

Fisheries for the Future: Enhanced Fisheries Management for Sustained
Ecosystems and Biodiversity

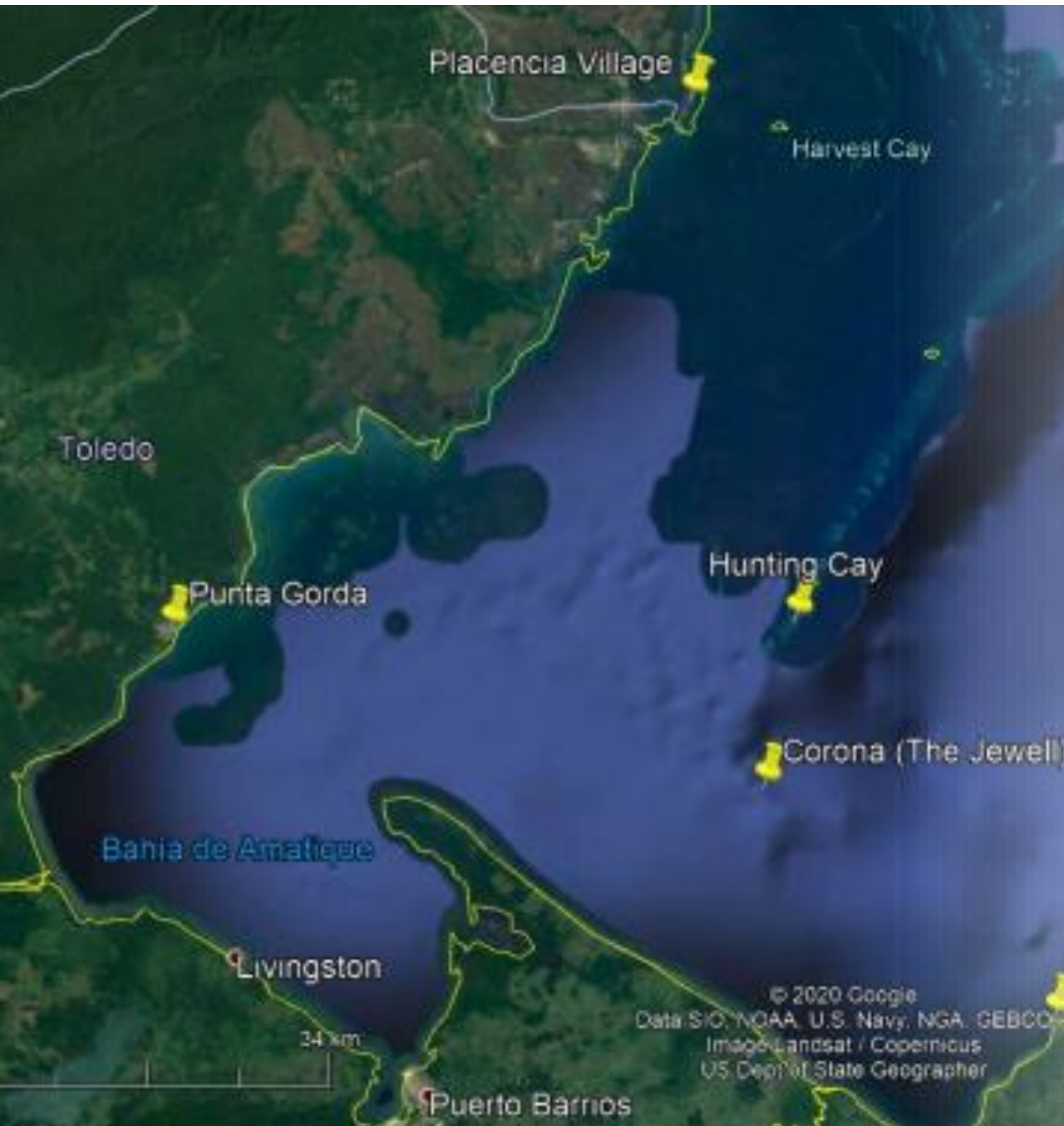
2nd Biennial Conference of the Belize Marine Fund, 10 May 2022

*Building knowledge of fish spawning
aggregations at Cayman Crown through
monitoring and protection*



