

# CAQALAI

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## MARINE CONSERVATION



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# CAQALAI MARINE CONSERVATION

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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.

The Republic of Fiji is a South Pacific archipelago that covers approximately 1.3 million km<sup>2</sup>, making it one of the largest reef systems in the world. Fiji is home to incredible biodiversity: there are hundreds of species of hard and soft coral, sea fans and sponges, a recorded 1,200 species of fish, nearly 500 species of molluscs including over 250 nudibranchs and over 100 bivalves in Fijian waters.

GVI is working closely with local communities in Fiji as well as the Fiji Locally Marine Area Network to establish Marine Protected Areas and thereby protect the health of the reef system.



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# RESEARCH OBJECTIVES

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## HUB OBJECTIVES INCLUDE

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- Provide a long-term and consistent collection of data on the reefs of Caqalai and Moturiki to establish community-managed Marine Protected Areas (MPAs) for the Fiji Locally Marine Area Network (FLMMA) and Partners in Community Development Fiji (PCDF) in order to protect the overall health of the reef system and provide a better approach to sustainable fisheries.
- Monitoring of commercial fish and invertebrate taxa across the reefs of Caqalai and Moturiki in collaboration with FLMMA and the local community.
- Collect data on the abundance and diversity of reef fish taxa across Caqalai and Moturiki on behalf of FLMMA and the University of the South Pacific (USP) Marine Studies Program.



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# RESEARCH OBJECTIVES

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- Collect data on incidental sightings of marine megafauna as indicators of reef health and general biodiversity for the USP Marine Studies Program, the Department of Fisheries and Great Fiji Shark Count.
- Gain a greater understanding of the overall reef health by collecting data on coral, fish and benthic species in the reef of Caqalai and Moturiki in association with FLMMA and MYMST.
- Collection of benthic cover assemblage data and coral diversity for the purpose of coral reef health assessment across the reef of Caqalai and Moturiki in association with FLMMA.



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# RESEARCH OBJECTIVES

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- Collect data and information on coral bleaching in collaboration with USP Marine Studies Program.
- Collect longitudinal data on the water temperature in the reefs of Caqalai for Marine Ecology Consulting.



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# FLAGSHIP RESEARCH PROJECTS

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## MONITORING OF COMMERCIAL INVERTEBRATE TAXA

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**Site:** 14 dive sites across the reefs of  
Caqalai and Moturiki

**Research focus:** Commercial invertebrate  
population

**Methodology:** Invertebrate Belt Transect  
20 meter

**Partners:** FLMMA

## COLLECTION OF BENTHIC ASSEMBLAGE DATA AND CORAL DIVERSITY

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**Site:** 14 dive sites across the reefs of  
Caqalai and Moturiki

**Research focus:** Coral reef health  
assessment

**Methodology:** Point Intercept Transects  
50m Belts

**Partner:** FLMMA and USP



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# FLAGSHIP RESEARCH PROJECTS

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## CORAL BLEACHING

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**Site:** 2 dive sites across the reefs of Caqalai and Moturiki

**Research focus:** Assessing the correlation between water temperature increases and coral bleaching events

**Methodology:** Underwater Visual Census  
20m

**Partners:** USP and Marine Ecology  
Consulting

## MONITORING OF REEF AND COMMERCIAL FISH TAXA

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**Site:** 14 dive sites across the reefs of Caqalai and Moturiki

**Research focus:** Commercial fish population diversity, abundance, and biomass

**Methodology:** Underwater Visual Census  
50m

**Partners:** FLMMA



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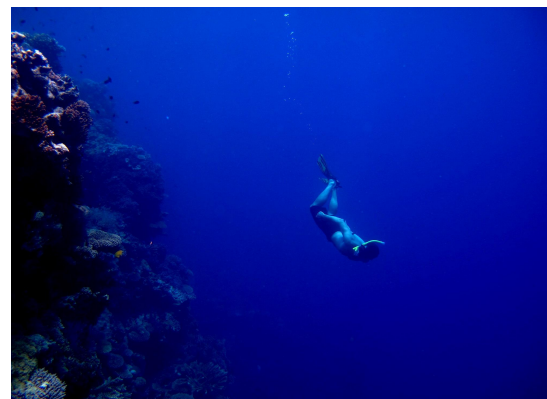
# INDEPENDENT RESEARCH PROJECTS

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## HUB TOPICS INCLUDE

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- Coral reef health
- Invertebrates
- Fish
- Marine plastic pollution in collaboration with Ocean Conservancy
- Marine megafauna for Great Fiji Shark Count (April, November)
- Environmental education
  - Rapid habitat assessments in five villages of Moturiki



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# INDEPENDENT RESEARCH PROJECTS

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- Invasive species
- Water quality
- Diversity of emblematic species (such as dolphins, marine turtles, reef sharks, sea snakes) indicating reef health
- Coral bleaching
  - The interrelationship between water temperature and coral bleaching
- Crown-of-Thorns starfish population monitoring (in collaboration with IRD Institute de Recherche)
- Nudibranch population monitoring



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# INDEPENDENT RESEARCH PROJECTS

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Recommended topics on datasets we have:

- The correlation between presence of Crown-of-Thorns starfish and coral cover diversity.
- The correlation between coral cover percentage and graser fish species as indicators of coral reef health.
- Researching nudibranch population as potential indicators of climate change.
- Comparison of marine protected areas against non protected areas focusing on a specific species or family.

Recommended topics for new research projects:

- Marine litter abundance and diversity to determine origin to inform management solutions.
- Soft coral research.



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# EXISTING DATASETS

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## AVAILABLE DATASETS INCLUDE

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- 4 years of data on the coral reef ecosystems: coral and benthic cover, coral diversity, coral recruit density; invertebrates abundance, diversity, and density; fish abundance, density, diversity (reef fish and commercial fish) biomass for commercial fish.
- 4 years of data (inconsistent) on megafauna incidental sightings that documents diversity.



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# TARGET SPECIES

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## FISH FAMILIES

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- Barracuda
- Bream
- Butterflyfish
- Emperor
- Fusilier
- Goatfish
- Grouper
- Yellow-Edged Lyretail
- Lined Bristletooth
- Mackerel
- Milkfish
- Moorish Idol
- Parrot fish
- Pufferfish
- Rabbitfish
- Snapper
- Chinamanfish
- Surgeonfish
- Orangespine Unicornfish
- Bluespine Unicornfish
- Sweetlips
- Trevally
- Triggerfish
- Tuna
- Wrasse



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# TARGET SPECIES

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## INVERTEBRATES

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- Urchins
- Crown of thorns sea star
- Gastropods
- Coral snail
- Drupella
- Trochus
- Triton's trumpet
- Tiger cowrie
- Giant clam
- Teatfish
- Curryfish
- Cspint lobster
- Spiny lobster

## BENTHIC LIFE FORMS

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- Hard coral
- Soft coral

## MARINE MEGAFaUNA

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- Dolphins
- Marine turtles
- Reef sharks
- Rays
- Sea snakes



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