

Moored Fish Attracting Devices (FADs) in Dominica: Have they achieved their intended objectives?

Dispositivos atractores de peces amarrados (DCPs) en Dominica: ¿Han logrado los objetivos previstos?

Dispositifs d'attraction de poissons amarrés (DCPs) à la Dominique : ont-ils atteint les objectifs visés?

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EXTENDED ABSTRACT

The fishing fleet in Dominica comprises small-scale vessels (3-8 m) that exploit three key fishery resources: demersal species (shallow and deep reef-associated); coastal pelagic species (e.g. jacks, ballyhoo, mackerels); and offshore pelagic species (e.g. tunas, dolphinfish, marlins) (Theophile 2012). The fleet operates from 31 landing sites around the island and fishery data are monitored by the government at 13 key sites (Figure 1). Moored Fish Aggregating Devices (FADs) have been promoted in Dominica since the late 1980s to help address management concerns of declining pelagic catches as well as heavy fishing pressure on the inshore demersal reef resources. By the late 1990s moored FADs had become popular and widely used by many of the island's fishers (Defoe 2004). However, the effectiveness of FAD fishing in addressing the management concerns has never been fully explored (Fisheries Division 2012).

In this study, we examine whether or not the introduction of moored FAD fishing has resulted in increased fish landings and/or a decrease in fishing effort on reef resources. We do this through an assessment of 21 years of Government fishery catch and effort data (1994 – 2014) from 9 landing sites (Figure 1), where fishery catch and effort data have been consistently collected over the entire 21-yr time period. Catch (as landed weight by species) and fishing effort (as number of fishing trips) were examined for each of the three target fisheries (demersal, coastal pelagic, offshore pelagic).

Results reveal high interannual variability, but overall, a dramatic increase in annual fish landings at the 9 sites from 200

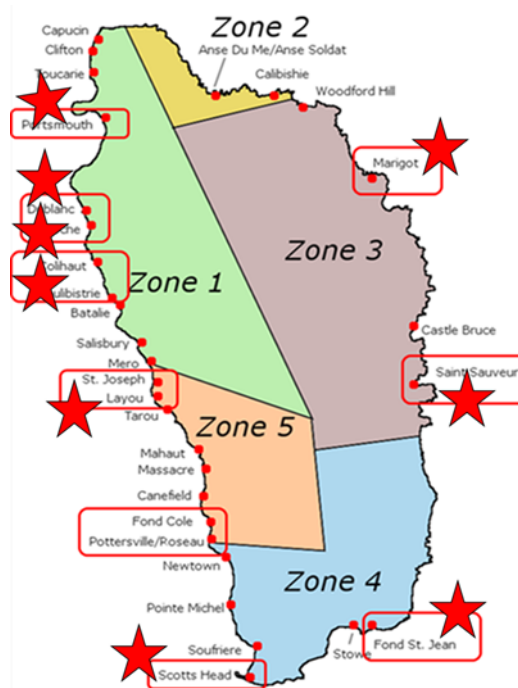


Figure 1. . Map of Dominica showing the 5 zones and 31 fish landing sites, the 13 monitored sites (in red boxes), and the 9 sites used in this analysis (red stars) .