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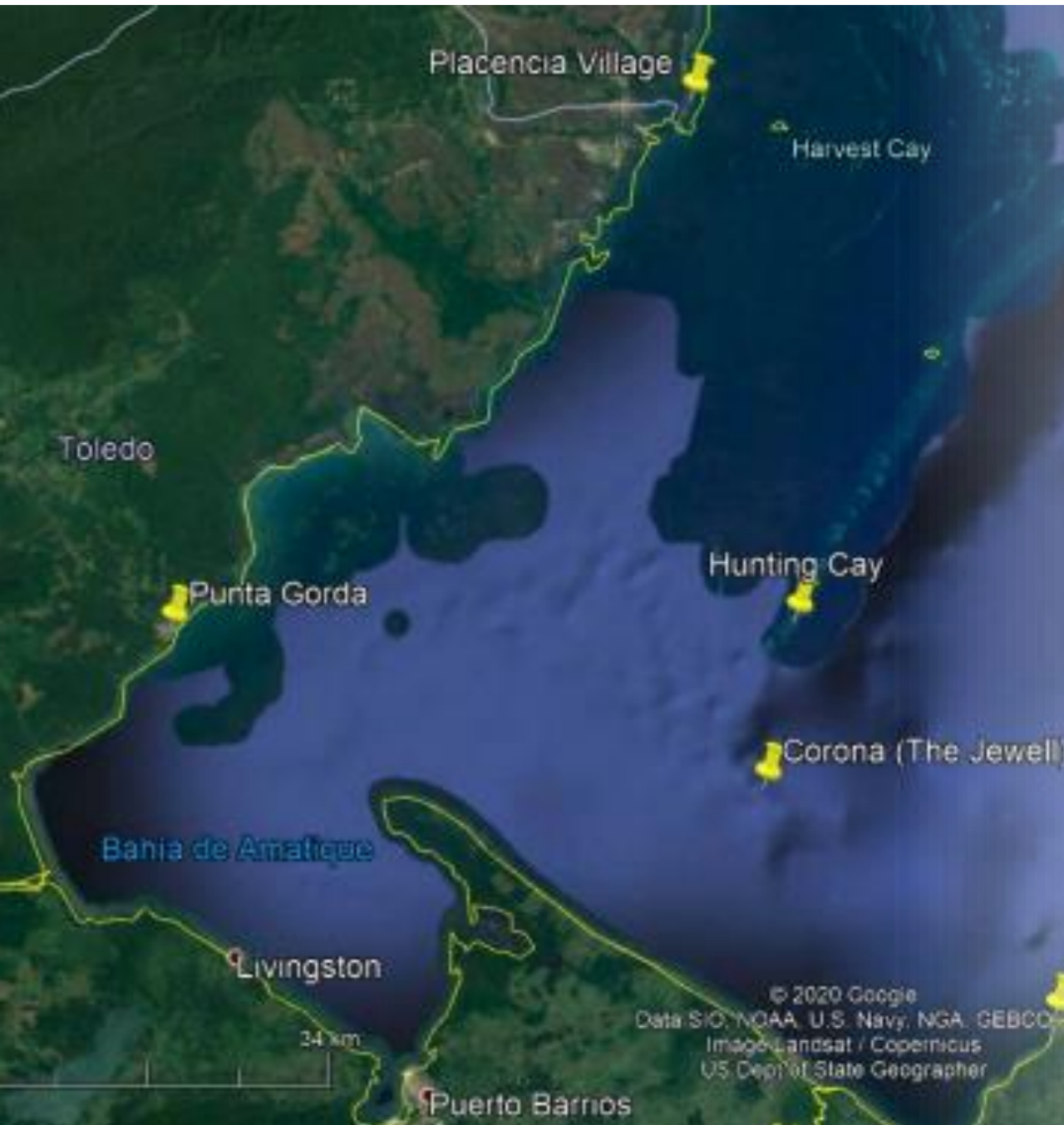
Cayman Crown

The Jewel of the Mesoamerican Reef

Located within the Gulf of Honduras, between Guatemala and Belize; situated at the southwest terminus of the Cayman Trench

Importance: biodiversity, role in larval dispersal / resilience and connectivity with the MAR

60% live coral cover, compared to the average of the whole Mesoamerican Reef of only 20% (Kramer et al. 2015)



Cayman Crown

The Jewel of the Mesoamerican Reef

Initial explorations indicate: reef supports fish spawning aggregations for numerous fin fish species and habitats for deep-slope snapper and bottom-dwelling species.

2020 survey characterized the use of the reef's resources in Belize, Guatemala, and Honduras

Survey concluded: Cayman Reef is extensively used for fishing by fishermen from all three countries with varying fishing modalities

