

**VARIATION TO:**  
**REPORT ON THE TERRESTRIAL FAUNA SURVEY FOR THE PROPOSED**  
**VICTORIA HIGHWAY UPGRADE**

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13 February 2006

## INTRODUCTION

This variation supplies information on the Black Rat *Rattus rattus*, an introduced (feral) rodent, which was recorded in Cane Grass habitats during surveys of terrestrial fauna for the proposed Victoria Highway upgrade. The species is of concern because of its occurrence in a natural habitat removed from human habitation and for adverse impacts it may have on the vulnerable Purple-crowned Fairy-wren *Malurus coronatus coronatus*.

## BACKGROUND

### **Black Rat**

Family	Muridae
Scientific name	<i>Rattus rattus</i> (Linnaeus, 1758)
Common name	Black Rat (Asian Black Rat, Ship Rat, Roof Rat or House Rat)
Status	Introduced

The Black Rat is a common long-tailed rodent of the genus *Rattus*. The species is believed to be native to India and possibly other Indo-Malayan countries, but is now found on all continents. At present it is largely confined to tropical regions, having been supplanted by the Brown Rat (*Rattus norvegicus*) in cooler areas. The Black Rat was probably introduced to Australia with the First Fleet, and has now spread throughout much of coastal Australia being most commonly seen in urban environments.

Despite its name the Black Rat comes in several colour forms, although is usually black to light brown in colour with a lighter underside. It is a poor swimmer, but an agile climber. Typical specimens will be about 20 cm long with a further 20 cm of tail. It is nocturnal and omnivorous. In a suitable environment it will breed throughout the year. Gestation lasts 21 days, with a female producing three to six litters of 6-22 (average around 8-9) young per year. *Rattus rattus* lives for about one year, although it may survive up to 3 years in captivity. Home range is less than an acre. Summer densities have been estimated at

72/ha and 346/ha on two grids in Puerto Rico (Zwank and Layton 1989). Social groups of up to sixty can be formed.

Usually associated with humans and their structures (Menkhorst and Knight 2001), but does occur in natural habitats in some areas. Black Rats are considered a public health menace, as it has been identified as a potential carrier of diseases that can affect humans, such as Hantaan virus (*Haemorrhagic fever*), Murine typhus (*Rickettsia typhus*), Leptospirosis, Rat bite fever (*Spirillum minor*) and the Plague (*Yersinia pestis*).

Often a severe pest, *R. rattus* is destructive to stored crops and has been implicated in decline of native fauna in Hawaii (Atkinson 1977). The occurrence of *R. rattus* in Cane Grass strands along the Victoria River is unusual and, being a known predator of bird eggs and hatchlings (Major 1991), its presence raises concerns for the vulnerable Purple-crowned Fairy-wren.

## CONTROL

Control of rodent pests, such as *R. rattus*, typically relies on poison or trapping regimes. In the Victoria Highway situation these methods would be difficult, if not impossible, to apply. Here, Black Rats occupy a natural environment (Cane Grass) that is also inhabited by a suite of native rodents (Tropical Short-tailed Mouse *Leggadina lakedownensis*, Western Chestnut Mouse *Pseudomys nanus* and Pale Field Rat *Rattus tunneyi*). Any control mechanism that might be applied to *Rattus rattus* would find it almost impossible to avoid impacting on these, and other, non-target species.

The best course of action for the Victoria Highway Upgrade Project is to mitigate the influence of *R. rattus*. Hence it is recommended that, during all phases of the project, every effort is made to minimise potential benefits to the Black Rat populations. These efforts should include adherence to proper management of domestic hygiene measures, such as disposal of foodstuffs and other rubbish. These materials should be placed into bins with tight-fitting lids and such bins should be regularly cleared and cleaned.

It would also be beneficial to ensure natural predators (eg. owls, snakes and goannas) are not discouraged (by activities associated with the Project) from staying in the area. This effort could include such actions as not harming, removing or re-locating large snakes and lizards that may be found within the project area.

## REFERENCES

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