



Photo credit: Stephania Bolden, NMFS.

KEY INFORMATION

Areas of Concern

Western Atlantic: south Atlantic and Caribbean.

Year Identified as “Species of Concern”
1991

Factors for Decline

- Fishing
- Illegal, unregulated, unreported fishing

Conservation Designations

IUCN: Endangered
American Fisheries Society: Threatened

Current Status:

Demographic and Genetic Diversity Concerns:

Although Nassau grouper are abundant in the Bahamas (they are the most important finfish landed there, second only to lobster and conch), the Florida and Caribbean populations are considered “**overfished**” by NMFS. High levels of fishing throughout the 20th century led to the commercial extinction of the species in the U.S. Caribbean by the mid-1980s. Florida populations declined between the 1950’s to reach very low levels in the early 1990s (Sadovy and Eklund 1999). There is some indication that spawning sites are quite specific and that their destruction or disturbance could negatively impact spawning activity of population(s) that use such sites. In this respect, species like the Nassau grouper, which may depend for their reproduction on highly specific spawning areas, could be severely habitat-restricted with the spawning sites forming significant bottlenecks in their life cycle. The loss of local stocks following the elimination of local spawning aggregations in a number of insular areas (e.g., Bermuda and Puerto Rico) suggests that some populations are partially self-recruiting, although further genetic studies are necessary to test this hypothesis. Their late age of maturation is a concern for conservation.

Existing Protections and Conservation Actions:

The Caribbean (1990), South Atlantic (1991), and the Gulf of Mexico (1996) Fishery Management Councils (FMC), and the State of Florida (1993) prohibited take and possession of Nassau grouper; all three FMCs currently classify them as overfished.

Factors for Decline:

Because of their reproductive strategy (aggregate spawners in site-specific areas), Nassau grouper spawning aggregations throughout the Caribbean are often targeted by fishers where many individuals, in reproductive condition, are removed. Anecdotal information indicates that some Nassau grouper spawning aggregations in the Caribbean have been severely reduced in number; however, recent tag returns from sites previously unknown indicate additional aggregation areas. This fishing pressure is not occurring in the U.S., as it is illegal to possess a Nassau grouper in the U.S., and there is no record of any Nassau grouper spawning aggregations in either the Gulf of



Species of Concern

NOAA National Marine Fisheries Service

Mexico Fishery Management Council or South Atlantic Fishery Management Council jurisdictional waters. Illegal and unreported fishing may be a problem. Hence, conservation efforts in the U.S. would likely benefit the Florida populations as they are probably a separate stock and mixing is unlikely.

Data Deficiencies:

Their habits, numbers, and life history characteristics in US waters are poorly understood because of their depressed numbers there.

Brief Species Description:

The Nassau grouper is a top-level predator found from inshore to about 330 feet (100 m). Adults are generally found near shallow high-relief coral reefs and rocky bottoms to a depth of at least 300 feet (90 m); juveniles (25-150 mm TL) have been found in and around coral clumps covered with macroalgae (*Laurencia* spp.) and over seagrass beds. Nassau grouper are characterized by five dark brown vertical bars on a pale tan or gray body, black dots around the eye, a large black saddle-blotch

on the caudal peduncle and a wide "tuning-fork" pattern on their forehead. However they can greatly lighten or darken this overall pattern within minutes. They reach a maximum size of about 39 inches (100 cm) TL and 55 pounds (25 kg). They are late-maturing (between 4-7 years) and fairly long-lived (up to 29 years). Unlike most groupers, Nassau groupers are primarily gonochoristic (separate sexes); however protogynous hermaphroditism (female to male sex change) has not been disproved. Nassau grouper are known to assemble in very large numbers (a few dozen to 100,000 individuals) at transient, site-specific areas each year to spawn, presumably cued by temperature and moon (new) phase. Aside from the spawning season, Nassau grouper are solitary, diurnal fish. They are ambush suction foragers: they lie and wait for prey and then engulf the organism in a current of water by opening their mouth and quickly expanding their gill covers. Often found near caves or large overhangs. Their diet is mostly fishes and crabs.

For Further Information:

http://www.oar.noaa.gov/spotlite/archive/spot_spawn.html

<http://www.flmnh.ufl.edu/fish/Gallery/Descript/NassauGrouper/NassauGrouper.html>

<http://www.reef.org/data/groupermoon.html>

Contact Information

For Nassau grouper, contact:

Dr. Stephania Bolden
NOAA Fisheries, Southeast Region
Protected Resources Division
9271 Executive Center Drive North
St. Petersburg, FL 33702
(727) 570-5312

Stephania.Bolden@noaa.gov

<http://www.nmfs.noaa.gov/pr/species/concern>

For Species of Concern, contact

NOAA Fisheries
Office of Protected Resources
1315 East West Highway
Silver Spring, MD 20910
(301) 713-1401

soc.list@noaa.gov

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- Eggleston, D.B. 1995. Mar Ecol Prog Ser 124: 9-22
- Robins, C.R. and G.C. Ray, and J. Douglass. 1986. A field guide to Atlantic coast fishes of North America. Houghton Mifflin Company, Boston, U.S.A.
- Sadovy, Y.J. and P.L. Colin. 1995. J Fish Biol 46: 961-976.
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