

## **HabitatNet Celebrates 2010 – International Year of Biodiversity**

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Beginning its' 15<sup>th</sup> year, HabitatNet (a grass roots project committed to students and teachers world-wide documenting and researching local biodiversity) joins the United Nations Convention on Biological Diversity international activities celebrating global biodiversity in 2010. During the past 15 years, HabitatNet has involved over 600 students and teachers with long-term biodiversity (and on-going) monitoring projects in Mexico, Jamaica, Saba, Tahiti/ Moorea, USA, Ecuador, and the Galapagos. Additionally, HabitatNet hosted an International Youth Symposium in 2005 at the El Eden Ecological Reserve (Quintana Roo, Mexico) and assisted with a 2<sup>nd</sup> International Youth Symposium in 2009 (Ottawa, Canada).

Year-long festivities began January 2 – January 9, 2010 with 24 HabitatNet students and teachers establishing a second HabitatNet one hectare biodiversity plot at the El Eden Ecological Reserve located in Quintana Roo, Mexico. Students came from Souhegan High School (Amherst, NH), Classical High School (Providence, RI), The Metropolitan School (Providence, RI), and Brown University.

### **January 2010 at El Eden Ecological Reserve – What we do at HabitatNet sites**

#### **Plot Selection and Establishment of “EEF2” – the second forest biodiversity plot at El Eden Ecological Reserve**

We first select a site to designate as a “biodiversity research site”. Selection of the plot site is crucial for both the educational and research values. Thus, the site selection is based on the following criteria:

- The area contained species representative and endemic to the ecosystem.
- Common or dominant species were represented.
- The plot was located within one vegetation type to give a true representation of the area's diversity.
- The plot had access for future student groups.

Once a site is selected, the forest plot was defined using SIMAB protocols (Dallmeier, SIMAB,1992). As a new site, we first surveyed and delineated a one hectare plot (100 X 100 meters) into 25 quadrats, each 20 x 20 meters in size. The location of EEF2 is: N 21.21020, W 87.20869 and is located on the North side of the forest trail at the SW corner of line.

#### **Field Measurements**

Tree tagging and identification began after the corner stakes of the quadrants were set. The process included locating, measuring, marking, and mapping all trees with a diameter at breast height (DBH) of 10 cm or greater. Diameter tape was used to measure DBH, avoiding any protrusions on the trunk. Where multiple stems occurred on a tree, all individual stem diameters were measured. Trees were tagged with an aluminum label facing toward the base line of the plot

and set with a nail 1.3 M above the ground. The nails thus serve as a general guide for future measurements regarding tree growth.

Trees were tagged with an individual number consisting of a sequence of two digits. Using (01-24) as an example, the first pair of numbers (01) identified the quadrat within the plot in which the tree was located, while the second pair (24) identified an individual tree within the quadrat. No other tree received that number. In each quadrat the tree numbers started at one and continued until the last tree was labeled.

Tree identifications have been verified by Juan Castillo (botanist/ field station manager at El Eden Ecological Reserve) with collections of all leaf types for each species of tree submitted to El Eden Ecological Reserve for future verification.

### **Concurrent Student Field Research Projects**

After quadrat 1 was surveyed, student groups were formed to develop and research particular areas of interest to the students. Projects included bird behavior of the two vulture species found at the reserve, tree growth rates, arthropod diversity indices, a community similarity index comparison to a New England forest, and a survey of wetland vs. forest butterfly species.

Final student reports and data will be submitted to HabitatNet and the El Eden Ecological Reserve in early February, 2010.

### **Field Researchers who contributed to this project:**

#### **Acknowledgements:**

We could not have conducted our vegetation projects without the support and botanical expertise of Juan Castillo. Thank you. Additionally, we extend our sincerest appreciation to the El Eden Ecological staff who cleared trails, prepared our food, and miraculously repaired much of the reserve's buildings devastated by Hurricane Wilma in 2005.

#### **Resources Used in Compiling this Progress Report and Field Data Submitted to El Eden:**

Bisaccio, D. "Field Report Numbers. 1-6: El Eden Ecological Reserve" HabitatNet website

Dallmeier, F. SIMAB Website – Smithsonian Institution, Washington, DC

Emmons. Neotropical Rainforest Mammals. University of Chicago Press: Chicago, IL

Howell, Webb. A Guide to the Birds of Mexico and Northern Central America.

Will, T. Checklist of Birds/ Yucatan. Gettysburg University, PA

*“If the land mechanism as a whole is good, then every part of it is good, whether we understand it or not. If the biota, in the course of eons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering”*

A SAND COUNTY ALMANAC – Aldo Leopold

## **2010 Calendar of Events for HabitatNet Celebrating IYB!**

### February 12 – 23, 2010 HabitatNet – Tahiti/ Moorea

Students in Northeastern University’s *Three Seas Program* will be conducting an invasive species (*Miconia clavescens*) survey with regard to the distribution and density of this species in the French Polynesia National Parks as part of their Tropical Terrestrial Ecology course taught by Dan Bisaccio.

### March – May and September – December, 2010 HabitatNet Classroom Projects

Teachers and students are encouraged to go to the HabitatNet website (<http://www1.sprise.com/shs/habitatnet/default.htm>) and choose a “Project To Go”. All of the projects are focused on students learning science by doing science and may easily be cross-referenced to your state / province grade span expectations as well as state / province / national science literacy standards. On-line assistance regarding your questions is available by emailing [HabitatNet@sprise.com](mailto:HabitatNet@sprise.com) or [Daniel\\_Bisaccio@Brown.edu](mailto:Daniel_Bisaccio@Brown.edu). Post your work on the IYB facebook page (<http://www.facebook.com/iyb2010>).

### August, 2010 – HabitatNet Biodiversity Workshop for teachers and college students at the El Eden Ecological Reserve, Quitana Roo, Mexico

August 7- 14, 2010

The El Eden Biological Preserve is located 27 kilometers west of Cancun in the north/central region of the Yucatan Peninsula. The enormous biological diversity is recognized by both the Center for Ecological Studies (Mexico) and the World Wildlife Fund as a global natural resource.

Participants will be staying at the El Eden Ecological Reserve field research station located within the Core Zone of the preserve. This area is only open to field researchers and is home to over 400 species of birds (equal to the number of bird species found in all of North America), stable populations of jaguar, ocelot, and spider monkeys. Additionally, in a one acre plot, there are more tree species found than in all of North America.

During the course, participants will study tropical botany while learning field method protocols in conducting biological diversity research. Invertebrate and vertebrate field surveys will introduce participants to sampling methods and subsequently, the variety of wildlife found at the reserve. Evenings will include mist-netting bats, night hikes, and

seminars discussing issues in conservation biology. A scientific purpose of this course is to establish baseline data on the biodiversity of the reserve. Overall, this is an unusual and unique field program in that it allows participants an opportunity to conduct authentic field research while learning field methods.

Dan Bisaccio has been leading these research courses at El Eden Ecological Reserve since 1995. He is an adjunct researcher for the Smithsonian Institution's Monitoring & Assessment of Biodiversity (SIMAB) Program and is the Director of Science Education at Brown University, Providence, Rhode Island.

***\*If interested, please email Dan Bisaccio by April 15, 2010 for information and details.***

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