

PUERTO MORELOS

MARINE CONSERVATION



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PUERTO MORELOS MARINE CONSERVATION

Join one of our flagship research projects to develop hands-on practical fieldwork experience or complete an independent research project as part of your undergraduate or postgraduate dissertation.

Puerto Morelos has an amazing habitat to research including 9 dive sites, 85 species of fish from at least 14 different families and 41 species of hard coral.



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RESEARCH OBJECTIVES

HUB OBJECTIVES INCLUDE

- Collect data on the abundance and variety of fish species in the seagrass beds ecosystem to monitor biodiversity for the National Fisheries Institute of Mexico.
- Understand the rate of recovery of the Mesoamerican Reef System and its overall health by collecting data on coral, fish and benthic species in association with Healthy Reefs for Healthy People Initiative.
- Collect data and information on coral illness including bleaching in association with Healthy Reefs for Healthy People Initiative.



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RESEARCH OBJECTIVES

HUB OBJECTIVES INCLUDE

- Monitoring of key fish species of commercial value in the reef ecosystem for National Fisheries Institute of Mexico.
- Collect data on incidental sightings of marine megafauna as indicators of reef health and general biodiversity for a range of partners including National Commission of Protected Areas.
- Investigating the marine water quality in Puerto Morelos to determine the best areas for reef transplantation for the National Research Centre for Fisheries and Marine Aquaculture (CRIAP).



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RESEARCH OBJECTIVES

- Understanding the distribution of invasive lionfish species in collaboration with local authorities National Commission of Protected Areas.
- Collect data about marine debris to monitor the abundance and diversity of trash in the ocean for Ocean Conservancy.



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FLAGSHIP RESEARCH PROJECTS

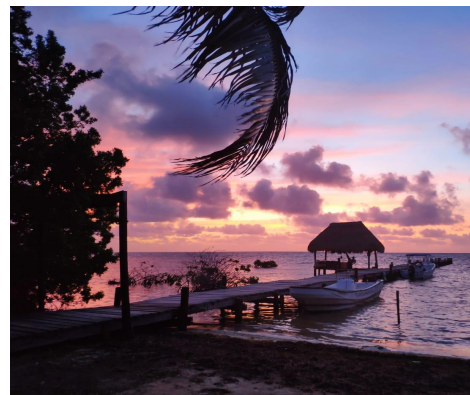
CORAL REEF HEALTH AND BIODIVERSITY FOR MESOAMERICAN REEF SYSTEM

Site: Monitoring sites around natural protected areas of Puerto Morelos

Research focus: Determining the state of the health of the reef ecosystem

Methodology: Atlantic and Gulf Rapid Reef Assessment (AGRRA) methodology and baited underwater cameras

Partners: National Fisheries Institute of Mexico and others



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FLAGSHIP RESEARCH PROJECTS

CORAL REEF RESTORATION FOR MESOAMERICAN REEF SYSTEM

Site: Coral lab in Puerto Morelos and monitoring sites around natural protected areas of Puerto Morelos

Research focus: Effectiveness of coral reef restoration through coral cloning and assisted fertilisation of coral gametes

Methodology: Monitoring of development of coral colonies obtained by coral fragmentation and/or assisted fertilization and determining the success rate of both of methodologies to generate viable coral colonies that can be transplanted back into the coral reef.

Partners: National Fisheries Institute of Mexico



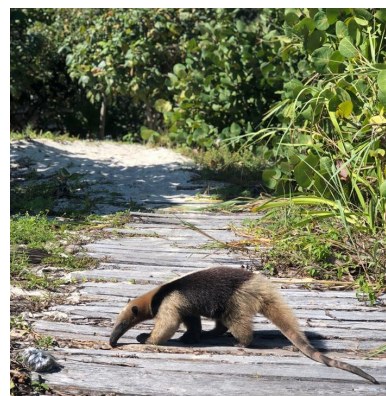
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INDEPENDENT RESEARCH PROJECTS

HUB TOPICS INCLUDE

- Coral reef health
- Invertebrates
- Fish
- Marine plastic pollution
- Marine megafauna
- Environmental education
- Marine water quality
- Influx of pelagic sargassum (algae)
- Invasive species
- Bull sharks (November - March only)



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INDEPENDENT RESEARCH PROJECTS

Recommended topics on datasets we have:

- Transient bull shark population of Playa del Carmen research.
- Coral, fish and benthic indicator species to determine the health of the reef.

Recommended topics for new research projects:

- Monitor and assess influx of sargassum to help local authorities predict quantity and appropriate control measures are taken.



