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Appendix 1: Summary of Species Ecology, Distribution and Management Issues

Description

The Little Penguin is the smallest penguin species generally weighing 1000–1200 grams (Klomp and Wooller 1988), and stands about 30cm (Stahel and Gales 1987). The upper body is slate blue and white, the bill is black, the feet are pale with black soles, and the eye is silvery grey. The male is generally larger than the female, and juveniles are similar to adults, although smaller (Serventy *et al.* 1971; Margus 1985; Lindsey 1986).

Only one species of penguin is recognised under the genus *Eudyptula.* Previously two species, the Little Penguin (*Eudyptula minor*) and the Fairy Penguin (*Eudyptula undina*), were recognised (Stahel and Gales 1987) and both common names are still widely used. The conventional common name used in biological literature is the Little Penguin (*Eudyptula minor*).

Distribution

Little Penguins are only found in Australia and New Zealand. It is the only penguin species occurring on mainland Australia (Stahel and Gales 1987). The Little Penguin population at Manly is believed to have occupied the site since the 1950s. Historical evidence suggests that the number of penguins in North Sydney Harbour was once much greater, possibly in the hundreds.The historical decrease in the size of the Manly population is part of a wider decline of Little Penguins in the Sydney area attributed to loss of habitat, predation, disturbance and indirect impacts to food supplies (Cunnigham *et al.* 1993). This population is the only known mainland breeding colony in NSW and currently contains 75 breeding pairs (2001/02 breeding season).

Habitat

At Manly a range of nest types are utilised by Little Penguins including under rocks on the foreshore, rock falls under seaside houses and garages, and sites under stairs, in wood piles and under overhanging vegetation. Potential habitat for the population of Little Penguins at Manly occurs on the foreshores between Stuart Street and Cannae Point in North Harbour (NSW Scientific Committee 2000). More detailed information regarding habitat requirements can be found in the Recovery Plan for the Endangered Population of Little Penguins at Manly (NPWS 2000).

Ecology

Little Penguins at Manly generally breed from July through February each year, although this can vary between seasons. A 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 seems to occur in no other species of penguin (Stahel and Gales 1987).

Adult penguins generally do not disperse far from their colonies and their daily foraging range is usually between 10–30km (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 foraging range is greatly reduced.

Once fledged young birds are usually not seen at their natal colony for about a year, after which 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.

Threats

A major threat to the Manly population is the loss of suitable breeding habitat. Past development has greatly reduced available habitat in the area. Disturbance of Little Penguins and their habitat is also a major threat to the population. Predators such as dogs, cats, and foxes are known to take penguins from shallow burrows and as they move between the water and their nesting sites.

Habitat loss

The amount of suitable breeding habitat seems to be the main factor limiting the distribution of the Little Penguin population around North Sydney Harbour. Therefore all known or potential breeding habitat is considered critical to the survival of the population. The amount of suitable habitat available for use as breeding burrows seems to be a limiting factor in the area occupied by the Little Penguin Population.

Seagrass beds provide habitat for baitfish, prey species of the Little Penguin, and may be important resources for the Manly population. Current research by the NPWS on the diet and foraging ecology of the population indicates that the Manly penguins eat fish species such as sandy sprat (*Hyperlophus vittatus*), anchovies (*Engraulis australis*) and hardyhead (*Atherinomorus ogilbyi*) which utilise kelp and seagrass. The significant amount and quality of seagrass beds (*Posidonia*, *Zostera* & *Halophia*) around current nesting areas of this population (Marine Pollution Research 2000) are likely to be important habitat for prey species of Little Penguins. A recent study (Marine Pollution Research 2000) noted that, while most of the seagrass beds next to the rocky foreshores of Spring Cove are in good condition, the seagrass beds off-shore from Store and Quarantine Beaches were in poor condition as a result of watercraft anchoring in the area.

