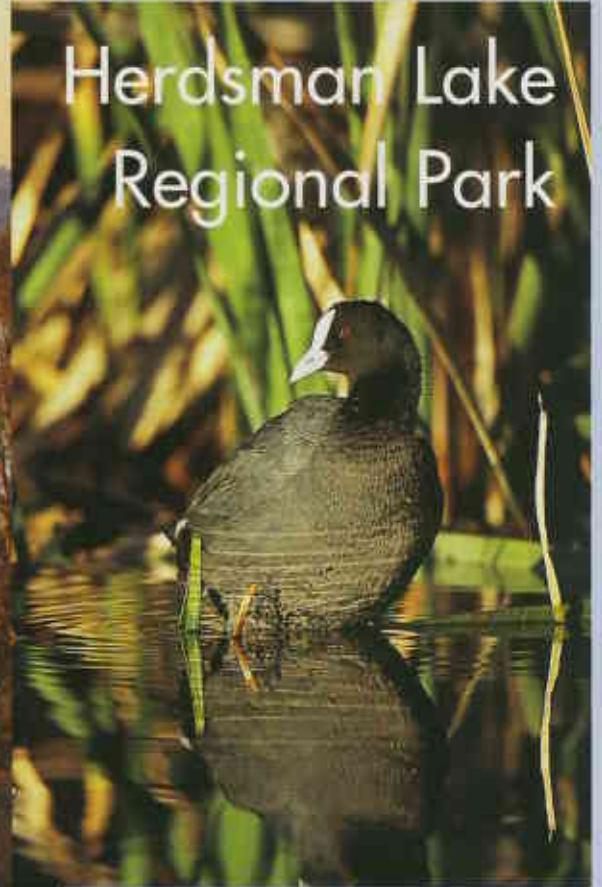


# Refuge in the city

## Herdsman Lake Regional Park



More than 80 per cent of wetlands on the Swan Coastal Plain have been destroyed since the arrival of European settlers.

A wetland less than eight kilometres from the Central Business District, only three kilometres from the Indian Ocean, adjacent to an industrial area and rich in a sought-after organic resource, should have been lost early in metropolitan development. So it is remarkable, and fortunate, that Herdsman Lake exists today and is able to provide a refuge for wildlife and people.

by Nicole Harvey

Almost everywhere you look at Herdsman Lake Regional Park, you see birds. Coots, Pacific black ducks, ibises and Australian shelducks are likely to be dabbling at the water's edge during every visit. It is estimated that more than 100 bird species live on or around this 300-hectare lake at some point of the year. Of those that migrate to other areas, some—such as wood sandpipers, red-necked stints and common sandpipers—travel mind-boggling distances to Norway, Siberia or China. The Australasian bittern and peregrine falcon are found at Herdsman Lake, though in Western Australia the former is a threatened species and the latter is in need of special protection. With about 30 species using Herdsman Lake as a breeding ground, it is a sanctuary for birds and a boon for cityslickers interested in watching a great diversity of our feathered friends.



The area is also notable for its reptiles. Some of those found at Herdsman Lake, such as the western mourning skink (*Egernia luctuosa*) and western tiger snake (*Notechis scutatus*), are rapidly being lost from other parts of the Swan Coastal Plain. The presence of highly-venomous tiger snakes is important. There are only a few predators at the lake, so they play a crucial role in controlling problem species such as introduced mice and rats. Signs around the park alert people

to the possibility of encountering tiger snakes. These warnings must be kept in mind as, even on a cool winter's day, visitors may come across the coils of a striped orange underbelly with dark brown dorsal scales that identify a tiger snake. Unlike many other types of snakes, western tiger snakes may be active at night or in cooler weather. But they are not particularly aggressive. So long as people take care to avoid them, both species can coexist without harming the other.

Frog spotting is a particularly popular activity with children taking part in WA Gould League (which is based at Herdsman) events. However, as idyllic as Herdsman Lake is, it has been modified enormously by human activity.

## History

Aboriginal people called the region Ngurgenboro, and used it as a food source and a meeting point. Their stone flakes have been found on the high ground north of the lake and there is a report of an Aboriginal burial site within two kilometres of the lake edge.

