

LAKE WOLLUMBOOLA – THEN AND NOW

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for the

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INTRODUCTION

I hold Lake Wollumboola in great affection because it can constantly fascinate and delight. It is important as a wonderful place for waterbirds and migratory shorebirds. For several years up to mid 2004, black swans were on the Lake in their tens of thousands, and duck and coot gathered in their thousands. Many shorebirds of various species from as far away as northern Japan and the Bering Straits used the sandbar at the north east of the Lake as their summer home. And the Lake has its own powerful beauty. It is stunning when the surface, under low cloud, looks like milk, almost blue, and when it is salmon pink under clouds inflamed by the setting sun. I also love the Lake when the water level is low, and the water has retreated, exposing large areas of silt and sand. Catch the Lake when the big storms come, and the westerly drives the spume from the tops of waves across the Lake in great clouds, and you won't forget.

I believe that an understanding of the known facts about the Lake its cycle of opening and closing, and the life it nourishes – assists us in appreciating its high conservation values. And these firmly justify the 2002 declaration of the Lake and its sandbar as part of the Jervis Bay National Park, and its placement by the Healthy Rivers Commission in the highest category of New South Wales coastal lakes – those requiring 'Comprehensive Protection'.

Lake Wollumboola is perched above mean sea level. That is, when full, the Lake is between 3 and 4 metres above average sea level (AHD). And so, when the rains force the Lake open by cutting a channel through the sandbar and the water runs out, the level falls 3 or 4 metres. Large swathes of sand and silt are exposed, and the Lake, or what is left of it in the centre, operates tidally through the narrow shallow channel in the sandbar.

In time, (usually a month or two), the entrance closes due to the action of wind and water, and the Lake starts to fill again. The Lake progressively fills because over time, the rainfall run-off from the catchment is greater than the rate of evaporation. However, the level may fall or remain stable during periods of drought as it has during the prolonged dry spell over the last few years. Lake Wollumboola, therefore, is known as an 'Intermittently Closed and Open Lake or Lagoon', [ICOLL], with periods when it is very shallow and large areas of its bed are exposed – that is, after an opening; and periods when it is up to three or four metres deeper and the water covers all of its bed – that is, when it is full and closed.

It is worth spelling out these age-old features of Lake Wollumboola because there are some tall tales or myths around, which are surprisingly widespread. These myths are based on the notion that the Lake used to be deep, not shallow, and that the Lake has silted up in recent times. There are earnest claims that, in the nineteenth century, ocean-going sailing ships – clippers – used to enter the Lake, there to discard ballast and then fill their holds with cargoes of timber for transport to Sydney and further afield. And it is sometimes claimed that as late as the mid twentieth century, ocean-going naval vessels entered the Lake during exercises. Photographs show a small naval vessel aground on the sandbar, but no

photographs of naval vessels or clipper ships in the Lake have been produced. These claims are put forward as evidence that it is only the last fifty years or so that Lake Wollumboola has silted up, and is 'degraded', or 'dying' or 'dead'. On this non-existent foundation has grown the campaign to 'fix up the Lake', although no-one has yet proposed 'how' to do it or what the impact on the Lake would be.

It is therefore important in developing a proper plan for the management of the Lake to know what it was like as long ago as possible, to see if indeed it was a deep lake with an entrance wide enough for large ships, and thus can be said to have become shallow and degraded only in recent times, and so needs to be fixed up. Fortunately, the information to answer this question is available.

Part of the evidence is based on knowledge available about the geological evolution of the Lake. Lake Wollumboola is one of about 90 coastal lakes in NSW. ¹Some of these drowned river valleys are very gradually filling up with sediment and over thousands of years may develop into wetlands. Research into the geological history of Lake Wollumboola has shown that it has always been shallow. It also shows that claims that it has silted up over the last 50 years by 30cm [1 foot] are simply incorrect. The rate of siltation for the last 1000 years has been less than 0.5mm per annum [ie .5m, or 20 inches, in 1000 years]. In more 'recent' times, ie between about 700 and 70 years ago, there has been an acceleration of sedimentation trends to about 1mm per year. Although the causes of this are yet to be researched this rate of sediment deposition is not observable except by scientific analysis of sediment cores. In developing a plan of management for the Lake, it is important to know this geological history.

