# THE FAUNA of



# **HYDE PARK**



2005

# **Biosphere Environmental Consultants Pty Ltd**

# The Fauna of Hyde Park

## 1.0 Introduction

Hyde Park is a large communal space in the Sydney CBD. The park was originally designed as a typical "London" park with avenues of tall trees and large open grassed areas. Hyde Park was designed to cater for the city dwellers and city visitors who would enjoy a stroll or a restful recline in the park, away from the traffic and bustle of the commercial parts of the city. The choice of plants was a mixture of exotic, ascetically pleasing plants and functional native plants.

In June 2005, Sydney City Council engaged Biosphere Environmental Consultants Pty Ltd to undertake an assessment of the vertebrate fauna of the park. The purpose of the assessment was to determine what native animal species were utilizing the park, and to investigate whether the diversity of native animals could be increased without undermining the utility of the park.

Two fauna survey periods were carried out; the first in September 2005, during the early spring; the second in late November and December 2005, during summer. This report describes the outcomes of those surveys and discusses the potential to retain, change or increase the biodiversity of native fauna using the park.

## 2.0 Methods

The methods of survey used varied for each major animal group.

#### 2.1 Small Ground Mammals:

25 hair tubes were set out in each survey period to detect ground-dwelling mammals. The location of the hair tubes is given in Figure 1. The hair tubes were baited and concealed under ground vegetation. They were laid out for a week on each occasion, from Monday the 5<sup>th</sup> of September to Monday the 12<sup>th</sup> of September and from Friday the 25<sup>th</sup> of November to Friday the 2<sup>nd</sup> of December 2005. Hair samples were sent to Dr David Read for analysis and identification.

In addition, other evidence of mammals being present was searched for during the day time; this included looking for tracks, burrows, scratching marks, fur, bone and scats.





#### 2.2 Arboreal Mammals:

Arboreal mammals were detected by spot-lighting at night. Spotlighting was carried out over two evenings in each survey period: during the nights of the  $6^{th}$  and  $7^{th}$  of September, and during the nights of the  $25^{th}$  and  $29^{th}$  of November 2005. In addition, daylight examination of trees for scratch marks, bite notches and drays was also carried out.

#### 2.3 Bats:

Flying foxes were detected by spotlighting at night; insectivorous bats were detected using ultra-sonic bat recorders (ANABAT). These recorders were hand-held and carried while spotlighting at night. Recorded bat calls were analysed using Anabat 5.0 software.

#### 2.4 Diurnal Birds:

Bird surveys were carried out over two mornings in each survey period: on the mornings of the 8<sup>th</sup> and 10<sup>th</sup> of September and the mornings of the 30<sup>th</sup> of November and the 1<sup>st</sup> of December 2005. The park was traversed on foot and all birds seen or heard were recorded.

#### 2.5 **Owls**:

Owl surveys were conducted at night using a small portable amplifier. Owl calls will be broadcast at night for Southern Boobook Owls, Powerful Owls, Sooty Owls, Masked Owls and Barn Owls. Calls were played at a few locations during the night, in areas away from bright lights or traffic.

#### 2.6 Reptiles:

Reptiles were searched for by hand over two mornings of each survey period; on the mornings of the 8<sup>th</sup> and 10<sup>th</sup> of September, and the 29<sup>th</sup> and 30<sup>th</sup> of November 2005. The park was walked and all potential reptile shelter sites will be examined. If need be, the reptiles were caught, identified and immediately released. The searches also looked for burrows, shed skins and droppings.

#### 2.7 Frogs:

Frogs surveys were carried out on wet nights during each survey period: at night on the 9<sup>th</sup> of September and again on the night of the 27<sup>th</sup> of November 2005. Calling frogs were identified, non-calling frogs were searched for using headlamps, caught, identified and released.

