KIMBERLEY MARINE

RESEARCH STATION ● CYGNET BAY

# FEBRUARY/MARCH 2016

## News from Cygnet Bay

**Fish Kill Update**

A marine fish kill north of Broome as well as an algal bloom off the Kimberley coast have both occurred in recent weeks. The latest update from the Department of Fisheries Western Australia has identified the bacteria *Streptococcus* as being present in samples taken from both the fish kill and algal bloom areas. This bacterial genus occurs naturally, but the exact species present at the two events has yet to be confirmed. In other parts of the world *Streptococcus* species have been linked to fish mortality events in the past. The Department of Fisheries' investigation is ongoing.

**KMRS at Montgomery Reef and Talbot Bay with Traditional Owner Donny Woolagoodja**

KMRS and Cygnet Bay Pearls commercial vessels recently supported a Japanese nature documentary team working in the Camden Sound area. KMRS founder and Kimberley marine biologist James Brown interpreted the incredibly productive inshore Kimberley reef systems for the Japanese team. Onsite at Montgomery Reef James was able to make observations about the health of the reef. This is important for the Kimberley area as currently records of coral bleaching at the Great Barrier Reef are high. As of March 12th, there were no signs of substantial coral bleaching at the sites inspected around the southeastern corner. Unknown to James at the time, the current Kimberley fish kill was beginning just north of Broome, however nothing similar was seen between Cygnet Bay and Camden Sound through the Buccaneer Archipelago and Talbot Bay areas.

**Donny Wooladoodja. Image: J. Brown**

Whilst operating in the Camden Sound area James got to spend a few days with Traditional Owner, Donny Woolagoodja and feels the opportunity deepened his understanding of the cultural and ecological landscape. James said of his experience, "I have been following Donny's work with great admiration over the years and it was an absolute pleasure to be able to spend time with such a leader on country. He is a proven visionary, a gentleman and a sublime educator of his ancient cultural knowledge. Being able to sit by a campfire and listen to his creation stories will remain with me forever."

**Cygnet Bay vessels in Camden Sound. Image: J. Brown**

Contact us for more information about our commercial vessel capabilities and Kimberley marine expertise spanning seventy years.

## Research at KMRS

**Juvenile Fish Recruitment Dynamics**

University of Western Australia PhD candidate Milly Piggott returned to Cygnet Bay in early February to deploy the Remote Underwater Video Stations (RUVS) used in her research about juvenile fish recruitment. Upon her return in March she started work on a multitude of projects in addition to continuing her PhD work. With the help of the new interns, Milly began the collection and dissection for her four species of fish: *Dischistodus darwiniensis*, *Lutjanus carponotatus*, *Pomacentrus milleri*, and *Choerodon cyanodus*.

**New fish recruits. Image: M. Piggott**

**Rock Oyster Settlement**

A commercial rock oyster industry has been identified and considered by Kimberley stakeholders for over a decade. KMRS has prioritized research into the feasibility of commercializing Kimberley rock oysters and has support from the Bardi Jawi Traditional Owners with the ultimate aim to provide business opportunities for the Traditional Owners of the West Kimberley coast. There has been development in the Northern Territory over the last year or two, and KMRS is calling on the new CRC for Developing Northern Australia to extend the project boundaries past the NT border with the hopes of expediting the industry's development. In order to gain more scientific insight into the wild rock oyster population at Cygnet Bay, Milly and her team of interns have been deploying sample plates in the field to determine the spatial and temporal settlement of rock oysters in the area. Our intern Alex has previously done research in this area, so his expertise was very helpful.

**Coral Monitoring**

Little research has been done regarding the corals that experience the extreme tidal changes around Cygnet Bay. KMRS interns are developing a program that will be able to produce a baseline of coral data and track changes in coral in the area. The hope is to create a long term program to monitor coral health and identify instances of coral bleaching. Historically, little coral bleaching has been observed in the Cygnet Bay area. However, a concerning amount of coral bleaching has recently been observed by scientists and Indigenous people in the area.

