

## NSW-IMOS

### Node report for the Annual Business Plan by Iain Suthers, Moninya Roughan 23 February 2009

#### 1) Response to the Review recommendations *(reprinted in italics)*

*some of the key concerns from the IMOS Director's viewpoint are:*

*Nodes – particularly NSWIMOS and WAIMOS are facing difficulties in funding node coordination, planning and implementation, and NSWIMOS and SAIMOS have difficulty in attaining the required level of technical and engineering support.*

- Agreed; especially with the mooring coordination and to facilitate the Coffs radar. NSW IMOS accepts recommendation #7: \$130K to June 2011

*GBROOS is well organised and provides the model for others to emulate.*

- Perhaps, but it may not be a realistic model. There are good reasons why GBROOS is doing well in some respects.
- SIMS has the local support for moorings and vessels (MOU with DMS vessels). NSW-IMOS has a cheaper way of doing business, which now seems to be working.

#### **4.3 New South Wales Integrated Marine Observing System (NSWIMOS):**

*Facilities currently operating within NSWIMOS are SOOP, ANFOG, AUV, ANMN, and AATAMS; and ACORN is at the planning stage. The main discussion points of the Review Panel were:*

*NSWIMOS has developed well, despite a number of funding/administrative issues resulting from the early life-stage of its lead institute the Sydney Institute of Marine Science (which commenced at the same time as IMOS)*

*• The proposed name change and change of scope to a South East Australia Marine Observing System (SEA-MOS) is premature in the light of some of the implementation issues in NSWIMOS, but should be considered for the next phase of IMOS after June 2011.*

- We accept the review's comments on a name change to SEA-MOS.

*The lack of significant NSW institutional support is a concern – there is a need to understand*

*a) what NSWIMOS needs in order to operate effectively;*

*b) the options available for meeting these needs; and*

*c) the steps to be taken to avert the risk of failure if support is not forth-coming.*

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- A) SIMS needs a greater commitment to coastal oceanography. It needs a mid-career oceanographer to mentor existing researchers and students, and to facilitate our growing team.
- Needs better links with coastal engineers at UNSW (Water Research Lab, e.g. through new NSW Moorings sub facility TO) and MHL;
- B) SIMS and UNSW will each fund 25% salary of an oceanographer to 1 May to Jun 2011 as institutional support to NSW-IMOS, upgrade coastal oceanography capacity
- SIMS is funding a new director leading to investment in new facilities and labs
- USyd and UNSW are seeking good CVs through their strategic funds.
- NSW-DECC Dir. Gen. has recognised ESCCI as the major coordinator of climate proposals;
- Beach erosion, marine parks, marine tourism are key issues;
- C) The 4 universities and the Sydney Harbour Trust will continue to support SIMS until at least 2013 and possibly in perpetuity.
- IMOS at SIMS will continue to function, but it would be strategic for the universities to invest in this area.

*The positive level of community integration is recognised and encouraged to continue*

- *The large number of ARC grants and PhD projects linked to this Node is very impressive*
- *The key scientific imperative is the understanding of the East Australian Current eddies, and impact of these on the ecosystems of the shelf systems*
  - *Research is needed to determine an appropriate deployment of instruments to monitor the Eastern Australian Current*
  - *A better developed long-term science plan is needed, including the outline of the scientific rationale for a SEA-MOS*

Monitoring the EAC requires 2 perspectives, the basin scale (transport, heat fluxes etc) and the regional scale, continental shelf variability and coastal impacts

- **Basin Scale**
- Continue collaboration with SOOP and BlueLink team to optimise deployments;
- Discussions underway to look at SW Pacific programs e.g. Interactions with SPICE and integration with Blue water node
- Need to improve on basin scale integration with Bluewater node to fully monitor heat fluxes and transport.
- **Regional Scale**
- NSW, SE Queensland, Victoria and hopefully Tasmania will have similar EAC concerns;
- BlueLink does not perform well on continental shelf so observations are needed
- Already established that a coastal radar at 30 degr. S provides best improvement in Bluelink forecasts (Oke et al. in review)
- Coffs Radar and a future, Newcastle radar at the separation-zone are likely to underpin EAC variability on the coastal scale
- Rather than SEA-MOS, perhaps an EAC-MOS with SE Qld and NSW (Fraser Is to Gabo Is).
- EAC-MOS may be part of IMOS-2 but state based nodes may prevail (which is not ideal regional oceanography);;
- We will include the above concepts in the NSW-IMOS Science and Implementation Plan after the ESCCI meeting

