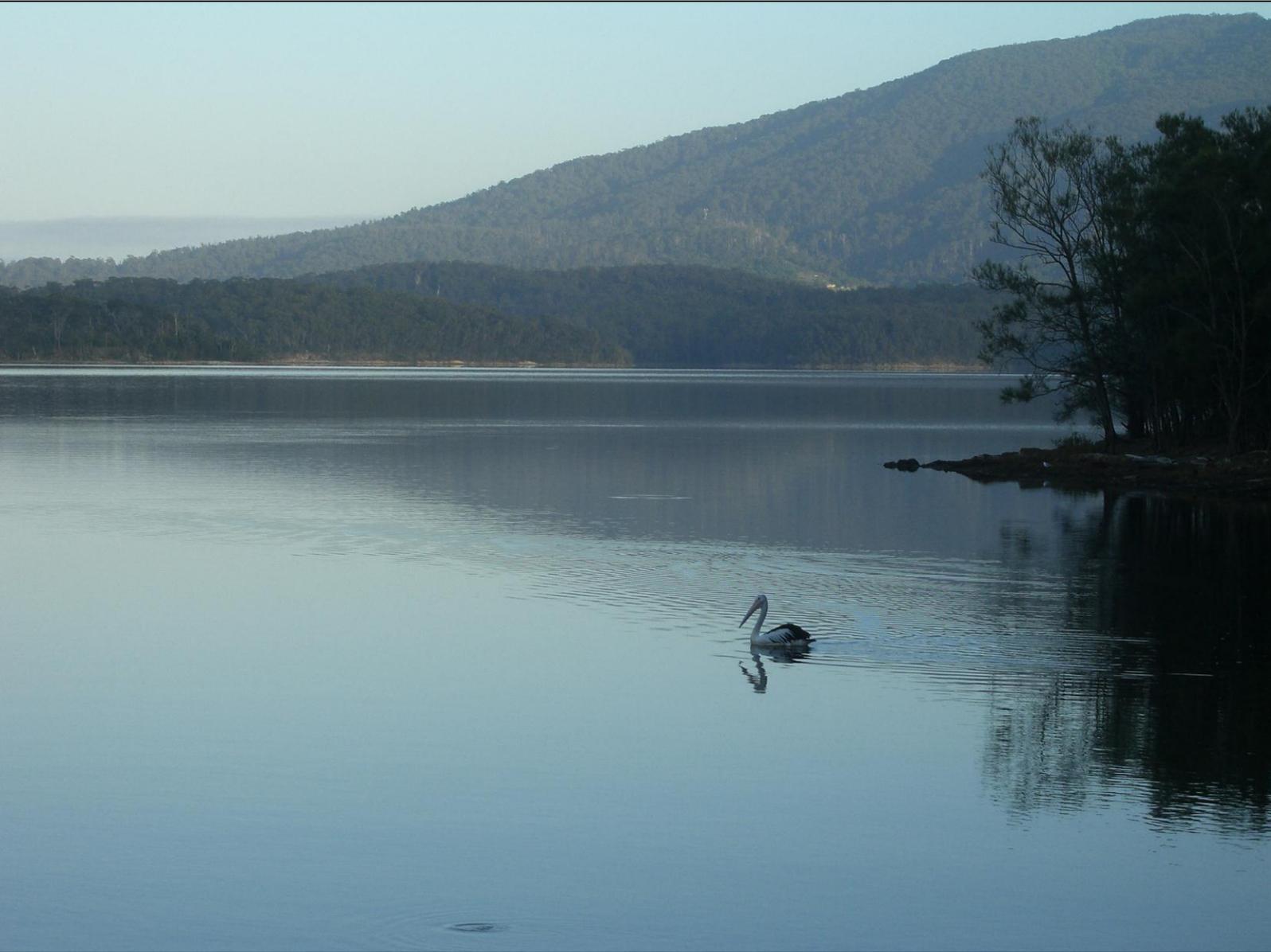


A journey through the earth history of  
Australia's Coastal Wilderness

Part 5 **The Coastal Lakes**



Wallaga Lake. Gulaga backdrop

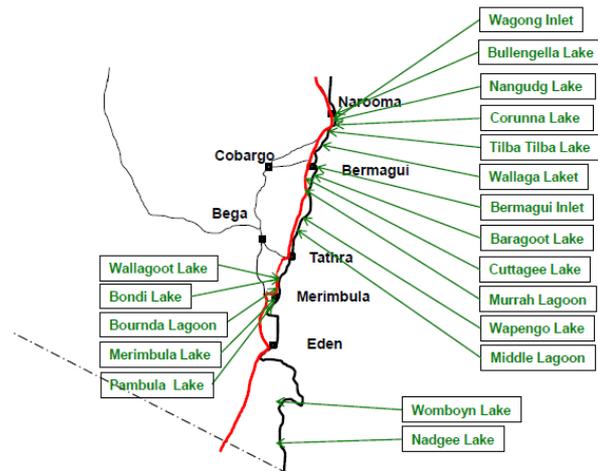


Wonboyn Lake



Wonboyn Lake

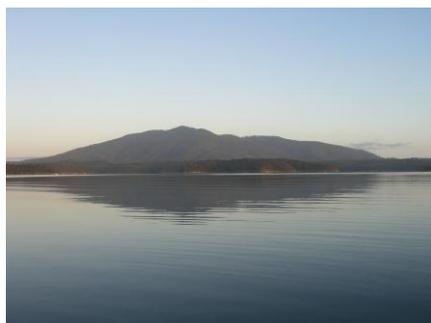
## 5. The Coastal Lakes



On the journey south from Gulaga, we find one of 21 exquisite coastal lakes of Australia's Coastal Wilderness. Near Tilba Tilba (the settlement closest to the Princes Highway), taking the coast road to Bermagui turning off from the Princes Highway, the traveller soon encounters the charming heritage wooden bridge across Wallaga Lake.



It is often thought that the coastline is timeless and unchanging. Nothing could be further from the truth. The coastal lakes tell the story of sea level rise and global ice ages. Formation of the modern coastline is just a recent snapshot at the end of 20,000 years of sea level rise, and, is only a few thousand years old.

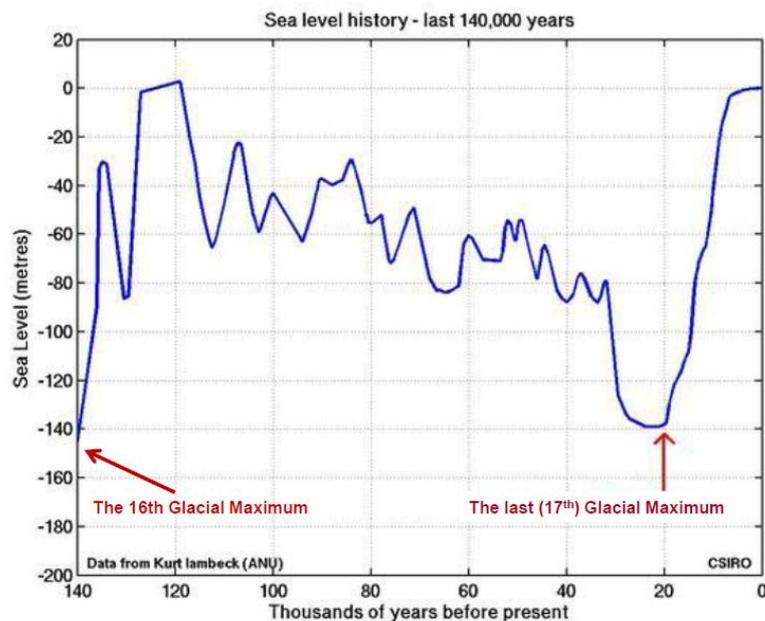


Wallaga Lake and Gulaga



Wallaga Lake

Over the last two million years there has been more global ice than today on 42 separate occasions. The more ice, the lower the sea level as fresh water is locked up in the world's ice sheets. Of these, 17 periods can be regarded as major glaciation events. Of the peak sea level levels between these 17 events, four have reached today's sea level. The graph below traces **one** of those events – the last ice age. The current coastline location has only been matched once in the last 120,000 years. 120,000 years ago the world had come out of the 16<sup>th</sup> glaciation and was about to move into the 17<sup>th</sup> (the most recent ice age). This historical record would suggest the world is about to move into the 18<sup>th</sup> ice age. Contemporary changes to climate could intervene.



A sea level of 130 metres below present puts the coastline 17-20 km off the current shoreline, below the edge of the continental shelf. Montague Island was a hill 8km inland. In Twofold Bay at Eden, the ancestor of the modern Towamba River cut a deep gorge across what is now the southern part of the bay, on its way to the sea many kilometres to the east.

The graph points to a significant Indigenous experience. Under current climate change impact assessments the sea level rise projection for the 21<sup>st</sup> Century is some 0.8 metres accompanied by impact predictions of doom and gloom. For over 300 generations Indigenous people experienced half a metre sea level rise per generation coming out of the global ice age. The impact on traditional coastal zone hunting and gathering must have been extraordinary.

