

Biodiversity

Sydney Olympic Park's rich biodiversity includes over 400 native plant species and over 200 native vertebrate animal species. It includes three endangered ecological communities, over 180 species of native bird, seven species of frog, 10 species of bat, 15 species of reptiles, native fish species, many thousands of species of invertebrates, protected marine vegetation, and three threatened plant species. This high species diversity and abundance in the geographic centre of a large and modern city contributes to Sydney Olympic Park's high ecological, aesthetic and educational values.

The successful restoration and development of Sydney Olympic Park can be seen in the continued protection of the rich biodiversity it supports. The Park is a haven for species such as the Superb Fairy-wren and Blue-tongue Lizards that are disappearing from the urban environment. Highlights include a breeding pair of White-bellied Sea-eagles, increases in the extent of endangered ecological communities and the conservation expansion of the Green and Golden Bell Frog population.

The habitats of the Park are a mix of:

- recovering remnant estuarine and forest communities
- extensive areas of terrestrial plantings
- constructed freshwater wetlands still establishing on newly remediated fabricated landscapes built in the late 1990s.

Planning, design and construction of these new landscapes incorporated principles relating to the conservation and enhancement of biodiversity, and some landscape and planting elements were constructed or conserved specifically to promote biodiversity.

Some of the species and ecological communities dependent upon the Park's habitats were once widespread in Sydney but are now uncommon in urban areas. These are of conservation significance at a local, regional, state, national or international level. The Park's habitats also provide a stepping stone for nomadic fauna species moving between urban habitats, and a drought refuge for species from western New South Wales.

Nearly half (300 hectares) of the Park provides habitat for listed threatened species, protected marine vegetation and endangered ecological communities which are all protected under State or Commonwealth legislation. The 47-hectare Newington Nature Reserve, containing remnant forest and wetlands and gazetted under the *National Parks and Wildlife Act 1974*, lies within the Park. The estuarine wetlands of Newington Nature Reserve and Badu Mangroves, totaling 100 hectares, are both listed on the Directory of Important Wetlands in Australia.

Threats and Pressures

Sydney Olympic Park is located within the Parramatta River catchment of the Sydney Basin Bioregion, and its species and communities are part of the larger ecological systems of these regions. Its biodiversity is subject to the threats and pressures operating at these regional scales, such as urbanisation, and resulting in decrease in ecological integrity and extent, climate change, sea level rise, water quality, pests and diseases.

In ecological terms, Sydney Olympic Park is virtually an island - it is physically disconnected from most other flora and fauna habitats by surrounding urban development, and subject to

the same ecological threats to which island ecosystems are especially prone. These include edge effects, low or zero rates of external recruitment by many species, and low recovery rates from localised perturbations (including anthropogenic impacts).

Other pressures on the Park's biodiversity include the constructed and altered nature of the Park's habitats, their immaturity (most are less than ten years old) and the Park's many competing land use objectives. The Park's habitats are subject to increasing human impact and increasing demand as a local and regional leisure destination as the Park continues to evolve, and residential and commercial development occurs within and around it.

Biodiversity Management

The nature of the Park's habitats, their small size, constructed and altered nature, and many competing management objectives, means that ongoing active and adaptive management is needed to retain their ecological values. Stringent conditions are applied to maintenance works and visitor programs within ecologically-sensitive areas of the Park to ensure continued conservation of the Park's biodiversity.

Ten species and communities are identified as 'priority species' for conservation and are the focus of specific management programs. These are:

- Sydney Turpentine-Ironbark Forest - a 'critically endangered' woodland community
- Green and Golden Bell Frog - Sydney Olympic Park supports one of the largest remaining New South Wales populations of this endangered species
- The largest remaining stand of Coastal Saltmarsh on the Parramatta River. This endangered ecological community contains large stands of *Wilsonia backhousei* (a threatened saltmarsh plant)
- The largest stand of Mangrove Forest (protected estuarine vegetation) on the Parramatta River
- Remnant Swamp Oak Floodplain Forest - an endangered ecological community of estuarine areas
- Migratory Shorebirds, protected under international treaties and Commonwealth and State legislation
- Latham's Snipe - a bird that migrates to Australia from Japan each year and is protected under international treaties
- A population of the White-fronted Chat (listed as an endangered population) is one of two populations remaining in Sydney
- 'Bush Birds' - a group of small, mostly passerine birds such as the Superb Fairy Wren. Bush birds are disappearing from surrounding urban habitats
- Microchiropteran Bats, including the only maternity roost of the White-striped Free-tailed Bat recorded in Sydney, and which is also the only maternity roost of this species recorded within a building.

Biodiversity Objectives

The *Sydney Olympic Park Authority Act 2001* requires the Authority to implement the principles of ecologically sustainable development in exercising its functions, and identifies protection and enhancement of the Park's natural heritage as a key function of the Authority. Through implementation of the Environmental Guidelines, Sydney Olympic Park Authority is committed to the following objectives for biodiversity conservation:

- Protecting and enhancing the natural heritage and ecological integrity of Sydney Olympic Park - targeting priority species and communities, places of high biodiversity value, and biodiversity generally
- Applying an adaptive management approach to stewardship of Sydney Olympic Park's biodiversity assets
- Ensuring conservation of biological diversity and ecological integrity is a fundamental consideration for all new developments, activities, levels or types of use, or management practices that affect the ecosystems of Sydney Olympic Park
- Promoting the ecological, aesthetic and educational values of an urban site with high species diversity and abundance
- Conserving and enhancing the remnant woodland and wetland habitats of Newington Nature Reserve in accordance with the Newington Nature Reserve Plan of Management, and managing adjoining lands in sympathy with the Reserve, and
- Maximising the habitat values of native plantings by promoting priority species and communities, providing structural complexity and plant species diversity, avoiding habitat fragmentation, promoting habitat linkages and large core areas, and prioritising the use of indigenous species in landscape planting schemes in the Parklands.