

strategic science  
underpinning key natural  
resource management and

*conservation  
decisions*

*Strong collaborations*

CSIRO's Wealth from Oceans National Research Flagship is working with the Australian Institute of Marine Science (AIMS), Geoscience Australia, Curtin University of Technology, Murdoch University, Edith Cowan University, The University of Western Australia, the WA Department of Environment and Conservation, the WA Department of Fisheries, the Chemistry Centre of Western Australia and the Western Australian Museum to undertake this research.

*better science  
better decisions*

*The Western Australian Marine Science Institution (WAMSI) is a consortium of 15 State and Commonwealth government, academic and private partners undertaking multi-disciplinary marine research. It is WA's first collaborative research facility dedicated to understanding the WA marine environment and resources, and to contributing to policy and management decisions on the future use of oceans.*

*The WA State Government has invested \$21 million over five years to establish WAMSI, while partners have co-invested \$60 million. WAMSI's strategic projects address climate change, its likely impacts for WA, how WA marine and coastal ecosystems function and how science can be used to understand the impacts of human activity in the marine environment.*

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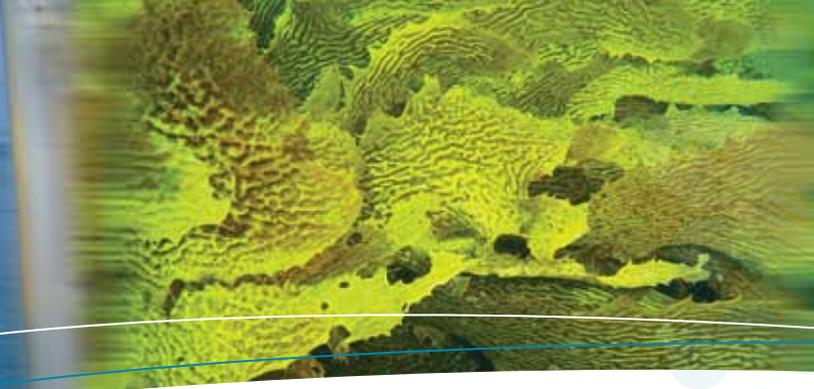
*Images courtesy of CSIRO's Wealth from Oceans National Research Flagship and the Western Australian Museum (C. Bryce).*



western australian  
marine science institution

*better science better decisions*

[www.wamsi.org.au](http://www.wamsi.org.au)



## *Western Australia's (WA's) marine ecosystems are facing unprecedented pressure from an increasing number of potentially competing uses.*

The need for extensive science-based knowledge of our ocean environment grows with the state's population and the variety of demands we place on marine and coastal ecosystems. These include oil and gas extraction, fisheries, aquaculture, port expansions, marinas and other coastal developments along with waste disposal, recreation, tourism and conservation.

The scale of some proposed uses together with the rate of climate change also mean the impacts on the marine environment are much less predictable than they may have been in the past.

As a result, governments, industry and the community face bigger, more frequent and more rapid decisions relating to marine and coastal planning. Enhancing their ability to do so urgently requires greater strategic understanding of our ocean environment.

WAMSI seeks to provide the science to meet this need and help underpin confident and well-informed decision-making.

### *Our vision*

WAMSI's research in this area focuses on:

- characterising WA coastal marine ecosystem structure and function; and
- enhancing our shared capacity to understand, predict and assess ecosystem response to man-made and natural pressures.

Outcomes will contribute strongly to ecosystem-based, multiple-use management of WA's ocean environment.

We conduct our research between the WA's south-west and the Kimberley, with projects that aim to:

- understand how ocean currents transport nutrients and marine larvae over a range of spatial and temporal scales;
- identify the source of nutrients to the productive near-shore ecosystems and identify how they are used and then transferred between marine plants and animals;
- determine what factors affect the distribution of animals and plants in different habitats and how these communities are affected by natural and man-made disturbances;

- evaluate the effectiveness of marine protected areas by comparing the ecological interactions in and around the protected zone;
- investigate and simulate how ocean waves influence coastal marine habitats; and
- develop visualisation tools that make data and the results of scientific research more accessible to decision-makers.

### *A multidisciplinary capability*

The strength of WAMSI's research approach is its ability to assemble multidisciplinary project teams, deploying expertise in the fields of physical and biological oceanography, marine biogeochemistry, biology, ecology and physiology. Project teams apply a mix of theoretical, empirical and experimental approaches to high-level science questions aimed at better understanding the unique WA marine environment, the processes that shape it, and its response to man-made and natural impacts.

We undertake long-term, strategic research to improve the state's capacity for sound decision-making, but also rapidly address key research needs to deliver findings within shorter time frames.