

Biodiversity and Marine Science

Western Australia's great diversity of plant and animal life is an important asset that must be carefully managed for future generations and for the development of the State. A deeper understanding of the natural environment will mitigate the impact of human activity, create knowledge that can be harnessed to pursue biotechnological advances and assist in the protection and conservation of Western Australian habitats.

Western Australian Museum (WA Museum) Collections and Research Centre

The State Government has provided \$17 million for the upgrade of the WA Museum Collections and Research Centre ensuring the safe storage, management and preservation of the State's significant marine and terrestrial collections.

Western Australian Marine Science Institution (WAMSI)

WAMSI is an effective mechanism for the State to deliver strategic programs of marine science. Its membership includes research, industry and Government sectors, drawing advice from collective experiences and viewpoints.

The \$30 million **Kimberley Marine Research Program**, managed through WAMSI, is developing baseline knowledge of the Kimberley marine environment to enhance the management of marine parks and underpin regional development. Over 120 researchers from nine organisations are working on 25 integrated projects. The State Government, through the \$81.5 million Kimberley Science and Conservation Strategy, has invested \$12 million in the program with another \$18 million leveraged from WAMSI partners.



▲ Data collected by The Kimberley Marine Research Program is informing management of the diverse marine environment off the Northwest Coast of Western Australia.



▲ Vessels connecting discharge pipeline from cutter suction dredge to hopper barge at Wheatstone. This is part of the day-to-day activities of the Dredging Science Node, which is one of the largest single-issue marine research programs in Australia.

WAMSI is also managing the \$19 million **Dredging Science Node**, to improve understanding of the impact of dredging on the environment. This will support port development around the State and Australia. Over 80 researchers are working across nine integrated themes.

The node is funded from \$9.5 million of industry offsets from Chevron, Woodside and BHP Billiton, with the remainder leveraged from WAMSI partners.

Control of Marine pests

The Department of Fisheries is undertaking several activities to continue adding to the State's understanding and management of biosecurity and biodiversity threats specifically associated with aquaculture activities and the marine and freshwater environment in general.

New Indian Ocean Marine Research Centre

Completion of the Indian Ocean Marine Research Centre will bring together four of Australia's leading

research organisations working in and around the Indian Ocean: the Australian Institute of Marine Science, the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the State Government Department of Fisheries and The University of Western Australia's (UWA) Oceans Institute.

The collaboration will develop multi-disciplinary research teams and significantly advance Australia's marine science capacity, capability and profile. The Centre will include a major new marine research hub at UWA and a world-class seawater facility at Watermans Bay, with both sites due for completion in 2015-16.



▲ The refurbishment of the Watermans Bay Marine Centre will result in the Indian Oceans first seawater facility for broad marine research.

Ningaloo

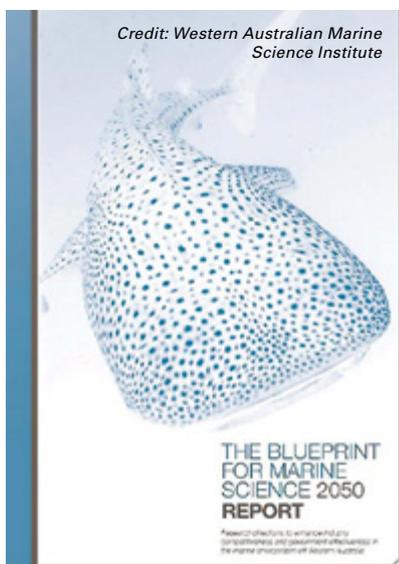
CSIRO and BHP Billiton are collaborating on the Strategic Marine Research Partnership for the Ningaloo Coast. This five-year project builds on the significant research program initiated by the State Government and managed by WAMSI to support the management of Ningaloo Marine Park.

The project will provide new knowledge to better manage the conservation of the Ningaloo Marine Park region.

Blueprint for Marine Science 2050

The Blueprint is an assessment of marine research priorities for Western Australia, based on Government and industry needs.

The Blueprint is the first step in the process of achieving transformational outcomes for Western Australia's marine environment. A series of high-level roundtable discussions with industry, Government and non-government organisations will be held during the remainder of 2015 to reach consensus on funding for the significant research programs under the Blueprint.



▲ The *Blueprint for Marine Science 2050 Report* was launched in April 2015.

A new institute for terrestrial biodiversity in Western Australia

With the support of the State Government, a new institute will be established in 2015 to shape the strategic research priorities for the conservation, protection and management of terrestrial biodiversity in Western Australia and coordinate new and existing research efforts to meet the needs of Government, regulators and industry.

The institute is an extensive collaboration between the Botanic Gardens and Parks Authority (BGPA), the WA Museum, the State Government Departments of Parks and Wildlife and Mines and Petroleum, the Environmental

Protection Authority, Fortescue Metals Group, Rio Tinto Iron Ore, BHP Billiton, CSIRO, Curtin University, Murdoch University and UWA.

The institute's partners will deliver more than \$60 million of significant terrestrial research programs across the Pilbara, the Kimberley, the South West and the Western Desert Lands over the coming years as a result of contributions from national and international sources, industry and the State Government.

Fire behaviour response of coastal shrublands

In response to a finding of the Keely inquiry into the Margaret River Bushfire, the State Government Department of Parks and Wildlife is undertaking research to better understand fuel characteristics and fire behaviour in coastal shrubland communities in the South West.

The research is collecting data on fuel moisture content, weather conditions and fire behaviour. This will inform the development of a fire behaviour guide to improve the effectiveness of prescribed burns and to predict the spread and intensity of unplanned bushfires.



▲ Department of Parks and Wildlife staff collecting data to inform research on fire behaviour in Southwest Western Australia.

The Restoration Seedbank Initiative

The Restoration Seedbank Initiative is a major five-year, multi-disciplinary partnership between BGPA, BHP Billiton and UWA.

This project is focused on developing cost-effective and scalable restoration of biodiverse native vegetation communities in the resource rich Pilbara region of Western Australia, resulting in



▲ A BGPA scientist examining seeds at the WA Seed Technology Centre. Seed science and storage are two of the research & development programs that form part of Restoration Seedbank Initiative.

an improved capacity to restore landscapes using seed-based technologies once mining activities are completed.

Policy and Legislative initiatives

The State Government's \$81.5 million **Kimberley Science and Conservation Strategy** will establish the State's largest interconnected system of marine and terrestrial parks, covering more than five million hectares.

A new **Biodiversity Conservation Act** will be introduced into Parliament in the second half of 2015 to provide for a modern framework for the management and recovery of biodiversity in Western Australia.

Legislation to facilitate **bioprospecting** is being developed to ensure that an effective regulatory system is in place to govern commercial and non-commercial bioprospecting activity in the State.

Amendments to the **Conservation and Land Management Act** have been introduced into Parliament to establish a single statutory authority to better manage marine and terrestrial conservation. These amendments will also greatly improve the management of the State's conservation estate by allowing the joint vesting of national parks with traditional owners.

The introduction of the **Aquatic Resources Management Bill** will provide a modern framework for the conservation and management of the State's fisheries and aquatic resources.