

Macroinvertebrates: Comparing Habitats

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ABSTRACT

The purpose of this project is to determine and compare the population of macroinvertebrates in two streams. This investigation will compare the Maracuto stream population of macroinvertebrates to the Sabana stream in Luquillo. The term macroinvertebrate for purposes of this investigation includes all insects along with other invertebrates and arthropods that live in the stream. These insects determine how healthy or unhealthy the river is in different locations. The objective is to take downstream and upstream samples of soil and collect the number macroinvertebrates in both streams in order to compare them with the number of collected in another location. The procedure followed was according to the Vermont Stream Project Manual. This investigation was done at the Maracuto stream which is a tributary of the Río Grande de Loíza and in Río Sabana which is located in Luquillo.

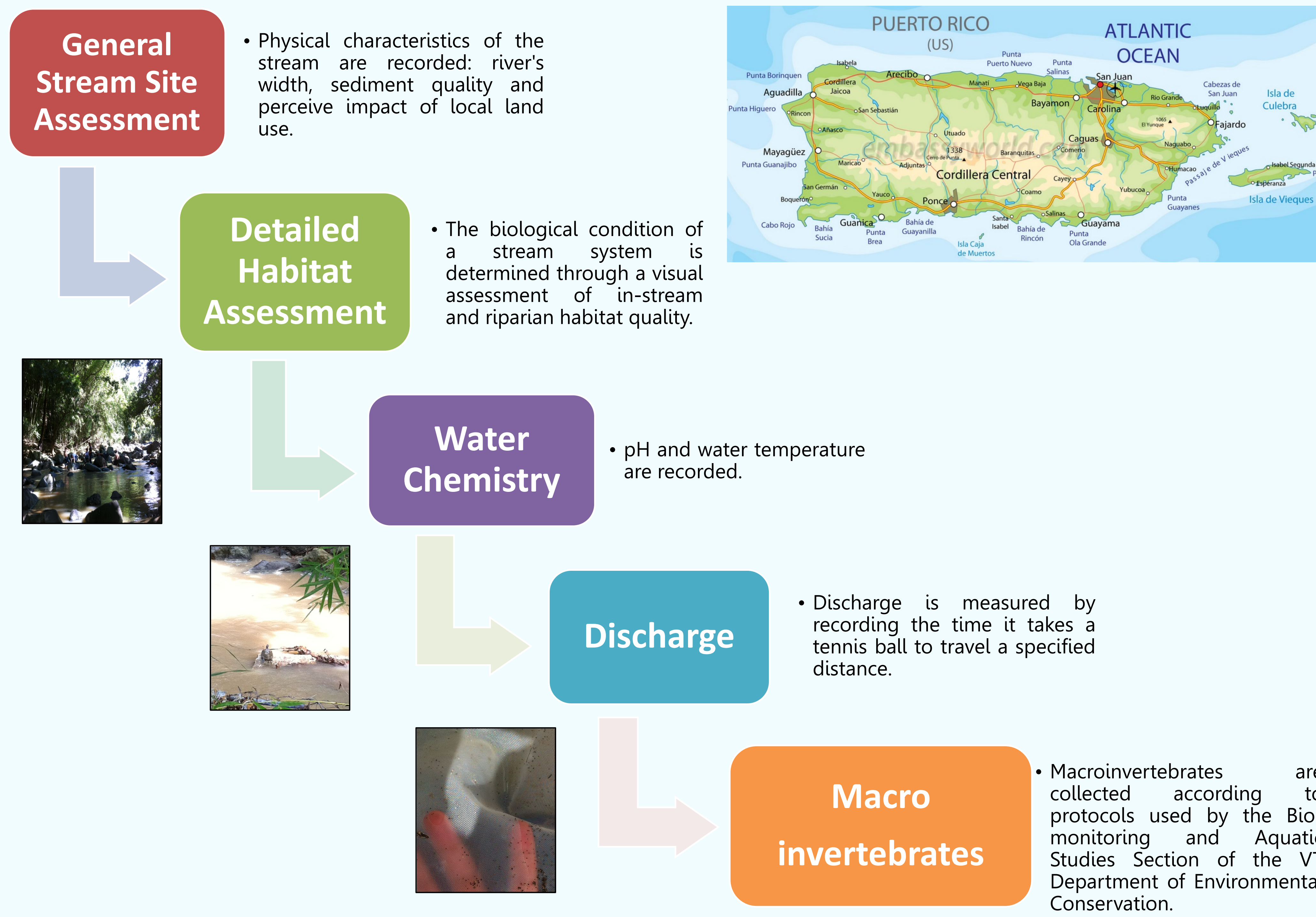
INTRODUCTION

The word macro refers to organisms that are large enough to be seen without a microscope, invertebrate refers to an animal that does not have a backbone. Put the two words together and you describe a spineless animal that is big enough to be seen with the naked eye. Aquatic macroinvertebrates include animals that live in wet environments such as lakes, ponds, rivers and streams. They include beetles, crayfish, leeches, mayflies, mosquitoes, mussels, shrimp, snails, stoneflies, water bugs and a host of worms that live in bottom sediments. Macroinvertebrates are very important to the aquatic environment because they are like a cleaning service. Scavenging dead or decaying bacteria, plants, and animals, they help recycle nutrients back into the system. Macroinvertebrates are considered biological indicators, this means that they help provide clues as to the health of a river. Their presence and abundance indicate that the system is at or near optimum health, and the absence of which indicate that the rivers health has been impacted.

HYPOTHESIS

The number and species of macroinvertebrates will differ in both sites given that the environments are not the same. According to the conditions of the stream as well as the environment surrounding it an increase or decrease in macroinvertebrates will be observed.

METHODOLOGY



RESULTS

After our test it was proven that the Maracuto Stream contains an estimate of 90% more macroinvertebrates than the Sabana Stream. This confirms our hypothesis that even though the streams may look similar the content and variety of life is drastically different underneath the waters surface.

As for the other tests, both the Maracuto and Sabana streams had very similar results as for pH and temperature. The location of the streams is a possible cause for the drastic differences in macroinvertebrate life; given that the Sabana stream in Luquillo is located next to a busy street and comes in contact with a drain system; while Maracuto, in Carolina, does not come in close proximity with cars, trucks or other sources of pollution. The Sabana stream is particularly lucky given that the flow of the water moves from upstream to downstream, also known as the discharge, and moves fast enough to prevent major damage from affecting the stream, the same effects go to the Maracuto stream.

CONCLUSION

With this investigation we were able to prove our hypothesis. Even if both atmospheres look similar to the bare eye to the macros living there it is a completely different environment. The abundance and capability to reproduce and survive depends on the atmospheric conditions and water quality of the stream.

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RESULTS

