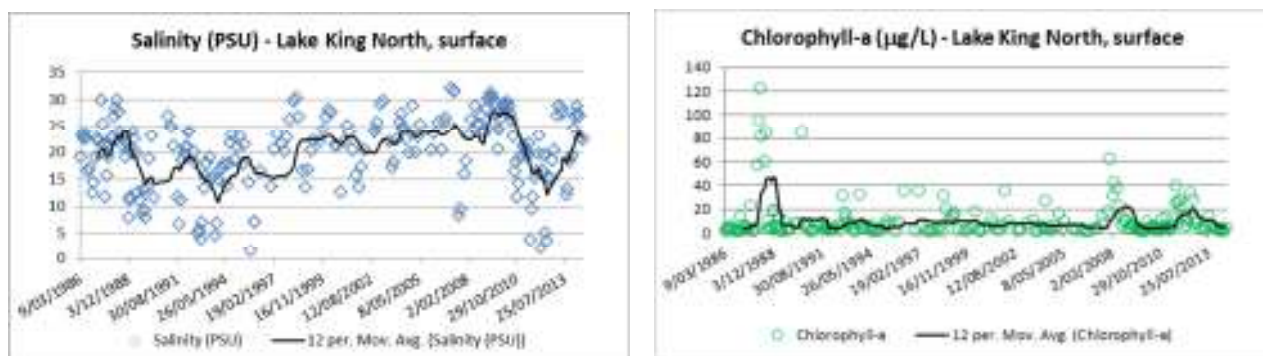




## Water quality measurements

Monthly water quality samples are collected and analysed for a suite of nutrients and phytoplankton pigments (predominantly chlorophyll-a), as well as physical condition indicators such as temperature and salinity, dissolved oxygen, suspended solids, water clarity (Secchi depth). Samples are assessed over time to determine trends and sensitivity to climatic conditions (Figure 3). As previous investigations have shown that the waters of the Gippsland Lakes can become salinity stratified at times, water samples and measurements are undertaken at the surface and bottom of the water column.



**Figure 3 Salinity and Chlorophyll-a time series at Lake King North site show sensitivity to inter-annual climatic variations, such as the 1997-2009 drought, and wet events that resulted in significant blooms in 1988, 2009 and 2011.**

## What does EPA do with the data?



**Figure 4 Burren dolphins are an endemic species to the Gippsland Lakes that rely on a healthy environment.**

EPA assesses the monitoring data from these five sites for water quality trends over time and the attainment of water quality objectives to ensure the protection of beneficial uses. These assessments are currently provided as condition reports published by the EPA. The data is also used to understand the triggers that cause excessive nutrient levels that lead to algal blooms, and define thresholds to work towards to minimise the impact of these events. This information informs policy development and targets actions for improvements. The data is freely provided by the EPA upon request (1300 EPA VIC or 1300 372 842) to stakeholders for their use.

EPA is currently using the monitoring data to assist developing bio-geochemical models that are able to mimic the nutrient plankton dynamics in the Gippsland Lakes. This work assists in defining problem areas, and can test for impacts of future growth and climate, as well as informing the effectiveness of mitigation actions.