KIMBERLEY MARINE

RESEARCH STATION ● CYGNET BAY

JANUARY—FEBRUARY 2021

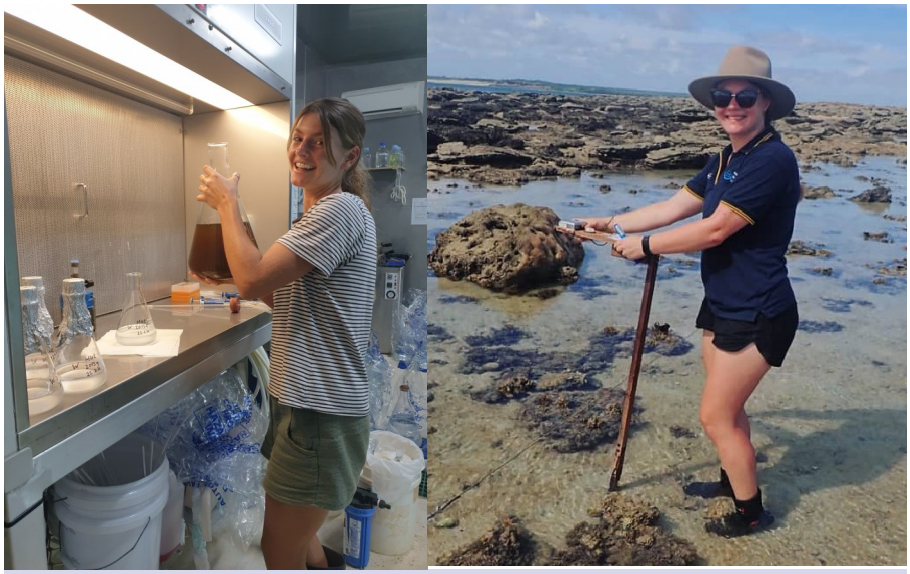
Panoramic view from the Cygnet Bay Pearl Farm lookout

IN THIS EDITION

Ongoing research projects continue into another year and the hatchery begins feed algae production in preparation for 2021 spawning.

STAFF NEWS

Cygnet Bay staff have begun to return to the farm after enjoying their Christmas breaks.



Our current interns Kate Pickering (left) and Lauren Munks (right)

In this period we have welcomed two new interns, Lauren Munks and Kate Pickering. Lauren studied marine science and coastal management at the University of Western Australia and went on to complete her honours thesis looking at temperate reef fish assemblages during storms. She is hoping to broaden her field research skills as well as gain knowledge and practical experience in the expanding Australian aquaculture industry. Kate studied marine and environmental science at Murdoch University and is hoping to gain some hands-on experience in marine research techniques and pearling during her stay at KMRS.

NEWS FROM THE RESEARCH STATION

Coral Monitoring

Research projects at the Kimberley Marine Research Station are continuing into 2021. 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.

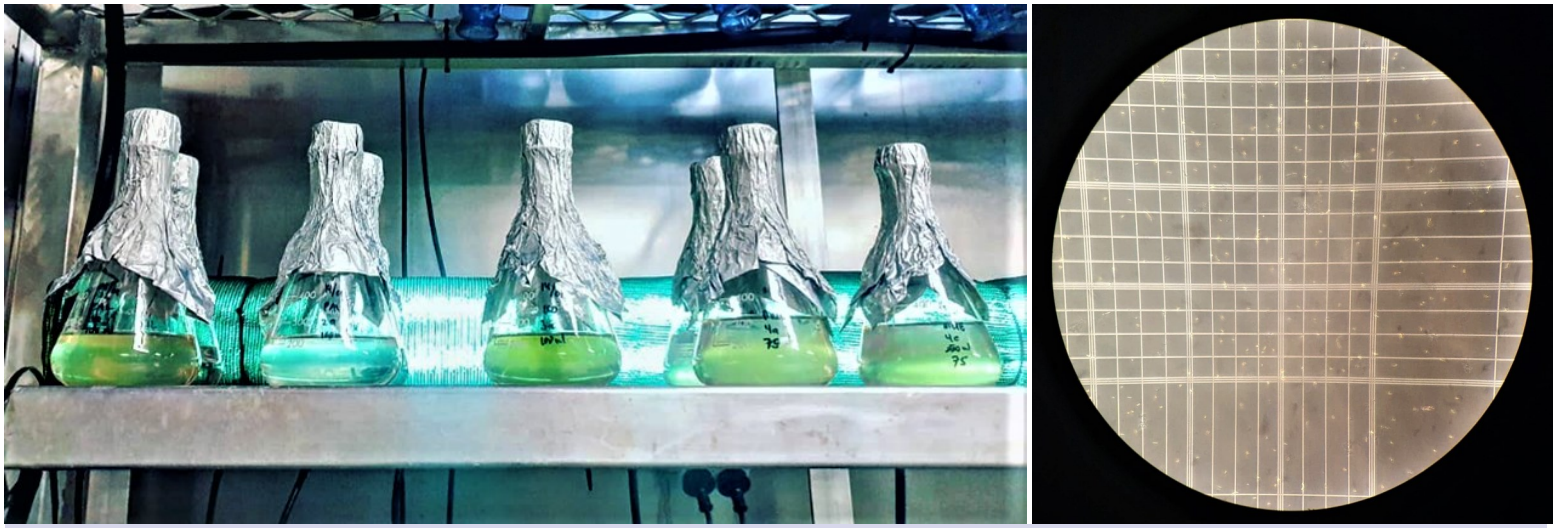
Various coral adults (top) and juvenile (bottom) in the Cygnet Bay intertidal coral monitoring area

