

Place Details

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Lesueur National Park, Coorow Green Head Rd, Green Head, WA, Australia

Photographs	None
List	National Heritage List
Class	Natural
Legal Status	Listed place (06/05/2016)
Place ID	105967
Place File No	5/10/133/0005

Summary Statement of Significance

The Lesueur National Park contains an exceptional concentration of plant species richness and endemism.

Located in the internationally recognised biodiversity hotspot of south-west Australia (Myers et al. 2000; Mittermeier et al. 2004; Conservation International 2016), the Lesueur National Park is one of the best places to demonstrate the extraordinary plant diversity and endemism of the region.

The Lesueur National Park is estimated to contain over 900 plant species. This includes nine plant taxa which are endemic to the national park and 111 taxa which are endemic to the surrounding region. A further 81 plant taxa are at the northern or southern limit of their distribution, which is significant for the evolution of new species (CALM 1995).

The highly weathered soils of the region have driven high rates of speciation and local endemism, as plants have evolved different strategies to acquire and use available nutrients (Lambers 2014).

Plant diversity is particularly high in the Lesueur National Park due to an unusually large range of geology, soil types and topography. This supports a diverse community of shrublands and heath, as well as woodlands occurring mainly along creek lines and in lower parts of the landscape (Griffin et al. 1990; Griffin & Hopkins 1990).

The Lesueur National Park is one of the most important places in Australia for demonstrating species richness and endemism within the Proteaceae plant family, including the genera of *Banksia*, *Hakea*, *Dryandra*, *Grevillea* and *Isopogon* (ANHAT 2013).

The Lesueur National Park contains outstanding species richness and endemism in several other plant families such as: the Fabaceae family, including the genera of *Gastrolobium* (poison pea), *Daviesia* (bitter pea) and *Jacksonia* (dogwood); the Myrtaceae family, including the genera of *Verticordia* (feather flower) and *Melaleuca* (paper bark); the Haemodoraceae family (bloodroots, conostyles and kangaroo paws); the Stylidiaceae family (triggerplants); and the Droseraceae family (sundews) (ANHAT 2013).

Official Values

Criterion A Events, Processes

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Criterion D Principal characteristics of a class of places

South-west Australia is one of 35 internationally recognised 'hotspots' for biodiversity, containing high levels of plant species richness and endemism.

The Lesueur National Park is one of the best places to demonstrate the extraordinary plant life of the region. It contains over 10 per cent of the plant species found in south-west Australia, including a high number of locally endemic plants. The Lesueur National Park is therefore one of the most important reserves for plant conservation in Australia.

Description

The Lesueur National Park is 27,235 hectares in size, located near the towns of Green Head and Jurien Bay, around 220 kilometres north of Perth.

The traditional owners of the area are recognised as the Yued Aboriginal people of the Noongar group.

Climate

The region has a Mediterranean climate with hot, dry summers and cool, wet winters with a moderately reliable rainfall that falls mostly between June and August. Rainfall varies from an annual average of 550 mm at Jurien Bay to over 650 mm along the escarpment area incorporating Mount Lesueur. Mean maximum temperatures vary from 30.5 to 32.5°C, while the mean minimum temperature varies from 9 to 10°C (CALM 1995).

Landform and geology

The Lesueur National Park contains a sequence of landforms. Coastal areas consist of recent (Holocene) sand deposits and mobile dunes extending inland for approximately two kilometres. The dunes are bordered by a series of mainly saline lakes with some freshwater springs and swamps on the eastern margins. Further inland are older (Quaternary) dune systems that have been compacted in places to form limestone (Griffin & Burbidge 1990; Griffin et al. 1983; CALM 1995).

The eastern part of Lesueur National Park consists of much older sedimentary rocks (some over 250 million years old) that have been exposed to deep weathering and leaching of soil nutrients. The landscape is distorted by a series of fault lines and has been heavily dissected by an intricate network of drainage lines. Erosion of the landscape has resulted in residual uplands, some in the form of flat topped mesas, which are flanked by valleys. The distinctive flat topped mesas of the area include Mount Lesueur, Mount Michaud and Mount Peron (Griffin & Burbidge 1990).

