Progress with the Development of Fish Aggregating Devices in the Caribbean

GREGORY S. MCINTOSH
McIntosh Marine, Inc.
621 Idlewyd Drive
Fort Lauderdale, Florida 33301

At the Conference on Environmental Management and Economic Growth in the Smaller Caribbean Islands, held at Barbados in the fall of 1979, speakers stressed the necessity of linking economic growth to environmental management. It was suggested that this might be achieved in a manner which would allow use of the "environment and natural resources without significantly foreclosing on the realistic hopes of any generation," (Beller, 1979). As a direct result of that conference, the author submitted a proposal to the Caribbean Conservation Association for the introduction of artificial reef construction techniques to the region. Although the construction of FADs was not a priority element in the body of the proposal, reference was made to the design, construction and installation of specific reefs for specific marine species. This might be considered the first attempt to introduce FADs and fishery enhancement technology into the region.

In 1980 the U.S. Virgin Islands installed a series of early design, shallow water FADs (Olsen, pers. comm.). The purpose of this deployment was to assess the effectiveness of small, inexpensive fish aggregators on the catch of commercial and recreational fishermen. The success of this experiment led to the political directive to purchase commercially manufactured FADs for shallow and deep water deployment. During these experiments, a less ambitious effort to assess FAD effectiveness was conducted in Puerto Rico by a recreational fisherman, interested in improving his catch-effort percentage. Two early design FADs were deployed in 400 and 800 feet of water off the island's north coast in front of San Juan Harbor. These units were fished by a limited number of anglers for a short period of time. Although catch-effort was improved, the results of this experiment were never formally quantified (Campos, pers. comm.).

In 1980 at the 34th Annual Meeting of the Gulf and Caribbean Fisheries Institute, held in Mayaguez, Puerto Rico, a formal presentation was made, addressing the potential for FAD technology use by Caribbean Basin nations (deSylva, 1982). The United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service ran experiments with FADs in 1983 and 1984 at St. Croix, United States Virgin Islands. The purpose of these experiments was to compare the efficacy of several midwater structure designs in the attraction of pelagic fish. For a period of five days recruitment to these units was measured as well as species composition/abundance and behavioral patterns from the underwater habitat, Hydrolab (Workman et al., 1985).

At the 36th Annual Meeting of the Gulf and Caribbean Fisheries Institute, in Trinidad, November 1983, Eastern Caribbean Fishery Officers identified FAD use and training as one of four top regional priorities. Specifically, the task group defined the objective as "Implementation of artificial reefs and fishery enhancement systems to increase landings of demersal and pelagic species for the Caribbean Region and to use this technology as part of management strategy to benefit commercial and recreational activities." An approach as to how this policy might be implemented was formalized and presented to the GCFI Board of Directors for approval. This recommendation included geographical areas to be covered and a scheme for monitoring results by local fishery officers to evaluate the utility and use of these devices and to determine their biological and economic effectiveness. Although the proposal submitted by the task development team was operationally complete, it lacked a funding component. Several nations of the sub-region, endorsed this consensus by requesting support from the United States Agency for International Development (USAID), Regional Development Office/Caribbean at Barbados. Concurrent with these deliberations, an independent proposal was submitted to USAID at the request of its Administrator, to develop fishery enhancement systems in the Caribbean Region. Curiously, both the solicited proposal and the request from the regional fishery officers were rejected by USAID. The rationale used to support the rejection was that the technology was not appropriate for the region.

Additional efforts by several GCFI members on behalf of a demonstration fisheries enhancement project in the region convinced USAID to modify its position and to fund a low level effort at St. Kitts/Nevis and Montserrat. The USAID has now agreed to fund the GCFI with U.S.$30,000.00 for a period of 46 weeks. The objectives of this limited effort will be to 1) evaluate the use of fish aggregating devices for improvement of artisanal fisheries in the Eastern Caribbean and 2) adapt and develop appropriate mooring, deployment and monitoring techniques to assist local use of fish aggregating devices in the Eastern Caribbean. A further project objective will be to qualitatively compare the effectiveness of commercially available FADs (McIntosh Marine) and locally manufactured units. The USAID has suggested the deployment of at least one linked tire model or other type already in use for comparison with commercially manufactured units.

These task/objectives will be carried out by Dr. Melvin Goodwin on behalf of GCFI with the assistance of Mr. Gregory McIntosh, project developer and manufacturer of the commercially available FAD units. The project calls for the installation of 60 commercially available mini-FADs and six clusters of 15-20 tires each. These two types of FADs will be deployed in similar areas for comparative purposes. Units will be monitored for 32 weeks at which time data will be reduced and analyzed and a report generated.

It is hoped that the results of this project will serve to delineate the role of fish aggregating devices in the Caribbean

Region and to stimulate further efforts to answer other questions, associated with their use (Myatt, 1982).

LITERATURE CITED

Bellers, W.S. (ed.). 1979. Environmental management and economic growth in the small Caribbean Islands. Proceedings of a conference held at Woodley - St. Michael, Barbados, September 17-21, 1979.

de Sylva, D.P. 1982. Potential for increasing artisanal fisheries production from floating artificial habitats in the Caribbean. Proc. July Carib. Fish. Inst. 34: 156-167.

Myatt, D.O. 1982. Application of mid-water fish attractors in the South Atlantic Bight. Middle Atlantic Reef Conference: a collection of abstracts. New Jersey Sea Grant Program, Fort Hancock, New Jersey.

Workman, I.K., A.M. Landry, Jr., J.W. Watson, Jr., and John W. Blackwell. 1985. A mid-water attraction device study conducted from Hydrolab. Bull. Mar. Sci. 37: 377-386.