TREE Foundation Annual Report 2008

www.treefoundation.org

Compiled by Dr. Meg Lowman Executive Director for the annual meeting on November 3, 2008

(photo: School children study bromeliads in TREE's Myakka canopy walkway)

TREE FOUNDATION

Dr. Thomas E. Lovejoy, President, The H. John Heinz III Center for Science, Economics, and the Environment
Honorary Board Chairman

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New College of Florida
Sarasota FL 34243

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President, Sarasota Downtown Association
2055 Wood St.
Sarasota FL 34237

Michael Brown, Legal Counsel
888 Second Street
Sarasota FL 24236

Student Interns for 2008 (Center for Canopy Ecology)

Charissa Jones
Rachel Renne
Erik Wallimaa
Ravi Bannerjee
Jessica Wheeler
Pamela Montero Alverez
Hannah Wilkins
Guillermo Sanchez
David Mitre
Christine Rohal
Marcos Oversluijz Vasquez
Ricardo Renfigo
Zachary Evers
Forest Hayes

TREE Foundation Highlights for 2008:

1. Interns from developing countries – We were happy to sponsor two interns who came to Florida to train in canopy ecology and environmental education. Ricardo Renfigo, a well-known guide in remote jungles of the Amazon basin, brought a wealth of cultural knowledge to schools in Southwest Florida, and also undertook conservation training in USA. (Of note, this was his first trip ever outside of his forest-land!) Dr. Alemayehu Wassie Eshete, from Ethiopia, was a visiting scientist at New College of Florida, and will work with TREE Foundation on a forest conservation project in his homeland of Ethiopia. Two applications are approved for the upcoming year: Willie Flores from the Amazon; and Drs. Soubadra Devy and T. Ganesh, canopy researchers from the Tiger Reserves of The Western Ghats biodiversity hotspot in India.

2. Treehouse signature project – We are thrilled to announce the successful completion of architectural plans for a children's tree house at Oscar Sherer State Park. Our dedicated committee chaired by Carolyn Johnson, Susanne Rodriguez, and Laura Peters will soon be launching an official fund-raising campaign. This project represents a second flag-ship project for TREE, following in the footsteps of our successful canopy walkway at Myakka River State Park. We will officially designate 2009 as "year of the treehouse."

3. Linking families to nature – The canopy walkway at Myakka River State Park continues to generate a large visitorship for the state park. To this end, an additional 50,000 brochures were printed for distribution this year! And TREE is happy to announce the sponsorship of local third and fifth grade science classes who are monitoring the health of bromeliads (air plants) from the walkway. Check out their progress on our website: www.treefoundation.org

4. Think local, act global – With seed funding from Triad Foundation, we launched an effort to promote canopy ecology in developing countries where forest canopy conservation is greatly needed. To this end, TREE has proposed a partnership with National Geographic for a forest conservation project in conjunction with Ethiopian foresters (see attached). TREE has also provided ropes and canopy textbooks to biologists working in the Western Ghats Tiger Reserves of India, another global "hot-spot" for conservation that desperately needs conservation expertise. For very small contributions, our efforts go a long way! TREE is a proud co-sponsor of the 5th International Canopy Conference, scheduled in Bangalore India during October 2009.

5. "No Child Left Indoors" - TREE continues to fund local environmental outreach in southwest Florida. Last year, approximately 35 New College students conducted hundreds of hours of education volunteerism, teaching elementary and middle school ecology classes. Posters, hand-outs in English and Spanish, and hands-on activities were created. This year, TREE hosted its first high school student, Hannah Wilkins, interning in canopy ecology and education outreach.

Approximately six forest walks for the public were hosted by TREE volunteers. At a national level, TREE's initial "no child left indoors" campaign moved from city to county to statewide, with recent Congressional funding allocated to "no child left inside" as an official environmental education legislative allocation. Although other states weighed in on this effort, TREE was one of the initial proponents of this educational achievement.

6. Out-on-a-Limb Canopy Exhibit - Our canopy ecology exhibit, partially funded by National Science Foundation, circulated to over 100,000 citizens and visitors to southwest Florida, including displays at GWIZ Science Museum, the Arts Festival, the Reading Festival in Sarasota County, and several schools.

7. Website - Our web site has been expanded and now receives local, national and global readership – approximately 25,000 people per month log in for updates on canopy ecology, forest conservation and environmental education. Check it out on www.treefoundation.org. Our sister sites, www.outonalimb-forestcanopies.com and www.canopymeg.com collectively total almost 100,000 hits per month.

8. Canopy Ecology Undergraduate Research - TREE continues to sponsor undergraduate student research including: a. ethnobotany in the Amazon basin, co-funding 4 students on an expedition with New College to study rain forest canopies in Peru and create a medicinal plant brochure to promote ecotourism and economic benefits for local villagers in the Amazon); b. presentations by 3 students at the national meetings of the Ecological Society of America in Milwaukee WI; b. student presentations at The Explorers Club in New York City; c. production of a bird guide to the Myakka River State Park by students; 4. student participation at the invasive reptile workshop at New College of Florida. (Because new invasions of Burmese pythons and iguanas threaten the forest (and coastal) ecosystems of Florida, TREE participated in publicity of this issue at the county level. Early management and control of invasives is scientifically proven to save both time and funds.) Fifteen students met professional herpetologists, attended lectures on the best management practices for reptile control, and participated in field trips to capture invasive species.

9. Canopy education for diverse audiences – TREE distributed 250 canopy books to minority science students at the Diversity Lunch of the Ecological Society of America's annual meeting, at the annual SEEDS conference, and also to science students in the Amazon. This effort hopes to inspire the next generation of canopy ecologists.

10. TREE's executive director spoke about canopy ecology and forest conservation to more than 15 universities and institutions. She also received a Fulbright Specialist ranking, to work with developing countries on canopy issues and science education outreach.

11. Canopy walkway fund-raising planks – We continue to offer a special plaque at the canopy walkway for donors who support our research and education programs. Donors contributing $1,000 - $19,999 receive a recognition plaque on an upright, contributions of $100 - $999 receive an inscription on a canopy board, and donors > $20,000 receive a bronze placque in the walkway entrance.

TREE Foundation is approaching its tenth anniversary, and we thank everyone for your continued support. Despite the existence of over 2,000 non-profit organizations in southwest Florida, there are only three even remotely involved in terrestrial conservation. Despite the extraordinary abundance of non-profits supporting social services, especially health, most people overlook the direct link between a healthy environmental and a healthy human population. TREE Foundation fulfills that niche in southwest Florida and beyond. Not surprisingly, there are no other foundations in southwest Florida dedicated to conservation and health of our forests, the tree canopies and associated environmental education outreach – so thank you for supporting this legacy to the next generation.

Summary of Goals and Measurable Outcomes for 2008

LOCAL TREE Initiatives

- Printed 50,000 new canopy brochures for Myakka canopy walkway
- Created and printed bird identification guide for Myakka watershed
- Produced middle school curricula guide for use by student volunteers
- Out-on-a-Limb exhibit viewed by > 100,000 citizens
- Funded 8 New College students for canopy research
- >25 environmental education talks in schools by TREE volunteers
- Architectural renderings and site selection for TREEhouse completed
- Assisted with management plan for invasive reptiles in Florida forests
- Sponsored the Fedder environmental lecture series at New College

NATIONAL TREE Initiatives

- Supported "no child left indoors" from local to national legislation
- Hosted 4 students to attend Ecological Society of America meetings
- Co-sponsored 2 students for attendance at Explorers Club meetings
- Distributed 200 canopy books to native-American, Latino and Afro-American science students
- Executive Director to serve Fulbright as canopy specialist

INTERNATIONAL TREE Initiatives

- Sponsored two interns from the Amazon to train in conservation and canopy ecology
- Started canopy conservation project in the tiger reserve of the Western Ghats, India – one of the world's biodiversity hotspots where canopy research is considered a global priority
- Co-sponsor of the 5th International Canopy Conference scheduled for Bangalore, India in October 2009
- Co-sponsor with National Geographic of conservation project in Ethiopia, to help save the biodiversity in remaining church forests
- Amazon expedition for college undergraduates to Amazon Center for Tropical Studies, Peru
- Established sister relationship with Tropical Forest Development and Conservancy SAC in Peru, to offer assistance with their proposed canopy walkway construction
- Distributed canopy books to > 40 science students in the Amazon, and four field stations
- Advised two prior TREE interns with graduate school admissions, Pamela Montero from Peru, and Guillermo Sanchez from Panama
- Assisted the Western Ghats in India with establishment of canopy ecology programs in this endangered habitat
- Hosted forest scientist from Ethiopia to establish US conservation base
- Web site used by 243,243 users from January-October 2008, and includes both Spanish and English activities

Florida Department of Environmental Protection
Division of Recreation and Parks
Oscar Scherer State Park
1843 South Tamiami Trail
Osprey, Florida 34229

April 20, 2008

Dear Tree Foundation:

On behalf of the Department of Environmental Protection, Florida State Parks and Oscar Scherer State Park staff, we thank you for your support in attending our event. Your services align with our mission to provide resource-based recreation while preserving, interpreting, and restoring natural and cultural resources. Our goal is to help create a sense of stewardship by showing park visitors the best of Florida's diverse natural and cultural heritage sites, and help create a positive environment for the future.

This event is a huge success year after year thanks to your dedication to the community and the environment, especially on this 19th Annual Earth Day Event, a day created to help increase public awareness of the needs of stewardship around the nation. We hope you had an enjoyable experience and look forward to your future participation.

Thank you again for your support.

Sincerely,

Ranger Diana Stinson
Event Coordinator

****

OSCAR SCHERER STATE PARK

presents this

Certificate of Appreciation

To

Tree Foundation

In recognition of your support of
19th ANNUAL EARTH DAY
On the 20th Day of April 2008

John J. Roche
Park Manager

Ranger Diana Stinson
Event Coordinator

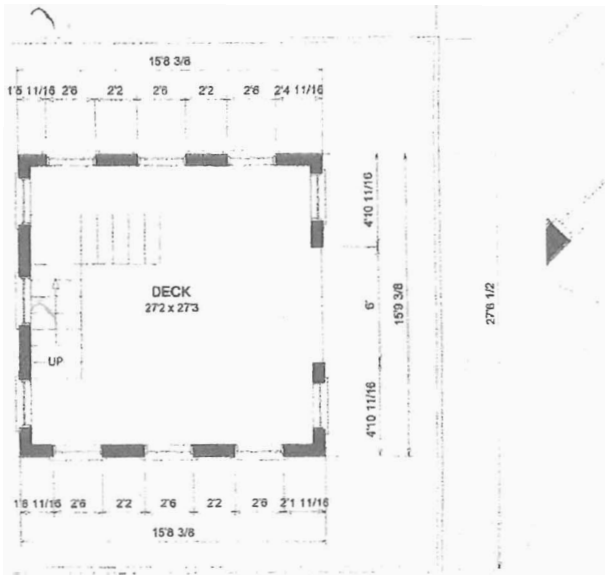
Tony Clements
Assistant Park Manager

Signature project: Canopy walkway

Myakka canopy walkway continues to double and triple visitorship to the State Park, with counts of up to 110 adults and 55 children PER HOUR recorded in November.

Local school classes enjoy visits to the Myakka canopy walkway, including these third graders who are also studying the air plants in the Florida canopy.

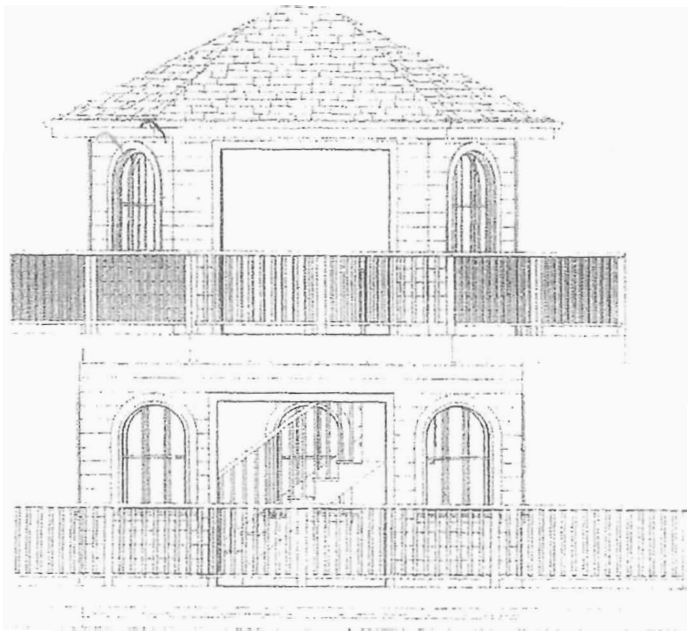
Signature project: tree-houses



DECK
21'6 x 22'2

LIVING AREA

Architectural renderings of TREEhouse for Oscar Sherer State Park, with ground-breaking planned for late 2009.