Cayman Crown

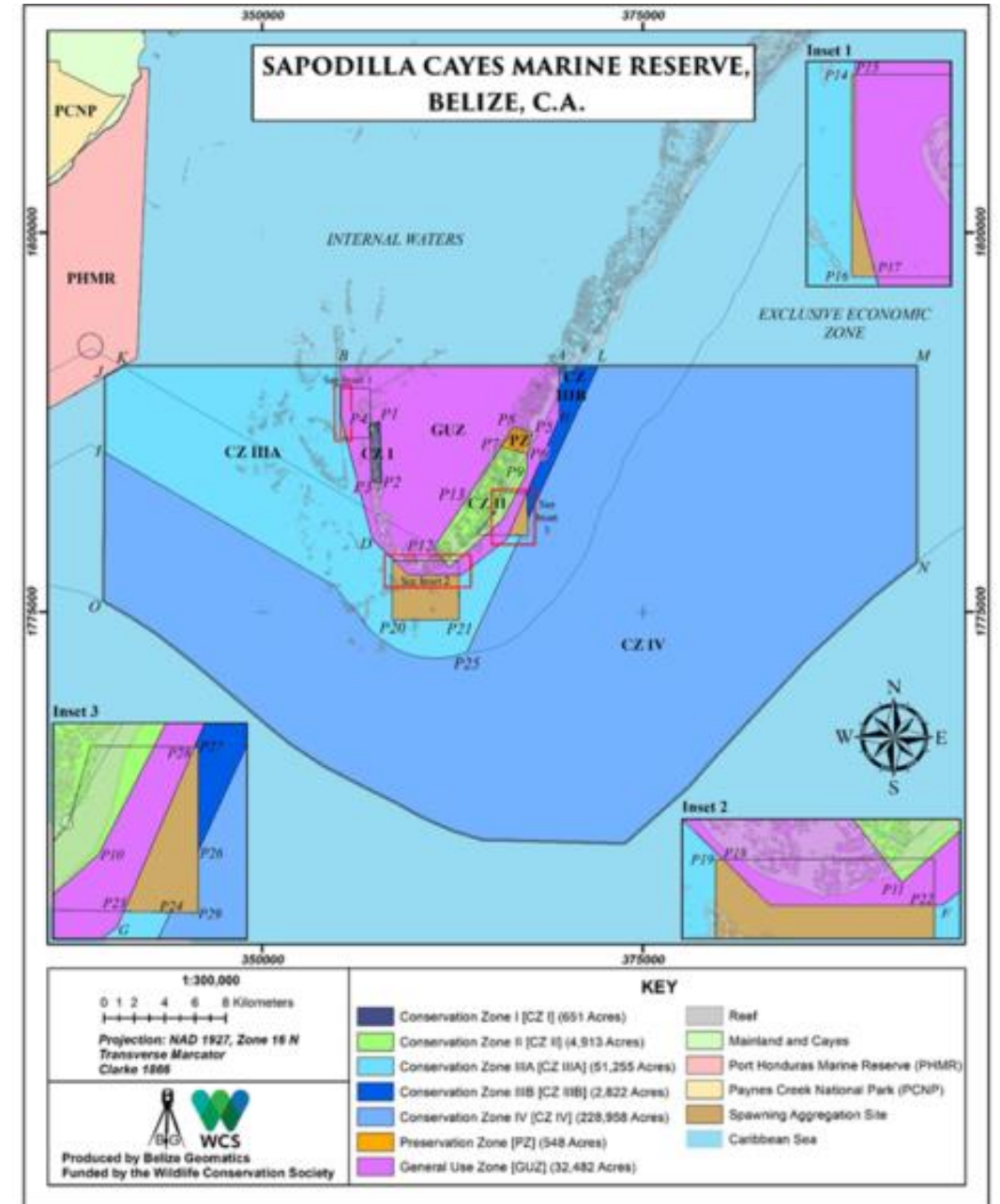
The Jewel of the Mesoamerican Reef

2020 - declared protected in both Belize and Guatemala

July 2020: included in the Sapodilla Cayes Marine Reserve (SCMR) by a Statutory Instrument signed by the Government of Belize

Found in Belize's Exclusive Economic Zone

Urgently need: information for management and protection



Project overview

Objective: *To contribute to the Knowledge, Monitoring and Protection of Mesoamerican Reef's Fish Spawning Aggregations and Replenishment Zones*

Achieved through a holistic approach which includes research and monitoring of Cayman Crown

Since 2020, TIDE has conducted the characterization of potential fish spawning aggregations sites at Cayman Crown

