CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY

Name(s)

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Project Number

35046

Project Title

How Do Rising Sea Levels of Tides Affect the Population of Emerita analoga?

Abstract

Objectives/Goals

Sand crabs are very important to the world, such as medical research because of their sensory neurons. This is also because sand crabs carry many parasites such as Acanthocephala, or thorny headed worms which causes the deaths of surf scooters and sea otters. Sand crabs also consume domoic acid and DDT. By having this, it could lead to death of the predators of the sand crab and possibly to humans, especially if digested. This is why this science fair project aims to show that rising tides will either increase or decrease the population of the sand crab. The hypothesis was that sand crabs would appear during the highest tides, 5 to 6 feet with an average of 15 sand crabs per sample.

Methods/Materials

The survey line was used to measure every one meter mark to place stake flags at. The stake flags were used to mark where to dig up the sand crabs with the core. The core was used to dig up sand crabs from sand. The two plastic sieves were used to place the sand from the core. The three plastic calipers were used to measure the length of each sand crab.

Results

The highest tide was 5.71 feet. The second highest tide was 4.21 feet. The lowest tide was -0.46. For this tide, measured 5.71 feet had an average of 21.4 sand crabs per sample. The second highest tide measured 4.21 feet. This tide had an average of 16 sand crabs per sample. The third highest tide was -0.41 feet. This tide had an average 14.4 sand crabs per sample. The fourth highest tide was -0.42. This tide had an average of 8.4 sand crabs per sample. The lowest tide was -0.46 feet. This tide had an average of 11.2 sand crabs per sample.

Conclusions/Discussion

The data gathered showed that the hypothesis was correct. Most sand crabs appear during the highest tides, 5 to 6 feet. With the data, the highest tide was 5.71 feet high with 107 sand crabs. The lowest tide was -0.42 low tides with 25 sand crabs. This would mean that the higher the tide, the more sand crabs would appear. The lower the tide is, the fewer sand crabs will appear. More crabs will appear during high tide because as the tide becomes more turbulent, plankton will appear for the sand crabs to eat.

Summary Statement

My project is about figuring out if rising sea levels affect the population of sand crabs by sand crab monitoring and figured out that the higher the tide, the population of sand crabs will increase.

Help Received

Family and friends helped to sand crab monitor and to write down data onto log sheets. Used sand crab monitoring equipment and log sheet from LiMPETS program.

Preliminary