Disturbance

Disturbance around nesting areas is another threat to the population. Disturbance can affect penguins when they are in and around burrows, moving between burrows and the water, while waiting to come ashore, while foraging and while rafting with other penguins. Most of the foreshore along Manly Point is not easily accessible to the general public although residents have observed increasing uses of the area over recent years. Increases in noise and light from nearby buildings and waterway

activities have the potential to impact on penguin nesting activities. Lights shining onto nesting areas from boats or buildings may disorientate or even prevent birds from returning to shore.

North Harbour is used for a variety of recreational purposes including windsurfing, power boating, kayaking, yachting, scuba diving and swimming as well as commercial and recreational fishing. These uses have the potential to disturb penguins at nesting sites as well as during foraging and rafting activities. The continual high use from recreational watercraft in areas of North Harbour, specifically around Collins, Store and Quarantine Beaches, may also be limiting the expansion of the population into suitable habitat within Sydney Harbour National Park.

Commercial fishing has the potential to impact on the Little Penguins at Manly through a possible reduction in prey species available as food items and by disturbing penguins during nesting and rafting activities. When adult penguins are feeding young they utilise more food resources which are close to nesting sites (Dan and Cullen 1989; Cullen *et al.* 1996) so the potential loss of prey species to commercial fishing would be highest during the rearing of chicks. Studies on the abundance and distribution of pilchards and anchovies, the two main prey species of Little Penguins in Port Phillip Bay, indicate that when these species are low in abundance, the foraging range of Little Penguins increases and breeding success decreases (Hobday 1992). Other studies on Phillip Island found that most chicks appeared to die from starvation, most likely due to food shortages (Reilly and Cullen 1979).

Fishing activities near nesting areas occurring around sunset and sunrise, when penguins are moving between burrows and the water, may also impact penguins. This impact is worse during the breeding season as the adult bird is forced to stay in the water longer and may digest a large portion of food that would have been available for the chicks. This type of disturbance was observed by researchers at Lion Island and the Five Islands Nature Reserve, where penguins were delayed returning to their nests to feed their chicks as a result of fishing activities (haul netting & recreational fishing) in the area (L. Smith, pers. comm. SOSSA & G. Webb pers. comm.).

Predation

Predators such as dogs, cats, and foxes are known to take penguins from shallow burrows and as they move between the water and their nesting habitat. Domestic dog attacks seem to be predominantly responsible for the destruction of the Eagles Claw population at Eden (N. Klomp, pers. comm.). Little Penguins from the Manly population have been predated by domestic dogs and foxes and domestic cats have often been observed in the nesting areas below residential houses.

The loss of only one adult in a breeding pair can result in the death of the young (Stahel & Gales 1987; NPWS Eden 1994). The colony at North Sydney Harbour is extremely sensitive to predation due to its small size and location within an urban environment.

The recent predation events (12 penguins killed by a fox in May/June 2000 and 8 killed by a domestic dog in June 2001), which removed approximately 14% of the population, highlight the impact this can have on a small population. In the five years since the population was listed as endangered on the TSC Act 1995 there have been 69 penguin mortalities recorded in Sydney Harbour, an average of about known 14 deaths per year.

Appendix 2: Summary of the Main Statutory Implications of Critical Habitat Identification and Declaration

Statutory requirements regarding critical habitat include:

