

# eReefs Regional Models Workshop

## Introduction



eReefs is a collaboration between



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# Workshop Objectives

- Bringing together eReefs scientists, users and experts to mark the completion of a significant milestone
- Overview of regional models by eReefs scientists:
  - Research and methods
  - Deliverables and outcomes
  - Applications and skill assessment
- Receive input from participants on priority applications and potential model improvements
- Introduction to non-expert users

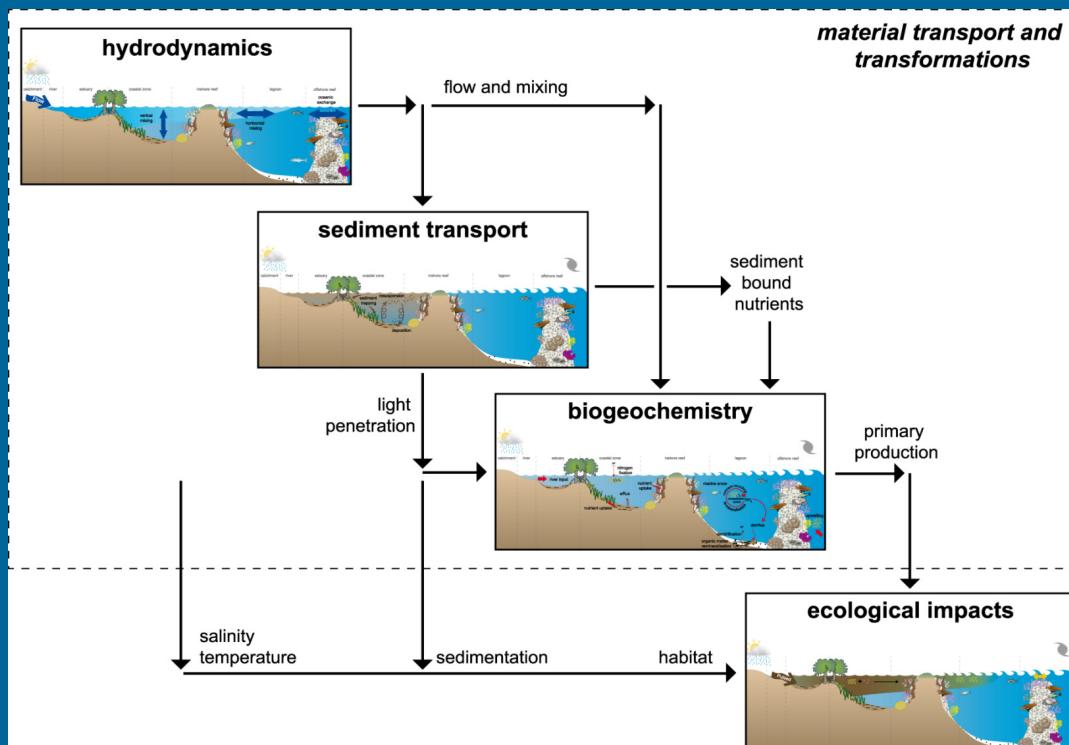
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# Day ONE – Stepping through the components of the research/models



+ RECOM

Input from participants on potential improvements in terms of modelling inputs and framework

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Great Barrier  
Reef Foundation



Australian Government  
Bureau of Meteorology



CSIRO  
Australian Government



Australian Institute  
of Marine Science



Queensland  
Government

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# Day TWO – Focus on applications and skill assessment

- Published applications and literature on or using the eReefs regional models
- Model skill assessment based on:
  - Performance against observations
  - Agreement with known GBR processes
  - Alignment with previous scientific studies
- Input from participants on priority applications and fitness for purpose

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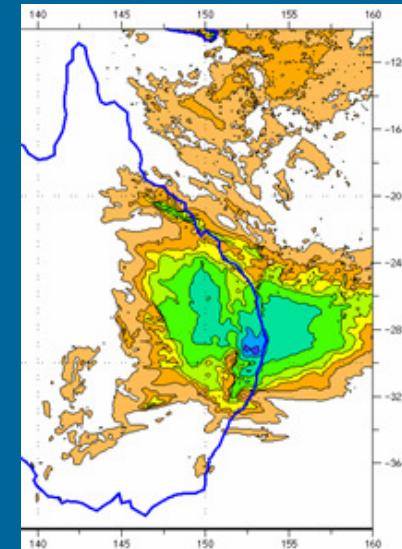




