



TREE Foundation

Annual Report 2011

Compiled by Dr. Meg Lowman, Executive Director

Annual Meeting October 21 2011

Cavanaugh & Co., Board Room, Sarasota FL - 11 AM

(cover photo: citizen science for girls: STEM education in action)



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

Annual Report for 2011

Happy United Nations International Year of the Forest. TREE Foundation made great strides in our mission this year, dovetailing with the international concerns of forest conservation that have also been the focus of many countries through efforts of the UN. TREE celebrated its tenth anniversary of both the Foundation and also the Myakka River State Park canopy walkway during 2010. Our eleventh year marked some landmark dates in our organizational history, as well as some critical times for bringing environmental education to both the public and also to policy-makers.

Thank you to all our TREE donors for your generous support of TREE Foundation in 2011, and especially for your enthusiasm to sponsor programs that link kids to nature, foster education about forest ecosystems, and stimulate environmental education for local and global communities. We received generous support from both donors and foundations; we expanded both local and international programs, including outstanding media coverage of some of our programs; we are creating a new TREE-house project in southwest Florida; and we are expanding our flagship project (the canopy walkway) to two other states.

Local Canopy Programs

1. **Linking kids and families to nature** – Two main environmental education programs continue to prosper and thrive at the local level. Our flagship project, the Myakka Canopy Walkway, underwent a “conservation face-lift” with new and more updated signage in process. In addition, we printed 20,000 new brochures so that every visitor learns about the importance of forest canopies during his/her adventure in the treetops. Our partnership with Sarasota County K-12 students achieved amazing media attention, when Jack Perkins’ Gulfcoast Journal filmed our third and fifth grade bromeliad researchers from Pine View School about their canopy ecology program (now in its sixth year – see www.treefoundation.org). We also installed a “people counter” at the walkway so we can track our visitorship, since the Park does not have enough staff to accomplish this.
2. **Virtual nature** – Our website continues to attract over 30,000 hits per month, making it a “go-to” place for information about forests, and a highlight for many student assignments. Dr. Lowman continues to be extremely busy answering middle school students who write from around the country with questions regarding rain forest conservation and environmental inspiration. South Korea sent an official delegation of tree canopy experts to tour our walkway in June, so they can build a similar structure in their country; and many other groups contact

TREE for similar information. In addition, TREE continues to partner with the Audubon Society and Green Mountain Digital Inc. to trial a new PDA (hand held digital) field guide about Florida wildlife for both students and citizens. A new APP is being designed for North Carolina natural history, including an invasive species section that will create ACTION for reducing the threat of these plants and insects. As part of TREE's mentoring activities, New College undergraduates mentor these elementary students and learn firsthand about science education by assisting with fieldwork.

3. **Training the next generation** – TREE co-sponsored 20 students to attend a tree-climbing workshop at North Carolina State University in spring 2011, including teachers and students who will spread the message to increase awareness of canopy science; co-sponsored an Amazon trip during July 2011 whereby 51 students and teachers and community leaders learned first-hand about this critical ecosystem; sponsored a minority science teacher to attend the national ecology meetings in Austin Texas during August 2011; and continued to host the traveling exhibit "Out on a Limb – Forest Canopies" to local schools during the past year. We are currently fund-raising for a brochure about the canopy walkway for our research site in the Peruvian Amazon; this educational material would give ecotourists a lasting education about the medicines, plant species, and awesome interactions in the most amazing "roof of the world." Popular Science Magazine listed Dr. Lowman's tree-climbing classes at the Myakka walkways as one of the national's Top Ten most awesome college classes – and featured a photo of the walkway in their August 2010 issue!
4. **Hosting the Ecology Education Summit** - TREE was a major sponsor of the national Ecology and Education Summit, Environmental Literacy for a Sustainable World. This meeting brought together diverse stakeholders for the first time to discuss the importance of STEM education – religious leaders, private corporations, educators, students, technology geeks, musicians, K-12 teachers, government officials, NGO leaders, and citizens. Another non-conventional outcome of this conference was the fact that no white paper was required (to collect dust in file cabinets) but rather an ACTION PLAN was created, for accomplishments by 2020.
5. **Sponsoring conservation publications** - TREE is co-sponsoring a new volume called Treetops at Risk – published by Springer Verlag and including the speakers from the 2009 International Canopy Conference in Bangalore, India. This volume gives a unique opportunity for forest scientists from developing countries to publish side by side with scientists from developed countries – maybe providing a nudge for credibility and action plans in places where the need is critical. TREE continues to disperse canopy books in developing countries, and to publish results from our current Ethiopian forest conservation programs.

6. **Educating the local community about the environment.** TREE continues its sponsorship of the Fedder Lecture series, a community lecture, with world-acclaimed climate change photographer Gary Braasch (www.worldviewofglobalwarming.org) presenting his work in October 2011, including time-lapse of glacier melt, the fate of fisherman in Tuvalu, and the scientists around the world who are passionately measuring indicators of climate change. Gary's talk provides inspiration to both citizens and to the college students in particular. In addition, TREE provided the content for more than 20 ecology lectures in different regions, including Florida and North Carolina as well as Minnesota and Texas and Florida.
7. **Birthday celebration winds down** . For TREE's 10th anniversary, we partnered with Turner Landscaping (www.turnerlandscaping.com) to launch our decadal project called "1000 Trees in 2010". This not only celebrated the birthday of TREE and of our canopy walkway, but was also appropriate in this United Nations proclaimed Year of Biodiversity at a global scale. For this project, TREE solicited local groups who need trees on their campus – schools, art museums, road medians, and city parks – to plant four-foot high live oaks (*Quercus virginiana*), and create a community event about the importance of tree canopies. Approximately 500 trees were planted during our anniversary year. Our tenth anniversary treehouse project, scheduled for construction at Spanish Point this fall, is well underway but waiting on the Spanish Point staff to approve the archeological map of this area and determine the best treehouse location. TREE continues to feature forests and conservation in the local newspaper column, Nature's Secrets, written by Dr. Lowman.
8. **President Aaron** was honored locally by several prominent organizations, including the American Jewish Committee, for her philanthropic efforts for forest conservation. Congratulations, Gerri!

National and International Canopy Programs

9. **International Forest Canopy Conference.** TREE co-hosted the 5th International Forest Canopy Conference in Bangalore, India. National Science Foundation co-funded this event, along with TREE and Ashoka Trust for Ecology and the Environment (an Indian NGO). Over 400 scientists and educators attended. The importance of this event cannot be underestimated, since approximately 250 Indian students also attended and came away inspired to work harder on their country's forest conservation (www.canopy2009.org) . In addition, Dr. Lowman was awarded a Fulbright Senior Specialist status, and the Indian government requested her expertise to help design some important forest conservation programs in India during the upcoming year. A publication about the economics of canopy walkways, featuring our Myakka metrics, was published by the international journal, Biotropica. University of California Press has also contracted a new canopy methods book with scheduled publication for the 6th International Canopy Conference to be held in Oaxaca, Mexico in October 2012.

10. **TREE continues working on forest conservation in Ethiopia and India.**

During 2009, TREE funded a workshop to educate the bishops of Ethiopia, who are stewards of the country's last remaining forests otherwise known as "church forests". Due to the success of this seed funding, National Geographic funded a full-fledged expedition to survey the biodiversity of Ethiopia's church forests this summer. TREE is partnering with National Geographic, and approximately 11 scientists from around the world have volunteered their time and expertise to survey these unknown regions of our planet. Because these church forests house water supplies, biodiversity including pollinators of local crops, as well as the local churches which represent important spiritual centers, these forests are an important legacy to the health of Ethiopian people. TREE's Ethiopia project represents a win/win/win in the world of conservation biology – construction of stone walls reduces the stones from agricultural fields and raises the crop yield; the stone walls conserve the remaining church forests; and the walls also provide income to local unemployed young men (TREE is fund-raising online to pay \$6 per square meter of stone wall, a veritable bargain.) To save critical areas of Ethiopia's church forests will cost \$270,000 – this is amazingly cheap compared to the complex forest conservation programs required in other tropical countries.

11. **Education of students in developing countries.** TREE also continues to provide canopy textbooks to biologists working in global "hot-spots" that desperately need conservation expertise. For relatively small contributions, our efforts go a long way! Dr. Lowman will assist with large-scale grant-writing conservation initiatives in both Ethiopia and India during the upcoming year. In addition, TREE is also sponsoring tee-shirts of insect pollinators for the children of Ethiopian church forests – these kids have no books or school supplies, so the notion of sending notebooks or laminated keys was not feasible. Since they each have at most one shirt, the concept of putting educational materials on their shirts is a creative solution to inspiring stewardship of their local biodiversity. Thanks to Betsy Cole and Phil Wittman for their artwork and enthusiasm to create these innovative educational tools!

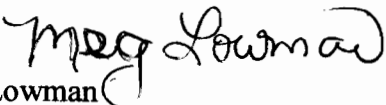
12. **Students and Forests.** Students from New College have printed and are selling their ethnobotany brochure about medicinal plants in the Amazon rain forest. Proceeds assist the Ethnobotanical Garden at ExplorNapo lodge on the Sucasari River, a tributary of the Rio Napo. In addition, North Carolina State University students and faculty are fund-raising for a fresh water supply in a local Amazon village after their expedition during July 2011, as well as a new canopy walkway brochure to provide interpretation of this unique experience. Four TREE fellows and New College graduates are currently enrolled in graduate school for conservation and environmental education: Charissa Jones, Bryson Voirin, Meghan McAvoy, and Angelique Girrard. Bryson's current work on sloth ecology has attracted international attention, thanks to the TREE website. A rock band in London, England, called the Powdered Cows, read about Bryson's sloth research on our website; and they are dedicating the proceeds of their new CD to sloth

research. And a children's author - Julie Heckathorn – is donating a portion of her royalties to sloth conservation. Another children's author, Lynn Cherry, is partnering with TREE in her latest endeavor called Young Voices for Climate Change, creating films of youth who are making a difference throughout the planet. Check this out on our website!