Last Update: 20 Oct 2008 - 14:58 Update now

Reported period: Oct 2008 OK

Summary

Reported period Month Oct 2008

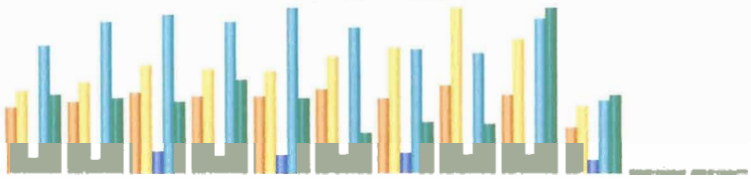
First visit 01 Oct 2008 - 00:12

Last visit 20 Oct 2008 - 14:58

	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Viewed traffic *	**355**	**528** (1.48 visits/visitor)	**1984** (3.75 Pages/Visit)	**12816** (24.27 Hits/Visit)	**688.45 MB** (1335.18 KB/Visit)
Not viewed traffic *			**6794**	**7875**	**1.29 GB**

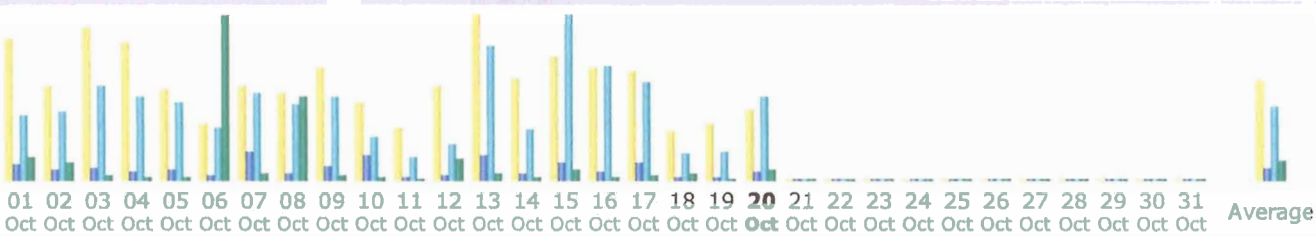
* Not viewed traffic includes traffic generated by robots, worms, or replies with special HTTP status codes.

Monthly history



Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2008	506	637	2323	22572	691.27 MB
Feb 2008	560	709	2226	26800	653.10 MB
Mar 2008	624	839	3904	28081	621.47 MB
Apr 2008	596	808	2892	26993	813.17 MB
May 2008	601	800	2993	29372	648.75 MB
Jun 2008	656	912	3244	25811	350.50 MB
Jul 2008	575	981	3326	21950	444.79 MB
Aug 2008	677	1293	3087	21391	421.19 MB
Sep 2008	609	1055	3173	27457	1.42 GB
Oct 2008	355	528	1984	12816	688.45 MB
Nov 2008	0	0	0	0	0
Dec 2008	0	0	0	0	0
Total	5759	8562	29152	243243	6.63 GB

Days of month



Day	Number of visits	Pages	Hits	Bandwidth
01 Oct 2008	38	137	561	42.65 MB
02 Oct 2008	25	86	592	32.41 MB
03 Oct 2008	41	106	808	6.81 MB

WEB SITE – TREE receives increasing activity, as our web site expands in content and the creative graphics of David Martin, our web designer of Brighter Technologies.

TREE FOUNDATION

TREE RESEARCH, EXPLORATION & EDUCATION

HOME • DONATE • BLOG • CONTACT

ABOUT US
PROJECTS
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RESOURCES
FACTOIDS
MULTIMEDIA
EVENTS

DONATION INFORMATION

Thank you for your interest in supporting the TREE Foundation. Help us today through a donation. You can do so by mail or electronically using PayPal.

MAIL

Send checks or money-orders, in US funds, to:

TREE Foundation
P.O. Box 48839
Sarasota, FL 34230-5839

PAYPAL

Make a donation with PayPal — it's fast, free and completely secure! With this convenient online payment system, The TREE Foundation will be electronically notified of your payment, and you'll automatically receive an email receipt of your donation. All you have to do is enter your payment information. Now a simple click is all it takes to help the TREE Foundation with their mission. Just click on the button below to start the donation process.

Make A Donation

MYAKKA WALKWAY "NAME A PLANK" DONATION

Put your name atop Myakka River State Park and fund research and education projects at the Myakka Canopy Walkway by having your inscription put on a plank or column.

If interested you may fill out this form, then print and mail along with your check to: TREE Foundation P.O. Box 48839 Sarasota, FL 34230-5839

or

You can use PayPal by following these instructions:

1. Decide on the amount you want to donate:
   - Name a plank: $100 - $999 donation
   - Name a column: $1000+ donation
2. Click the PayPal button below:

   Donate

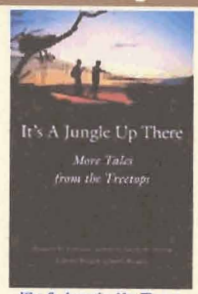
3. When filling out the PayPal form be sure to include your plank inscription. The inscription should be limited to two lines with 20 characters max per line.

All payments are tax deductible (in the USA) since the TREE Foundation is a 501(c)3 corporation. 501(c)(3) letter from the IRS PDF

"If nothing is done, the rain forests of the world will no longer exist in 25 years."
- Dr. Margaret Lowman, Canopy Biologist

Days	Hours	Mins	Secs
5917	00	47	38

Recommended Reading



It's A Jungle Up There
by Margaret D. Lowman, Edward Burgess and James Burgess

Forest Canopies
by Margaret D. Lowman, Ph.D. and H. Bruce Rinker, Ph.D.

View All

New Web pages including on-line donor opportunities

ABOUT US
PROJECTS
RESEARCH
RESOURCES
FACTOIDS
MULTIMEDIA
EVENTS

DEAR DR. WATER BEAR

TREE Foundation is proud to have Dr. Water Bear answer your questions about Water Bears (Tardigrades).

Please e-mail your questions to dr.water.bear@treefoundation.org

Questions along with Dr. Water Bear's answers will be posted here on the TREE Foundation blog. Subscribe to our RSS feed to keep up with the latest entries.

Dear Dr. Water Bear

Monday, March 10th, 2008

Dear Dr. Water Bear answers your questions about Water Bears (Tardigrades). Send your questions to: dr.water.bear@treefoundation.org

Questions and answers will be posted to the Dear Dr. Water Bear category of the TREE Foundation blog.

Posted in ANNOUNCEMENTS, DEAR DR. WATER BEAR | Comments Off

Search

You are currently browsing the archives for the DEAR DR. WATER BEAR category.

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- AUDIO (1)
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- DEAR DR. WATER BEAR (1)
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- October 2005
- September 2005
- March 2005
- August 2004
- June 2000
- June 1990

New Web pages include a BLOG section, for canopy questions or "Dear Doctor Water Bear"

« Dear Dr. Water Bear

Distinguished Guests in the Treetops »

TREE Foundation intern Ricardo Rengifo visits Sarasota

TREE intern, Ricardo Rengifo, visited Sarasota, Florida as part of his canopy ecology and environmental education internship. Ricardo spoke at local elementary schools, explaining the importance of rain forest conservation. He also starred at the regional Earth Day festival, giving demonstrations with his blowgun to many children of all ages (including their parents). Ricardo worked at New college, learning from Dr. Lowman and her students about canopy ecology and new advances in environmental education outreach. As part of his internship, Ricardo will also travel to Washington DC, Charlotte NC, Minneapolis MN, and Chicago IL for school talks and to meet with tropical conservation biologists.

Ricardo thanks all the TREE donors who kindly sponsored his first-ever trip out of the Amazon jungle to visit the United States.

Photos:

UPDATE (9/7/08): Video by ABC 7 News of Ricardo's visit:

This entry was posted on Sunday, April 27th, 2008 at 6:46 pm and is filed under MULTIMEDIA, PHOTOS. You can follow any to this entry through the RSS 2.0 feed. Both comments and pings are currently closed.

Comments are closed.

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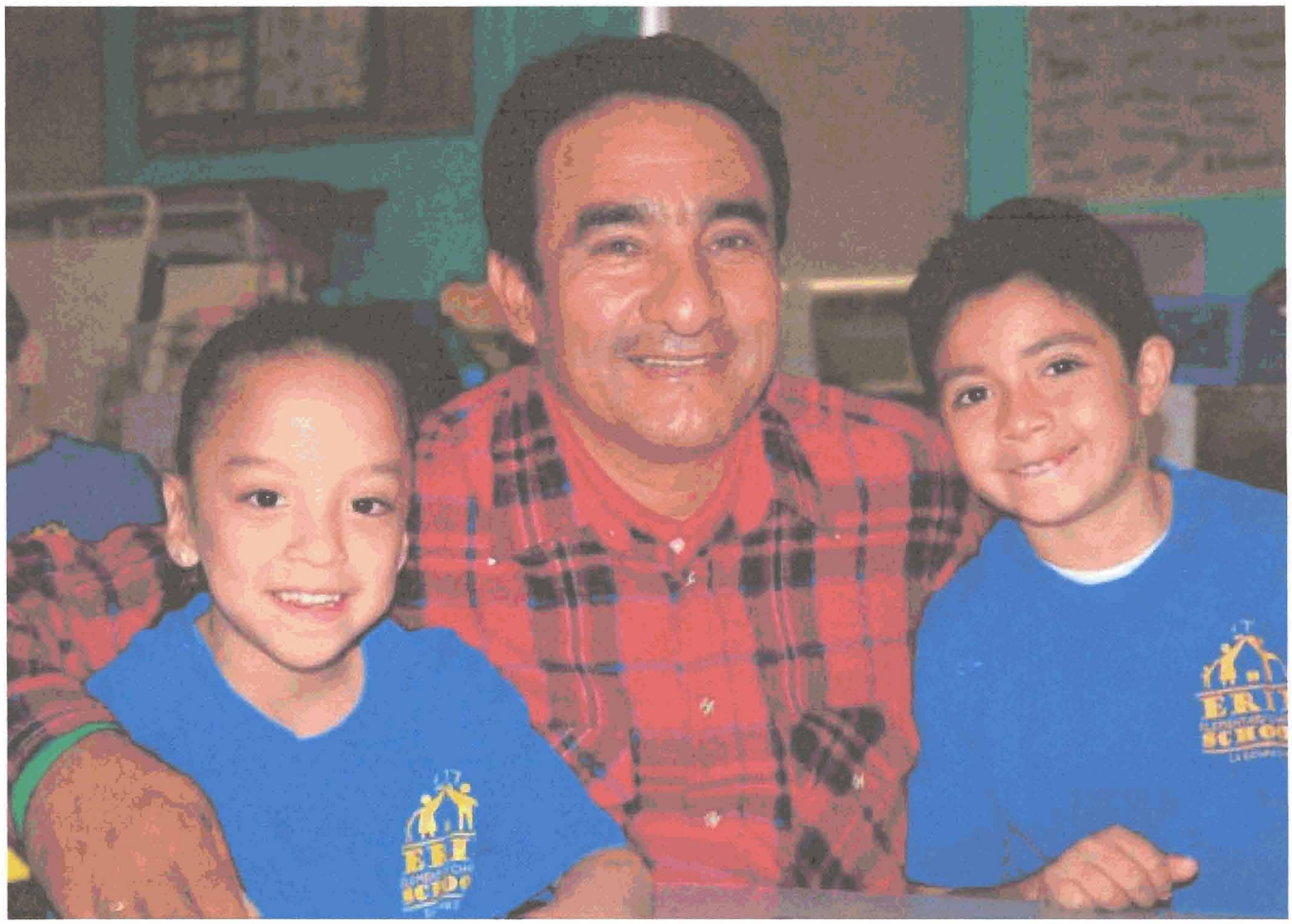
New Web pages including news and events such as lectures or interns-in-the-news

Intern Ricardo Renfigo from the upper Amazon River was a hit at Earth Day in Oscar Sherer State Park, teaching children (and adults!) how to hunt with a blowgun



Intern Ricardo Renfigo visited local schools and inspired children about forest conservation. Below: We welcome new donors, the Spurlino Foundation, who helped fund maintenance, new brochures and education programs at the canopy walkway as well as in the Amazon.

Lowman, Margaret

From: Kelly Morgan [learningstudio@mac.com]
Sent: Wednesday, May 21, 2008 10:13 AM
To: Lowman, Margaret
Subject: Thank You Tree Foundation

Dear Tree Foundation,

We want to thank you for sponsoring our visitors from the Amazon rain forest. Last year we hosted Marcos Oversluijs Vásquez and this year Ricardo Rengife for the Chicago part of their itineraries. Both of these men were great ambassadors not only for trees and the rain forest, but also for global climate change. They've touched our lives deeply.

Ricardo and Marcos brought knowledge, warmth, and caring to our family and also to the 100 school children with whom they met. Many of these children are from the inner city and are unlikely ever to get a chance to visit the rain forest. They gave these children a new awareness of the natural world and shared their love and joy of nature with them. Their kindness and generosity left a heart-warming and lasting impression.