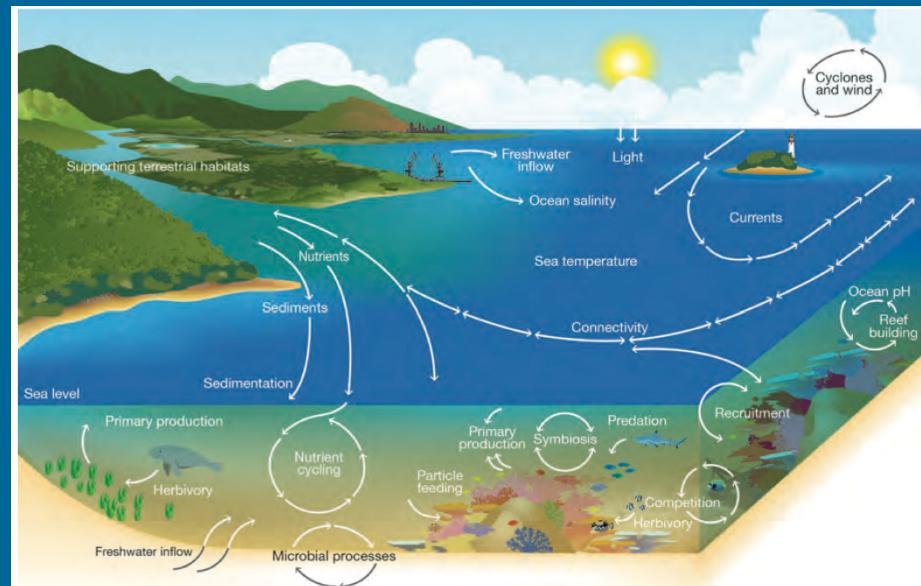
# Why eReefs?



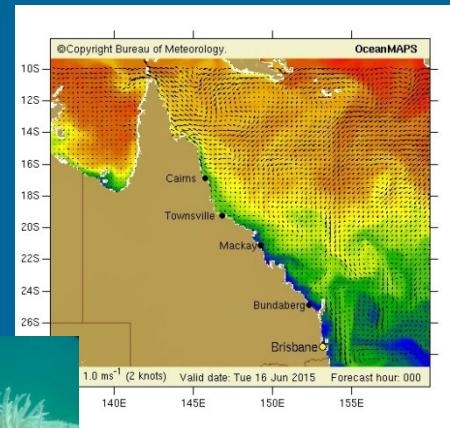
Multiple sources of stress



Water quality stress



Mechanical  
stress



COTS



pH stress



Thermal stress

# eReefs Vision

- Covering the whole GBR as one system
- Models linking catchments to ocean
- Past, present and future conditions on the GBR
- Interactive access to data and reports