13. **Our Leadership - Emeritus director, Thomas Lovejoy** (formerly President of the Heinz Center for Science, Economics and the Environment in Washington DC) has transitioned to an endowed Chair in Biodiversity at the Heinz headquarters. Balanced with his new title as Professor at George Mason University. Tom has headed up several global conservation programs this year as part of the United Nation's Year of Biodiversity, and he continues to represent TREE Foundation in his important global outreach. We welcome new Research Associate, **Dr. Alemayehu Wassie Eshete**, an Ethiopian conservation forester who is spear-heading our church forest program and overseeing the restoration programs. In addition, **Ms. Joanne Spurlino**, philanthropist and business entrepreneur from Odessa, FL, is now our Secretary. Joanne has enthusiastically supported both local and global forest conservation programs, and we are so grateful for her dedication. **Joel Fedder** is now Vice President International, and **Laura Peters** is Vice President.

Conservation and education continue to be the priorities for TREE Foundation, in a region where science funding is relatively sparse. TREE Foundation is grateful for your continued support of our local and global forest conservation projects. With a relatively small budget, we are proud of our activities, and our outreach to a large diversity of constituents. We continue to be the only foundation in southwest Florida dedicated to conservation of our trees, forest conservation and environmental education – so thank you for supporting this legacy to the next generation. As Dr. Seuss stated in his book, The Lorax, we “speak for the trees” in our efforts to make the world a better place for our children and grandchildren.

Yours from the treetops,


Meg Lowman
Executive Director

Gerri Aaron
President, Board of Directors

Officers, Directors and Research Associates 2011

Thomas Lovejoy, Ph.D., Honorary Chairman of the Board
Biodiversity Chair, H. John Heinz III Center for Science, Economics, & Environment
And Professor, Conservation Biology, George Mason University
Washington DC

Gerri Aaron, President
1255 North Gulfstream Avenue
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Joel Fedder, Vice President International
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Longboat Key FL

Laura Peters, Vice President
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Osprey FL 34229

Joanne Spurlino, Secretary
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Odessa FL

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2718 Casey Key Drive
Nokomis FL 34235

Dan Bennett, Exploration Chair
Past President, The Explorers Club
Naples FL

DC Randle, Research Associate (non-voting)
K-12 science educator
2874 Riverbank Dr NW
Isanti MN 55040

Bryson Voirin, Research Associate (non-voting)
Graduate student research associate
Max Planck Institute
Germany

Dr. Soubadra Devy (non-voting)
Research Associate
Ashoka Trust for Ecology and the Environment (ATREE)
Bangalore, India

Dr. Alemayehu Wassie Eshete, (non-voting)
Research Associate
Forestry Department
Addis Abba, Ethiopia

Dr. David Jarzen (non-voting)
Research Associate
Senior Scientist, Museum of Natural History
Gainesville FL

Dr. Leon Kaganosky (non-voting)
Research Associate
New College of Florida

Margaret Lowman, Ph.D., Executive Director
Director, Nature Research Center
NC Museum of Natural Sciences
Research Professor, NC State University
11 West Jones St.
Raleigh NC 27601

Michael Brown, Legal Counsel
888 Second Street
Sarasota FL 24236

Student Interns (Center for Canopy Ecology)	
Andrea Lucky	Ricardo Rifugo
Jiri Hulcr	Erik Wallimaa
Pamela Montero Alveres	Guillermo Sanchez
David Mitre	Marcos Oversluijs Vasquez
Angelique Girrard	Charissa Jones



LEMUR
CONSERVATION
FOUNDATION

P.O. Box 249
Myakka City, FL 34251
941 322-8494

NOV 22 REC'D

59-3359549

November 16, 2010

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

Dear Laura:

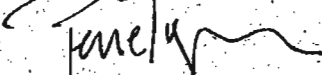
The Lemur Conservation Foundation is very grateful for the donation and delivery of the 24 live oak trees to the Myakka City Lemur Reserve in celebration of the Tree Foundation's 10th anniversary. Your partnership with Turner Trees to further forest conservation is wonderful and we were pleased to have been able to take part.

These new trees will be planted in selected spots in the existing lemur forests where more shade is needed and in years to come will greatly enhance the tree canopy for the lemur colony.

Your kindness will be noted in our 2011 annual report to be published next year.

Thanks again, we really appreciate your generosity and congratulations on your 10th anniversary!

Warmest regards,


Penelope Bodry-Sanders
Founder

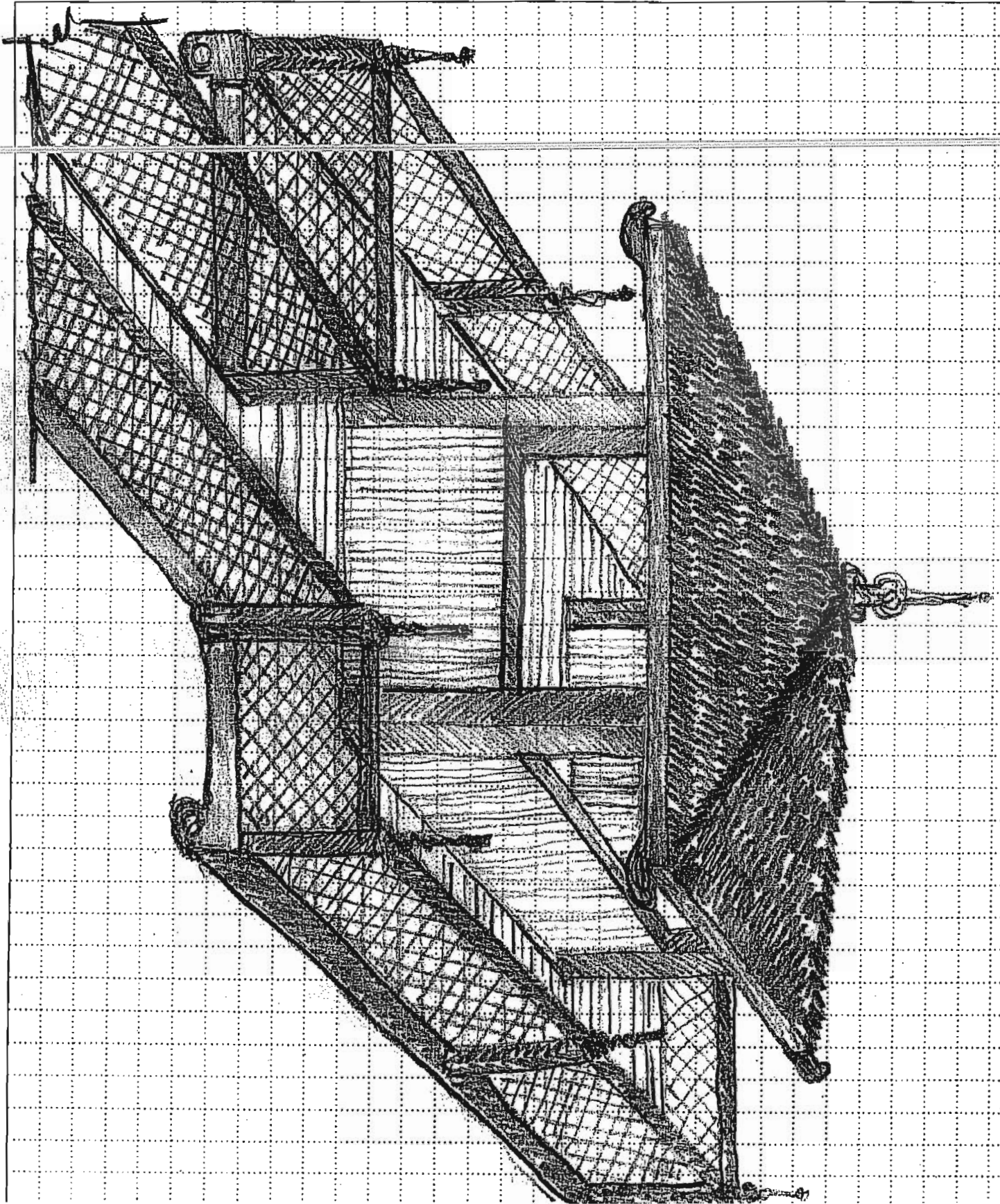
cc: Meg Lowmen

"...dedicated to the preservation and conservation of the primates of Madagascar through captive breeding, scientific research, education, and reintroduction."



MICHAEL K. WALKER & ASSOCIATES, INC.
CONTRACTORS-CONSULTANTS

Project: SPANISH PT	Project #: SJ.123
Date: 5.27.11	Title: CONCEPT
Page 1 of 1	DWG #1
By: MKW	





MICHAEL K. WALKER & ASSOCIATES, INC.
CONTRACTORS-CONSULTANTS

Project: SPANISH PT.

