WORKSHOP SUMMARY REPORT

IMPROVING DEWHA's CAPACITY TO PREDICT THE DISTRIBUTIONS OF MARINE SPECIES

CONVENED BY CERF MARINE BIODIVERSITY HUB

Workshop objectives and approach

On 9 March 2010 the Marine Biodiversity Hub convened a one day workshop between marine scientists and the Environmental Resources Information Network, DEWHA. The objectives of the workshop were to identify:

1. Current DEWHA practices, challenges and objectives for predicting species distributions;
2. Methods, techniques and environmental surfaces developed or investigated by the CERF Marine Hub that address some of the problems of predicting marine species distributions.
3. The advantages and limitations of available data, surfaces and techniques to predict species distributions; and
4. Opportunities to improve ERIN's capacity to predict and maintain species distributions through use or adoption of new surfaces, methods and techniques.

The workshop also provided a good opportunity to explore the usefulness of the Marine Biodiversity Hub as a conduit to specific elements of the marine science community (i.e. for times when DEWHA is seeking advice on marine biodiversity topics).

The workshop was attended by 30 people (see Attachment A for a list of attendees) that represented an even balance of Hub and ERIN staff, and also included experts in particular fields from outside of the Department. The first half the workshop focused on building a shared understanding about the Hub's current and future biodiversity research and ERIN's roles, responsibilities and challenges relating to predicting species distributions. This was achieved through two presentations followed by discussion periods.

The second half of the workshop focused on topics ERIN had identified as having scope to increase the efficiency and accuracy of marine species distributions. This part of the workshop was composed of numerous short presentations, followed by discussion periods specifically related to:

- Availability and access to biological and physical marine data (specifically, species observations and environmental surfaces);
- Potential uses of new biological and physical marine data generated or collated by the Marine Biodiversity Hub;
- Interpretation and potential uses of tracking/acoustic data and commercial fisheries data; and
- Opportunities for improving how ERIN models species and ecological community distributions (e.g. accounting for data quality and quantity and uncertainty).

The final session of the workshop was focused on agreeing on actions to follow up opportunities identified in the workshop.

Workshop outcomes and actions
The workshop achieved its objectives, was perceived positively by participants and achieved four main outcomes.

Better alignment between ERIN and Marine Biodiversity Hub
The workshop generated a better understanding between ERIN and the Marine Biodiversity Hub about their respective roles, responsibilities and future challenges and directions for predicting patterns in marine biodiversity. This is an important development as ERIN plays a key role in DEWHA for storage, access and analysis of marine data.

Marine Biodiversity Hub as conduit to marine science community
The workshop drew on a range of scientific expertise to focus on challenges and opportunities to improve ERIN's capacity to predict the distributions of marine species. Approximately half of the participating scientists were part of the Marine Biodiversity Hub. The other half was associated with other research groups (i.e. CERF research hubs, research agencies, universities and private consultants). The workshop demonstrated the potential of the Marine Biodiversity Hub to act as an effective conduit for advice from the broader marine research community.

Identification of research outputs from CERF transition funds
The workshop identified 2 useful research outputs to be considered for delivery with CERF transition funds, they are:

- Providing advice to ERIN on suitable marine environmental layers for modelling particular threatened marine species or groups of marine species; and
- Providing advice to ERIN about the strengths and weaknesses of areas within marine environmental surfaces (i.e. to understand where uncertainty is relatively high).

Identification of research ideas from CERF Phase 2
The workshop identified 2 future research areas that could significantly improve ERIN's capacity to develop effective marine species distributions, they are:

- Developing methods to spatially identify the life history attributes of particular threatened species (e.g. breeding, feeding, etc) from a range of marine tracking / telemetry devices.
- Developing new methods/improvements to existing methods for utilising available marine data to predict distributions of species;

Developing useful biodiversity metrics for marine biodiversity is another area of investigation which could be explored with the Marine and the Heritage divisions

Another type of outcome from the workshop was agreement to follow-up on potential opportunities that need more consideration; they were:

- CSIRO (Tony Rees) to liaise with ERIN (Jeff Tranter) on documenting expert knowledge (i.e. consideration of Aquamaps approach);
- Marine Biodiversity Hub (Nic Bax) to contact Lee Belbin/ and explore opportunities to align the Hub's data outputs with data management initiatives for IMOS and Atlas of Living Australia
- Marine Biodiversity Hub (Nic Bax) to contact AFMA (Beth Gibson) to investigate potential to access fisheries data on threatened, endangered and protected species

- Marine Biodiversity Hub (Piers Dunstan) to follow up with ERIN on potential uses of ERIN uses of archetypes methodology for predicting distribution of listed communities.

Attachment A – Attendees at the workshop on Improving DEWHA's Capacity to Predict the Distributions of Marine Species convened in Canberra on 9 March 2010.

Attendees	**Institution**
Jason Ferris	DEWHA – Landscape Analysis and Ecology Section
Jeff Tranter	DEWHA – Landscape Analysis and Ecology Section
David Holt	DEWHA – ERIN Marine Team
Jason Passioura	DEWHA – ERIN Marine Team
Annette McIntosh	DEWHA – ERIN Marine Team
Marcus Baseler	DEWHA – Landscape Analysis and Ecology Section
Robert De Vries	DEWHA – Landscape Analysis and Ecology Section
Larry Guo	DEWHA – Landscape Analysis and Ecology Section
Cherie Hart	DEWHA – Landscape Analysis and Ecology Section
Colin O'Keefe	DEWHA – Landscape Analysis and Ecology Section
Maris Ozolins	DEWHA – Landscape Analysis and Ecology Section
Randal Storey	DEWHA – Heritage Section
Josh Thompson	DEWHA – CERF Program
Nic Bax	Marine Biodiversity Hub
Paul Hedge	Marine Biodiversity Hub
Simon Barry	CSIRO - CMIS
Keith Hayes	CSIRO - CMIS
Piers Dunstan	Marine Biodiversity Hub
Scott Foster	Marine Biodiversity Hub
David Clifford	CSIRO - CMIS
Jane Elith	University of Melbourne and AEDA
Glenn De'ath	Australian Institute of Marine Science
Jin Li	Marine Biodiversity Hub
Zhi Huang	Marine Biodiversity Hub
Toby Patterson	CSIRO - CMAR
Hideyasu Shimadzu	Marine Biodiversity Hub
Tony Rees	CSIRO - CMAR
Brendan Brooke	Marine Biodiversity Hub
Simon Ferrier	CSIRO
Matthew Koopman	Fishwell Consulting