

Western Port Environment Research Program Overview

All things Western Port - Community Forum

Dr Rhys Coleman

**Waterways and Wetlands Research Manager
Melbourne Water**

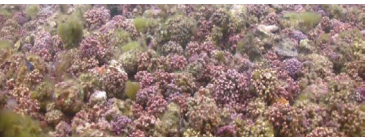
31st August 2023

Western Port and surrounds are on Bunurong Country. We acknowledge their elders past, present and emerging and that they have cared for the bay and surrounding areas for many thousands of years.



OFFICIAL

Western Port is Special



Historical Pressures

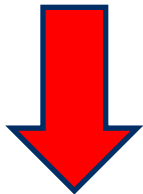
Substantial changes to the waterways and catchments over past 200+ years e.g.

- Draining Koo Wee Rup Swamp (formerly 400km²) 1857-1930s
- Previously few streams flowing to north, now many artificial channels
- Extensive catchment vegetation clearing
- Changes in land use, including progressive urban growth

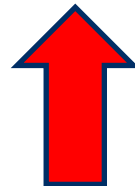


Management Issues

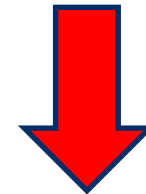
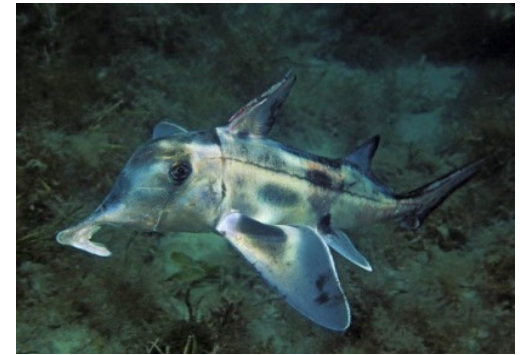
Habitat Loss



