**HOUSE OF ASSEMBLY**

**THURSDAY 15TH MARCH 2012**

**LOWER LAKES**

**Mr PEDERICK (Hammond) (15:30):** I wish to respond to a report, commissioned in February, and a campaign petition launched by a Jennifer Marohasy, who represents the so-called Australian Environment Foundation. What she wants recognised is that there is an estuary that should be restored by re-engineering or removing the barrages to allow inflows from the Southern Ocean. I wish to correct her thoughts.

Prior to European settlement, Lake Alexandrina and Lake Albert, at the terminus of the River Murray, were predominantly fresh with river water discharging into the sea and keeping the mouth clear. Contrary to what some believe today, saltwater intrusions into the lake environment were not common until after 1900, when significant water resource development had occurred in the River Murray system. Before large-scale extractions of water, the lakes and Lower Murray were rarely subject to seawater invasions.

There is scientific proof that the Lower Lakes have not been a seawater environment for more than 7,000 years. Freshwater tributaries like the Finniss, Bremer and Angas rivers and Currency Creek inject much-needed fresh water into Lake Alexandrina during winter. Man-made seawater floods would trigger an environmental disaster where thousands of tons of freshwater fish would die, while some areas of the lake would become hypersaline because of no circulation, with a higher evaporation rate resulting in massive salt build-up.

The River Murray travels over 2,500 kilometres to the Southern Ocean, and in the final 100 kilometres before entering the ocean it passes through Lake Alexandrina, the Murray estuary and the Murray Mouth. Connected to Lake Alexandrina by a narrow channel is Lake Albert. These are the Lower Lakes, together holding approximately 2,000 gigalitres of water, nearly four times that of Sydney Harbour. The barrages separating the River Murray from the sea are designed to ensure the lakes and lower reaches of the river remain fresh not only for environmental reasons but as a water supply source.

The barrages are not the only cause of change in the Lower Lakes. Decreased flows from upstream usage has a huge impact. Allowing sea water in, as suggested, would not return the environment to a natural state without a significant reduction in upstream water usage. A natural environment, where substantial quantities of fresh water run into the sea, would only be returned if the natural end of system flows were returned. This would entail pulling the other 3,000 plus structures out of the basin, if the barrages were removed. I cannot see that happening.

Of the total amount of water taken by the three states at the bottom of the system, South Australia takes about 8 per cent, while New South Wales and Victoria take 49 per cent and 35 per cent respectively. Queensland uses approximately 8 per cent. Ms Marohasy constantly talks about the evaporation of water in the Lower Lakes but never mentions other states, particularly her own. Menindee Lakes, for example, are half the size with the same evaporation rate as the Lower Lakes. Two of the dams, Lake Victoria and the Menindee Lakes, have the largest evaporation rates, which lead to increases in their salinity.

A summary of events over time include sealers, whalers and inhabitants of Kangaroo Island in the 1820s telling of the existence of a freshwater lake on the mainland of South Australia. In 1837 Strangways and Hutchinson travelled up river from near the mouth to Point Sturt/Point McLeay, where water 'was so pure that we filled our kegs'. In 1838 Sturt revisited, looking for an alternative mouth. He said, 'During my late visit I never observed sea running in, but a strong current always setting out to the channel.'

In 1839 cattle and sheep began being brought from New South Wales to South Australia by parties called Overlanders. One of the first to make the journey was a party led by Charles Bonney who, upon reaching Lake Alexandrina, commented 'came upon a point of the main lake, the water of which was perfectly fresh. The shores were also covered with reedy flats'. There were many other reports that I do not have time to talk about today.

In summary, short-lived intrusions of salt water would occur during periods of low flow downriver, resulting in a lowered level of water in the lakes. Even in times of these low flows it would appear that only small areas of the lakes around the Murray Mouth and into the channel towards Point Sturt, for a short distance, were affected. Winds would blow salt water into the main body of Lake Alexandrina for short periods, but, when the wind ceased to blow, the flow of water downstream pushed the saline water back out of the mouth.

*A Fresh History o f t he Lake* details and illustrates the conditions found from when colonisation of South Australia began in 1836 until changes to the quality and quantity of water began in the 1880s. It shows that extractions of water from the system upstream in New South Wales, Victoria and South Australia, along with drought conditions, caused change to the lakes. I just wish people would stick to the facts and not put out these misconstrued reports.