

## Discussion on Conservation

The Nassau grouper grows to a large size, has a slow growth rate and aggregates to an exact location annually to reproduce. These characteristics make this species particularly vulnerable to overexploitation. Theoretically over fishing changes the population dynamics of a species by decreasing abundance, and by selecting the largest individuals, those with the greatest reproductive capacity.

In order to prevent over fishing The Department of Fisheries has, since 1998, seasonally closed some specific areas where spawning aggregations occur to provide some protection to grouper stocks. In addition, the Department is conducting a stock assessment of the species.

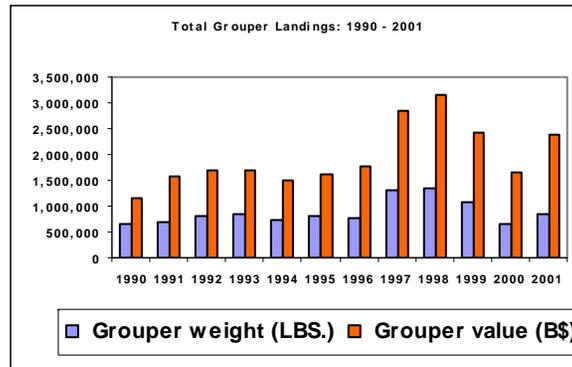


## Fisheries Regulations

In order to protect immature Nassau groupers, the Fisheries Regulations require that these fish not be taken, purchased or sold if less than 3 lbs. in weight. This regulation is also applicable to rockfish.

## Economic Importance

The Nassau grouper represents the most important finfish resource in The Bahamas. 618,961 pounds of Nassau grouper were landed in 2001, with a value of almost B\$ 1,852,150. Local landings and recreational catch are not accounted for. It is apparent from the graph that recorded landings are down since 1999.



## Grouper Facts

- 70% of all grouper landed in The Bahamas are Nassau groupers.
- 40% of the total annual landings are made during the months of November through February.
- Nassau groupers attain sexual maturity between 40 – 45 cm SL, which is at least 4 years old.
- Nassau groupers in The Bahamas spawn during the full moon phase in the winter months.
- Scientists have reported 23 spawning aggregations in The Bahamas, but the status of these are unknown.
- Nassau groupers can live to over 29 years.

# THE NASSAU GROUPER



*Working Towards Sustainable Management*



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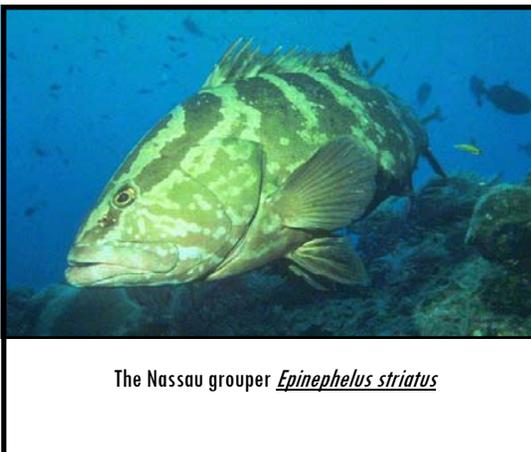
# THE NASSAU GROUPE

**Scientific Name:** *Epinephelus striatus*

The Nassau grouper can be found throughout most of the tropical western Atlantic. It has a geographical range from Bermuda to Brazil including the Caribbean Sea and the Gulf of Mexico. The Bahamas is considered to be one of the few, if not last, areas in this region that still has a substantial and relatively healthy population of the Nassau grouper. However, recorded landings are declining.

The Nassau grouper may be found in reef, mangrove, seagrass and estuarine areas to about 100 meters depth. They can usually be seen in caves, crevices and cracks of the reef. Nassau groupers contribute to the health of coral reef communities throughout the Caribbean as a top reef predator.

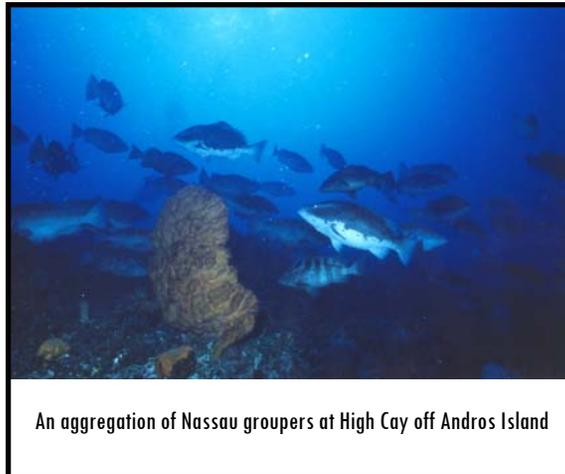
The Nassau grouper usually has five dark brown bands around its body, a black saddle-like patch near the tail fin, and a dark streak running from its nose through its eye.



## Reproduction

It is characteristic of some grouper species to undergo a sex change from female to male as the animal grows. This change occurs only with sexually mature groupers. The Nassau grouper however is no longer thought to do this. Rather they primarily live as male or female.

Nassau groupers are said to sexual maturity at about 4 years old.



A combination of the full moon and low water temperatures triggers a change in the Nassau grouper. During the full moon periods from December to February they aggregate in large schools. Every year Nassau groupers leave the reefs and travel to specific locations, generally on the seaward edges of the reef, to participate in reproductive activities. During this time the fish loses its olive brown color and becomes black on top and white underneath.

Spawning takes place around sunset when the aggregation moves from the shallows into deeper water. Males can be seen prodding the

bellies of females as they both swim toward the surface.

They rise quickly to the surface in small groups where the females release eggs and the males release milt (sperm) into the open sea. Of the million or more eggs that are released by each female, less than 1% will survive long enough to grow into adults.

## Status of Nassau Grouper within the Western Atlantic

The status of Nassau groupers is threatened throughout their range, with the exception of The Bahamas. Countries like Belize and the Dominican Republic have experienced serious declines in landings of Nassau groupers in recent times and in Florida it has been protected since 1996.

Other countries in the region have strict management measures in place, an example of this is the Cayman Islands who only allow hand lining on its aggregations.

Heavy fishing pressure is almost certainly the cause for the decline of the Nassau grouper throughout its range. Uncontrolled fishing in the spawning aggregations, spearfishing and the use of traps all contribute negatively to sustainability of Nassau grouper fisheries.

It should also be noted that the Nassau grouper is listed on the IUCN (International Union for the Conservation of Nature) **Red List** of threatened species and is considered to be commercially extinct in many areas.