



Prof. Frank Talbot retires

Professor Frank Talbot, founding Chair of SIMS, retired from the Board on 31st December, just three days before his 80th birthday. It is only just over four years since SIMS was established and in this time Frank has done a remarkable job in laying the foundations for what will undoubtedly become a great marine research institution.

SIMS is now well established with in excess of 50 associated scientists and with funding to enable the establishment of the required infrastructure over the next several years. Frank was also instrumental in encouraging the establishment of the SIMS Foundation which will be a significant source of research funding in the future.

Having gained his PhD in coral reef fish at the University of Capetown in 1960, Frank came to Australia in 1964 and joined the Australian Museum. He was appointed Director of the Museum in 1965 and during his ten years there founded both the One-Tree Island marine research station and the Lizard Island Research Station.

He left the Museum in 1975 and became the founding Professor of Environmental Studies at Macquarie University.

Following this Frank spent seven years as Executive Director of the California Academy of Sciences (one of the world's leading natural history museums) before becoming director of the Smithsonian Institution US National Museum of Natural History, Washington DC. The Smithsonian included two marine research stations within its scope of operations.

Frank retired from the Smithsonian in 1994 and returned to Macquarie University as an Adjunct Professor in the Graduate School of the Environment, a position he retains to-day.

We are not losing Frank – he remains on the Board of Trustees of the SIMS Foundation where his expertise, experience and enthusiasm will continue to be a valuable resource. We are most grateful for all of Frank's efforts to establish SIMS and we look forward to it becoming the world-class institution that he envisaged.

Dr. John Keniry AM is the new Chair of SIMS. John has extensive experience in both corporate management and governmental advisory roles. Currently he is Chairman of Ridley Corporation and Chair of the NSW Ministerial Advisory Council on Primary Industries Science .



News in brief

Our first newsletter

This is the first newsletter published by the SIMS Foundation. We are aiming to produce these several times a year with the objective of keeping you well informed about what is happening at SIMS. They will be available on the SIMS website for viewing and downloading.

Doctoral fellowships

The first doctoral fellowships will be awarded at SIMS in 2010. The fellowships will be awarded on a competitive basis. We shall bring details of the recipients in the next newsletter.

Next *Herald* supplement

The second supplement on SIMS' research will be published in the Sydney Morning Herald on 5th March. The first supplement "*What Lies Beneath*" was about Sydney Harbour. This second supplement will be about our coastlines and the oceans beyond. It will explain changes to the East Australian Current and cover other marine research projects that are happening along the NSW coast. **Make sure you buy the *Herald* on Friday 5th March!**

Dates for the diary

Scientific talks (plus light refreshments) will be held at SIMS on the following dates:

30th March

Dr. Adele Pile

Life on the edge of an active submarine volcano

15th June

Details to be advised

Bookings 9969-2664.

Cost is \$10 per head for current donors to SIMS or SIMS Foundation and \$20 per head for other guests.



Left: Bronze rudder gudgeon from the *Porpoise*.

Photo: Xanthe Rivett courtesy Silentworld Foundation

Top right: The anchor of the *Porpoise* was one of the artificial substrate sites where Booth and Fowler conducted a fish census.

Photo: Xanthe Rivett courtesy Silentworld Foundation

Bottom right: Threadfin butterflyfish – a regular visitor to Sydney via the EAC.

Photo: Ash Fowler

Australian National Maritime Museum and SIMS collaborate at Wreck Reefs

In December, 2009 the Australian National Maritime Museum (ANMM), partnered by the Silent World Foundation, undertook an expedition to Wreck Reefs to survey and document the wrecks of the *Porpoise* and *Cato*. Very generously, the ANMM invited two SIMS scientists to accompany the expedition, as this was a rare opportunity to carry out detailed surveys of a remote group of coral reefs.

Wreck Reefs (approximately 420kms east of Gladstone) are located in Australia's Coral Sea Islands Territory. This Territory covers 780,000 sq kms extending east and south from the Great Barrier Reef. The *Porpoise* and *Cato* were wrecked on 17th August, 1803 on Porpoise Cay which is part of Wreck Reefs. Matthew Flinders was a passenger on the *Porpoise* and he immediately set to work to build a cutter out of timbers salvaged from the *Porpoise*. He named the cutter Hope and with the Captain of the *Porpoise* and twelve other men, he sailed on 26th August to Port Jackson where he organised a relief ship for the marooned sailors.

