

Conch Research Summary

Overview

During the 2003-2004 school year students began an experiment to test the effects of population density on the growth rate of queen conchs, *Strombus gigas*. Students were responsible as a class for designing the study with instructor guidance. We began by researching information about the queen conch's anatomy, physiology, and life-history. Students also researched past experiments performed on queen conchs to gain a familiarity of experimental designs. The study took place over a 64-day period. Students were responsible for collection of data and maintenance of the experimental tank. At the end of the study students analyzed the data, created graphs and identified trends.

Materials and Methods

Three densities were tested 30, 90, and 150 conch/m². Students began by measuring the area of a 30 gallon tank in meters. They then determined the area that would be used for each replicate. Dividers were made from light diffusers and covered with ¼ inch trical netting to inhibit the conchs from moving to another test area. A filter sufficient for a 20 gallon tank was placed on each end of the tank and a 100 watt heater was placed near one of the filters. An air stone was also placed in each replicates' area. About 2.5 cm of crushed coral was used as substrate. Each conch was fed daily 1 gram of a spirulina enriched algae wafer. Data collection was done bi-weekly. Each conch's siphonal length was measured in mm using calipers. The tank water was also tested for pH, ammonia, nitrites, nitrates, and calcium.

Results

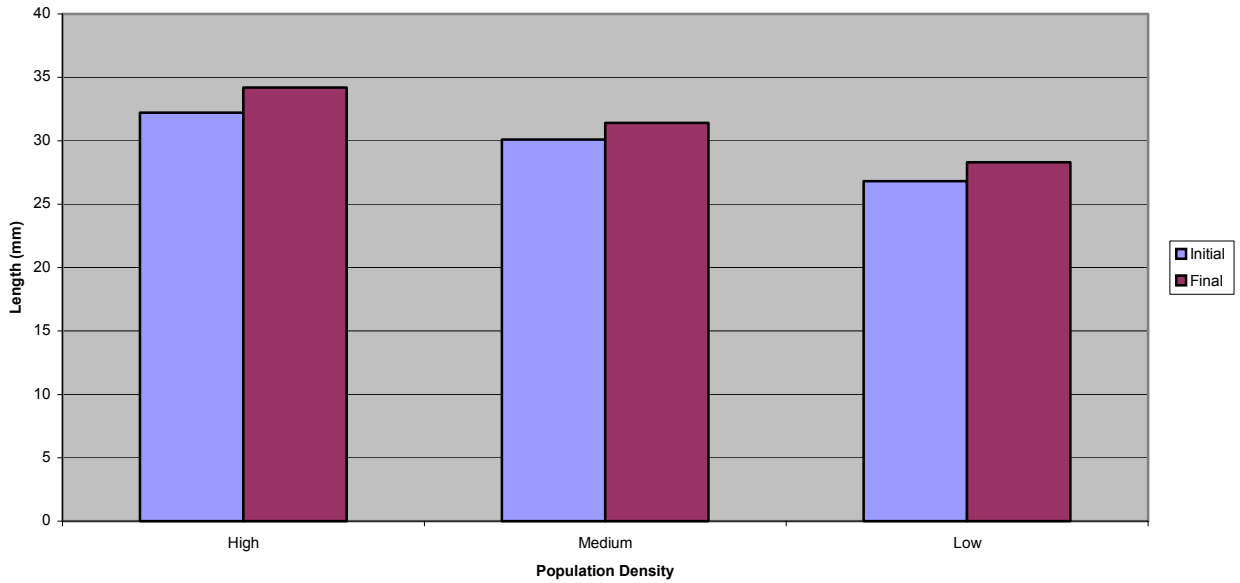
Table 1: Initial and final mean length of queen conchs grown at densities of 30, 90, 150 conch/m².

<u>Density (Conch/m²)</u>	<u>Initial length (mm)</u>	<u>Final length (mm)</u>
30	26.8	28.3
90	30.1	31.4
150	32.2	34.2

Table 2: Water quality results.

	<u>Mean</u>
temperature	28.0
salinity	34
pH	8.3
nitrites	0.1
nitrates	1.2
ammonia	.05
calcium	463

Mean Initial and Final Shell Lengths



Bi-Weekly Mean Shell Length