Increases in pollution and pest plants/animals



Declines in environmental values



Future Challenges

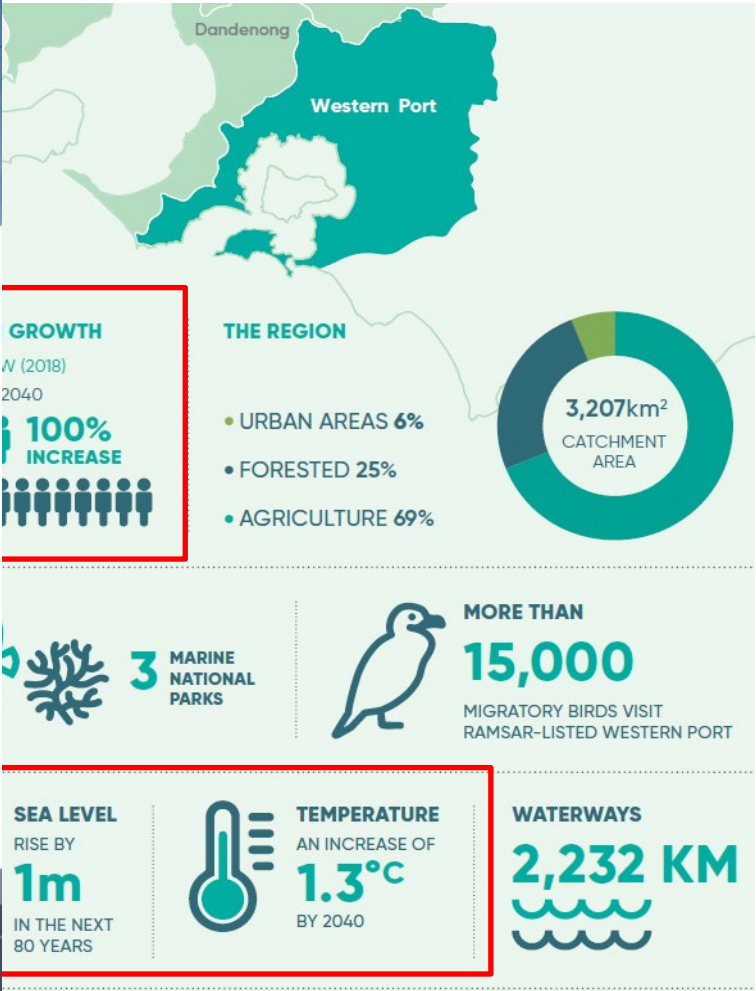


Western Port
STRATEGIC DIRECTIONS STATEMENT
SEPTEMBER 2018



Victorian Climate Projections 2019
Technical report

VICTORIA State Government | Environment, Land, Water and Planning | CSIRO



Western Port

GROWTH
Population (2018) to 2040: **100% INCREASE**

THE REGION

- URBAN AREAS 6%
- FORESTED 25%
- AGRICULTURE 69%

3,207km² CATCHMENT AREA

3 MARINE NATIONAL PARKS

MORE THAN 15,000 MIGRATORY BIRDS VISIT RAMSAR-LISTED WESTERN PORT

SEA LEVEL RISE BY 1m IN THE NEXT 80 YEARS

TEMPERATURE AN INCREASE OF 1.3°C BY 2040

WATERWAYS 2,232 KM

Western Port Science Review 2011

**9 government agencies, 11
researchers (Michael Keough UoM)**

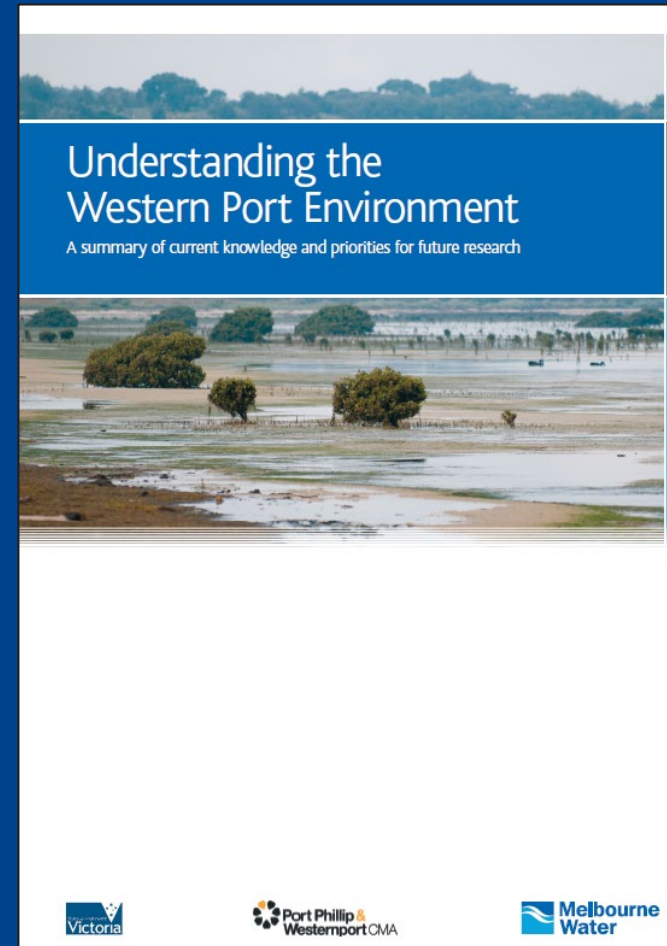
Broader stakeholder input e.g. WPCC

What's environmentally important?

What are the major threats?

Do we know enough to protect it?

What are the strategic research gaps?



Western Port Environment Research Program

- Progressive research program based on priorities in science review
- Substantial co-funding/in-kind resources from other organisations
- 8 partner organisations, 16 research organisations
- Information published on Melbourne Water's website:

www.melbournewater.com.au

- science review
- project summaries
- publications
- Public seminars

The screenshot shows the Melbourne Water website navigation and content. At the top, the Melbourne Water logo is on the left, and navigation links for 'Water and environment', 'Services', 'Education', 'About us', and 'Things to do' are in the center. On the right, there is a dark blue box with 'Water storages 92.1%' and '+85 ML' with an upward arrow, and a search icon. Below the navigation is a breadcrumb trail: 'Home > About us > What we do > Research and innovation > Western Port environment research'. On the left side, there is a sidebar menu with 'About us' selected, and sub-items: 'Careers', 'What we do', 'Annual Report', 'Our customers', 'Publications', 'Legislation', 'Policies', 'Accessibility', and 'Enquiries and complaints services'. The main content area features the heading 'Western Port environment research' and a paragraph: 'We're undertaking a range of strategic research projects, in partnership with other Victorian government agencies and leading environmental scientists, to improve our knowledge of Western Port marine and coastal environment. These projects will help us protect and improve its health into the future.' Below this is a link for 'Understanding the Western Port Environment 2018' with a PDF icon and 'PDF | 17.81 MB'. At the bottom, it says 'We've released a scientific review strategically assessing our knowledge of the Western Port environment, to inform future'.

