

## AusSeabed

Collaborating to maximise Australian seabed mapping efforts

Kim Picard, chair of AusSeabed Steering Committee SDB day 15 May 2019





### Outline

What is and Why AusSeabed? Where is AusSeabed at? What's in it for SBD communities? Where to next?







BRINGING THE SEABED TO THE SURFACE

ausseabed.gov.au

### A community of collaborators from Governments, Academia and Private sectors







BRINGING THE SEABED TO THE SURFACE

ausseabed.gov.au

### Governed by







BRINGING THE SEABED TO THE SURFACE

ausseabed.gov.au

### **Our Mission**

### To improve the *coverage, awareness, quality, discoverability and accessibility* of seabed mapping data for the Australian community.

## **Current state: Coverage (< 25% of EEZ)**



## **Current state: Awareness (mapping for multiple purposes)**



# **Current state: Awareness (many mapping plans)**

### Navigation





## **Current state: Quality (multiple sources, sensors, formats)**

Cost of acquisition Data volume and size GIS knowledge amongst staff Various quality and acquisition parameters Data storage Availability of skillsets Working with Sound Velocity Data currency Incomplete cover Discoverability Data not being processed properly Aggregating depth data into large datasets Incomplete coverage Data access Different proj Incomplete or inaccurate metadata Data cleaning and levelling issues File formats Subjective interpretation of data Data accuracy and quality Compatibility between different software Post-processing delays No standard data acquisition Data cleaning Instrument issues and impacts on the data Data processing and data management Lack of tools for quality assessment Editing depth data

## **Current state: Discoverability & Accessibility (Fragmented)**



## **Drivers for AusSeabed**

### National Marine Science Plan 2015-2025

Undertake systematic collection of environmental social and economic baseline data of Australia's marine estate

### Hydroscheme Industry Partnership Program

Enhance safety of navigation and deliver a nation building program

### Nippon Foundation – GEBCO Seabed 2030

Produce the definitive map of the world ocean floor by 2030 and make it available



## How can the SDB community contribute and benefits?

Benefits to SDB communities	Potential contribution to AusSeabed
Access to data to validate/improve SDB model	SDB guideline
Shape SDB data contribution and development	Coverage of existing and upcoming dataset
Contribution to larger initiatives	SDB feasibility study
Opportunity for innovations	Open datasets
Contact and networks	
SSSI accredited	



### **Strategic Plan**



### **Programme themes**

AusSeabed Data hub Tools, Guidelines and Standards Outreach, Education, and Training,

## **Programme theme: AusSeabed Data Hub**

### Aims

- 1. Become the national point for submission, storage, discoverability and accessibility of seabed data from the region of interest.
- 2. Contribute data to the Nippon Foundation GEBCO Seabed 2030 project
- 3. Complement existing Australian marine data initiatives



### **Product suites**



Bathymetry

Backscatter





#### MBES Water Column

**Sub-Bottom Profiles** 



#### **Sediment Samples**

## Data hub: An end-to-end capability

Survey ledger

- Upcoming surveys details
- Design specs and templates for tendering
- Specs for future data QA



#### **QA & Package**

- For use during acquisition
- Repository of QA checks
- Interface to run QA tool
- Package data for delivery

Processing • pipeline

- Process data to consistent standard
- Prepare data for collection index



 Consistent data structure and quality

- Delivery channels
- Data holding consistent with global marine community



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### Analytics & **Delivery** Portal



- Display and discovery capability
- Accessibility to the-flv'

### **Provenance (metadata)**

## Data Hub: A distributed open access cloud-based platform



## **Data Hub: Data Discovery & Accessibility**

Survey by survey and Compilations Point cloud





## **Programme theme: Tools, Guidelines and Standards**

**Aims:** Develop community-ready resources that enhance the quality, consistency, and ease of seabed data acquisition and processing.

Theme streams:

*Tools:* online tools and databases enabling easier workflows from survey planning through to data processing and analysis.

*Guidelines and standards:* documents outlining current best practice for various aspects of seabed mapping.



## **Tools, Guidelines and Standards**

### **Guidelines**



### National bathymetry priority map



## **Tools, Guidelines and Standards**

### Upcoming survey register



### Survey planning tool

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## **Programme theme: Outreach, Education and Training**

**Aim:** Provide a consistent message across Australia and internationally regarding the benefits of the AusSeabed initiative to the community.

Theme streams:

*Outreach*: enable engagement of potential contributors by demonstrating value proposition to their businesses

*Education*: provide information, raise awareness, and build cooperation and relationships within the marine community

*Training*: provide user training regarding provision, discovery, and accessibility of seabed mapping data

## **Programme theme: Outreach, Education and Training**

- Tracking our community engagement
- SSSI accreditation by assisting to AusSeabed events
- Lecture to Royal Australian Navy Hydrography School: raise awareness of other data type and applications
- CSIRO MNF Collaborative Australian Postgraduate Sea Training Alliance Network (CAPSTAN)





## **Conclusion: Build a complete picture**



## Conclusion: Need all efforts we can and SDB is part of it



Thanks to Liz Johnstone, IXBlue

## **Conclusion: It's possible**

To map 0-200 m (shelf edge only no external territories):



Common methodology: ~ 190 yrs (1 ship/24hrs) @ 200k line m/yr (Credit for these calculations: IX Blue –Thanks)

Recent methodology: ~25 yrs (based on MH370 experience)

### It's possible









## Conclusion

AusSeabed is a community of seabed mappers and users

AusSeabed aims to improve coverage, awareness, quality, discoverability and accessibility of seabed mapping data for the Australian community

SDB community can contribute:

- 1. Guidelines and standards
- 2. Coverage of existing and upcoming SDB data
- 3. SDB feasibility study to inform planning
- 4. Example of open dataset





### Thank you

### **Further information**

Data Hub Formats & Standards Workshop Canberra, 23 May

Hydroffice/QCtools training by NOAA & CCOM-UNH Canberra, 17 June

Australian Marine Science Association 2019 Seafloor Mapping Symposium, AusSeabed AGM & Workshop Perth, 11 & 12 July

AusSeabed : www.ausseabed.gov.au and ausseabed@ga.gov.au





### **Further information**