

FLOURISHING OCEANS RESEARCH INFRASTRUCTURE & PROGRAMS



Ningaloo Marine Research Centre – Business model

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FLOURISHING OCEANS RESEARCH INFRASTRUCTURE & PROGRAMS

OVERVIEW

- **BACKGROUND**
- **WHY**
- **WHAT + OBJECTIVES**
- **HOW**
- **NINGALOO MARINE RESEARCH CENTRE (NMRC)**

RESEARCH INFRASTRUCTURE & PROGRAMS

BACKGROUND

- Minderoo Foundation's Flourishing Oceans initiative – 3 part philanthropic marine research and conservation program:
 - Eliminate marine plastic pollution;
 - Global Fishing Index - fish stock status report card;
 - Indian Ocean-wide Research Infrastructure and Programs.

WHY

- Indian Ocean is least understood of the world's oceans
- Lack of available research infrastructure
- Tyranny (and expense) of distance from world's major marine research providers
- Minderoo in a unique position (agnostic, well-resourced, local).



RESEARCH INFRASTRUCTURE & PROGRAMS

WHAT

- M/Y Pangaea Ocean Explorer.
- Ningaloo Marine Research Centre.
- Others being considered.

OBJECTIVES

- Provide Australian and international research organisations with world class marine research facilities.
- Attract new levels of scientific funding and capacity for Indian Ocean science and conservation.
- Enable globally impactful science.



RESEARCH INFRASTRUCTURE & PROGRAMS

HOW

- Facility time donated to third-party research teams through merit-based application process.
- Biannual calls for proposals through Minderoo website.
- Proposals assessed by Scientific Advisory Board of independent experts.
- Schedules and programs developed around top-ranked proposals.
- Extra capacity filled by lower ranked proposals to maximise facility use.



RESEARCH INFRASTRUCTURE & PROGRAMS

HOW

- Proposals sought to address research issues under 3 broad themes:



THEME 1. Fish population dynamics

- Distribution, abundance, structure, movements;
- Understand/predict climate change responses;
- Oxygen metabolism & responses to environmental dO_2 changes;
- Identifying spatial conservation values;
- Understanding impacts of fishing;
- Rebuilding overfished populations.

RESEARCH INFRASTRUCTURE & PROGRAMS

HOW

- Proposals sought to address research issues under 3 broad themes:



THEME 2. Human impacts on ocean ecosystem health and resilience

- Understanding habitat and community condition and changes;
- Performance and requirements of Marine Protected Areas and other conservation tools;
- Developing habitat conservation and rehabilitation solutions.

RESEARCH INFRASTRUCTURE & PROGRAMS

HOW

- Proposals sought to address research issues under 3 broad themes:

THEME 3. Plastic pollution

- Measuring, mapping and identifying sources of ocean plastic pollution
- Assessing impacts of ocean plastics to wildlife, economies and human health
- Developing solutions for mitigating impacts of ocean plastic



RESEARCH INFRASTRUCTURE & PROGRAMS

NINGALOO MARINE RESEARCH CENTRE (NMRC)

NINGALOO CENTRE:

- Capex upgrades to meet contemporary research aquarium facility standards:
 - Install constant seawater supply to site;
 - Insulate ceilings and external walls;
 - Internal plumbing (for variable experimental layout);
 - Precision control of environmental variables.
- Rearrange and equip internal spaces for functionality and improved workflow.
- Minderoo fully covers operating costs.



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ACCOMODATION:

- Provide scientists with accommodation for short-long term field and laboratory research programs:
 - Close to Research Centre, shopping/dining and marina;
 - Likely mix of short-term stay, long-term lease and building development options.

LOCAL SCIENTIFIC SUPPORT STAFF (min. 4.0 FTEs):

- Research Centre manager;
- 2 x aquarium/laboratory technicians;
- Field support technician;
- All permanently based in Exmouth.



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NINGALOO MARINE RESEARCH CENTRE (NMRC)

VESSELS

- Provide scientists access to research vessels, vehicle and qualified operator(s):
 - 7.3 m trailable RIB;
 - 10.5 m purpose-built research RHB;
 - Towing vehicle.
- Permanently located in Exmouth, requiring local service support.
- Pangaea Ocean Explorer support.



RESEARCH INFRASTRUCTURE & PROGRAMS

SUMMARY OF LOCAL COMMUNITY BENEFITS

- Local business opportunities:
 - NMRC capex works.
 - Facility, vessel and vehicle maintenance and repairs.
 - Equipment manufacture and repairs.
 - Short stay accommodation.
- Rental accommodation.
 - Housing for visiting scientists and staff.
 - Offsite equipment and vessel storage.
- Future building developments.
- Employment, training, education and volunteer opportunities.