Preliminary Research

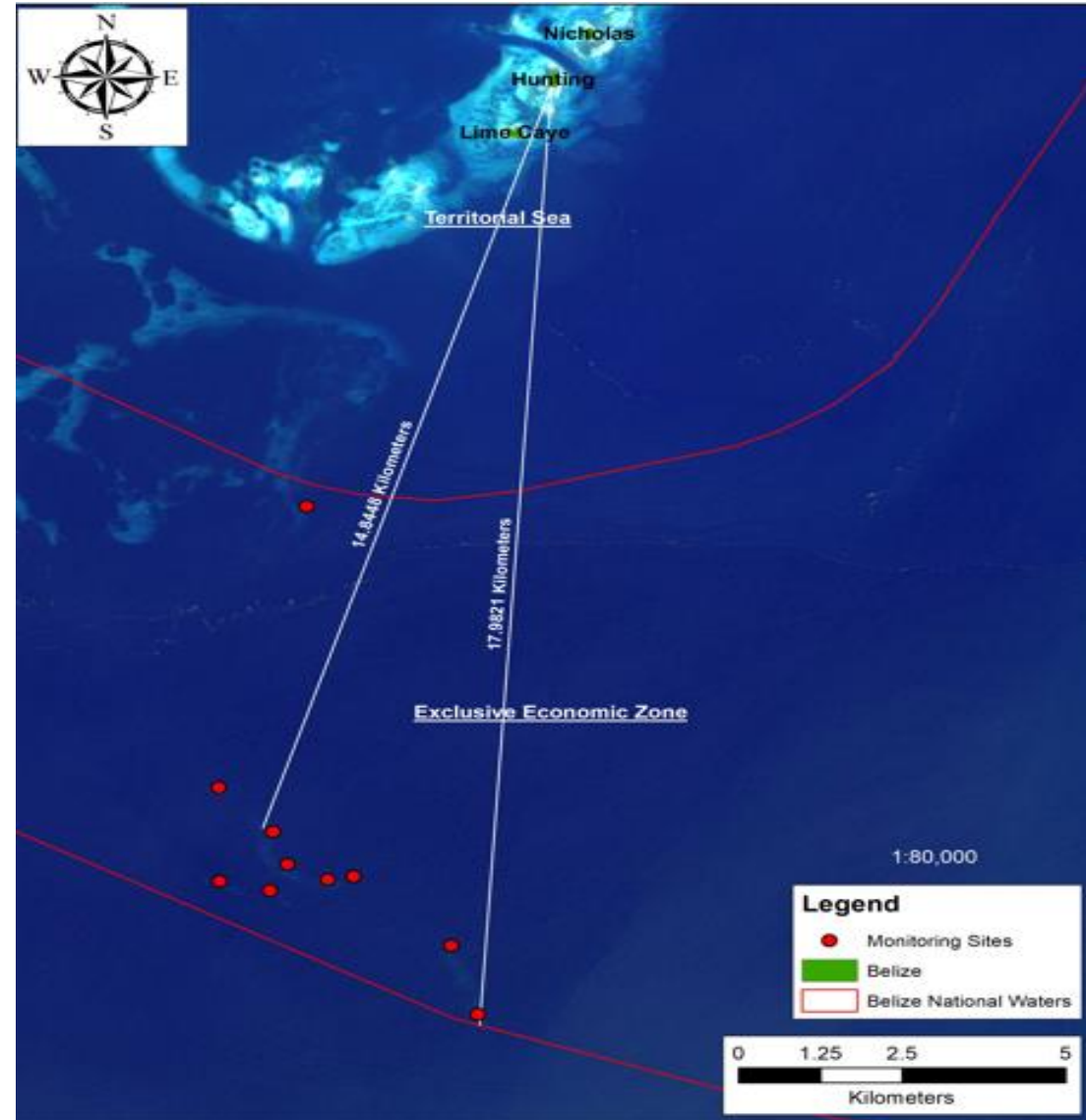
Preliminary results from February 2020 to April 2022:

- 26 sites characterized
- ~37 fish species reported

Evidence of spawning = behavior and physical changes in fish species

Spawning behavior observed in the following fish species:

- Ocean Trigger Fish (color change)
- Atlantic Spade (grouping, courtship)
- Tiger Grouper (color change)
- Black Grouper (color Change, courtship)
- Dog Snapper (courtship, barred across body)



2022 FSA Monitoring / Characterization

Other research includes:

- Evidence of FSA: horse eye jack, crevalle jack, Atlantic spadefish, mutton snapper, cubera snapper and ocean triggerfish
- Reported many charismatic megafauna (e.g., pilot whales, sperm whales) and pelagic fishes (e.g., marlin, sailfish, wahoo, mahi mahi, kingfish and various species of tuna)

Project interventions and achievements

- Secured legal recognition and management of CC, working closely with BFD, WCS, BCG, and Ministry of Foreign Affairs
- SI signed by Minister of Fisheries on 31 July 2020 for the expansion of SCMR, to include protection of CC
- Development of SCMR management plan through consultancy services
- Training on standard techniques and protocols for monitoring aggregations and coral reefs
- Procurement of equipment to facilitate research and monitoring at CC
- Signing of Collaboration Agreement with FUNDAECO & HRI - April 6th, 2021
- TIDE currently applying for the co-management of SCMR
- Patrol and enforcement by Belize Fisheries Department / Belize Coast Guard

Conclusions

- Strong evidence of spawning behavior observed in fish species (e.g., horse eye jack, mutton snapper, Cubera snapper)
- Further research necessary to determine spawning sites
- Transboundary nature facilitates illegal fishing = decline in fish numbers = remnants for FSA
- Monitoring and evaluation of all FSA sites to ensure proper protection and management
- Effective enforcement is necessary

Thank you!

