

North West Shelf Joint Environmental Management Study



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Scott Condie & Beth Fulton
10 April 2008



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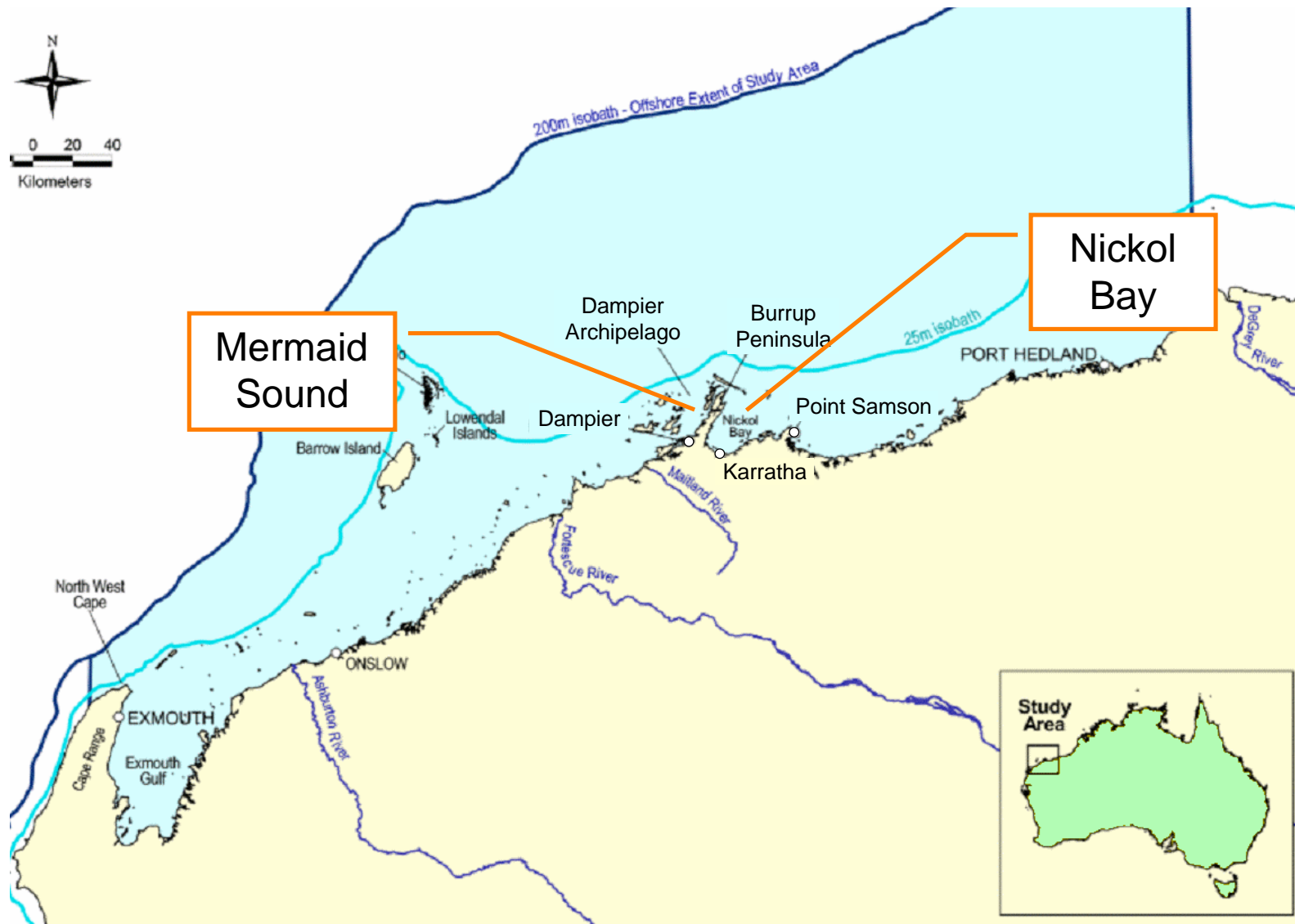
Hypothetical

*Proposal for a new waste discharge or outfall
near the Dampier Archipelago*

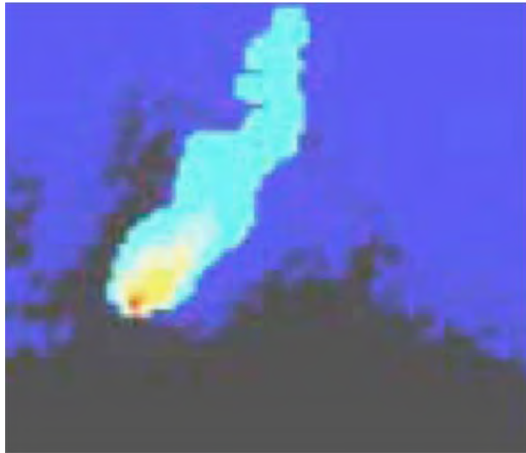


How can the study help management
assess such as proposal?

Hypothetical: proposal for a new waste discharge

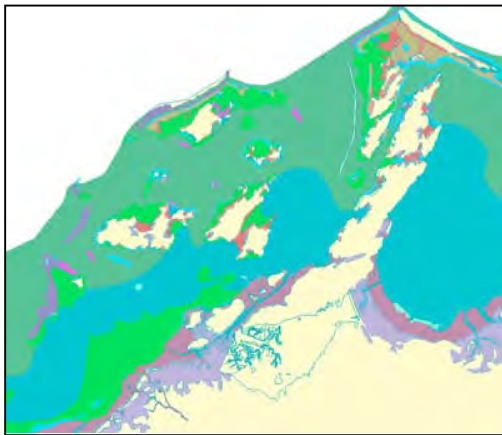


Management questions



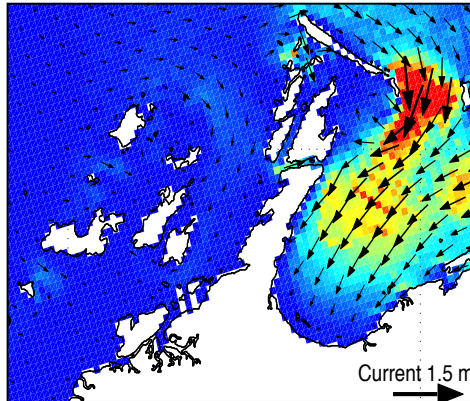
What is the area of potential impact of the contaminant plume?

Management questions



What natural assets and potential vulnerabilities lie within the impact area?

Management questions



How are these impacts moderated by natural processes?

Management questions



What are the potential interactions with other human activities?

Management questions



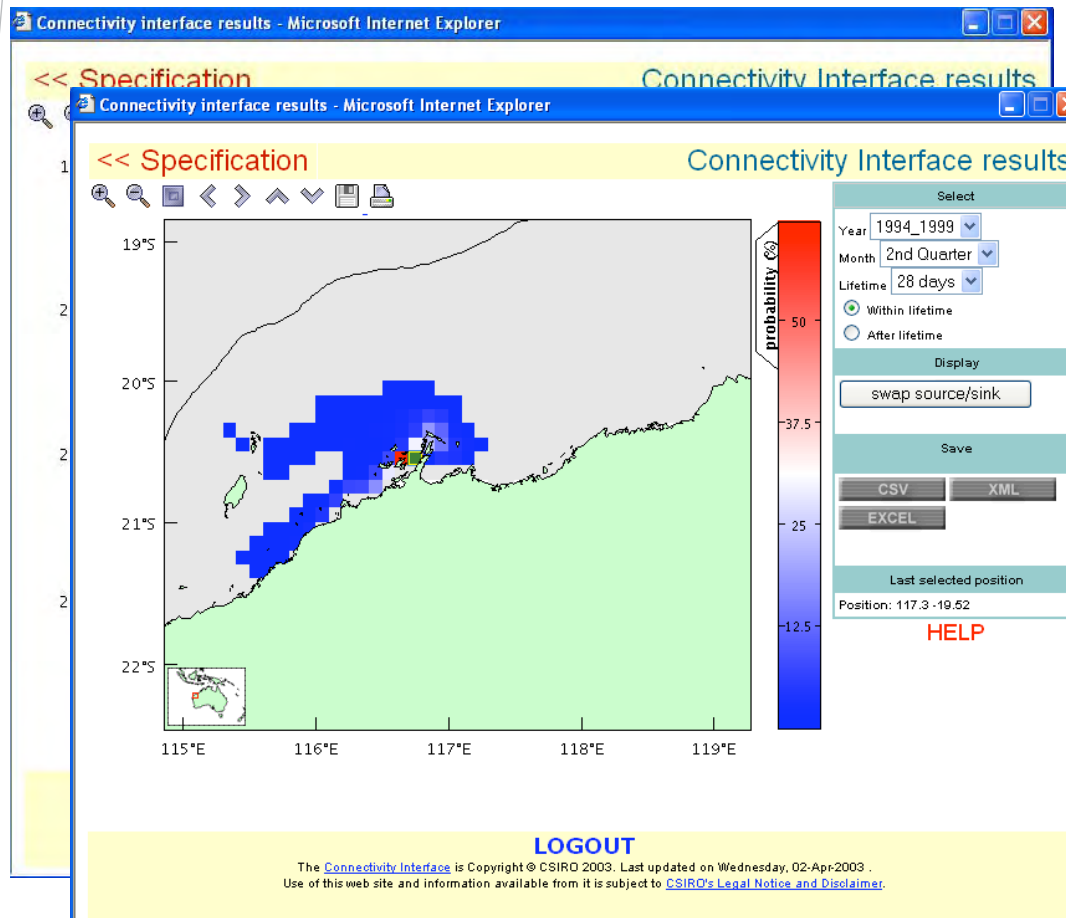
What are the most effective ways to manage the impacts?

