1/Bregar 6/13/06

Standing Water vs. Beetles

PLEASE NOTE – THIS IS A FINAL REPORT FROM A COUPLE OF YEARS AGO THAT DOES NOT NECESSARILY MEET ALL THE REQUIREMENTS OF THIS YEAR'S FINAL REPORT ASSIGNMENT!

Introduction:

For our research project we want to figure out what the relationship is between the population of beetles and the centimeters of standing water. Our group is curious as to how standing water is related to the amount of beetles we find and if there is any correlation between the two and Great Blue Herons.

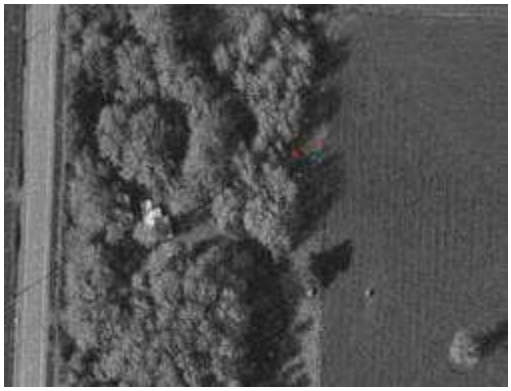
Site Location and Description: **(This section is not required)**

The Noyes property lies alongside Highland Drive and Harmon Lane. This site has lots of trees, both deciduous and evergreen. A lot of the site has been taken over by Himalayan blackberries and there are patches of poison oak littering the property. Walking paths are strewn around the site, helping the viewer to see the different sites.

Part of the property is a grassy wetland. This wetland attracts many types of birds and animals, going to the wetland for food. The woodland also attracts many different types of birds and animals. The happy chirping of little birds like Black Capped chickadees greet the viewer as they arrive. Small animals like rabbits and field mice can be heard, or seen, tromping around in the undergrowth. The site has a welcoming aura that is inviting to both animals and humans.

Map of Noyes Property

Our sites are located at the following GPS coordinates (indicated by the red dots on the maps):



Site # 1 (UL)	**44 37.239**	**123 5.6040**
Site # 1 (LR)	**44 37.239**	**123 15.596**
Site # 2	**44 37.239**	**123 15.595**
Site # 3	**44 37.237**	**123 15.594**
Site # 4	**44 37.239**	**123 15.601**

Methods:

Standing water:

We:

1. Went to the first site location, flag number 1 UL, and used a meter stick to measure the depth of the water that surrounded the flag.
2. Measured the deepest part and marked the point on the meter stick where the top of the water ended.
3. Measured the depth of water every so often to see if it changes, and if that affected the population of beetles.

(Herrera 2005)

Pitfall Traps- Beetles (Coleoptera):

We:

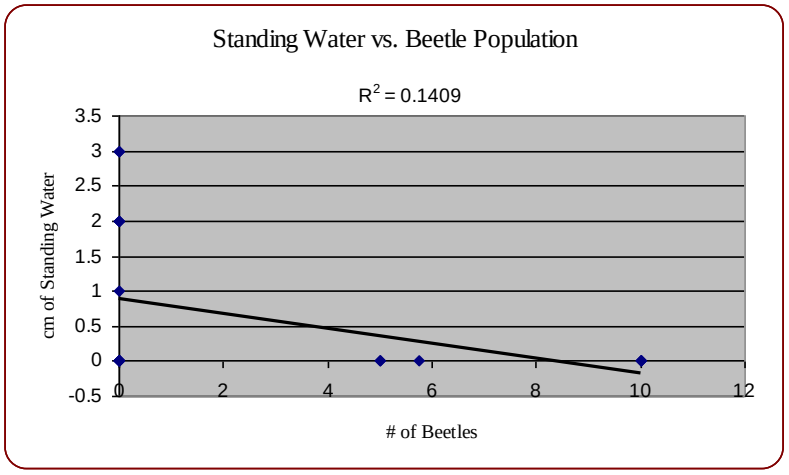
1. Got two plastic cups and cut the bottom off one of them to create a funnel.
2. Dug a hole in the ground that was the size of the cup and placed the cup in the ground and placed the funnel in the cup so it was easy for the insects to fall inside.
3. Placed bait at the bottom of the cup (molasses) to attract the beetles.
4. Got a piece of board and placed it over the trap so that it would keep out large animals and rain.
5. Repeated this method 3 times and placed the traps all around our site.

(CSIRO 2005)

Results:

Site #	Standing Water (cm)	Beetles #
1UL	5	0
1LR	10	0
2	10	0
3	10	0
4	0	0
1UL	6	0
1LR	5	0
2	0	2
3	0	3
4	0	0
1UL	0	0
1LR	0	0
2	0	0
3	0	2
4	0	0
1UL	0	0
1LR	0	0
2	0	1
3	0	3
4	0	2

Graph:



Discussion:

The correlation on our graph between the cm of standing water and number of beetles is negative. Because the relationship between them is 0.1409, it means that our correlation is weak. The graph displays that when the amount of standing water is higher then there are fewer beetles.

It is possible that the amount of water could be the cause of the departure in beetles. There is a possibility that the beetles fear being drowned in the rain, so when it is very wet they go to higher ground were it is safe and dry. Even though we put molasses in the traps to attract them, it is possible that they did not find the attraction strong enough to leave the safety of the higher ground.

It is also possible that the lack of beetles is not affected by the water, but by birds and other predators. If the beetles do not like the high water levels, then it is possible that so do the birds. Supposing the beetles are on the higher ground and so are the birds, and thus the beetles could be easier to catch and eaten by the birds. The water levels may cause the decrease or increase of beetle population because of its affect on the migration of the beetles.

References:

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