

# NOAA Gray's Reef National Marine Sanctuary Acoustic Fish Tagging Project

## Activity: Interpretation of Data and Graphs – Grades 6-8

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Use the available table and graphs at the end of this document, or online sources to answer the following questions. The table and graphs are real data collected by scientist at Gray's Reef National Marine Sanctuary.

More information on the particular acoustic tagging project at Gray's Reef can be found at the Gray's Reef Website:

([http://graysreef.noaa.gov/science/research/fish\\_tagging/welcome.html](http://graysreef.noaa.gov/science/research/fish_tagging/welcome.html))

and NOAA's FishWatch website (<http://www.nmfs.noaa.gov/fishwatch/>).

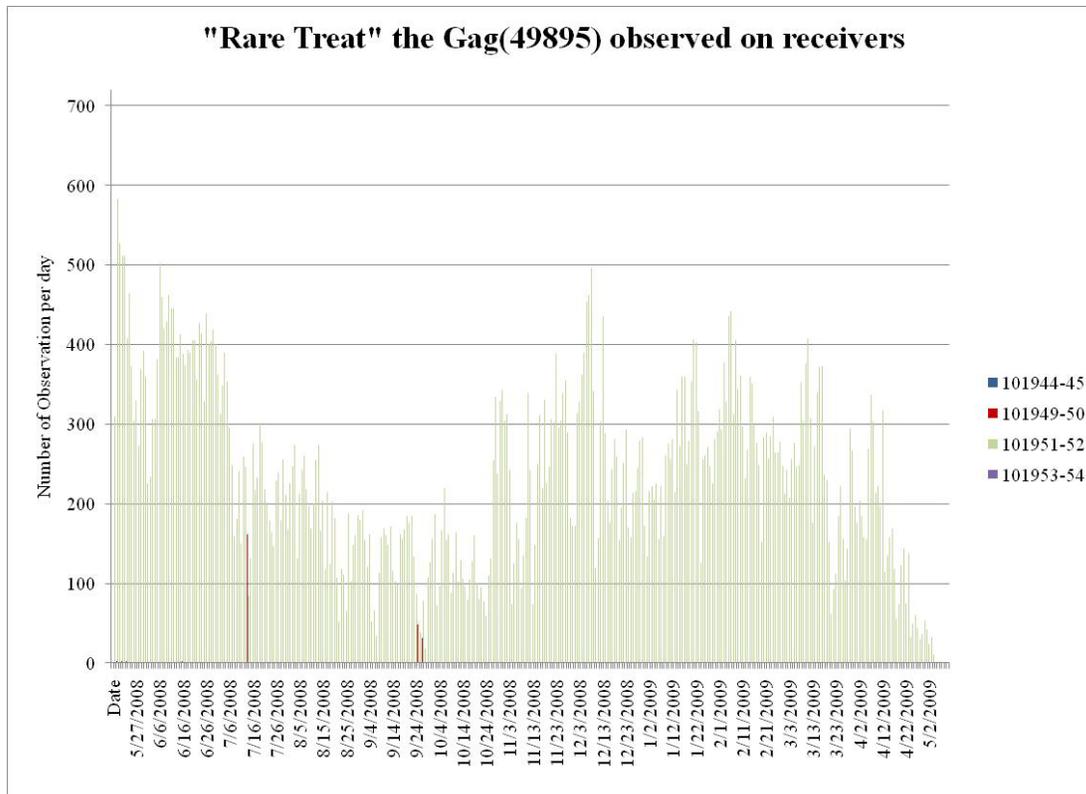
1. The three species of fish used in the acoustic tagging student at Gray's Reef National Marine Sanctuary are *Lutjanus campechanus*, *Mycteroperca microlepis*, and *Mycteroperca phenax*. What are the common names of these fish?
2. How old can these fish get?
3. How big can these fish get?
4. Are the fish captured at Gray's Reef close to the maximum size that their species can reach?
5. How old do these fish have to be to be able to reproduce?
6. Where are these fish found?
7. What type of habitat do the fish prefer? How deep can the water be?
8. Scamp and gag are considered to be protogynous hermaphrodites. What does this mean?

9. Between "Sergio Snapper" the red snapper (49899) and "Rare Treat" the gag (49895), which can we determine to be a year-round resident?
10. About how long is the other fish (not the answer in Question 9) a resident in the reef?
11. Which fish stayed at receiver 101951-52 the longest? Which stayed at receiver 101949-50 the shortest?
12. The gag grouper can be detected 720 times per day. On the day with the most detections what was its % detection and on the day with least detections (not including zero) what was its % detection.