- Declared critical habitat must be mapped on the relevant Local Environmental Plan and Regional Environmental Plan (s.26 of the *Environmental Planning and Assessment Act 1979* as amended 1998);
- The Director-General of the Department of Urban Affairs and Planning must consult with the Director-General of National Parks and Wildlife before preparing a draft State Environmental Planning Policy, or an Environmental Study or a draft Regional Environmental Plan, if, in the opinion of the Director-General, critical habitat will or may be affected by the draft policy, environmental study or draft plan (s.34A(1) of the *Environmental Planning and Assessment Act 1979* - the EP&A Act).
- Councils must also consult with the Director-General of National Parks and Wildlife before preparing an Environmental Study, or a draft Local Environmental Plan, if, in the opinion of the council, critical habitat will or may be affected by the Environmental Study or draft plan (s.34A(2) of the EP&A Act).
- If land declared as critical habitat is land to which a Local Environmental Plan, Regional Environmental Plan or State Environmental Planning Policy applies, the Plan must be amended by the relevant Council, and the Department of Urban Affairs and Planning in a manner that identifies the land that is declared as critical habitat.
- The maintenance of a register of all declarations (s.55(1) of the TSC Act);
- A planning authority (eg. local council) must have regard to the register of critical habitat when exercising any of its functions under the EP&A Act (s.5B(1) of the EP&A Act).
- A person must not, by an act or an omission, do anything that causes damage to any critical habitat (s.118C of the *National Parks and Wildlife Act 1974* (NP&W Act)). However, it is a defence to a prosecution for an offence against this section of the NPW Act if the accused proves that the act constituting the offence was:

  (a) authorised to be done, and was done in accordance with, a licence granted under the NPW Act or a licence or certificate granted under Part 6 of the TSC Act, or

  (b) essential for the carrying out of development in accordance with a development consent within the meaning of the EP&A Act, or

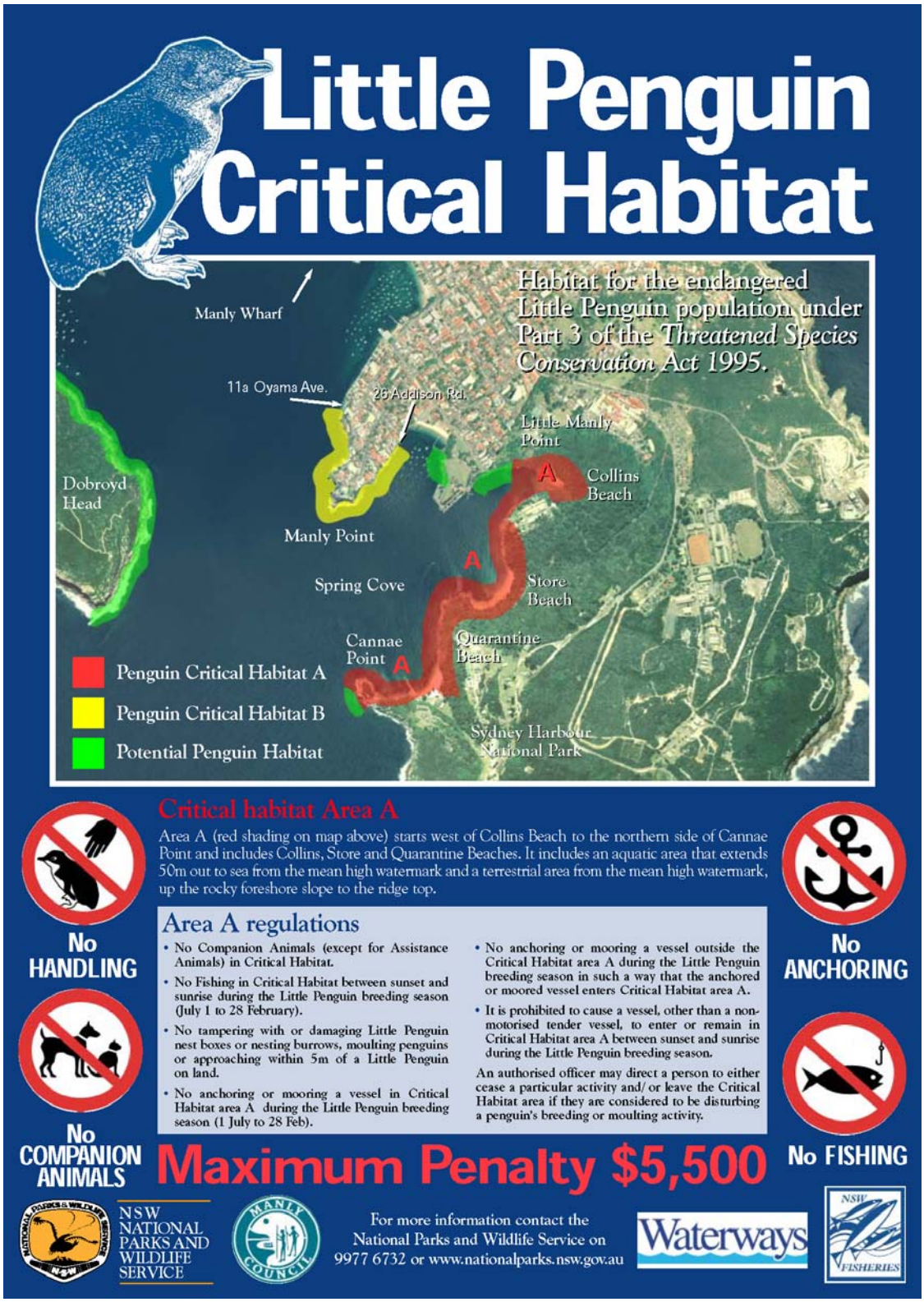
  (c) essential for the carrying out of an activity, whether by a determining authority or pursuant to an approval of a determining authority within the meaning of Part 5 of the EP&A Act if the determining authority has complied with the Part, or

