

**INTEGRATED MARINE OBSERVING SYSTEM (IMOS)
IMOS REGIONAL NODES**

PROFORMA – Information for the 2008/09 Review

Please complete and return to Jo Neilson by Monday 3 November 2008
(email jo.neilson@imos.org.au, phone 03 6226 7139, fax 03 6226 2107)

South East Australian-Marine Observing System (SEA-MOS) (formerly NSW-IMOS)

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1. Whether the implementation of the IMOS Facilities, as planned for your region, is adequate or any comments.

Implementation of the three facilities that SIMS hosts through SEA-MOS has been very good. The two Sydney moorings (SYD100, SYD140) deployed and operated through Oceanographic Field Services has been most satisfactory. We are delighted with the professionalism of OFS and they satisfy our goal of building oceanographic capacity in the region. OFS also services the Ocean Reference Station off Bondi (ORS-65 m). One significant hurdle has been the re-location of these moorings from the historic Port Hacking transect (PH50, PH100, where 70 years of data has been collected), due to the risk of trawling activity (the two SYD moorings are in the cable exclusion zones, along with the proposed AATAMS line). Finally, we await the testing of the WQMs in Hobart with anticipation.

We are examining the budget implications of a trial mooring at PH110 m, to compare with SYD100. To assess the past 70 years of monthly data, we hope to deploy a WQM at this mooring to examine how the sub-monthly scale variation influences the annual trends.

The Jervis Bay mooring maintained and operated by ADFA was a bonus, along with DSTO's WaMos deployment. We look forward to MHL beginning the Coffs Harbour moorings (early 2009), which will complement the Coffs Radar and Coffs AATAMS transect. We will then consider our budget for a coastal mooring along the southern NSW coast off Eden.

The AUV facility operates from SIMS and has been a star attraction at our annual open days. The facility is active nationally and has reliably delivered. SIMS will use it to survey the fauna on deep reefs and wrecks off Sydney, and await an MOU with the navy's DMS for vessel support.

SEA-MOS has not engaged well with SOOP, nor with Tasmanian researchers. However the proposed CPR line from Brisbane-Portland and interaction with Anthony Richardson from the SE Queensland region is a welcome addition. This confirms opportunities with eastern Victoria and Randall Lee Vic-EPA: the Spirit ferry box, the de-salination mooring off Wonthaggi; the AATAMS transects off Gabo Island. Victoria has directly analogous organizations and issues as NSW.

2. Suggestions for filling gaps in the regional observing system and / or suggestions for any enhancements which could be made during July 2009 to June 2011.

- 1) The second coastal radar, located near the separation zone off Newcastle is a high priority for SEA-MOS;
- 2) SIMS wishes to link with Tasmania in the deployment of a third radar off Eden or in the Bass Strait area, possibly with an ARC-LEIF grant leveraging on the IMOS investments. South East Australia is a consistently problematic area for BlueLink, especially over the continental shelf. Observational data is needed. We wish to discuss with BlueLink the potential for these radar fields to be linked.
- 3) The Coffs moorings should be up-graded to National Reference Mooring status. The mooring data could be in real time - the benefit to the public and marine community would make the project worthwhile.
- 4) SEAMOS needs of a node project leader funded through IMOS, much the way that GBROOS has a full time lead scientist.

3. Considering IMOS#2 (ie a possible future version of IMOS past July 2011), comment on whether any of the other IMOS facilities (those not mentioned in 1 or 2 above) could be applicable to your region, and / or suggestions for new infrastructure (brief details only).

Nearshore, biological and estuarine research should be the hallmark of IMOS-2. We need to ensure complementary state funding before signing any federal agreement.

- 1) Further short range high resolution coastal radar (WERA) and shorter range WaMOS systems for beach erosion, storm surge and marine park planning; estuarine or park connectivity. For example, the NSW government does not see the East Australian Current as a state priority, but beach erosion and storm surge definitely is a concern for them.
- 2) Maintenance of national reference moorings; further development of water colour assessments and tailoring algorithms;
- 3) A Marine Microbial Observatory – a first for the southern hemisphere.
- 4) Aerial surveys of the eastern and southern coasts to monitor kelp abundance and the spread of urchin-dominated barrens. Also, surveys for precise land elevation (L-band radar).

4. Comments on how the Nodes activities fit into the National IMOS; for example describe factor(s) which unify this Node's activities at the National level

The IMOS infrastructure off Sydney and especially Coffs Harbour addresses a major national concern about the activity of the East Australian Current, and its affect on the region's climate for over 50% of Australians. The Tasman Sea is a consistent anomaly in BlueLink due in part to the considerable mesoscale variability. Observational data is needed. The two AATAMS transects will be of direct benefit for east coast scientists on the migration of fish and sharks from the Spencer Gulf to the GBR. The proposed AUV surveys of deep reefs will benchmark deepwater communities. The SEA-MOS glider deployments will be facilitated by SIMS for *any* interested and collaborative scientists in the EAC-Tasman Sea region.

5. Any other comments

Much of the IMOS scientific infrastructure has no dedicated science based funding. For many cases (e.g. AATAMS, AUV) the equipment nicely complements existing scientific activity. However the management tasks of SEA-MOS and the additional scientific effort to deploy and analyse data is considerable and unfunded (especially the coastal radar and ocean gliders). These management duties are done on top of existing workloads as a service to the marine community. SEA-MOS is acutely aware of the importance of attracting scientists and attracting/supervising students to succeed with IMOS-2, but together the task is too large for too few, to be a success. The NSW state government has been unable to assist SEA-MOS, although negotiations to support SIMS are still on-going over the past 2 years. This issue was raised at the Feb. 2008 Glenelg meeting, and has not been resolved. A strong node on the urbanized eastern seaboard is essential for a successful IMOS. To this end:

- 1) The AUV facility will assist with glider deployments – we need east coast radar and glider capability (not a facility, just a capability to troubleshoot).
- 2) SEA-MOS is about to appoint a mooring technician to facilitate communication and data QA-QC amongst OFS, MHL, ADFA and eMII;
- 3) SEA-MOS has already suggested to IMOS some creative ways to foster students and attract researchers to the field and the data-sets for IMOS-2.
- 4) SEA-MOS must employ a node Project Scientist dedicated to the implementation and promotion of the various IMOS activities. Recently, the coordinator from UNSW of the SEA-MOS radar and moorings, and the node deputy chair, has not been re-appointed as lecturer at UNSW and is a serious concern for us all. Moninya Roughan brings essential skills and publications in coastal modeling and radar to SEAMOS.