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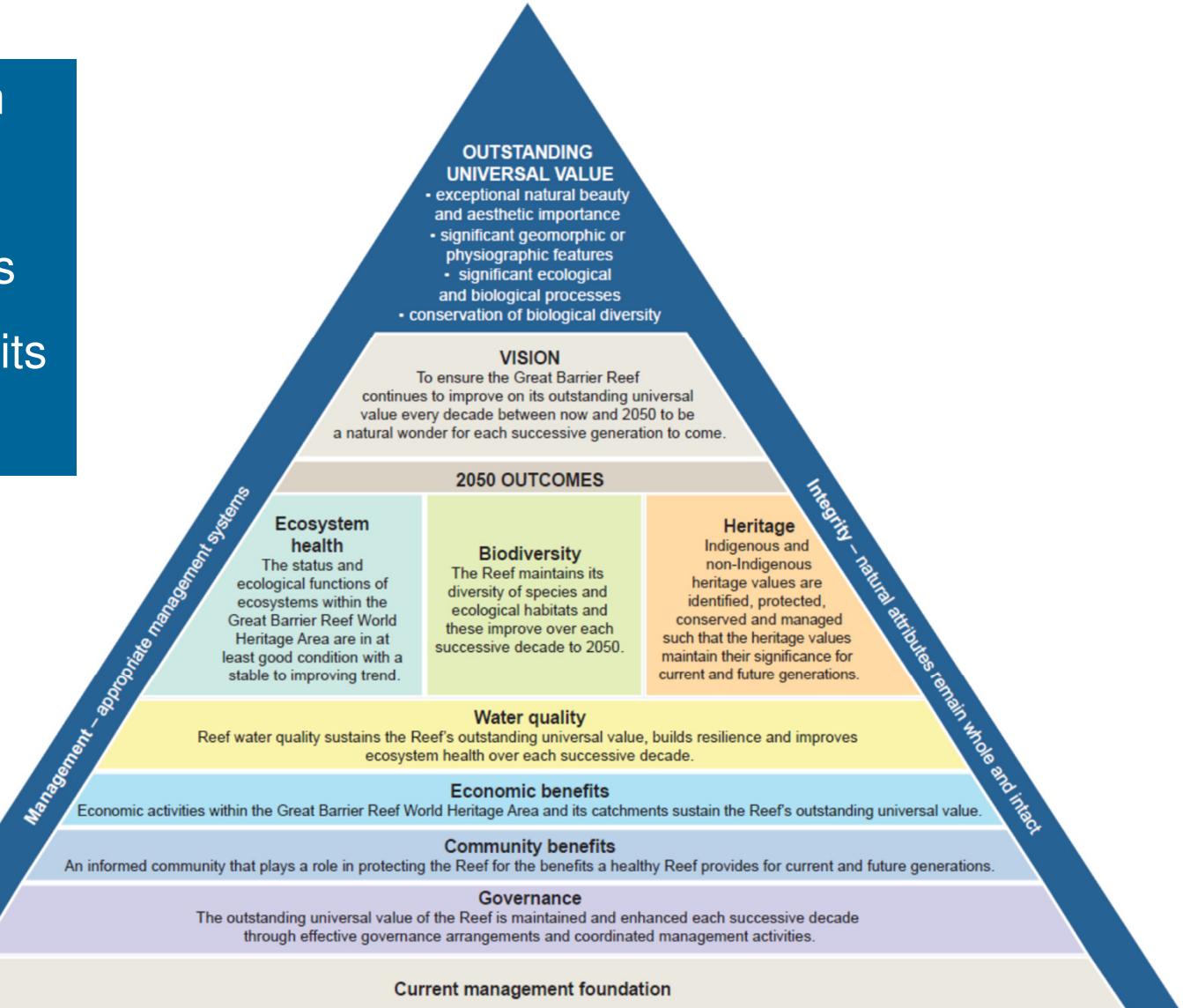
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# 2050 Reef Sustainability Plan

- Ecosystem Health
- Water Quality
- Economic Benefits
- Community Benefits
- Governance

  
**Measurable  
Targets**



# Partners

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GREAT BARRIER REEF  
*foundation*



