



KIMBERLEY MARINE

RESEARCH STATION • CYGNET BAY

MARCH – APRIL 2020



The last of the wet season stormy weather looms over Eagle Rock.

IN THIS EDITION...

The Cygnet Bay community pushes through the COVID-19 outbreak, a new spawning grows in the hatchery, and the weather shifts from the wet to dry season.

STAFF NEWS

With the advent of the global COVID-19 pandemic, it is hard to think of a place untouched by its widespread effects. Even though we are relatively remote at Cygnet Bay Pearl Farm, we have still experienced significant affects due to the outbreak. With that being said, it's safe to say that thanks to the flexible and optimistic nature of both our pearling and hospitably staff, we have comfortably adapted our working and social lives in order to do our part in flattening the curve in Western Australia.

The majority of changes were implemented throughout early March, when the severity of the pandemic was becoming evident. Measures taken included the closure of the farm to outsiders, accompanied by social distancing rules in both the workplace and throughout the farm as a whole. Meals were adjusted to be delivered on a takeaway basis to avoid the use of the buffet and lunches were pre-prepared by our hard-working kitchen staff. We even had a number of employees in a 14 day isolation, after returning from work on the new Broome pearling lease!



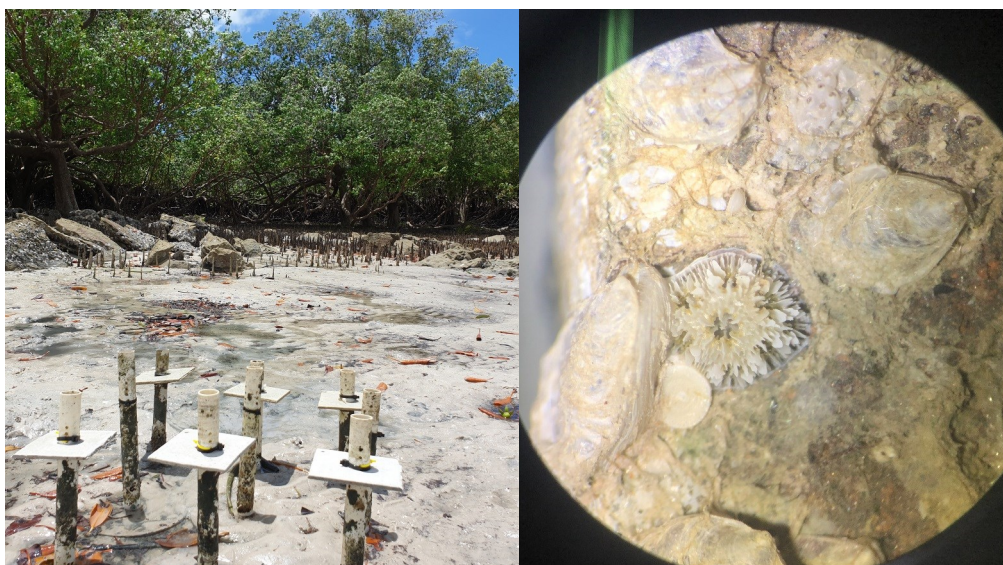
"The social" building for Cygnet Bay employees, currently under social distancing rules.

NEWS FROM THE RESEARCH STATION

Coral monitoring

Research projects have continued at the Kimberley Marine Research Station, despite the turbulent times. One such project is the monitoring of recruitment, growth, and overall health of corals living throughout the Cygnet Bay area. Our ongoing research involves the use of set transect lines within the intertidal zone, to monitor the growth and health of established coral communities within this ecologically resilient slice of the local habitat. The coral tile project also continues to track the recruitment of coral larvae through the area.

Recent coral bleaching events close to Broome have prompted a possible upcoming collaboration between the KMRS and the Bardi Jawi Rangers.



A rock oyster recruitment tile array at low tide (left), and a coral recruit among rock oysters as part of ongoing coral monitoring (right).

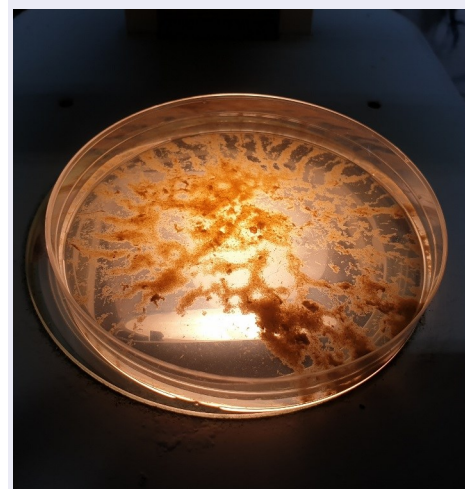
Rock Oyster Recruitment

Our rock oyster recruitment project, which monitors the settlement and growth of sessile shellfish species within the immediate Cygnet Bay area has continued. Tiles are deployed across 3 different sites, and animals living directly on these tiles are profiled on a monthly basis. Using 3 sets of interchangeable tiles allows KMRS to create a continuous data set of recruitment rates, per species, across a 3 month period before tiles are replaced and the process is repeated. This project gives important insight into how variation in local conditions are affecting natural ecosystems, information which also aids in the deployment of stock and equipment within Cygnet Bay Pearl Farm.