Project #: SJ123

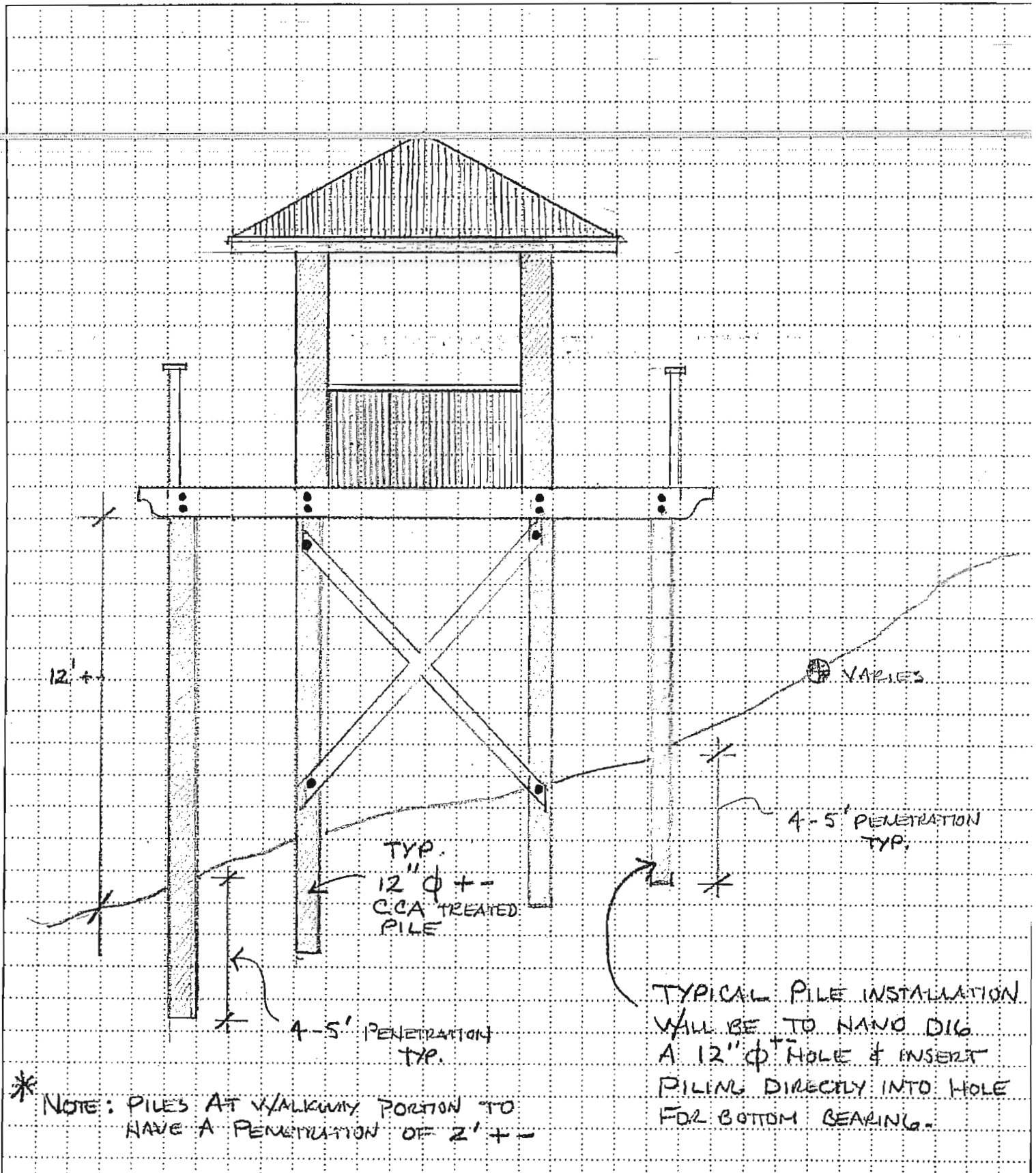
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Title: PRELIMINARY

Page 1 of 1

SECTION

By: MKW





Celebrating the International Year of Forests -2011

Highlighting the unexplored “Forest Canopies”

31st January 2011

Conference Hall, Kerala Forest Head Quarters

Thiruvananthapuram



Kerala Forest and
Wildlife Department



Dear Sir/Madam,

As part of observing the International Year of Forests- 2011, signifying its theme 'Celebrating Forests for the People', the Kerala State Forest and Wildlife Department and Ashoka Trust for Research in Ecology and the Environment (ATREE) are jointly organizing a seminar and talk on 31st January 2011.

The Seminar will be presided over by **Dr. R.V. Varma** (Chairman, Kerala State Biodiversity Board) and inaugurated by **Mr. V.K. Sinha** IFS (PCCF, Social Forestry, Kerala Forest Department) **Dr. Gladwin Joseph** (Director, ATREE) will give a message on IYF 2011 highlighting ATREE's research and conservation activities in last one and a half decade.

Prof. Margaret Lowman, world renowned and pioneering scientist in canopy science will deliver the keynote talk highlighting the importance of tropical forest canopies, popularly known as the "last biological frontier", which remains the least explored, particularly in the Asian region.

A book titled "Forest Canopies of South Asia – a glimpse" will be released by **Mr. N.V. Trivedi Babu** IFS (PCCF & CWW Kerala Forest Department).

We extend our invitation to you and would be honored by your presence on this occasion

With warm regards,

24.01.11
Bangalore

Priyadarsanan Dharma Rajan
ATREE

RSVP on or before 30th Jan, 2011: Jojo, T.D., Mob. 9846009339, jojo@atree.org;

Programme

Chair: Dr.R.V. Varma (Chairman, Kerala State Biodiversity Board)

03.30 pm	Documentary on Ants by Mr. Suresh Elamon
03:45 – 03:55 pm	Welcome address by Dr. Priyadarsanan Dharma Rajan
03:55 – 04:05 pm	Presidential address
04:05 – 04:15 pm	Inauguration and Special remarks Mr. V.K. Sinha IFS (PCCF, Social Forestry, Kerala Forest Department)
04.15- 04.30 pm	Special Message Dr. Gladwin Joseph, Director, ATREE
04.30- 04.40 pm	Book release “Forest Canopies of South Asia – a glimpse” By Mr. N.V .Trivedi Babu IFS (PCCF & CWW Kerala Forest Department)
04:40 – 04.50 pm	Introduction to Dr. Margaret Lowman by Dr M. Soubadra Devy, Scientist, ATREE
04.50 – 05.50 pm	Life in the Treetops -- Forest canopies promote Conservation, Ecotourism and Education - Key note by Dr. Margaret Lowman, Director, Nature Research Center ,North Carolina Museum of Natural Sciences, Professor, North Carolina State University
05.50 pm	Vote of thanks – Dr. Latha Bhaskar
06.00	High Tea

Margaret Lowman has pioneered the science of canopy ecology. She has designed hot-air balloons and walkways for treetop exploration to solve mysteries in the world's forests, with special expertise on the links between insect pests and ecosystem health. She currently serves as Vice President of The Explorers Club; Vice President of the Ecological Society of America; Executive Director of Florida's TREE Foundation; and Cluster Chair for the Sarasota Economic Development Corporation. She is currently the Director of Nature Research Center, North Carolina Museum of Natural Sciences.



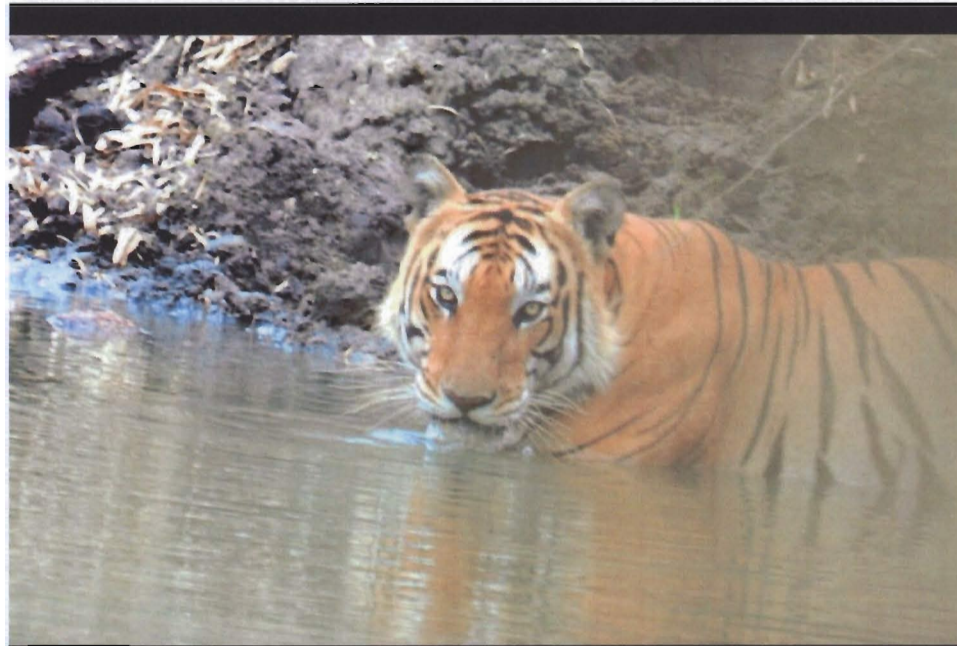
Ashoka Trust for Research in Ecology and the Environment, Bangalore



Kerala Forest and
Wildlife Department

Kerala Forest and Wildlife Department

Dr. Lowman - training students and conserving forests, India - Fulbright



Kabini-Tiger

Amoolya Iyer ©



UN Year of the Forest- TREE conservation, India



"canopy meg" mentoring Indian Women Students in Chennai, India



"canopy meg" surveying rhino populations, Assam

U.N. Year of the Forest - THE
in India 17.



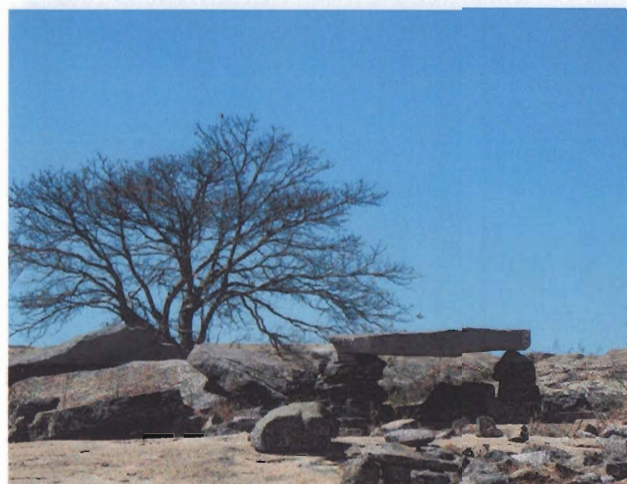
Feb, 2011 - Dr. Lowman's Fulbright Scholarship, India "Year of Forest"

Tree in India - Lowman's Turbidity



Conserving The forests of India - Outreach to Forests

TRF Foundation in INDIA - Year of Forests 19.