**Coral bleaching at Cygnet Bay. Image: M. Piggott**

## Upcoming research

**26 March – 4 April**

A team from AIMS is joining us at KMRS at the end of March to continue their ongoing research around Cygnet Bay. They will be deploying RUVS and sampling fish to study fish recruitment processes in the area. They will also continue their coral recruitment study, which is a joint effort with the Bardi Jawi Rangers.

**5 April – 14 April**

Verena Schoepf of UWA will be returning to KRMS to continue her research on corals for the Professor Malcolm McCulloch research group. She will be checking on corals in a translocation study, as well as surveying coral communities to monitor health and bleaching. Verena will also take coral cores from which historical environmental conditions can be reconstructed.

## Other news from Cygnet Bay

**Solar Power Upgrade**

Cygnet Bay's solar power system is being upgraded to provide 50kW additional power to the farm. This will be up and running in the coming months and will minimize use of the generator. The system is set up to allow future expansions to increase production of solar power.

**Traffic at Cygnet Bay. Images: G. Firman**

**Spawning Postponement**

Production of algae for pearl oyster larval feed was off to a strong start in February until news of the spawning postponement reached the hatchery. The spawning has been delayed until further notice due to lack of funding and the potential implementation of genetic testing program for spat and broodstock oysters.

**Pearl Meat**

Cygnet Bay is coming soon to a restaurant near you! Recent ventures into providing pearl meat for a local restaurant decreases waste product from oysters no longer used for pearl production, and increases production of delicious oyster snacks! Look out for our pearl meat at Azuki Japanese Fusion in Broome.

Pearl meat in shell. Image: D. Wong

**Product Testing**

Farm Manager Gary Firman and hatchery employees have been ensuring the pearl meat and rock oysters from Cygnet Bay are of the highest quality via meticulous sampling techniques.

Pearl meat and rock oyster quality control. Image: A. Hickling

## Staff news

**New Staff**

Cygnet Bay is happy to have new diver James Reid join the crew. Also new to the farm are Lauren Pearse, Tuuli Peranen, Outi Haapaniemi, and Helene Santala. Welcome to Cygnet Bay!

Top (L to R): Helene, Tuuli
Bottom (L to R): Outi, Lauren
Right: James
Image: D. Wong, Facebook

**This Season's Interns**

**The interns (L to R): Dani Wong, Milly Piggott, Nina Robb, Alex Hickling. Image: G. Firman**

Milly Piggott is currently completing her PhD at University of Western Australia in Perth. She is studying fish recruitment processes in NW Australia. At KMRS Milly is the ultimate multitasker alpha intern, and is currently developing the intern program, supervising and participating in ongoing research, and completing her PhD data collection. If Milly was a marine animal, she'd be an octopus.

Nina Robb acquired her BSc in Marine Biology at Victoria University. She has done research on the effect of ocean acidification on seaweeds, and light effects on zooplankton. Her interests include nearly everything! Nina is working on the coral monitoring program, and maximizing pearl meat harvest and weight. If Nina was a marine animal, she'd be a coelacanth. Or maybe a rhodolith. Or anything pretty cool, but weird.

Alex Hickling completed his BSc in Coastal Zone Management and Environmental Biology with Honours. He has done post-graduate research on rock oysters, and has worked in the edible oyster industry. At KMRS, Alex is working on creating and managing projects about rock oyster settlement, spat monitoring, and pearl meat harvest. If Alex was a marine animal, he would like to be an otter or merman, but deep down knows he'd be an oyster.

Danika Wong did her BSc with Honours and Co-op in Marine Biology at Dalhousie University. She has researched wind use in Black-footed Albatross fledglings, but like Nina, wants to explore everything nature. Danika is currently working on the coral monitoring program, spat monitoring, and trying to organize Cygnet Bay one room at a time. If Danika was a marine animal, she'd be a remora because she'd like to follow a cool, large sea creature around.

Impressed by our interns? You could be one of them! KMRS is accepting new intern applications. Look out for the intern advertisement in June.

## Follow us

KMRS is now on Twitter! Follow KMRS on Twitter (@KMRS2009) and Facebook (facebook.com/kmrs2009) for frequent updates on the research and happenings in and around Cygnet Bay.

## Photo of the month

**A curious olive python (*Liasis olivaceus*). Image: R. Coyle**

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