

Endangered Population of Little Penguins (*Eudyptula minor*) at Manly

The following information is provided to assist authors of Species Impact Statements, development and activity proponents, and determining and consent authorities, who are required to prepare or review assessments of likely impacts on threatened species pursuant to the provisions of the *Environmental Planning and Assessment Act 1979*. These guidelines should be read in conjunction with the NPWS *Information Circular No. 2: Threatened Species Assessment under the EP&A Act: The '8 Part Test' of Significance* (November 1996) and with the accompanying "Threatened Species Information" sheet.

Proponents, consent and determining authorities should also note that a recovery plan for the Little Penguin population was approved in October 2000. The recovery plan requires that any developments or activities will be assessed in accordance with the recovery plan and these environmental impact assessment guidelines. Development proposals must assess direct and indirect impacts on the penguin population and its habitat. Direct impacts can include harm to individual penguins, loss/damage to nesting habitat and restriction of access to nest areas. Indirect impacts can include increases in noise and light around nesting areas as a result of the proposed development and/or its construction.

Additionally, on 20 December 2002, the Minister for the Environment approved the declaration of Critical Habitat for the Little Penguin

population. A full description of the area declared critical habitat and the supporting regulations that prohibit some activities within the area, can be found at www.npws.nsw.gov.au.

In accordance with Section 77(3)(d1) of the EP&A Act, any development on land that is, or is part of, critical habitat must be accompanied by a species impact statement.



A breeding pair of Little Penguins (*Eudyptula minor*) in a burrow, Sydney Harbour. P. Glass.

Survey

Survey for development assessment purposes should target areas of potential habitat and should be performed by a suitably qualified and experienced person. Potential habitat can be identified by the presence of nesting and/or moulting burrows. Searches to identify active breeding burrows should be carried out from August through February. It should be noted that Little Penguins at Manly utilise a range of burrows such as under rocks on the foreshore, rock falls, under seaside houses, garages, under stairs, in wood piles and under overhanging vegetation. Active burrows can be identified by the presence of penguins, bird faeces, egg shell, feathers and soil compaction

within or just outside the burrow. A burrow should be classed as breeding only when chicks or eggs are present. Details of the monitoring program for the Manly population can be obtained by contacting the NPWS.

Limit of known distribution

Potential habitat for the endangered population of Little Penguins at Manly occurs on the foreshores between Stuart Street and Cannae Point in North Harbour (NSW Scientific Committee 2000). This is the only known breeding population on the mainland in NSW.

Life cycle of the species

Little Penguins at Manly exhibit breeding behaviour (nest building, attracting mates, breeding, raising young and moulting) from July through February, although this can vary between seasons.

A breeding pair may rear two consecutive clutches, known as double-brooding, which is more likely to occur when the first clutch commences early in the season. This behaviour often occurs at the Manly population.

Adult penguins generally do not disperse far from their colonies and their daily foraging range is usually between 10 – 30 km (Margus 1985; Cullen pers. comm.). Studies in Victoria (Dann and Cullen 1989) estimated a feeding range of 20 km for Little Penguins during the chick rearing period when adults were only away from the nest during daylight. Once young have hatched, however, the adult's foraging range is greatly reduced.

Fledged young birds are not again seen at their natal colony for about a year when they return to moult (Reilly and Cullen 1982; Stahel and Gales 1987). They repeat this pattern year after year until they are ready to breed at about 3 - 4 years of age

(Reilly and Cullen 1982; Margus 1985).

Some Little Penguins are found at their colonies all year but, outside of the main breeding season, relatively few birds come ashore (Margus 1985; Klomp and Wooller 1991). Studies by Reilly and Cullen (1982) found that adults in south-east Australia seemed to remain centred on their breeding colony throughout the year although they may leave for 2 - 3 months during the non-breeding season.

Threatening processes

The "Clearing of native vegetation" is listed as a key threatening process in Schedule 3 of the TSC Act 1995 and has been identified as potentially affecting the Little Penguin Population at Manly.

A major threat to the Manly population is the loss of suitable habitat. Predation from foxes and dogs, is also a major threat, as well as disturbance around nesting habitat. Noise, light and movement from human activities can delay penguins accessing burrows to feed chicks and may also deter penguins from nesting in nearby potential habitat (NPWS Recovery Plan 2000).

Pollution may adversely impact the colony. Stormwater runoff and rubbish dumping can damage nesting habitat and may expose penguins to pollutants. There have been suggestions that commercial fishing in Sydney Harbour may be having a detrimental impact on the food source of Little Penguins. Currently there are no data available to support this claim.

Viable local population

The current monitoring program aims to provide information to assess the population's viability. Monitoring of the population has been undertaken

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since 1998 and it appears that the Manly population is viable.

Significant area of habitat

The amount of available breeding habitat seems to be a main factor limiting the distribution of the Little Penguin population around North Sydney Harbour. Therefore, all known or potential breeding habitat is considered significant.

The population currently occupies suitable habitat on the western side of Smedleys Point around to the eastern side of Manly Point, the eastern side of Spring Cove and Quarantine Beach. All of these sites are considered significant to the population and have now been included in the declared Critical Habitat area. Any alteration or destruction of this habitat should be carefully assessed during any environmental impact assessment.

The importance of foraging habitat is currently being investigated and may identify areas of Sydney Harbour that are important foraging areas. Once identified, these areas will need to be considered during any environmental impact assessment for the population.