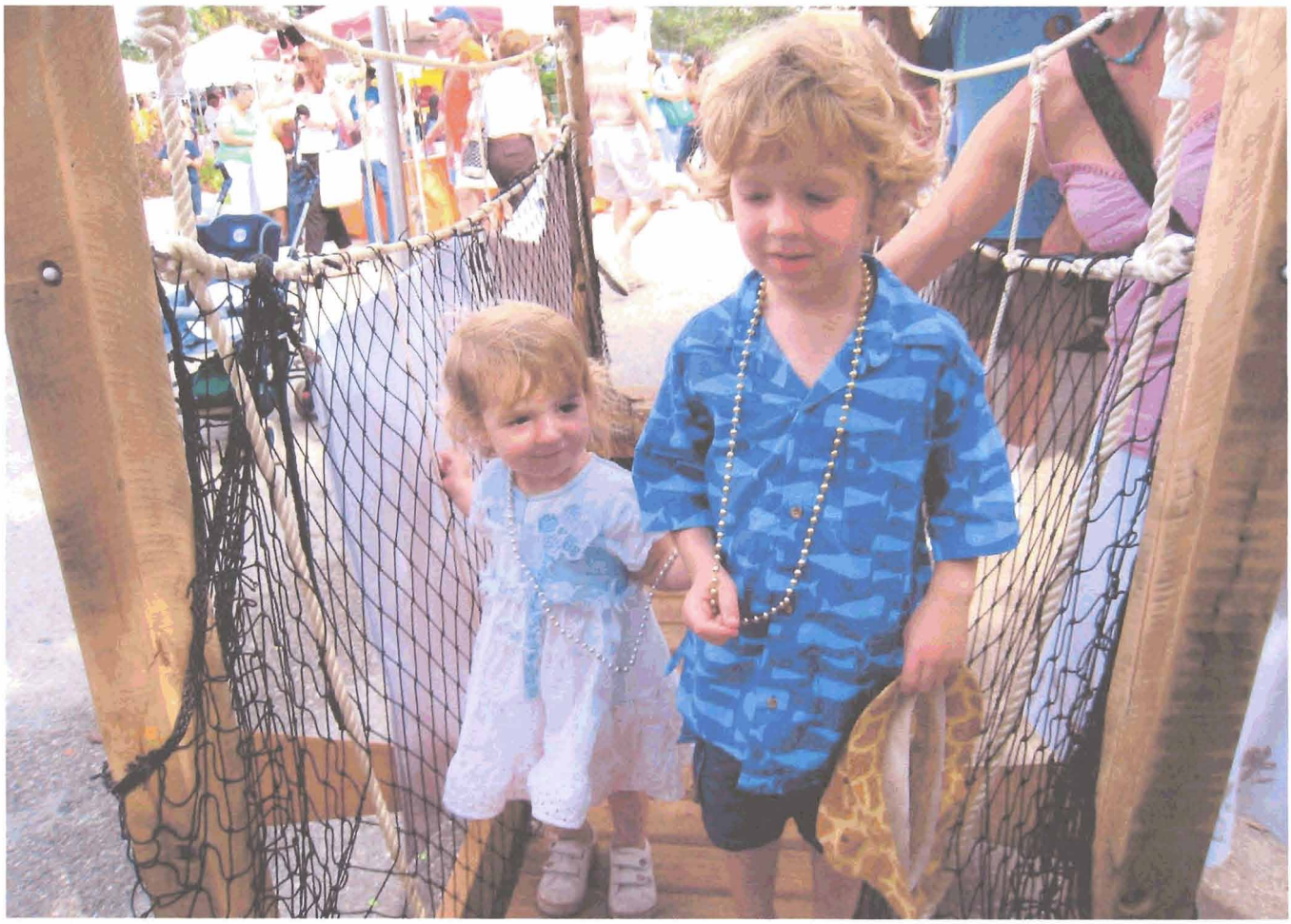
Thanks again for your underwriting this important program. Our family looks forward to hosting another visitor each year and continuing to build connections between Chicago and the Amazon rain forest.

Sincerely,

Kelly, Blake, Bryn, and Cole Morgan
and Jim Blake

Our portable exhibit, Out-on-a-Limb, continues to circulate at festivals and schools throughout southwest Florida. Fifth graders at Pine View School enjoy a "day in the rain forest canopy," with New College student Charissa Jones as host.

Out-on-a-Limb attracted over 40,000 visitors at the Arts And Book Festivals in downtown Sarasota. Charissa Jones and Zach Evers served as student guides.

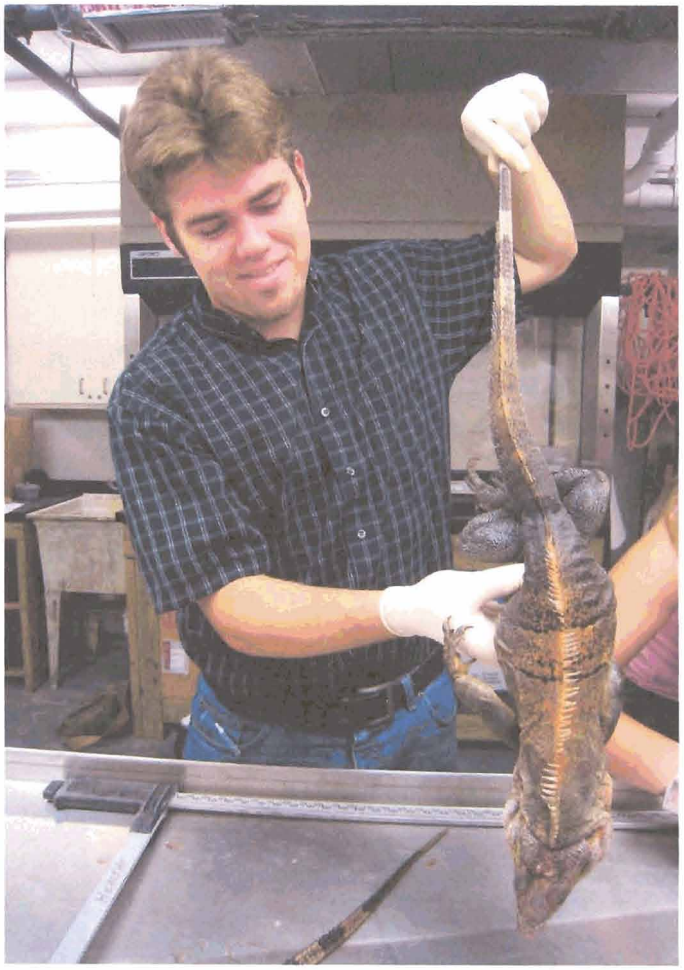


Jorges Ramos, Mexican ecology student,
enjoys his book, donated by TREE Foundation,
as he works in a canopy construction crane
in the forests of Washington state.

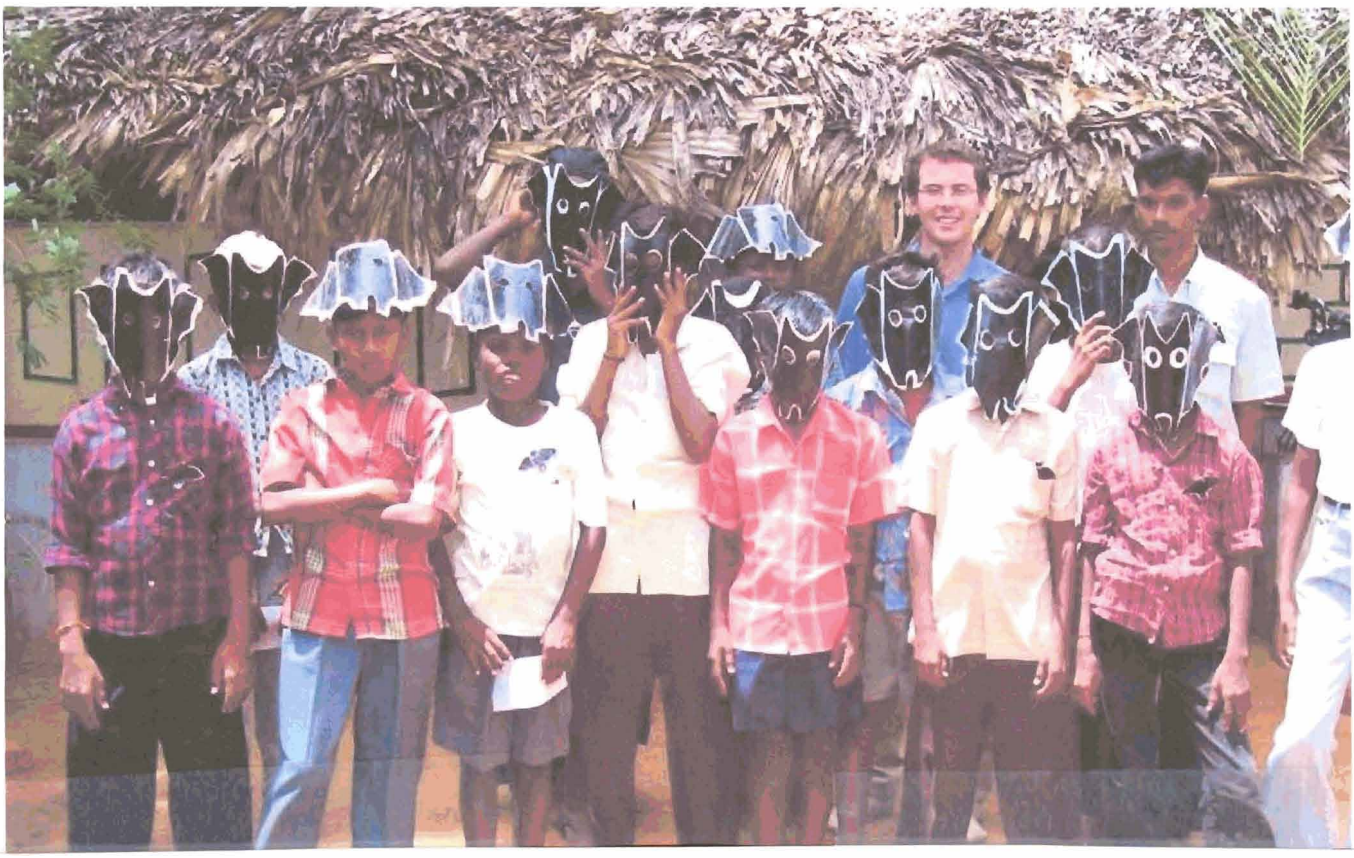
New College students present nature readings at Red Bug Slough as part of a community nature series.

New College undergraduate students present posters on canopy ethnobotany and environmental education outreach at the Ecological Society of American annual meeting in Milwaukee WI during August 2008. Former TREE teacher intern, DC Randle (above, left) was also featured as an ESA Profiles in Education.

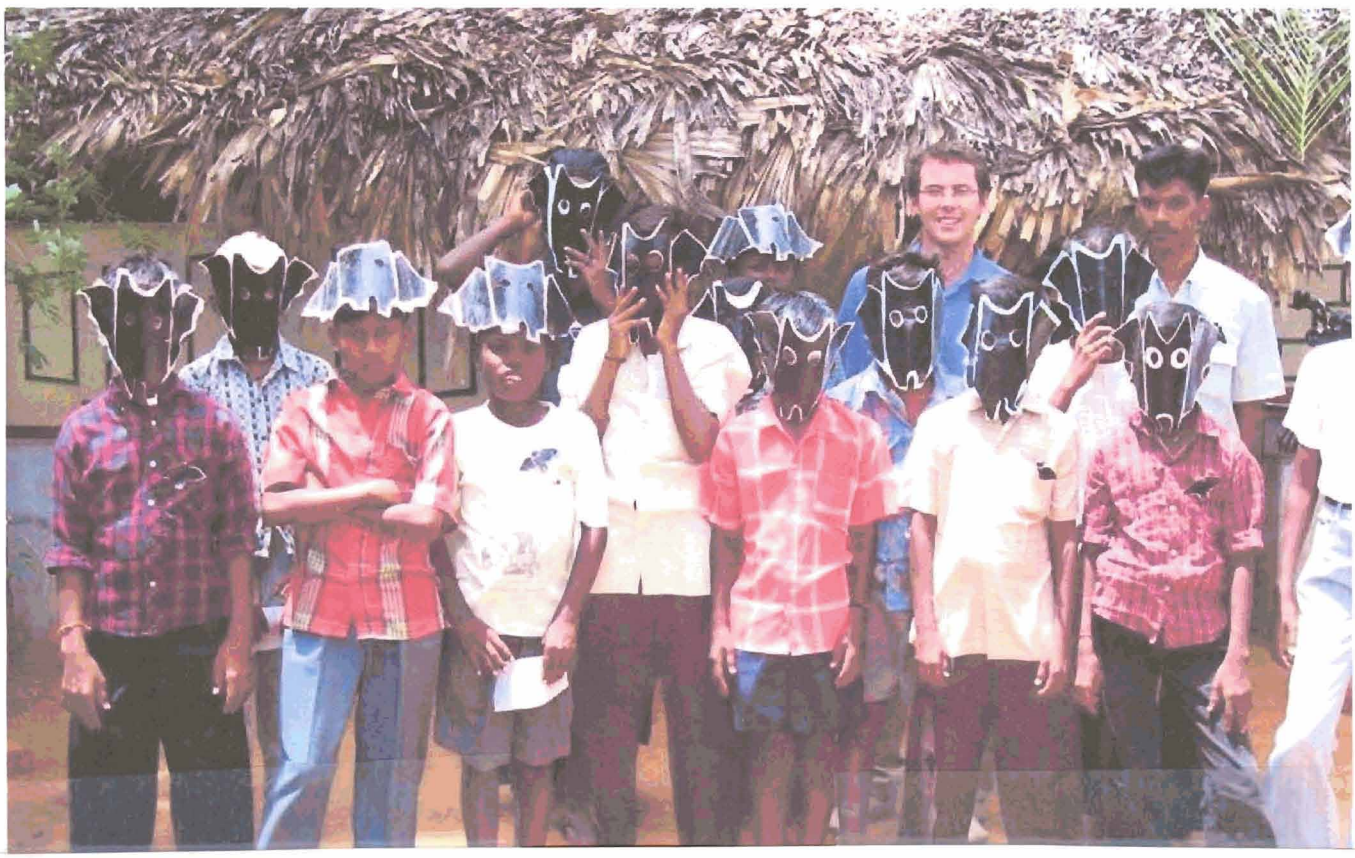
TREE Foundation sponsored student attendance at the Invasive Reptile Workshop at New College. Students experienced an invasive python (captured near Myakka) up close and personal at the Scientist Reception at Dr. Lowman's home before the conference.



