



COST-BENEFIT ANALYSIS FOR THE APPLICATION OF A MULTI-SENSOR APPROACH NEAR SHORE HYDROGRAPHY

Andrew Waddington



TS06J_Hydrography in action 1_Waddington_

VALUE ECONOMY



Gaps in knowledge and data about the state of our oceans, seabed resources, marine life and risks to habitats and ecosystems

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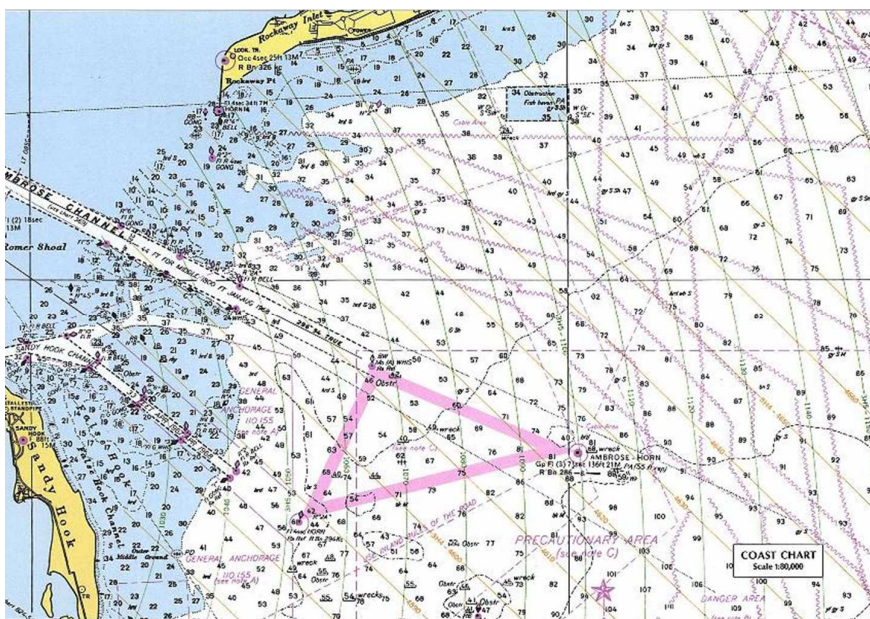
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THE COASTAL ZONE