*There is a need to concentrate on bringing NSWIMOS together from its initial disparate activities, to address the concerns regarding local institutional support and gain recognition of the value of the science propositions. Further IMOS investment may be needed to assist with consolidation, however in the long-term all Nodes will need to be self-sustaining.*

- NSW-IMOS has already brought together over 100 member scientists, with 40-50% attending the bi-annual node meetings. We will continue to improve without needing a large federally funded institute.

**Review Panel recommendations:**

- 7. IMOS to invest an additional \$130,000 to support management and implementation of the NSWIMOS node. IMOS Director to discuss with the NSWIMOS Node Leader how the funds will be used, including what is planned, what will be attained, and projected outcomes.**
- 8. The panel endorses the need to develop a broader understanding of the East Australian Current into a future plan, but the proposal for a more extensive node and a name change to SEA-MOS is premature and should be considered for any IMOS-2**

## **2) Impact of delays on the Node Science and Implementation Plan**

Except for the Radar, all deployments will give 2 years of data, acceptable for many publications.

- Moorings. No mooring delays, all deployed in the financial year that we said we would.

- AATAMS. Delays to Sydney and Coffs transects, but major grants with DPI also suffered delays
- AUV. On time, but major user been DECC
- Radar. Delayed through to end 2009, not ideal, but ARC funding still pending
- Glider. On time

### **3) What is the plan to promote uptake of data?**

- April 2009 node meeting for IMOS-2 and data workshop;
- Will work with K. Hill and keen to see eMII taken up in 2009;
- Already students ready for Ocean Reference Station data, and Sydney transect data with MODIS and BlueLink;
- AMSA promotion
- Keen to quantify science outputs from NSW-IMOS
- Planning for a special issue of DSR on the EAC is underway and IMOS data and plans will be featured.

### **4) Node meetings-report on the past year, plan for next year**

- Meeting 5 Aug 2008, IMOS team keynote address Andreas Schiller
  - 24 presentations on IMOS data use, RAN, ADFA,
- Meeting 10 Nov 2008, IMOS team keynote address George Cresswell
  - Presentations on a Special Issue on the EAC in Deep Sea Research II
  - Editors Suthers, Young, Ridgway, and Roughan
  - 20 March 09: Submission of titles, authors and 2 page abstracts. Cull and invitation to ~25.
  - 20 Sept09: Deadline for completed manuscripts for review;
  - Jan 2010: Publication process, to appear before June 2010
- Node talks were presented at AMSA2008, AMOS2009 and abstracts submitted for AMSA2009.

### **Meetings in 2009:**

- NSW-IMOS and Victoria – met with members of Victorian Marine Science Consortium 5 February 2009;
- Eastern Seaboard Climate Change Initiative ESCCI
  - Workshop funded by SIMS **28-30 April 2009**
  - Incl. NSW-IMOS Node meeting and mooring meeting
- Node Meeting 2 – **August for IMOS 2 planning**

### **5) Summary of case for the Coffs Harbour radar:**

- Strategically located to capture the EAC out to 100 km, upstream of the separation zone
- Overlap with SOOP XBT line Brisbane to Noumea
  - Overlap with 2 moorings; wave rider; AATAMS line; southern part of Solitary Island marine park
- Southeastern Australia most problematic for BlueLink
- Accelerating EAC, 2 degree C in <100 years
  - Increasing eddy activity
- EAC affecting Brisbane-Sydney-Melbourne populations
- Already an analysis by Oke et al. shows that a radar at Coffs provides greatest improvement in anomalies
- Highest ranked of all radar proposals by the Steering committee in early 2008.

## **6) Conclusions**

- NSW-IMOS has delivered beyond expectations;
  - Started from scratch, provides monthly updates
  - 100 named participants, 12 institutions
- SIMS provides a model for other nodes, by seeking or building capacity outside the organisation;
- Increasing recognition by NSW state government (e.g. ESCCI)
- Prepare abstract and title for the Special Issue on EAC in Deep Sea Research II
  - Abstracts, titles by 20 March