

Excellence in marine science  
inspired through collaboration

# MISA

## update

May 2009

National and South Australian seafood industry leaders have welcomed the major expansion of one of Australia's premier marine research and education facilities, the Lincoln Marine Science Centre (LMSC) at Port Lincoln.

Speaking at the official opening of the \$6.59m expansion, Wildcatch Fisheries SA General Manager, Neil MacDonald said the new laboratories and the world-class scientists that it has already attracted will help the SA seafood industry remain internationally competitive.

"These new facilities will add significantly to our industry's capacity in a global context in one of the most competitive food segments in world trade."

More than 100 seafood industry, research and tertiary education leaders and Port Lincoln community members gathered on March 18 to celebrate the opening of the new building which overlooks Boston Bay at Port Lincoln (*see story inside*). The expansion, a Marine Innovation SA initiative, nearly doubles the size of the original centre and will house around 35 permanent and visiting scientists and educational staff from the South Australian Research and Development Institute (SARDI) and Flinders University, and cater for increased student numbers.

Mr MacDonald said that key industry driven research had already been delivered through the LMSC to both the wild catch and aquaculture sectors over the centre's decade-long history.

"The additional facilities will be critical in taking our seafood industry to the next level, providing leading edge resources and capacity for the continued growth of SA's seafood industry."

Australian Southern bluefin Tuna (SBT) Industry Association Chief Executive Officer and MISA Steering Committee member, Brian Jeffriess, said Port Lincoln was one of the few places in the world where aquaculture leaders collaborated so closely with a high level research base "right at their doorstep."

"The potential of what we are building at Port Lincoln is incredibly important, and the positive collaboration between researchers and industry will, in the long term, be seen as an international model for regionally based research," said Mr Jeffriess.

"The Eyre Peninsula is pioneering many aquaculture industry sectors including Southern bluefin tuna, abalone, mussels, kingfish and mulloway. The unique collaboration at the LMSC is allowing us to develop the research and technology solutions for our emerging aquaculture industry as the need is foreseen – and the rest of the world is following," he added.

"What the expanded LMSC provides is not just the right infrastructure for further progress, it is proof that the industry, researchers and government are committed to the same goal – growing a sustainable seafood industry. The expanded capacity of the LMSC reinforces SA's place at the forefront of temperate seafood research and production, and I think it will become the educational and research base for the Southern Hemisphere."

The expansion will intensify research in the areas of product quality and value-adding, innovation to create new industries and increase yields of existing food harvests, understanding and managing the impacts of our fishing, aquaculture and eco-tourism industries, and identifying and protecting against the biosecurity threats posed by invasive marine species and diseases.

The expansion was supported by \$4.49m in funding from the South Australian Government and \$2.1m from Flinders University provided through the Federal Government's Capital Development Pool scheme.



Deputy Premier Kevin Foley officially opened Stage II of the Lincoln Marine Science Centre. "There's no question that if we're going to compete, we have to have the best, the smartest and the most innovative technology available."



Wildcatch Fisheries SA General Manager, Neil MacDonald, speaking at the LMSC expansion celebrations

### Keeping our seas clean

With the LMSC expansion now completed, MISA is focussed on its next major project – the development of a high level aquatic biological containment facility.

The facility, which will be of national importance, is a critical element of MISA's infrastructure planning to allow advanced research to manage marine pests and fish diseases which threaten Australia's aquatic ecosystems.

The MISA Steering Committee is now considering funding options and suitable South Australian sites for the proposed facility, including the possibility of a shared facility at Adelaide University's Roseworthy campus.



(Top) Flinders University Deputy Vice Chancellor (Research) and MISA Steering Committee Deputy Chair, Professor Chris Marlin, SARDI Executive Director and MISA Steering Committee Chair, Professor Rob Lewis and LMSC Director, Assoc. Professor Sabine Dittmann with Deputy Premier Kevin Foley.

(Above) Port Lincoln Mayor Peter Davis and Flinders University Chancellor Sir Eric Neal unveil a sculpture commissioned for the newly opened building — the State's marine emblem, a leafy sea dragon.