Management questions

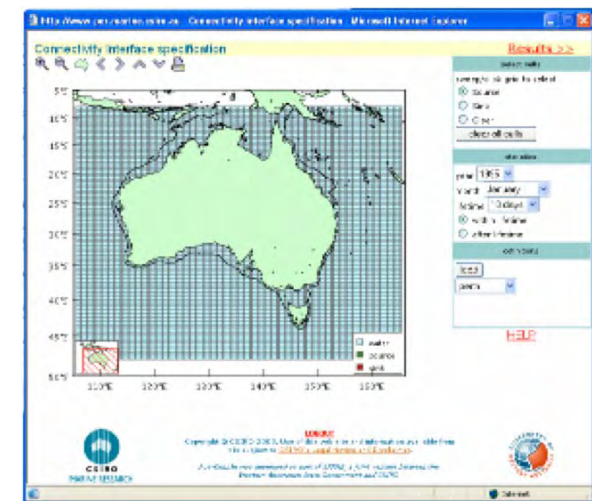


What are the trade-offs?
Social, economic, environmental

What is the area of potential impact?



Online Connectivity Interface “Connie”



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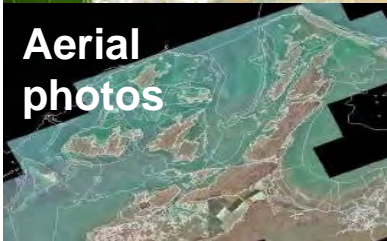


What are the natural assets and vulnerabilities?

