



Case Details

The Environmental Protection Authority in Australia is obliged by an Act of Parliament to monitor the condition of Port Phillip Bay. As a result, the ecological effects of wastewater outflow from Melbourne needed to be measured. Outflows into the Bay include the Yarra, Patterson and Werribee Rivers and the Werribee Sewerage Farm. The Marine Sciences Laboratories were chosen to map the discharge plumes from these outflows over a 12-month period. Scientists needed information on temperature, salinity, acidity, dissolved oxygen, nitrates, phosphates and chlorophyll levels.

Key Requirements

- Long term monitoring solution
- Capacity for high number of sensors

dataTaker Data Logging Products

- 1 Cost effective data logging solutions
- 2 Capable of measuring and logging DC voltage, current and resistance sources in addition to digital signals
- 3 Suitable for small to large scale applications
- 4 Rugged design and construction provides reliable operation under extreme conditions
- 5 Designed and manufactured in Australia to the highest quality standards



Port Phillip Bay: Covers 1,930 square kilometres and is surrounded by Melbourne and its suburbs.

dataTaker Solution

Equipment

- dataTaker DT500 data logger
- dataTaker CEM (Channel Expansion Module)

Sensors

- Temperature
- Salinity
- Acidity
- Dissolved Oxygen
- Nitrates
- Phosphates
- Chlorophyll

Implementation Notes

As part of a specially equipped launch, the dataTaker DT500 was installed to record the mass of information generated by the sensors, greatly simplifying the collection of data during the project. The water was pumped continuously from 1.5 metres below the surface, through the array of sensors, which measured temperature, salinity (reduced salinity because of increased fresh water can lead to damage to marine life) acidity, dissolved oxygen, nitrates, phosphates and chlorophyll.

The dataTaker data logger's ability to directly record electrical current and resistance in addition to voltages proved a significant advantage.

The recordings were taken at intervals throughout the year and interval reports were generated quarterly. These reports revealed there had not been serious damage to marine life, although there was plenty of evidence of the city's outpourings. It was found that most major outflows into the Bay occur only intermittently, however influences of the Yarra River flows were found on every sampling.