Students working with TREE Foundation on invasive reptiles learned about the native species that invasive reptiles are consuming during a laboratory day at Mote Marine Lab.



TREE Foundation provided equipment for the New College Ecology of the Amazon rainforest expedition. Due to its popularity, two trips were scheduled during January and June 2008. Below: Former TREE intern, Trevor Caughlin, worked on ecology outreach in India, and just received a National Science Foundation scholarship to study tropical ecology at University of Florida.



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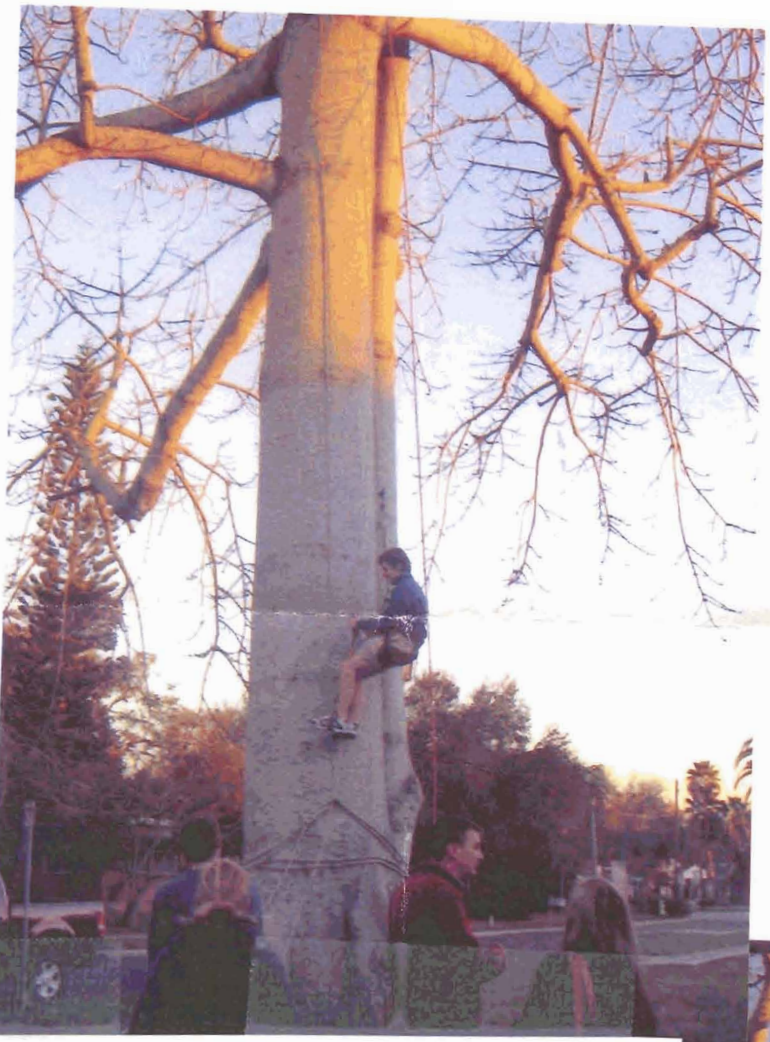
TREE Foundation continues to sponsor "no child left indoors" as both a local and national initiative.



Venice High School Zoology Club enjoys tree-climbing lessons from TREE volunteers.

Invasive Reptile Workshop - Monday September 22 2008
New College of Florida – Cook Hall Music Room on the Bayfront campus
5800 Bayshore Road Sarasota 34243
(Dinner at Meg's home on Sunday 21 September at 6 PM – 4762 Watermark Lane)
9:30 AM – Coffee and posters and herp displays

10:00 AM – Opening Introduction – The invasion ecology of large reptiles in South Florida – Defining a new battleground Meg Lowman, New College

10:15 – Sarasota County – Management challenges of invasive herps
Kenya Leonard, Sarasota County Environmental Services

10:30 – Cooperative research and education for control of Burmese pythons in Greater Everglades ecosystems Michael R. Rochford, Michael S. Cherkiss, Matthew L. Brien, Skip Snow, Kenneth Rice, Michael E. Dorcas, Alexander Wolf, Brian Greeves, Laurie Wilkins, Gordon Rodda, Robert Reed, **Kristen Hart,** and Frank Mazzotti

11:00 Nonindigeneous amphibians and reptiles in Florida: defining the invasion process and identifying continuous pathways. **Kenneth Krysko**, Joseph Burgess, Kevin Enge, Louis Somma, Michael Rochford, and Stuart Nielson

11:30 Preliminary data on the Argentine black and white tegu (Tupinambis merianea) in central Florida – Bernard Kaiser, Larry Connor, Ross Dickerson, **Kevin Enge**, Scott Hardin, Kenneth Krysko, and Catherine Smith

12:00 Are invasive fishes causing the collapse of Florida's native semi-aquatic herpetofauna? Steve Godley, Biological Research Associates

12:30 - Lunch

1:30 Reptile Trapping Techniques – Challenges and Frustrations George Cera

1:45 How far can they go? Exotic in NE Florida Joseph Burgess

2:00 Exploring potential management strategies for invasive Cuban treefrogs and coquis
Steve Johnson and Monica McGarrity, University of Florida

2:30 What, why, and what does it all mean? Kevin Enge, Florida Fish and Wildlife Conservation Commission

3:00 – 3:15 Coffee

3:15 – 3:30 Is there a role for invasive journalists in the exotic species problem? Public education as a solution Leslie Anthony, author of Snakebit

3:30 – 4:00 Paradise lost: the status of introduced amphibian and reptile management in Florida Todd Campbell, University of Tampa

4:00 – 5:00 Discussion – Where to go from here? Group discussion led by Meg, Kenya, Kristen, Kenney and Todd

Invasive Herpetology Workshop
September 22, 2008
New College of Florida, College Hall Music Room

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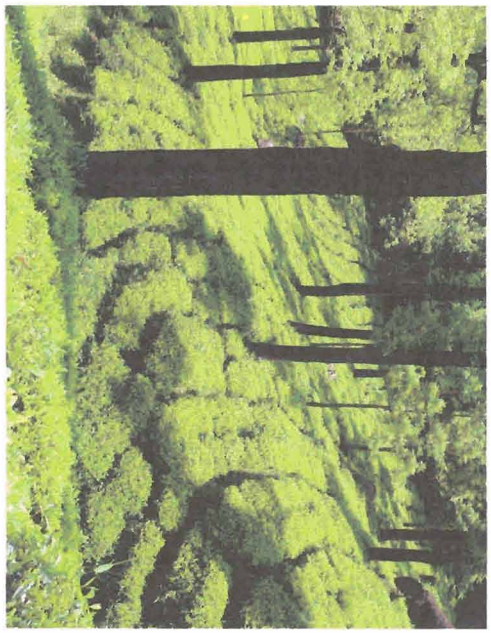
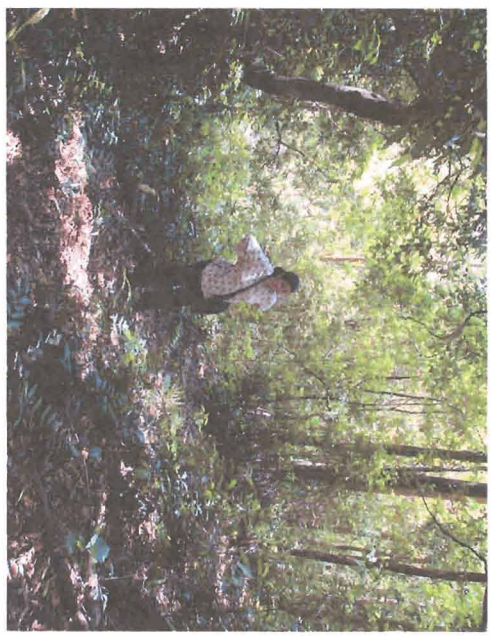
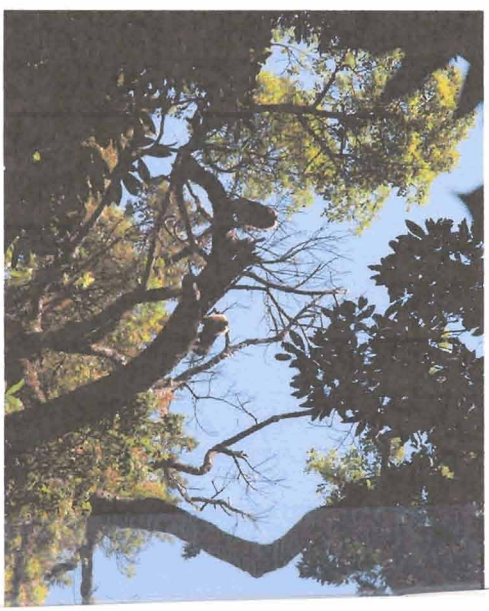
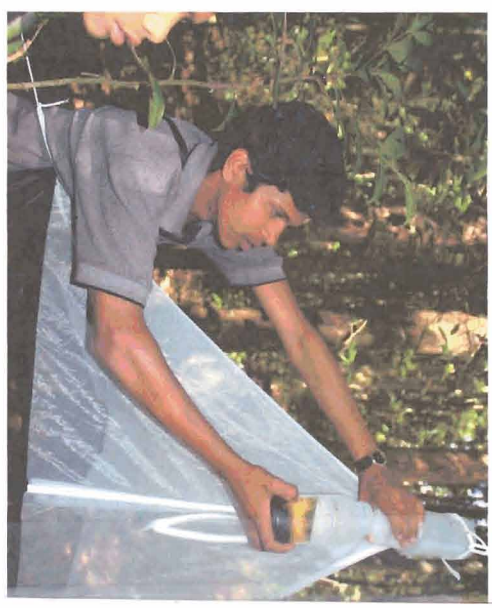
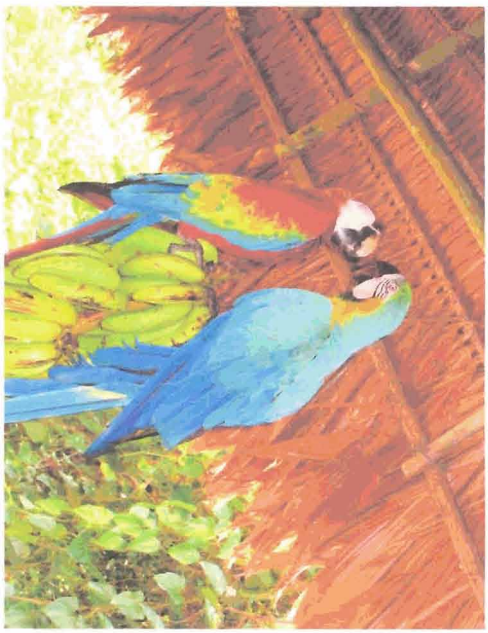


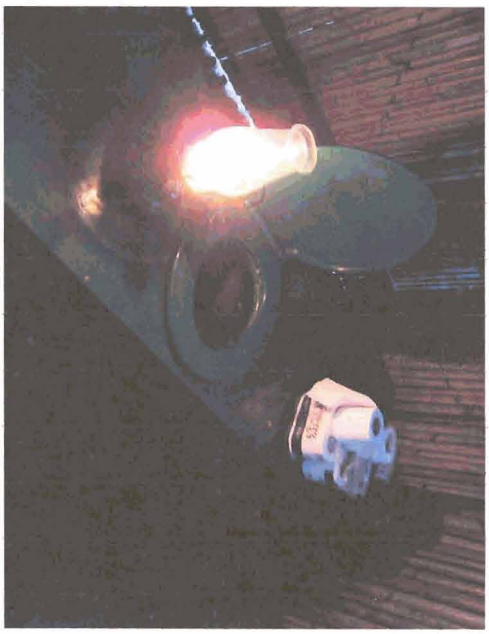






TREE initiated and exchange with ATREE (Ashoka Trust for Ecology & Environment) in India, partnering on canopy research in the tiger reserve of the Western Ghats, India.







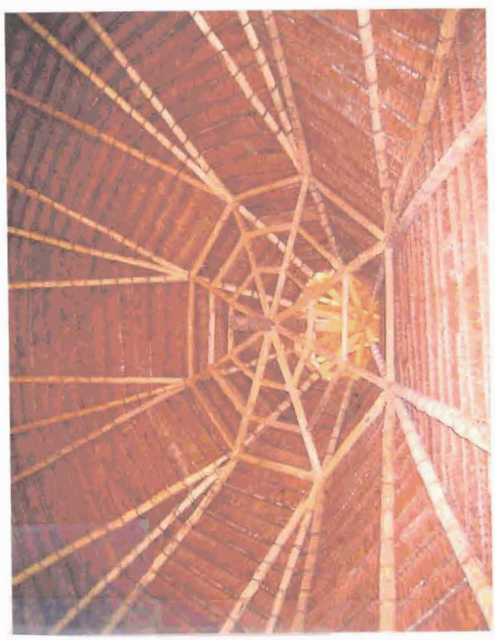



Students and local families learn about tropical rain forest canopy ecology on one of two TREE expeditions to Peru during 2008.