## Lincoln Marine Science Centre Opening— Time for Celebration!

The Lincoln Marine Science Centre (LMSC) is set to enter a new phase of leading edge research with the opening of Stage II of the Port Lincoln-based facility.

Seafood industry representatives and the community gathered to celebrate the commissioning of the \$6.59 million development, which was officially opened by the Deputy Premier of South Australia, Kevin Foley on March 18, 2009.

Marine Innovation SA Steering Committee Chair and SARDI Executive Director, Affiliate Professor Rob Lewis, says SA's seafood industry success is built on the collaborative drive of industry, complemented by the ingenuity and innovation of marine scientists and fisheries managers.

"The SA Seafood Plan, announced in early 2005, seeks to increase the industry's value to \$2 billion by 2015. MISA supports this future and the many new opportunities it affords, through knowledge and innovation, integrating and expanding South Australia's marine research capabilities, education and technology transfer pathways," Professor Lewis said.

"This project is an example of science and education underpinning our communities and industries through innovation and collaboration."

Flinders Deputy Vice Chancellor (Research) and Deputy Chair of the MISA Steering Committee, Professor Chris Marlin, said South Australia is already leading Australia and the world, inventing the technology and research imperatives as the country's young aquaculture industry grows.

"The Lincoln Marine Science Centre is a world leader for abalone, Southern bluefin tuna and black mussel research and our wild fisheries work is widely recognised for its ground breaking ecosystem-based fisheries management research," Professor Marlin said.

"Much of this research and collaboration is taking place at the Lincoln Marine Science Centre alongside industry, facilitating the timely development of new technology," said Professor Marlin.



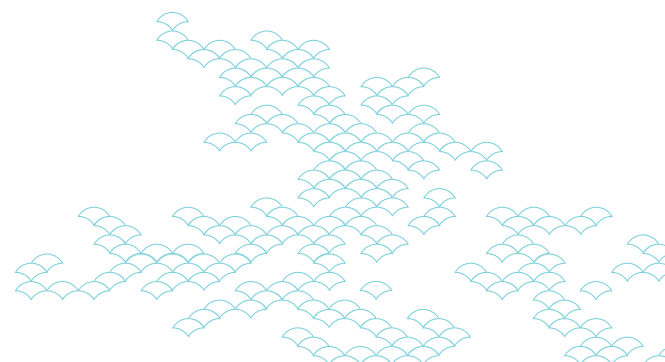
(1) Japanese tuna buyer and grader, Sasayama San from Global Seafoods, Japan, shows Port Lincoln Mayor, Peter Davis, and LMSC opening guests, (2) the finer points of sashimi preparation. Sasayama volunteered his time for the event, and the delicious tuna was donated by Sekol, and the wines by Boston Wines.

(3) Clean Seas Tuna Ltd owner, Hagen Stehr, with Deputy Premier, Kevin Foley.

(4) The Port Lincoln and regional communities were invited to help celebrate the official opening of the Lincoln Marine Science Centre expansion with tours of the new laboratories and talks with MISA scientists about some of the research underway. The event was organised by staff from Flinders University, SARDI Aquatic Sciences and the Lincoln Marine Science Centre for the Marine Innovation SA initiative.

(5) Minister for Agriculture, Food and Fisheries Paul Caica (left) and the Deputy Premier Kevin Foley, discuss tuna health research with MISA's Dr Craig Hayward during a tour of the new LMSC laboratories.

(6) Deputy Premier, Kevin Foley, enjoying a close up view of farmed tuna.





Dr Xiaoxu Li's research into selective breeding of abalone is helping abalone farmers improve production.

## Genetics advancing abalone farming

In an exciting development for abalone breeders, MISA scientists, working on an Australian Seafood Cooperative Research Centre project, have created a model to work out how many breeding pairs of farmed abalone are required to maximise return from genetic investment and ensure economically sustainable production.

Steven Clarke, Leader, MISA Aquaculture Innovation, and Principal Scientist, SARDI Aquaculture, says the genetics research software that has been developed provides an economic analysis to the whole industry of the cost benefits of such a breeding program.

