



Great Goliath Grouper Count: Survey Protocol

(For a short GGGC training video, click [here](#))

Surveys should be performed during the time frame specified by Florida Sea Grant & FWC/FWRI (usually the first two weeks of June.)

Sites should be chosen *a priori*. Artificial reefs are preferred survey sites; however, dive teams are encouraged to include natural bottom if there are no artificial reefs within their region. Please see additional instructions for recording site characteristics on the GGGC data sheet.

Dive teams are responsible for choosing the type of survey that best fits each site. There are 2 survey options:

Modified Roving Diver: This method involves a thorough visual survey of the entire site. It is the most appropriate method for sites that can be completely surveyed within allowable bottom time (no deco limits). Begin at one end of the site and systematically swim to the other end as you search for goliath grouper. Attempt to investigate holes, crevices, overhangs, etc. (don't forget your dive light!)

Each goliath observed should be recorded in the order observed, along with a size estimate and any identifiable characteristic(s) (e.g., hook in lip, scar on face, etc.). Remember to look around periodically for a full visual assessment of the area as you are swimming.

When you reach the end of the site (or you are ready to turn around and head back), that is the end of **replicate 1**. If you would like to complete another replicate as you head back, please do! Replication is a good thing. Just be sure to indicate the start of the replicate survey (notation on the data sheet in the GG number column). Record the replicate start and end times. At the beginning of a new replicate, fish numbers will revert back to 0, as if you are beginning an entirely new survey. (see video for clarification).

Attempt to be on the bottom at each survey site for a minimum of 15 minutes.

Team Supplies

List of sites to be surveyed

Dive light(s)

Clipboards (1 per diver)

Waterproof Data Sheets (contact Florida Sea Grant for data sheets if necessary)

Pencils

PVC pipe* (1 ft t-bar for measurement)

Camera*

(* = optional)

Survey Procedure

1. Record site data
 - a. Date, name of site, **lat/long**, crew
 - b. Topside environmental conditions (cloud cover, wind speed and direction, wave height)
 - c. Type of survey to be performed (Transect OR Roving Diver)
2. Designate jobs for each diver (e.g., data recorder OR assistant(s))
3. Enter water (optimal: 2 divers per site. No more than 3 divers are to be in the water during the survey)
4. Orient to site; estimate and record horizontal visibility.
5. Record survey start time and begin survey
6. Slowly swim in a forward direction to search for goliath grouper – each individual fish should be recorded on the data sheet along with an estimated size.
 - a. Total length estimate (circle one): < 3 ft, 3-5 ft, > 5ft
 - b. Note any identifying characteristics
7. Estimate the maximum relief (tallest point of the reef; this can be done using diver's depth gauge)
8. Estimate the maximum depth of survey (using diver depth gauge – this can also be recorded after the dive by looking at diver's computer log)
9. Minimum observation period is 15 minutes.
10. Record time of ascent.

All data sheets should be submitted to Angela Collins (abcollins@ufl.edu) as soon as possible after the survey has been completed.