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THE NAVIGATION - ACCESS



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EXPLOITATION OF MINERALS

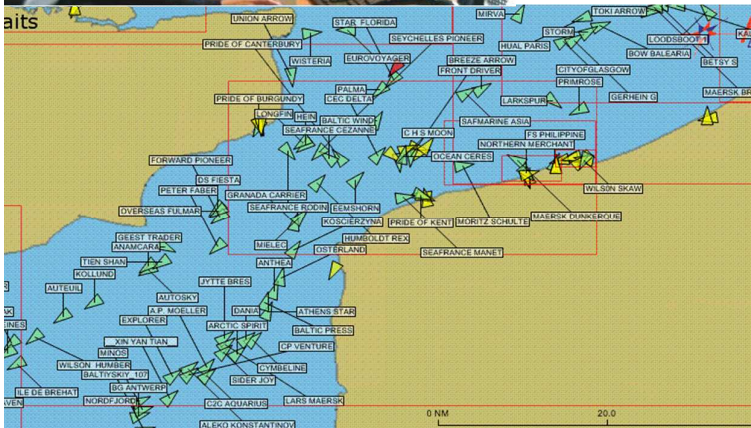


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MANAGEMENT AND REGULATION



Requires knowledge and information – especially of the space, which is dynamic

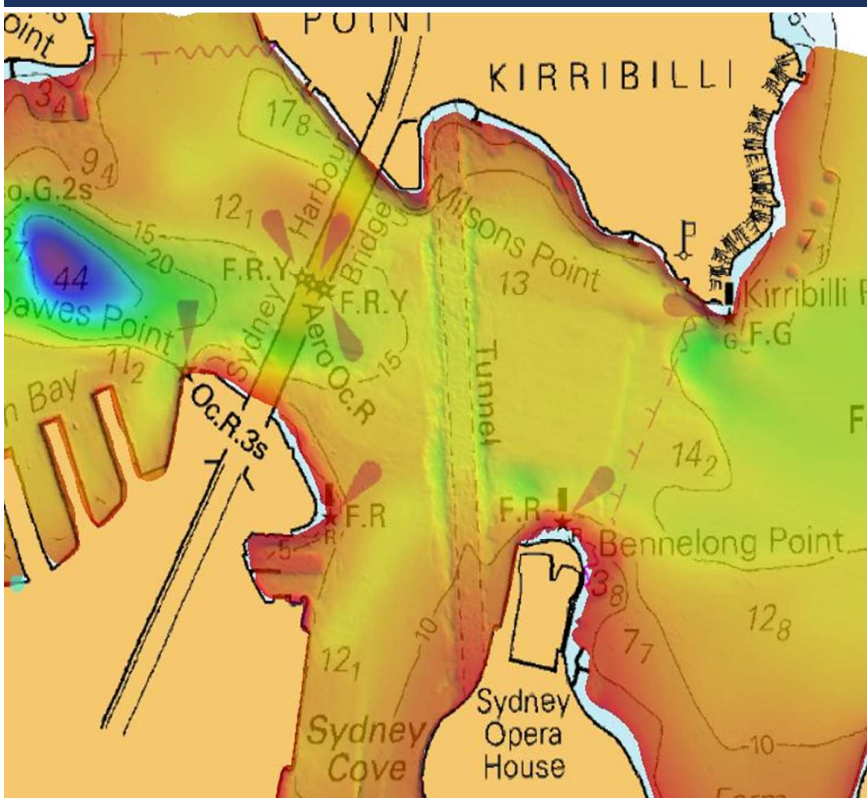


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INCREASING PRESSURES ON THE SPACE

NEW ROLES FOR HYDROGRAPHY?



or just the same roles applied in a different way?