The deep weathering and erosion in the landscape have produced a complex variety of soil types (CALM 1995). Upland areas are dominated by gravel and exposed laterite (a weathered red soil rich in oxides of iron and aluminium). Further down the slopes are a variety of sands and gravels laid over weathered sedimentary rocks. The valleys and creek flats

contain various sands, loams and occasional clays (Wilcox et al. 1996).

Vegetation

Vegetation patterns in the Lesueur National Park are closely related to the underlying geology, soil types and topography (Hopper & Gioia 2004; Griffin & Hopkins 1990). A sequence of vegetation change occurs from the west coast to the eastern uplands in response to changes in the underlying substrate (Griffin & Hopkins 1990).

Coastal areas support a variety of low heath with salt lakes supporting *Casuarina* and *Melaleuca* species, sometimes forming woodlands. Further inland, the vegetation is a fine-scale mosaic of heaths interspersed with patches of *Eucalyptus* woodlands along drainage lines and in lower parts of the landscape (AHC 1992; Griffin & Hopkins 1990; CALM 1995).

The Lesueur area has long been recognised for its extremely high plant diversity. Botanical collector, James Drummond, explored the region in the 1850s noting the area's exceptional richness of locally endemic species, particularly in the Proteaceae plant family (for example *Banksia*, *Hakea* and *Grevillea*). Subsequent collections from researchers in the 1940s and 1950s confirmed Drummond's observations (CALM 1995).

The vegetation patterns in Lesueur National Park are considered to be some of the most complex in Australia. The variety of substrates and an unusually large array of habitats have resulted in a complex and fine scale mosaic of vegetation patterns (CALM 1995).

Fauna

Although not studied in detail, the fauna of the Lesueur area is considered to be richer than all except a few larger conservation areas in the south west region, such as Fitzgerald River National Park (Burbidge & Fuller 1990).

52 species of reptiles have been identified in the Lesueur National Park (CALM 2006), including 41 lizard species and 11 snake species. It is the only place where three subspecies of the gecko, *Diplodactylus vittatus* (*granariensis*, *ornatus* and *polyopthalmus*), occur together. The region also provides habitat for the skink lizard, *Lerista christinae*, which has a very limited range and is only found in a few reserves north of Perth and Rottnest Island (CALM 1995).

The Lesueur National Park supports approximately 122 birds, including a diverse range of honeyeaters, fairy wrens and thornbills. The region provides habitat for the endangered Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) which nests in tree hollows generally confined to *Eucalyptus wandoo* woodlands (Burbidge & Fuller 1990).

More than 40 per cent of the original mammal fauna in the region is now regionally extinct (McKenzie et al. 2003). Despite this, the region remains an important area for a number of small marsupials, including the Honey Possum (*Tarsipes rostratus*) and several species of dunnarts and bats (CALM 2006; Atlas of Living Australia 2014).

Studies of invertebrates have been limited although many invertebrates appear to be restricted to the region and have close associations with the region's endemic plants (Burbidge & Fuller 1990).

Cultural environment

Few systematic archaeological surveys have been undertaken in the Lesueur National Park, limiting our understanding of patterns of Aboriginal occupation prior to European settlement.

The North West Stock Route ran for approximately 400 kilometres from Star Swamp in Perth to Walkaway, just south of Geraldton. The route passed through the area now forming part of the Lesueur National Park. The stock route played an important role in opening up and sustaining pastoralism in the nearer northern districts in the 1850s and formed part of the main road for travellers, mail carriers and drovers before the Midland Railway was completed in 1894 (State Heritage Office 2004).

History

Prior to European occupation of the region, the Lesueur National Park area did not appear to support a large, permanent Aboriginal population because of the lack of a reliable water supply (CALM 1995).

In the early 1800s the French government commissioned the sister ships, the *Naturaliste* and *Geographe*, to chart those areas of the Australian coast not documented by Captain James Cook. The *Naturaliste* sailed up the west coast past Jurien Bay and many of the features along the coast were named after members of the expedition, including Mount Lesueur (named after the expedition's topographical artist) and Mount Peron (named after the expedition's naturalist) (JBCRC 2014; Hopper 1990).

