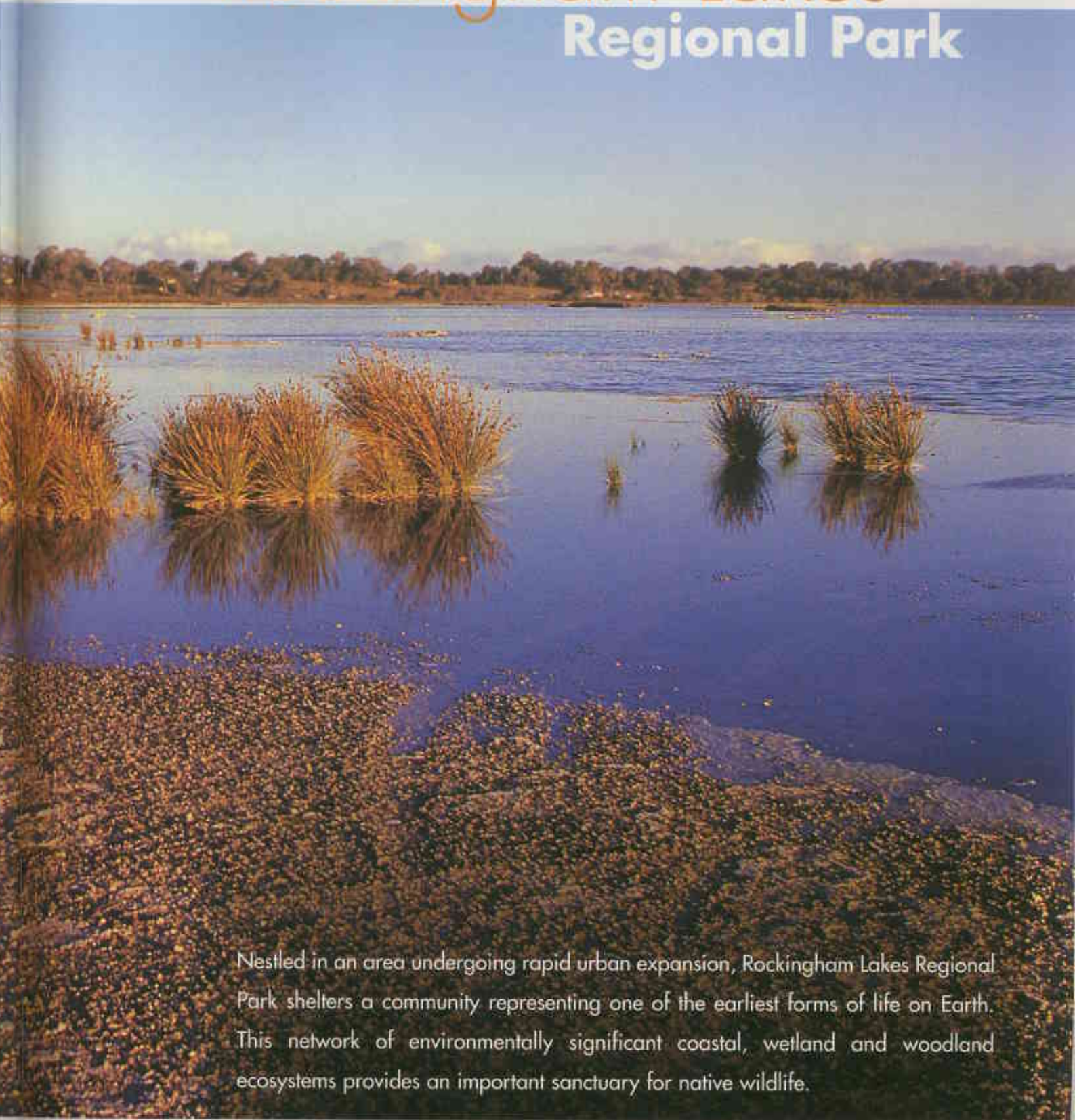




Rockingham Lakes Regional Park



Nestled in an area undergoing rapid urban expansion, Rockingham Lakes Regional Park shelters a community representing one of the earliest forms of life on Earth. This network of environmentally significant coastal, wetland and woodland ecosystems provides an important sanctuary for native wildlife.



by **Danielle Le Moignan**



One of the most striking visual features of Cape Peron, in Rockingham Lakes Regional Park, is the array of vivid greens dispersed among the dense vegetation. Coupled with the almost ethereal presence of the cape's rugged limestone cliffs, this array of colour provides a captivating scene for the area's many visitors. Peaceful, idyllic and picturesque, Cape Peron provides a space for an often much-needed escape from the bustle of city life.