India Earthwatch HSBC training - Nature for Bank Employees



Environmental education outreach
for school children in rural India

Action Items From the National Education Summit in Washington, DC Co-sponsored by TREE

Ecology and Education Summit

Environmental Literacy for a Sustainable World

Action Plan 2010-2020

Developed by invited participants following the Summit.

Theme 1. Learning about Complexity and Change: Foundations for Environmental Literacy

Action Item 1.1 Identify 5-15 key concepts and principles that link human and natural systems for use by teachers and policy makers (eg. Ecosystem services, sustainable livelihoods)

Objective: Promote Literacy for Science and Society

Action Item 1.2: Articulate a comprehensive green schools program and methods to advance such a vision.

Objective: Further galvanize and solidify the green schools movement by creating a comprehensive vision, approach and program for green schools at the federal level, in particular the Dept. of Education.

Theme 2. Turning the Tide: Building a Green Society through Learning and Doing

Action Item 2.1 Community Engagement to Meet the Challenges of an Uncertain Future

Objective:

- Convene, catalyze, and empower established grassroots leaders at various levels to create sustainability initiatives.
- Community engagement by connecting occupations and mentoring to businesses, communities, international groups, faith, youth, and higher education
- Create a robust peer mentoring program, including mentoring between groups and youth mentoring, to promote sustainability, defined as "quality living for now and in the future"

Action Item 2.2 Designing Green Built Environments (Green Community Buildings/Spaces)

Objective: Create network of communities that designed green community buildings and spaces

Action 2.3 Develop a Template (an Action Kit?) for Achieving a Green Society through Legislative Action

Objective: Produce and disseminate a template to communities to help them initiate legislative change for a green community.

Theme 3. Seeing our World Inside and Out: Harnessing Technology for Environmental Literacy

Action Item 3.1 Develop "C. Science" 2.0

Objective: Put data and tools into hands of educators and people; incorporate into handheld games or in simulations that can support instruction; and create supporting structure for individual citizen users to provide feedback on the content and delivery of C. Science 2.0

Action Item 3.2 Create a collaborative effort to use digital tools towards a sustainable future

Objective: Facilitate development of games and simulations that support sustainable future

Action Item 3.3 Personalized Health Response / Tool

Objective: Create a personalized reporting tool that links personal behavior, lifestyle, and health to environment, (time-location) and risk factors

Theme 4. Best Practices for Effective Teaching and Learning

Action Item 4.1 State Inventory of Environmental Literacy Related Standards and Licensure-Re-licensure Requirements

Objective: To find out what is known about environmental literacy-related standards and licensure requirements and establish access to this information; determine where the inventory is housed or should be housed if it does not exist; determine criteria and components for the inventory.

Action Item 4.2 Analyzing Effectiveness of EE/STEM/Sustainability Education Programs Toward Validating Cognitive/ Affective Outcomes

Objective: Develop a coordinated, comprehensive program of education research that studies effectiveness of various EE/STEM/Sustainability Education methods along specific outcome domains: 1) Standards-based knowledge; 2) Critical thinking/problem solving; 3) Responsible and sustainable behavioral practices/changes; 4) Work force preparation

Action Item 4.3 Environmental Literacy Community Network

Objective: Create the technological infrastructure to effectively inventory, synthesize and share best practices, programs, research and information and to facilitate new partnerships

Theme 5. Environmental Literacy for All

Action Item 5.1 Partnerships for a Sustainable and Secure ^{Future} Feature

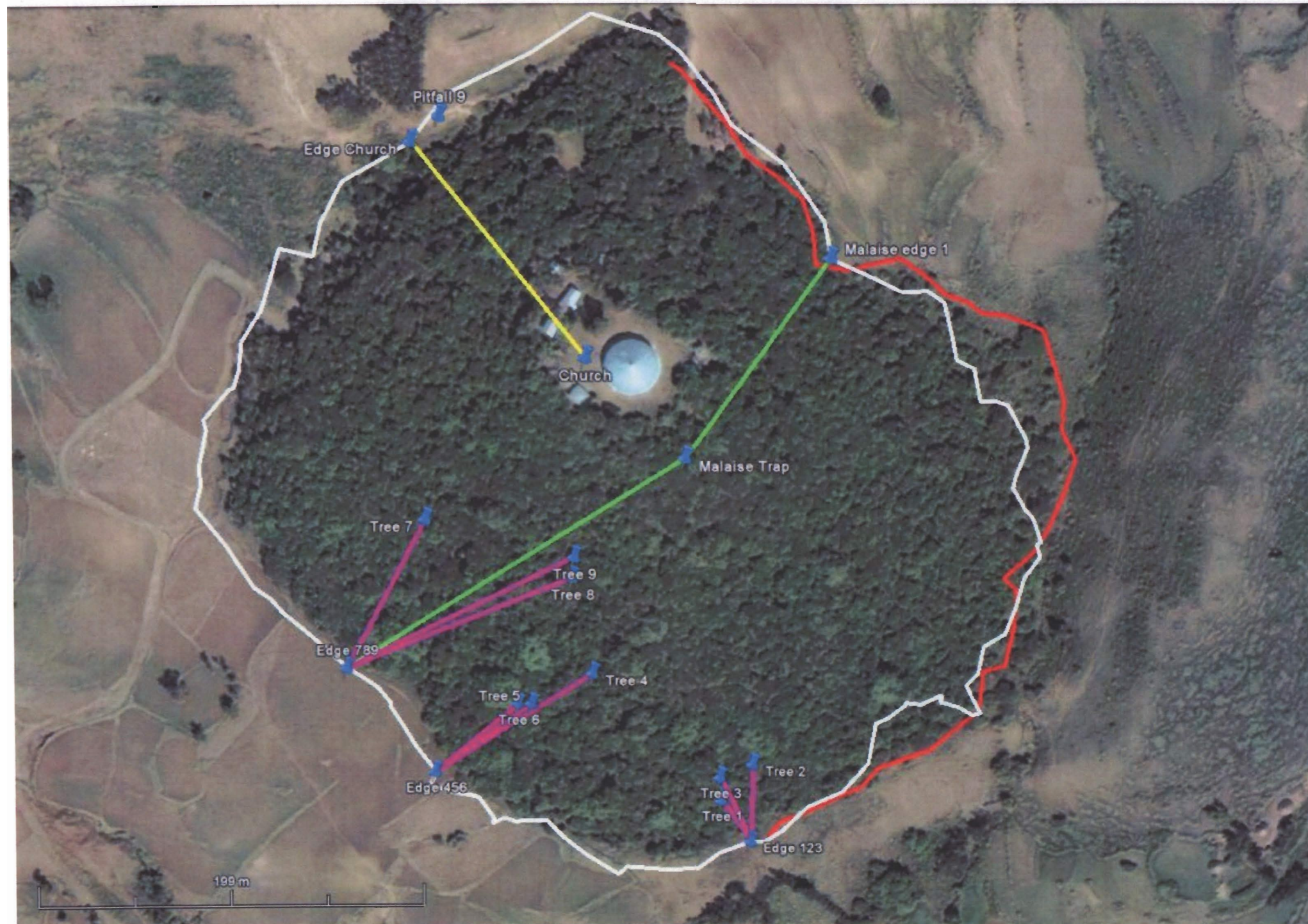
Objective: Develop new processes for mutually beneficial partnerships focused on high priority societal needs e.g. jobs, crime, health, education, equal opportunity, social justice that serve as entry points towards environmental literacy.

2011 TREE Foundation "saves The Forests of ETHiopia, 1 church ata



time... " " saves African forests. 73.

~~JOJO STAPLEWOOD~~



Training The future stewards of church forests

25



Children Learn Forest conservation in Ethiopia



SUSTAINABLE SOLUTION! Walls from stone



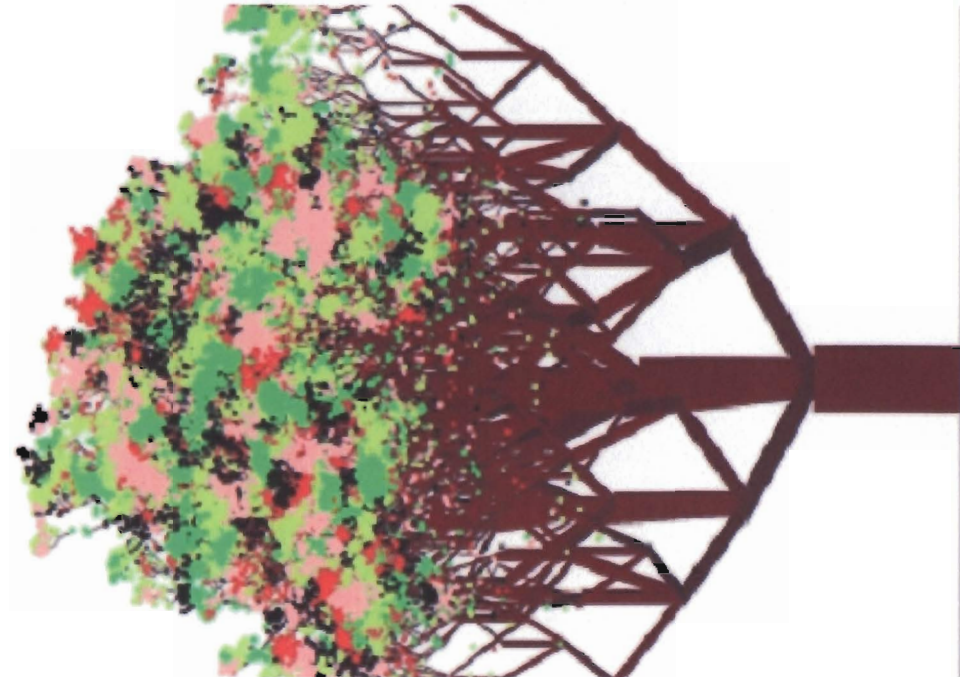
Building walls is a community activity, inspiring pride! 27



Advance Pages from The upcoming CANOPY METHODS book



28'





TREE-sponsored student
climbing workshop for students
and K-12 teachers - May 2011



TREE, NRC, + NCSU host BELLY-BUTTON BIODIVERSITY Project.