  (d) authorised to be done by or under the *Rural Fires Act 1997* or the *State Emergency and Rescue Management Act 1989* and was reasonably necessary in order to avoid a threat to life or property.

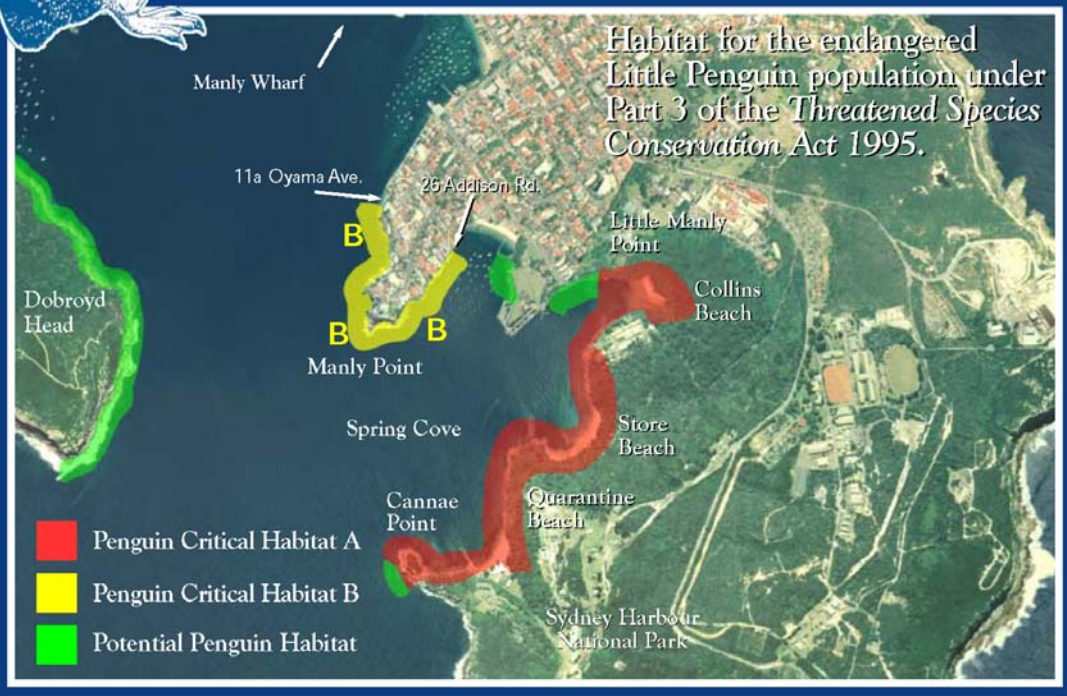
  (e) carried out under an approved Property Management Plan or as a routine agricultural activity.
- While it is a defence against prosecution under s. 118D (1) of the NP&W Act that a defendant did not know they were affecting habitat of a threatened species, population or ecological community, this is not a defence if critical habitat of an endangered species, population or ecological community is affected (NP&W Act, s. 118C (1)).
- A development proposed on land which is critical habitat may not be considered an exempt development (s.76 of the EP&A Act). This means that all developments occurring on land that is critical habitat either require a s. 91 licence under the TSC Act or must go through the development consent process under the EP&A Act.
- A development may not be considered a complying development if it occurs on land that is critical habitat (s.76A(5) of the EP&A Act). This means that developments proposed on land that is critical habitat may not be approved by an accredited certifier, but must be approved by the consent authority.
- A determining authority must not carry out an activity, or grant an approval in relation to an activity that is in respect of land that is, or is a part of, critical habitat unless a Species Impact Statement (SIS), or an Environmental Impact Statement that includes a SIS, has been prepared in accordance with the TSC Act (s.78A(8) of the EP&A Act). Section 112C of the EP&A Act ensures that in such circumstances a determining authority (with the exception of where the authority is a Minister) will not carry out, or grant an approval to carry out, an activity without the concurrence of the Director-General of National Parks and Wildlife. Where a Minister is the determining authority he or she must only consult with the Minister administering the TSC Act.
- When conducting an assessment under part 5A of the EP&A Act, consent authorities are required to consider whether the activity or development will affect critical habitat. This means that activities and developments, which are not carried out on land that is critical habitat, may trigger a SIS if they are likely to have an indirect impact.

