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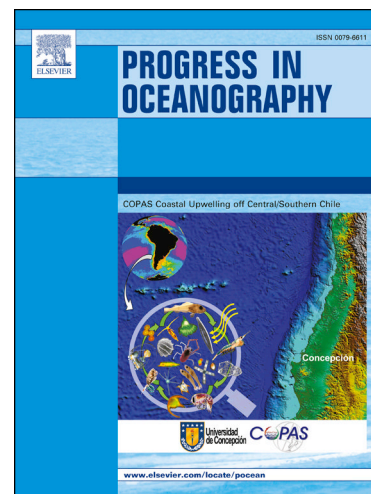
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Structural and functional similarity of epibenthic communities on standing and reefed platforms in the northwestern Gulf of Mexico.

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ABSTRACT

Fossil fuel extraction in the Gulf of Mexico currently involves the use of approximately 2,000 active oil and gas production platforms. These artificial structures provide a number of ecological functions including habitat provision for epibenthic invertebrates and production of food and refuge for a variety of fish species. To mitigate the loss of habitat when active platforms are decommissioned, Rigs-to-Reefs programs maintain existing communities by removing the upper 26 m of platform structure and converting upper and lower portions into artificial reefs. We examined the epibenthic communities of two standing platforms at 5 m and 30 m depths and three reefed platforms at 30 m depths. A combination of stable isotope and community analysis was used to assess the structure and food web functioning of epibenthic communities among these site-types. Reefed platforms (30 m) supported communities with similar food web structure as 5 m and 30 m standing platform communities. However, community composition in standing platform and reefed platform sites at 30 m differed from those of standing platform sites at 5 m depths. Results indicate that, although loss of shallow water habitat associated with platform reefing may diminish some aspects of biodiversity, reefed platforms support similar fundamental ecological functions as standing platforms in the Gulf of Mexico. Thus, the current reefing practice of removal of the upper 26 m of the structure does not substantially influence the functionality of these systems, and the retained structure maintains beneficial habitat for epibenthic communities.

Key words: Artificial Reef, Rigs-to-Reefs, Food Web, Stable Isotope

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