Date Tagged	Species	Name	Forklength (cm)	Transmitter number	Date Released
5/14/2008	<i>Mycteroperca phenax</i>	Killer Grouper	58	49898	5/15/2008
5/14/2008	<i>Mycteroperca phenax</i>	--	85.5	49903	5/15/2008
5/15/2008	<i>Mycteroperca phenax</i>	--	84	49901	5/16/2008
5/17/2008	<i>Mycteroperca phenax</i>	Snappy Striper	74	49894	5/18/2008
5/17/2008	<i>Mycteroperca microlepis</i>	Rare Treat	63	49895	5/18/2008
5/17/2008	<i>Mycteroperca phenax</i>	--	75	49896	5/18/2008
5/18/2008	<i>Mycteroperca phenax</i>	--	83	49897	5/19/2008
5/18/2008	<i>Lutjanus campechanus</i>	Sergio Snapper	59	49899	5/19/2008

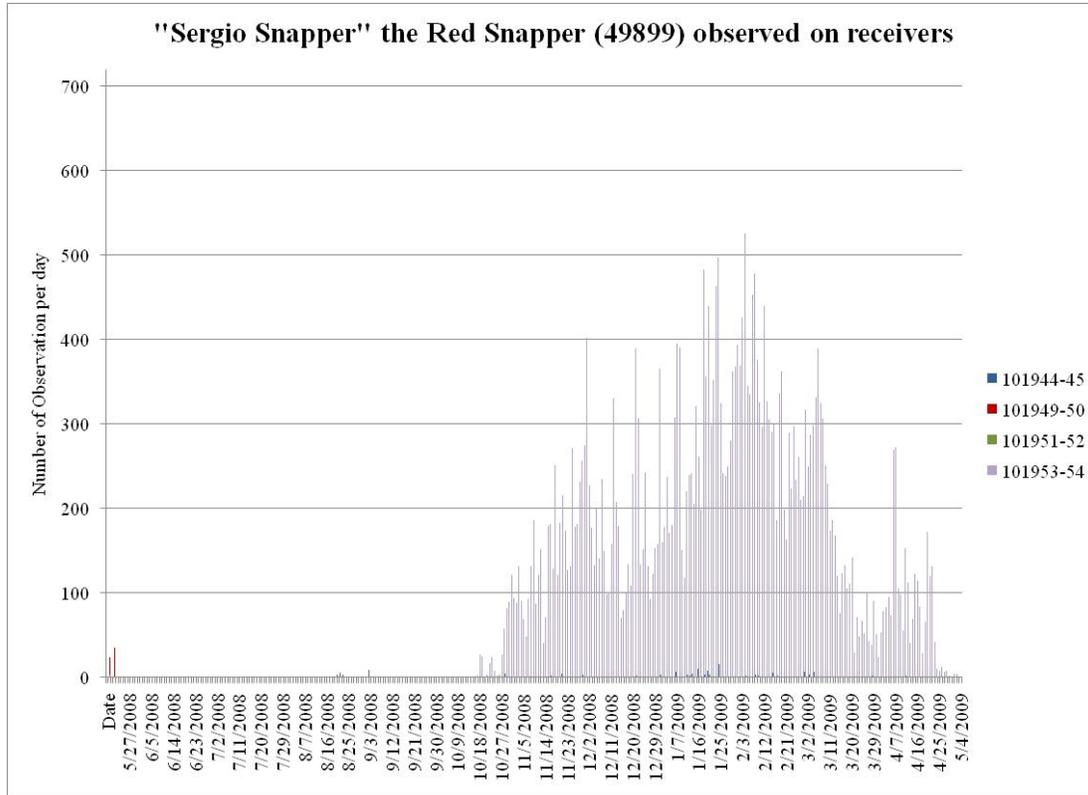
### **Fish Captured and Tagged by Gray's Reef in May 2008**

These fish have been monitored by the deployed receivers to determine if they are present or absent in the detection area of the receivers. The following two graphs are the number of times a fish has been detected by a receiver per day. Detection is when a tag is in the range of a receiver and its signal has been picked up and recorded. Detections can be made from as far as 200 meters away from the receiver. As you can see, some fish can be detected 500 or more times a day. All graphs have a scale of 720 detections on the y-axis because the transmitters will send about 720 "pings" in one day.



"Rare Treat" the Gag (49895) observed on receivers

This graph represents present-absent data of a gag grouper in select areas of Gray's Reef National Marine Sanctuary. The numbers in the legend on the right side of a graph represent a receiver placed in the sanctuary. Each vertical bar is a single day of the year and it is the number of times the gag was detected around that receiver (match the colors to the numbers on the right). As you can see the gag was mostly detected on receiver number 101951-52, and was picked up a few times on receiver 101949-50.



"Sergio Snapper" the Red Snapper (49899) observed on receivers

This graph represents present-absent data of a red snapper in select areas of Gray's Reef National Marine Sanctuary. The numbers in the legend on the right side of a graph represent a receiver placed in the sanctuary. Each vertical bar is a single day of the year and it is the number of times the red snapper was detected around that receiver (match the colors to the numbers on the right).