- Any action which does not require consent or approval under the EP&A Act but which damages critical habitat can only be legally undertaken under the authority of a licence granted under the NPW Act or a licence or certificate granted under Part 6 of the TSC Act the licence. It should be noted that if the action proposed to be taken under the authority of the licence is on land that is critical habitat, the application must be accompanied by a SIS.
- However, according to s. 111(4) of the TSC Act; despite anything in the TSC Act or the EP&A Act (including critical habitat), the Director-General may, having regard to the circumstances of a particular case, dispense with the requirement for a SIS in the particular case if the Director-General is satisfied that the impact of the activity concerned will be trivial or negligible.
- The *Native Vegetation Conservation Act 1997* (NVC Act) does not operate on land which is declared critical habitat (s.9(k)). However, the initiator of a Regional Vegetation Management Plan must consult with the Director-General of National Parks and Wildlife regarding critical habitat before preparing the plan (s.26(1) NVC Act).

Appendix 3: Signage



Little Penguin Critical Habitat



Critical habitat Area B

Area B starts at 11A Oyama Avenue and extends around Manly Point to 26 Addison Road. It includes an aquatic area that extends 50m out to sea from the mean high water mark and a terrestrial area from the mean high water mark, up the rocky foreshore slope to the start of the ridge top. It does not include the formed backyard of residential houses and units.

No HANDLING

No FISHING

No COMPANION ANIMALS

Area B regulations

- No Companion Animals (except for Assistance Animals) in Critical Habitat.
- No Fishing in Critical Habitat between sunset and sunrise during the Little Penguin breeding season (July 1 to 28 February).
- No tampering with or damaging Little Penguin nest boxes or nesting burrows, moulting penguins or approaching within 5m of a Little Penguin on land.

An authorised officer may direct a person to either cease a particular activity and/ or leave the Critical Habitat area if they are considered to be disturbing a penguin's breeding or moulting activity.

Maximum Penalty $5,500

For more information contact the National Parks and Wildlife Service on 9977 6732 or www.nationalparks.nsw.gov.au

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