"Because abalone production is slow, one of the major improvements we can make is to increase the product's 'speed to market' and in this area nutrition and genetics are two things we can influence," he said.

Mr Clarke says MISA industry consultant, Dr Nick Robinson, who has also worked on salmon breeding for the Norwegian Akvaforsk Genetics

Centre, has been working with MISA and SARDI abalone breeding expert, Dr Xiaoxu Li and industry to help farmers decide how they can make the breeding program happen.

"This is pioneering work. So far, in Australia there's been very little selective breeding research for aquaculture.

"One of the options recommended by Nick is a centralised abalone breeding centre rather than have breeding spread out over many abalone farms. Southern abalone breeders are now considering several potential centre locations.

"This type of breeding program should make a big difference to abalone performance," adds Mr Clarke.

"In South Australia, abalone growth and mortality is impacted by temperature as we are at the higher end for abalone, so we can selectively breed for higher tolerance to warmer waters. We can also breed to improve production and disease tolerances."

**Contact: Steven Clarke 8207 5443**

## Tuna aquaculture success

The goal of rearing one of the ocean's speediest and most highly valued fish - the Southern bluefin tuna - from eggs to hatchery reared fingerlings is now a step closer.

Clean Seas Tuna Ltd, an innovative South Australian aquaculture company, has recently achieved controlled egg production from captive Southern bluefin tuna broodstock at their hatchery at Arno Bay, with SARDI the first research agency in Australia to receive eggs from the company.

SARDI scientists are hatching these eggs and improving the performance of larvae during the critical early stages of culture. So far they have been successful in rearing them to 20 days after

hatching (as of April 29th, 2009), with the larvae expected to survive for several more days.

The work is being undertaken through the Australian Seafood CRC and the Marine Innovation SA initiative, and is occurring in conjunction with researchers from Clean Seas Tuna Ltd, Northern Territory Department of Regional Development, Primary Industries and the New South Wales Department of Primary Industries.

This world leading research aims to support future growth of the Australian Southern bluefin tuna industry by developing a supply of hatchery reared tuna fingerlings for on-growing.

## Adapting to a carbon-based world

What does the future hold for the Australian seafood industry in a carbon-based world?

MISA will sponsor a Special Symposium as part of the Australian Marine Sciences Association (AMSA) National Conference being held at the Adelaide Convention Centre from the 5-9th July 2009.

The session titled 'Australian Seafood Industry Response to a Carbon-Based Future' aims to bring together available science that can assist in identifying the climate change drivers and future "landscapes" that seafood industries will need to operate within. The session will look at the impact on seafood industries and how to best respond in the areas of mitigation, adaptation and in identifying opportunities.

MISA is sponsoring the symposium using some of its Constellation SA Award for Excellence in Collaborative Research prize money, announced at the 2008 South Australian Science Excellence Awards.

For more information on the Adelaide AMSA conference, themed Marine Connectivity, go to [www.amsaconference.com.au](http://www.amsaconference.com.au)

## University students leap in

A rare opportunity for aquaculture students to be part of a project with commercial outcomes has been established by MISA and SARDI scientist, Dr David Stone.

Flinders University aquaculture and marine biology students, Phillipa Dean, and Sam Kowald were the first to take part in the project to understand mulloway feeding behaviours.

Around 5000 mulloway are involved in two experiments at the high-technology SARDI pool farm at West Beach providing four feeding regimes to determine the best time of day to feed for optimum growth for this notoriously slow growing species.

Dr Stone, who is based with SARDI at the South Australian Aquatic Sciences Centre, says the potential for improvements to mulloway grown under aquaculture is exciting.

"The biggest potential in improving mulloway growth is in developing better feeding methods. We expect that this project will provide new ways forward."

The project is ongoing and Dr Stone is keen to take on more aquaculture students next semester.

**Contact: Dr Stone 8207 5350**



Aquaculture student, Phillipa Dean will be featured on the ABC website series, Ace Jobs, later this year. An ABC crew spent a day with Phillipa at SARDI Aquatic Sciences to highlight the exciting career paths available within the aquaculture industry.

2008 South Australian Science Excellence Awards winner of the  
Constellation SA Excellence in Collaborative Research Award.