act 2016</i>
VIC	Threatened , <i>Flora and Fauna Guarantee Act 1988</i> Regionally Extinct , <i>Advisory List of Threatened Vertebrate Fauna 2013</i>
SA	Endangered , <i>National Parks and Wildlife Act 1972</i>

CRITERIA

The Eastern Quoll is listed as Endangered in the ACT Threatened Native Species List under IUCN Criterion A — A2(b), A3(b)(c). The factors that make it eligible include a *severe* reduction (>50%) in population size over the past 10 years with further declines (>50%) projected into the future due to declining habitat suitability and ongoing threats (Threatened Species Scientific Committee (TSSC) 2015).

DESCRIPTION AND ECOLOGY

The Eastern Quoll, *Dasyurus viverrinus*, has “fawn or black fur, which is covered with small white spots of varying sizes except on the tail. The tail is bushy and may have a white tip. Males have a head and body length of 32–45 cm and a tail length of 20–28 cm; females are slightly smaller. Males weigh between 900–2000 g and females weigh between 700–1100 g” (TSSC 2015)¹.



Juvenile Eastern Quoll (Charles Davis –
Woodlands and Wetlands Trust)

¹ The Commonwealth Conservation Advice (TSSC 2015) has formed the basis of this advice. The species has been listed as part of a process to align ACT threatened species listings with those of the Commonwealth.

Compared to the Spotted-tailed Quoll (*Dasyurus maculatus maculatus*), the Eastern Quoll lacks spots on the tail, has only four toes on the hindfoot and is slightly built with a pointed muzzle (Godsell 1983, Jones 2008).

The Eastern Quoll is mostly solitary, nocturnal and only occasionally forages or basks during daylight (Fancourt et al. 2015). It is an opportunistic carnivore that takes live prey and also scavenges (Blackhall 1980; Jones 1998). However, the main component of its diet is invertebrates, especially agricultural pests such as cockchafer beetles, southern army worms and corbie grubs, although rodents, birds, small reptiles, frogs, fruits and plant material are also eaten seasonally (Blackhall 1980; Godsell 1983; Jones and Barmuta 1998). In alpine areas, invertebrates form a smaller component of the diet (Jones and Barmuta 1998).

Breeding is highly synchronised and occurs in May–June each year. A litter can have up to six young. Juveniles emerge from their dens in November–December, resulting in a 3–4 fold increase in population abundance over summer. However, juvenile mortality appears high, with population abundance typically returning to pre-weaning levels by winter. Juveniles of both sexes reach sexual maturity at around 10–11 months of age (Godsell 1983; Bryant 1988). Maximum longevity recorded in captivity is 6.8 years (AnAge 2012), but average longevity in the wild is around 2–3 years (maximum 3–4 years) (Godsell 1983; Fancourt et al. 2014). Generation length is estimated to be two years (Woinarski et al. 2014).

DISTRIBUTION AND HABITAT

The Eastern Quoll is widespread but declining in Tasmania and was previously widespread in mainland south-eastern Australia, including New South Wales (NSW), Victoria and eastern South Australia where it rapidly declined in abundance around 1890–1910 (Jones 1923; Peacock and Abbott 2013, 2014). Some isolated populations persisted in low densities in some areas in Victoria and NSW until the early 1960s (P. Menkhorst pers. comm. in Woinarski et al. 2014; Peacock and Abbott pers. comm. 2015 in TSSC 2015). The species is considered extinct (in the wild) on the mainland, with the last confirmed mainland sighting at Vacluse in 1963 (Dickman et al. 2001) and extant wild populations now restricted to Tasmania and Bruny Island.

The Eastern Quoll is mostly solitary with a home range of between 35 ha (females) and 44 ha (males), with males ranging more widely during the breeding season (Godsell 1983). It is commonly associated with dry grassland and forest mosaics bounded by agricultural land, particularly where pasture grubs are common (Blackhall 1980; Godsell 1983; Fancourt 2015). Animals sleep in dens made under rocks, in underground burrows or in fallen logs (TSSC 2015).

THREATS

Threats to the Eastern Quoll in Tasmania are detailed in the Mammal Action Plan and the Commonwealth Conservation Advice (Woinarski et al. 2014; Fancourt 2015 in TSSC 2015) and include:

- predation by feral cats, red foxes and dogs
- disease
- non-target poisoning associated with 1080 and rodent control programs
- road mortality
- extreme weather events associated with climate change.