## 3.0 Results

#### 3.1 Mammals

The ground mammal fauna of the park was dominated by feral species:

| Black Rat<br>Rattus rattus | Hair tubes detected Black Rats in both the northern and<br>southern sections of the park. Black rats were<br>occasionally spotted at night around garbage bins and in<br>the garden beds. |
|----------------------------|---|
| Cat                        | Cats were spotlit in each survey period in the gardens of   |
| Felis cattus               | the northern section of the park during the night surveys.  |

Only one species of arboreal mammal was detected:

| Brush-tail Possum     | Possums were present in both the northern and southern  |
|-----------------------|---|
| Trichosurus vulpecula | sections of the park but were more commonly seen in the |
|                       | northern section of the park.                           |

Only one species of bat was detected:

| Grey-headed Flying Fox | Flying for           | oxes wer | e ol | bserv | ved i | in reas | sonab | le numbers | each  |
|------------------------|----------------------|----------|------|-------|-------|---------|-------|------------|-------|
| Pteropus poliocephalus | evening              | feeding  | in   | the   | fig   | trees   | and   | paperbark  | trees |
|                        | throughout the park. |          |      |       |       |         |       |            |       |

No insectivorous bats were detected.

#### 3.2 Birds

Thirty five species of birds were detected in the park, of which seven species were exotic. The native birds are listed in Table 1 while the exotic species are listed in Table 2 below:

| Common Name               | Scientific Name              | Spring  | Summer  |
|---------------------------|------------------------------|---------|---------|
|                           |                              | Survey  | Survey  |
| White Ibis                | Threskiornis molucca         | Present | Present |
| Magpie-lark               | Grallina cyanoleuca          | Present | Present |
| Pacific Black Duck        | Anas supercilliosus          | Present | Present |
| Chestnut-breasted Teal    | Anas castanea                | Absent  | Present |
| Silver Gull               | Larus novaehollandiae        | Present | Present |
| White-faced Heron         | Ardea novaehollandiae        | Absent  | Present |
| Little Pied Cormorant     | Phalacrocorax melanoleucos   | Absent  | Present |
| Welcome Swallow           | Hirundo neoxena              | Present | Present |
| Noisy Miner               | Manorina melanocephala       | Present | Present |
| Australian Raven          | Corvus coronoides            | Present | Present |
| Australian Magpie         | Gymnorhina tibicen           | Present | Present |
| Pied Currawong            | Strepera graculina           | Present | Present |
| Eastern Rosella           | Platycercus eximius          | Present | Absent  |
| Crested Pigeon            | Geophaps lophotes            | Present | Present |
| Willie Wagtail            | Rhipidura leucophrys         | Present | Present |
| Black-faced Cuckoo-shrike | Coracina novaehollandiae     | Present | Present |
| Figbird                   | Sphecotheres viridis         | Absent  | Present |
| New Holland Honeyeater    | Phylidonyris novaehollandiae | Present | Present |
| White-plumed Honeyeater   | Lichenostomus penicillatus   | Absent  | Present |
| Noisy Friarbird           | Philemon corniculatus        | Absent  | Present |
| Superb Blue Fairy Wren    | Malurus cyaneus              | Present | Present |
| Spotted Pardalote         | Pardalotus punctatus         | Present | Present |
| Silver-eye                | Zosterops lateralis          | Present | Present |
| Red Wattlebird            | Anthochaera carunculata      | Present | Present |
| Koel                      | Eudynamys scolopacea         | Present | Present |
| Channel-billed Cuckoo     | Scythrops novaehollandiae    | Absent  | Present |
| Dollarbird                | Eurystomatus orientalis      | Absent  | Present |
|                           |                              |         |         |