Ash Fowler (a graduate student from UTS) and I were the fortunate participants from SIMS as much of our work relates to the impact of tropical fish that are now overwintering along the NSW coast. An immediate impression was the lack of larger reef fish. It is likely that fishing pressure (charters mainly), coupled with isolation (reducing connectivity with other fish populations and so lowering replenishment potential) are to blame, which is a sobering reminder that human influence extends into apparently pristine locations. We gathered data and samples to supplement our ongoing studies of how reef health (and coral bleaching) affect fish populations, the life

history of vagrant tropical fishes (the ones now being transported to southern locations) and the role of artificial habitats in fish population dynamics. The East Australian Current (EAC) flows past this area, and continues southward along the coast of NSW all the way to Victoria. The predicted increasing strength of the EAC due to climate change will continue to bring significant changes to the marine environment along the NSW coast. Several fish species that appear as juveniles in Sydney were common at Wreck Reefs but rarer on the Great Barrier Reef, so this area may be a key source of some of the vagrant fish we see in Sydney.

We also helped the archaeologists search for remnants of the shipwrecks. There were a number of significant finds. From the *Porpoise* these included the anchor, parts of its rigging and an intact gudgeon, the brass fitting that holds the tiller. A coral encrusted cannon of the *Cato* also was found. Permission was granted for the gudgeon to be removed for display at the ANMM in Sydney.

Ash and I were overwhelmed at the hospitality we were shown on the trip and greatly appreciated the opportunity to visit this remote reef. Already we are already planning future collaborations with the ANMM.

David Booth
Professor of Marine Ecology
SIMS and UTS



Infrastructure investment at SIMS

SIMS is fortunate to have received \$19.5 million infrastructure funding from the Australian Government through the Nation-building Economic Stimulus Plan and the Education Investment Fund. In addition The Ian Potter Foundation has provided funding for the upgrade of the aquarium and the NSW Government has provided matching funding for further infrastructure upgrades. All told SIMS will be spending approximately \$21 million on infrastructure over the next several years.

This funding will enable SIMS to establish the facilities necessary for the creation of a world-class marine research institute. The scope of the works is as follows:

- a) Two whole buildings (22 and 23) devoted to laboratories. These will include a state-of-the-art protected laboratory to enable work on marine pathogens. In addition the research training laboratories in building 2 will be upgraded.
- b) A major expansion of the aquarium, including a protected facility to enable work on marine pathogens in the aquarium.
- c) Lecture theatre seating 70 persons and equipped with modern teaching aids. This will be used for a variety of post-graduate courses that SIMS plans to commence in 2011.
- d) Conference facilities. The broad scope of marine science at SIMS has already resulted in a high level of demand for existing conference facilities.
- e) Facilities for the permanent research staff and technical support for operation of the laboratories and aquarium.
- f) IT and communications facilities including high speed links to the universities.
- g) A public exhibition area.

Work is moving ahead rapidly. Project managers, architects and engineers have been appointed and are working with SIMS scientists and management to complete detailed designs for all of the facilities. Construction is planned to commence on the first stages of work before mid 2010 and the whole program will take about three years to complete. The work planned for this year includes:

- a) Stage 1 of the aquarium upgrade – increased seawater supply and expansion of tank and seawater circulation facilities within the aquarium.
- b) Conversion of building 22 (currently administration) into several laboratories with facilities for researchers located permanently at SIMS.
- c) Conversion of building 19 which is intended to accommodate conference facilities, work spaces for visiting researchers, IT and communications, administration and public exhibition space. Negotiations for the use of this building are being finalised with the Harbour Trust at the moment.

Following the infrastructure funding described above, the four founding universities have provided the funding to enable the appointment of Professor Peter Steinberg as Director and CEO of SIMS. Peter took up his appointment in July, 2009 and is now well and truly in the driving seat focussing on both the infrastructure building program and the development of SIMS' research program. One of Peter's early targets is for the appointment of several post-doctoral researchers to SIMS.