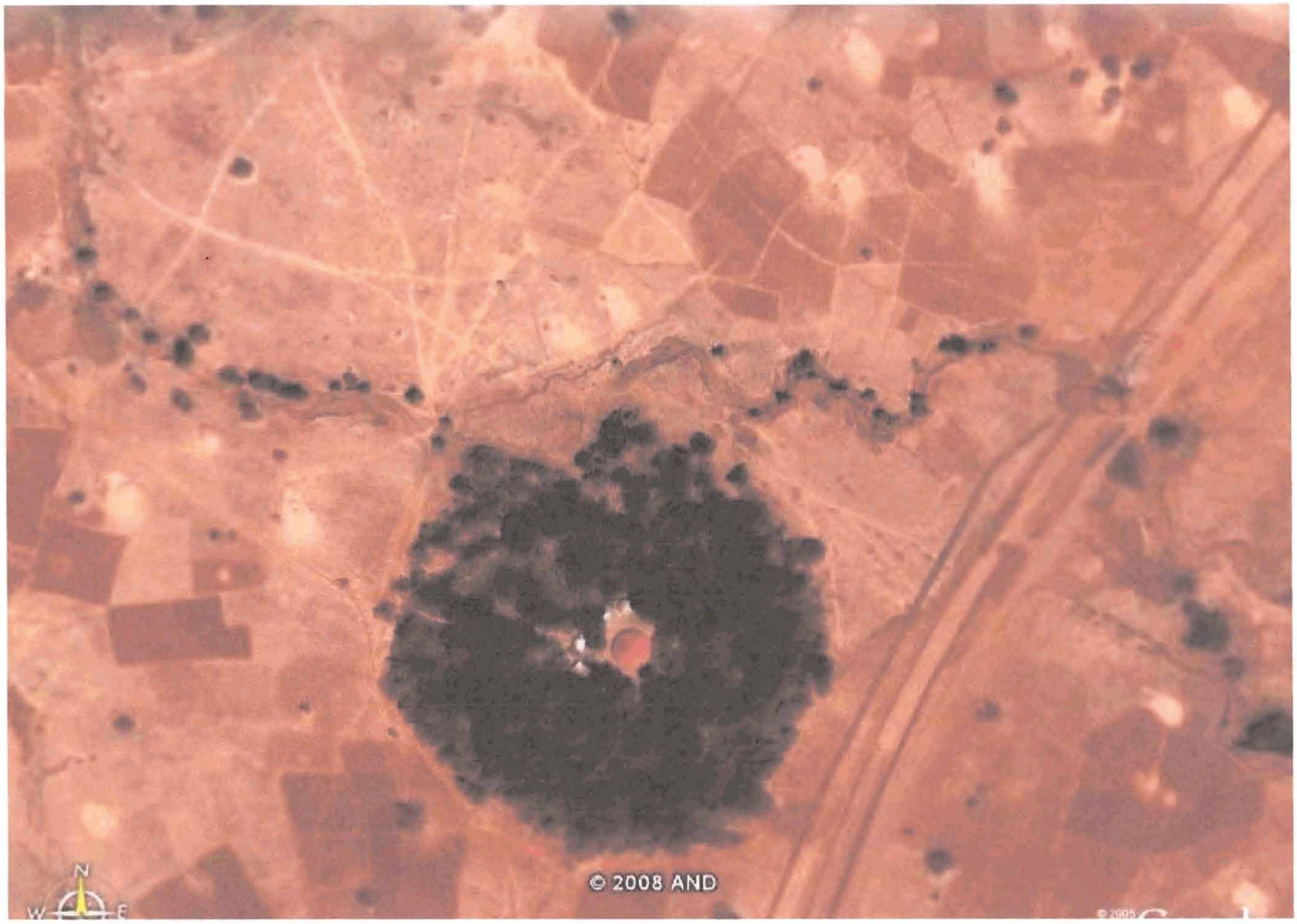







ove insects, and some do not!



Google images of the Ethiopian church forests, the last remaining conservation lands amidst enormous agricultural pressures.

The Art of Exploration

EXTRAORDINARY EXPLORERS AND CREATORS INSPIRE US ALL TO REACH OUR OWN POTENTIAL

The Kennedy Center IMAGINATION CELEBRATION Fort Worth

WINGS WORLDQUEST™

• temperate rainforest • tropical rainforest • virgin forest or primary forest • Amazon basin • alternatives • bamboo • canopy • conserve • clear-cut logging • deforestation • ebony • endangered • extinction • fiber • food chain • habitat • harvest • indigenous peoples • jelutong • landfills •

MARGARET DALZELL LOWMAN- "Canopy Meg"

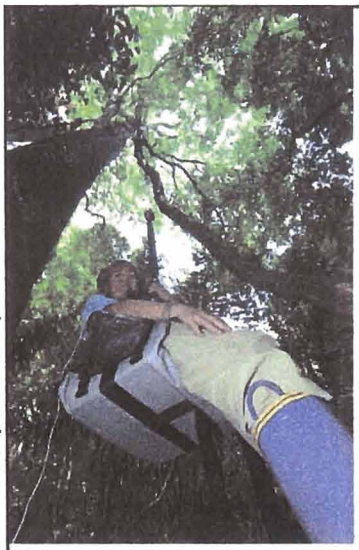
Photo: Courtesy of Meg Lowman

Meg Lowman, also known as "Canopy Meg", is an explorer of " canopies" or the tops of trees. She works high above the ground studying the plants and animals that live in all the different types of trees that grow in forests around the world. She explored canopies in Australia, Peru, Africa, the Americas, and the South Pacific. She was one of the first scientists to study forest canopies and built the first canopy walkway in North America. Canopy walkways provide a safe way for people to move in the treetops without falling or hurting the trees. She has taken her two sons with her on many of her expeditions around the world.

Conserve

To use less of something like gasoline or paper in order to save the natural resources it comes from. For example, conserving gasoline means less rainforest needs to be drilled for oil, and conserving paper means less trees need to be cut down to make paper.

CanopyMeg was nominated into the Wings WorldQuest Women-in-Exploration honor roll. She gave lectures to inspire women in science and encourage ecological stewardship for all citizens in over 20 institutions and universities.



What did you want to be when you were young?

When I was a child, I climbed trees in my backyard of upstate New York looking at bird nests, watching beetles eat leaves, and finding new discoveries in nature. I am grateful that my family allowed me to play outdoors and observe the natural world, because today not all children have this wonderful privilege of nature.

How did you decide to study canopies?

As a field biologist and now a grown-up, I discovered early in my career that no one knew very much about treetops. Most people walk through the woods, including scientists, and only look at the ground or the very lowest part of a treetrunk. In short, a whole world of discovery exists in the canopy! As a student, I sewed a harness and carved a slingshot to propel myself into the canopy using ropes and climbing hardware. As a pioneer in this field of science, I spent a lot of time designing ways to access the treetops safely and for long periods of time. Today, I have a small company and foundation (www.treefoundation.org) that builds canopy walkways around the world to aid conservation of forests. Walkways are not only great for research, but they are also important for eco-tourism and allowing people to learn and appreciate their local forests instead of cutting them down. Since my early days of using ropes and harnesses, I have since tried hot-air balloons, canopy walkways, construction cranes, treehouses, cherry-pickers and other creative tools to enter into this magical world of the treetops.

What unusual things have you found in the trees?

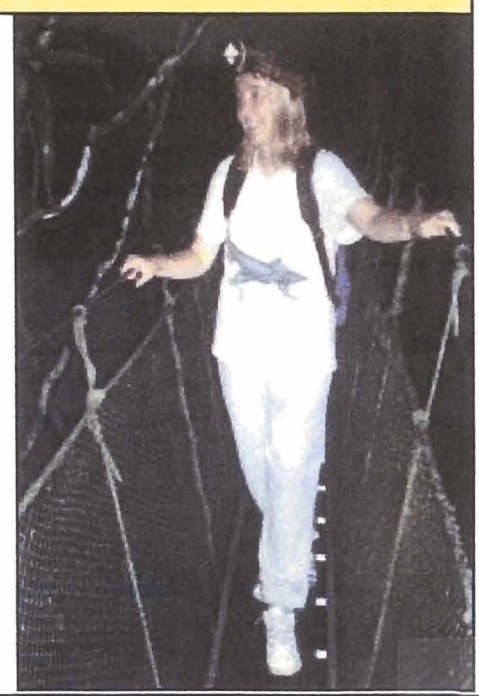
Here exist millions of creatures, and probably more new species awaiting discovery than any other part of the earth. The canopy is sometimes called the "eighth continent" of the world, meaning that it is a new region for exploration. Scientists estimate that almost half of the world's biodiversity lives in the treetops, and we probably have identified and named less than ten percent.

Forests

Forests cover one third of all the land on earth. There are three types of forests: tropical, temperate and boreal. More than half of all life is found in the forests. Much of the life is found in the treetops or canopies. Today forests are being cut down to make room for farms and domestic animals like cattle. Now only 20 percent of the old growth forests -- forests that have not been damaged by people -- are left. Hundreds of species have gone extinct because the forests are being cut down.

What is your favorite insect?

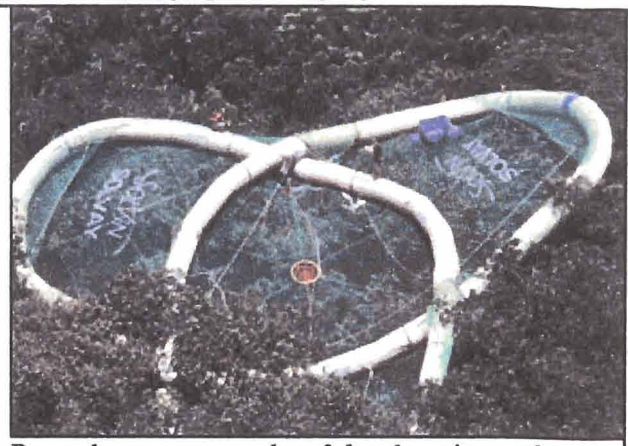
My favorite insect is the giant stinging tree beetle that lives in the treetops of the giant stinging tree in Australia. Despite the both physical and chemical defenses in the leaves of the giant stinging tree, this shiny green beetle is adapted to digest these leaves and eat them voraciously, consuming up to 40 percent of leaf area losses per year. Its gorgeous metallic green shell is camouflaged perfectly with the giant stinging tree leaf color. Another favorite is the walking stick or stick insect. It looks just like a beige branch of a tree, and can easily hide from predators. In Australia, walking sticks eat the foliage of many tree species, usually eating leaves of the same age, similar height, and the same toughness (to chew).



What advice do you have for young people?

I hope children will consider a career in science, because we need more explorers of the canopy!

This is the way researchers reach the tree tops to work.



Researchers can stay on the raft for a long time as the weight is spread by the raft and does not harm the trees.

What Lives in the Canopies?

Flowers, ferns, mammals, birds, reptiles, amphibians, insects, and bacteria all live high above the forest floor. Many species have developed special adaptations for living high up in the trees. Monkeys have tails to grasp branches. Sloths have special hooked feet so they can hang on branches; some lizards, mammals and snakes have evolved membranes that act like wings so they can glide between trees.

What Types of Plants Live in the Canopies?

- Epiphytes are plants living on other plants, deriving support but not nutrients from their host trees such as mosses, liverworts, and algae.
- Lianas, woody climbing plants rooted in the ground, climb up trees and twist around the tree trunks
- There are 23,000 species of orchids and half are Epiphytes.
- Bromiliads are epiphytes and they store water. They get their nutrients from leaves that fall into their wells and rot, releasing nutrients.
- Moss mats, moss mixed with plant roots and soil, grows between branches forming a platform for other plants, insects, and animals.

Why Do Scientists Study Canopies?

Scientists want to study the canopies because more than half of all plant and animal species live in the tops of trees. Many of these plants, insects, and animals never come down to the forest floor. There is much to learn from these species in the treetops.

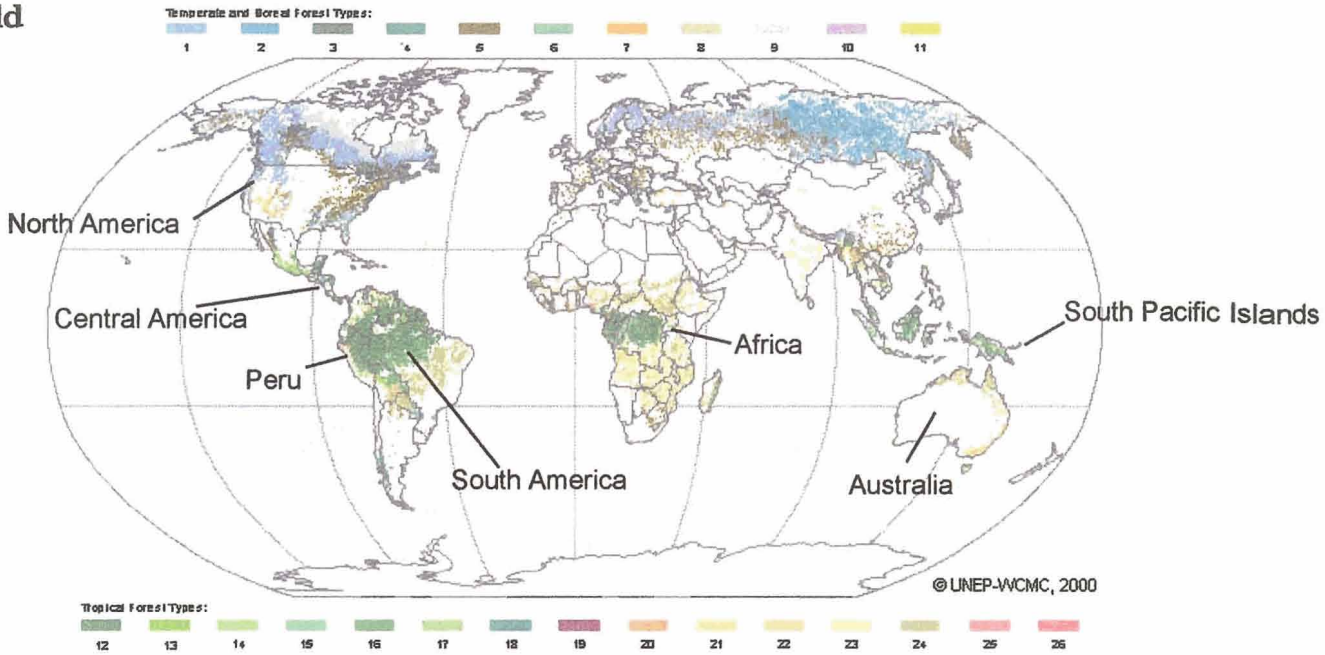
Expedition to the Canopy

What to take to study the treetops: camera, film, light traps (to catch insects and animals for study), nets, hammock with mosquito netting attached, insect spray, notebooks, alcohol, first aid kit, clippers, tweezers, field guides, binoculars, and rope.