Satellite imagery



Aerial photos



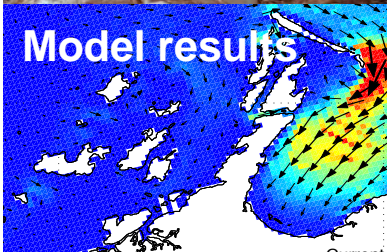
Underwater video



Infrastructure



Model results



Habitats

Coral reef communities



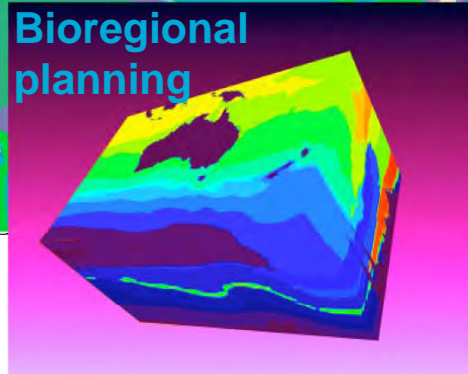
Subtidal muds and sands



Mangal



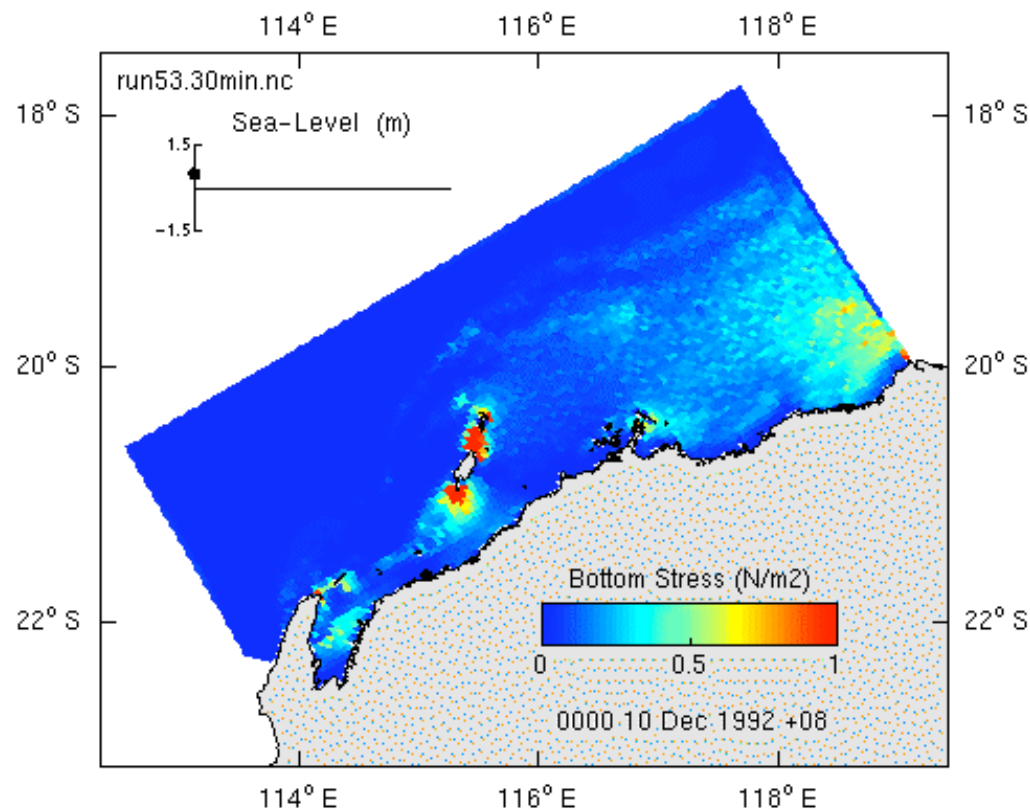
Bioregional planning



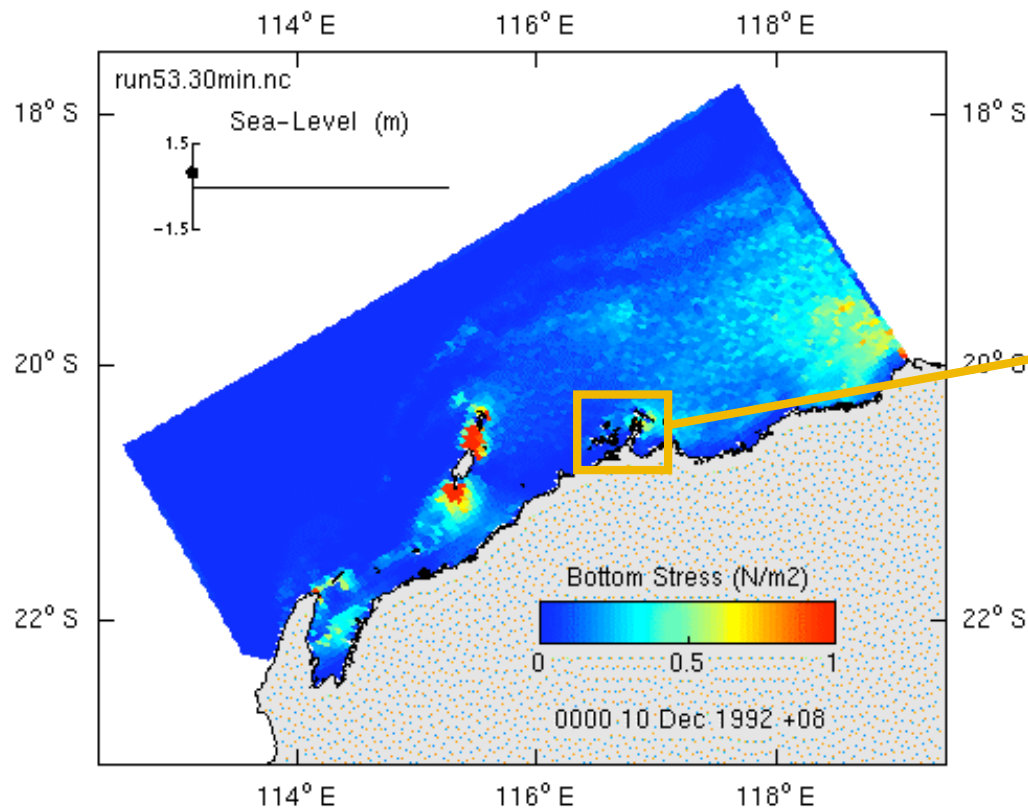
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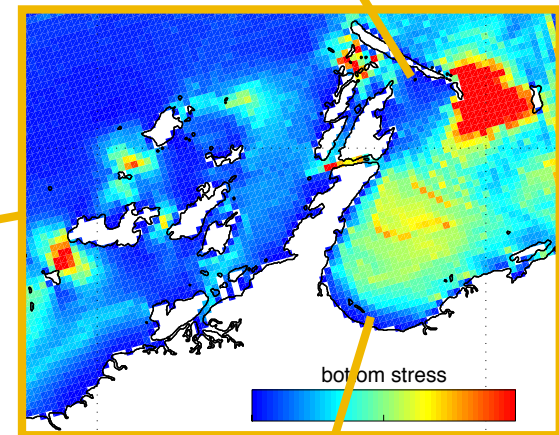
Impacts moderated by natural processes – sediment contamination



Impacts modified by natural processes – sediment contamination



Coral reefs



mudflats



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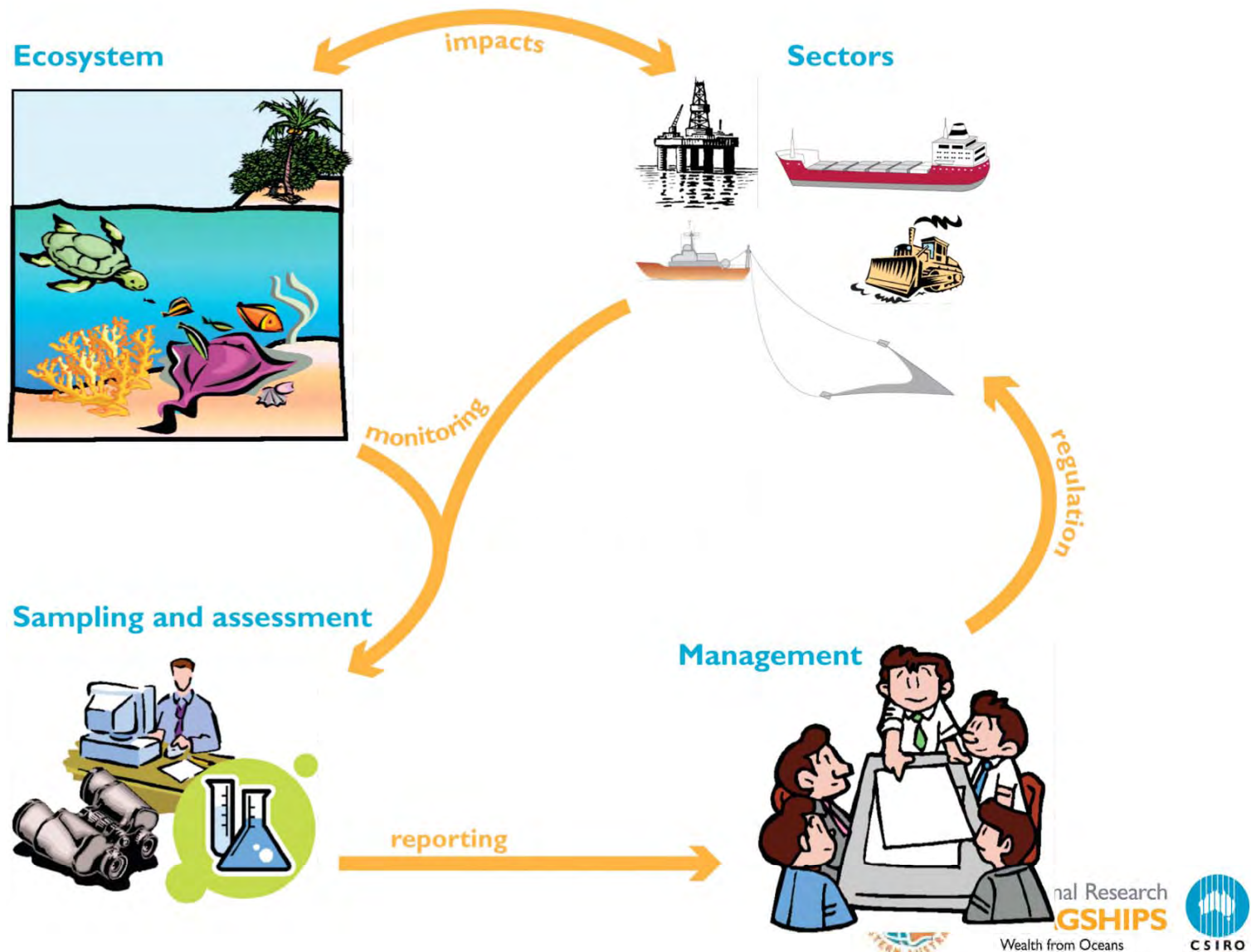


