

Exmouth Gulf Region Scientific Forum Summary of final discussions

These notes were compiled during the Workshop stage of the Scientific Forum. They are likely to be incomplete and people interested in aspects of the discussion should try to contact the names listed alongside the notes.

Helen Penrose presentation notes

- Suggested that quantitative aerial surveys of dugongs should be carried out (continued?)
- Useful study would be elemental composition of dugong calves – could be useful as an indicator of the flowing of the Leeuwin Current
- Should study links between dugong distribution and habitat use.

Other research that people were aware of

Bob Prince
Bioacoustics of whales (Rob Macaulay, Curtin)
Large vertebrate work

Mike Travers
Fish samples – 3 years' seasonal data – associated with prawn fishery

Kurt Jenna whale tracking (plus links with the Antarctic Survey biologists)

Norm McKenzie and Tony Start (CALM) – biological information on the area

Ron Johnson (WA Museum) – bird studies (published). Other work from the Museum dealing with birds and reptiles (unpublished)

Long-term *Drupella* monitoring at Bundegi (CALM) – Shannon Armstrong (DEC)

Straits Resources ERMP with technical appendices due in 4-6 weeks should review much of this info.

WA Museum – surveys at the Muiron Islands and into the Gulf. Major focus on fish and invertebrates

Chari Pattiaratchi – oceanographic studies – may have reached into the Gulf

Nick D'Adamo – oceanographic studies

CALM research database for Ningaloo will include surrounding areas, including Exmouth Gulf – contact Shannon Armstrong (DEC)

SE part of Exmouth Gulf – studies by the Marine Protected Areas Working Group

UWA reptile studies at Giralia Bay

Geoscience Australia – work in the Gulf on interglacial sea levels and storm surge associated with Cyclone Vance (Lindsay Collins)

Oil exploration – info will be sent direct to Edwina

Fish WA and Murdoch Uni – biological info on fish and sharks

Bill Humphries (WA Museum) – stygofauna

Gascoyne Environmental Review – Fisheries (Jenny Shaw)

Human use info for the region – CALM database (Exmouth regional office)

Recfishwest – info on human use

David Sutton and Peter Hitchcock – World Heritage Review

Exmouth marina – water quality data

Brad Norman – anecdotal records on great whites and whale sharks in the region

Defence forces - ?

NW Shelf/JEMS – review

Des Mills – sediment information

Pilbara coastal waters study (DoE)

Ningaloo coastal strategy does include parts of the Gulf

Cultural history from the start of the fishery – Bob Prince

Research gaps identified

Geological history. Sedimentary history affecting biological systems (Lindsay Collins)

AIMS model incorporating meteorological data. Could incorporate wind/wave data to work out circulation patterns. Base this on early AIMS data.

Fish data collected by CSIRO study (Neil Loneragan) – reports produced. Can this be linked to AIMS data?

Would be useful to make comparisons between Shark Bay and Exmouth Gulf. It was felt that Exmouth Gulf was quite different with better exchange/cross-over with the open ocean.

Need a clear distinction between Exmouth Gulf and Ningaloo Reef (Eric Paling). There is a need for basic info on the Gulf – what's there, etc.

Much research is applied – need for basic research?

John Pandolfi (UQ) – what about “what used to be there”? i.e. before human impact.

Oral history of Ningaloo – Exmouth Gulf? (CALM work about 10 years ago)

Tourism – what data exists? David Woods is working on Ningaloo – any overlap into the Gulf?

Gap in knowledge about flash events – floods, cyclones, etc. Need a swot team to tackle these events and get instantaneous data; e.g. productivity spikes, etc. and impacts on fisheries (Alex Kailis)

Critical space/time grid on which to plot these events is needed. Could underlie many of these aspects of processes. Need to stitch together many sources of data from different researchers.

Keep in mind shifting baselines resulting from flash events.

Tsunami impacts. David Collins (DEH, Canberra) – Peter Green

Research stations – NOERC – Peter Green

Halina Kobryn – satellite imagery should be better used to pull down info daily etc. (e.g. currently used for fire events – links to nutrient pulses, etc.). Need a GIS for all the previous research.

What resets the system? (Bob Prince) Reinforcing the need for spatial/temporal pattern analysis. Links between the Gulf system and outside the Gulf.

Heyward report (2000) – identified gaps in research from NW Cape to the Pilbara. Groundwater. Report available online (not on the AIMS website – Luke Smith has a copy)

Lindsay Collins – potential for further groundwater studies. Connectivity between freshwater and the reefs on the NW Cape peninsula

Neil Loneragan – capturing major events – important to have funding in place and the ability to mobilise quickly.

Climate change – the Gulf is very vulnerable (Catherine Lovelock)

Peter Green – heavy rainfall event in 2001 – was there any follow up? Considerable flow into the Gulf.

John Knott (JCU) – conducted a Cyclone Vance impact analysis.

Lack on info on deeper areas of the Gulf (Jo Buckee) – need good info on bathymetry especially if hypersaline inputs are coming in.

Effects of growth of human activity at Ningaloo and Exmouth on the Exmouth Gulf (Andrew)

Exotic species – need info from many users of the Gulf. Vessel activity. Cross-industry information/project (Straits)

Data from other fisheries – netting fishery, pearls. Anthony Hart and Rod Lenanton.

Availability of old aerial photographs – to look at long-term changes in mangroves and coastlines (Luke Smith)

Whale surveys – old photos. Defence force – Russian data?