The Effects of Salinity on Daphnia
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**Introduction**

Our project was on the effects of salinity on Daphnia and how global warming causes salt water to pollute our freshwater sources. With global warming rapidly occurring, salt water is steadily intruding into our fresh water sources. We were curious about the effects and the possible detriments of this event. Saltwater intrusion is one of the biggest telltale signs that sea levels are in fact rising. Daphnia live in mainly freshwater habitats. They are bio-indicators which means they are excellent indicators of whether something is wrong with an environment. These factors all contribute to Daphnia being the best test subject for our experiment.

**Research Question**

How high of a tolerance do Daphnia have for salinity?

Our purpose was to better understand the effect of salinity on organisms like Daphnia and how climate change may affect them.

**Hypothesis**

We think that small contents of salt will be fine, but when we reach 2% they will die.

**Materials and Methods**

- Set up our tanks
- We transferred the Daphnia to the new tanks
- We put controlled amounts of them into 1% salt, 2% salt, and 5% salt water
- We used a microscope to count their heart beats
- We analyzed the data

**Data**

Comparison of Daphnia heartbeat in different salt concentrations

**Procedures**

1. Set up our tanks
2. We transferred the Daphnia to the new tanks
3. We put controlled amounts of them into 1% salt, 2% salt, and 5% salt water
4. We used a microscope to count their heart beats
5. We analyzed the data

**Results**

Our Daphnia survived in all concentrations of water. They got more and more stressed as the tests progressed. 1% slightly accelerated their heart beat, unlike 5% where it rapidly increased. This was an insightful project.

**Discussion**

We think there is a lot more to test. It should be considered that our data can always be built upon. We could have done better by completing more tests.

The average heartbeat showed that 5% salt water is a stressor.

**Conclusion**

Our hypothesis was only partially correct. The Daphnia survived in all concentrations of salt water, but were stressed out in the higher concentrations.

**References**

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