MAJOR CONSERVATION OBJECTIVES

The priority management objectives in the ACT are to

- enable the ACT to contribute effectively to the national objective of translocating viable, wild populations of the Eastern Quoll to the Australian mainland (TSSC 2015)

- establish and maintain one or more fenced areas within the ACT (e.g. Mulligans Flat) to protect and rehabilitate habitat of the Eastern Quoll and other species of concern through intensive management of introduced predators and other pest species
- undertake research of immediate relevance to achieving the above objectives, in an adaptive management context
- provide opportunity for strategic research into the biology of the Eastern Quoll by third parties, research that may subsequently be relevant to management in captivity or in the wild, or subsequently become relevant as circumstances change and
- provide opportunity to build constituency and community awareness of native species conservation and opportunities for the community to become directly involved in conservation action.

CONSERVATION ISSUES

The future management of the species may be the subject of an ACT Native Species Conservation Plan for the Eastern Quoll issued by the Conservator under Part 5.3 of the *Nature Conservation Act 2014*.

The Eastern Quoll was reintroduced to the fenced Mulligans Flat Woodland Sanctuary (MFWS) in the Australian Capital Territory (ACT) from Tasmania in 2016. The 16 individuals were deliberately selected from various areas in Tasmania to establish the most diverse population possible. The Eastern Quoll successfully reproduced in the sanctuary in 2016, with a litter size around six, and there were around 40 individuals in total in 2017 (MFWS 2017). Following another release in 2017, ten females gave birth to up to 60 quolllets (B Wilson in Doherty 2018).

Specific conservation issues to be considered for the Mulligans Flat/Goorooyarroo reserve population are:

- (a) whether the reserve is a stepping stone to support ultimate wild releases and establishment of the Eastern Quoll in the wild, or whether it is to be considered an end in itself, that is, the first of what may be several 'mainland islands' (sensu Saunders and Norton 2001, see also Legge et al. 2018) established as a sustainable, long-term solution to the historical loss of iconic native species from the ACT
- (b) the so-called *fence effect* (sensu Krebs et al. 1969). Briefly, dispersal for many species is an integral component of regulation of their abundance, so fencing can result in increases in abundance that need to be addressed by management and
- (c) potentially conflicting needs of other threatened or endangered species within the reserve as manipulation of habitat to meet the needs of one species can alter habitat suitability for another.

Specific conservation issues to be considered for wild release are:

- (a) the need to determine targets for control of predator numbers necessary for the successful translocation and establishment of the Eastern Quoll in the wild
- (b) assessment of whether achieving such predator control targets is feasible, and if it is, whether the predator control program can be sustained indefinitely with available resources, including funding
- (c) consideration of the naïveté of captive-raised Quolls and those living in the absence of predators
- (d) explicit consideration of the impact of predator control on native predators (e.g. dingo)
- (e) explicit consideration of the potential interactions with the Spotted-tailed Quoll *Dasyurus maculatus*, an ACT and nationally threatened species
- (f) the need for assessment of the release proposal/translocation plan by relevant independent experts in the context of international best practice on translocations and
- (g) commitment to transparent planning, monitoring, evaluation and accountability of any releases, preferably involving a relevant independent expert authority.

OTHER RELEVANT ADVICE, PLANS OR PRESCRIPTIONS

- Commonwealth Conservation Advice — Eastern Quoll (TSSC 2015)
- The Action Plan for Australian Mammals (Woinarski et al. 2012)
- Guidelines for Reintroductions and Other Conservation Translocations (IUCN/SSC 2013)
- Translocation for Conservation (Australasian Wildlife Management Society 2013)
- Conservator Guidelines for the Translocation of Native Flora and Fauna in the ACT (ACT Government 2018)

LISTING BACKGROUND

The Eastern Quoll was listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 3 December 2015. In 2019, under the *Nature Conservation Act 2014*, the ACT Scientific Committee recommended the Eastern Quoll be listed in the Endangered category in the ACT Threatened Native Species List to align with the EPBC Act listing. The Eastern Quoll has not been previously listed as threatened in the ACT as it was locally extinct until reintroduction to the Mulligans Flat Woodland Sanctuary in 2016.

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FURTHER INFORMATION

Further information on this species or other threatened species and ecological communities can be obtained from Environment, Planning and Sustainable Development Directorate (EPSDD).

Phone: (02) 132281, EPSDD Website: <http://www.environment.act.gov.au/cpr>