

Concept Plan SP 2011-005

Ecology and management of the northern quoll in the Pilbara

Animal Science

Project Core Team

Supervising Scientist	Judy Dunlop
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Project status as of Dec. 12, 2017, 4:43 p.m.

Approved and active

Document endorsements and approvals as of Dec. 12, 2017, 4:43 p.m.

Project Team	granted
Program Leader	granted
Directorate	granted

Ecology and management of the northern quoll in the Pilbara

Science and Conservation Division Program

Animal Science

Parks and Wildlife Service

Service 2: Conserving Habitats, Species and Ecological Communities

Aims

The northern quoll, *Dasyurus hallucatus*, is the smallest of all Australian quolls (300 – 1000g) and is restricted to five regional populations across Queensland, the Northern Territory and Western Australia, both on the mainland and offshore islands. The species distribution has declined gradually over the last 50 years with a number of threats, either directly or in combination with each other, thought to be contributing to the species decline. Threats include mortality caused by poisoning from cane toads, inappropriate fire regimes (and predation by introduced animals after fire) and the removal, degradation and fragmentation of habitat as a result of development actions, mining activities and pastoralism. The northern quoll is listed as a threatened ('Endangered') species under the Commonwealth's Environment Protection and Biodiversity Conservation Act 1999. A recovery plan has been prepared (Hill and Ward 2010), and the research proposed is consistent with the actions of this plan.

Northern quolls occupy a variety of habitats across their current range including rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrublands, grasslands and desert. Habitat usually requires some form of rocky area or structurally diverse woodland/forest for denning and shelter purposes with surrounding vegetated habitats used for foraging and dispersal. Northern quolls are a highly mobile species with home ranges in the northern parts of their range known to cover 100 ha or more. They reproduce once per year and have on average seven young. Many of the males and females have only a short lifespan, surviving for one breeding season. However where resources are more abundant some males and females will survive into their second or even third breeding season.

Little is known about northern quolls in the Pilbara region of WA. Most information on the demographics, biology and ecology of this species comes from studies conducted in the Kimberley, Northern Territory or Queensland (Begg, 1981; Schmitt et al., 1989; Braithwaite & Griffith, 1994; Oakwood, 1997 & 2000). These studies have highlighted differences in the northern quoll's ecology between regions and populations and a need to address the gaps in our knowledge of the species in the Pilbara. Genetic studies indicate a primary genetic division between Western Australian populations (Kimberley and Pilbara) and Northern Territory / Queensland populations of the northern quoll (How et al. 2009). These authors further show that there is also marked genetic divergence between the Kimberley and Pilbara populations, and identify the Great Sandy Desert as a substantial and long standing barrier to gene flow.

Expected outcome

- Improved understanding of northern quoll ecology in the Pilbara and comparison with published studies in the Kimberley, Northern Territory and Queensland.
- Better management of northern quoll populations in and around mining sites and other developments.
- Confirmation of taxonomic and conservation status of the Pilbara northern quoll population.
- This project will provide a model for other proposed regional fauna projects in the Pilbara.

Strategic context

Expected collaborations

BHP Billiton, DSEWPAC

Proposed period of the project

None – None

Staff time allocation

Role	Year 1	Year 2	Year 3
Scientist			
Technical			
Volunteer			
Collaborator			

Indicative operating budget

Source	Year 1	Year 2	Year 3
Consolidated Funds (DPaW)			
External Funding			