Climate change

Climate change is a current hot topic and a number of SIMS' scientists are working on research relating to climate change. The NSW coast is a climate change hot spot – the waters in the Tasman Sea have experienced some of the highest increases in temperature of anywhere on the planet (more than 2° in less than one hundred years) and the warm waters of the East Australian Current are moving south and are moving more rapidly. Already we can identify changes in the marine environment along this South-East Australian coast. The following reports are on our website for viewing and downloading:

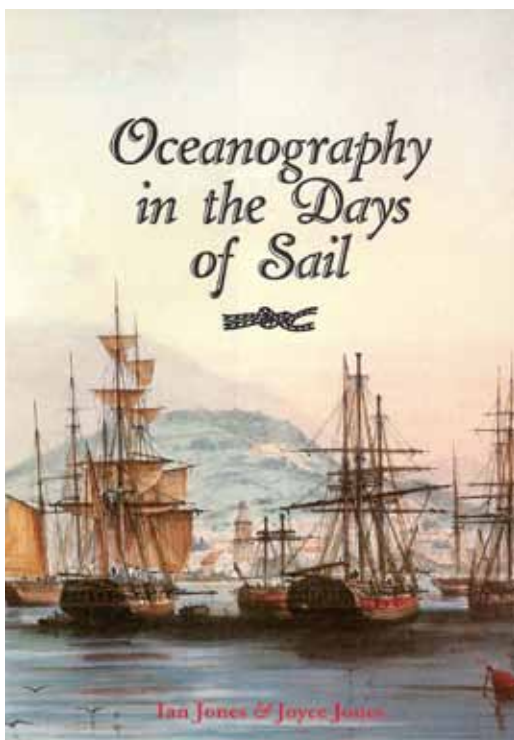
2009 Report Card on Marine Climate Change in Australia – Impacts and Adaptation Responses

This report card summarises present knowledge on marine climate change impacts and identifies knowledge gaps and adaptation responses in Australia. It was produced by an author team representing virtually all of the major centres of marine science in Australia. This team included six of SIMS' scientists who made contributions in their specialist areas.

Report on the Eastern Seaboard Climate Change Initiative (ESCCI) conference – April 2009

ESCCI is a SIMS initiative that brings together the major marine research institutions along the eastern seaboard of Australia. This initiative has now been broadened to include the NSW Department of Environment Climate Change and Water and other government agencies and will now encompass research on terrestrial and atmospheric aspects of climate change as well.

Oceanography in the Days of Sail



This is a fascinating book by Ian Jones and Joyce Jones, reprinted by SIMS in updated form in paperback and electronically.

Professor Ian Jones is Director of the Ocean Technology Group at the University of Sydney and a scientist at SIMS.

The book is available on the SIMS web site and can be purchased through SIMS. It is a wonderful insight into how the early mariners in the Pacific Ocean developed their skills and knowledge of the ocean. Many European scientific expeditions were conducted in this part of the world during the eighteenth and nineteenth centuries and the narratives of those expeditions still make exciting reading to-day.

Farewell Tori – Welcome Catherine & Alana

Tori Pollard finished her employment with SIMS in December 2009. Over the last several years Tori has been a tower of strength at SIMS, helping to build a very positive public profile of SIMS and doing anything else that helped – even diving and boating with the researchers if they needed an extra person. We thank Tori for all of her help and we look forward to keeping in touch with the Pollard family in the future.

Catherine Maher and Alana Rooney have now joined SIMS to take over Tori's role. They will be job sharing and SIMS now has a full time presence in the front office to handle communications and enquiries. Both have previous experience that will be valuable to SIMS.

Catherine was involved in client relationship management in the merchant banking industry prior to spending several years with various not-for-profits doing fund raising and profile raising. Alana was an Environmental Project Officer at Blacktown Council where her responsibilities included significant community outreach and environmental project functions. We are delighted to welcome Catherine and Alana to SIMS.

CONTACT US

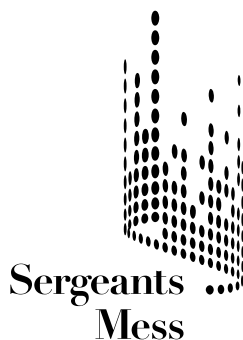
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Our thanks to the Founding Partners of SIMS Foundation



Sergeants Mess is partnering with SIMS Foundation to provide a major function each year at their stunning harbour-side location (pictured).

The inaugural function was held in August 2009 when Dr. Robyn Williams AM officially launched the SIMS Foundation.

230 guests attended a cocktail party where 20 of SIMS' scientists had displays and spoke about their research. A flute recital by Jane Rutter put a very nice finish to the evening.