But there is direct evidence from more recent times about the condition of the Lake. Observations made by reliable observers nearly 200 years ago give us a clear picture. This pamphlet describes those observations.

This pamphlet is circulated on behalf of the **Lake Wollumboola Protection Association Inc**, a Culburra Beach community environment group. The Association aims to protect the natural environment of Lake Wollumboola and to promote its appreciation and understanding in the community. The Association was known until 2002 as the (unincorporated) Lake Wollumboola Support Group. The first edition of this pamphlet was called 'Three Things you Should Know About Lake Wollumboola', and it was circulated under the name of the 'Lake Wollumboola Support Group'. However our organisation became incorporated in 2002 as the **Lake Wollumboola Protection Association Inc**. after another group with opposing aims became incorporated using the Lake Wollumboola Support Group name. The **Lake Wollumboola Protection Association** is a member group of the Nature Conservation Council of NSW.

¹ Information in this paragraph is taken from "Lake Wollumboola Sediment Survey" Umwelt (Australia), October 1999 and Baumber in "Lake Wollumboola Odour Processes Study", WBM Oceanics, July 2002

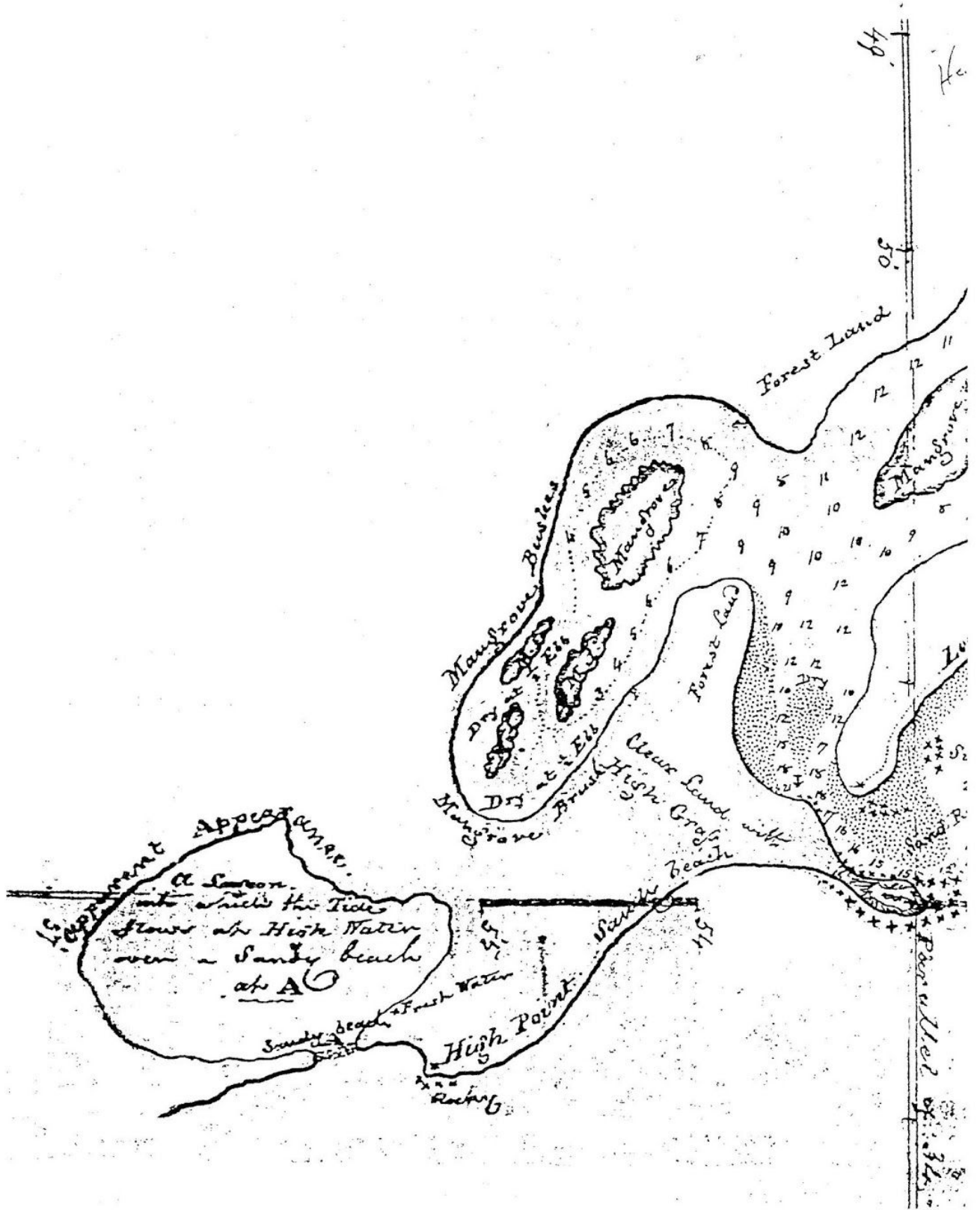
WHAT WAS LAKE WOLLUMBOOLA LIKE 200 YEARS AGO?

