

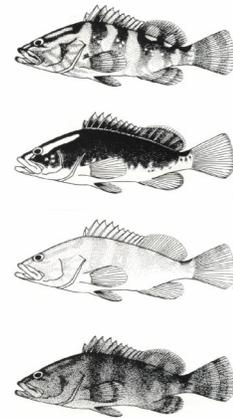
Information Circular No 9: The Belize Spawning Aggregation Working Group

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Shown at right, from top to bottom: Four color-phase changes of the Nassau Grouper, *Epinephelus striatus* – Barred, Bicolor, White belly, Dark



Update for the 2011 Nassau Grouper Spawning Season

Working Group members monitored the seven priority spawning aggregation sites and reported on the maximum counts of Nassau grouper for the ninth consecutive year. As can be seen in the table below, the numbers were low for most sites. No aggregation could be found at Dogflea Caye on Turneffe and only black groupers were observed at Rocky Point. Some of the low counts could be due to the rough weather experienced in February, when many of the dives had to be cancelled. In addition, groupers do not always spawn every season, which can result in smaller aggregations.

Maximum Nassau Grouper Counts for 2003 – 2011

Site	2003	2004	2005	2006	2007	2008	2009	2010	2011
Rocky Point	0	200	200	0 ¹	N/A	0	N/A	N/A	0
Dog Flea Caye, Turneffe	1,500	100 ³	-	2 ²	N/A	N/A	N/A	N/A	0
Sandbore, Lighthouse	1,800	2,500	1,800	1,205 ⁴	1,495	1,250	2,050	2,000	1300
Caye Glory	1,000	1,000	350	7 ⁵	69	405	3,000	N/A	400
NE Pt., Glover's	2,400	1,700	2,240	3,000	800	1190	1,100	3,328	1800
Gladden Spit ⁵	250	450	360	700	500	1106	260	238	375
Nicholas Caye	52	~50	80	48	80	100	25	30	45

¹ Only one dive; ² Site only monitored in February; ³ Site only monitored in January; ⁴ Probably missed peak spawning due to bad weather, ⁵ Numbers for Gladden Spit revised by SEA in 2011)

Dr. Yvonne Sadovy's Visit



Dr. Yvonne Sadovy presenting at a technical seminar © J. Maaz/WCS

In January 2011, a world-renowned spawning aggregation expert, Dr. Yvonne Sadovy, visited Belize. Dr. Sadovy, a professor at the University of Hong Kong and Executive Director of the Society for the Conservation of Reef Fish Aggregations (SCRFA), helped to evaluate the monitoring at Northeast Pt, Glover's Reef and she also joined the University of Belize monitoring team for a dive at Sandbore. Dr. Sadovy provided valuable advice on ways to improve the monitoring methodology. She attended a special meeting of the Spawning Aggregation Working Group, where she provided information on the unique management requirements of spawning aggregation species such as the Nassau grouper and described the work of SCRFA. Dr. Sadovy also presented a seminar on her work entitled *Why Spawning Aggregations Need Our Help* to 21 participants comprised of staff of the Fisheries Department and the University of Belize, conservation NGOs, and co-managers of marine reserves.

Focus On: Gladden Spit and Silk Cayes Marine Reserve (GSSCMR) - Co-managed by Southern Environmental Association (SEA) and Belize Fisheries Department

By Dr Annelise Hagan, Science Program Director, SEA.

Lying 36 km off the coast of Placencia, the Gladden Spit and Silk Cayes Marine Reserve (GSSCMR) was declared in 2000. In part this was due to the importance of the spawning aggregation site at Gladden Spit promontory. Deep water (up to 250 m) to the east, underwater bathymetry and associated oceanographic processes have made this the highest priority fish spawning aggregation site in the whole of Belize, supporting up to 30 species of fish, many of which (such as snappers and groupers) are commercially important. Historically this aggregation site has always been an important fishery, but now the snapper fishery is regulated through the issuing of special licenses to fishermen who are traditional users of the site.

Although fish spawning at GSSCMR is monitored year round, the key months are December to February when Nassau grouper (*Epinephelus striatus*) congregate, and March to June when thousands of fish; principally cubera snapper (*Lutjanus cyanopterus*), mutton snapper (*L. analis*) and dog snapper (*L. jocu*) gather to spawn. At the same time, whale sharks (*Rhincodon typus*) come to feed on the spawn, making it a popular tourist destination, and one of the largest predictable whale shark congregations in the region.

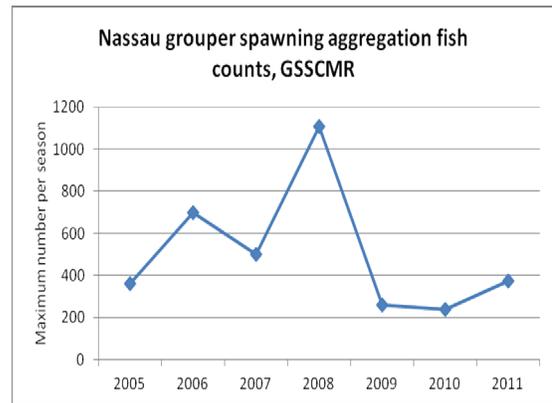


Cubera snappers spawning at GSSCMR. Photo: A. Hagan

Cubera snappers spawning at GSSCMR. Photo: A. Hagan

Throughout the year (all months except September and October) two monitoring dives (one at midday and one at 5.30pm) are conducted per day by the SEA science team for 10 days after the full moon. Species and abundance of fish are recorded, along with their behavior prior to and during spawning. Landings monitoring is also conducted during snapper spawning season, documenting the size, weight and reproductive state of mutton snappers caught at GSSCMR.

During 2011, a PhD student from Texas A&M University (supervisor: Dr Will Heyman) worked as a SEA intern to conduct a detailed stock assessment of mutton snapper at GSSCMR. In conjunction with SEA's fish landings, CPUE (catch per unit effort) and spawning aggregation datasets (some of which date back as far as 2003), this assessment will provide SEA with essential information that will be used to better manage this reserve and the fishery it supports.



If you would like more information about the Nassau Grouper, the Belize Spawning Aggregation Working Group, or anything mentioned in this newsletter, please contact Dr. Leandra Cho-Ricketts, Chairperson, Spawning Aggregation Working Group at the Environmental Research Institute, University of Belize.

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