Belly Button Biodiversity
of Lady Gaga and all the rest of us

Get yourself sampled too!

Be part of the largest microbial citizen science project!

1 - find our booth at Sigma Xi, Sunday, Jan 15th, 8-9am

2 - sample your B.B. with a q-tip

3 - we grow the microbes

4 - you **get a photo** of your B.B. microflora by e-mail

Jiri H
jhulcr@ncsu
Rob D
Meg Low

KIDS
LOVE
IT!

30.



DC Randle (Research Associate, TREE) and Meg Lowman lead research-and-education expeditions to The Amazon, continuing their Long-term canopy studies in The ACTS walkway.



Students explore The Amazon biology + culture. 33



Help Save the Pygmy Sloths!



There are only 300 pygmy sloths left in the world, on a small island in Panama.

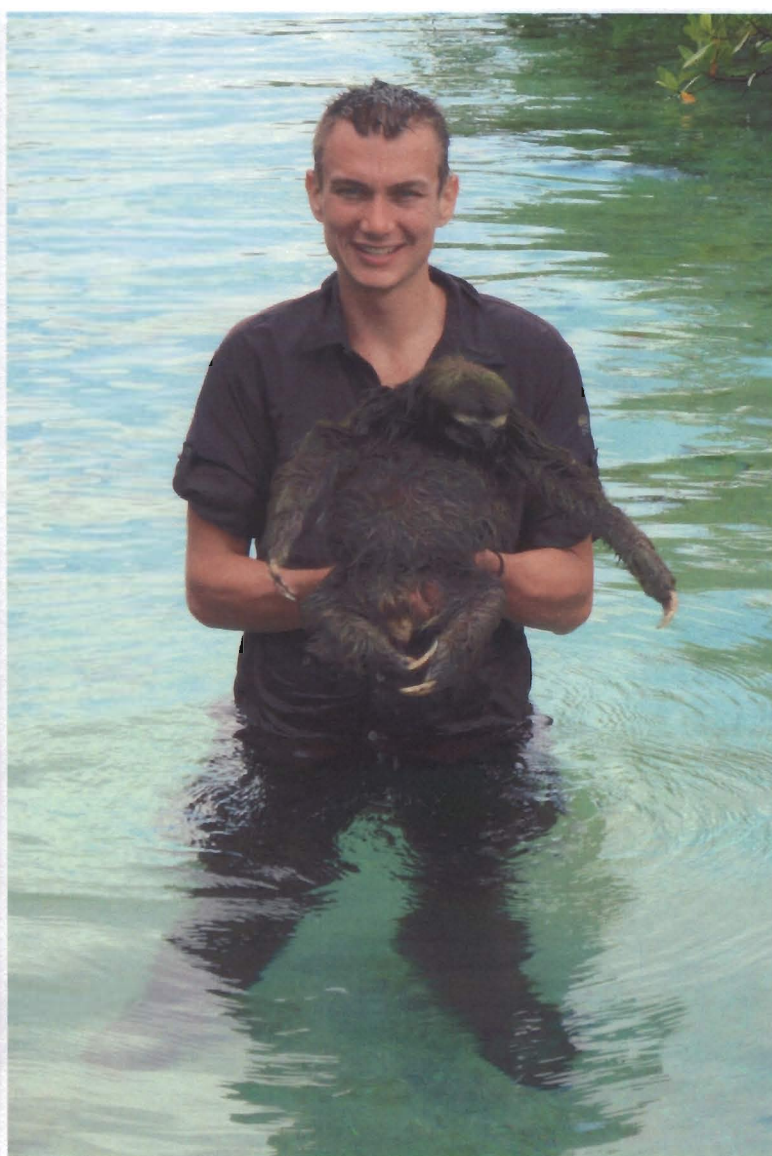
They are disappearing quickly.

The Hidden Clover team is working with the Tree Foundation to help save them.

Find out how you can help by going to
www.Searchforthehiddencllover.com/pygmysloths

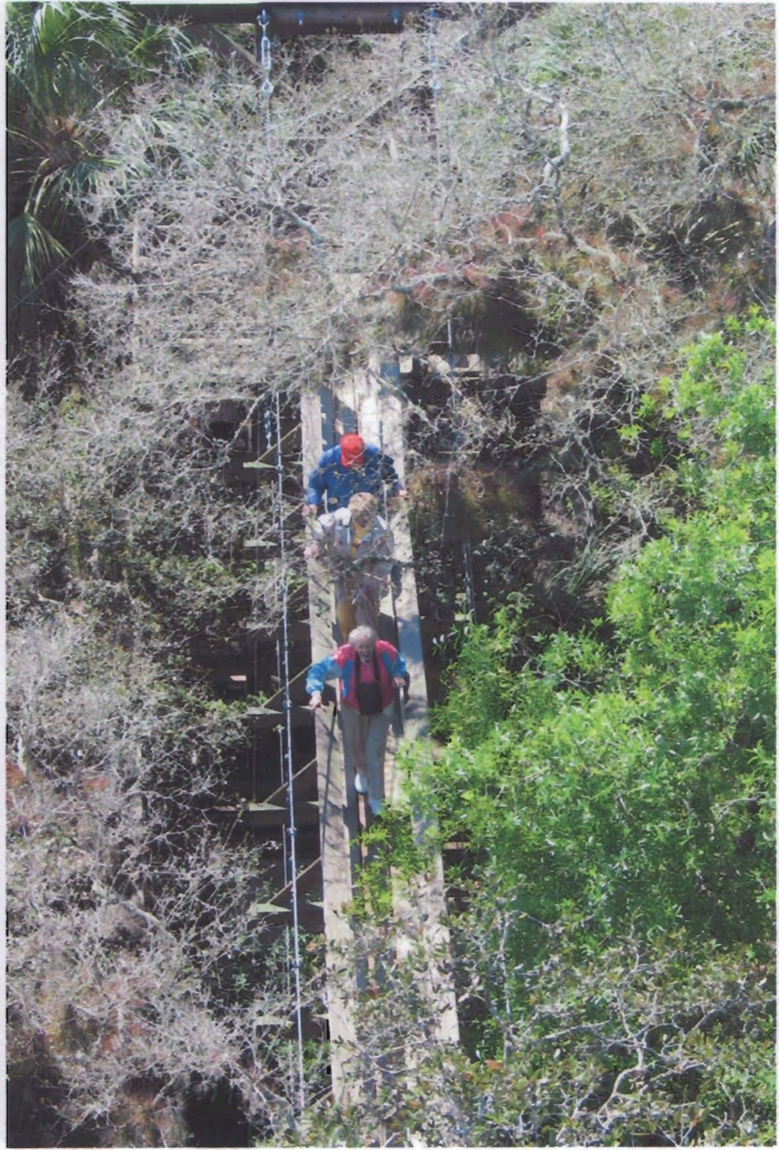
A portion of the proceeds of this book go towards the Tree Foundation
To find out more about the Tree Foundation, go to www.TreeFoundation.org

TREE student, Bryson Voinich, continues
to work on sloth ecology. Through
the TREE website, a London rock band
"Found" Bryson and are donating proceeds
of their CDs to save
sloths!



TREE'S Bryson Voirin, aka "Sloth Man" !

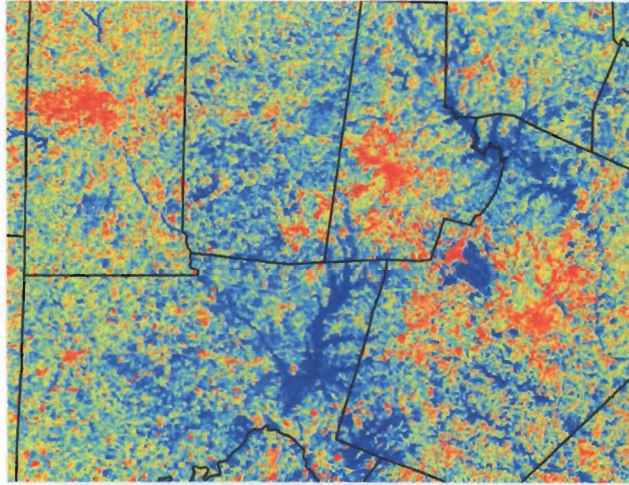




Myakka Canopy walkway with new bolts+boards!