Australian Government  
Bureau of Meteorology



Australian Government



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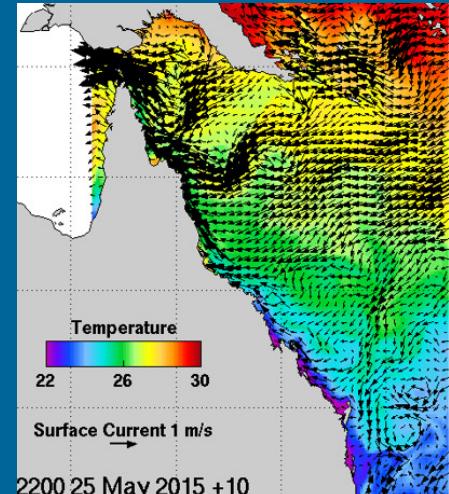
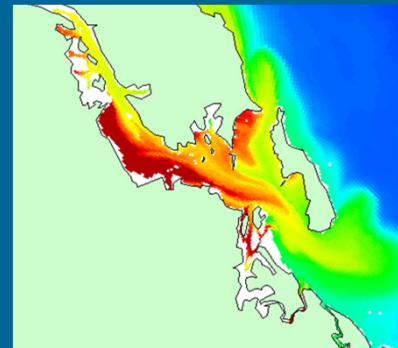
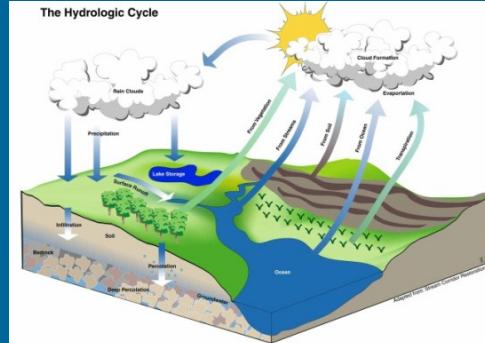
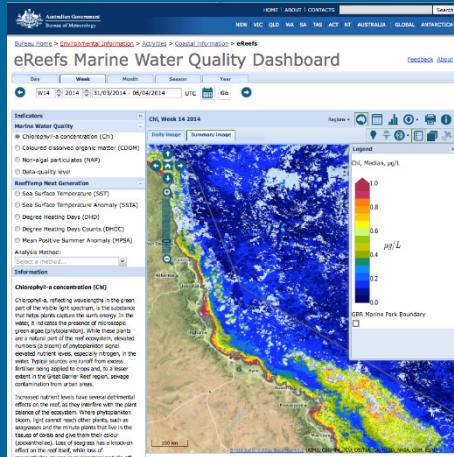
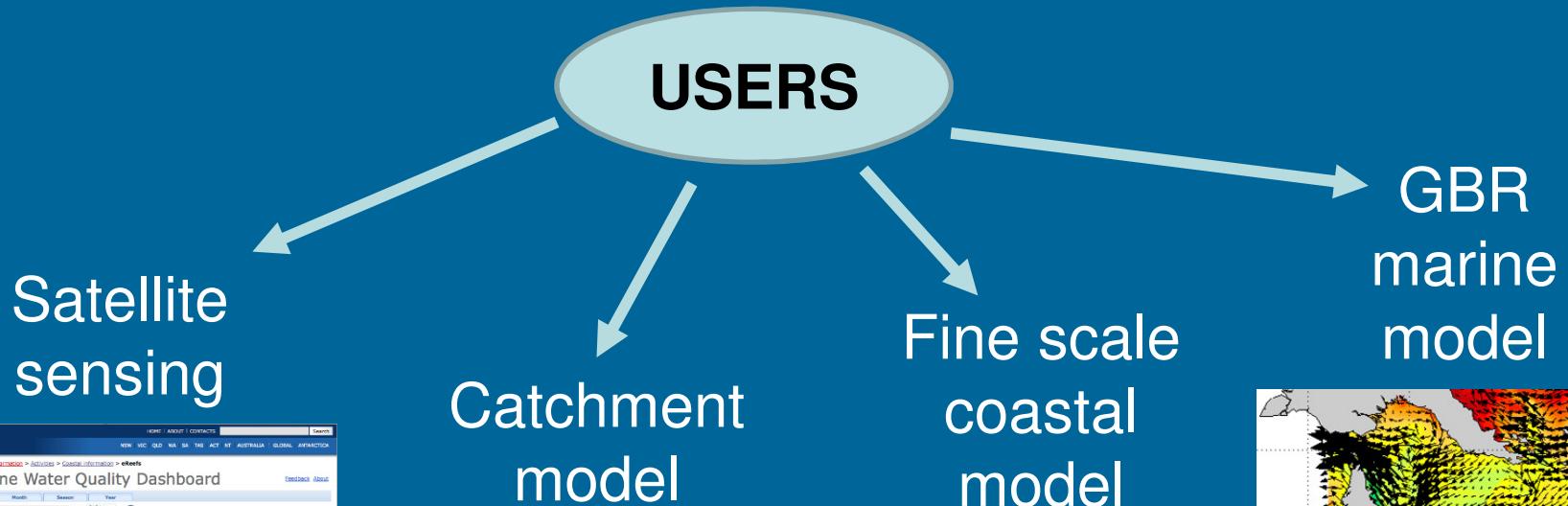


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# eReefs is an integrated platform