Biofouling project update

Aran's 16 week biofouling project continues, investigating how marine biofouling growth affects the *Pinctada maxima* oysters at Cygnet Bay Pearl Farm. Cleaning frequency is being manipulated, with different treatments being cleaned every 2, 4, 8 and 16 weeks and pearl growth and biofouling assemblages being measured during every cleaning period. A suite of environmental data is also being collected, to assess how both pearl oyster and biofouling growth shifts with the ever changing conditions throughout the Kimberley. Over the last 2 months we have already seen a dramatic shift in the local conditions.





The *Atalanta VII*, hooked up to a pearling long line during cleaning.



Broodstock oysters in a group spawning arrangement.

AROUND THE FARM

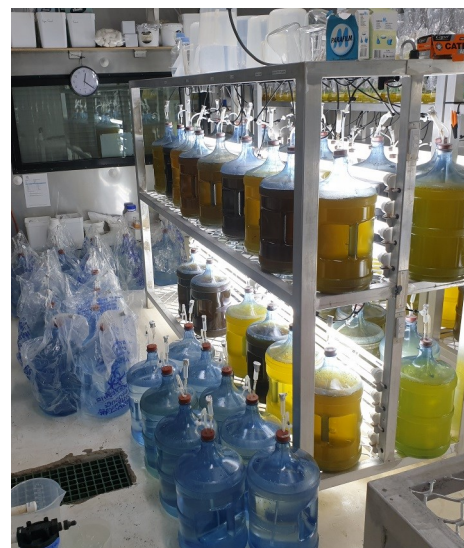
Spawning & hatchery operations

Throughout March we carried out 2 successful spawning events within the specially designed Cygnet Bay Pearl Farm hatchery. Prior to spawning a number of viable 'broodstock' oysters throughout the farm were assessed for gonad quality, and a number of males and females were selected and brought back to our hatchery building for an induced spawning. This involves a number of techniques which aim to increase oyster stress to a level at which they release sperm and eggs, which then fertilise and create living larvae within our hatchery tanks. Oyster larvae are then transferred into large tanks in which we care for them throughout their multiple stages of development.

Feed Algae production

Part of caring for growing *Pinctada maxima* larvae is making sure they have enough to eat. At the Cygnet Bay Pearl Farm hatchery we have a laboratory which is entirely dedicated to this task. Before spawning, hatchery employees along with assistance from KMRS interns grew a wide variety of algal feeds in anticipation for the newborn oysters. Since spawning in early to mid March, the algae lab team has been working hard to keep up with the ever-growing appetites of our future farm stock.

Algae growth begins in small 500 mL vials, and multiplies overtime to fill many 20L containers. Feed for larvae, and later spat, is prepared using a specifically tailored mixture of four different algae species, dependent on the age and number of spat present in each hatchery tank. Currently we are preparing the oyster spat for their eventual deployment into the Cygnet Bay Pearl Farm itself.



The algae lab in full swing. 20L 'carboy' containers are prepared to grow multiple feed algae species.

MORE AROUND THE FARM

Weather

The last two months have seen the transition from the end of the wet to the beginning of the dry season throughout the Kimberley region. Although rain has become increasingly infrequent, we have started to experience some colder temperatures, accompanied by stronger, prevailing easterly winds. Conditions are becoming particularly pleasant for scientific work, as with the easterly winds comes cooler water with significantly increased visibility!



Wet season weather has left the bushland surrounding Cygnet Bay lush as ever.



Frilled-neck lizard *Chlamydosaurus kingii*, endemic to Northern Australia and Southern New Guinea.

A new beginning for tourism

Although the tourism season was stopped short before it really began, due to the COVID-19 outbreak, we are stated to see the light at the end of the tunnel. With an increasingly low number of new cases of the virus appearing daily, restriction are due to rollback over the coming weeks.

Starting with the restaurant providing takeaway meals for Dampier Peninsular locals, our hospitality team will rise to meet a growing demand as regional and state lockdowns begins to ease. We anticipate a relatively large influx of tourists once travel restriction are relaxed, as Australians scratch their travel itch after months of self-isolation and social distancing.

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Check out our website for more info..

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Small bushfires burn through the night as a result of controlled burns throughout the Cygnet Bay area.

All photos in this issue by Aran