The *Herald* has been a Sydney icon since it was first published in April 1831 so it is not surprising that Fairfax Media is now partnering SIMS Foundation to produce four supplements a year on the vital research that SIMS is doing to understand and preserve another icon, Sydney Harbour. Lloyd Wish-Wilson

the *Herald's* Chief Executive of Sydney Publishing, said the Harbour was part of Sydney's fabric and it was imperative to protect our greatest natural asset. This Partnership will be tremendously helpful to SIMS and the Foundation and will go a long way towards making the general public aware of the importance of SIMS' research, not only in the Harbour but along the whole of the NSW coast. The middle page of the first supplement is pictured above. The supplement is available for viewing and downloading on the Downloads page of the SIMS website.



The Thyne Reid Foundation has been a major supporter of marine research on the Great Barrier Reef for some time. They are now shifting their focus southward and we are delighted to announce that they are partnering SIMS Foundation for the award of doctoral fellowships at SIMS. The recipients will be known as the Thyne Reid Doctoral Fellows at SIMS.

The fellowships will offer a number of very important benefits:

- a) They will encourage more students to undertake research at PhD levels. The number of marine scientists in Sydney urgently needs to increase and these fellowships will be a significant factor in assisting this.
- b) Experience has shown that these early years of research, commencing from the time when a PhD is undertaken, are the most creative time of a researcher's career. They can concentrate on research as they have minimal administrative and teaching commitments. This is the time when they can make the difference – they can explore novel ideas that will change the way people think – leading to significant advances in our ability to understand and manage our marine ecosystems.
- c) The doctoral fellows who undertake their studies at SIMS will recognise the excellence of the facilities and its ideal location for research. This will have a multiplier effect as very often, they will return later with other researchers and their own students. This will be a significant factor in the long term development of SIMS.

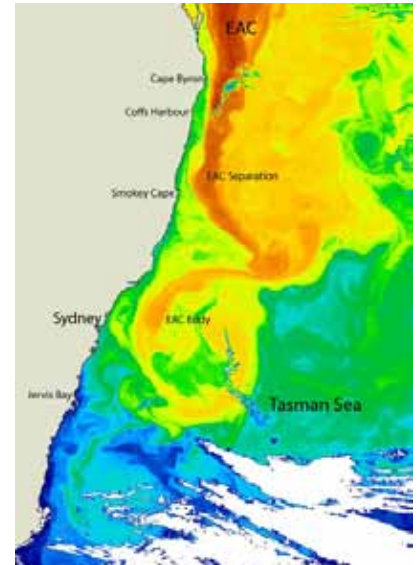
IMOS, the Integrated Marine Observing System

This is an Australia wide program of ocean observations funded by the Federal Government. Australia's ocean jurisdiction is one of the largest in the world, larger than our total land area, yet is poorly known. Marine science is particularly relevant to climate change. The heat engine of the ocean is a major driver of climate, and forecasts of climate and future climate change rely on understanding ocean processes.

The first stage of IMOS commenced in 2007. IMOS comprises five nodes (geographic areas) of which NSW is one. SIMS, with its collaborative structure bringing together scientists from multiple institutions and with different areas of expertise, was chosen to manage the NSW node. Professor Iain Suthers is the Node Leader, supported by Dr. Moninya Roughan as Deputy Node Leader. The second stage of IMOS runs to June 2013. SIMS will continue to manage the NSW node during this time and details of funding will be finalized by the end of March 2010.

The focus of IMOS in NSW is the East Australian Current (EAC). The oceans off the South-East Australian coast have a complex circulation structure where the EAC moves away from the coast. Amazing patterns of eddies form in this area. The EAC and its eddies are strongly implicated in heat transport along the NSW coast. Both warm and cold eddies occur and they are strongly linked to fish stocks, local biodiversity and marine park location. The CSIRO image on the right shows how the EAC moves away from the coast and one of the warm water eddies formed as the result. The fact that this is occurring right on Sydney's doorstep makes SIMS ideally placed to investigate the impacts of ocean warming.

In future newsletters we shall bring you more information on IMOS and how it is making a major contribution to our understanding of ocean processes.



The EAC off the NSW coast. The large eddy off Sydney is clearly visible.

*Image: NOAAII TM455 29 Sep 1991
CSIRO Div. of Marine Research, Hobart*

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