



Use of habitat mapping and
resilience assessments to aid in coral
reef management

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Capabilities



M/Y Golden Shadow (67 m)

- Dive locker with hyperbaric chamber
- Laboratory with sterile hood, aquaria flow-through sea water system
- Seakeepers 1000 monitoring system
- Multiple small research vessels
- Elevator to deploy vessels up to 12 tons
- 16-20 berths for scientists



A diver in a black wetsuit and blue fins is swimming over a diverse coral reef. The water is clear blue, and the reef is covered in various types of coral, including branching and table corals. The diver is positioned in the upper center of the frame, looking down at the reef. The overall scene is a rich, colorful underwater environment.

Research Priorities

- Identify reefs of high conservation value for protection
- Characterize and map marine habitats
- Assess structure, composition and health of coral reef organisms (fish, corals, algae)
- Identify stressors across gradients of biodiversity, exposure and human impacts
- Characterize processes and factors that promote healthy reefs

An underwater photograph of a coral reef. The left side shows a close-up of various coral species in shades of brown, orange, and pink. The right side shows a deeper view of the reef with blue water and some fish. A dark blue vertical bar is on the right side of the slide, containing the title and some text.

Research Targets*

- Remote locations, compared to nearshore sites
- Sites under consideration for new management measures (e.g. potential MPAs)
- Existing MPAs that lack baseline information needed for management (“paper parks”)
- Sites under active management, mitigation, or restoration

*sites, information needs, conservation targets and partners determined from letters of engagement and discussions with key stakeholders



Outcomes

- Establish baseline conditions, characterize impacts , threats, and patterns of recovery
- Predict future conditions based on ecosystem attributes
- Document effectiveness of management and/or restoration efforts
- Identify potential management interventions
- Identify sites that should be included in MPA networks
- Produce tools to aid in place-based management (high resolution habitat maps/GIS database platform)

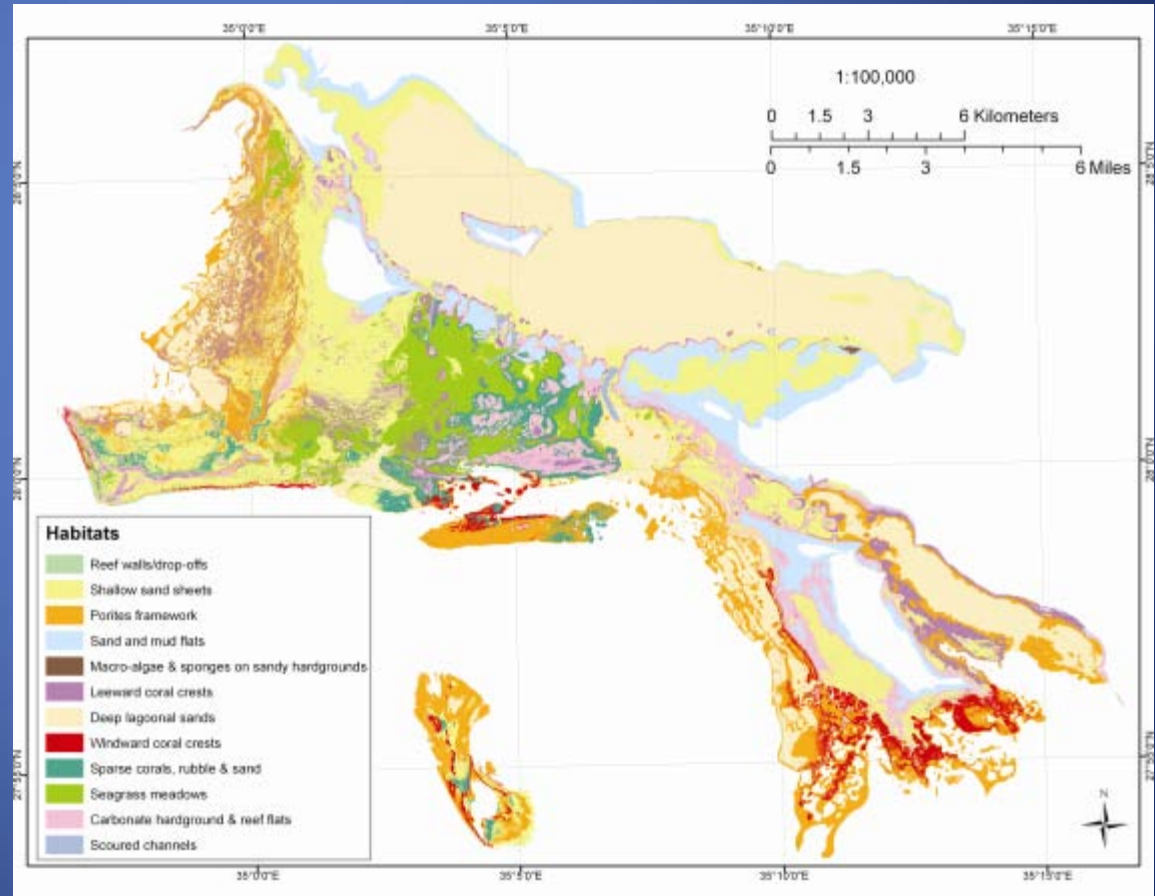
Use of Marine Habitat Maps

- Distribution and size of different habitat types
- ID sensitive, vulnerable or important areas
- ID number, sizes and spacing of protected sites
- Zone other areas for multiple uses



Existing Charts

Habitat maps aid in implementing spatially-based management approaches



New habitat maps

Reasons for success

- Work with resource management agency to identify targets for research (**target priority sites**)
- Involve local and regional experts in Expedition research (**provide training; ensure engagement and follow-up**)
- Able to access remote locations and cover large spatial scales rapidly, at a low cost (**assist countries that lack capacity/technology**)
- Provide high resolution tools and relevant information to aid in decision making (**single comprehensive tool; dynamic**)
- Identify specific management interventions based on data and models (**work with resource managers**)
- Incorporate educational modules (**improve buy-in**)

THANKS FOR YOUR ATTENTION!

