WATER STRIDERS

***The Distribution Of Water Striders In The Arroyo Del Valle Creek***

INTRODUCTION

When we decided to focus on water striders as the topic of our scientific investigation, we knew nothing of this insect. We also were shocked to find that we weren't the only ones who didn't have any information on water striders. We searched through many different resources including the internet, many different encyclopedias, and national geographics. The only useful data we could dig up was from Encarta 96. The following information was obtained:

"Water Strider, common name applied to slender water bug that is a predator on other insects. It darts about with great rapidity, using the middle pair of legs as paddles and the hind pair for steering. The front pair of legs is adapted for grasping prey. Fine, dense hairs on the feet keep the insect from breaking the water's surface film. One genus of water striders is marine"(Encarta 96).

In some other resources we learned that the family of the water strider is Gerridae, and it belongs to the order of Hemiptera.

Since there was no significant research in any of the resources we checked out, we decided to learn as much as we could about water striders so that other people might benefit from our research.

**HYPOTHESIS**

**Question:** Can the distribution of water striders in the Arroyo del Valle creek be determined by specific abiotic conditions?

**Hypothesis:** The distribution of water striders in the Arroyo del Valle creek can be determined by specific abiotic conditions.

**PROCEDURE**

We are going to monitor all the creek locations in which we think water striders might thrive. We will document specific abiotic conditions such as temperature, depth, rate of flow, and location from the bank. Also we will capture water striders and tag them for the purpose of finding out if the same striders prefer the same locations.

RESULTS/DATA

During the course of our survey we documented eighteen various sights. Some of the sights we collected data more than once, on different days, in different conditions. We also tagged a total of seven water striders. Here is the data we collected:

LOCATION 5 (see map)

Documentation 1: Temperature: 20 degrees C

Rate of Flow: 5.3 seconds/1 meter

Depth: 23 cm

Distance from Bank: 50 cm

Documentation 2: Temperature: 19 degrees C

Rate of Flow: 9 seconds/1 meter

Depth: 11 cm

Distance from Bank: 20 cm

LOCATION 6(see map)

Documentation 1: Temperature: 18 degrees C

Rate of Flow: 15 seconds/1 meter

Depth: 11 cm

Distance from Bank: 20 cm

Documentation 2: Temperature: 19 degrees C

Rate of Flow: 5.6 seconds/1 meter

Depth: 24 cm

Distance from Bank: 100 cm

LOCATION 7(see map)

Documentation 1: Temperature: 20 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 3 cm

Distance from Bank: 15 cm

LOCATION 8(see map)

Documentation 1: Temperature: 21 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 11 cm

Distance from Bank: 30 cm

Documentation 2: Temperature: 19 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 4 cm

Distance from Bank: 25 cm

Documentation 3: Temperature: 18 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 3 cm

Distance from Bank: 30 cm

LOCATION 9(see map)

Documentation 1: Temperature: 19 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 4 cm

Distance from Bank: 25 cm

LOCATION 10(see map)

Documentation 1: Temperature: 17 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 15 cm

Distance from Bank: 40 cm

LOCATION 12(see map)

Documentation 1: Temperature: 19 degrees C

Rate of Flow: 15 seconds/1 meter

Depth: 3 cm

Distance from Bank: 10 cm

LOCATION 12.5(see map)

Documentation 1: Temperature: 19 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 6 cm

Distance from Bank: 45 cm

Documentation 2: Temperature: 19 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 5 cm

Distance from Bank: 13 cm

Documentation 3: Temperature: 18 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 5 cm

Distance from Bank: 30 cm

LOCATION 13(see map)

Documentation 1: Temperature: 17 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 10 cm

Distance from Bank: 30 cm

LOCATION 14(see map)

Documentation 1: Temperature: 20 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 30 cm

Distance from Bank: 15 cm

Documentation 2: Temperature: 20 degrees C

Rate of Flow: 15.3 seconds/1 meter

Depth: 20 cm

Distance from Bank: 15 cm

Documentation 3: Temperature: 18 degrees C

Rate of Flow: 0 seconds/1 meter

Depth: 5 cm

Distance from Bank: 30 cm

TAGGED STRIDERS:

DAY 1: Caught and tagged seven water striders

DAY 2: Saw 3 tagged Water Striders at locations: 5, 8, 10

DAY 3: Saw 2 tagged Water Striders at locations: 12, 12.5

DAY 4: Saw 3 tagged Water Striders at locations: 10, 12.5, 12.5 DAY 5: DAY 5: Found "***MOTHER LOAD!!***." Saw 5 tagged Water

Striders at location 14!

DAY 6: Saw 3 tagged Water Striders at locations: 12.5, 14, 14

CONCLUSION

Our hypothesis was mostly supported by our findings. The only aspect of our hypothesis that was not supported was our prediction about the temperature. From this data we learned that the striders prefer a slow moving current, or no current at all. They seem to prefer to stay near shallow waters, even though they are constantly floating on the surface. The Water Striders also prefer being closer to the bank.

From our observations, the reason why they prefer shallow waters is because they prefer being close to the bank. The closer to the bank, the more shallow the water gets. They also seem to like water with a temperature near 19 degrees Celsius. This means that they did not prefer a warmer or colder temperature, but a medium between the two extremes.

Although our survey was very accurate, there is always the possibility of an error occurring. Some of the things that may have contributed to errors in our survey may have been faulty equipment. Also when measuring rate of flow, we could have let the styrofoam ball float a milli-second to long or to short. This shows that humans are usually can not be exactly precise without the aid of a computer or some type of advanced machinery.

The strengths of our experiment was our amount of data we collected and the dedication and effort we put forth into discovering as much accurate information as possible. The main weakness was the lack of advanced equipment that would have made our results even more accurate.

Although we feel our survey was very precise and detailed, there are still many questions that are left unanswered. Some of these questions include:

1. What is the preferred pH for Water Striders?
2. How do Water Striders mate?
3. What is a Water Striders life span?

We liked this project very much because it was a hands on assignment and it gave us the chance to get outdoors. It also gave us a chance to experience what nature has to offer.

WORK CITED

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