

The Reintroduction of Nassau Grouper (*Epinephelus striatus*)
to Buck Island Reef National Monument

Submitted to:

United States Department of the Interior
National Park Service
Buck Island Reef National Monument
P.O. Box 160
Christiansted, St. Croix
U.S. Virgin Islands 00820

Submitted by:

William Tobias, Fisheries Biologist
Department of Planning and Natural Resources
Division of Fish and Wildlife
Lagoon Street Complex, Room 203
Frederiksted, St. Croix
U.S. Virgin Islands 00841

and

Dr. John Tucker, Jr., Head-Fish Culture Department
Harbor Branch Oceanographic Institution, Inc.
5600 Old Dixie Highway
Fort Pierce, Florida 34946

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RATIONALE:

Commercial fishermen have historically relied on breeding aggregations of Nassau grouper Epinephelus striatus as a significant seasonal source of income throughout the Caribbean. Smith (1972) and Munro (1974) reported breeding aggregations of Nassau groupers in the Bahamas and St. Thomas, U.S. Virgin Islands, respectively. Reports of catches up to 1000 kg per day using both West Indian fish traps and handlining were described by Munro (1974). Intense fishing pressure on grouper stocks in the U.S. Virgin Islands for 10 to 20 years was determined to be the cause of the decline in Nassau grouper abundance to the point where the grouper no longer aggregated (St. Croix - Skov, personal communication; St. Thomas - Sylvester et. al., 1977 and Olsen and La Place, 1978).

With the aid of scuba equipment, spearfishermen have virtually reduced the remaining grouper population to near extinction in territorial and federal waters today. The once common Nassau groupers of inshore waters, such as those observed along the Buck Island National Monument underwater trail, have become a memory of the past. In an effort to protect the remaining grouper in federal waters around Puerto Rico and the U.S. Virgin Islands (Exclusive Economic Zone), the Caribbean Fishery Management Council has established management regulations prohibiting the take of Nassau grouper. Unfortunately, the governments of Puerto Rico and the U.S. Virgin Islands do not have similar laws for commonwealth or territorial waters.

In an effort to determine the mariculture potential of Nassau grouper, Dr. John Tucker, Head-Fish Culture Department, Harbor Branch Oceanographic Institution, Inc., Fort Pierce, Florida, collected fertilized eggs from Nassau grouper obtained at Grand Cayman Island in February 1990. Under laboratory conditions, Dr. Tucker was successful in incubating the eggs and rearing the larvae to juveniles. In April 1992, juvenile Nassau groupers, 233-329 mm total length and 190-672 g weight, were tagged with numbered dart tags. Their diets were adjusted from pelletized commercial feed to more natural food items and behavioral work initiated to condition the fish for release back into the wild.

Dr. Tucker has offered the Department of Planning and Natural Resources, Division of Fish and Wildlife, 38 juvenile Nassau grouper for reintroduction into semi-protected St. Croix waters. These are the first and only Nassau grouper raised from eggs and could form the nucleus for reestablishing a spawning population of Nassau grouper in the Virgin Islands. By releasing the Nassau grouper in the semi-protected waters of Buck Island Reef National Monument, valuable information may be obtained on the behavior and survival capability of reared grouper. Commercial fishermen will view this project as a positive step towards improving depleted inshore reefish resources. Visitors to Buck Island may once again be able to see Nassau grouper as part of the reefish community of the underwater trail.

METHODS AND MATERIALS:

A five-meter square by one-meter high temporary holding pen, divided in half with a center partition, will be constructed of 5.1 cm square vinyl coated wire mesh. The holding pen will be secured on the bottom in a sandy area of one to two meters of water depth off the north side of Buck Island within the marine garden area. Groupers will be sent from Florida in two air shipments and acclimated in the temporary holding pen for a one-week period. The grouper will be fed approximately 2.5 kg of fish daily. At the end of the acclimation period, the grouper will be released and the holding pen removed.

Monthly census surveys will be conducted along pre-determined transects for a period of six months to obtain data on behavior and survival capability of reared groupers. During this period, questionnaires will be distributed to concessioners (snorkel tours and dive operators) at Buck Island Reef National Monument to voluntarily report Nassau grouper sightings. Cooperation will be requested from fishermen fishing in and around Buck Island waters to avoid taking Nassau grouper, especially tagged ones. The public will be informed through the media on the efforts of the National Park Service, Harbor Branch Foundation and Department of Planning and Natural Resources to reintroduce Nassau grouper into Buck Island waters as a cooperative conservation and fisheries management effort.

ANALYSIS OF DATA

- Fish census surveys
- Behavioral observations (home range, feeding, human impact, etc.)
- Survival ratio
- Fishermen catch survey
- Concessioner surveys

Site selection - NPS/DPNR
Holding pen placement - DPNR
Shipment of groupers - HBF
Preparation of fish food - DPNR
Daily fish feeding - NPS
Release of fish - NPS/DPNR/HBF
Monthly fish census - NPS/DPNR
Concessioner participation - NPS/DPNR
Fishermen cooperation - DPNR/NPS
Data collection - DPNR/NPS
Report preparation - DPNR

IMPLEMENTATION

19 August 1992

COMPLETION

20 February 1992

I look forward to our future cooperation on this interesting project.

Sincerely,

A handwritten signature in cursive script that reads "William Tobias". The signature is written in dark ink and is positioned above the printed name and title.

William Tobias,
Fisheries Biologist

CC: Ann Sellar, Director - DFW
Dr. John Tucker, Harbor Branch Foundation