

State and Benefit: Delivering the First State of the Bays Report for Victoria

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Abstract : Victoria's first State of the Bays report is an historic baseline study of the health of Port Phillip Bay and Western Port. The report includes 50 assessments of 36 indicators across a broad array of topics from the nitrogen cycle and water quality to key marine species and habitats. This paper discusses the processes for determining and assessing the indicators and comments on future priorities identified to maintain and improve the health of these water ways. Victoria's population is now at six million, and growing at a rate of over 100,000 people per year - the highest increase in Australia - and the population of greater Melbourne is over four million. Port Phillip Bay and Western Port are vital marine assets at the centre of this growth and will require adaptive strategies if they are to remain in good condition and continue to deliver environmental, economic and social benefits. In 2014, it was in recognition of these pressures that the incoming Victorian Government committed to reporting on the state of the bays every five years. The inaugural State of the Bays report was issued by the independent Victorian Commissioner for Environmental Sustainability. The report brought together what is known about both bays, based on existing research. It was a baseline on which future reports will build and, over time, include more of Victoria's marine environment. Port Phillip Bay and Western Port generally demonstrate healthy systems. Specific threats linked to population growth are a significant pressure. Impacts are more significant where human activity is more intense and where nutrients are transported to the bays around the mouths of creeks and drainage systems. The transport of high loads of nutrients and pollutants to the bays from peak rainfall events is likely to increase with climate change - as will sea level rise. Marine pests are also a threat. More than 100 introduced marine species have become established in Port Phillip Bay and can compete with native species, alter habitat, reduce important fish stocks and potentially disrupt nitrogen cycling processes. This study confirmed that our data collection regime is better within the Marine Protected Areas of Port Phillip Bay than in other parts. The State of the Bays report is a positive and practical example of what can be achieved through collaboration and cooperation between environmental reporters, Government agencies, academic institutions, data custodians, and NGOs. The State of the Bays 2016 provides an important foundation by identifying knowledge gaps and research priorities for future studies and reports on the bays. It builds a strong evidence base to effectively manage the bays and support an adaptive management framework. The Report proposes a set of indicators for future reporting that will support a step-change in our approach to monitoring and managing the bays - a shift from reporting only on what we do know, to reporting on what we need to know.

Keywords : coastal science, marine science, Port Phillip Bay, state of the environment, Western Port

Conference Title : ICEESD 2018 : International Conference on Ecosystems, Environment and Sustainable Development

Conference Location : Melbourne, Australia

Conference Dates : February 01-02, 2018