European settlers first called it the Great Lake, but by 1836 it had been renamed Herdsman's Lake. The permanent supply of fresh water and the abundant wildlife attracted settlers



*Previous page*

**Main** Herdsman Lake at sunrise.

**Inset** Coot.

*Photos – Jiri Lochman*

**Above** Reed warbler.

*Photo – Michael Morcombe*

**Left** Peregrine falcon.

*Photo – Jiri Lochman*

**Below right** Western tiger snakes are native to Herdsman Lake and help keep down numbers of problem species such as rats and house mice.

Photo – Jiri Lochman

to the area. Among the first residents were William Padbury, Henry Trigg and Thomas Walters.

In 1854, large amounts of land near Herdsman Lake were granted to Benedictine monks, who set up orchards and vineyards there. Over the following decades, market gardens and cattle grazing became established in the region. With the West Australian goldrush in the 1890s, even greater numbers of people lived off Herdsman Lake and raised crops, pigs and poultry on its shores. In the 1900s, ownership of the land was transferred to the Roman Catholic Church, which farmed cattle there.

Osborne Park soils were found to be more suitable for agriculture than those at Herdsman, but the wetlands in the Osborne Park area had to be drained before that land could be used. Drains into Herdsman Lake were completed in 1912. Land was bought from the Roman Catholic Church in 1920 for a returning soldier settlement, and ground was reclaimed from the lake to increase the area available for use. To prevent the water bodies in the region from flooding, a major drain was built in the early 1920s that ran from Osborne Park into the north-west part of Herdsman Lake and then through a tunnel to the ocean. This expensive enterprise (£116,362) had a dramatic effect, reducing water levels from highs of three metres to only half a metre. A side effect was that the vegetation at the lake changed, with introduced bulrushes replacing native plants. The area still had problems with flooding though, and this, combined with the acidic soils, caused the Soldier's Settlement Scheme to be unsuccessful.

Blocks of land around the lake edge were prepared for sale in 1928. But, fortunately for today's naturalists and recreational users, the same difficulties also saw this venture fail. These issues





**Above** Less than eight kilometres from Perth's CBD, Herdsman Lake offers highly accessible nature-based recreation opportunities.

*Photo – Jiri Lochman*

**Left** Australian shelducks.

*Photo – Sallyanne Cousans*

**Below** Stormwater drains are evidence of extensive modification of Herdsman Lake.

*Photo – Jiri Lochman*



did not prevent the region from being used for extensive cattle grazing and market gardening in the 1930s. There were also plans to use the lake as a water supply for all of the metropolitan area, although they never were finalised. Herdsman Lake was nearly lost again in

1936, with a bid to build an airport over the site. The region, like many other WA wetlands, has also been used for waste disposal, though an official proposal in the 1970s for it to become a rubbish dump was rejected due to public outcry. Public opinion also prevented peat mining at the lake in the 1970s.

### **Moves towards conservation**

The first report recommending the reservation of Herdsman Lake was prepared in 1955. It took until 1976 to devise a concept plan for the lake, containing residential, industrial and wildlife conservation strategies. Based on this plan, roads were constructed and the industrial area to the north-east and the residential zones to the north-west and south-west were developed. The plan aided conservation in the region by restricting access to the central wetland area. It promoted the idea of increasing habitat diversity at the lake by creating deep channels and sloping shores around its periphery. Thus, the four deep lakes in the park—Floreat Waters, Floreat Lakes, Popeye Lake and Powis Lake—were created, though the proposed deep moat around the entire edge of the lake is yet to be completed.

In 1997, Herdsman Lake was declared a regional park, with management responsibility being transferred to the Department of Conservation and Land Management (CALM) and the City of Stirling. Regional parks are places with natural





character within the metropolitan area where many activities can be pursued. The focus at Herdsman Lake is now on preserving and restoring the wetland ecosystem and encouraging non-destructive public use and appreciation of the park.

### Conservation issues

Much of the past use of the park has given rise to detrimental effects. The complete absence of mammals from the park is an obvious loss. The last kangaroo was seen at Herdsman Lake in 1953. The area also used to sustain quenda, brushtail possums and western brush wallabies, but no mammals have been seen there since the 1960s.

The biggest clue that Herdsman Lake could be in serious ecological decline would go unnoticed by most of us. Large, predatory invertebrates (such as dragonflies, damselflies and beetles) are key species that indicate a healthy

wetland: there are very low numbers at Herdsman Lake. It has been suggested that the lack of these animals is due to pesticides: particularly dieldrin, heptachlor and dichloro-diphenyl-trichloroethane (DDT). Extensive chemical spraying took place at Herdsman from 1957 to 1986 to control Argentine ants (*Linepithema humile*). The toxins have remained at high levels in Herdsman's peaty soils, and have been shown to be moving through the food chain to fish and birds.