Initial Focus of Research

Hydrodynamic modelling

Nutrients and sediments sources/impacts

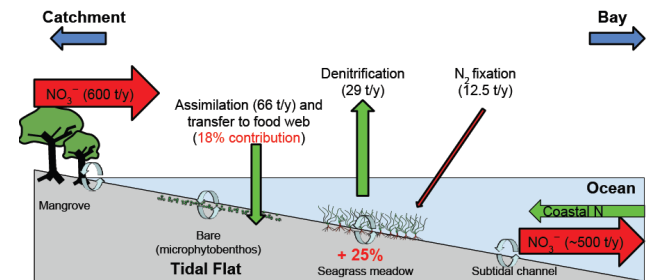
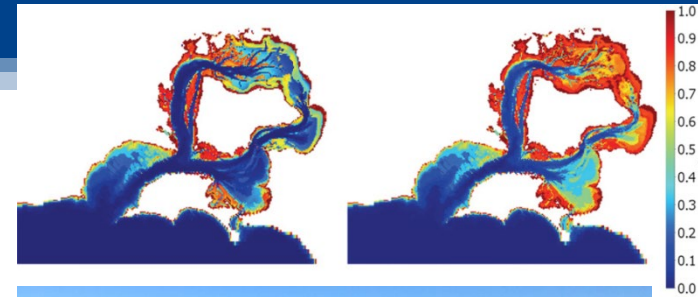
Mangrove restoration

Fish habitats and status

Waterbird population trends

Toxicants

Invasive weeds



Understanding the Western Port Environment 2018

**Summary of research findings
2011-2017**

**Threats and opportunities for
management**

Updated research priorities

MELBOURNE WATER 2018

Understanding the Western Port Environment 2018

A summary of research findings from the Western Port Environment Research Program 2011-2017 and priorities for future research



Examples of how research supports waterway management

General resource to support informed decision making

Priority issues/opportunities for major strategies and plans e.g. Healthy Waterways Strategy

Environment Protection Act, ERS load targets planning

Ongoing mangrove planting programs e.g. WPSP

Environmental flow objectives for Australian grayling

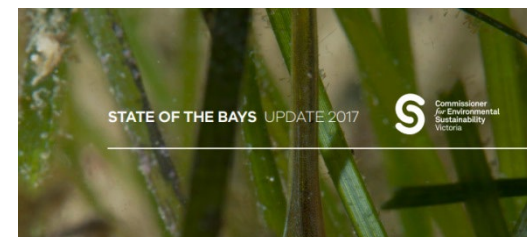
'State of the Bays' reporting



Victoria Government Gazette

No. S 493 Friday 19 October 2018
By Authority of Victorian Government Printer

Environment Protection Act 1970
STATE ENVIRONMENT PROTECTION POLICY (WATERS)



Recent Focus of Research Program

- Seagrass restoration planning, propagation and planting
- Understanding major sources of sediments to Western Port
- Coastal vegetation management under a changing climate
- Toxicant sources and impacts, including microplastics
- Mapping baywide biodiversity using molecular techniques



Research Presentations

<p>Dr Kathy Russell University of Melbourne</p>	<p><i>Sediment sources in the Westernport catchment: findings from a collaborative research program</i></p>	<p>1:20-1:40pm</p>
<p>Laney Callahan Deakin University</p>	<p><i>Developing tools and knowledge for intertidal seagrass restoration in Western Port</i></p>	<p>1:40-2:00pm</p>
<p>Dr Ashley Whitt The Nature Conservancy</p>	<p><i>Sustaining coastal wetlands amid sea-level rise and unravelling mangrove encroachment</i></p>	<p>2:00-2:20pm</p>
<p>Prof. Vin Pettigrove RMIT University</p>	<p><i>Toxicants: Western Port and surrounding catchments</i></p>	<p>2:20-2:40pm</p>

Thank you

www.melbournewater.com.au