For well over 20,000 years after their first arrival Indigenous people would have dined on marine life on rocky shores far to the east of the present coast. They hunted in grassland and forest that is now drowned beneath the waters of the continental shelf. A large part of that indigenous history and culture is now deep underwater, buried in sand.

Today's coastal lagoons are often flooded river valleys. Some valleys have been blocked by sand piled up by waves and wind, ponding fresh water lakes behind the barrier. Sand that today forms the barriers between lagoon and sea became trapped on the continental shelf as sea level began to rise 20,000 years ago. Instead of pouring their sand over the continental shelf edge, these mighty rivers found their way to the sea blocked by the rising waters. The rivers were forced to dump their sediment load on the newly inundated shelf, where ocean waves began to spread it

out. The barriers we see today were formed as sea level rise slowed, and then fell slightly, around 6500 years ago.

Where large amounts of moving sand became trapped in large coastal bays, beach barriers have formed in a series of parallel beach ridges separating ocean and lagoon. Best seen from the air or in aerial photographs, these multiple beach ridges can be crossed east of Merimbula airport, west of the Princes Highway at Boydtown, and at Disaster Bay.



Merimbula Airport on a beach ridge

Walking across the beach ridges is an up-and-down experience as the traveller climbs a ridge and descends into the adjacent swale, but the ups and downs are only a couple of metres high. Thick *Banksia* forest clothes the beach ridges (often mistakenly called dunes) at Merimbula and Disaster Bay. At Boydtown, the beach ridge area has been cleared for cattle grazing and sand extraction, but a few *Banksia* trees remain on the ridge tops.

At Disaster Bay, the beach access track halfway between Greenglades and Bay Cliff crosses no fewer than 27 beach ridges separated by shallow swales. Here, the oldest beach ridge, well inland of the access road to Bay Cliff, has been dated at 7,800 years using ancient shells buried in its sand. The beach barrier position has built out some 3 km seaward from its old original location. The last beach ridge, that backs the modern beach, may be as old as 130 years. With sea level rise and more frequent extreme storms, how long will it be before this beach ridge starts to erode back?



Wonboyn Lake, Disaster Bay

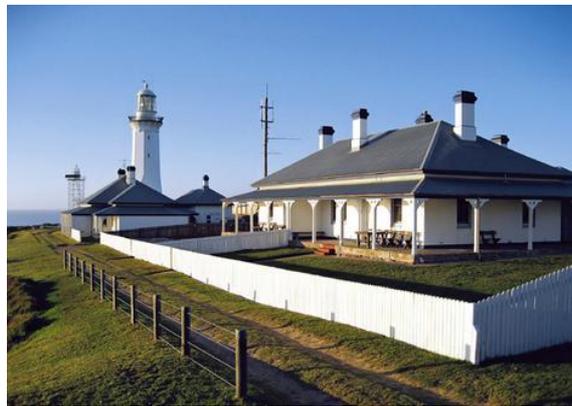
The Disaster Bay beach ridge system is one of the best examples of this landform type in NSW. For the traveller, Disaster Bay has some of the best scenery and wilderness experience in Australia's Coastal Wilderness. The area can be accessed

via the Green Cape Road in Ben Boyd National Park, via the village of Wonboyn or on foot from the south via Nadgee Nature Reserve.



Disaster Bay Lookout

This is an area rich in natural and historic heritage. Highlights for the visitor include Green Cape Lighthouse completed in 1883, now managed by the National Parks and Wildlife Service. Visitors can stay in the light keepers' old cottages.



Green Cape Light House

The terrific Light to Light walk between Boyd's Tower and Green Cape Lighthouse, in the southern part of Ben Boyd National Park, traverses coastal heathland and forest growing in sandy soil on the cliff tops. Geological highlights are spectacular cliffs of pink Devonian sandstone and red mudstone, laid down 360 million years ago, in Mississippi-scale rivers that traversed Australia's ancient red deserts. These rivers were home to fierce armoured predatory fishes, whose bodies are sometimes preserved in former billabongs. Casts of some fishes from this area are displayed at the Eden Killer Whale Museum.

Beyond Disaster Bay, the walking track continues through Nadgee Nature Reserve, the only coastal Wilderness area in NSW. The reserve provides important habitat protection for the area's plants and animals in addition to conserving the catchment area of the Nadgee and Little River systems and Nadgee Lake.



Nadgee Lake looking south to Cape Howe (the Victorian border)

The Nadgee to Mallacoota multi day walk is a world class wilderness experience and is the highlight of Australia's Coastal Wilderness.



Cape Howe looking north