**Table 1**: Native Bird Species Detected in Hyde Park

| Table 2 : | Exotic | Birds S | Species | Detected | in H | lyde Park |
|-----------|--------|---------|---------|----------|------|-----------|
|-----------|--------|---------|---------|----------|------|-----------|

| Common Name          | Scientific Name        | Spring  | Summer  |
|----------------------|------------------------|---------|---------|
|                      |                        | Survey  | Survey  |
| Indian Myna          | Acridotheres tristis   | Present | Present |
| Red-whiskered Bulbul | Pycnonotus jocosus     | Present | Present |
| Common Starling      | Sturnus vulgarus       | Present | Present |
| European Pigeon      | Columba livia          | Present | Present |
| Spotted Turtledove   | Streptopelia chinensis | Present | Present |
| House Sparrow        | Passer domesticus      | Present | Present |
| European Blackbird   | Turdus merula          | Absent  | Present |

#### 3.3 Reptiles

Four lizard species were founding the park:

| Garden Skink        | Lampropholis guichenoti |
|---------------------|-------------------------|
| Grass Skink         | Lampropholis delicata   |
| Wall Skink          | Cryptoblepharus virgata |
| Eastern Water Skink | Eulamprus quoyii        |

#### 3.4 Frogs

Only one species of frog was found in the park:

Common Eastern Froglet Crinia signifera

### 4.0 Discussion

#### 4.1 Biodiversity

The range of native animals able to use Hyde Park appears to be quite low. There is a complete absence of native ground mammals, few tree-climbing species and no insectivorous bats. The birds contained a high proportion of native species but many of the birds found were medium-sized, highly territorial species. There was an almost complete absence of small shrub-using birds.

The number of exotic species using Hyde Park was quite high, considering the land area available. Cats and rats may be problem species for native ground animals.

#### 4.2 Potential for Habitat Recreation

Hyde Park has a large land area that is heavily used for recreational purposes. Its ability to also provide habitat for native animals is severely limited by the requirement to create open areas of parkland where members of the public are safe during the day and night. Thus, the park consists of a selection of exotic and native tall trees widely dispersed across an otherwise open landscape.

If native species are to be encouraged to use Hyde Park, a diversity of habitats is required to be established, including groves of dense shrubs and alternate ground cover species. In addition, a change in the composition of the tall tree community can also bring about a significant change in the native birds community in the park.

Some native animals are unlikely to be re-established in the park as their habitat cannot be recreated within practical limits, and there are no habitat corridors that would permit them to naturally colonise new habitats created within the park. Native ground mammals, reptiles and frogs are virtually excluded form the occupation of site in the park for these reasons. The diversity of native birds could be greatly increased, and the abundance of exotic birds species lessened, through selective and controlled replanting in the park. Clearly, any replanting measures would need to be weighed against other public uses of areas within the park.

#### 4.3 Existing Habitat Trees

At present, only a few species of trees provide food or shelter for animals in the park. The figs contain cavities and crevasses that are used for shelter by possums, and the fruit is consumed by flying foxes, some birds, possums and rats. The Broad-leaved paperbark Trees *Melaleuca quinquenervia* are used by several native birds, particularly, the lorikeets, wattle birds and honey-eaters. These colourful native birds feed on nectar in the flowers of the paperbark trees. Most of the other birds in the park are scavengers that feed on food scraps found around the lawn area or bins of the park.

The existing habitat trees do not provide food in winter and the nectar-feeding birds are forced to forage elsewhere.

#### 4.4 Habitat Enhancement

To assist the presence of native birds in the park, additional food and shelter resources are needed. In particular, tall flowering Grevilleas (e.g. *Grevillea robusta*, Grevillia hybrids) could be planted in conjunction with the paperbarks to create a more diverse range of nectar flowers within the park. Swamp Mahogany trees (*Eucalyptus robusta*) could be sparingly planted to provide a winter-flower source and help retain the nectar-feeding birds throughout winter. Senescent or dying Broad-leaved paperbark trees should be replaced with young trees of the same species.

Many of the native parrots and nectar-feeding birds utilize hollows in trees as nesting sites. These are almost absent in Hyde Park. Parrot boxes could be used to create the nesting habitat for these birds. Other forms of nest boxes could also be employed, such as bat boxes.

Dr Arthur White

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