FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY

Baseline Ecological Assessment of HI-A-389-A Technical Report Published in ONMS Conservation Series

Title: Baseline Ecological Assessment of Artificial Reef, High Island A-389-A: Pre- and Post-partial Structure Removal

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Summary: The report summarizes fish and benthic community observations collected from the oil and gas platform High Island A-389-A (HI-A-389-A) in the northwestern Gulf of Mexico before and after removal of the upper 21 m of the platform in July 2018 within the EFGB marine sanctuary boundaries. This effort was jointly funded by NOAA's Flower Garden Banks National Marine Sanctuary (FGBNMS) and the Bureau of Safety and Environmental Enforcement (BSEE).

Important Conclusions: The artificial structure is dominated by a fouling community comprised of sponges, hydroids, macroalgae, bivalves, barnacles, tunicates, zoanthids, bryozoans, and several stony coral species. The most abundant stony coral was an exotic species, orange cup coral (*Tubastraea* sp.), native to the Indo-Pacific. Analysis of the benthic community suggests four distinct biological zones occur, likely driven by light availability, wave action, temperature, and sedimentation. Significant changes in the biological community were reported after the removal of the working deck and associated equipment above water, which served as shade structure. The loss of hydroids documented from pre- to post-removal surveys was the most significant difference in the benthic community. Fish species on the platform were primarily invertivores, illustrating a strong link to food sources, given the dominant benthic community. Fishery acoustic surveys documented individual and schools of fish in close proximity to the platform during both pre- and post-removal surveys. Fish were observed throughout the water column prior to removal. Following removal, schools of fish were no longer present in the upper water column, but were present at depth. The water surrounding the platform had minimal changes from 2016 to 2019 and was characteristic of typical open ocean water with seasonal fluctuations. For more information, contact Michelle.A.Johnston@noaa.gov. To view or download the report, visit: https://sanctuaries.noaa.gov/science/conservation/2020-baseline-ecological-assessment-of-artificial-reef-hi-a-389-a.html

Significance: The changes presented in this study reflect a snapshot in time after removal of the upper portion of the platform, and aid in documenting the shift in benthic and fish communities. These data may be useful to federal agencies and resource managers aiming to assess impacts to biological communities on similar structures in the region as a result of conversion to an artificial reef.

A diver conducts a roving fish survey in the upper portion of HI-A-389-A before partial removal. (Photo: Ryan Eckert/FGBNMS)