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EXISTING DATASETS

AVAILABLE DATASETS INCLUDE

- **CRIAP dataset:**
 - Queen conch population
 - Shark fisheries
 - Commercial fisheries research
 - Lobster population
- **GVI dataset:**
 - Presence of coral diseases
 - Biomass and biodiversity of reef fish species, particularly those that are key species for AGRRA
 - Live coral cover by species
 - Composition of benthic fauna obtained by point intersect methodology
 - Lion fish presence
 - Mega fauna presence



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TARGET SPECIES

FISH

- Butterflyfish
- Angelfish
- Grunts
- Parrotfish
- Seabass
- Snappers
- Surgeonfish
- Triggerfish
- Wrasses
- Filefish
- Porgies
- Porcupinefish
- Band tail pufferbar jack
- Bermuda/yellow chub
- Great barracuda
- Lionfish
- Permit
- Spotted trunkfish
- Three-spot damselfish
- Yellowtail damselfish



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TARGET SPECIES

DECAPODS

- *Panulirus argus* (spiny lobster)
- *Panulirus guttatus* (spotted spiny lobster)
- *Stenopus hispidus* (banded coral shrimp)
- *Ancylomenes pedersoni* (pederson cleaner shrimp)
- *Mithrax spinosissimus* (channel clinging crab/king crab)
- *Stenorhynchus seticornis* (yellowline arrow crab)

CONCH/SNAILS

- *Lobatus gigas* (queen conch)
- *Cassis tuberosa* (king helmet)
- *Cyphoma gibbosum* (flamingo tongue)



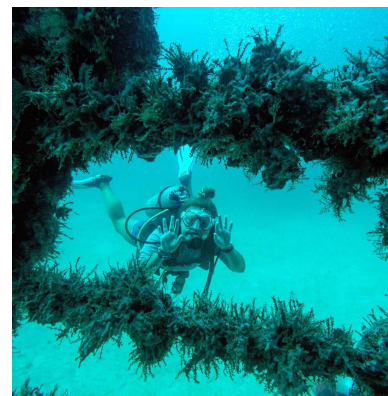
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TARGET SPECIES

INVERTEBRATES

- Coral
 - Hard coral
 - Soft coral
- Sea urchin
 - *Diadema antillarum*
 - Juvenile (long-spined sea urchin)
 - *Diadema antillarum* Adult (long-spined sea urchin)
 - *Tripneustes ventricosus* (Sea Egg)
 - *Echinometra viridis* (reef urchin)
 - *Lytechinus variegatus* (variegated urchin)
 - *Eucidaris tribuloides* (slatepencil urchin)



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TARGET SPECIES

- Sea cucumbers
 - *Holothuria mexicana* (donkey dung sea cucumber)
 - *Isostichopus badiotus* (three rowed sea cucumber)
 - *Actinopyga agassizi* (five-toothed sea cucumber)
 - *Holothuria thomasi* (tiger tail sea cucumber)
- Fireworms
 - *Hermodice carunculata* (bearded fireworm)
- Sea stars/Brittle stars
 - *Davidaster rubiginosus* (golden crinoid)
 - Asteroidea (sea stars)
 - Ophiuroidea (brittle stars)



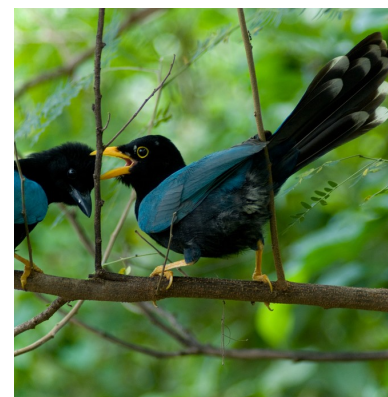
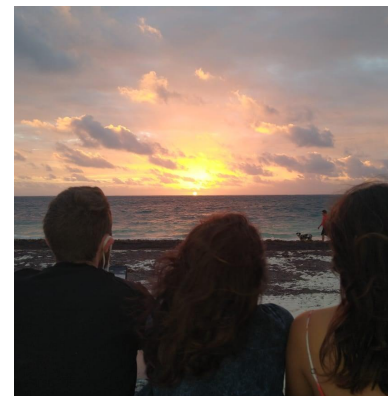
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TARGET SPECIES

MARINE MEGAFAUNA

- Sharks
- Rays
- Moray eels
- Dolphins
- Manta Rays (not common)
- Pelagic predator fish



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