How Do Scientists Study the Forest Canopies?

1. They can study trees from the ground, collect samples of bark and leaves, and make maps of types of trees.
2. They can climb trees with a rope or rope ladders to get to the top.
3. On the tops of trees, scientists use arial walkways or platforms that link trees together. People can live on the top of trees for weeks.
4. Researchers use cranes to get above the trees to study them.
5. Scientists use hot air balloons to float above the trees
6. Scientists use special rafts that sit on top of the trees.

Meg's World



Meg Lowman Books

It's a Jungle Up There : More Tales from the Treetops by Margaret D. Lowman, Edward Burgess, and James Burgess Yale University Press (March 11, 2006)

Forest Canopies by Lowman M.D. and H.B. Rinker Elsevier Press (2004)

Life in the Treetops : Adventures of a Woman in Field Biology by Margaret D. Lowman Yale University Press (June 10, 1999)

Websites

http://www.canopymeg.com/
http://academic.evergreen.edu/projects/ican/ican/
http://www.nationalgeographic.com/earthpulse/rainforest/index_flash.htm
http://www.ran.org/ rainforest action network explore a rainforest at night
http://www.ecokids.ca/pub/events/index.cfm - eco calendar for kids
http://rainforestheroes.com/ Kids site
http://www.biodiversity911.org/FunandGames/funandgames.html - fun and games for klds. World Wildlife Fund
http://www.globalforestwatch.org/english/interactive.maps/ - make a map of world forests
http://treefoundation.org/canopy_education.htmtree research ,exploration and education
http://www.envirolink.org/ - The EnviroLink Network provides access to thousands of online environmental resources
http://www.nps.gov/learn/

Films

Heroes of the High Frontier, National Geographic

Organizations to check out:

World Wildlife Fund www.worldwildlife.org
Nature Conservancy www.nature.org
Rainforest Alliance www.rainforest-alliance.org
Wildlife Conservation International www.wcs.org
National Park Service http://www.nps.gov/
Become a junior ranger online (Spanish and English) http://www.nps.gov/webrangers/

Books

What's in the Rainforest? by Suzanne Ross (Enchanted Rainforest Press)
The Shaman's Apprentice by Lynne Cherry and Mark J. Plotkin (Harcourt Brace and Company)
The Great Kapok Tree by Lynne Cherry (Harcourt Brace and Company)

The Kennedy Center IMAGINATION CELEBRATION Fort Worth

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WINGS WORLDQUEST™

Milbry Polk, Executive Director
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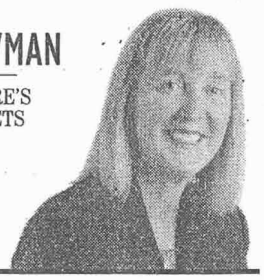
5 May, 2008

Down on the butterfly farm

The pleasures, the values of contact with the natural world, are not reserved for the scientists. They are available to anyone who will place himself under the influence of a lonely mountain top — or the sea — or the stillness of a forest — or who will stop to think about so small a thing as the mystery of a growing seed.

— **Rachel Carson**, U.S. scientist and author (1907-1964)

MEG LOWMAN
NATURE'S SECRETS



Activity

Enjoy May wildflowers and butterflies! Sarasota County will host a botanical walk May 21 in Sleeping Turtles Preserve from 9 to 11 a.m. Call (941) 861-5000 for reservations and information, as well as a full listing of May hikes in local parks and trails.

Jan and Teneke Meerman have carved out a niche in the Mountain Pine Ridge of Belize. Transplanted from Holland, the Meermans came to Belize over 20 years ago, inspired by the notion of becoming tropical naturalists. When they arrived, Jan was surprised to discover that the original British exploration surveys — which listed only 150 species of butterflies in Belize — were still the only existing publications on the subject. Through diligent field exploration, Jan has raised that number to more than 800 species, one bearing his name in honor of his discoveries.

In addition to studying the natural history of Belize, the Meermans run a small enterprise called Green Mountain Butterflies. Their business not only helps Belizean butterfly conservation, but also promotes social justice by providing employment to local women.

The butterfly farm is a labor-intensive business, centered around a modest screened garden. Butterflies flutter in large numbers for any tourists who endure the bumpy roads to visit this innovative enterprise. Our group from New College was fascinated by the economic, social and conservation opportunities spawned from Green Mountain Butterflies.

Twenty young women work at the Green Mountain enterprise. Each day, they place fresh leaf material into small containers containing hungry caterpillars. As the caterpillars grow, they shed their exoskeletons approximately three times (in stages of life called instars).

When the caterpillars reach a carefully documented size, they are transferred into a container that holds a stick rather than leaf material. Soon after transfer, the larva spins a chrysalis, which is a cylindrical waterproof encasing. Almost magically, a caterpillar undergoes metamorphosis in its chrysalis, and approximately 10 days later, emerges as a butterfly.

Caterpillars eat leaves, and many species consume the foliage of specific food plants. As adults, butterflies use their delicate tongues to sip nectar from flowers. In the natural world, a caterpillar and its adult butterfly are as different as two separate species in terms of physical structure, in their feeding habits, and in their function within the ecosystem. Ecologists have coined a term called an econe, where one species has two phases that function in totally different roles.

The Green Mountain farm supplies tropical butterflies to museums, collections and butterfly farms throughout the Americas. It serves an important role in conservation, reducing the illegal capture of wild butterflies that otherwise would deplete their populations, and also providing a future source of genetic material for rare species of Lepidoptera.

In addition, the farm provides an income for 10 local young women, who might otherwise follow the traditional role of marrying as teenagers and having large families in a country where birth control is not readily available. Belizean women in rural locations do not have many opportunities to achieve independence, and employment allows them to make choices, and perhaps to change the traditional roles of their own mothers who never had a paycheck.

When asked what the Meermans would do for Belize if they had a magic wand, Jan had no hesitation: Make birth control available for the young Belizean women who seek it but cannot get access to it. He hopes that Belizean women will receive similar career opportunities to American and European women.

Historically, the women of Belize relied on traditional knowledge whereby the yam vine (a member of the squash family) is utilized for birth control. The medicinal uses of plants have a long history in tropical regions, but such plant concoctions are less readily available to villagers, especially because many tropical forests (and their medicinal components) have been cut down.

Today, as the traditional knowledge is increasingly lost to "progress," a handful of young women in Belize rely upon the popularity of Blue Morpho butterflies in America to advance their status. Butterfly conservation, opportunities for women and economic development — an unlikely combination of activities has metamorphosed into a unique success story in Belize.

New College student Molly Burgess displays an owl butterfly reared at the Green Mountain butterfly farm in Belize. Owl butterflies are a tropical species. Spots on their wing undersides resemble owl eyes.

PHOTO PROVIDED

Dr. Margaret Lowman is director of Environmental Initiatives at New College of Florida. On the Web:

Florida's natural beauty inspires thanks

MEG LOWMAN
NATURE'S SECRETS

The year 2007 is nearly over. And what a roller-coaster ride it has been for science, environment and conservation. Both locally and internationally, science news has dominated headlines as never before. Nature's Secrets has remained chockablock with issues as new discoveries in science unfolded and as policies were debated.

Year's end is always a good time to contemplate all of nature's secrets for which we are thankful. Continuing with my traditional year-end report, I asked a cross section of community leaders to summarize an environmental or nature-related activity or issue in 2007 for which they were most grateful.

Here are their thoughts:

"I'm grateful for the many hiking trails, parks, preserves and open areas we have in our community. I can be 'in the woods' from almost anywhere in Sarasota County in less than 10 minutes and that is truly special."

— **Kathy Baylis**, president, Economic Development Corp. of Sarasota County

"To be Green is not a choice of sacrifice but rather a choice of least resistance in both the economic and environmental world. It's the right and smart thing to do."

— **Henry Rodriguez**, Osprey developer

"I am grateful that throughout the land Sarasota is recognized as a leader in working sustainability into its strategic thinking around community building."

— **Jim Ley**, Sarasota County administrator

"I am grateful for the leadership shown by our governor when it comes to renewable energy. I wish our president would do the same. Independence from foreign oil is the key to our economic mess and the end of our involvement in Mideast wars."

— **Mike Bennett**, state senator, R-Bradenton

"I am grateful that DEP Secretary Michael Sole has established the Peace River Basin Management Advisory Committee in response to the management needs of the Peace River."

— **Don Ross**, president/CEO EarthBalance, North Port

"The quiet efforts of local organizations, such as the Succulent Society, who educate those wanting foliage plants that use less water, to the Sarasota Chapter of the North American Butterfly Association, who work with nurseries and individuals to understand that those 'worms' on their plants are really our butterflies of the future, gradually change the way we look at nature.

"Leadership Sarasota's Class project, led by Josh Sankes, is further testimony of how a small group of caring people

SEE NATURE ON 5F

HERALD-TRIBUNE ARCHIVES

Myakka River State Park is among the many natural assets to be thankful for in our part of the Sunshine State.

NATURE FROM 1F

can change how we behave. Their 'Change a Light, Change Sarasota' Campaign resulted in 30,007 incandescent bulbs being switched out to energy-saving fluorescents, with an annual savings of over 1.5 million kilowatt hours avoiding greenhouse gas emissions of over 1 ton, the equivalent of removing more than 200 cars from the road for a year.

"Indeed using science to improve our environment is a very personal opportunity — yes an individual responsibility."

— **Debra Jacobs**, president/CEO, William and Marie Selby Foundation, Sarasota

"I am most grateful that the Foundation became an official green workplace this past year. We are part of the Sarasota County Green Business Partnership, in which we pledge to demonstrate environmental stewardship by taking sustainable actions to reduce waste and conserve water, energy and other natural resources. It has been a great board and staff member activity, embraced with enthusiasm by all."

— **Teri Hansen**, president/CEO, Gulf Coast Community Foundation of Venice

"I am thankful the sales tax passed and we are preserving more of our natural resources."

— Bob Johnson, former state senator, R-Sarasota

"The heavens declare the glory of God; the skies proclaim the work of his hands." (Psalm 19:1) God speaks to us via his creation. Who does not marvel when encountering a tiny insect in the canopy of a tree over 100 feet tall which has never set foot on earth? Or of a micro-organism living in the moss in the

tic? Have you ever contem ed the beautiful flower of cactus which only blooms night? The list is endless. fore we should love and t care of creation, but abov we should love the Creato in creating everything cre us too!"

— **Dulce Martinez**, p of Casa del Alfarero, Sa

How appropriate to cl with a quote that links sc with spirituality. After all both perspectives are cor ble to appreciate nature's secrets. In closing, what i New Year's resolution fo of my readers?

I hope that every citize from 16 to 106, will celebr nature in 2008 by taking child outdoors to experie the natural world firsthar To quote my own childre our recent book, "It's a Ju Up There" (Yale Univers Press, 2006), we all need advocate "conservation o conversation" because ac speak louder than just wo Happy New Year!

Dr. Margaret Lowman is a sci writer and director of Environmental Initiatives at Ne College of Florida. On the Wet

Free event

Nature Lovers and bird save this date!

"Ivory-billed Woodpeck the Pearl River Basin" will presented Feb. 28 at 7 p.r the Sainer Art & Music Pa on the New College campu Sarasota. The annual Fedt Community lecture (spons by TREE Foundation) will fe speaker Mike Collins, who logged in thousands of hou wading in swamps to find ivory-billed woodpeckers. www.treefoundation.org)

CLOSING THE COMMUNICATION GAP

Science gets lost in translation

"Our bigger-and-better society is now like a hypochondriac, so obsessed with its own economic health as to have lost the capacity to remain healthy. The whole world is so greedy for more bathtubs that it has lost the stability necessary to build them, or even to turn off the tap."

— **Aldo Leopold**, "A Sand County Almanac," 1949

MEG LOWMAN
NATURE'S SECRETS

Last year, several world-recognized conservation biologists calculated that by the year 2050, approximately 25 percent of the world's biodiversity will be heading toward extinction. They published their findings in the prestigious, peer-reviewed journal Nature. In translating this prediction to the public, the media distorted the scientists' results. Some press releases claimed that by 2050, 25 percent of all species on Earth would *be* extinct (not "will be heading in that direction"). The authors were chastised by some of their peers for lack of clarity, and the journalists were scolded for crying wolf about extinction rates. Scientists and journalists struggle to communicate, in part because they speak different languages.

The Poynter Institute, in St. Petersburg, was the venue for a recent workshop titled "Scientists and the Media — Conversations." The conference focused on global climate change and sea-level rise in Florida, with the aim of bridging the communication gap between the scientific community and the media.