Around 200 years ago, Lake Wollumboola was very much the same as it is now. Before there was any European settlement in the Shoalhaven district, travellers visited the Lake and on three occasions they recorded their observations. From these early records we know something of what the Lake looked like and how it behaved.

The first piece of evidence is a map shown on page 5.² It is a detail showing Lake Wollumboola from a larger map of the area. It was drawn by Assistant Surveyor James Meehan when he visited the area in 1805. The condition of the Lake could not have been affected by settlement because it was 17 years before Europeans came to live in the region, and many more years before they came to settle anywhere near the Lake. The diagram is what is called an 'eye map', and it is not to scale. Note that the map is 'on its side': that is, the top of the page is the west and the right hand side of the page is the north, etc. This was a common practice at the time. To get the normal north-south orientation, turn the page 90 degrees anticlockwise.

This 1805 trip to the south coast of New South Wales was instigated by Governor King in the hope of finding suitable areas for the expanding colony. He sent Acting Lieutenant Bartholomew Kent as Captain, with Acting Surveyor Meehan, on the *Anne* to explore the area around the Shoalhaven River. Meehan was highly regarded by Governor King for his surveying skills. He had been transported as a convict for his part in the Irish rebellion of 1798, but had by this time been granted a conditional pardon. Bad weather prevented the ship from entering either the Shoalhaven River or the Crookhaven River, so it anchored in Jervis Bay. For about three weeks from 11 February, Kent and Meehan explored the Shoalhaven River system, travelling up as far as Burrier (called Pharrier by the Aborigines) and up Broughton Creek as far as present day Berry (which place the Aborigines knew as Boon-ga-ree). The excursion provided much information to the land-hungry society developing in Sydney. On his map, Meehan noted the quality of the soil, the varieties of vegetation, and the signs of previous flooding. Significantly, he noted the presence of cedar.

² The two maps used in this pamphlet are from State Records, NSW (formerly the Archives Office of NSW). Their reference numbers are: 1. Meehan's Map – SZ429; 2. Edwardsons's Map – SZ509.



MEEHAN'S MAP

During this three week period of exploration, Meehan journeyed to the seaward side of Lake Wollumboola and produced the map. The features are clear. The words written 'inside' the Lake by Meehan are as follows:

“A Lagoon into which the Tide flows at High Water over a Sandy beach at A”

We can see that the words ‘**Sandy beach**’ and “**A**” are located where the sandy beach or sandbar is today. And we know that the action of the water at the sandbar is still the same: frequently, a big surf flows over the bar into the Lake, as it did then. From this description, we know, therefore that Lake Wollumboola was closed when Meehan observed it.

It is interesting to know that there are plans to commemorate the bicentenary of this episode of European exploration into the area in February next year.

The second piece of evidence is a report in the *Sydney Gazette* of 17 April 1813, eight years after Meehan’s tour. The report describes the excursion to the Shoalhaven River made by a party of 12 from the brig *Matilda* which had also anchored in Jervis Bay.