Cape Peron, or Point Peron as the locals more affectionately know it, is part of the Rockingham Lakes Regional Park, one of eight regional parks in and around the Perth metropolitan area. The park was established in 1997 and is managed by the Department of Conservation and Land Management (CALM) in



Left Coast bonefruit (*Threlkeldia diffusa*).
Photo – Michael James/CALM

collaboration with the Rockingham Lakes Community Advisory Committee and the City of Rockingham. Located just 39 kilometres south of the central business district, and occupying 16 per cent of the entire area of the City of Rockingham, the park is part of a network of environmentally significant lands, including coastal, wetland and woodland ecosystems.

The park's 4270 hectares cover the areas of Cape Peron, lakes Richmond, Cooloongup and Walyungup, Lark and Tamworth hills and the Port Kennedy Scientific Park, as well as the Paganoni, Anstey and Tamworth Hill swamps. Located in an area undergoing rapid urban development, the park houses internationally and regionally significant reserves, featuring two threatened ecological communities, and provides opportunities for recreation, as well as educational and scientific research.

Conservation significance

Rockingham Lakes Regional Park is located on the Quindalup Dune System. Part of this system is the Rockingham-Becher Plain, a globally unique land formation that represents the evolving coastal environment of the region. The plain's vegetation exhibits a clear sequence from west to east: from coastal shrubland to permanent and temporary wetlands and into the Quindalup woodlands, which contain abundant tuart, jarrah and marri trees.

The area is regarded as having 'outstanding significance', due to its extensive coastal ridge (dune) patterns. The Rockingham-Becher Plain has evolved over the Holocene period (10,000 years ago to present) and is one of the world's best examples of consistently developed beach ridge plain. The dune patterns give scientists

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Main Lake Walyungup.

Photo – Michael James/CALM

Insets from left The sedgeland that surround Lake Richmond are a critically endangered community.

Thrombolites in Lake Richmond.

Photos – Val English/CALM

Enjoying the water at Rockingham Lakes Regional Park.

Photo – Michael James/CALM

An oblong tortoise sunbathing.

Photo – Jiri Lochman

Left View across native coastal groundsel (*Senecio* sp.) at Point Peron to Shoalwater Islands Marine Park.

Photo – Jiri Lochman





an insight into changes that have occurred in shoreline positions and sea levels during this time.

The park also accommodates an extremely rare natural phenomenon: a group of rock-like structures known as thrombolites—living structures produced by the growth and metabolic activity of microscopic creatures that live in communities on the lake floor. Sunlight and fresh water rich in calcium, bicarbonate and carbonate are essential to their growth and survival.

Thrombolites have a limestone colour and rounded shape. They have a similar external appearance to other microbial communities at Hamelin Pool in Shark Bay (see 'Lilliput's Castles', *LANDSCOPE*, Summer 1991-92). The thrombolites at Lake

Richmond have a clotted internal structure ('thrombus' means clot), as opposed to the layered internal structure of Hamelin Bay's stromatolites.

Microbialites are found in few areas of the world: including the Bahamas, Bermuda, Mexico and Western Australia—where they are particularly well represented. These microbial communities are similar to the earliest forms of life on Earth found in fossils dating back at least 2.8 billion years. It is believed that these communities may have been involved in generating the first atmospheric oxygen, making the biosphere (the part of the Earth where living organisms are found) suitable for other forms of life on Earth. This may be the most critical event in the planet's history.

Thrombolites can be found in a 15-metre-wide band around the rim of Lake Richmond, as well as in Lake Clifton in Yalgorup National Park south of Mandurah (see 'Yalgorup National Park, coastal escape', *LANDSCOPE*, Autumn 2005). While the international significance and unusual scientific origin of thrombolites are a drawcard for sightseers, it is important to preserve this community from potentially threatening and damaging processes. Thrombolites are listed as a critically endangered threatened ecological community.