Opening the conversation, professor Albert Hine of the University of South Florida's College of Marine Sciences explained how science is a creative process that allows us to understand the physical world in which we live. Based on a process that involves challenging uncertainties, science uses specific and rigorous methods that distinguish it from other professions.

This definition of how scientists work set the stage for the conference, which examined how scientific messages often fail to translate clearly to non-scientists. Journalists, charged with distilling science for the public, have a daunting task, especially when it entails such complex topics as global climate change or stem cell research.

The conference was organized as a series of conversations, each involving a journalist, a scientist and a facilitator. Case studies included the impacts of sea level rise on fresh water, featuring Cynthia Barnett (author of "Mirage," a definitive book about water). Barnett, a Florida journalist, admitted that the notion of scientific uncertainty is abused in Florida. A scientist commented, "Asking a scientist to provide a specific number is like asking a stockbroker which stock is going to perform best over the next five years."

Journalists and scientists alike lamented the fact that little, if any, professional academic training exists to integrate the two vocations. Even worse, scientists are seldom rewarded in university tenure and promotion systems for public outreach, only for technical publications. One cutting-edge program that tackles the media-scientist communication challenge is the Aldo Leopold Leadership Program (www.leopoldleadership.org).

Based at Stanford University's Woods Institute for the Environment, ALLP awards up to 20 annual fellowships to mid-career academic environmental scientists. Fellows come from a wide range of backgrounds, including atmospheric sciences, tropical forest ecology, oceanography, climate change, polar ecology and anthropology. Named for environmental scientist and writer Aldo Leopold, ALLP was founded in 1998 by Jane Lubchenco, distinguished professor of zoology at Oregon State University, and funded by the David and Lucile Packard Foundation.

"Academic scientists often lack the special communication skills necessary to give decision makers the information they need to address pressing environmental challenges," said Pamela Matson, the Chester Naramore Dean of the Stanford School of Earth Sciences who chairs the program's advisory committee. "The Leopold Leadership Program provides them with critical skills and intensive training to do so more effectively."

In the final presentation of the Poynter Institute conference, Robert Costanza (director, Gund Institute for Ecological Economics at University of Vermont) expressed concern at our conventional measures of progress established by the industrialized world. Instead of gauging success by GNP (gross national product), he ventured that GNH (gross national happiness) may provide a better measure of success.

If Americans were to adopt a "happiness index," then perhaps we could avert Leopold's bathtub dilemma, quoted at the beginning of this article. Leopold, as a professional ecologist, was probably not trained to talk about bathtubs; but as a writer, he used his journalistic license to appeal to human sensibilities. In this world of diminishing resources, perhaps we need Leopold's approach.

Dr. Margaret Lowman is director of Environmental Initiatives at New College of Florida. On the Web: www.canopymeg.com

Spring break reading

If you have never read "The Sand County Almanac" by Aldo Leopold, go straight to your nearest bookstore and buy this classic volume. It represents the "bible" of modern conservation and ecology.

Online

■ Contact information for all members of Congress is available through the Library of Congress Web site: http://thomas.loc.gov

Nature's Secrets newspaper column features ecological education.
JULY 28 2008

INTRODUCTIONS GONE BAD

Alien invasions cost us millions

A good gardener doesn't sling mud.

— **Joan Ehrenfield** (Rutgers University professor, in reference to encourage gardeners to plant natives, not aliens)

MEG LOWMAN
NATURE'S SECRETS

In 1932, cane toads (Bufo marinus) were introduced into Australia by the agricultural industry to control an infestation of grubs on sugar cane. The hasty decision to introduce an alien species onto this island continent proved disastrous.

First, the cane toads simply did not eat the grubs, and so control efforts were ineffective. Second, the toad populations exploded, thriving in almost any conceivable habitat from streams to garages to gardens to roadsides. And third, native Australian animals (and pets) that attempted to eat the toads were poisoned and usually killed outright.

Today, over 300 million toads thrive in the "lucky country" from the original dozen or so. The ratio of toads to Australians is 10-to-1!

Millions of dollars are spent annually in control efforts, without much success. Numerous native species, including freshwater crocodiles, Tasmanian devils and many birds, are threatened by cane toads. And worst of all, there is no end in sight to slow the invasion of these aggressive, fast-reproducing and highly toxic critters.

Similar scenarios exist in the United States, where more than 7,000 plant and animal aliens have invaded our shores. (Some scientists argue that a more appropriate term for invasive species is "introduced," which may eliminate some of the emotions from the issue.)

Regardless of terminology, the economics of species introductions undoubtedly incurs emotional responses, with the cost of escaped alien plants from American gardens estimated at over $35 billion a year.

Yet some gardeners continue to plant aliens such as English ivy, periwinkle and Japanese honeysuckle, and many botanical gardens and nurseries continue to sell non-native plants. Australian pine, kudzu and Brazilian pepper intro-

pets or as garden or aquarium plants, for recreational fishing, or for agriculture. An increasing number arrive accidentally, such as zebra mussels that hitchhiked in the ballast water discharge of ships into the Great Lakes. Stories of invasive species read like good science fiction — except they are truth, not fiction!

In hindsight, most invasions were preventable. Many species were intentionally introduced for profit, and others as attempts to control other invaders. The sale of pythons, aquarium plants and iguanas is big business, but often their owners release them into the wild through a combination of carelessness and helplessness. As a consequence, U.S. taxpayers pay over $160 billion a year for invasive species control.

In addition, the indirect costs are enormous. For example, water supplies may become contaminated by insecticides, gypsy moth outbreaks create real estate devaluation, and homeowners devote increasing amounts of time and money fighting fire ants, termites and kudzu.

A growing number of responsible organizations, policymakers and citizens are beginning to advocate policies for invasive species. In 2001, representatives from nurseries and botanical gardens met to develop codes of ethics, discouraging the planting or sale of any non-native plants.

In Florida, the Department of Environmental Protection has created a statewide network of working groups to manage invasive plants on public lands. However, many invasive species experts advocate that an effective national center for the management of inva-

When alien species replace natives, they usually alter the habitat to benefit their own survival, leading to a decline in the health of the natural ecosystem. This provides challenging research issues for ecologists, but it also creates ethical questions: Should introduced creatures be encouraged, at the expense of native ones? What are the rights of native species, or introduced pests? And should we invest billions of dollars in an attempt to retain the integrity of ecosystems that humans inevitably degrade?

One of the largest invasive populations is livestock (sheep, cattle, pigs, goats) that wreak havoc on millions of acres throughout the world — yet we tolerate and even encourage their breeding. On the other hand, invasive brown snakes on Guam led to the extinction of nine of its 13 native bird species. Should policies allow some species to run amok at the expense of others?

As scientists continue to discover the value of nature's secrets — ecosystem benefits like clean water, production of oxygen and carbon storage — invasive species pose a major threat to our health and economy.

■ **Next installment:** Invasive Species in Sarasota County — Did you know a 12-foot python was found approximately 6 miles east of Myakka River State Park? Nature's Secrets will talk about the challenges of alien species in local ecosystems.

Margaret Lowman is director of Environmental Initiatives at New College of Florida. On the Web: www.canopymeg.com

CONSUME THE INVADERS

8 Sep 2008

An iguana in every pot

Iguana Stew
Yield: 4 Servings
Ingredients: 1 iguana, 1 large onion, 2 cloves garlic, 3 tomatoes, 2 green peppers, 4 teaspoons achiote oil, 1 pinch pepper, salt to taste
Instructions: Cook iguana in salted water until the meat is tender (take care not to let it get too soft). Cut in portions. Season with all the above ingredients and cook with 1 cup water until almost dry.

MEG LOWMAN
NATURE'S SECRETS

ACTIVITY

Report any invasive reptiles seen on your property or on Sarasota County lands by calling Lizard Alert on (941) 861-5000.

Slithering through neighborhoods at 6 feet in length and tipping the scales at 25 pounds, iguanas pose a significant threat to Florida wildlife, as well as to the homeowner. Their prehistoric physique makes them look like close relatives of ET, or perhaps escaped creatures from the movie set of Godzilla.

Three iguana species have been introduced into Florida in the past 50 years: green iguana (Iguana iguana), native to Central and South America; black spiny-tailed iguana (Ctenosaura similes), also from Central America; and Mexican spiny-tailed iguana (Ctenosaura pectinata). The latter species is native to western Mexico, where they are considered a delicacy (to eat, that is!).

Romance ends

Iguanas were initially tolerated, and even loved, at Fairchild Botanical Gardens in Miami, when they first established a local population several decades ago. But when these enormous herbivores began to graze prized orchids and leveled the entire hibiscus display, director Mike Maunders created a new policy of lizard removal throughout the grounds.

Over the past decade, iguanas have also overrun Boca Grande, achieving a population of 10,000 individuals or more. Lee and Charlotte counties have spent several hundred thousand dollars in attempting to control these invasive pests. Iguanas have since expanded northward to the Tampa Bay area, reportedly released by careless pet owners.

Iguanas eat shrubs, trees, landscape plants, orchids, fruits, bird eggs, tree snails and insects — hence, they inflict serious damage to Florida ecosystems and landscapes. They also dig nesting burrows that can destroy sidewalks, sea walls and gardens. Iguanas can transmit Salmonella by defecating in ponds or rivers (iguanas love to swim!) or into swimming pools when they bask in foliage or on pool cages.

On Gasparilla Island, residents say iguanas are chewing through insulation in attics, consuming prize-winning flower beds, displacing gopher tortoises and scaling rooftops.

Females produce up to 65 eggs in one clutch, so two iguanas can quickly become an outbreak of 200 beasts after three or four nesting seasons. As cold-blooded (also known as exothermic) animals, iguanas do not produce heat. Instead, they bask in the sun and comprise an efficient solar-powered lizard-machine.

Useful protein

So how can these highly fecund and aggressive creatures be controlled in south Florida and beyond?

Iguana vasectomies were suggested (albeit jokingly) by Matt Rosenberg in his News of the Skewed report from Seattle. Another suggestion is to control the pet trade, making it illegal to sell or own invasive reptiles, and/or requiring a tracking chip and a permit for any iguana sales. Because green iguanas are not native to Florida, they are not legally protected. Private property owners may trap (and barbecue) these hulking creatures on their own property; iguana stew may represent the most sustainable and energy efficient means of controlling iguana populations.

For Christopher Columbus and his sailors, iguana was a delicacy; they reported it as "white, soft and tasty." Google lists 243,000 results for the topic "iguana recipes." These large, cumbersome creatures form an important part of the diet in Central and South America.

Considering the outrageous cost of controlling invasive iguana, and the extensive ecological damage wrought by their invasions into Florida landscapes, it seems tempting to contemplate them as a new and highly sustainable cuisine.

Conservation cuisine

In Nick Payne's exotic kitchen (www.exotickitchen.com), he writes about the popularity of iguana as a main course: "Throughout Mexico, ancient manuscripts have revealed that iguana has been a source of food for several thousand years. Although tough yet tasty when grilled on the fire, iguana sauteed in tomato, onion and chili is the most traditional."

How about serving iguana hors d'oeuvres at green fundraisers? After all, eating iguana helps to conserve native landscapes and wildlife — so iguana cuisine represents a sustainable diet! Colonel Sanders, take note!

Margaret Lowman is director of Environmental Initiatives at New College of Florida. On the Web: www.canopymeg.com

AP ARCHIVE / 2008 / KENT GILBERT

Iguana throwdown for Bobby Flay?

Rain forests in the classroom create a new climate of learning

"It would be a mistake to introduce a child to Nature by a walk through a park or arboretum, with labels naming the species of trees and shrubs. The child is a savage, in the best meaning of this word. He needs to thrill to the excitement of personal discovery, to mess around a lot and learn as much as possible on his own."

— E.O. Wilson,
"The Creation," 2006

MEG LOWMAN
NATURE'S SECRETS

How do schoolteachers manage to take entire classrooms of students to the Amazon jungle?

Why, they build the rain forest in their classrooms. That is the creative solution that teachers in two local school programs have successfully initiated.

Nature's Secrets was invited to speak and tour these student-created ecosystems; so with great joy, I donned my khaki pants and mosquito netting to visit two local "jungles," accompanied by a team of New College biology students. All five senses remained on overload from the inspirational sights and sounds created by local schoolchildren, but inspired by talented, local educators.

The first school, the Manatee County school district Children's Day Treatment Program at Manatee Glens hospital, uses the layers of the rain forest as a goal-oriented teaching incentive. With an inspirational and positive spirit, Vicki Hampton brings the rain forest alive through reading, science and social studies. Trained in exceptional student education, Vicki works for the School Board but partners with Manatee Glens, where her students benefit from a smaller class and special incentives.

Her classroom provides an atmosphere in which children gain necessary tools to develop positive relationships at home and at school. Taking a personal interest in rain forest conservation motivates her students to think beyond their own challenges.

On the side wall of Vicki's classroom is a diagram of the tropical rain forest, complete with four layers: ground, understory, canopy and emergent trees. As students learn to achieve personal goals (Vicki uses the analogy of a butterfly emerging from a chrysalis), they track their progress by ascending toward the canopy. In this way, the rain forest serves as a reward; and as it is for people who live in the Amazon, the rain forest also becomes a spiritual and inspirational backdrop for overcoming obstacles.

New College students enjoy volunteering in the Manatee Glens rain forest classroom, bringing their environmental education activities and visuals to share with students. And how appropriate to witness young students learning about the layers of a rain forest, where the canopy represents the top or highest level of productivity!