Placement of recruitment tiles (top) and close up of rock oyster spat settlements (bottom)

Rock Oyster Recruitment

This year we are continuing with our rock oyster recruitment project, which monitors the settlement rates of rock oysters and other sessile shellfish species such as barnacles and limpets in Cygnet Bay. 3 sets of interchangeable settlement tiles (1 month, 2 month and 3 month) are positioned across 3 sites and recruits are counted on a monthly basis. This allows us to add to a continuous data set of recruitment rates across a 3 month period before tiles are replaced and the process is repeated. This data is useful for determining the effects of variation in environmental factors on ecosystems. February saw a large increase in the amount of recruits present on the 2 and 3 month tiles.

AROUND THE FARM

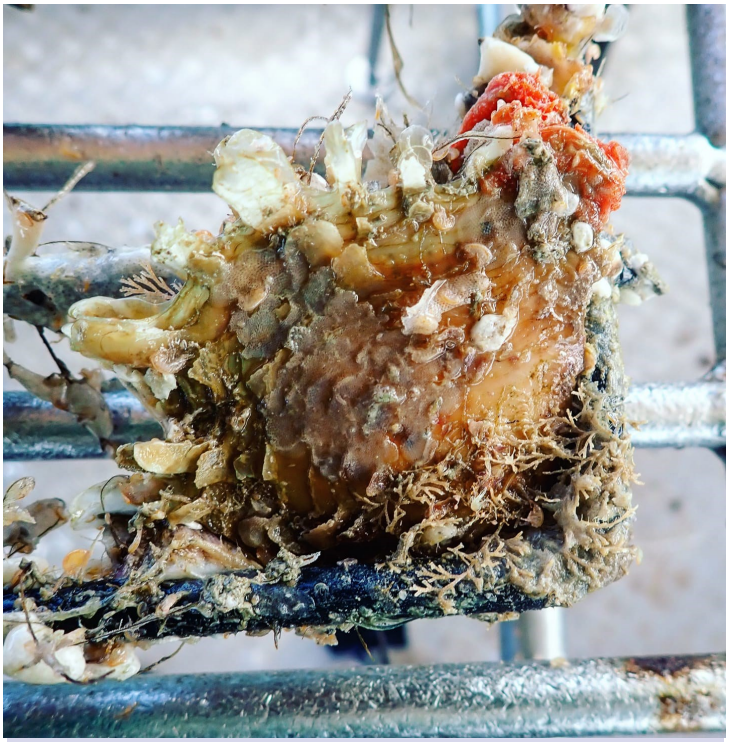


Various species of microalgae being grown in the lab (left) and microalgae cells being counted under a microscope (right)

Feed Algae Production

The Cygnet Bay Pearl Farm algae lab has been hard at work for another year cultivating several different species of diatom and flagellate microalgae to feed the *Pinctada maxima* larvae after spawning procedures. The algae lab team must work hard to ensure an adequate quantity of feed is available for spawning in early to mid March.

Due to variation in size and properties, the microalgae species are suitable for feeding the newborn oysters at different stages of development during their time in the hatchery. Specially tailored mixtures of the four algae species are prepared depending on the developmental stage and the density of larvae in each tank.

