Threatened Species of the Northern Territory

GHOST BAT

Macroderma gigas

Conservation status
Australia: Vulnerable
Northern Territory: Near Threatened

Photo: B. Taubert

Description

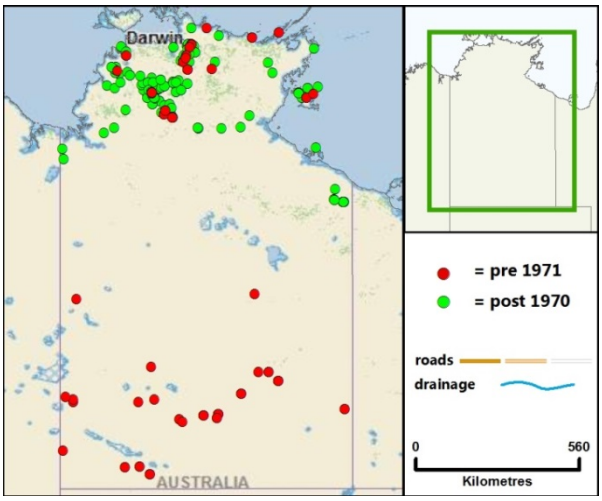
The Ghost Bat is the largest species of microchiroptern bat in Australia (those bats that use echo-location) and one of the largest in the world. It is pale grey or brown on the back and lighter on the belly. The wing membranes are pale cream to brown. The ears are very large, joined together above the head and have a large tragus. The nose-leaf is large but relatively simple and the eyes are large. There is a tail membrane but no tail.

Distribution

At the time of European settlement the species was sparsely distributed in Central Australia but more numerous in northern Australia. There are several records of the Ghost Bat in rocky areas in the southern NT up until the early 1960s but an extensive survey of caves and mine sites in the region in 1985 failed to find continuing populations (Churchill and Helman 1990). At this time, however, the Ghost Bat remained in the recent memory of several Aboriginal people from Papunya and Docker River.

The species' current range in northern Australia ranges from relatively arid conditions in the Pilbara region of Western Australia to humid rainforests of northern Queensland. One of the largest known colonies occurs in a series of gold mine workings at Pine Creek in the Northern Territory. Elsewhere in the Territory they have been recorded throughout the mainland Top End north of approximately 17° latitude as well as Elcho Island, Groote Eylandt and other nearby islands.

The distribution of Ghost Bats is influenced by the availability of suitable caves and mines for roost sites. There are likely to be very few maternity sites across Australia (only ten are known) which probably explains the strong genetic differentiation of populations across Australia.



Known locations of the Ghost Bat

Conservation reserves where reported:
Kakadu NP, Litchfield NP, Limmen NP, Keep River NP, Cutta Cutta Caves NP, Umbrawarra Gorge NP, Kintore Caves CR.
(There are past records of the species from Uluru-Kata Tjuta NP, Tjoritja / West MacDonnell Ranger NP.)

Ecology

The Ghost Bat is primarily insectivorous, but also feeds on other bats, small terrestrial mammals, birds, frogs and reptiles (Milne et al 2016). It perches in vegetation and preys on passing prey, or actively flies over surfaces, such as the ground, looking for prey.

Ghost bats use several roosts or perches each night but often return to the same daytime roost, often in a deep crack or cave. Daytime roosts may change seasonally. Mating typically occurs in May, with births a couple of months later. Females usually aggregate in maternity roosts when breeding, but few such sites are known. The largest known site is near Pine Creek.

Conservation assessment

The species was once much more widespread in the Territory, with populations in Central Australia. The species disappeared from these more arid areas of the Territory in the 1960s and 1970s. These declines are long-enough ago that they do not influence the current assessment of the conservation status of the species when using the criteria of the International Union for the Conservation of Nature.

The current total population in the Northern Territory is estimated to be 2500–3500 individuals, based on counts at known colonies (Worthington Wilmer 2012). The population in Pungalina, in the Gulf Coastal/Gulf Plains Bioregions, is estimated to be 100 from counts undertaken from 2005 to 2012 (N. White pers. comm., in DoE 2016). The population at Pine Creek is estimated to be 550 (Grant et. al, 2010). There is currently no accurate estimate of the number of Ghost Bats in Kakadu.

Milne & Pavey (2011) considered the species to be relatively common and secure in the wet dry tropics of the Northern Territory. It is possible that Ghost Bat numbers have declined at four caves in Kakadu but these observations remain unconfirmed.

Counts in the largest known roost in the Territory, in an adit near Pine Creek, showed increasing numbers in the 1980s, from 300 in 1980 to 1500 in 1990 (Grant et al. 2010). However, more recent counts in 2010 and 2013, but using different methods, recorded fewer than 600.

The Ghost Bat was added to the National threatened species list as Vulnerable in May 2016, on the basis of national population declines of more than 30% in the last 24 years (three generations) (Criterion 1 A2(b)(c)(d), A3(b)(c)(d), A4(b)(c)(d)) and a declining national population of less than 10,000 individuals (Criterion 3 C1). The species is currently listed in the Northern Territory as **Near Threatened**.

Threatening processes

Nationally, the most significant threatening processes to the Ghost Bat are habitat loss and degradation due to mining – particularly destruction or disturbance of roost sites in Queensland and Western Australia. Habitat alteration through livestock and feral herbivore grazing, inappropriate fire regimes or weed incursion can make foraging more difficult.

In the Northern Territory, the roosting site supporting the largest known colony is an adit (horizontal ventilation tunnel for a mine) near Pine Creek that is in danger of collapse. This

site also experiences disturbance from cavers, ecologists and members of the general public entering the adit; Ghost Bats are easily disturbed and such disturbance can cause loss of young and/or abandonment of the roost site. Ghost Bats are known to be susceptible to cane toad toxin and bats have been found dead with chewed toads in their throats in Kakadu National Park (Woinarski et al., 2014).

Conservation objectives and management

Management priorities are:

- Assess the structural integrity of the Pine Creek adit and investigate ways to secure the site for Ghost Bats.
- Educate people not to disturb roost sites, especially at the Pine Creek roost.

Research/Monitoring priorities are:

- Monitor local population sizes of all known subpopulations, but especially at Pine Creek and in Kakadu NP.
- Additional surveys, especially to locate breeding sites, are required in remote parts of the Northern Territory.

Complied by

Simon Ward
Damian Milne
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References

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