On this occasion, the travellers were given assistance by three Aborigines who acted as guides. The report of the party from the *Matilda* stated that they travelled north-east from Jervis Bay with the three Aborigines until they reached a “large lagoon” (the present day Lake Wollumboola). They then continued around the south of the Lake to near what is now Kinghorn Point. Then:

“Keeping along the beach we arrived at the mouth of the lagoon, and found a sand-bar stretching directly across to the opposite shore. The tide was now at ebb, and running very strong, we were at first apprehensive that we should not be able to wade across in the direction we wished; but a native going first, we followed, and got over with little difficulty, the water not exceeding four feet in depth. Here we found ourselves in a very beautiful scope of country ...”.

Here we have the first known written description of Lake Wollumboola operating tidally. A shallow channel has cut naturally through the sandbar, opening the Lake to the sea - and this is a description of the Lake still nine years before European settlement in the region. The Lake was an opening and closing one – an ICOLL – with a shallow entrance, as far back as we can see.

It is noteworthy, too, that one of these early travellers was able to look beyond the hardships of the moment and see the country and express in words his sense of the beauty of the place later to become the village of Culburra Beach.

It is unfortunate that we know so little about the three Aboriginal guides – had they seen Europeans before? What were their reactions to the travellers? Were relations friendly? Why did they leave the party after crossing the mouth of the Lake? It is likely that they

joined the party with some fear, because the hostilities between Aborigines and timber-getters which occurred throughout the region for two decades had already started.

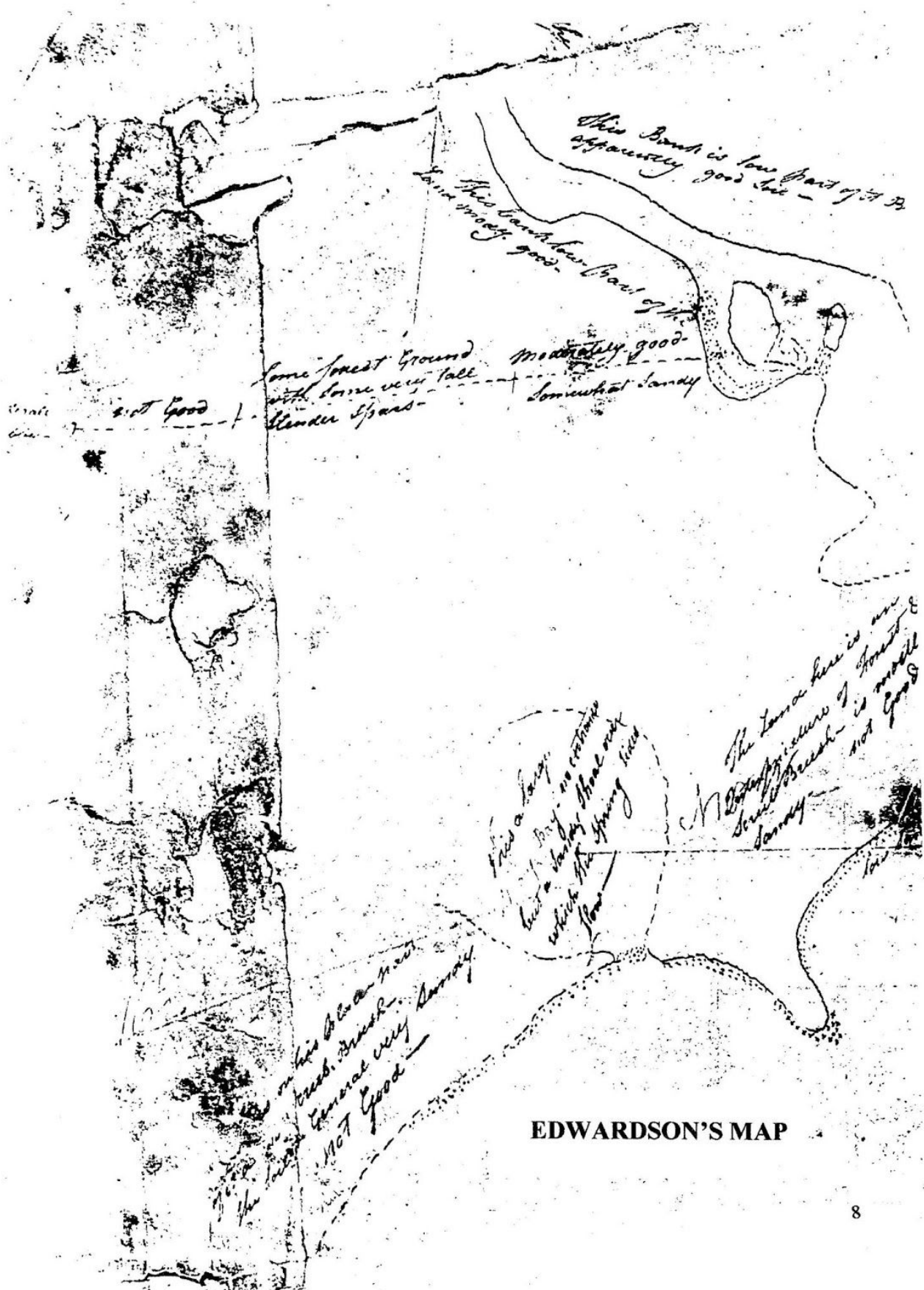
It is likely that the three Aborigines belonged to the clan referred to later as the Conomy, whose home or main camp was probably near Coonemia Creek, which runs into Lake Wollumboola from the south-west. What happened to this clan is obscure. By the 1830s, European occupation of the land had removed some Aborigines from their homes and had restricted the movements of all of them across the country. One group or clan, however, had become attached to James Kinghorn's establishment, 'Mount Jervis', on the northern neck of the Beecroft Peninsula about four or five kilometres to the south-east of Lake Wollumboola. Perhaps these were the Conomy, seeking survival under the new difficult conditions. By the 1850s, Kinghorn had an Aboriginal woman working as a housekeeper in his mansion: the existence of other Aboriginal workers there is unknown. What happened to the Conomy? And what of other clans around Lake Wollumboola, as evidenced by traces of Aboriginal occupation on the north-eastern shore.