Weeds are another major issue. Disrupting original vegetation encourages the establishment of pest plants. The most prominent plant in the

park is the introduced bulrush (*Typha orientalis*). The major local rushes at Herdsman Lake were jointed-twig rush (*Baumea articulata*), sea rush (*Juncus kraussii*), *Baumea preissii*, a local bulrush (*Typha domingensis*) and lake club rush (*Schoenoplectus validus*). There were once many more freshwater paperbarks (*Melaleuca raphiophylla*), swamp banksias (*Banksia littoralis*) and flooded gums (*Eucalyptus rudis*).

While bulrush has taken over since European settlement, it does perform positive functions within the park. Many bird species rely on its dense cover for shelter and nesting material, and it absorbs nutrients from the water (delivered by the 13 stormwater drains

**Above** Swamp banksia (*Banksia littoralis*).

Photo – Marie Lochman

**Above right** Bulrush flower spike.

Photo – Dennis Sarson/Lochman  
Transparencies

**Right** Herdsman Lake is surrounded by bulrushes and paperbarks.

Photo – Marie Lochman





**Left** Herdsman Lake is an important breeding area for black swans.

*Photo – Michael Morcombe*

**Below left** A cottage from the Soldier Settlement Scheme in the 1920s has been restored by the National Trust and the WA Planning Commission.

*Photo – Michael James/CALM*

flowing into the park) that could otherwise cause additional algal blooms. The bulrush dominance does, however, pose a fire hazard when its leaves dry out over summer.

Strategies that encourage jointed-twig rush to replace some of the bulrushes are beginning to show positive results. CALM, in conjunction with community groups and local schools, has planted some 34,000 trees and rushes in the park. This year a further 15,000 rushes will be planted in various revegetation sites around the park.

Catchment management and drainage management is also critical to the survival of the lake.

### **Attractions**

Against the odds, Herdsman Lake has remained a sanctuary for waterbirds, plants, reptiles and frogs on the Swan Coastal Plain. A favourite part of the park is the Olive Seymour Boardwalk. This short, easy walk takes visitors above the water for a great perspective on the lake's wildlife. The boardwalk leads you through a dense stand of paperbark trees. This darkened environment is reminiscent of scenes in children's fantasy-adventure movies: pale, twisted trees shedding ragged strips of bark emerge from shallow water. They seem a world unto themselves and you, a privileged visitor. The reality that suburban houses are only around 50 metres away is difficult to fathom. The boardwalk is next to the main entrance carpark, at the corner of Flynn and Selby Streets in Churchlands, and is accessible to wheelchairs.

There are several playground and picnic areas at Herdsman Lake Regional Park. A glimpse of life as an early settler





is available at the Settler's Cottage. This original dwelling from the Soldier Settlement Scheme has been restored by the National Trust of Australia (WA) and the WA Planning Commission. It is readily found off Pearson Street on the western side of the park.

The Wildlife Centre run by the Gould League (see 'A league of their own', *LANDSCOPE*, Spring 2003) contains a vast amount of information on the history and biology of the area. The centre is remarkable in its own right: established in 1984, it became the second wetland education centre in

WA. The second floor of the Wildlife Centre also provides an excellent perch to see into the middle rushes of the lake, allowing observers to view different birds to those found at the edge. The Gould League organises early morning bird walks one Saturday each month for those who wish to learn more about the inhabitants of Herdsman Lake.

The management plan for Herdsman Lake Regional Park is due to be completed in the near future. Future plans are based on three goals: protection, restoration and recreation.

This lake has survived substantial modification and, hopefully, will become an example of how to achieve a balance between human use and conservation. Perth is fortunate in having a remarkable environment such as Herdsman Lake in a highly developed area so close to the city. Responsible management will improve the well-being of the lake and its residents, and guarantee that future generations can enjoy the wildlife spectacle that is there for us now whenever we need a handy reprieve from our urban existence.

**Above** Freshwater paperbarks (*Melaleuca rhaphiophylla*) along the Olive Seymour Boardwalk.  
Photo – Michael James/CALM

**Left** The Olive Seymour Boardwalk.  
Photo – Jiri Lochman



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