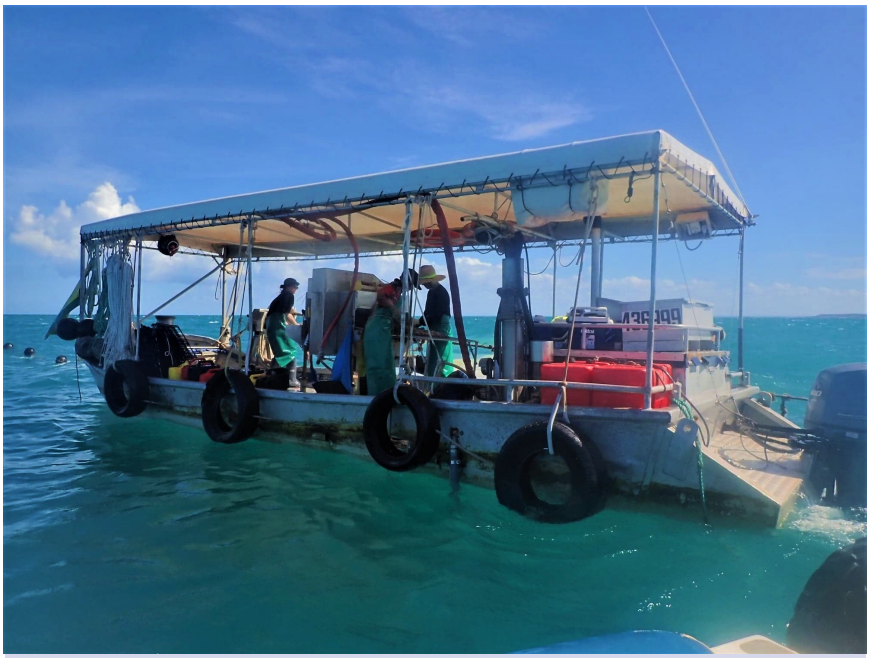


A juvenile (one year old) *P. maxima* from our genome sequencing trial

Pearl Oyster Research

We are continuing to investigate the genetic drivers for survivorship during outbreaks of Juvenile Pearl Oyster Mortality Syndrome (JPOMS); a syndrome capable of inducing mortality rates greater than 90% across young hatchery stock across young hatchery stock in Australian pearl farms. Routine sampling of specimens before, during and after outbreaks are analysed with the aim of uncovering any genetic traits that may be influencing survivorship during these events. In 2018, genome sequenced broodstock was spawned, and the spat deployed onto our various farm sites within Cygnet Bay. We are collecting a variety of data on this group of oysters to keep track of growth and survival rates and determine which farming techniques and genomes are favourable for pearl development.

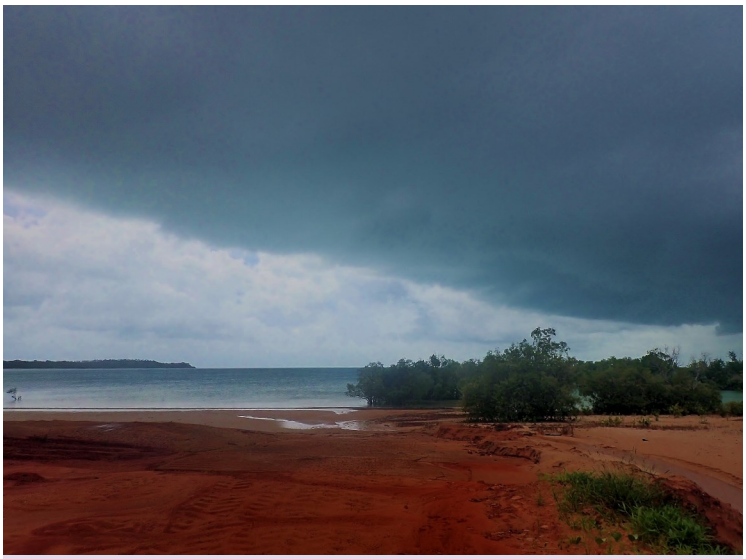
MORE FROM AROUND THE FARM



A Cygnet Bay Pearl Farm cleaning crew hard at work removing biofouling organisms from the longlines and pearl oyster shells

Pearling Operations

Our cleaning vessels have been hard at work over the past couple of months after taking a well-deserved break over the Christmas period. These vessels have specialised equipment to facilitate the removal of biofouling organisms such as algae, sponges, barnacles and other invertebrates. These organisms can lead to shell damage and other negative effects that can reduce oyster growth and pearl production. It is a never-ending job to keep our pearl oyster shells and longlines clean and in the best condition possible!



Storm clouds rolling in over Cygnet Bay during cyclone Lucas

Weather

January saw seen wet season in full swing throughout the region with the development of the first cyclone of 2021. Cyclone Lucas did not hit Cygnet Bay directly, however, we did experience some strong winds, rain and thunderstorms during the days it was active.

Tourism Ramps Up Again

After a relatively quiet start to the year, the Australia Day long weekend at the end of January saw a large influx of tourists to the accommodation here at Cygnet Bay. Guests have been enjoying fishing trips and other activities around the area as well as relaxing by the pool and enjoying delicious meals from the Cygnet Bay Pearls Restaurant. The attendance for pearl farm tours has also seen a steady increase over the period as larger tour groups have started to visit the area again.

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