Rockingham Lakes Regional Park also houses a second critically endangered threatened ecological community, known as Sedgelands in Holocene Dune Swales. This



community has a particular composition of species that mainly occurs in linear wetland depressions between the parallel sand ridges of the Rockingham-Becher Plain. Native species typical of the sedgeland include shrubs such as climbing lignum and orange wattle, sedges such as bare twig-rush, knotted club-rush and coastal sword-sedge, and the grass *Poa porphyroclados*.

The sedgeland are significant because they collectively provide a unique record of wetland evolution, progressing from older wetlands in the eastern parts of the Rockingham-Becher Plain to young wetlands near the present-day shoreline. The communities depend on groundwater, and may also be threatened by changed groundwater regimes, declining water quality, weeds and fire.

To ensure that the critically endangered ecological communities of Rockingham Lakes Regional Park are not destroyed, CALM is preparing and implementing interim recovery plans, which outline actions needed to address urgent threats to the communities. Representatives from CALM, the City of Rockingham and community organisations such as the



Above Splendid fairy-wrens.
Photo – Babs and Bert Wells/CALM

Top left Pelicans on the boardwalk at Lake Richmond.
Photo – Jiri Lochman

Centre left Coastal vegetation in Port Kennedy Scientific Park.
Photo – Michael James/CALM

Left Lake Richmond viewed across flowering wattles.
Photo – Marie Lochman



Naragebup Rockingham Regional Environment Centre have collaborated to form recovery teams committed to conserving and repairing these critically endangered communities.

Wetland wonders

The wetlands of Rockingham Lakes Regional Park are a valuable environmental asset, supporting diverse ecosystems and contributing to the State's biodiversity. Most wetlands on the Swan Coastal Plain have been dramatically modified by surrounding development, so conservation is a priority in managing them. Pollution, salinisation, weeds, insects and fire also pose threats to the wetlands.

Lake Richmond, arguably the most significant lake in the area, is a perennial freshwater lake that can reach up to 15 metres in depth. This is unusual as lakes of the area are generally shallower. Because of its depth, the lake holds water in summer when other waterways dry up. This is significant for the multitude of waterbirds residing around the lake. Lake Richmond is a marine relic, historically containing seawater. It was previously part of the Cockburn Sound, which was filled within the last 4000 years. In 1968, inlet and outlet drains were built to provide drainage for new housing developments, reducing the lake's salinity.

Wildlife

More than 100 bird species use lakes Richmond, Cooloongup and Walyungup and their surrounds, including transequatorial migratory birds that fly between Western Australia and Siberia, arriving around August-September and leaving around March-April. Several of these birds are protected under international agreements between Japan and Australia. Waterbirds, like

musk ducks, black swans, Australasian coots and reed warblers, as well as seabirds and bush birds, such as splendid wrens, singing honeyeaters and silvereyes, also use the lakes.

Lake Richmond also supports three types of fish: native freshwater-tolerant varieties, exotic freshwater varieties originally from Central America, and sea mullets. Lakes Cooloongup and Walyungup support native fish species and koonacs, a type of freshwater crayfish native to Western Australia.

The open tuart and marri-jarrah forests surrounding Lake Cooloongup and Tamworth Hill Swamp provide a sanctuary for mammals such as western grey kangaroos, western brush wallabies, echidnas and quendas. The park also houses more than seven frog species, as well as the long-necked tortoise, various lizards, and black-striped snakes, tiger snakes and dugites.



Above The shallows of Lake Walyungup across rushes.

Photo – Marie Lochman

Above left A musk duck.

Photo – Babs and Bert Wells/CALM

Aboriginal heritage

The wetlands and woodlands of the Rockingham Lakes Regional Park are particularly significant for the Nyoongar Aboriginal people of the south-west, as sources of abundant food and as places of ceremony and trade. While Lake Richmond was traditionally used for food gathering and camping, lakes Cooloongup and Walyungup have special significance, as they were places where the Sea Waugal laid her eggs in the Dreaming. Both the names Cooloongup (place of children) and Walyungup (place where Nyoongars talk) are Aboriginal in origin. The



significance of these names is evident in the geographic features of the lakes, Lake Coo loongup, the lake of the children, is a smaller, shallower lake, while Lake Walyungup, the place of adult Nyoongar people, is larger and deeper.

