A National Framework for Hydrographic Data Management

Doug White
Deputy Director Data Management
Australian Hydrographic Office

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Australian Hydrographic Service

- **National Hydrographic Data Custodian**
  - Management of Hydrographic and Oceanographic Data
  - Tidal and Geodetic Data and Products
  - Nautical Information and Publications

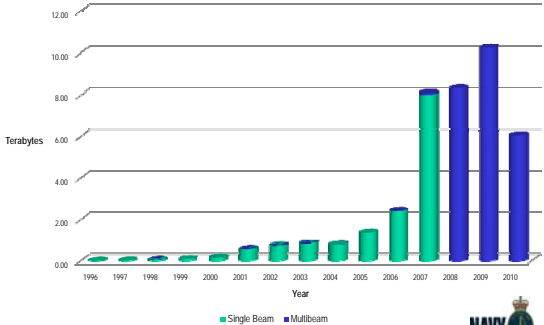- **Support Development of National Framework**

Traditional Data Sources

- **Maritime and Research Silos**
  - RAN Collection
  - Maritime and Port Authorities
  - Resources and Exploration
  - Earth Science Research

How much data is there?
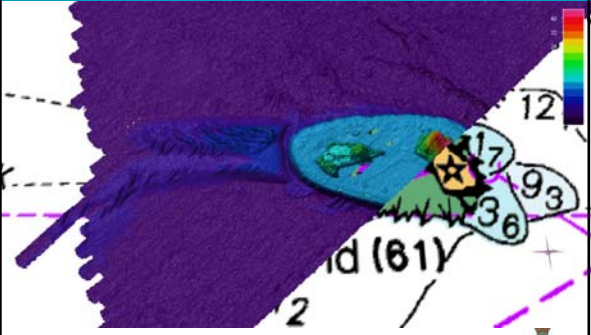### RAN Yearly Data Collection

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What type of data is available?

- **20,000+ manuscript records**
- **Digital Bathymetry**
  - Single Beam
  - Multi-beam
  - LADS
- **Side Scan Sonar**
- **Imagery**

LADS survey data overlaying chart

Full Density Source Data
Laser Airborne Depth Sounder
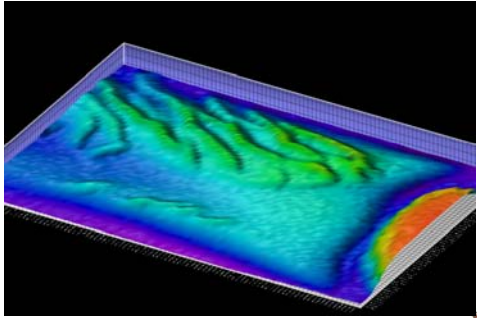
Individual Soundings
Sand Waves Torres Strait
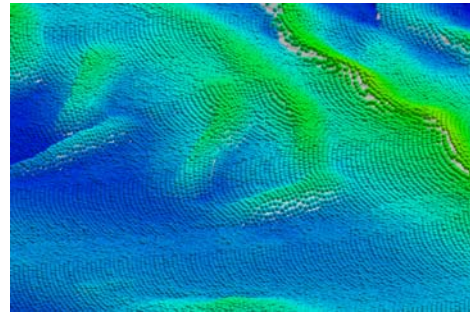
Surface Model

Side Scan Sonar

LADS Air Mosaic 0.5 metre resolution

Using Coastal Environment Data

- Navigational Safety
- National Elevation Data Framework
- Engineering and Exploration
- Tsunami and Climate Change Modelling
- Biodiversity/Habitat and Aquaculture Research
- Seabed Mapping
- Geomorphology

Meteorology and Oceanography Data
Online Data Access

- Coastal Sea Surface Temperatures

Geographic Information
Location=Batemans Bay State=NSW Latitude=35 43S Longitude=150 10E
Monthly Averages
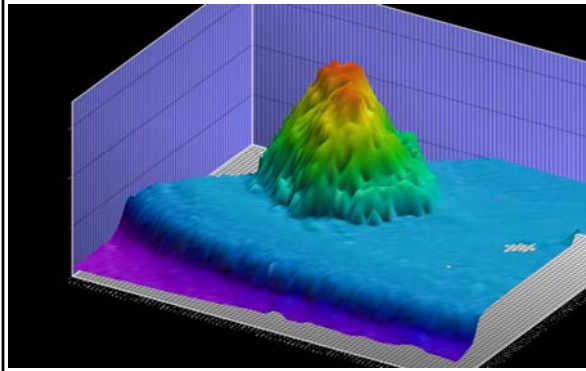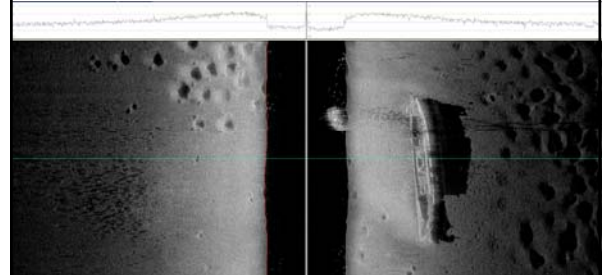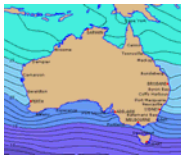Jan=21.5 Feb=21.9 Mar=21.6 Apr=21.2 May=19.2 Jun=17.7
Jul=16.2 Aug=15.4 Sep=16.1 Oct=17.2 Nov=17.8 Dec=19.2
Summary Statistics
Max=21.9 Min=15.4 Avg=18.75 Std Dev=2.36

