

Green Shore Crabs Distribution Related to Beach Elevation

A Citizen Science Project

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Focus Question

How does tidal height affect concentration of Green Shore Crabs?



Procedure

For our project, we used the transect line that was set up down the beach for the citizen science research as our guide. Stopping at every other zip-tie (ties were 3 meters apart), we placed a quadrat directly to the left of the tie with the edge of our quadrat centered on the tie. The quadrat became our collection area where we counted how many crabs were present at each tie we tested.

By conducting our experiment this way we were able to keep the distance between collection zones and the size of our collection zone exactly the same for every collection point we tested.



Variables

Manipulated Variable: The Height of the tide

Responding Variable: The amount of shore crabs found at these various heights

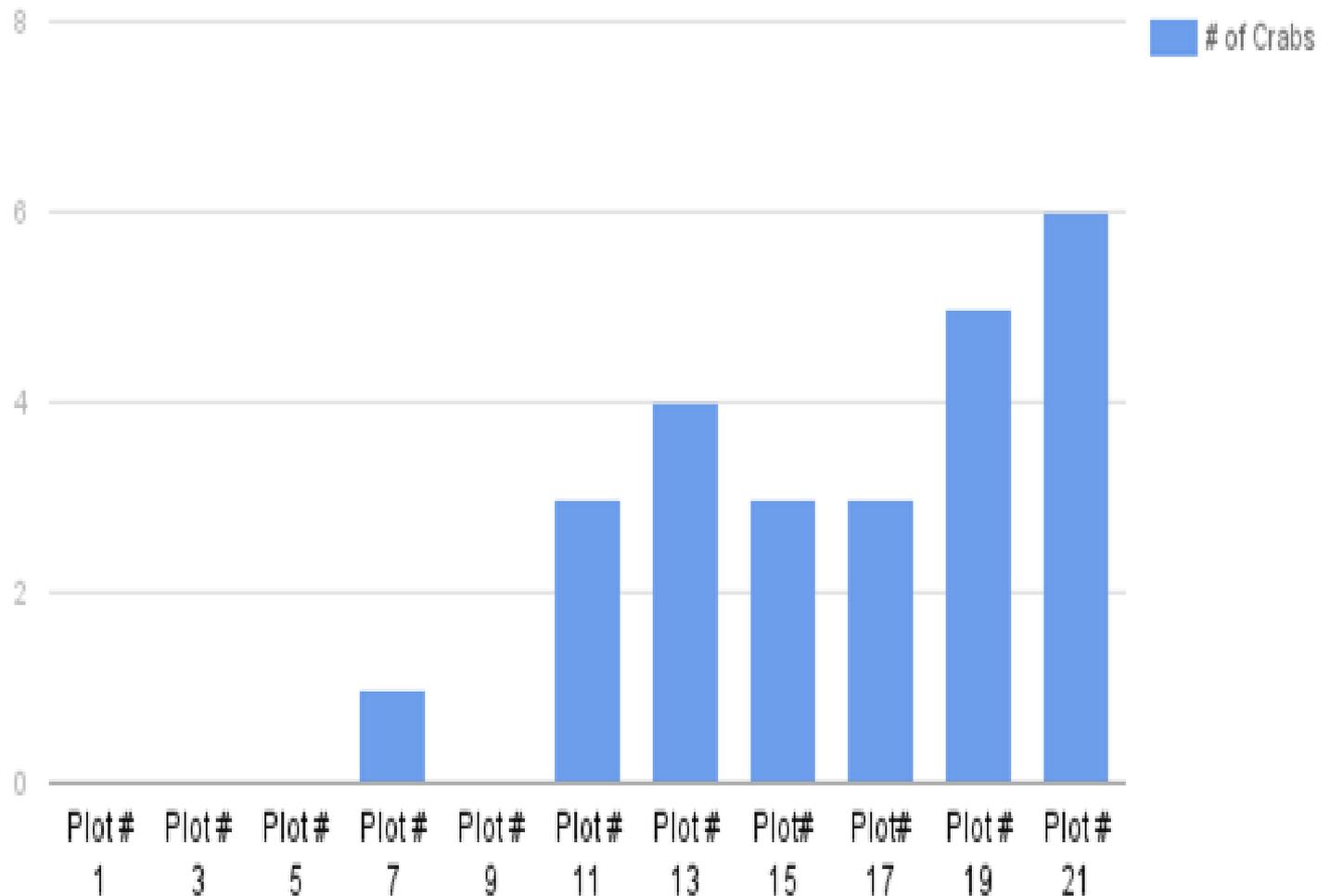
Controlled Variables: Same beach (constellation park) , Same day, Same weather, Same grid markers, Same survey area, Same distance (about six feet) between survey markers, same people counting the crabs,

Concerns

Our main concerns was getting an accurate crab count due to specimens moving about and their relative camouflage. An additional concern is the habitat and substrate types might change and this might cause drastic changes in the data.

Data

Number of Shore Crabs by Plot #



Plot tested	Number of crabs found
Plot # 1	0
Plot # 3	0
Plot # 5	0
Plot # 7	1
Plot # 9	0
Plot # 11	3
Plot # 13	4
Plot # 15	3
Plot # 17	3
Plot # 19	5
Plot # 21	6

Conclusion

We found that there definitely seemed to be a higher concentration of crabs the further down the transect line we went. However, the random nature of collection zones we tested using the transect line led us to collect data in multiple different habitat and substrate types including some collection zones that were completely submerged.

In unrecorded crab searching, independent from our experiment we found many more crabs living under larger rocks leading us to believe that while although our data supports that a higher density of shore crabs can be found further down the beach, the concentration of shore crabs has to do more with habitat and substrate than tidal height.