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## scenarios

*land practice change  
climate change*

## reporting

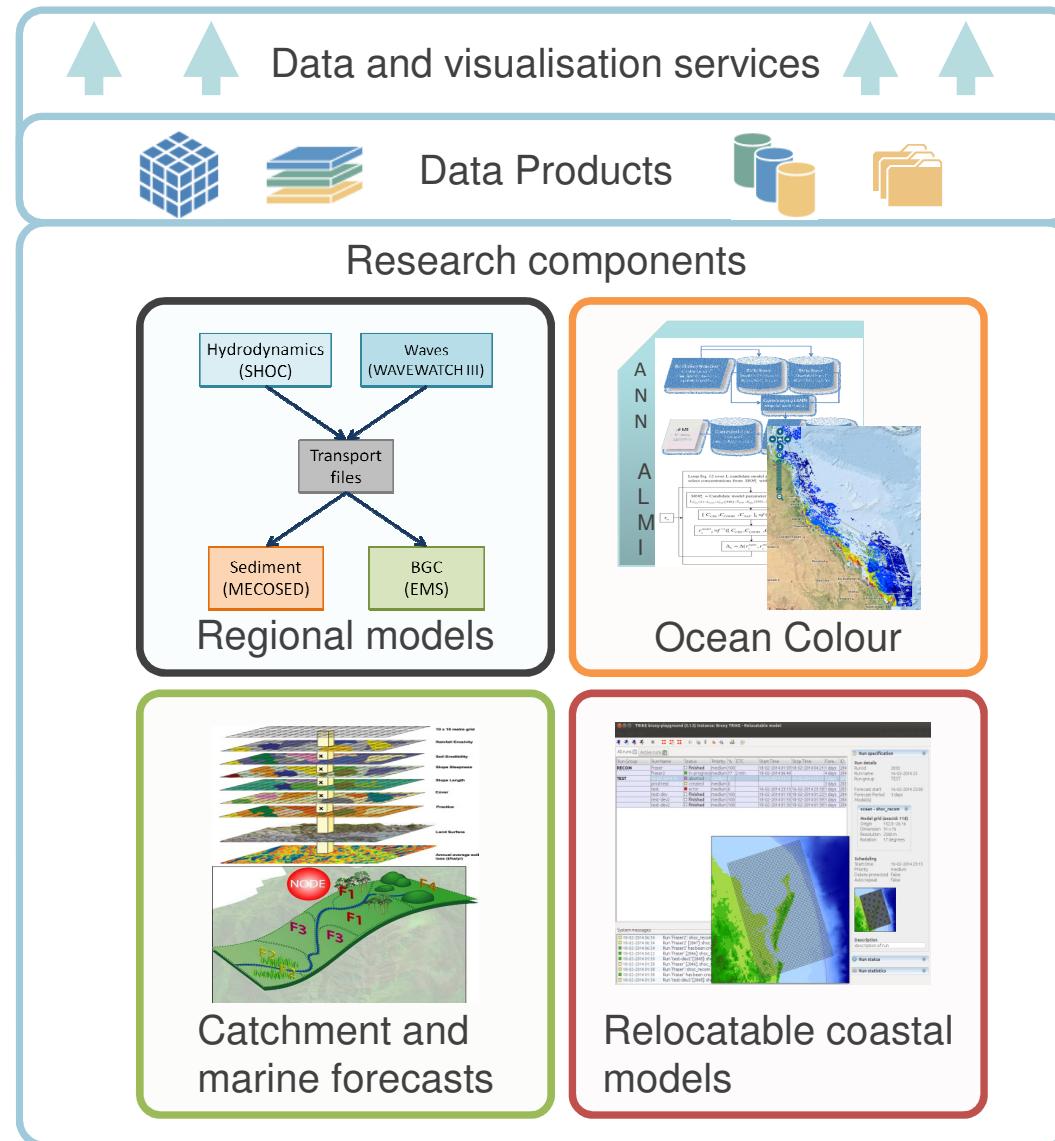
*Reef Report Card  
State of Environment  
(use case examples)*

