

Intermodal Logistics Centre at Enfield Environmental Assessment

CHAPTER 13

FLORA AND FAUNA

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13. Flora and Fauna

This chapter describes the findings of the assessment undertaken in the Flora and Fauna Assessment, provided in Appendix G. The chapter describes the existing environment of the study area in terms of terrestrial flora and fauna at the proposed Intermodal Logistics Centre (ILC) site at Enfield. It addresses the Director-General's requirements relating to flora and fauna impacts, especially in terms of riparian vegetation on Coxs Creek, vulnerable and threatened species as defined under Commonwealth and State legislation, and the possible impacts on those species. An assessment of impacts on the Green and Golden Bell Frog is considered, and mitigation measures outlined which aim to provide habitat enhancement for that species.

13.1 Introduction

This chapter is based on an ecological assessment of flora and fauna in the ILC study area. The aims of the assessment are to:

- Document the diversity of plants and animals on the site;
- Identify any threatened or endangered species, populations and communities that may occur on the site, and if present, recommend measures for conservation;
- Identify any habitat for threatened or endangered species, populations and communities;
- Advise on habitat requirements and design considerations for habitat for the Green and Golden Bell Frog to meet the objectives of the Green and Golden Bell Frog Draft Recovery Plan (DEC, 2005); and
- Address the Director-General's requirements regarding flora and fauna assessment and habitat creation and enhancement.

This chapter summarises the assessment outcomes and provides mitigation measures for the conservation of significant species and plant communities on the site.

13.2 Methodology

The ecological assessment involved a detailed review of existing information (including previous flora and fauna reports and wildlife databases) and dedicated flora and fauna field surveys, including terrestrial and aquatic habitat assessments. In addition, targeted searches for threatened species listed under the *Threatened Species Conservation Act, 1995* (TSC Act) and the *Environmental Protection and Biodiversity Conservation Act, 1999* (EPBC Act) were undertaken.

Field investigations were conducted throughout the study area, as defined by the boundary of the ILC site. The flora study included an intensive ground survey that aimed to cover the entire site, giving particular attention to areas of remnant vegetation. All plant species were identified. Fauna and fauna habitats occurring at the site were noted during the survey, with standard fauna detection surveys undertaken. Special attention was paid to identifying threatened or endangered fauna species known to occur or previously recorded within the vicinity of the ILC site.

13.3 Flora

To accommodate the differences in the vegetation, access and topography, the assessment study divided the site into ten smaller flora and fauna survey areas, denoted Area 1 – 10. **Figure 13-1** shows the limits of each of these survey areas. Each area was treated as an independent area and the flora and fauna of each area were recorded separately.

In general, the ILC site is a highly disturbed area with very little original topography or original vegetation remaining. Native flora vegetation is generally found only at the extreme southern and northern ends of the site and at the eastern side of the site near to Cosgrove Road. These areas contain some common native flora species, although no native plant communities are represented at the site. None of the plant communities in the study area constitute threatened or endangered ecological communities as listed by State or national conservation schedules.

The site has been extensively cleared of original vegetation but is now covered by invasive plants that have colonised the areas of bare soil and fill. All the areas surveyed contained a very high proportion of introduced weed species and exotic grasses. These are particularly predominant at the southern sector of the site. Weed species found include Castor Oil, Pampas Grass, Crofton Weed, Lantana, Fennel, Fleabane and Cobblers Pegs, with some of these species listed as noxious weeds species within the Strathfield Local Government Area.

Trees are mainly confined to very sparse pockets at the east and north of the site. Locally native tree species found at the site include Sydney Blue Gum (*Eucalyptus saligna*), Spotted Gum (*Corymbia maculata*), Swamp She-oak (*Casuarina glauca*), Sydney Green Wattle (*Acacia decurrens*), Smooth-Barked Apple (*Angophora costata*), White-feather Honey-myrtle (*Melaleuca decora*), Bangalay (*Eucalyptus botryoides*), and Broad-leaved Paperbark (*Melaleuca quinquenervia*). The only native trees present on the site that appeared to be self-seeded are Wattles and She-oaks. These species are intermixed with ornamental and landscaping trees that were deliberately planted to hide the views of industrial areas. Shrub mid story species are virtually absent at the site with Sweet Pittosporum (*Pittosporum undulatum*) being the only found.

