

A Study of the Pollinators in and Around Ian Andersons Caves Branch

Research Station - Belize

Introduction

In order to determine if an ecosystem is able to support a stable population of Jaguars a study of insects in the area must be done. Insects play a vital role in contributing to the health of an ecosystem capable of supporting Jaguar populations; more specifically they pollinate plants that Jaguars prey are dependent on for food. Jaguars prefer large prey such as Paca, Tapir, and Capybara. These three species rely on vegetation as part of their diet. Butterfly's will be the primary pollinators I focus on for this study. A large base of pollinators will show that pollination takes place on a consistent basis.

Materials

Camera

Containers (to transport insects in)

Field guide for Belize butterflies/insects

Brush net

Method

In order determine if a stable population of pollinators is present in the Caves Branch area I will be collecting specimens both digitally and physically for

identification. The brush net will be the primary tool used for collection. Photos will be the secondary. Butterflies will be caught with the net then placed in inflated plastic bags to decrease the chance of harming the specimen. After a specimen is identified or documented by photograph for later identification it will be released into the area where it was captured. Butterfly's that cannot be captured will be counted with their appropriate species. Unidentified specimens will be documented photographically and marked as unknown in the results.

Results

All locations marked "trails" refer to the trails near the research station

All locations marked "Main" refer to the open area (landscaped) around the research station

Common Name	Scientific Name	Area	Count
Tiger-Striped Butterfly	<i>Heliconius ismenius telchinia</i>	Trails /main	7
Owl Butterfly	<i>Caligo eurilochus</i>	Trails + my room	2
Plain Satyr	<i>Cissia pompilia</i>	Trails	1
Cloudless sulphur	<i>Phoebis sennae</i>	Edge of main area	2
Zebra Longwing	<i>Heliconius charithonia</i>	Trails	3
Banded Peacock	<i>Anartia fatima</i>	Main	28
Blue Morpho	<i>Papilio achilles</i>	Trails	1

Conclusion

The results of the data collection are inconclusive; a total count of 44 butterflies is not enough to base a sound conclusion of the population and diversity. When covering a large area with a camera and a net it is likely that many specimens will be missed. Some of the situations where they would be missed are as follows: Focusing on one can cause others to be overlooked, butterfly's are not limited to the ground, camouflage conceals them well, and for every ten you chase with a net you may only catch one. Another negative factor was while research took place there was cooler weather than normal and it was mostly cloudy during the day. "Because they are cold-blooded and active only during the day, butterflies use sunshine and/or hot air temperature to warm themselves and become active."(Swengel) The data is weather dependent as well as method dependent. The weather is a factor that cannot be controlled. Suggested methods that could be used in future research include but are not limited to: Different types of nets such as a butterfly net, traps to catch and/or attract butterfly's, divide the area into a grids/sectors and record specimens in each area, and working in a team would all increase the accuracy of the data. In the future if I were to continue this research I would use photography and map out sectors for data collection as the primary method. I would also enlist the help of one or two people to help with data collection. To expand on this project other pollinators would be considered. The head gardener at the botanical gardens at Caves Branch brought the importance of wasp as a pollinator to my attention. Separate studies on ants, bees, hummingbirds, and other species should be considered due to their unique roles in pollination. Data from multiple studies

would be necessary to determine if there is a healthy pollinator base in the area or not. Even though a single group of pollinators plays a critical role one group will not show the whole picture.

Sources

Works Cited (Swengel, 1995)

Consejo Belize. (2007, ?? ??). *Herbivores of Belize: A Sampling of the Land Dwelling*

Mammalian Herbivores Found in Belize:. Retrieved Oct 31, 2011, from consejo Belize:
<http://consejo.bz/belize/herbivores.html>

Gaaton, A. (1999). 1999. Revista Chapingo Serie Horticultura 5. *AVOCADO (Persea americana Mill.) POLLINATORS IN ITS REGION OF ORIGIN* , 137-143.

Swengel, A. B. (1995). *Straight Talk About Butterfly Biology*. Morristown: North American Butterfly Association.

http://www.neotropicalbutterflies.com/Site%20Revision/Pages/Table_of_Contents1.html