Fedder Lecture for OCT. 2011 Features Climate Change photos by Gary Braasch

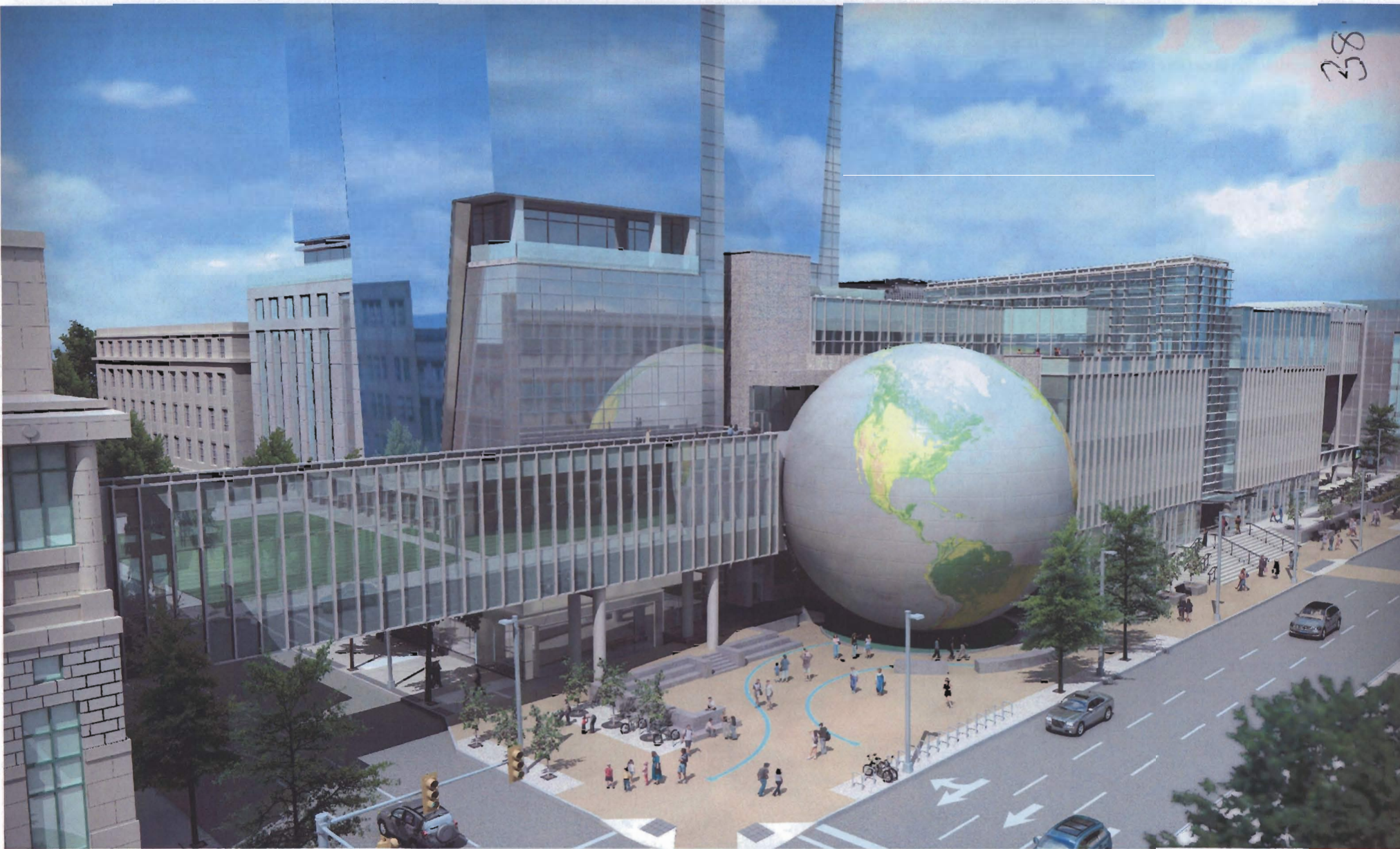


37.



"Canopy Meg" brings canopies + science education to North Carolina!

38



NATURE RESEARCH CENTER

FENTRESS ARCHITECTS | OBrienAtkins

Meg's "Nature Research Center", Linking The public to scientific discovery!



39.





March 11 - Construction of The Daily Planet
Technology Theater at The Nature Research
Center, Raleigh NC.

THE NORTH CAROLINA
MUSEUM of NATURAL SCIENCES
and SIGMA XI present

Tuesday, January 18

TIR NA NOG
218 S. Blount Street, Raleigh

6:30-8:30 PM
Discussion begins at
7:00 followed by Q&A

SCIENCE *café*

SPEAKER

Dr. Meg Lowman
*Director, Nature Research Center
NC Museum of Natural Sciences*

*Research Professor
NC State University*

gone?

going

going

Rainforests

RSVP

*katey.ahmann@ncdenr.gov
919.733.7450, x 531*

2011 - TREE Lectures + Outreach about Forests,

411

Canopy Program's for kids inspire future scientists!

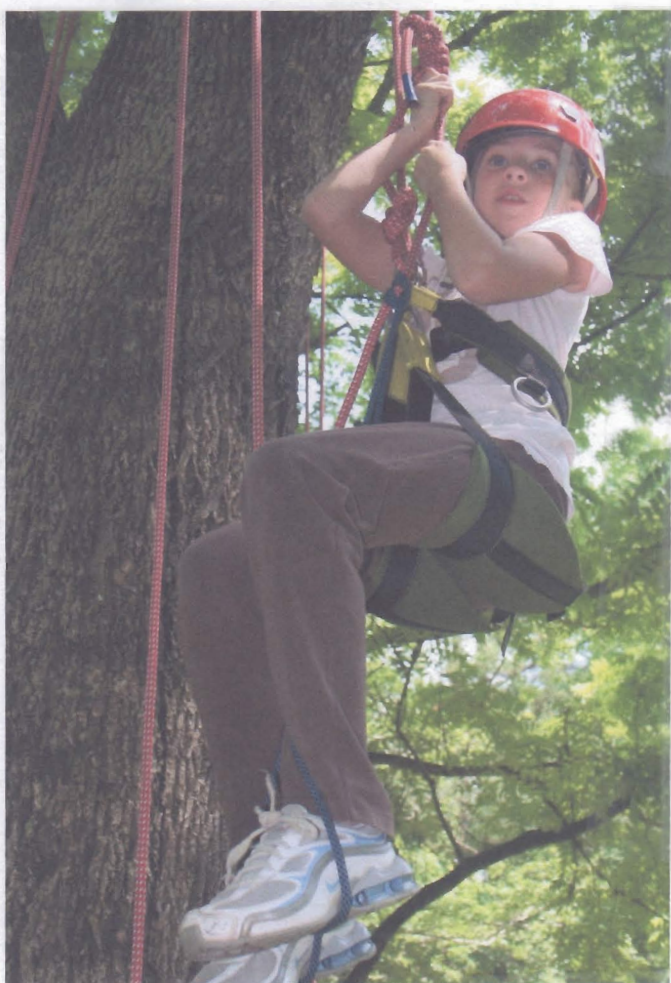


42.





July 15-21, 2011
 Meg Lowman TREE-tops
 Camp in Elmira NY
 - serves under-served
 teenage girls to Love
 Science





Rolex Awards for Enterprise: Young Laureates Programme

The first five winners in the Young Laureates Programme:

(from left) Nnaemeka Ikegwuonu, Reese Fernandez, Jacob Colker, Bruktawit Tigabu and Piyush Tewari.

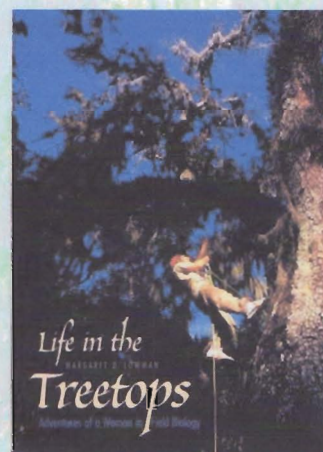
Geneva, Switzerland, April 2010

P10Gr1004_004R ©Rolex Awards/Marc Vanappelghem

Rolex young Laureates who are making
a difference for The planet -
TREE was represented on The Rolex Jury panel.

**Natural Sciences & Mathematics
Inter-Club Council
Presents 8th Annual Science Symposium**

Speaker: *Dr. Margaret Lowman*



Dr. Margaret Lowman, also known as, Canopy Meg, is a Tropical Rain Forest Canopy Biologist, and a research professor at North Carolina State University.

She will be speaking at the Science Symposium on Tuesday, April 19, 2011. In addition, she will be signing her first book, *Life in the Treetops*.

Dr. Margaret Lowman

April 19, 2011

4:30 PM

TSU Pavillions

Visit nsmicc.blogspot.com for the Science Symposium Schedule and speaker information

The military goes green

Failure is an opportunity.

Tao Te Ching

The U.S. military is moving aggressively to reduce its energy "footprint."

The Department of Defense is our country's largest single consumer of energy, using more than 300,000 barrels of oil per day. With an armored Humvee averaging only 4 miles per gallon, and with a gallon of fuel

NATURE'S
SECRETS



Meg
Lowman

costing \$400 to reach our troops in Afghanistan, the military budget is crippled by energy inefficiencies. But new initiatives for military installations include solar power units, purifying stagnant water, solar tents and LED lights. At Fort Drum, N.Y., one of the world's largest solar installations currently heats the base. A fleet of new clean-energy naval vessels, dubbed "Prius of the oceans," will save millions

of taxpayer dollars. The military's goal is to achieve 25 percent renewable energy by 2025.

Fort Bragg has a dedicated chief of the environmental division, David Heins, whose job is to save energy and money for the military. A recent report, the Quadrennial Defense Review (QDR), outlines military strategies for an uncertain world, with clean energy technologies and climate change adaptations highlighted as key priorities.

In a new PBS series funded by the National Science Foundation called "Earth - The Operator's Manual," host Dr. Richard Allee visits the new solar-cooled tents in Afghanistan and explains how such energy efficiencies at military bases in the Middle East can save lives as well as money. More than 1,000 Americans have been killed on military missions delivering fossil fuels to troops in Iraq and Afghanistan. Petroleum convoys are obvious targets as they cross the desert.

Steve Anderson, former military senior logistician for Iraq, recently spoke at the N.C. Museum of Natural Science in Raleigh about the importance of greening the military: "Nine years into that war, (our troops) are living more or less as Alexander the Great's men did 23 centuries ago, in often dangerous and always inefficient tents and shacks." He went on to note that it costs taxpayers about \$66 million per day to air-condition the war zones using fossil fuels, but expressed hope that new technologies will change operations soon.

The military's QDR also acknowledges that climate change poses an enormous threat to our national security. Sea level rise, warming temperatures and glacier melts will foster instability in some of the world's most volatile regions. Over 150 of America's coastal military installations are at risk from sea level rise and the inevitable political struggles caused by droughts, famine, floods, forest diebacks and disease.

Are we equipped to deal with the catastrophic consequences of droughts, famine, floods, forest diebacks and disease on a global scale? The emerging new technologies developed to "green the military" may have far greater impact on global stability than our existing arsenals of guns and missiles.

