CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)

Cheyenne E. Newallis

Project Number

S2211

Project Title

Breeding Season of the Cephaloscyllium ventriosum or Pacific Swell Shark in Captivity

Abstract

Objectives/Goals

The question to be answered is what is the breeding season of the Cephaloscyllium ventriosum. The main objective was to record a definite breeding season of the California swell shark in captivity.

Methods/Materials

One large community tank measuring 24 inches high and with a diameter of 144 inches was used. The tank is home to 12 swell sharks. The tank has 2 water pipes on opposite side of the tank. The tanks also contained 2 live Gorgonians, one large, one small, and several rocks covered in algae turf as well as an air tube with a net basket over it protecting it from the sharks. This provides an assortment of items for the sharks to lay eggs on. Each Saturday, in the morning, several water quality parameters (salinity, ammonia, and Ph) were recorded from a log and the water temperature was taken in terms of Celsius. Then, the tank is scanned for eggs on the gorgonian plants, the floor, on tubes, or under rocks. When eggs are found, they are carefully taken out and immediately put into a shallow tub filled with salt water. Then, the tendrils are cut short enough just to make a couple knots at the top. The bottom tendrils were fully removed so the shark would not get tangled in the process of hatching. Then, a label with the the date was placed through the top hole and secured. When all eggs were tagged, they were placed on their month string in chronological order and then the two sides of the string were tied back to form a circle so the eggs would not come off.

Results

There was no correlation between water temperature in captivity and the amount of eggs laid. Because of this, statistical tests were not possible. However, longer observations of egg laying behavior by the sharks in this tank may show a correlation to seasonal changes, like daylight or slight temperature fluctuations. The graph is a double axis graph comparing the water temperature in captivity to the ammonia levels.

Conclusions/Discussion

There was no correlation between water quality factors and amount of fertile eggs laid. However, the graph that compared temperature and number of eggs laid showed a correlation. This might have been because the water quality log was taken bi-weekly and the egg data was taken weekly. Further research will be conducted to finish following the breeding season for 1 year.

Summary Statement

Recording a breeding season of swell sharks in captivity.

Help Received

Research took place at the Cabrillo Marine Aquarium; Dr. Kiersten Darrow always answered any questions; Marissa Velarde overlooked my project and helped me every saturday; Dwight Causey helped me with statistics and poster organization; My parents drove me to the aquarium every saturday morning