Native groundcover is generally absent from the areas although some native grasses, such as Wallaby Grass (*Austrodanthonia sp.*) Three-awn Spear Grass (*Anistida vagans*) and Kangaroo Grass (*Themeda australis*), are found in pockets in the less disturbed areas. In particular, Area 9 contains some species indicative of a native heath community.

No plant species listed on either the TSC Act or the EPBC Act were recorded within the boundaries of the study area, although particular attention was paid to searching for the Dawny Wattle (*Acacia pubescens*) referred to in the Director-General's requirements. The habitat within the study area is not considered suitable for any of the threatened flora species that were previously recorded within 5 km of the study area (as detailed in Appendix G).



13.4 Fauna

13.4.1 Fauna Habitats

Fauna habitats in the study area are only suitable for those species that can inhabit highly disturbed urban environments. It is highly modified and disturbed from the clearing of vegetation, dumping of fill, and construction of buildings and railway facilities. The study area is encroached by industrial development and is continually disturbed by weed infestation and altered hydrological regimes. There are few trees and shrubs present, resulting in an absence of tree hollows and very little timber and leaf litter on the ground. Other important fauna habitats such as rocky outcrops are also absent. It is also expected that there would be considerable predation pressure from introduced species such as cats, dogs and foxes. This would further reduce the occurrence of ground dwelling native fauna.

Low lying areas and small drainage lines in the southern and eastern sections of the study area, which are dominated by Cumbungi or Bull-rush (*Typha orientalis*), provide habitat for some amphibian species. However, these areas are ephemeral, being fed intermittently by stormwater and land runoff. The largest of these habitats occurs in Area 8 and is an overflow area associated with an emerging stormwater drain. Bull rushes and sedges dominate this area, although open water is generally absent from the site.

13.4.2 Fauna Species

Fauna field surveys conducted throughout the study area recorded an inventory of 31 bird species, four reptiles, two frogs and two native mammals. The only threatened fauna species recorded was the Grey-headed Flying Fox (*Pteropus poliocephalus*), which was observed flying overhead, but not roosting or feeding in the area.

Of the bird species observed most are common disturbance tolerant bird species, owing to the surrounding land uses, and up to six are introduced species. In general, it is only the medium-sized, territorial predators or scavengers (such as Ravens, Magpies, Currawongs, Ibis and Butcherbirds) that have thrived as a result of the changes in land use. Some of the smaller raptors (such as the Black-shouldered Kite and Nankeen Kestrel) are able to exploit the large cleared spaces in search of exotic rodents as prey.

No large or medium sized reptiles were recorded from the study site. The reptile species observed included the Delicate Skink (*Lampropholis delicata*) and the Eastern Water Skink (*Eulamprus quoyii*). Most frog species have also been displaced with the Striped Marsh Frog (*Limnodynastes peronii*) and the Common Eastern Froglet (*Crinia signifera*) confined to small wet areas associated with drains or along the edges of railway batters.

13.4.3 Threatened Fauna

Results of desktop database searches within 5km of the study area indicate that 10 fauna species under schedules of the TSC Act, and three fauna species listed under schedules of the EPBC Act have the

potential to occur within the study area. Despite targeted searches, no threatened fauna were found on the study site, although Grey-headed Flying Fox was recorded flying over the site. Habitat for threatened fauna species is either totally absent from the site or is present in a degraded form. Following an assessment of habitat requirements and the likelihood of occurrence of these threatened species, only Green and Golden Bell Frogs (*Litoria aurea*) are considered to have a possible presence on the study site.

Green and Golden Bell Frogs were observed on the ILC Site in 1995. In 1996, a Green and Golden Bell Frog pond was created in the new Enfield Marshalling Yards and Green and Golden Bell Frogs have been sighted at this pond. Green and Golden Bell Frogs are also present in the nearby Juno Parade Brick Pit site and a long-term management program is underway for the frogs on this site. Although the current surveys (2005) and previous surveys (2001, 2004) failed to locate Green and Golden Bell Frogs on the ILC site, this does not mean that they do not utilise the site. Green and Golden Bell Frogs are known to be a highly dispersive species and have the capacity to travel across the site under suitable weather conditions.

The habitat present in the south eastern portion of the study area (Areas 1 and 3) meets most criteria for Green and Golden Bell frog habitat. These areas comprise unshaded ephemeral areas dominated by Cumbungi and are highly weed infested. A small number of rubbish piles and logs may provide suitable sheltering sites for this species, but no evidence of this was recorded during the surveys. No evidence of the predatory Plague Minnow fish (*Gambusia holbrooki*), which is a known predator of Green and Golden Bell Frogs, was recorded. It is likely that this area would currently provide marginal foraging habitat for the Green and Golden Bell Frog only and not breeding habitat. The species would range from the established frog areas west of the ILC site.