Meg Lowman is an N.C. State University professor and forest canopy expert who directs the Nature Research Center, N.C. Museum of Natural Sciences. Online: www.canopymeg.com.

11 JUL 2011



Forests going, going ...

Destroying a tropical rain forest and other species-rich ecosystems for profit is like burning all the paintings of the Louvre to cook dinner.

— E.O. Wilson

Brazil's environmental minister, Izabela Teixeira, recently announced that, during March-April 2011, logging in the Amazon rose 473 percent from last year. With new satellite technologies, detailed changes in land use can be monitored with greater accuracy. Most of the clearing occurred in Mato Grosso, a Brazilian state dominated by soybean farming. In other news, a major hydroelectric power plant was approved in the Amazon basin, affecting the fate of tens of thousands of indigenous people and millions of species inhabiting these forest canopies, and further shrinking/fragmenting South America's tropical rain forests.

Viewed from space, Earth's tropical rain forests form a green necklace around the equator, with three significant emeralds: northern South America, West Africa, and Southeast Asia. These three regions of tropical rain forest provide key aspects of global water and carbon cycles, ecosystem services for humans living nearby, and home to an estimated half of all species on Earth.

Brazil is not unique in its rates of deforestation. According to the FAO (Food and Agricultural Organization), an estimated 80 percent of original forests are now gone, with a whopping 50 percent lost since the beginning of the 20th century. Only 1,200 million acres (or just over 3 million square miles) remain.

Some countries, like Madagascar and Ethiopia, have lost more than 95 percent of their forests, whereas Surinam and Guyana still have more than 90 percent original forest cover. An estimated 20 percent of American and European timber imports were illegally harvested, so corruption exists at

both ends of the trade.

In addition to human threats to tropical rain forests, climate change poses an even greater risk. Between 2003 and 2006, more than 20,000 flying foxes died of heat stroke in Australian rain forests, when temperatures soared to 42 degrees Centigrade, nearly 8 degrees higher than average.

In montane rain forests, animals are moving to higher elevations, seeking cooler climates; but some of them have reached the top of the mountain, with no further retreat from warming trends. Hundreds of species may be extinct in the next few decades, victims of warmer and drier climates in the tropics. Although climate change is often linked with polar ecosystems because of the clear trends of melting ice, the impacts on tropical rain forests are equally serious and threatening to life on Earth.

To combat its rapidly accelerating rain forest clearing, Brazil has set up a crisis center with 700 agents and police officers dedicated to combating illegal forest practices. But these measures only tackle the problem after the fact. A bigger challenge remains: How to create a new paradigm for conservation so that political will shifts to save forests?

One notion is to create economic incentives for ecotourism, carbon credits and better controls on U.S. timber imports. Another idea involves the creation of sustainable harvests from tropical forests such as orchids, iguana and butterfly farming. But ultimately, conservation initiatives require political will.

The system is broken. Can a new generation of leaders create innovative policies that link economics, ecology and social services? It needs to happen yesterday. If business as usual continues, most tropical rain forests will be gone when our grandchildren grow up.

Meg Lowman, longtime Florida scientist/educator, is establishing the Nature Research Center at the North Carolina Museum of Natural Sciences, with a mission to engage the public. Her column appears monthly on these pages. Web: [meglowman.com](http://www.meglowman.com)



MEG LOWMAN
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47

For all ages, Forests R Us

18 April 2011

"The Trees"

Do you think of them as decoration?
Think again.

Here are maples, flashing.

And here are the oaks, holding on all winter to their dry leaves.

And here are the pines, that will never fail, until death, the instruction to be green.

And here are the willows, the first to pronounce a new year . . .

— Mary Oliver, American poet

The United Nations has declared 2011 as the International Year of Forests, to celebrate trees. Even the Queen of England got her hands in the dirt, launching a project in honor of her 2012 diamond jubilee to plant 6 million trees throughout the United Kingdom. In New York City, Bette Midler works tirelessly to green urban spaces with trees. In Southwest Florida, our local TREE Foundation is planting a thousand trees.

Whether large- or small-scale, tree planting offers a legacy to future generations, especially during this Year of the Forests.

All of us depend upon trees for life on Earth. According to the United Nations, forests contribute significantly to sustainable development, poverty eradication and human health. Several generations ago, trees covered approximately 10 billion acres (or 30 percent) of our planet's land area. Satellite images estimate that over 80 percent of this green canopy blanketing Earth has been destroyed by human activities. And the remaining 20 percent faces enormous pressures of degradation, with an area the size of New York City (approximately 200,000 acres) removed every day. Some countries fare worse than others: Madagascar has cleared almost 95 percent of its forests, whereas forests in Suriname remain almost intact.

Why are forests so important that the United Nations is highlighting them? Forests provide what scientists call "ecosystem services." These essential services not

ACTIVITY

TREE Foundation is giving away live oaks to celebrate its 10th anniversary (treefoundation.org). Contact Laura Peters (lpeters@comcast.net) by June 1 to plant trees in your school grounds, road median or Southwest Florida community.

only keep us alive, but trees provide their free benefits even as we sleep. Forest services include water conservation, energy production, medicines, climate control, building materials, shade, home to countless species, soil stability, carbon storage, pollution offset and cultural heritage for millions of people. When forests disappear, people experience water shortages, soil erosion, loss of pollinators and extinction of species that provided food and livelihoods.

But the good news is that many citizens, towns, states, countries, and businesses are planting trees! More than 10 million acres of forest are planted each year. Scientific studies indicate, however, that plantations and/or tree saplings do not necessarily provide the same services as primary (or original) forests. Pine plantations do not house as many species as primary forests; and tropical rain forests — if cleared — take hundreds, even thousands, of years to regenerate from seeds. Forest cover remains controversial, however, because people do not agree how to define a forest. Should we count plantations, even though they are not natural? Should we include nurseries with seedlings? Can we include areas where selective cutting has reduced the forest canopy by half?

All of these issues are part of conversations during the Year of the Forest, where both local and global forest conservation policies are under scrutiny.

Scientists still have a lot to learn about the machinery of forests — how do these "factories" produce oxygen, store carbon, and support millions of other creatures living in their foliage?

In Peru, a quarter-mile long walkway through the treetops provides scientists with unprecedented observations of orchids, beetles, macaws and other biodiversity high in the jungle. In Brazil, the Amazonian Tall Tower Observatory will soar almost 1,000 feet above the forest, to provide long-term monitoring of forest respiration and other important processes. Such research programs are critical to ensure the health of our planet, and the future of life on Earth.

Celebrate the International year of the Forest with your own activities:

1. Plant a tree.
2. Take a child walking in the woods.
3. Buy shade-grown coffee.
4. Advocate for sustainable timber.
5. Promote tree canopies in your neighborhood.
6. Buy a book about trees to educate yourself and others.

May the Forests be with you!

Meg Lowman, longtime Florida scientist/educator, is establishing the Nature Research Center at the North Carolina Museum of Natural Sciences, with a mission to engage the public. Her column appears monthly



MEG LOWMAN
NATURE'S SECRETS



Georgia's Cumberland Island National Seashore is an example of a pristine

9 May 2011 Florida

Turning termites into lunch

"Most children have a bug period."

— E.O. Wilson

At the National University of Laos in Vientiane, a new demonstration farm is under way that could change our conventional views of agriculture. Funded by the United Nations Food and Agriculture Organization, this farm features "mini-livestock," including crickets, mealworms, weaver ants and palm weevils. "Entomophagy" (otherwise known as eating insects) is the most sustainable diet for consumers who want a small energy footprint, and a high protein/low cholesterol intake.



MEG
LOWMAN
NATURE'S
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Rearing insects for large-scale farming is a cutting-edge global initiative that seeks to feed the anticipated 8 billion people who will inhabit Earth in the year 2030.

Halfway around the world, the Oxford Museum of Natural History recently hosted an entomophagy banquet, where BBC media stars mingled with ambassadors, munching salted mealworms and locusts dipped in chocolate, to raise awareness of rain forest conservation.

At the North Carolina Museum of Natural Sciences in Raleigh, the Critter Cook-Off at the annual Bug Fest every September attracts more than 25,000 curious and daring bug-tasters.

Certain insects (and other arthropod cousins) are surprisingly healthy to consume. In Australia, the Aboriginals relish Witchetty grubs. Termite heads offer a tasty on-the-go-snack in Uganda. China boasts multiple arthropod favorites: raw scorpion, cockroach shish kabobs, or fried crickets. In the Peruvian Amazon, beetle grubs from rotting palm logs are often eaten raw as a "sushi of the forest" (but don't forget to nip the heads off first). Tarantula tempura and stir-fried dragonflies are available in many Indonesian markets.

Pound for pound, insects are a very sustainable diet, since they do not require ex-

pensive petroleum-based fertilizers like many grain crops, nor do they need vast swaths of cleared pastureland to graze.

Some restaurants feature "aquatic bugs" on the menu — crawfish or lobsters — which are succulent relatives of terrestrial arthropods. They are popular choices, even though their terrestrial counterparts are not usually relished. But in the near future, terrestrial "bugs" will likely become an important sustainable, healthy food choice. A grasshopper contains more than 20 percent protein but no fat; 100 grams of giant silkworm larvae contain 100 percent daily requirements of copper, zinc, iron, thiamin and riboflavin. Best of all, silkworms require approximately seven times less food than cattle and almost no water, and emit no methane (aka, cow flatulence) into the atmosphere. Even more sustainable, what if we could turn our garden pests into lunch? This truly represents "locavory" at its best!

Officially, Americans already eat more bugs than we realize. Permissible levels of insect body parts allowed in processed foods are regulated by the federal government. Aphids may be in your frozen broccoli, and a maggot may accompany your tomato juice!

