

“HabitatNet / El Eden Ecological Reserve: Notes from the field - January, 2007”

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The Souhegan High School (Amherst, NH) Conservation Biology / HabitatNet students began their 12th field season at El Eden Ecological Reserve January 13, 2007. Since 1995, we have had 400 students take part in field research at the reserve. Student research projects over the years have included the complete inventory of all trees (tree vs. sapling being defined as having a DBH of 10 cm or greater) in a one hectare Biodiversity Plot, canopy density by month (January, April, July), invertebrate, and vertebrate inventories (including migratory and resident avifauna as well as bats and cats).

Additionally, in 2005, we hosted an international forum for students to: (1) Present the conservation biology work they are doing at their home site, (2) work collaboratively on a biodiversity research project at the reserve, and (3) develop and write a Youth Accord on Biodiversity that was submitted to the United Nations for Earth Day, 2006. Eighty students, from 13 nations, attended this project and their work is to be highlighted this year on May 22, 2007 at the UNEP International Biodiversity Day in Montreal, Canada.

Our post-Hurricane Wilma (December, 2005; January 2006) field work focused on the initial impact of the hurricane on the Biodiversity Plot. Canopy density, tree fall direction, and snap heights of trees in the hectare plot were measured as well as monitoring the invertebrates and vertebrates found within the BioPlot.

Field Research Reports, Data, and the Youth Accord, and the post-Hurricane Wilma reports are listed in the Appendix as URL's to the HabitatNet / Conservation Biology Program at Souhegan High School.

Our primary focus in January, 2007 was to begin a re-census of the entire biodiversity plot. The one hectare plot is sub-divided into 25, 20 meter by 20 meter quadrats. It is worth noting that the Reserve's *tintal* (seasonal flooded forest) region is still inundated with .4 - .8 meters of water which translates to the trail, heading out to the forest biodiversity plot, is still submerged. We also noted “tidal influence” regarding the depth – when high tide in the Cancun region was reached, the trail flooding increased for that time period by 5 cm. during our two week program.

Of the 25 quadrats, we were able to completely re-census 6 of the quadrats (approximately 25% of the hectare). That data is currently being analyzed with the results to be added to this report later on this Spring, 2007.

Initial results follow:

- Canopy Density – Immediately following Hurricane Wilma the canopy density for the Forest Biodiversity Plot was 45%. The pre-hurricane data for the forest canopy coverage was 85%. During this field season we found that the canopy coverage was 70% indicating that tree recovery was well underway. There was

abundant tree sprouts from downed trees and trees that were snapped off were still alive and sending out shoots and branches.

- Unlike last year, we found avifauna species in all functional feeding groups present. Hummingbirds were seen as several tree and under-story species were in flower. Insectivorous birds include: social flycatchers, migratory warblers (see photos with identified species – the field report in late Spring will list all), resident and endemic birds including the Ocellated turkey, Chachalaka, Yucatan Jay, Brown Jay, Roadside Hawk, Ferruginous Pygmy Owl, Yucatan Nightjar, Vaux's Swift, and Laughing Falcon were observed and most photographed. Additionally, we observed both the Lineated Woodpecker and Yucatan Woodpecker nearby the main field station. Both the Black and Turkey Vultures were observed as well.
- Numerous Lepidoptera were visible and photographed as well (see photos). Several species of Heliconiidae, Morpho, Nymphalidae, Pieridae, Lycaenidae, Papilionidae, and Hesperidae were present (as well as their larvae) as we surveyed the Biodiversity Plot.
- Evening mistnet and observational activities for bats produced two species present: the frugivore *Artibeus jamaicensis* and the insectivore *Myotis* sp.
- Large mammal surveys are on-going and thus far we have photographed ocelot, puma, and jaguar at the biodiversity plot using remote sensing cameras. One photograph of a puma showed a young kitten behind her and we have been able to identify at least 4 individual jaguars based on their spot / coloration patterns.

Student researchers this year include:

Brett Murray, Zachary Laforet, Jordan Curro, Rachel Brayman, Kathryn Buonadonna, Jeffrey Fasoli, Betsy Hedges, Caroline Smith, Melissa Phillips, Sarah Bowditch, Mackenzie Davis.

With special thanks to **Marissa Locher** (former student and now colleague/ co-chaperone) and **Nate Langille** (former student and T.A. for this year).

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- **Souhegan High School Administration & School Board**
- **SHS Faculty: Melissa Chapman and Kathy White for their “tech. support”.**

Appendix:

Souhegan High School (Amherst, NH) HabitatNet Website URLs:

HabitatNet Main Page

<http://www.sprise.com/shs/habitatnet/default.htm>

Caribbean Map w/ hotlinks to all HabitatNet Caribbean sites (click each Red Dot)
<http://www.sprise.com/shs/habitatnet/HabitatNet%20Field%20Sites/caribbeanmap.html>

El Eden Ecological Reserve Field Reports
<http://www.sprise.com/shs/habitatnet/HabitatNet%20Field%20Sites/eleden.html>

El Eden Ecological Reserve – HabitatNet/SIMAB Pre-Hurricane Wilma Hectare Biodiversity Plot Data Set
<http://www.sprise.com/shs/habitatnet/HabitatNet%20Field%20Sites/images/EEForestData.pdf>

El Eden Ecological Reserve BioPlot Hectare Map with Canopy Density Data – Pre-Hurricane Wilma
<http://www.sprise.com/shs/habitatnet/HabitatNet%20Field%20Sites/images/EECanopyDensity.pdf>

El Eden Ecological Reserve HabitatNet Field Report – “Post-Hurricane Wilma” February, 2006 Post-Wilma Hurricane HabitatNet Field Report
http://www.sprise.com/shs/habitatnet/Post_Hurricane_Wilma_Report.pdf

Photos from El Eden Ecological Reserve – January, 2006 Post Hurricane Work
http://www.sprise.com/shs/habitatnet/winter_06_pics/winter_2006.htm

“Youth Accord on Biodiversity” – Summit at El Eden Ecological Reserve, 2005
http://www.sprise.com/shs/habitatnet/El_Eden_EcoReserve_Youth_Summit_Accord.pdf

“Youth Summit” photo gallery
http://www.sprise.com/shs/habitatnet/global_youth_summit/el_eden_photo_gallery.htm

Articles from the Miami Herald covering the Youth Accord Summit (3 Articles pdf files)
http://www.sprise.com/shs/habitatnet/global_youth_summit/articles.htm

Souhegan High School (Amherst, NH) Website (A Coalition of Essentials School)
<http://www.sprise.com/shs/default.htm>

