Overview

- Oceans Policy – principles & information perspectives
- Marine data coordination forums
- Technology & systems necessary for marine components of an ASDI
- NOO’s capacity-building role
AOP & Data Requirements


NOO – 47 staff, offices – Hobart, Canberra, Townsville, Darwin
AOP & Data Requirements

- ESD is at the heart of Australia’s Oceans Policy as are two principles:
  - **Integrated oceans management** which recognises that planning and management need to be integrated across sectoral agencies and governments to satisfy the socio-economic and ecological objectives of ESD. This is necessary because marine-based activities may overlap or interact, resulting in conflicts between users and/or cumulative impacts on the ecosystem.
  - **Ecosystem-Based Management** which recognises that maintaining the structure and function of ecosystems is vital and that human uses and ecosystem health are interdependent.
AOP & Data Requirements

- 13 Large Marine Domains
- RMP vehicle for implementing AOP. SE Plan to be released in 2 weeks time
AOP & Data Requirements

Statutory Information

- Copies of various UN Conventions,
- Copies of various State and Federal Acts and Regulations,
- Identification of places of National Estate significance (designated or meeting requirements),
- Existing fisheries management zones, boundaries, legislation and management instruments,
- Planned and designated marine reserves and conservation areas,
- World Heritage areas or areas that might meet World Heritage zoning,
- Areas that may be affected by Environmental Impact Assessment requirements,
- Areas requiring environmental protection under various pieces of legislation,
AOP & Data Requirements

Economic Considerations

- Nature and extent of existing marine resources (quality, quantity, value and uses),
- An evaluation of sustainable exploitation practices (using models of yield under different management scenarios or constraints – need to know resource location, resource yield both current and historic in the context of exploitation practices used),
- Structure and trends of marine based industries (Fisheries, Petroleum, Tourism, Mining & Minerals, bioprospecting, shipping, research and conservation),
- Potential conflicts between uses,
AOP & Data Requirements

Social and Cultural
- Community values (concerning attitude to uses, cultural heritage and amenity) within the region,
- Regional demographics,
- Evaluation of social impacts or implications of differing planning options or management regimes.

Impacts
- Threats posed by introduced marine pests,
- Type and amount of chemicals entering the environment (against background levels and estimation of risk associated with toxicity),
- Impacts associated with resource exploitation (both ecosystem and on other uses),
- Impacts associated with human uses other than resource exploitation (both ecosystem and on other uses),
- Land and sea based sources of pollution
- Impact of natural events
AOP & Data Requirements

Indigenous
- Indigenous values (concerning attitude to uses, cultural heritage, and amenity) within the region,
- Value of region to indigenous economy,
- Breakdown of social statistics for indigenous people living within the Region,
- Identification of existing or proposed marine claims,
- Existing indigenous management arrangements within Region.

Biological & Physical Characteristics
- Identification of species distributions and habitats (including migratory and threatened species),
- Important species habitat requirements and life-cycle characteristics,
- Evaluation of physical ecosystem characteristics (e.g. water column characteristics such as nutrients, temperature, salinity, and productivity; water masses and currents, benthic community composition, sediment chemistry and composition),
- Categorisation of habitats into bio-regions,
- Regional climatology, and
- Models of ecosystem processes
AOP & Data Requirements

Healthy oceans: cared for, understood and used wisely for the benefit of all, now and in the future.
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**DRIVERS**
- Oceans Policy (Championed by NOO)
- Marine Science & Technology Plan (Championed by former DISR)
- Commonwealth Spatial Data Access & Pricing Policy (Cabinet approved 2001 – championed by GA in DITR)

**NATIONAL FORUMS**
- Heads Of Marine Agencies (HOMA) or OPSAG?
- Australia & NZ Land Information Council (ANZLIC)
- National Marine Data Group (ANMDG)
- Spatial Data Working Group (SDI WG)
- Commonwealth Spatial Data Policy Executive
- Commonwealth Spatial Data Management Group
- Office Spatial Data Management (OSDM)

**CUSTODIANS**
- AFFA; DEST; DoTaRS; EA; AFMA; DITR; Defence; Industry; AMSA; State agencies; Universities; CRC’s
Technology & Systems

• Distributed GIS and web services to underpin information discovery & data sharing; collaborative mapping and modeling services.

• Web services offers
  ▪ Platform and implementation neutral services
  ▪ Conforms to a set of open standards and specifications
  ▪ Leverages a common infrastructure for description, discovery, and invocation.
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**Technology & Systems**

- A network of shared (but distributed) data stores
- With spatial and aspatial internet accessible applications
- We could query data in real time and integrate data on the fly, according to requirements of the day
- Data custodians can focus on managing their content in a distributed computing environment (reducing the maintenance of multiple copies of the same datasets)
- We would have mutual access to considerable investments made by individual agencies in software development and technology,
- And, most importantly conformance to standards and protocols are required but this does not mean standardisation of in-house technology.
Output Required
10 yr fishing stats tabular summary for sharks, within SE region – accompanied by maps & overlays

Tabular stats and maps displayed in an html page

GA – content & mapping service
BRS – modeling & integration service
AFMA – catch logbook data

INTERNET

NOO App

Registry

GA
BRS
AFMA

What
Where
How
Technology & Systems

- Application is thin and contains little business logic - cost little to make.
- Able to find appropriate data and services just by going to the internet – rather than:
  - spending time finding out what data was out there,
  - negotiating with AFMA, BRS and GA about data licenses and access issues,
  - massaging variously acquired data into the same format before being able to analyse and integrate it.
- Data remains with custodians and we just take what we need. Requires virtually no in-house expertise or software to manipulate the data or produce the maps.
NOO’s Capacity Building Role

- We have embraced the ASDI concept.
- We are participating in forums where standards, protocols, projects are being discussed and planned.
- We are sponsoring projects under the auspices of the ANMDG that will incrementally help to bring the marine ASDI about.
- We are using our National Science Work Program to build national-scale, fundamental marine datasets and pilot aspects of the ASDI architecture.
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NOO’s Capacity Building Role

- SST Data Compilation
- Marine Cadastre
- National Bathymetric Grid

Bioregionalisation Project
New 250 m grid provided unprecedented detail of bathymetric features on the Australian EEZ.
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