

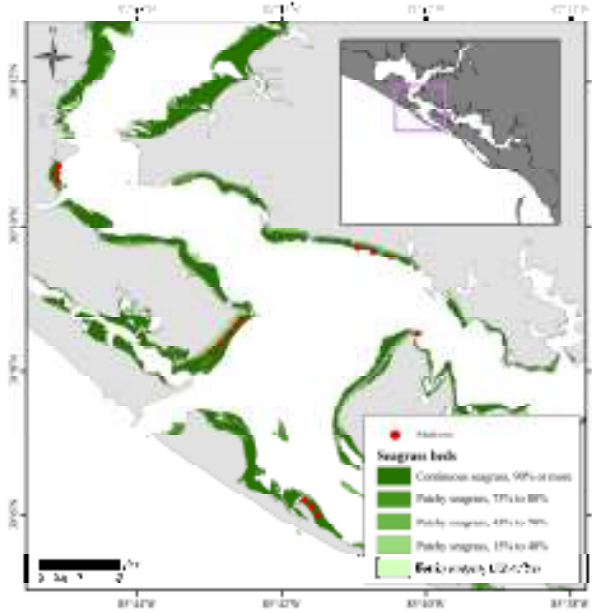
Juvenile Reef Fish Study

St. Andrew's Bay, Panama City, FL

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Many species of fish caught in the Gulf spend the early part of their lives in seagrass beds in the bay. The most important of these species include gag grouper, lane snapper and gray (mangrove) snapper. The grouper spawn in the late winter and juveniles arrive in the bay in late spring. The snapper are early summer spawners and their offspring arrive in the middle of summer. When the juveniles arrive in the grassbeds, they are less than 1/2 inch long and use the grass as both a place to hide to avoid larger fish and a place to hunt for food (usually small shrimp). By using a small trawl to collect juvenile grouper and snapper in the grassbeds, we can evaluate the size of each year's production and predict how many grouper or snapper will be available to fishermen a few years in the future when the juveniles grow into adults. This predictive capability helps fishery managers adjust the regulations to avoid shortages of these species in the future. The number of fish produced each year fluctuates widely, we have seen 20 times the number of snapper and grouper in one year compared to the number the year before or after. Our sampling method uses short tows of less than one minute and all fish are quickly measured and released alive to minimize our impact on the resource. Between 95 and 98% of the grouper and snapper we collect survive.

Location



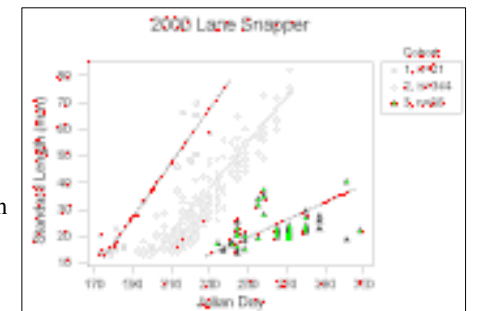
Equipment



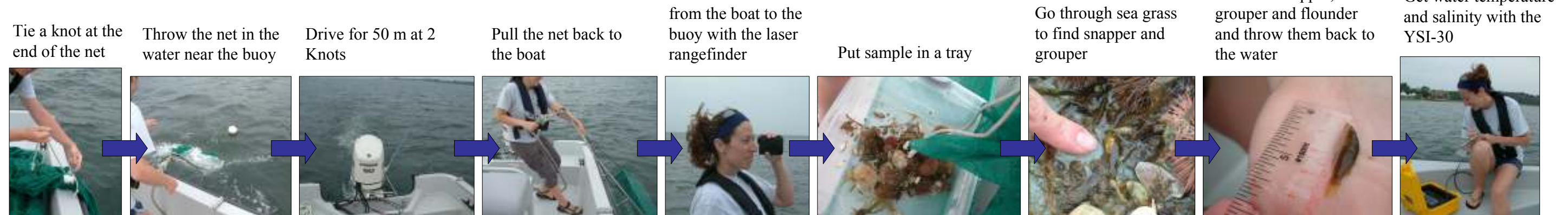
1.- 17 ft. boat; 2.- Laser rangefinder; 3.- Net; 4.- YSI-30: Conductivity, Salinity, & Temperature Meter; 5.- Tray, Buckets and small net; 6.- Data sheet and ruler

Results

This is an example showing lane snapper collected in 2000 in a seagrass bed between the NOAA Fisheries laboratory and the new pass. The graph shows the size of the fish collected over time. Size is shown in millimeters (25 mm = 1 inch) and time is shown in Julian days (Julian days assign a consecutive number to each day of the year, January 1 = Julian day 1, December 31 = Julian day 365, today is Julian day 174). Lane snapper spawn about once a month so the juveniles arrive in waves about a month apart. The different waves of fish, or cohorts, are shown in different colors. If you imagine a line drawn through the middle of the points for each cohort of juveniles, you can determine a growth rate for that cohort. The steeper the line, the faster the growth rate. The first cohort (in blue) is growing much faster than the third cohort (in green). Several factors account for the growth rate differences; the first to arrive have more access to food and by the time the last cohort arrives, the first group is much larger and better able to compete for the shrinking number of shrimp. The early bird may catch the worm, but the early snapper catches the shrimp.



Methodology



Examples

