Assessment of Nearshore Juvenile Grouper Habitats Using Traditional Knowledge of Fishermen

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Introduction

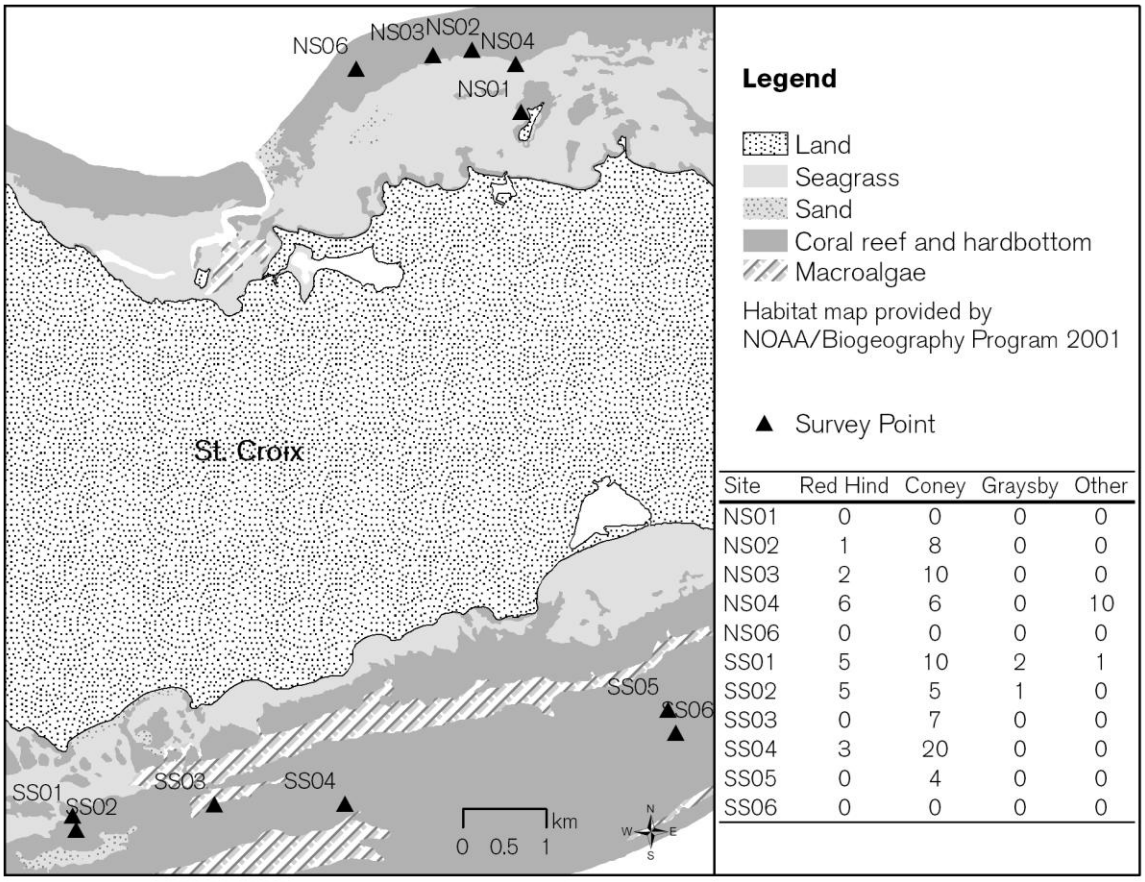
Fishermen are often, simply by virtue of the extent of their interaction with various commercial species, more acquainted with their distribution patterns, than scientists who, as funding will permit, might conduct occasional surveys, seeking to understand habitat preference of a given species or their geographical distribution. While fishermen's anecdotal or traditional knowledge may not in its basic state, be considered acceptable in the scientific realm, it can certainly make significant contributions to guiding scientific design of surveys and assessments, in order to obtain necessary quantitative data. Such involvement of fishermen in assessing nearshore habitats, for example, not only contributes to our body of information, but also validates the fishermen's contribution of their knowledge and expertise to the process, and can guarantee greater stakeholder support of eventual management strategies

Methods

Fishermen's vessels were used for transportation to the various study sites. They themselves assisted with underwater surveys, and they shared their knowledge of where juvenile groupers were traditionally seen. On two separate expeditions, a crew lead by St. Croix Fisherman Gerson Martinez, was invited to take The Ocean Conservancy staff to areas where they habitually saw sub-adult grouper species during the course of their work. The first trip was taken on the North side of St. Croix, and the second trip on the South side of the island The fishers basically roamed areas in which juvenile groupers were known to occur, and frequent forays were made into the water to assess these areas pointed out by the fishermen. Surveys were kept to depths no greater than 30 feet, and length of time observing an area varied considerably. Large areas in excess of 200 m^2 were sometimes covered by drift-snorkel. Data including species, size and number of groupers, and substrate type were recorded along with GPS points of the areas surveyed. "Chum" was used to attract the juveniles from their cryptic locations on the North side trip only.

Results

The results of the North side and South side surveys are illustrated below:



Site	Red Hind	Coney	Graysby	Other
NS01	0	0	0	0
NS02	1	8	0	0
NS03	2	10	0	0
NS04	6	6	0	10
NS06	0	0	0	0
SS01	5	10	2	1
SS02	5	5	1	0
SS03	0	7	0	0
SS04	3	20	0	0
SS05	0	4	0	0
SS06	0	0	0	0

Map 1.

Discussion and Conclusions

Both scientific and traditional knowledge are important in achieving optimal effectiveness in fisheries management. Our efforts to assess the nearshore distribution of Juvenile groupers on St. Croix were enhanced by the collaboration and information shared by fishermen. The areas pointed out by the fishermen almost invariably yielded observations of juvenile grouper presence. A juvenile form of grouper was in fact pointed out both on the North shore and the south shore by Martinez, and identified by him as juvenile Goliath Grouper (*Epinephelus itjara* Map 1. “Other”). Efforts are being made to confirm the identity of this species. If it is in fact confirmed to be the virtually locally extinct Goliath Grouper, there would be compelling need for further assessment of these areas and documentation of the existence of these individuals. Notwithstanding, these findings now set the stage for more robust scientific assessment of the areas, while supporting the need for, and value of continued work with fishermen to assist us in

identifying other areas in the USVI where juvenile groupers are known to traditionally exist.