On the south side of Saraso-

SEE LOWMAN ON 5F

PROVIDED BY MEG LOWMAN

Future scientist and fifth-grader Mohamed Ibrahim shows his Amazon snake as part of the Pine View Amazon rain forest display.

Blackboard jungle has a new meaning

LOWMAN FROM 1F

ta, the elementary classes at Pine View School also bring the layers of the rain forest into the classroom through an integration of biology and art. In this case, each student selected one organism from the Amazon ecosystem, researched its natural history, and constructed a life-size replica from papier-maché.

During a rainy week in October (appropriate weather for jungle tours), the Pine View multipurpose room was transformed via black lights and camouflage netting into a dimly lit rain forest floor. Students from Stephanie Gould-Olson's fifth grade and Denise Fugere's third grade served as guides for my visiting team of New College biology students who toured the homemade Amazon jungle.

Each elementary student enthusiastically lectured on his/her chosen organism, answering questions and explaining its habits. Conversations ran wild with wonderful facts about the exotic plants and animals that live in these equatorial forests. . . . Did you know that the sloth only climbs down from the canopy once a week to go to the bathroom? Did you know that anacondas can grow to 30 feet? Who lives in the great kapok tree, also called an "emergent"? Why do the poison dart frogs lay their eggs in bromeliads in the canopy?

Despite wet feet from the downpour outside, parents and students emerged from their canopy tours with smiles and gratitude for this incredible "field trip," hosted by all the third- and fifth-graders through the Pine View elementary multipurpose room.

No doubt, many other schools and teachers bring ecosystems into their classrooms through creative activities. In a world that is now so interconnected with Internet and rapid communication, students need to learn about nature far away from home as well as in their own backyards. And how fortunate to have creative teachers who inspire our youth to great heights, no pun intended!

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Activity

Need a great gift idea for the holidays? Buy cloth shopping bags for family members, so they will not have to use paper or plastic bags.

Canvas bags have a hundred uses, and come in many sizes, styles and prices. And best of all, they reduce your family's energy footprint if used faithfully.

PROVIDED BY MEG LOWMAN

Students at Manatee Glens have red-eyed tree frogs that illustrate their "ascent" into the canopy by achieving classroom goals.

Short Grant History of TREE Foundation, Funding our Mission to Conduct Local and International Canopy Projects and Linking Youth to the Natural World – Midyear 2007

1. Myakka Canopy Walkway project – 1999-2001 with a total of $128,853.86 raised from private and grant sources, plus five foundations (see list):

Selby Foundation	$30,000
Community Foundation	$10,000
Nations Bank Foundation	$10,000
Gulf Coast Foundation	$25,000

2. Canopy Ecology Research in the tropical rain forests of Puerto Rico – 1999-2004 with funding from National Science Foundation totaling $419,976 (grant attached) plus additional sums for students ($59,932) totaling $ 479,908.
3. Herbivory protocols using canopy cranes - 2003-4, Global Canopy Program, ($26,178)
4. Canopy Ecology for middle school students – 1999, 2004 - Jason Project for Education for direct support of $20,000 in 1999 for canopy studies of the Amazonian Peru and $25,000 in 2004 for canopy studies in tropical rain forests of Panama, plus in-kind contributions of over $1,000,000 for the distance learning hardware and support staff.
5. Out on a Limb – 2005, canopy ecology exhibit for the public – two years funding from National Science Foundation $74,950.
6. TREE website development and overhead – 2004, Aaron Foundation for $10,000
7. Canopy intern program for college students – 2004, Booth Family for $3000
8. **Forest Canopies**, textbook for professionals and college courses – 2004 published by Elsevier Publishers
9. **Life in the Treetops**, public outreach book on canopy ecology – 1999-2001 (hard cover and paperback editions) published by Yale University Press with special funding from the Mary Cady Tew Memorial Foundation (undisclosed sum).
10. Canopy Ecology programs in Southwest Florida and beyond – Triad Foundation 2004 for $30,000 to fund training of interns, community lecture series, publications (7 and 8 above), research and education programs in Florida canopies, interpretive signage and brochures at the Myakka River State Park canopy walkway, and science education outreach in local schools.
11. Canopy Ecology programs in Southwest Florida and beyond – 2005, with $35,000 pending from Triad Foundation.
12. Canopy Ecology programs in Myakka River State Park – 2005, grant in process for $20,000 from Gulf Coast Foundation to fund expanded signage and programs
13. Canopy outreach programs in local schools – 2005, $15,000 grant in process from Community Foundation to fund school outreach programs in ecology.
14. Canopy Ecology in the Amazon – 2005, $20,000 from New College Foundation for six students to study and initiate research programs in Amazonian Peru on ethnobotany, canopy access, soil ecology, herbivory and allelopathy.
15. Canopy Ecology at Myakka River State Park – 2005 continued contributions from public sector for walkway programs averaging $3000 annually.

16. Canopy Ecology conferences in Australia, India, Panama, Costa Rica, Miami – funds from Association for Tropical Biology and Selby Gardens from 1999-2004 totaling approximately $30,000.
17. Canopy ecology student internships for students from Panama and Peru to attend classes at New College, learn canopy ecology at the Center for Canopy Ecology and apply for graduate stipends during their stay in USA – 2005, $2500
18. Distribution of **Forest Canopies** textbook to field stations and tropical students in developing countries - 2005, $2000
19. Continued student outreach to promote science education in middle schools, with approximately 24 New College students participating in this program - $10,000
20. Creation of a national science advisory committee who convened in September in Sarasota County and selected a site and criteria for an international biological field station, partnering with Sarasota County, New College of Florida, Gulf Coast University, University of Florida, Manatee Community College, University of South Florida, and the Organization for Biological Field Stations - $10,000
21. Creation of web site with high visibility - $4,500
22. Participation in 4th International Canopy Conference by 3 TREE Research Associates and 3 student interns - $8000
23. Funding of two local interns for their subtropical canopy research - $1000
24. Publications of conference materials - $2000
25. Successful local canopy ecology hikes with publication of 2 field guides - $2000
26. Student science outreach volunteers receive Sarasota County Conservation award for environmental education, April 2006
27. Meg Lowman received Sarasota County Lifetime Achievement in Conservation award, April 2006
28. Over 6,000 students in southwest Florida were linked to nature through classroom or hiking ecology activities led by 26 New College biology students in 2006 – Community Foundation and Triad $15,000
29. Our National Science Foundation exhibit, Out on a Limb – Forest Canopies was launched in fall 2006 and was viewed by over 50,000 families, children and citizens in its first six months of circulation - NSF $75,000
30. Three interns received TREE Foundation scholarships to train in canopy ecology and botany during 2006 – from the Peruvian Amazon and from Panama - Booth Foundation $7500
31. Five women and minority undergraduate students received scholarships to present their ecological research at national meetings -Triad and Explorers Club $10,500
32. Another canopy book was published, **It's a Jungle Up There – More Tales from the Treetops** and distributed in developing countries and tropical field stations - Triad $2000
33. A new project aimed at linking kids to nature was launched in 2007 and is in the planning phases: a treehouse that will provide a "green hour" for children to experience the natural world - Rodriguez Foundation and Triad $10,000
34. The website (www.treefoundation.org) was improved with new information on the Center for Canopy Ecology - Triad and Aaron $8000
35. Field work in the Peruvian Amazon was continued in 2006-7 studying herbivory in forest canopies with undergraduate students - Triad $2500

36. Base Camp Sarasota planning phases were completed by mid-2007, with completion of a series of planning/visioning charettes, business plan and green-design sketches of proposed construction for the proposed biological field station of southwest Florida - Florida House Institute, Sarasota County, Economic Development Corporation & Triad $85,000
37. TREE's first fulltime research associate worked at headquarters to organize the files, assist with canopy ecology projects, design new "green hour" activities for youth, and undertake tardigrade studies in Florida forest canopies - Aaron Foundation $20,000
38. New brochures for the Myakka canopy walkway were printed in 2007 - Triad $2500
39. Student researchers worked in India, Panama and Florida on canopy ecology in 2007 with publications on sloth ecology, and on frugivory by bats and birds in trees of India - $10,000 Explorers Club, Triad and New College
40. Myakka canopy walkway continues to host thousands of families in 2006-7, and has doubled the visitorship to Myakka River State Park - $11,000 (miscellaneous) and $10,000 Spurlino Foundation for brochures, student nature hikes, and new signage
41. Successful application for TRIAD Foundation – received $25,000 for canopy ecology and education programs (both local and global) – September 2007
42. Base Camp Sarasota – received $5000 from Economic Development Corporation to create a web site for this long-term ecological project for Sarasota County
43. Preliminary application filed to The Conservation Fund for their 2008 grants to fund projects linking children and nature. TREE Foundation proposes to build a treehouse in Oscar Sherer State Park with environmental education enhancements.
44. Donations from Kluttz, Rodriguez, Booth, Lowitt Foundations to fund interns and exchange programs for 2008 ($6000)
45. Treehouse project launched with in-kind donations from local partners: Turner Landscaping (pledge for landscaping), Ringling School of Art and Design (logos and brochures), Rodriguez Foundation (prototype treehouse, and fund-raising functions on Casey Key), coordination with state park chaired by Laura Peters.
46. National Science Foundation grant on ecosystem services in the forest edges of Thailand submitted in September 2007 for $570,000 partnering with New College and University of California – Santa Barbara. If successful, new internships for student training in canopy ecology would be funded, as well as research on the ecosystem services of pollinators and herbivores in tropical forest edges.
47. Ecological Society of America (ESA) and Association for Tropical Biology (ATBC) – joint funding of TREE Executive Director to attend the Tropical Ecology Congress in India, December 2007 ($3000).
48. Media outreach in 2007 – Smithsonian Magazine, National Geographic Adventure Magazine, Explorers Club Journal, Leonard Lopate Show, NPR radio interviews, Society for Environmental Journalists, and others offered in-kind contributions for outreach of our canopy ecology programs and publications.
49. First intern from Ethiopia – Alemayehu Wassie Eshete – who works on forest conservation there. Ethiopia's last remaining forests are housed as sacred sites in church yards, but remain unstudied and under-appreciated, despite the fact that

they provide pollinators, honey, and other ecosystem services to villages.Grant application to National Geographic for conservation of the church forests in Ethiopia, and seed funding for a meeting with Ethiopia's church bishops from Triad Foundation, and donations from Booth, Minshall, and Morgan.

50. Third Amazon intern – Ricardo Rengifo gave 4 school talks, was featured on 6:00 news, demonstrated blow guns at Earth Day festival in SW Florida, and met with conservation partners in Washington DC as well as Chicago. Thanks to our intern donors: the Booth, Morgan, Rodriguez and Kluttz families.
51. Out-on-a-Limb, our National Science Foundation-funded canopy exhibit, is touring schools in SW Florida, and programs are provided by New College students (who also use their lesson plans for part of their thesis research). Visits to GWIZ Science Museum, New College, and Pine View School were scheduled during fall 2008.
52. The Myakka canopy walkway continues to be a premier tourist destination in Sarasota, with park staff counting 110 adults and 55 children tree-top walkers during one hour of a November weekend. You can do the multiplication for annual visitors!
53. TREE's annual Fedder environmental lecture series was a big success, featuring one of the Ivory – billed woodpecker field team, Michael Collins, who showed footage of his (alleged) sightings and told stories of his fieldwork in the swamps of Louisiana. In 2009, Fedder lectures will partner with New College hot topics, to celebrate Charles Darwin's 200th birthday with Tim Berra (international Darwin scholar).
54. TREE Foundation continued our canopy ecology outreach, serving middle schools with New College student volunteer environmental lecturers, mentoring the Venice High School Zoology Club (including tree-climbing lessons), and an upcoming TIP (talent identification program) for high school science students in March 2009.
55. Four undergraduates attend the Ecological Society of America meetings in Milwaukee, WI, and presented posters on their canopy ecology and education outreach programs, thanks in part to a donation from Nellie Mae to fund student-faculty activities.
56. Over 250 canopy books were distributed to minority students and students in third world countries, as part of our canopy education outreach. A grant renewal from the Triad Foundation for $15,000 assisted with continued ecology education outreach both locally and globally,
57. With seed funding from Triad Foundation, two canopy ecologists from the tiger reserve in India will visit Florida during November 2008, and give lectures as well as write grants for future India/USA canopy collaboration.
58. Our "No Child Left Indoors" initiative went from the City of Sarasota to Sarasota County, all the way to Congressional legislation which passed (in October) the first ever "no child left inside" national environmental education funding.
59. Our website is growing by leaps and bounds, with over 40,000 average monthly hits! This truly makes our message not only local, but also global. Our sister website, www.outonalimb-forestcanopies.com now hosts canopy games and educational units for teachers, thanks to a renewal from Spurlino Foundations.

60. An ecotourism brochure is in progress by New College students, to help create economic incentives for rain forest conservation by the Yagua tribes in the upper Amazon of Peru. Nellie Mae Foundation is funding this student-faculty initiative.
61. Due to popular demand, we printed 50,000 of a new, updated Myakka canopy walkway brochure in fall 2008 --- hopefully to last through the upcoming season of tourism.
62. The treehouse project has moved forward with official approval for its site in Oscar Sherer State Park, an architectural rendering, and a fund-raising team who will take action in early 2009. (The downturn in the economy put their fall schedule on hold for a few months.) A big thanks to the Aaron Foundation renewed their donation of $10,000 to assist with all programming.
63. Another former TREE intern has achieved international acclaim – Bryson Voirin received a full scholarship for a PhD in canopy pathogens from the Max Planck Institute in Germany!