Isolation/fragmentation

The population at Manly is the only mainland breeding colony in NSW. The closest island breeding populations are at Lion Island on the mouth of the Hawkesbury River and Five Islands near Wollongong. The interactions between these populations are not clear and further research is needed to clarify the relationship between the colonies.

Adequacy of representation in conservation reserves

Approximately 22% of viable nest sites occur in Sydney Harbour National Park and 21% on Commonwealth owned lands. The remaining 57% occur on lands that are either freehold or administered by

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Manly Council above the mean high water mark, or the NSW Waterways Authority below the mean high water mark. Therefore, it is considered that the population is not adequately represented in conservation reserves.

Critical habitat

The Minister for the Environment declared Critical Habitat for the population on 20 December 2002.

The area has been identified based upon the biological requirements of the population and the potential impacts of known and/or suspected threats.

The Critical Habitat area includes known nesting burrows, possible foraging habitat and identifies potential nesting areas. The declaration includes two areas of Critical Habitat (Areas A & B) and also areas of potential habitat.

Area A starts from west of Collins Beach and extends to the northern side of Cannae Point and includes Collins, Store and Quarantine Beaches to the northern side of Cannae Point. The terrestrial critical habitat boundary in Sydney Harbour National Park includes ridgetop habitat where penguins currently nest and areas of other potential ridgetop nesting habitat.

Area B starts at 11A Oyama Avenue and extends around Manly Point to 26 Addison Road. The land side of the critical habitat boundary includes the area from the mean high watermark, up the rocky foreshore slope to the beginning of the ridgetop in residential areas (ie the rocky foreshore upslope to the boundary of the formed backyard is included as critical habitat, but *the backyard and residential area is not included*).

The critical habitat includes aquatic areas (extending 50m out from the

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mean high water mark) to facilitate un-restricted access for penguins to current and potential nesting areas. Parts of this zone include seagrass areas which are likely to be important foraging areas, especially during the rearing of chicks when Little Penguins are known to forage closer to nesting areas.

It is considered that the protection and maintenance of these areas in North Harbour are essential to the population's survival and therefore constitute Critical Habitat for this population.

Potential nesting areas have been identified as Dobroyd Head, Cannae Point and parts of Little Manly Point.

Mitigating impacts

The basic principles of protecting threatened species is to:

1. avoid direct impacts and retain habitat;
2. minimise impacts wherever possible;
3. mitigate or ameliorate impacts; and as a last resort
4. compensate or offset for any unavoidable impacts.

In regards to Little Penguins, where activities or developments are proposed on or in the immediate vicinity of habitat occupied by the Little Penguin population, where practicable and appropriate the following mitigating measures should be adopted:

- Fully informing any person/s contracted to undertake such works (ie, contractor and sub-contractor) about how to minimise impacts.
- Restricting public and private access to penguin nesting/moulting areas or penguin

access points to and from the water.

- Maintenance and/or promotion of vegetation around nesting habitat which shades the burrows and provides some protection from predators.
- Avoidance of works that cause any permanent change to the current structure of nesting/moulting areas, e.g. changes to vegetation or rocky areas.
- Undertaking any major works that may disturb penguins and/or their habitat outside the breeding season (ie, between 1 March to 30 June). (NB: This is only an approximate date. In some areas, penguins will already be commencing nesting activities in May/June).
- Any works to cease should penguins return to nesting areas prior to 30 June and the NPWS Threatened Species Unit, Central contacted.
- Undertaking any minor works within or adjacent to critical habitat during daylight hours (7:30am – 4:30pm) during the breeding season.
- All works areas within or adjacent to Little Penguin habitat to be fenced to prevent penguins from entering the work area.
- Installing devices to prevent runoff and to control sedimentation impacting on penguin habitat.
- Directing any lighting away from the water's edge, penguin burrows and access routes between the water and penguin burrows.

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- Negation or reduction of predator impact. Predators such as foxes and dogs pose a significant threat to Little Penguins. Control of these predators should be carried out where necessary. Dogs in particular have the potential to impact on Little Penguins at the interface between natural and urban areas especially if dogs are permitted into areas where penguins are known to nest/moult. Responsible pet ownership in such areas, and in some cases restrictions on pet ownership, should assist in reducing the potential for conflict.
- Assessment of any proposed weed removal for its impact on penguins and their habitat. If weed removal is required, care should be taken to do this gradually and preferably using low-impact techniques causing minimal disturbance (e.g. manual removal) so as to leave cover for penguins and should only be undertaken during the non-breeding season. Suitable native vegetation should be planted to replace the weeds and provide shelter for penguins. Follow up work should be carried out. Should penguins arrive to begin nesting prior to 30 June, all works should cease and the NPWS Threatened Species Unit, Central contacted.
- The removal of terrestrial rubbish should be assessed for its impact on penguins and their habitat (e.g. it may be providing shelter) and if removal is necessary, should only be undertaken during the non-breeding season.
- Minimising and removing marine pollution such as fishing line, hooks, nets, and other rubbish that could impact on penguins.

For further information contact

Little Penguin population Recovery Team Co-ordinator, Threatened Species Unit, Central Directorate, NSW NPWS, PO Box 1967, Hurstville NSW 2220. Phone (02) 9585 6678 or visit our website www.npws.nsw.gov.au.

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