Lakes Coo loongup and Walyungup, as well as freshwater Lake Richmond, provided a plentiful and generally reliable food source of wild fruits and fish for the Nyoongar people. Rockingham Lakes Regional Park is rich in cultural significance for the Nyoongar people, and provides opportunities to promote awareness and educational research into the region's Aboriginal heritage. Three sites within the park are listed as significant by the Department of Indigenous Affairs, and it is likely that there are other significant sites in the park.

European history

The Rockingham coastline was first charted between 1801 and 1804 by French explorer Nicolas Baudin. His expedition named Cape Peron and other significant sites such as Ile Buache (Garden Island) and Ile Bertollett (Carnac Island). The area has a long maritime history: the name Rockingham commemorates a ship that ran aground in 1830 opposite the present location of Governor Road. During the 1830s, farmers settled in the eastern parts of the Rockingham area, moving south to find more arable soils than those offered in the vicinity of Woodman Point. Mangles Bay was deemed a suitable port for shipments of timber, a growing industry for the region. Later, ports at Fremantle and Bunbury would make the need for a Rockingham port unnecessary.

Many historic buildings and sites have been retained in Rockingham and within the park's borders. During



Top left The Naragebup Rockingham Regional Environment Centre.

Photo – Jiri Lochman

Centre left Bobtails can sometimes be seen sunning themselves on warm days.

Photo – Michael James/CALM

Left Quenda.

Photo – Marie Lochman



Above Point Peron beach and rocks at dusk.

Photo – Sallyanne Cousans

World War II, the HMAS Stirling Naval Base was established at Garden Island. Gun placements were built at Cape Peron in 1942 and formed an integral part of the State's coastal defence system during World War II. The guns were technically advanced in their design, and formed the most southerly artillery battery of the Perth-Fremantle defences. They were decommissioned in late 1944, and are now listed on the Municipal Heritage Inventory and on the Register of National Estate.

Recreation

Rockingham Lakes Regional Park has a range of interesting recreational opportunities, from birdwatching to thrill seeking. Cape Peron is by far the most popular area, attracting almost three quarters of the park's annual visitors. Recent developments in the area, including new walktrails and an interpretive snorkelling trail, have added to the existing lookout, parking areas and boat ramp to provide a variety of activities and conveniences for the cape's visitors. The fragile coastal environment around Cape Peron is the perfect location for relaxing walks along the beach, or more involved activities such as snorkelling or windsurfing.

Lake Richmond is a serene expanse of water in an otherwise urban setting. Popular activities include walking, birdwatching and nature observation. There are picnic tables in the north-

west corner, and a walktrail along part of the lake leads to a boardwalk on the northern shore. The Naragebup Rockingham Regional Environment Centre, adjacent to Lake Richmond, provides visitors with educational and scientific information on the park. The centre has a thrombolite display and the opportunity to see loggerhead turtles from the WA Marine Turtle Rescue and Rehabilitation Program.

Lake Cooloongup is a visually dominant feature of the landscape. A trek through the dense woodlands surrounding the lake offers an escape from urban influence and the rare opportunity to connect with nature within the city's bounds.

Some of the most unusual recreational opportunities in the park are at Lake Walyungup: model aeroplane flying and land yacht sailing. Land yachting is a fast-paced, high-intensity activity involving a three-wheeled base, similar to that of a go-kart, and a large windsurfing-like sail. With relatively low impacts on the environment, both land yachting and model aeroplane flying are authorised under permits from CALM, as part of registered clubs. The area is also used for walking and birdwatching, but the primary focus is conservation.

Other areas of Rockingham Lakes Regional Park include Tamworth Hill, with its notable diversity of landforms and vegetation, and Port Kennedy Scientific Park, which provides a

glimpse of undeveloped coastline and the area's wealth of plants and animals.

The Rockingham Lakes Regional Park is a rare natural haven within an urban environment, providing a broad spectrum of geographical features, unique ecological communities and an array of wildlife, lying only minutes from Rockingham and half an hour from Perth. CALM's *Healthy Parks, Healthy People* campaign (see 'Healthy Parks, Healthy People', *LANDSCOPE*, Winter 2005) encourages people to visit their local nature reserves to reap some of the health and well-being benefits of the natural environment. Rockingham Lakes Regional Park is the perfect place to do just that.



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