13.5 Riparian Habitat

No riparian flora species were recorded along Coxs Creek, and no aquatic biota survey component was undertaken for the study. Although Coxs Creek is within the study area, it is a concrete-lined channel and does not represent any habitat for aquatic species.

13.6 Impacts during Construction and Operation

The areas on which construction of the ILC site would impact directly are highly modified and in poor condition. During construction, the ILC site would involve the removal of only highly disturbed, weed infested or non-native/ornamental vegetation, which has little habitat value for all but the most disturbance tolerant species. Therefore, this section will address potential impacts to the Green and Golden Bell Frogs only.

Green and Golden Bell Frogs do not appear to use the site for breeding but they may venture across the site on wet nights in search of food and prospective habitat areas. The ILC could result in disruption to the dispersing frogs during both construction (due to earthworks) and operation (due to the functioning of the site as an Intermodal Logistics Centre).

13.7 Mitigation Measures

As part of Construction Environment Management Plan (CEMP) for the ILC site, it is proposed to develop a Landscape Management Plan (LMP) that incorporates management of the on-site weeds. The LMP would include detail on the rehabilitation of the site with a program of weed removal and revegetation with native species. Noxious weeds at the ILC site would be identified and be removed in accordance to the criteria under the *Noxious Weeds Act, 1993*, and the relevant NSW Department of Primary Industries weed control guidelines.

During construction, all efforts would be made to ensure Green and Golden Bell Frogs are not directly affected by site works. This would include frog clearance activities from areas where frogs may be found and earthworks are proposed, and the use of frog exclusion fences at strategic locations to ensure frogs do not venture onto the site during works. Once the ILC site is developed and the Frog Habitat Area (FHA) developed, exclusion fences would no longer be needed.

An area at the southern end of the site would be created to provide a secure habitat for the Green and Golden Bell Frog on the ILC site. The general location is shown in **Figure 13-1**. The FHA would comprise frog ponds which would be located away from the high activity areas of the site and would have an adjoining area that contains suitable foraging and shelter habitat. The ponds would be designed to promote their use by Green and Golden Bell Frogs and this may include features that make them less suitable for other aquatic fauna.

The frog ponds would be linked to other safe habitat areas (shown in **Figure 13-1**) by means of designated frog corridors. These would consist of planted and landscaped swales that allow frogs to travel safely to the frog pond area and away to other safe habitat areas off-site.

A Management Plan for Green and Golden Bell Frogs would be prepared for the ILC site that considers the needs for secure foraging and shelter habitat and safe movement corridors as well as future monitoring of the performance of the habitat. The Plan would incorporate the recommendations of the Flora and Fauna Assessment in Appendix G.

An eight-part test of significance¹ under Section 5A of the EP&A Act was carried out to assess the potential impacts of the ILC site on Green and Golden Bell Frogs. The test included the proposed mitigation measures outlined and concluded that risks encountered for dispersing frogs would be more than offset by the creation of habitat in the FHA. It concluded that the proposed ILC development is not likely to have a significant effect on the Green and Golden Bell Frog.

¹ An eight-part test of significance assesses the factors to be taken into account in deciding if there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats caused by the proposed development.

13.8 Conclusions

The ILC site represents a highly disturbed and modified environment that provides habitat to a number of common, disturbance tolerant flora and fauna species. Within the areas of likely disturbance, the habitats and vegetation communities present are considered to be of low ecological value. The ILC proposal is not considered to affect, threaten or have an adverse impact on any of those plants or animals listed under schedules of the TSC Act or the EPBC Act.

The ILC site does, however, provide marginal habitat for the Green and Golden Bell Frog. The creation of the FHA would minimise the impact of any further disturbance or habitat loss that may result from the development of the ILC site. The development of the ILC site provides an opportunity to ameliorate adverse impacts on Green and Golden Bell Frogs that may be occurring in the area, as well as assisting with the conservation of the species. The development of secure, high quality habitat areas and the linking of the habitat areas to other Green and Golden Bell Frog sites nearby is consistent with the aims of the Green and Golden Bell Frog Draft Recovery Plan prepared by the NSW Department of Environment and Conservation (DEC, 2005).

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