Figs come with their own bountiful supply of wasp body parts, as a result of pollination activities that often render the wasp entombed inside the ripe fruits. More than a dozen fruit-fly eggs can be acceptable in every cup of raisins. Peanut butter can legally contain 136 insect parts per pound. A healthy, albeit legal, dose of arthropod wings or legs may "enhance" most fast foods!

So, next time you accidentally inhale a gnat, don't panic and choke — add Tabasco sauce, savor the texture, and chew carefully. You may be taste-testing the sustainable diet of the future!

Meg Lowman, longtime Florida scientist/educator, is establishing the Nature Research Center at the North Carolina Museum of Natural Sciences, with a mission to engage the public. Her column appears monthly on these pages. Web: www.canopymeg.com

TREE'S Website

TREE FOUNDATION

TREE RESEARCH, EXPLORATION & EDUCATION

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RESEARCH

RESOURCES

FACTOIDS

MULTIMEDIA

EVENTS

Pine View Weevil Watchers



Pine View Third Grade Class
Osprey, Florida

Instructor: Denise Fugere

THE MISSION



An evil weevil (*Metamasius callizona*) has spread across south Florida, and along the way, has been eating up Florida's native bromeliads! The weevil must be brought under control; and to do that, we need to know what the weevil and the bromeliads are doing, out in the real world.

So your mission is to go to Myakka River State Park and

Search

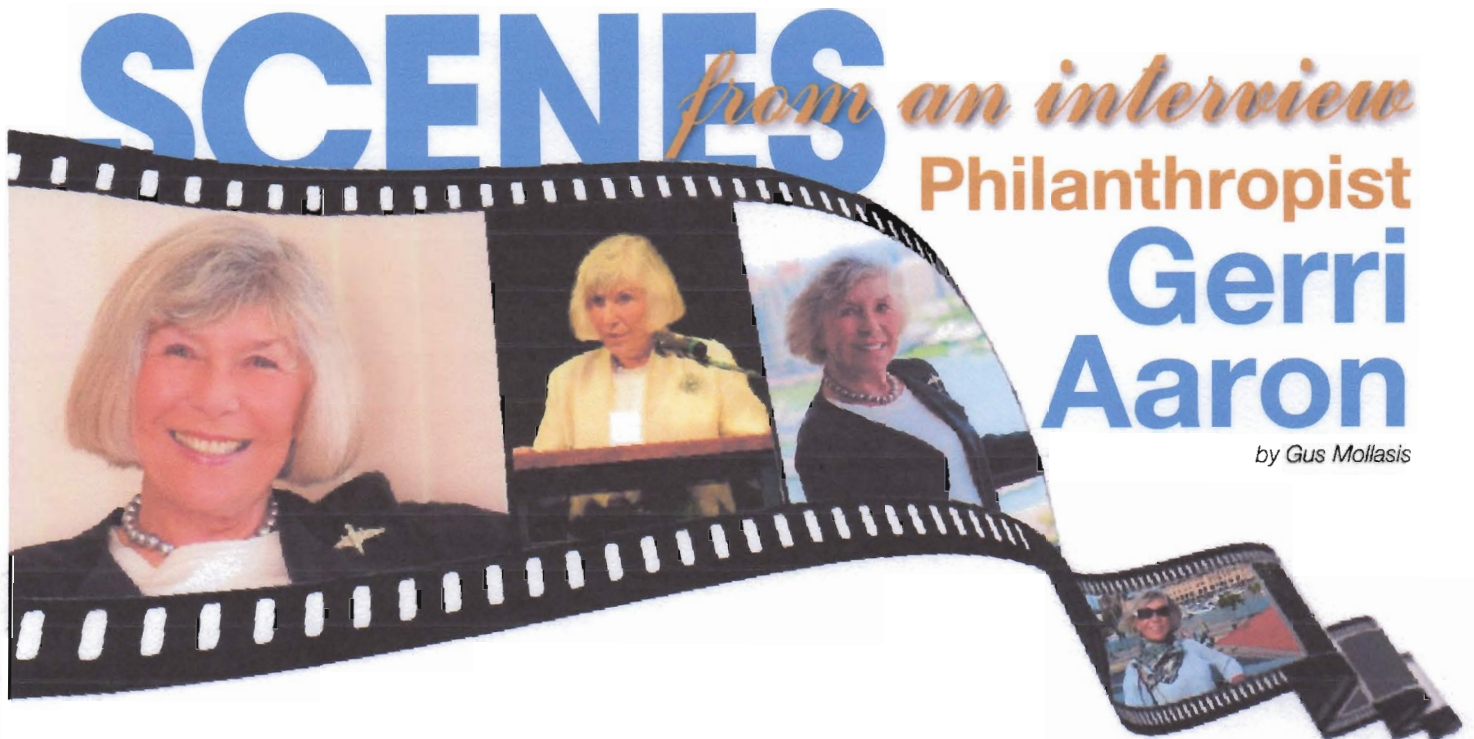
Pages

- Canopy Methods
- Pine View Weevil Watchers
- Sloths

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50'



She was born in Philadelphia, a city kid, who yearned for a day of fresh air in the country to take in nature and just play outside. Today, many years later, she takes in the beauty that surrounds her with the eyes and wonderment of a child, while continuing a full life of living and giving to the arts and to her community. She is a giver with a capital G, and it's easier to name the causes she's not involved with than the ones she is. Because she's opened her very big heart to Sarasota, we can all breathe a little easier. Recently I sat down with Gerri Aaron and we took a look at some of the scenes from an interview of her life.

Where were you born?

I was born in Philadelphia, and I still maintain a residence there. A lot of my family is still up there.

What was your childhood like?

I had an interesting childhood. I had marvelous parents. My father and I were extremely close. He was a very unusual man – a brilliant lawyer and a musician who was a charming intellectual and a very funny man. My mother was a good mother. She was a good person, but my relationship with my father was closer. I had a sister who was three years younger, but we were not very close growing up. We became closer as we both got married and became interested in our families.

Describe your perfect day as a child?

I went to summer camp in the mountains, in the Poconos at Camp Lindenmare. I loved getting away from home and being at summer camp. I really expressed myself generously and explicitly in sports and in friendship and developed into somewhat of a leader at summer camp. I attended camp between the ages of

12 and 18. It was the best time of my life.

How did you find Sarasota?

I came down here with my husband in the early 1970s while he was on business. And I remember telling him when we retire, this is it. This is where I want to be. So I always knew that I loved Sarasota. I consider myself a Sarasotan. Sarasota is my home.

What was it about Sarasota that so attracted you?

I loved the area. The big buildings weren't here. There was no such thing as condos. Longboat Key was very lonely and remote. In terms of the distance, it just seemed far from Sarasota. I loved little Sarasota, which was a tiny low key place. I loved the feeling down here, the complexion and the beauty of it. I wasn't interested in anything but having fun then. I played tennis, and went to the Asolo Repertory Theatre every night.

Define a Giver?

A giver is somebody who has the feeling of doing something that benefits others – philanthropy. When people ask me what I do, I say

TREE Website has both Spanish and (now) Amharic sections!

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የደን መጨፍጨፍ የሃገራችንን ህልውና ሊፈታተኑ የቻሉ የሥነ ምህዳር አደጋዎች እንዲከሰቱ ዐቢይ ሚና ተጫውቷል። ደኖች ሲመነጠሩ ተራሮች፣ ኮረብቶችንና አምባዎች ተራቆቱ። በተከሎቻቸው አማካይነት የፀሃይን ሃይል በመጠቀም ምግብ የመሥራት ከህሎታቸው ተረት ሆነ። በምግብ ስንሰለት ቁርኝቱ ውስጥ ሊጫወቱ ይገባ የነበረውን ምርታማነት እስከወዳኛው አጡትና የጨረቃ መሬት መሰሉ። ይህም የሆነበት ምክንያት በውሃ ሃይል ተሸርሽሮ ከአካባቢው የሚጠፋው የአፈር መጠን ተፈጥሮ ከሚተካው በእጅጉ ያነሰ በመሆኑ ነው። በየዓመቱ ለጎርፍ ስለባ የሚሆነው ለም አፈር 2 ቢሊዮን ቶን እንደሚደርስ ሲገመት አገራችን ከሃይቲ ቀጥሎ ከፍተኛ ሥነ ምህዳራዊ ቀውስ የገጠማት አገር ተብላ እንድትፈረጅ አድርጓታል።

የተለያዩ በኢትዮጵያ የአካባቢ ገጽታ ላይ ተመርኩዘው የተካሄዱ ጥናቶችን በመፈተሽና ከራሴ ልምድ በመነሳት አሁን ኢትዮጵያ የገጠማት ሥነ ምህዳራዊ ቀውስ የተከሰተው በማወቅና ባለማወቅ መካከል ባለው ልዩነት ሳይሆን አደጋውን ለመቀነስ ብሎም ለማስወገድ ዕርምጃ በመውሰድና ባለመውሰድ መካከል በተፈጠረው ሰፊ ልዩነት ነው የሚል ግምት አለኝ።

ይህ በኢትዮጵያ ላይ ያንገጥበበውን የሥነ ምህዳር ቀውስ መከላከል ብሎም ማስወገድ ይቻላል ወይ? ለሚለው ጥያቄ ምላሽ ለመስጠት የሚቻለው ችግሩን ለመፍታት በምንወስደው ርምጃ ላይ ተንተርሶ ነው። በተወሰኑ የህብረተሰብ ክፍሎች የተወሰዱ ርምጃዎች አመርቂ ውጤት ያስመዘገቡበት ሁኔታ እንዳለ ይስተዋላል። ለምሳሌ የኢትዮጵያ አርቶዶክስ ቤ/ክርስቲያን ለዘመናት ተንከባከባ የያዘቻቸው ደኖች በጉግል ማፕ አማካይነት በተራቆተው የአገሪቱ ክፍል መካከል አረንጓዴ ግርማ ሞገስ ተላብሰው በግልጽ ይታያሉ።