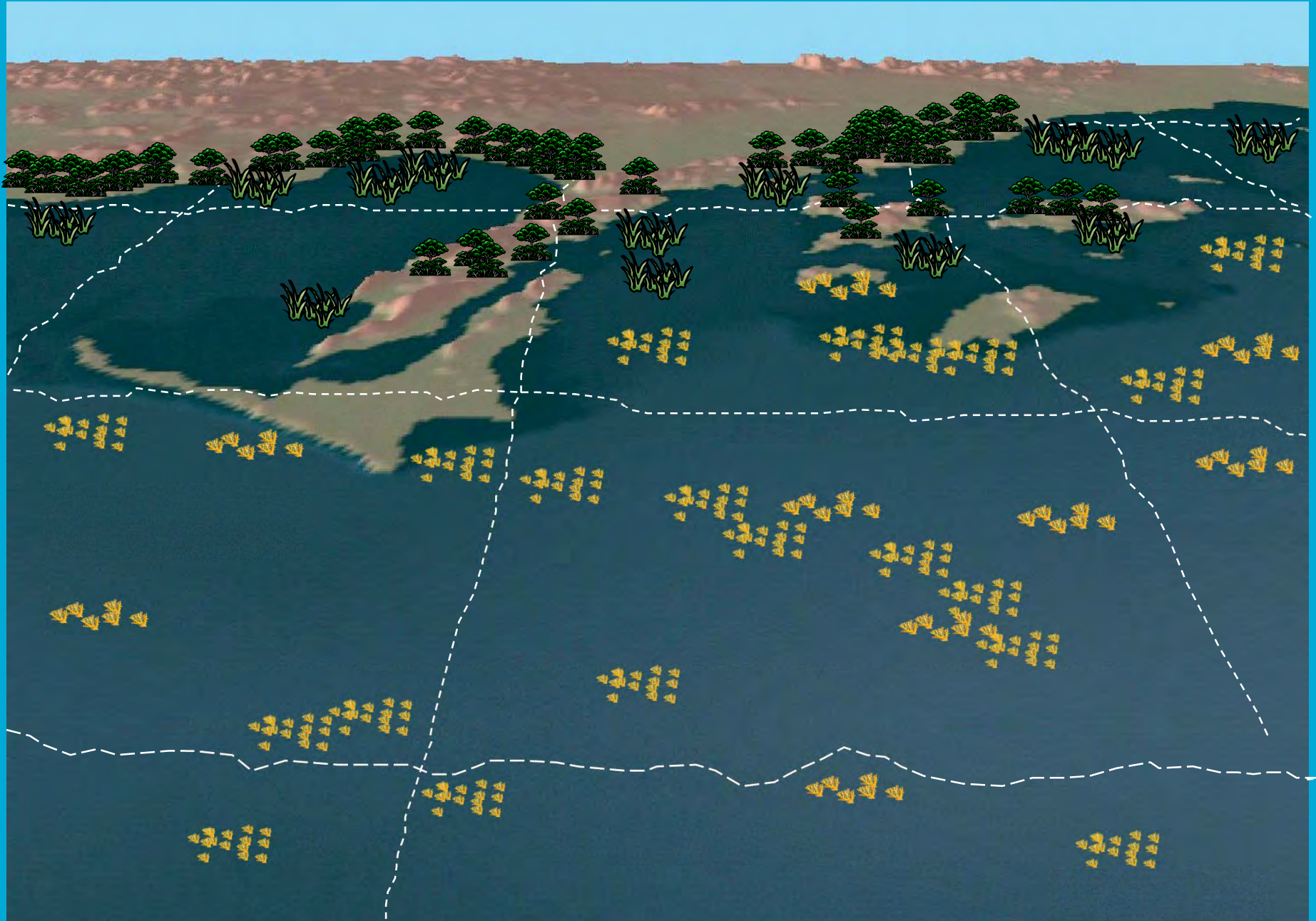
Moving beyond simple reporting

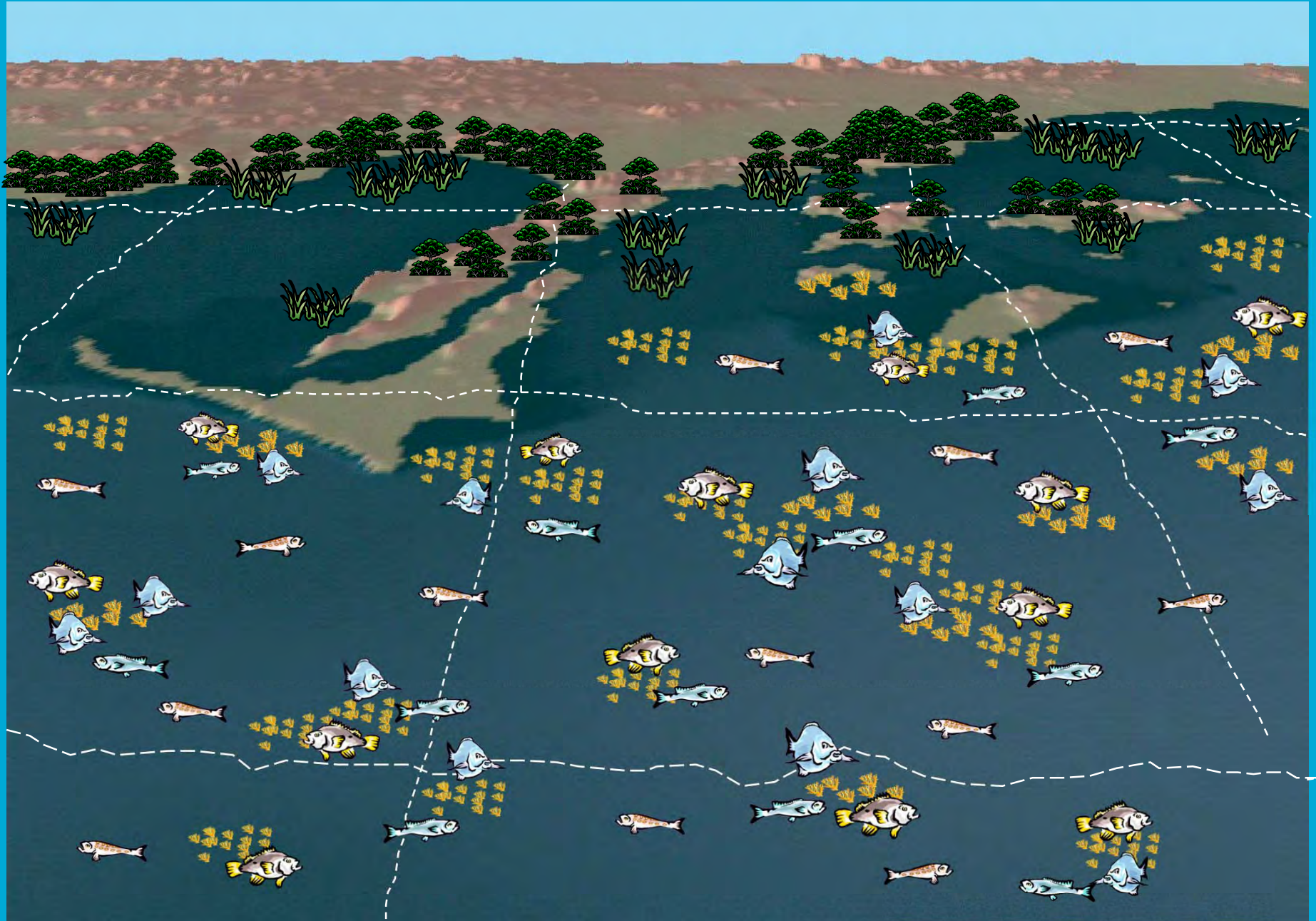
- **More than just typical science reporting**
- **Integrating knowledge to aid management**
- **Needed new tools (models)**