The third piece of evidence to confirm our understanding of Lake Wollumboola comes from another map, shown on page 8. This map was sketched by William Edwardson, Captain of the *Snapper*, the ship on which Alexander Berry sailed to the Shoalhaven early in 1822. Berry was looking for good quality land to claim as the grant he had received from Governor Macquarie. On Edwardson's map, Lake Wollumboola is represented by the dotted circle, (not quite complete), near the centre of the bottom of the page. Note that this map is also 'on its side': again, to get the normal north-south orientation, turn the page 90 degrees anticlockwise.

Berry, born in Fife, Scotland, was now 40 years old, and had spent most of his adult life on board ship, firstly as a surgeon, and then as a trader circumnavigating the globe. He was now working hard to establish his reputation and fortune as a merchant in Sydney. He was journeying south to assess for the Governor and himself the possibility of establishing European settlement in the area. He was shortly to locate his land grant at Coolangatta, on the northern shore of the Shoalhaven River, and thus become the first white settler in the Shoalhaven region. Berry was a prodigious writer on business and personal matters, and a significant part of what we know about the region over the next 50 years comes from his pen.

On his map, Edwardson has written a note 'within' the area of Lake Wollumboola. This brief note states:

"This is a large Shoally Bay, no entrance but a Sandy Shoal over which the spring tides flow". ['shoally' = shallow]



EDWARDSON'S MAP

Again, this is a description of the Lake as much now as it was then: in sum, 200 years ago, Lake Wollumboola was shallow with a low sandbar. Taken together, the three observations identify the Lake as being, in turn, closed, open, and then closed again – an ICOLL.

This knowledge, that the Lake is healthy and operates the same way it did 200 years ago, means that we can say it is not 'degraded' or 'dying' or 'dead', as is sometimes claimed. Now, as then Lake Wollumboola is shallow, it has an opening and closing cycle, and much of the bed is 'perched' above mean sea level. As a result of these factors, the Lake is characterised by extremes in water level, in freshwater and salinity, in oxygen levels, and in nutrient release. And the consequences are a cyclical pattern of growth and decay of seagrass and algae, of wide variations in bird and marine life, and in possible recreational uses.

So Lake Wollumboola is healthy and maintains the natural cycle it has run for centuries. But nevertheless it is a fragile Lake, and it needs to be treated with care and full appreciation of its wonderful variety.