Pastoral leases were established in the region from the mid 1850s, including in the nearby Cockleshell Gully area. Pastoralists in the region were serviced by the North West Stock Route, which ran between Perth and Geraldton.

With the expansion of European settlement and agricultural development, access to traditional foods and water became difficult and many Aboriginal people moved into settlements or set up camps on the fringe of settlements. The enactment of the *Aborigines Act 1905* (WA) gave the Protector of Aborigines power to remove Aboriginal people from towns and place them on missions, reserves and newly established native settlements.

Botanical studies

Botanical collector, James Drummond, undertook numerous botanical collecting expeditions throughout Western Australia between 1838 and 1852, assembling six major collections sold to collectors, botanists and herbaria around the world. Drummond's sixth major collection included many specimens from the Mount Lesueur region (Barker 2004).

Botanical exploration of the area lapsed for some time after James Drummond's pioneering collections. N.H. Speck was the first to describe the Lesueur vegetation system in 1958 and proposed a new Lesueur botanical district because of its distinctive vegetation, landform and soils. Further botanical studies have been undertaken in the area since the 1970s (Hopper 1990; CALM 1995).

In 1974 the Western Australian Environmental Protection Agency recommended that the Lesueur area be declared as a nature reserve, however the recommendation was not implemented due to objections from the then Western Australian Department of Mines which considered that the area should be available for mineral exploration (CALM 1995). The presence of coal deposits at the eastern end of the Lesueur area delayed plans to reserve the Lesueur area until 1992 when the area was gazetted as a Class 'A' reserve.

Condition and Integrity

The 1995-2005 Management Plan identifies that *Phytophthora dieback* is the greatest management concern in the Lesueur national park (CALM 1995). In 2010, a *Phytophthora* management plan was developed for the Lesueur area which identified that there are no known infections of *Phytophthora cinnamomi* in the park or reserve, however a number of other *Phytophthora* infections have been observed in small areas of Lesueur National Park (DEC 2010).

The vegetation of the Lesueur area is considered highly susceptible to *Phytophthora dieback*. Of 111 geographically restricted and/or rare species that occur in the Lesueur area, 60 are considered to be susceptible to the disease. This includes members of the Proteaceae (banksias and allies), Epacridaceae (southern heath) and Fabaceae (peas and wattles) families. *Phytophthora dieback* is considered to have the potential to cause major degradation of the nature conservation values of the Lesueur National Park (Hill 1990).

The 1995-2005 Management Plan also identifies fire protection as a major issue for future management (CALM 1995). There have been a number of fires in the Lesueur region in the past decade, including a fire in February 2011 that burnt an estimated 8,500 hectares in Lesueur National Park (Kennedy 2011) and a fire in January 2007 that burnt an estimated 3,000 hectares in Lesueur National Park (AAP 2007).

Feral herbivore grazing, particularly from rabbits and goats, is widespread in the region (McKenzie et al. 2002). More recently feral pigs have also become a major problem and are subject to an intensive control program. Feral predators, such as foxes and feral cats are also common and have been implicated in the regional extinction of many small to medium sized mammals.

Disturbance to parts of the area has resulted from a number of mining operations, including leases of small areas for gravel and marl (limestone) extraction adjacent to the Lesueur National Park. The key risk from extraction activities is the spread of *Phytophthora dieback* so strict hygiene measures are therefore necessary (CALM 1995). Petroleum exploration is also currently active in the surrounding area.

The main visitor access to Lesueur National Park is an 18.5 km sealed road that enters and exits the park from Cockleshell Gully Road, constructed in 2004. A number of loop walking tracks have also been constructed, one of which terminates at the peak of Mount Lesueur (DEC 2010).

Climate change poses a significant threat to the natural values of the Lesueur National Park, particularly due to the fragmented condition of remnant vegetation in the region. The impacts of climate change on Mediterranean systems, such as the south-west of Western Australia, may include: increased fire frequency and intensity; spread of weedy species; and reductions in stream flows and wetlands. These impacts may affect vegetation structure, composition and growing season which could threaten some of the geographically restricted and rare flora of the area (Dunlop & Brown 2008).

Location

An area of approximately 27235ha, Coorow-Green Head road, 3km east of Green Head, comprising the whole of the Lesueur National Park as gazetted on 24/1/1992.

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