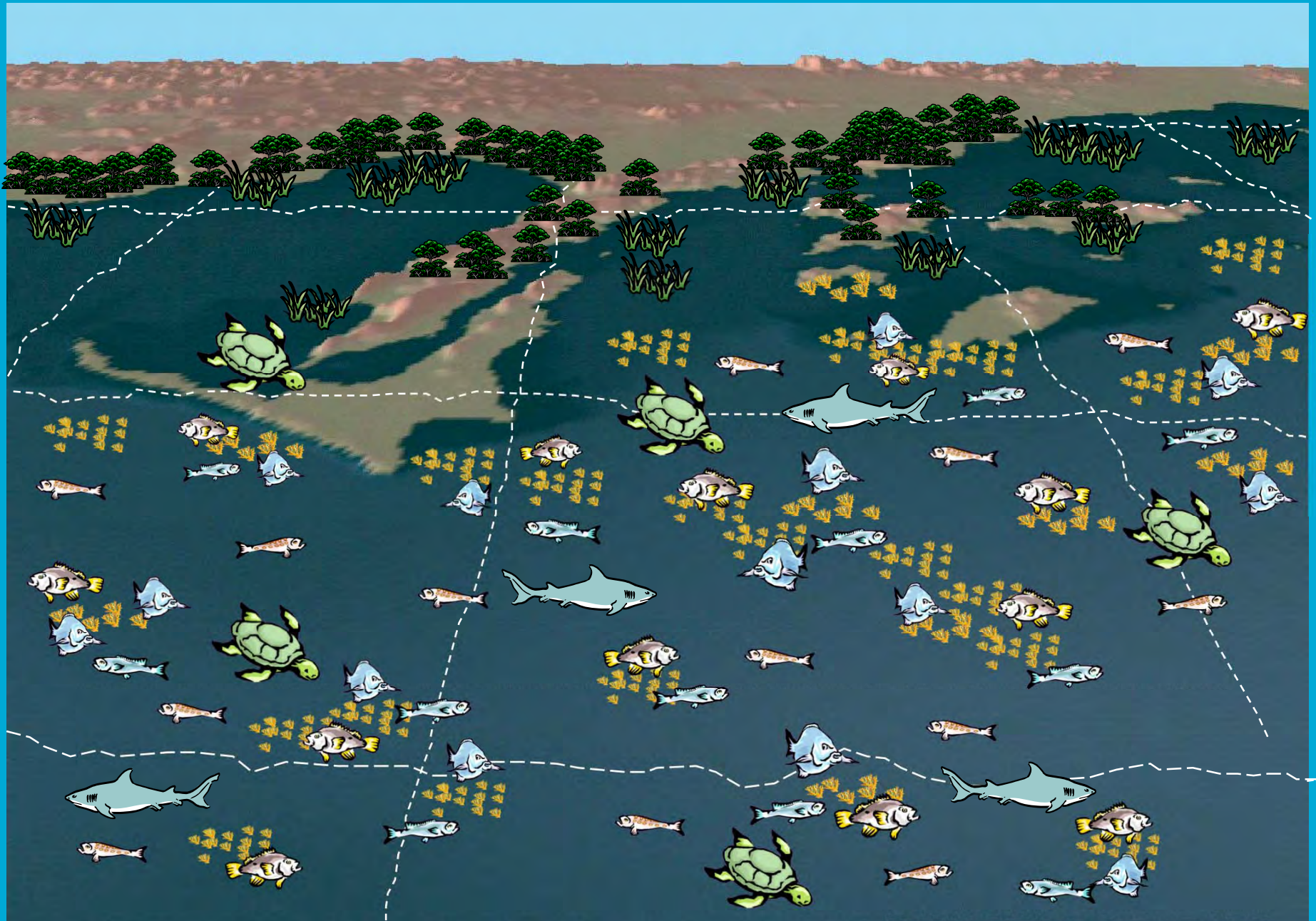


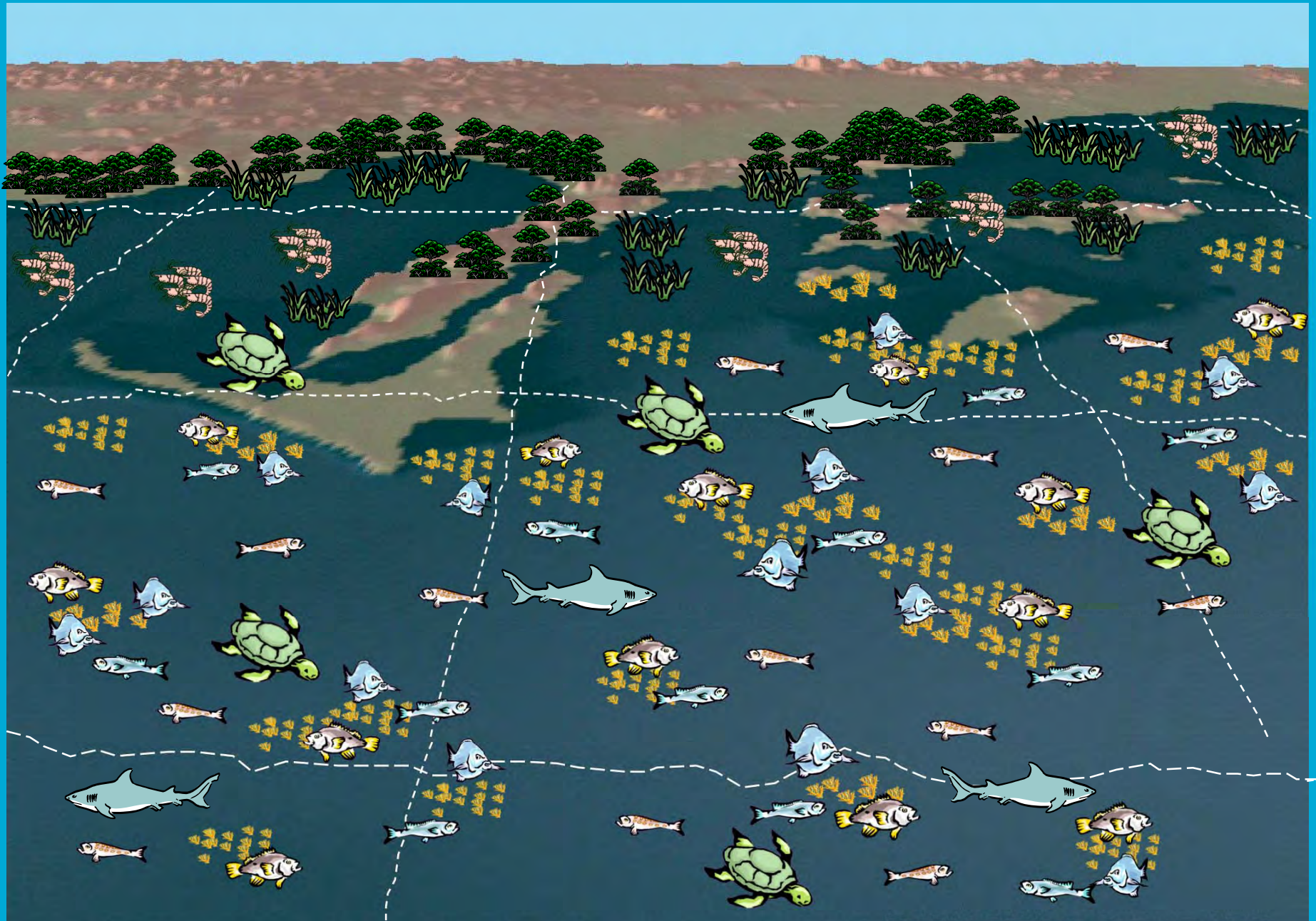
What are the most effective ways to manage the impacts?