VIROONMENTAL MANAGEMENT



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VIL ENGINEERING

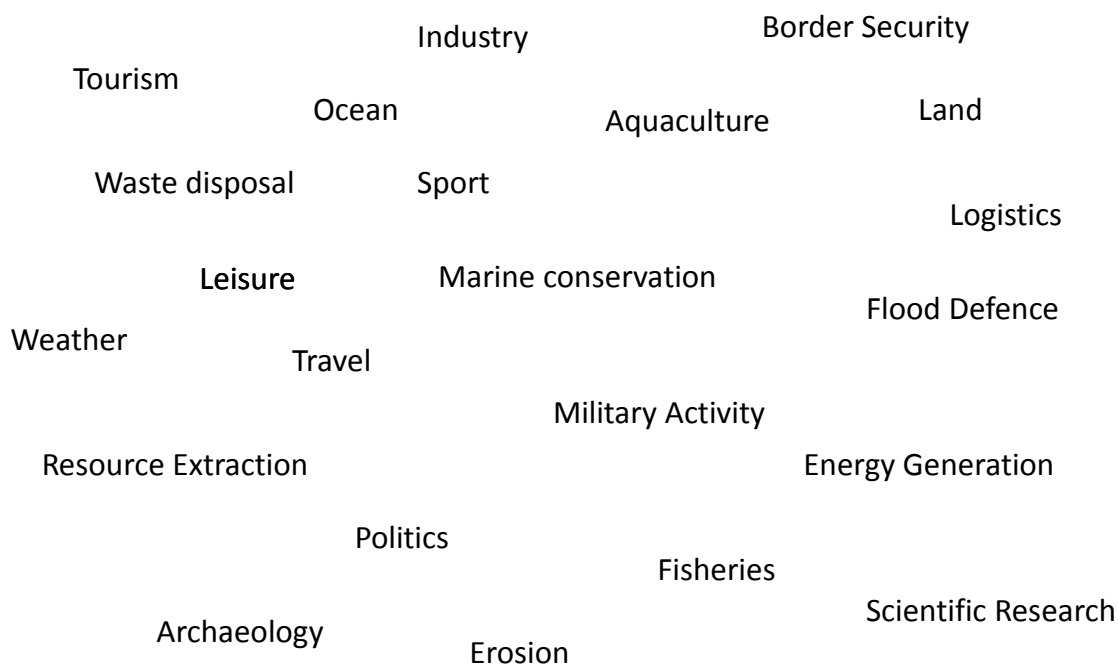


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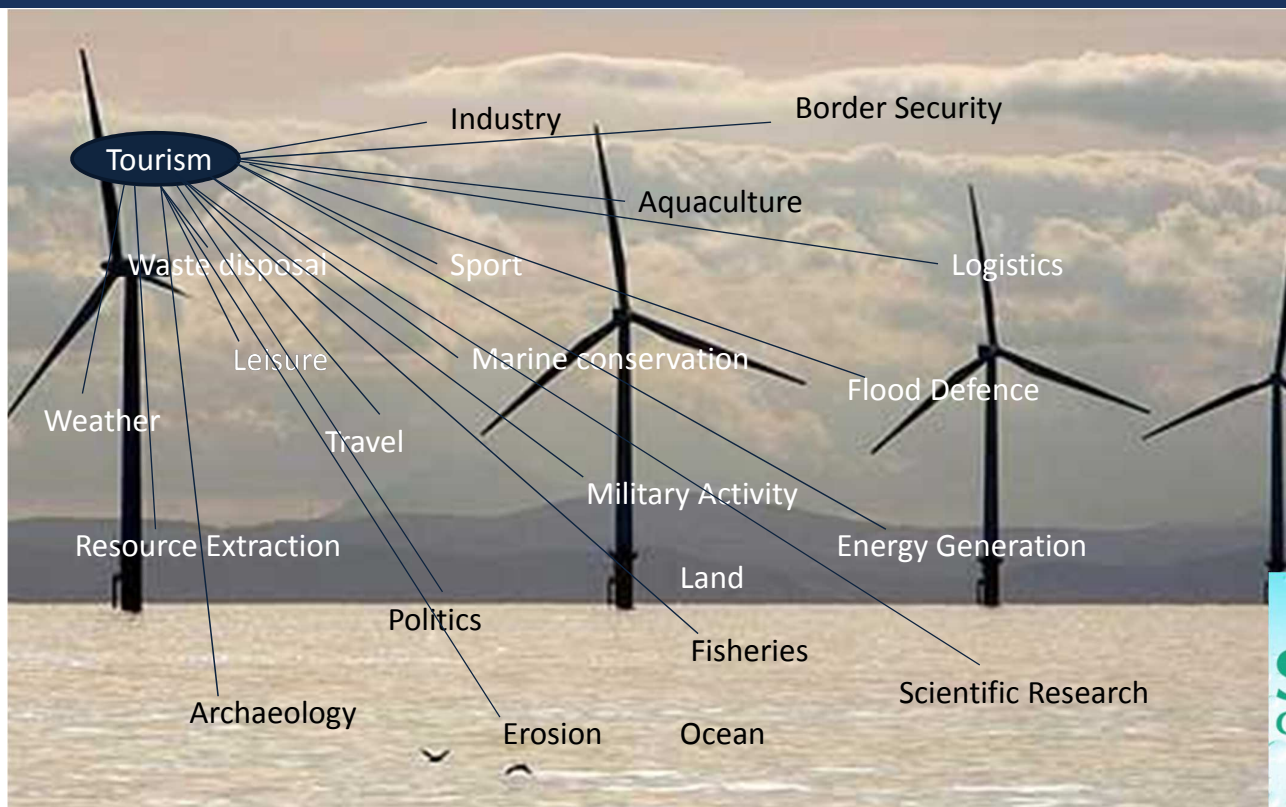


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ASTAL ZONE INFLUENCES AND ACTORS



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INTEGRATED GEOSPATIAL APPROACH?

Option A - collect hydrographic data

- Ignores influences and relationships
- Does not identify project impact and impacts on project
- Potential higher cost to client in longer term
- Thinking in a vacuum – not representative of the real world

Option B – collect, analyse, and present multiple data types separately

- Better, but potential for temporal dislocation
- Increases error budget unnecessarily
- Does not analyse relationships – only data points
- Large collation and secondary analysis burden for client

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Use an integrated geospatial approach for.....

- Requirement planning
- Data gathering
- Analysis
- Visualisation
- Production

Hydrography!

.....across the coastal zone – land and sea.

cial, economic and environmental considerations - the potential of a survey goes beyond the 2-dimensional view. There is more to hydrography than just a navigational chart.

Measurement, regulation and control of environmental impact – benthic mapping, modelling, pollution monitoring, disaster mitigation, pollution control

Spin-off industries / activities – aquaculture, non-cruise tourism, diving

Secondary anchorage

Traffic and demand management

Climate change impact mitigation

Regulatory compliance

Consider existing data sources – charted depths, echo sounder information from visiting ships, local knowledge, crowd-sourced data, tidal data

Consider current shipping traffic patterns

Consider forecast shipping traffic patterns – without the survey / with the survey

Consider contribution of survey to other infrastructure projects

Consider contribution of survey to environmental projects

Consider contribution of survey to regulatory responsibilities

Consider contribution of survey to other industries



- Assisting the safe conduct of a rescue effort
- Containing related pollution
- Enabling a recovery
- Permitting traffic management (diversion)
- Predicting the most probable short term and long term impact on the ecosystem

- Social and environmental effects
- Increased resilience in the infrastructure
- Commercial and residential economic development
- Investment and planning
- Regulation and management
- Managing risk

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a.waddington@aamgroup.com