



# KIMBERLEY MARINE

RESEARCH STATION • CYGNET BAY

OCTOBER - NOVEMBER 2020



*Healthy plate coral in Catamaran Bay*

Photo: Emily Fosbery

## NEWS FROM CYGNET BAY

### *A visit from WAAPI!*

It was a pleasure to meet the Woombooriny Amboon Angarriya Partnership Initiative (WAAPI) staff and students in October. KMRS interns presented on the operations that occur at the Cygnet Bay Pearl Farm and dissected an oyster with the students. They were also able to experience the beauty of Cygnet Bay by taking a boat trip around the archipelago with Ben, our experienced skipper and tour guide, to work on their music video.

### *Take 3 for the Sea CEO Clean-Up*

Take 3 for the Sea CEO Clean-Up is an annual event for central coast business leaders to help make a difference in cleaning up our beautiful ocean. Our CEO, and owner of Cygnet Bay Pearls and KRMS, James Brown has been nominated and has been helping to raise \$30,000 towards cleaning our oceans and educating students. So far he has raised over \$3000 and is the top fundraiser for 2020. Taking just three pieces of rubbish with you when you visit the ocean or any waterway can make a huge difference, this simple action can address a very complex problem. Plastic pollution is having a devastating effect, killing our wildlife and threatening the overall health of our planet. If you would like to donate (every little bit helps) go to <https://www.ceocleanup.com/fundraise/> and select 'James Brown' from the dropdown menu.

# NEWS FROM THE RESEARCH STATION

## *Coral monitoring*

The intertidal range in the Kimberley is one of the largest in the world. During the spring tides it can vary up to 11m. This results in a very unique habitat in which thrive many different species that seem to be resilient to a huge range of environmental pressures. In some coral pools, such as those pictured on the right, the water temperature can get as high as 50 °C in summer.

We have two coral monitoring projects to look at the ongoing health of our corals over time. The first studies coral recruitment by placing tiles into the water at four different sites around the bay. After three months they are retrieved and we count how many baby corals have recruited to the tiles. Over the October-November spawning events we have been delighted to find large numbers of recruits, many with multiple polyps. This indicates that our coral is still reproducing. The second looks at bleaching events by using transect lines across the intertidal zone to see if corals are bleaching. It appears that at the moment we are seeing some very healthy corals.



*Coral recruitment monitoring site; Coral Pools. Sometimes this intertidal pool gets to more than 50°C , but corals continue to recruit, grow and thrive.*

Photo: Emily Fosbery

## ***Temperature Loggers***

We have also been looking at the changes in water temperature very closely with several temperature loggers placed in strategic positions around Cygnet Bay. Most are recording the water temperature every hour or more to several decimal places. We are able to then track the length and intensity of any marine heatwaves that occur and then look at if the corals experience bleaching events or lower than average recruitment numbers.

## ***Rock Oyster Recruitment***

The interns have continued to collect data for the rock oyster recruitment project. Throughout October and November there was very little recruitment with only barnacles and limpets found on the tiles which had been out for three months. We are now coming into wet season and are hoping to see more rock oyster recruitment with the increase of rainfall.



*Through the microscope: Coral recruitment has been especially good this spawning season.*

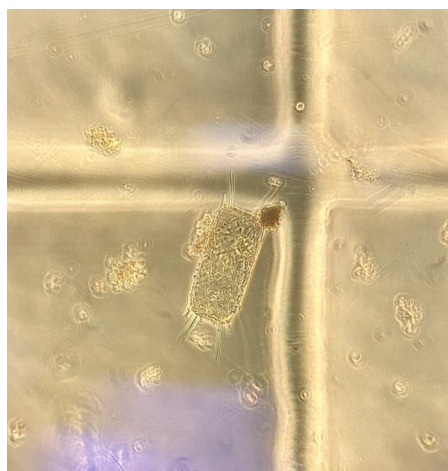
Photo: Hamish Cowan





*The incredible tides in Cygnet Bay.*

Photo by: Emily Fosbery



Through the microscope: *Phytoplankton monitoring is part of monthly sampling, looking at the overall health of the bay.*

Photo: Emily Fosbery

### **Monthly Sampling**

Overall water temperature in Cygnet Bay is on the rise with the beginning of wet season. We had about a week of very windy weather in early October which seems to have caused a short term drop in temperature significant enough to register on our temperature loggers 6m below the water surface. However, we have since seen a sharp jump of nearly 2 °C bringing the water temperature up to around 29 °C and back to a similar temperature as November of previous years.

During monthly sampling we also look at the different species of phytoplankton at four different locations around the farm. We have been finding large numbers of diatoms which are vitally important as between a fifth and a quarter of all photosynthesis on Earth is carried out by diatoms.

### **Around the Farm**

The beginning of October saw the delivery of wild caught pearl oysters from Paspaley. The entire pearling team was out in force to safely transfer these newly seeded shells into the ocean on our lines. Two oysters were tested to determine the health of the shell at delivery and we were pleased to find they were in very good health and we are optimistic for a good pearl harvest in approximately two years.

In late October we performed a pearl, meat and shell harvest. This particular cohort was encouraged to produce pearls with a beautiful gold colour. This is achieved by taking parts of the mantle from a particular oyster that has a lot of gold colour around the lip, and inserting it alongside the nucleus into the gonad during seeding. This suggests that the oyster will continue to produce gold coloured nacre to create the pearl around the nucleus. Oysters that produced high quality pearls were re-seeded and put back into the water to grow another pearl while the rest were harvested for their meat and for their shell, so no part of the oyster is wasted.