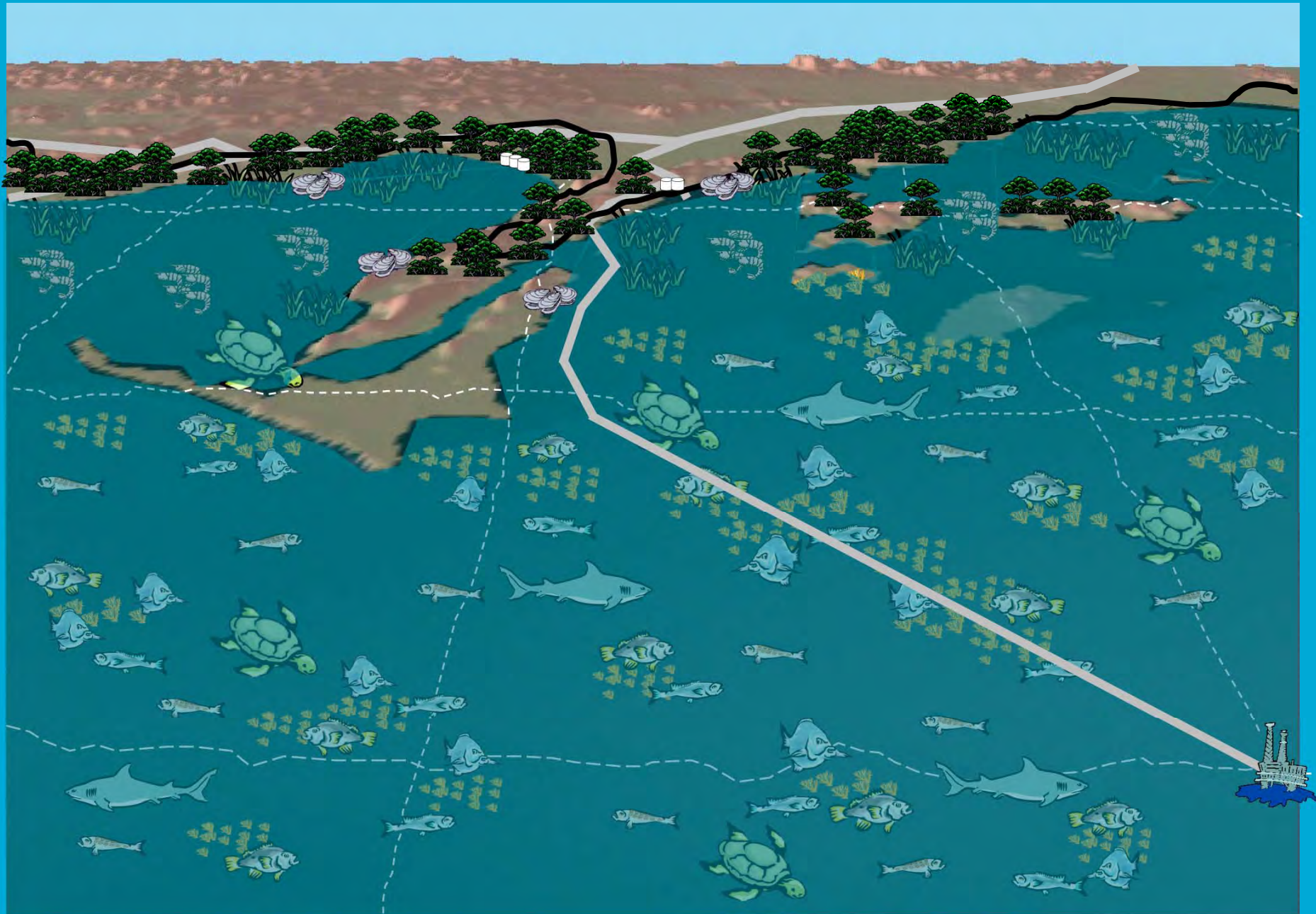


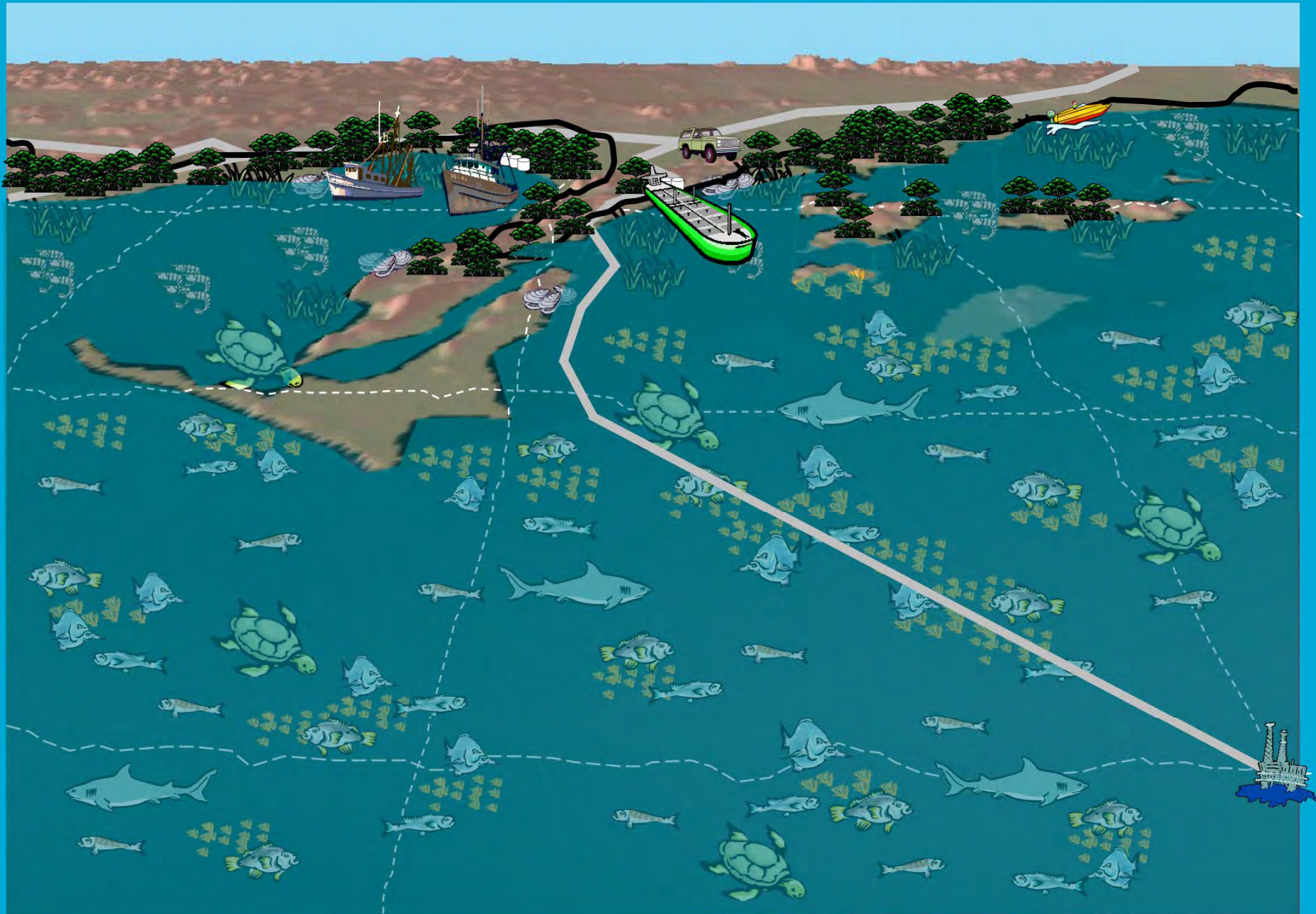


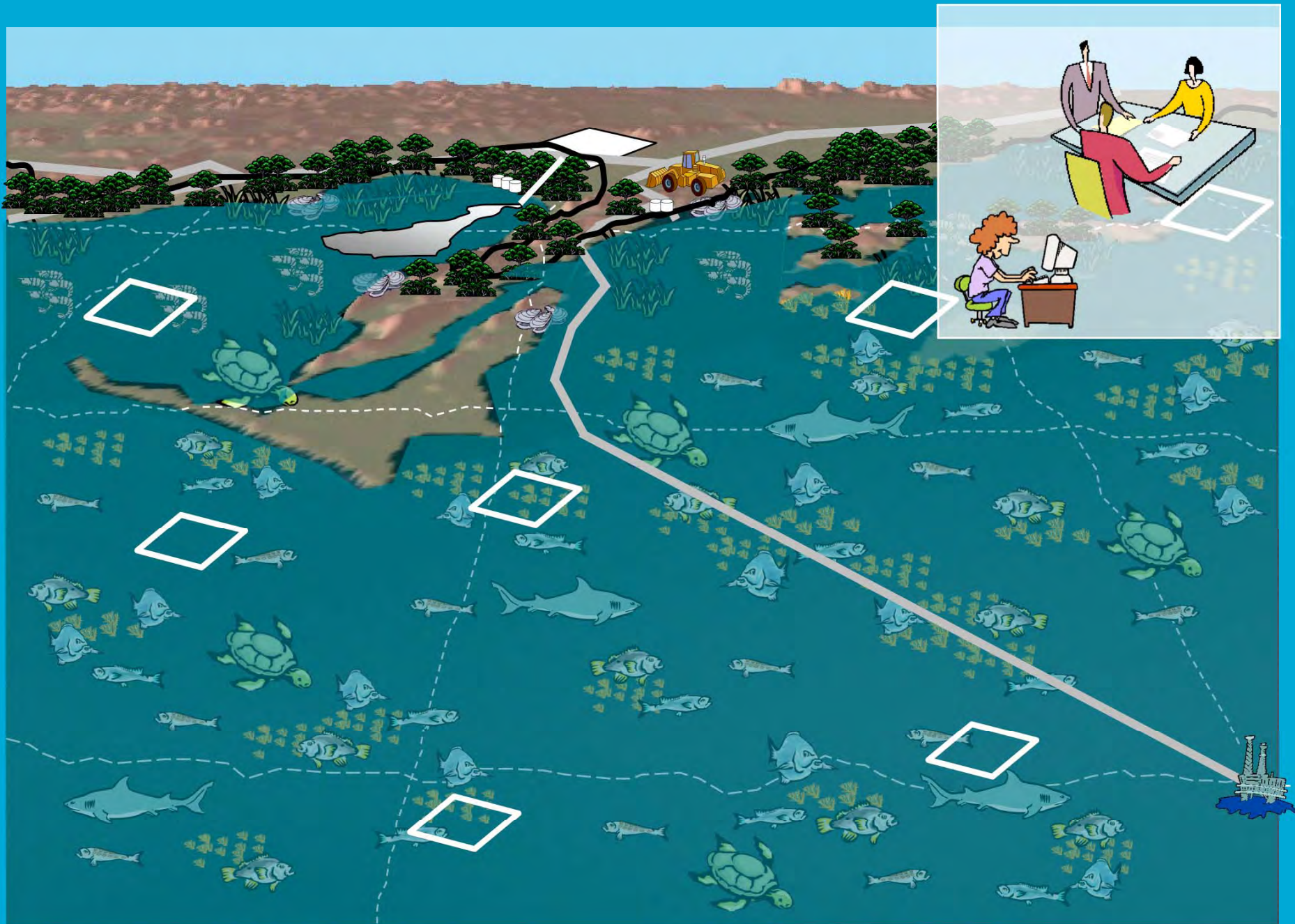




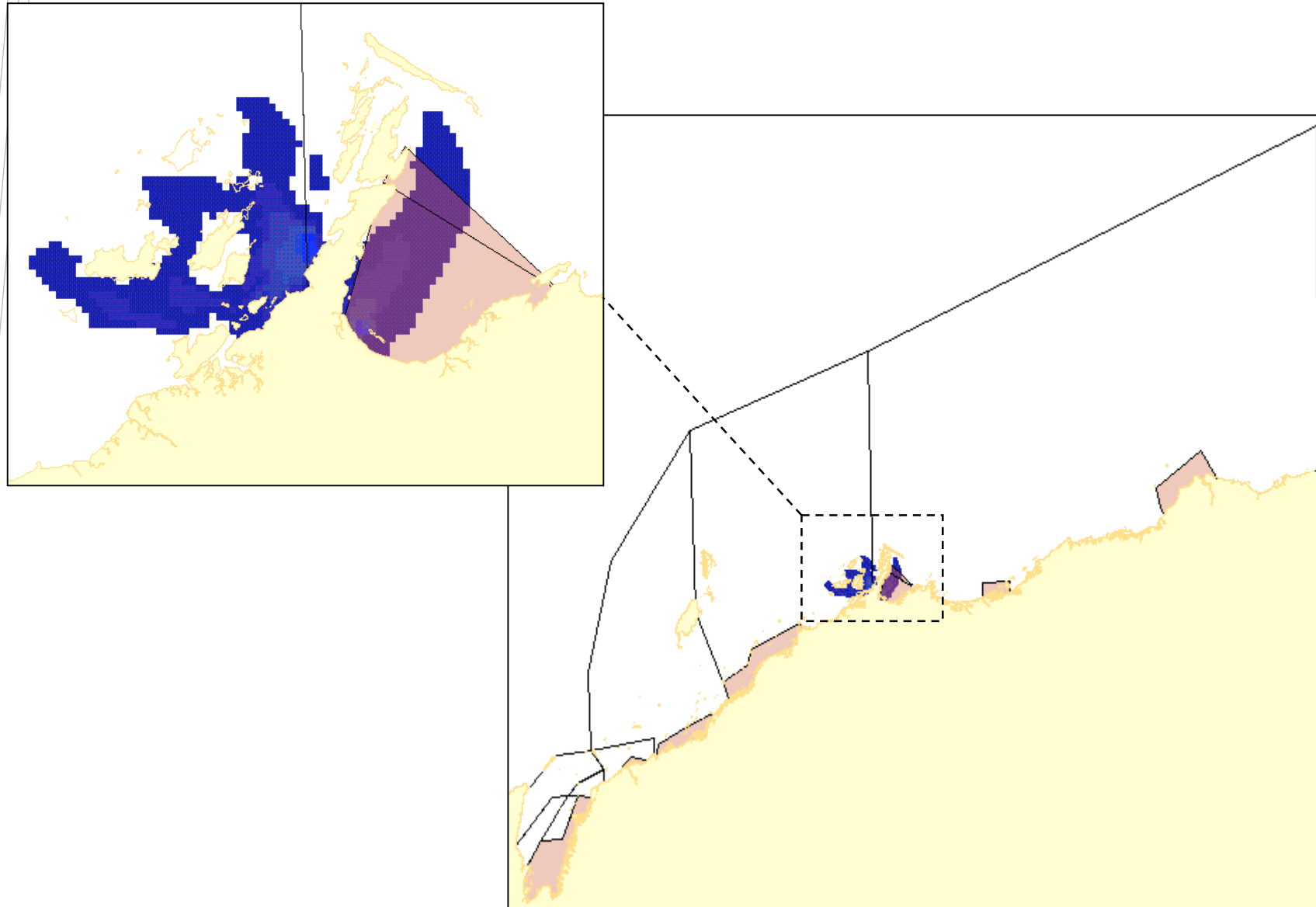




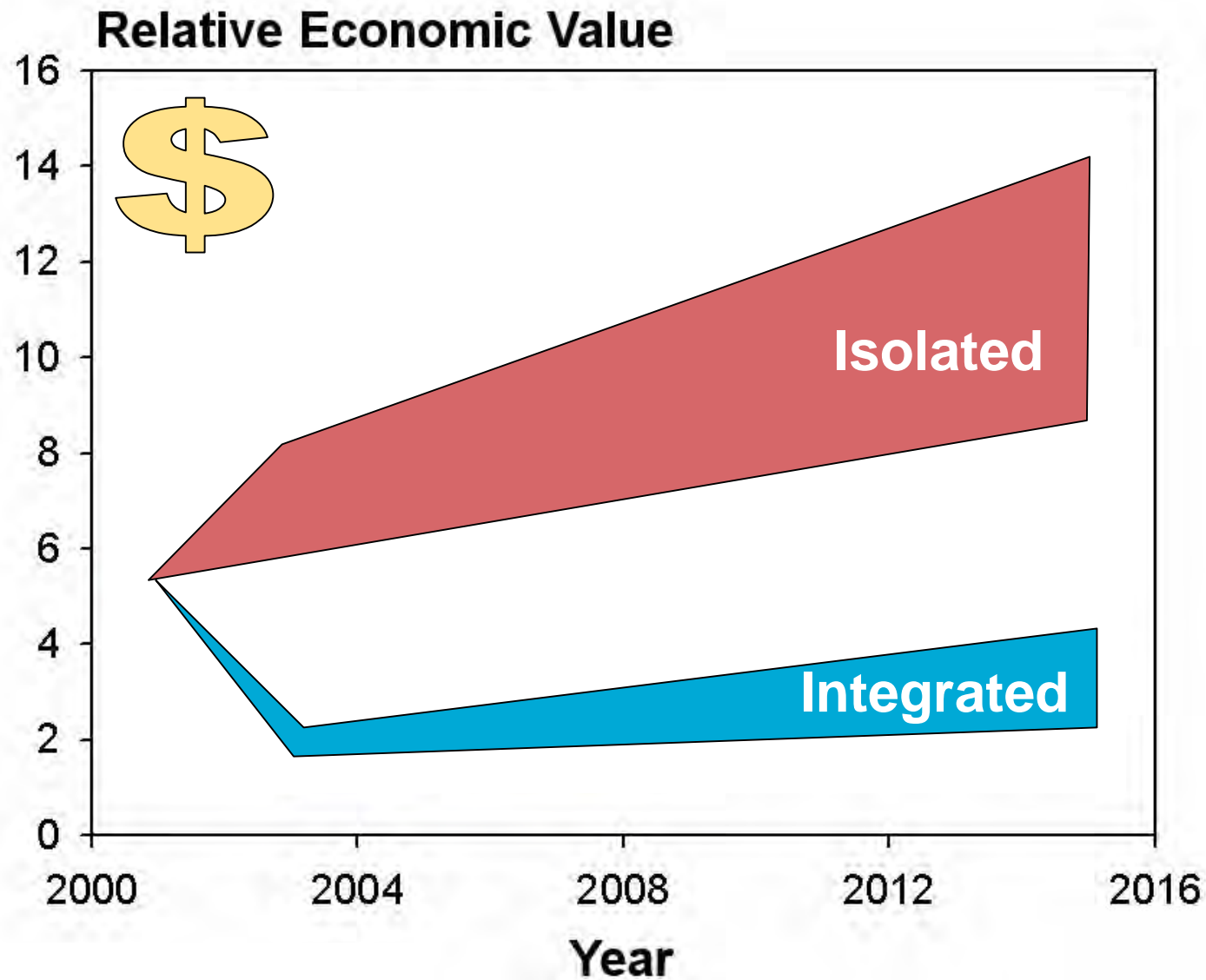




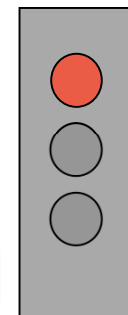
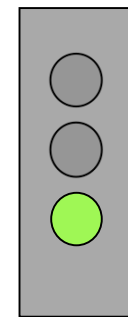
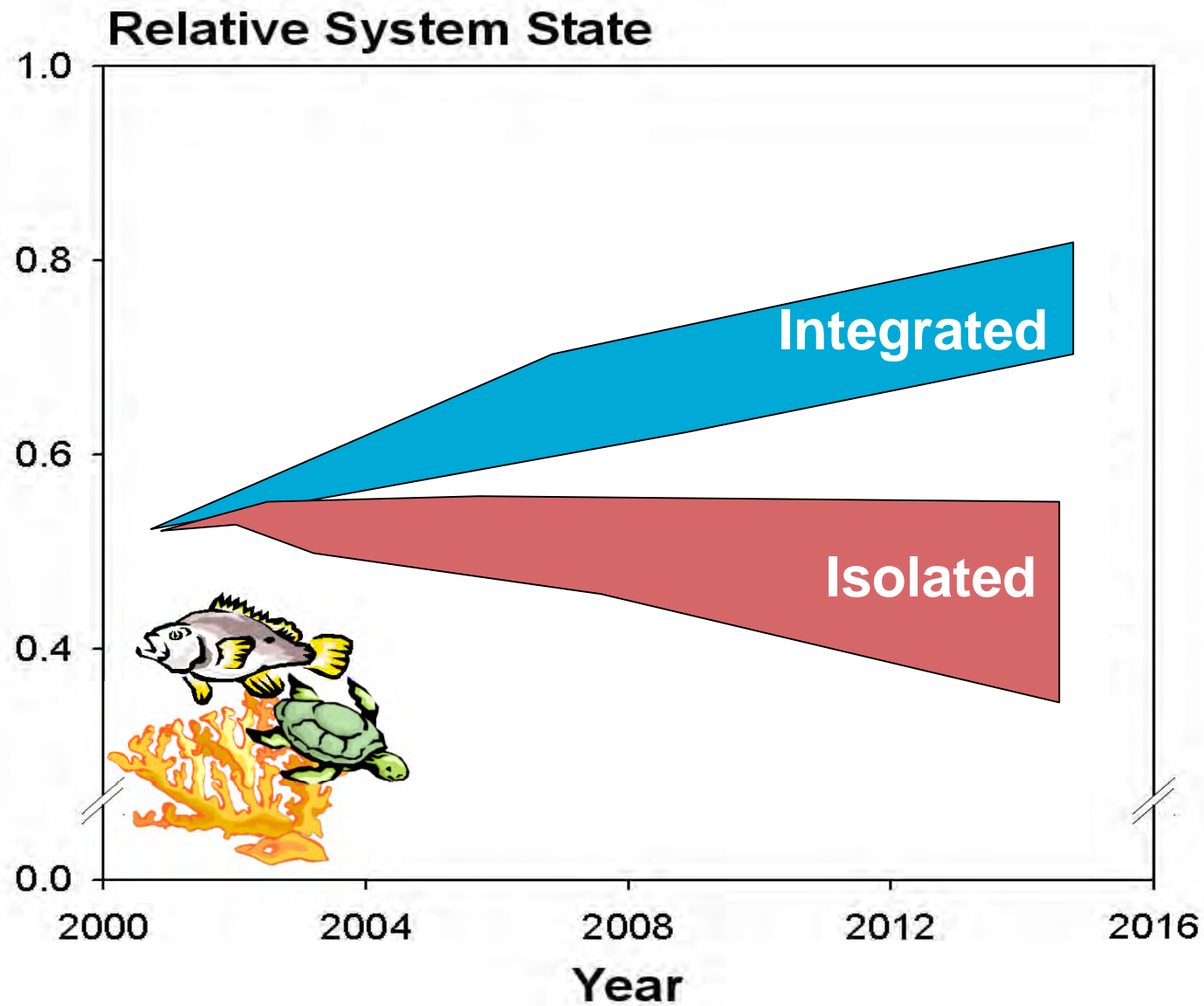
Potential interactions between industries



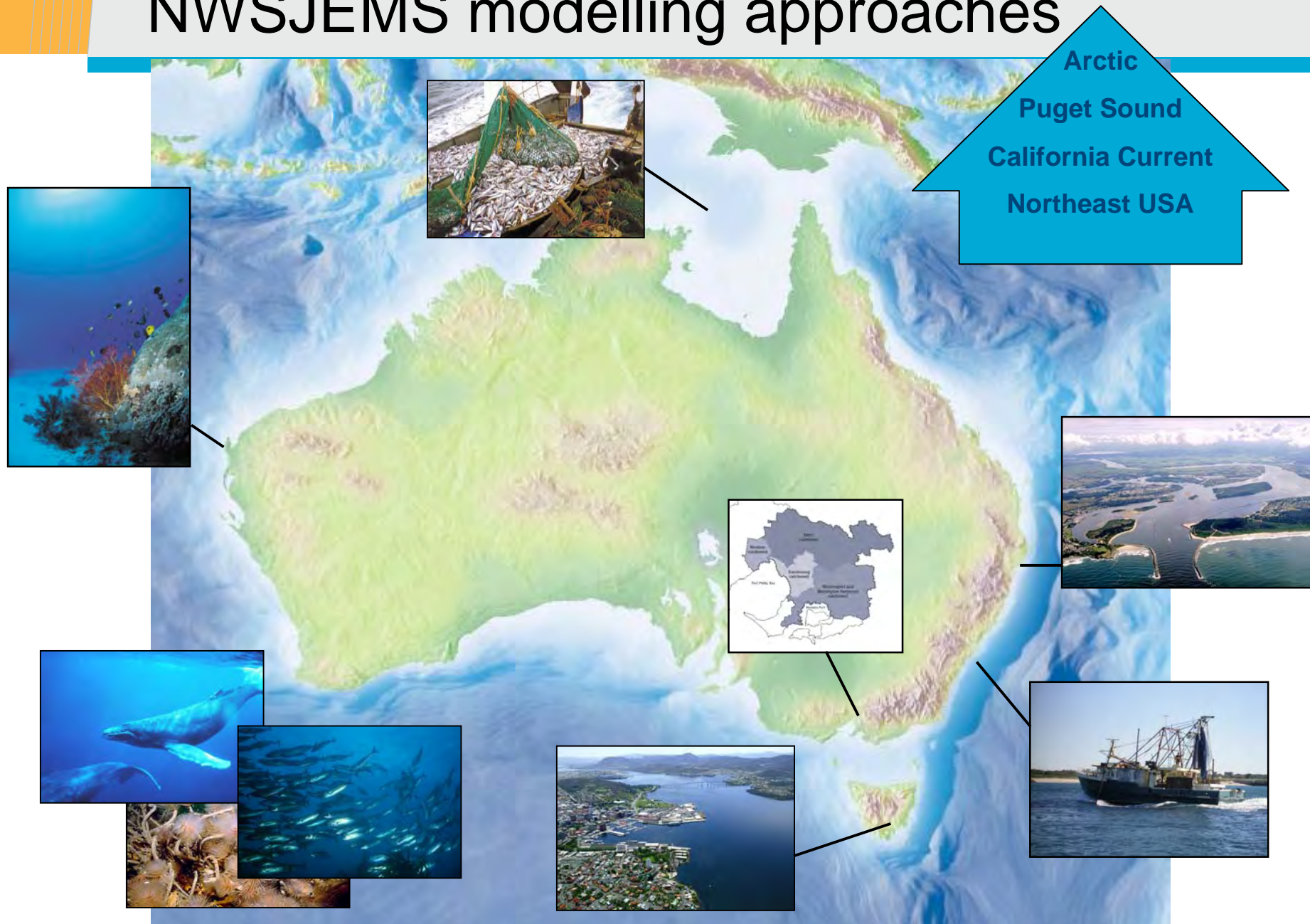
Highlighting trade-offs



Highlighting trade-offs



National and international adoption of NWSJEMS modelling approaches



Benchmark science

- **Informing management decisions**
- **Key benchmark**
- **Tools rolling out nationally and internationally**
- **Defining new standards and approaches**



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Contributors to NWSJEMS

Western Australian agencies

Department of Environment and Conservation
Department of Fisheries
Department of Industry and Resources
Department of Land Information
Department for Planning and Infrastructure
Pilbara Tourism Association
Shire of Roebourne
Town of Port Hedland
Tourism Western Australia
Western Australian Land Information System
Western Australian Museum

Commonwealth agencies

Australian Institute of Marine Science
Geoscience Australia
CSIRO

Industries

APPEA
Apache Energy
BHP Petroleum
Chevron Australia
Dampier Salt
Hamersley Iron
Mermaid Marine
Woodside Energy

Consultants

Cognito Consulting
David Gordon International Risk
METOCEAN Engineers
Oceanica