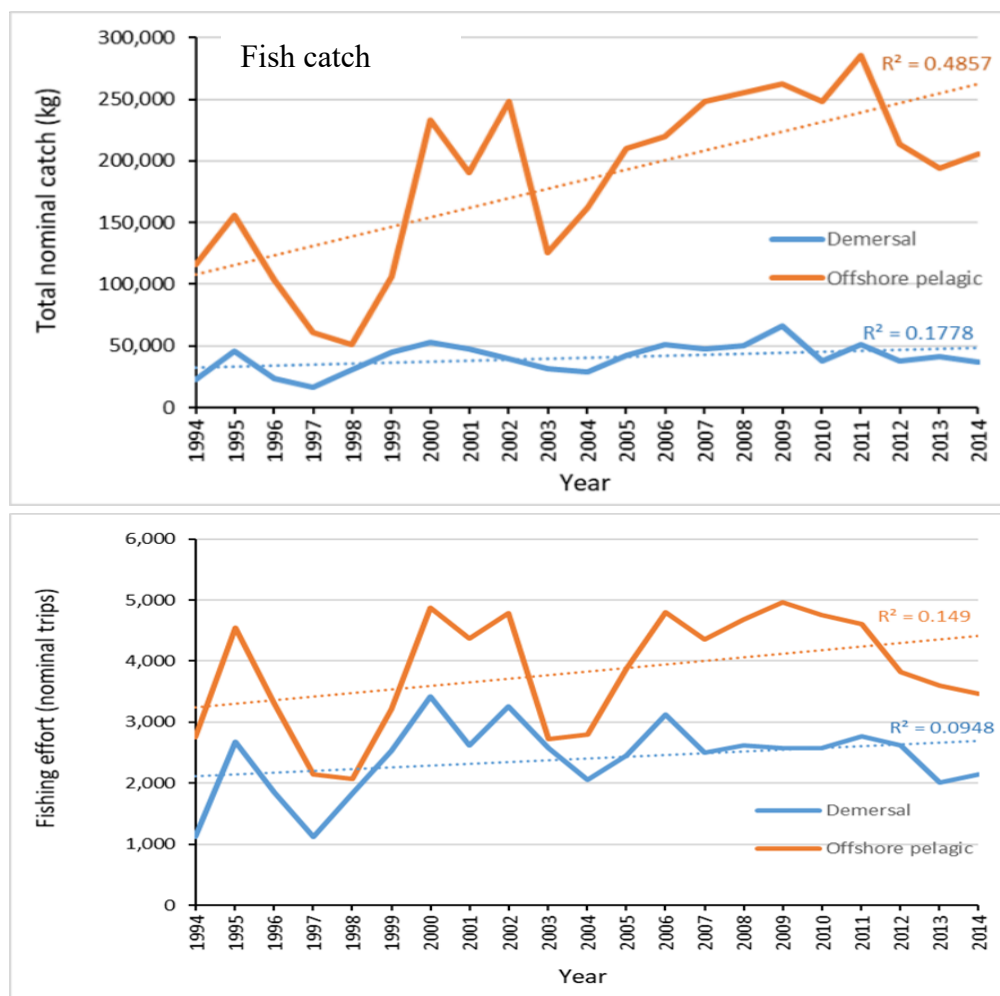


Figure 2. Time series plot of fish landings (top panel) and fishing effort (bottom panel) across the 9 monitored landing sites, shown separately for the offshore pelagic fishery (orange line) and the demersal fishery (blue line). Trend lines (dashed) are also shown.

to 350 metric tonnes since the introduction of FADs. The catch of offshore pelagic species, many of which are taken from around FADs was largely responsible for this increase (Figure 2). There was also a small increase in fishing effort in the offshore pelagic fishery (Figure 2). In contrast, there was no significant change in the catch or fishing effort in the demersal reef-associated fishery (Figure 2). As might be expected, there has also been an increase in fishing efficiency in the offshore pelagic fishery, measured as average catch per fishing trip, but no change in the demersal fishery.

In conclusion, the introduction of FAD fishing in Dominica's small-scale fisheries has been highly successful in meeting one objective of increasing overall fishery production, but has apparently failed to alleviate fishing pressure on inshore reef species. Further study is needed to better understand the factors that continue to incentivize fishers to target demersal species, in order to understand how this fishery could be effectively managed in the future

to reduce the fishing pressure and ensure sustainability of the reef resources.

KEYWORDS: Moored FADs, Fishery management, Dominica, Fish production, Fishing pressure.

LITERATURE CITED

- Defoe, Jullan. 2004. National Report: Dominica FAD Management Systems and Their Impact On Sustainable Fisheries Development. Rome: FAO Fisheries Division.
- Fisheries Division. 2012. A Fisheries and Aquaculture Policy for the Commonwealth of Dominica 2012 – 2037. Roseau: Government of Dominica.
- Theophille, Derrick. 2012. Fisheries Industry Census of Dominica: 2011 - Report of the Second Fisheries Industry Census for Dominica. Roseau: Fisheries Division, Government of the Commonwealth of Dominica..