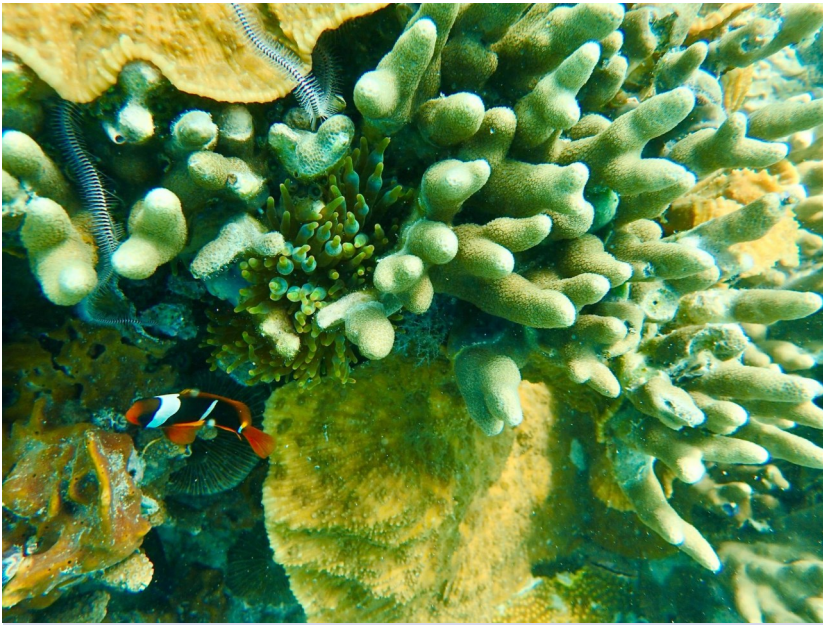


*Oysters waiting for the pearl harvest*

Photo: Emily Fosbery



# AROUND THE FARM



*We are lucky to see some incredible marine life while we do our sampling.* Photo: Emily Fosbery

## Staff News

With the winding down of tourist season and wet season looming, the staff took a trip out to Cone Bay to enjoy a day in the sun together before Christmas break. Staff have been heading home for the holidays, we wish everyone the best of luck in the new year!

## Weather

There was some excitement around the farm in mid November with our first big rain storm of the wet season. We experienced 42 ml of rain overnight along with an incredible lightning show.

## FOLLOW US...

For more updates, photos and details on available positions follow us on our social media platforms. We love to share knowledge!



Kimberley Marine Research Station



@kimberleymarineresearchstation



@KMRS2009

Check out our website for more info.. <https://www.kmrs.com.au/>

Contact us via..

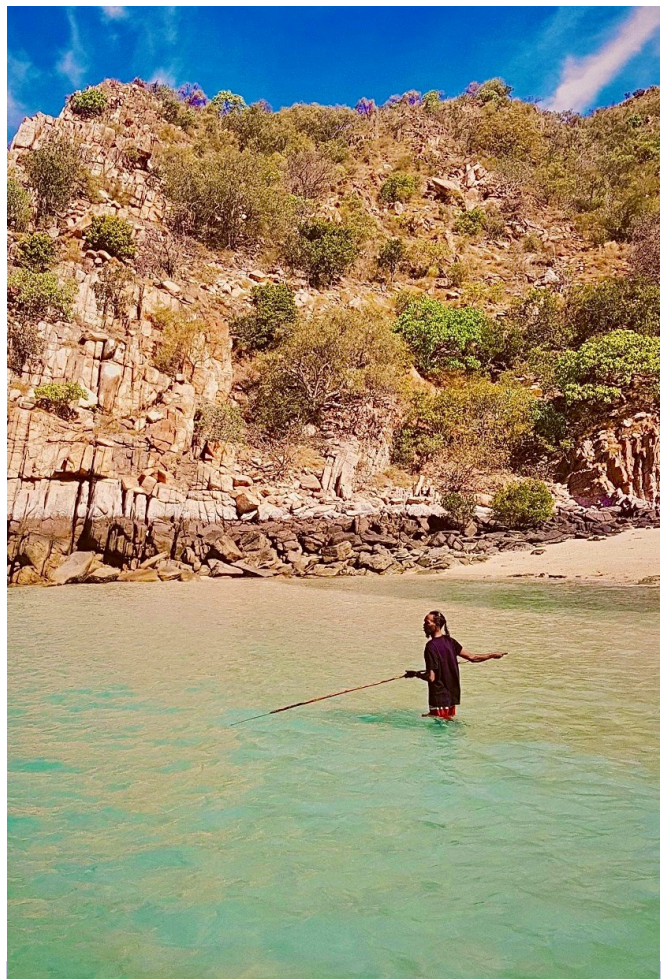
Phone: +61 8 9192 4999

Email: [research@cygnetbaypearls.com.au](mailto:research@cygnetbaypearls.com.au)

## CRC sampling

Our work with the Cooperative Research Centres (CRC) project is still moving forward. The aim of the project is to research the environmental factors contributing to juvenile pacific oyster mortality syndrome (JPOMS) which can wipe out >90% of seedstock. This of course can have a devastating effect on the industry.

The spat have been safely encased in protective mesh bags while on the lines in the water but they have now grown to a size where they are less vulnerable to predation from small marine animals. We have been working on the next phase of the project by removing them from the fine mesh bags to increase water and nutrient flow around the spat.



*Terry Hunter on our staff trip to Cone Bay.*  
Photo: Hamish Cowan