- Coastal Sea Surface Salinity

Geographic Information
Location=Batemans Bay State=NSW Latitude=35 43S Longitude=150 10E
Monthly Averages
Jan=35.7 Feb=35.7 Mar=35.7 Apr=35.7 May=35.7 Jun=35.7
Jul=35.6 Aug=35.6 Sep=35.6 Oct=35.6 Nov=35.6 Dec=35.6
Summary Statistics
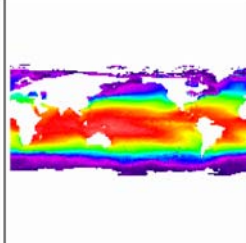Max=35.7 Min=35.6 Avg=35.65 Std Dev=0.05

Meteorology and Oceanography Data
http://www.metoc.gov.au/ArcGIS/rest/services

ArcGIS Services Directory
Home > climatology > ICOADS (MapServer)

Export Map Image (climatology/ICOADS)

Width: 400
Height: 400
Extent:

XMin: -7.1522680598091
YMin: -183.023909205549
XMax: 365.31744190236
YMax: 189.445800756621
Spatial Reference: 4326

Scale: 391338320.999508

BlueNet MEST
http://www.metoc.gov.au/geonetwork/

- XBT Temp Profile
- Secchi Disc Data
- Seabed Samples
- Bioluminescence

Data Management Software Tools

- **Hydrographic Transfer Format (HTF)**
  Distribution format for sounding data
- **HTFBuilder**
  Create and manage HTF data files
- **MarineQC**
  Quality control tool for marine datasets
- **MarineXML**
  Marine environmental data format

External Data Sources

- 60% of all survey data is from external agencies
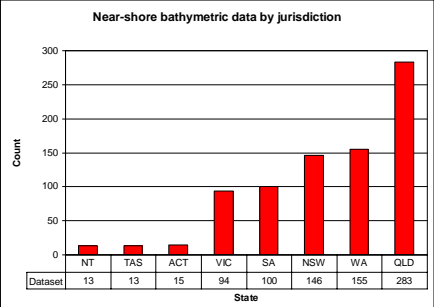
	All Datasets (Oct 10)		Near-shore Bathymetry (+3 Nm coast)		
Data Origin	Count	Percent	Count	Percent	Percent of All
Internal	4892	41	423	34	9
External	7154	59	817	66	11
Total	12046	100	1243	100	10

- Invaluable to the AHS

- Limited National exposure

What do we know exists?

Near-shore bathymetric data by jurisdiction

	NT	TAS	ACT	VIC	SA	NSW	WA	QLD
Dataset	13	13	15	94	100	146	155	283

Where is the data located?
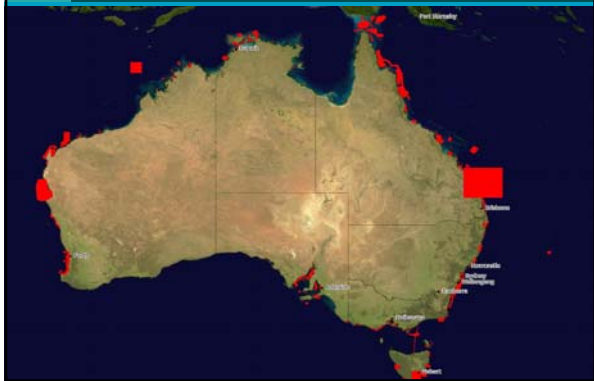
Future Requirement

- Jurisdictional Silos
- New "collectors" of hydrographic data
  - Environmental, Planning and Climate Change Agencies
- Coastal super datasets merge LiDAR and LADS

Engagement

- Requirement for national approach
- Establish a national working group
- Strategies for open data access and exchange
- Engage the "new collectors"

Roadmap Options

- Existing frameworks
  - OPSAG
  - ICSM National Collaborative Framework
- ICSM Working Group (Hydrographer Sponsor)
- Reach agreement
- Pursue funding
- Acquire resources

Recommendations

- Identify all stakeholders followed by national audit
- Establish a national marine SDI
- Review licensing policy
- Ratify a marine metadata profile
- Define a federated custodianship model
- Define or use existing portals for data access

Collective Benefits

- Safety of navigation
- Accurate data for informed decision making
- Enhanced environmental management
- Minimise data duplication and collection
- Enable best practice data management & use of technology
- Enhance the ASDI and NEDF

Web Links and References

- **Data Management**
  - hydro.data@defence.gov.au

- **Data Licensing**
  - hydro.licensing@defence.gov.au

- **Web Links**
  - HTF - http://www.hydro.gov.au/tools/htf/htf.htm
  - MarineQC - http://www.metoc.gov.au/products/marineqc.php
  - MarineXML - http://www.metoc.gov.au/products/marinexml.php

NAVY