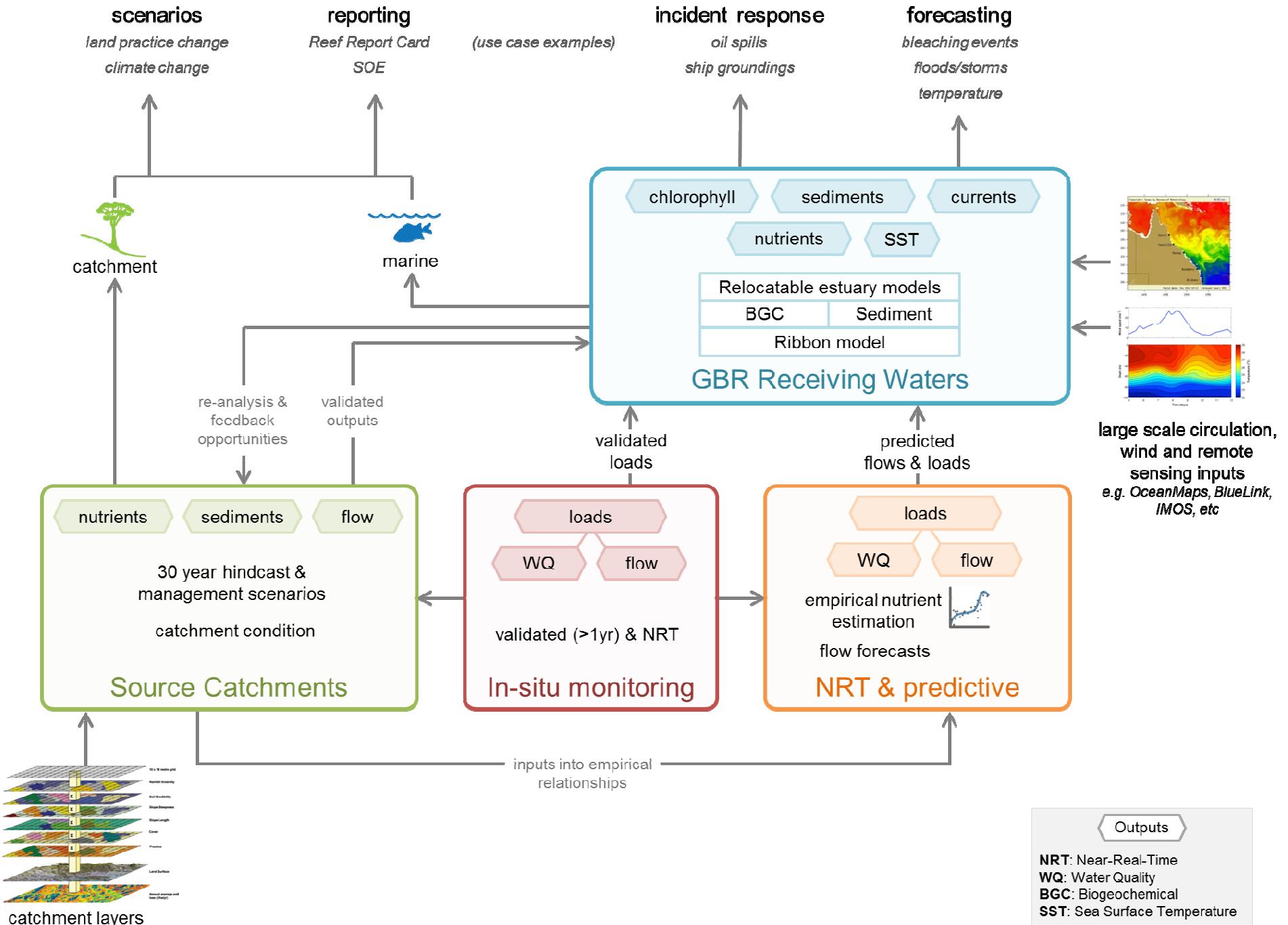
## maritime operations

*incident response  
operational management*

## forecasting

*bleaching  
events  
floods/storms  
temperature*





# Phases 1 and 2 (2012 – 2015)

## Delivery of Regional Models

- ✓ Validated GBR 4km and 1km resolution hydrodynamic models
- ✓ Validated biogeochemistry and sediment transport models
- ✓ Integration and routine operation on CSIRO infrastructure

## Delivery of Relocatable Model (RECOM)

- ✓ Three case studies in Fitzroy, Heron Island and Mackay-Whitsundays
- ✓ Operational online platform

## Water Quality monitoring through remote sensing

- ✓ BOM Marine Water Quality Dashboard
- ✓ Transition to new satellite

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# Phases 2 and 3 (2016 – 2017)

- BOM Catchment water quantity and water quality forecasting models
- GBR hydrodynamic forecasting and sediment transport models
- Improvement in data integration with improvements to SSIMR functionalities
- Reporting and Visualisation tools
- Operationalisation of research components

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# eReefs Research Portal

<http://research.csiro.au/ereefs>

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