

Reef Fish Fisheries and Spawning Aggregations

Pesquerias de Peces de Arrecife y Agregaciones de Desove

Pecheries de Poisons de Recif et Agregations de Geniteurs

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EXTENDED ABSTRACT

Globally, over 25% of fish spawning aggregations are decreasing, and some have gone (Russell et al. 2014). During a special Gulf and Caribbean Fisheries Institute (GCFI 68) session on fish spawning aggregations, contemporary and innovative research was showcased. Work was presented on the aggregations of Nassau Grouper (*Epinephelus striatus*) in Puerto Rico, Little Cayman Island and Bahamas; Red Hind (*Epinephelus guttatus*) in the US Virgin Islands and Puerto Rico; Sheephead (*Archosargus probatocephalus*) in Texas; Sling-jaw Wrasse (*Epibulus insidiator*) in Guam; and Coral Grouper (*Plectropomus leopardus*) in Australia.

The Nassau Grouper is an iconic and overfished species in the Caribbean. We currently know that 28% of their aggregations are decreasing, and alarmingly 13% have gone (Russell et al. 2014). Evan Tuohy from the University of Puerto Rico explains that there is only one aggregation of Nassau Grouper in Puerto Rico. The site is characterized by high site fidelity and strong lunar dependency; key reasons why Nassau Grouper are vulnerable to overfishing. Brian Stock from Scripps Institution of Oceanography, San Diego announced that the number of Nassau Grouper on an aggregation site in Little Cayman has increased since being protected in 2003. He is doing innovative egg dispersal monitoring via *NetCam* to see how the increase in numbers of fish affect recruitment. Also on Little Cayman, Lynn Waterhouse from Scripps, the 2016 SCRFA student award recipient, presented her work on predicting future Nassau Grouper population size after the management intervention. The aggregation on Little Cayman has not yet fully recovered, but there are pulses of recruitment, which are not constantly annual. The genetic structure of Nassau Grouper in the Bahamas is being studied by Krista Sherman from the University of Exeter, U.K. Krista concludes that there are two distinct populations of Nassau Grouper in the Bahamas, which is extremely useful information for fisheries management.

Aggregations of Red Hind, another key target species in the Caribbean, have declined by about 17% (Russell et al. 2014). Jonathan Brown from the University of the Virgin Islands has been using acoustic telemetry to determine that Red Hind remain within closed areas when spawning, and he is currently looking into migratory corridors, which will help determine their vulnerability to fishing. Ronald Hill from NOAA National Marine Fisheries Service, Texas, has been using drifters and sound recordings to map the Red Hind aggregations in Puerto Rico.

The sheephead in Texas is a well-known recreationally targeted fish. Martha Romero from the University of Texas at Austin has determined that these fish spawn in March to April each year, with no lunar rhythm. There is no indication of overfishing yet, but further monitoring is definitely needed.

Terry Donaldson from the University of Guam Marine Laboratory has been able to gain an insight into sling-jaw wrasse fighting for sex. These fish vigorously hold territories when spawning, which should mean a better chance of reproduction. However, it takes a lot of time and energy to defend these territories.

The Coral Grouper on the Great Barrier Reef forms aggregations on the new moon in October, November and December. Martin Russell from SCRFA, Australia announced that a 25-year research project on Coral Grouper spawning aggregations on two reefs demonstrates that reefs permanently closed to fishing have more fish aggregating to spawn. The project is also looking into spawning behavior and fish size variations between reefs closed and open to fishing.

KEYWORDS: Fish, spawn, aggregation

LITERATURE CITED

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