

EXMOUTH RESEARCH LAB: FACILITIES



Controlled Environment Room

The controlled environment room (OE room) has flow-through temperature-controlled water and is configured into two separate rooms containing:

1. A multi-factor experimental room comprised of 27 x 50L aquaria.
The room has three temperature control systems each with nine tanks, allowing a second three level factor to be implemented while retaining three replicates in each temperature factor combination (i.e., a 3 x 3 x 3 design).
Aquaria are housed in temperature controlled water baths, allowing in tank temperatures to be maintained at $\pm 0.25^{\circ}\text{C}$ (or better) of the set value, within the range of 22°C to 36°C . Each aquaria has an in tank wavemaker and an Orphek Atlantic V4 light situated above. These lights provide the capacity to program light regimes.
2. Larval rearing room comprising of 2 x 500L and 4 x 80L conical larval tanks.
A temperature control system provides water at a set temperature to the entire room. There is also a work bench with multiple seawater outlets.



Experimental room at the Exmouth Research Lab.



Larval rearing room at the Exmouth Research Lab.

EXMOUTH RESEARCH LAB: FACILITIES

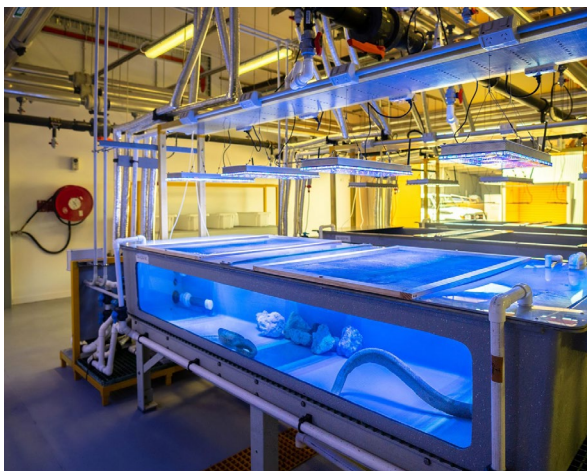


Open Laboratory Area

The open laboratory area comprises two separate areas:

1. Three 1200L holding systems. Each holding system is temperature controlled to an accuracy of up to $\pm 0.5^{\circ}\text{C}$ of the set point with a recirculation flow of 4000L per hour and three full water exchanges a day (water exchange can be increased but this decreases temperature accuracy). The system has programmable wavemakers to create changing turbulent flow and 4 x Orphek Atlantic V4 lights, with the capacity to program light regimes.
2. 8 x benches that can each hold:
 - 8 x 50L aquaria
 - 4 x 100L aquaria
 - 2 x 200L aquaria
 - 8 x 60L kreisal aquaria
 - or any combination of the above

All benches are set up as flow through systems supplied by 38°C , ambient water temperature and 20°C seawater that can be manually mixed to a desired temperature manually. There are wavemakers and programmable lights suit all tanks.



1200L holding systems in the open laboratory area at the Exmouth Research Lab.



Benches holding a combination of aquaria combinations at the Exmouth Research Lab.

EXMOUTH RESEARCH LAB: FACILITIES



Molecular (Dry) Laboratory

- Zeiss Stemi 305 dissecting and Zeiss Primo Star compound microscopes, both with Axiocam 208 colour camera attachments.
- DNA extraction, quantification and amplification capabilities (instruments including QuantStudio, nanodrop spectrophotometer, eGel electrophoresis and imaging).
- PCR thermal cycler (ProFlex PCR machine).
- Eppendorf pipettes, 10 microl, 20 microl, 200 microl and 1000 microl, plus 10 microl multichannel pipette (8 channels).
- Lab coats, gloves, safety glasses provided.
- General consumables provided (plastic ware, glassware, ethanol, millipore water).
- Sample storage available (fridge, -20 freezer and -80 freezer).



The molecular laboratory at the Exmouth Research Lab.



The molecular laboratory at the Exmouth Research Lab.

Wet Laboratory

The wet laboratory offers bench space with fresh and salt-water taps and a fume cabinet.

EXMOUTH RESEARCH LAB: FACILITIES



Accommodation

Exmouth Research Lab Accommodation

The researcher accommodation is located about 1.5km from the Exmouth Research Lab and 1.5km from the town centre.

The house can sleep up to 15 people across 5 bedrooms. There is plenty of parking space available, and the house is connected to NBN internet and office space. Gear wash down and laundry facilities are on site, and all linen is provided.



Alternative Accommodation

Exmouth is a major tourism centre so there is a range of accommodation options – from luxurious to low budget. The Ningaloo Centre website is a good source of information on available accommodation. Note, accommodation fills up quickly so any bookings will need to be made well into the future.

The Ningaloo Centre is located at 2 Truscott Cres, Exmouth WA 6707, Australia and can be reached on 08 9949 3070.

Family Care

The Minderoo Exmouth Research Lab is a family friendly facility. Please enquire how we can help facilitate family care while you undertake your research.

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Vessels and Vehicles

The Minderoo Exmouth Research Lab is located 2km from the Marina boat ramp and 16km from Bundegi boat ramp, allowing for quick access to Exmouth Gulf. Access to the Ningaloo Reef is provided by Tantabiddi boat ramp, located 38km away from the Lab.

Tethys

Tethys is trailered 7m plate aluminium vessel surveyed to 15nm offshore and a 5-person capacity. Equipped with a Yamaha 225hp outboard motor it has a travel range of approx. 100nm. Features include a Simrad GPS/sounder, 600W pure-sign wave inverter (for charging sensitive 240-volt electrics, e.g., laptops), 12-volt DC charging (cigarette lighter) and salt/freshwater deck wash.

A coxswain's certificate and Minderoo sign off is required to skipper *Tethys*.



Tethys being launched.

Isurus

Isurus is the newest vessel in the Exmouth Research Lab fleet. The trailered vessel will be surveyed to 30nm offshore and have a 6-person capacity. At 7.5m length and 2.7m beam it will provide a greater deck space than *Tethys*. The vessel is estimated to have a travel range nearing 200nm, with dual 140hp outboards for additional safety on long voyages. Features will be comparable with *Tethys*, with the addition of a davit arm and winch and side door.

A coxswain's certificate and Minderoo sign off is required to skipper *Isurus*.



Toyota 70 Series Landcruiser Ute

This is the primary towing vehicle. When not in use for towing, it is available for researcher use if they have car days allocated. There is also the option to hire additional vehicle days.

An Australian manual driver's licence is required to drive this car.



Mitsubishi Triton

This is the primary towing vehicle. When not in use for towing, it is available for researcher use if they have car days allocated. There is also the option to hire additional vehicle days.

An Australian driver's licence (automatic or manual) is required to drive this vehicle.