



TEACHERS AND RESEARCHERS
EXPLORING AND COLLABORATING

Welcome to *PolarConnect*

With Elizabeth Eubanks and the
expedition team in Costa Rica!

Wednesday 17 October 2012

9:30a.m. AKDT

(10:30am PDT, 11:30 am MDT, 12:30 pm CDT, 1:30 pm EDT)

Blackboard collaborate

Sides will be shown here

Exit the presentation

Click to Talk, Unclick to finish talking

Raise your hand to ask a question

Share with emoticons

List of all participants

Chat with one person or the entire group

The screenshot displays the Blackboard Collaborate interface. On the right, a presentation slide is shown with the text "Welcome to Blackboard Collaborate" and the ARCUS logo (Arctic Research Consortium of the United States). On the left, a control sidebar contains several sections: a "Talk" section with a microphone icon, a "Hand" section with two red hand icons, an "Emoticons" section, a "Participants" list, and a "Chat" section. Arrows from the text labels on the left point to these specific controls in the sidebar.

Please Note:

- Participants using the telephone can mute/unmute by **pressing *6** on the phone.
- Today's event will be recorded and archived.

Participant Introductions

Please type in the chat box:

- ✓ Name
- ✓ Affiliation (School, Institution, Etc.)
- ✓ The number of students and adults participating with you in the same location



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What is PolarTREC?

PolarTREC is a professional development experience in which K-12 teachers are paired with researchers for 2-6 week research experiences in the polar regions.

From 2010-2013, nearly 50 teachers from around the United States will join scientists in the Arctic and Antarctica to learn about science, the polar regions, and to share what they have learned with their students and communities.

Connecting the Poles to Costa Rica



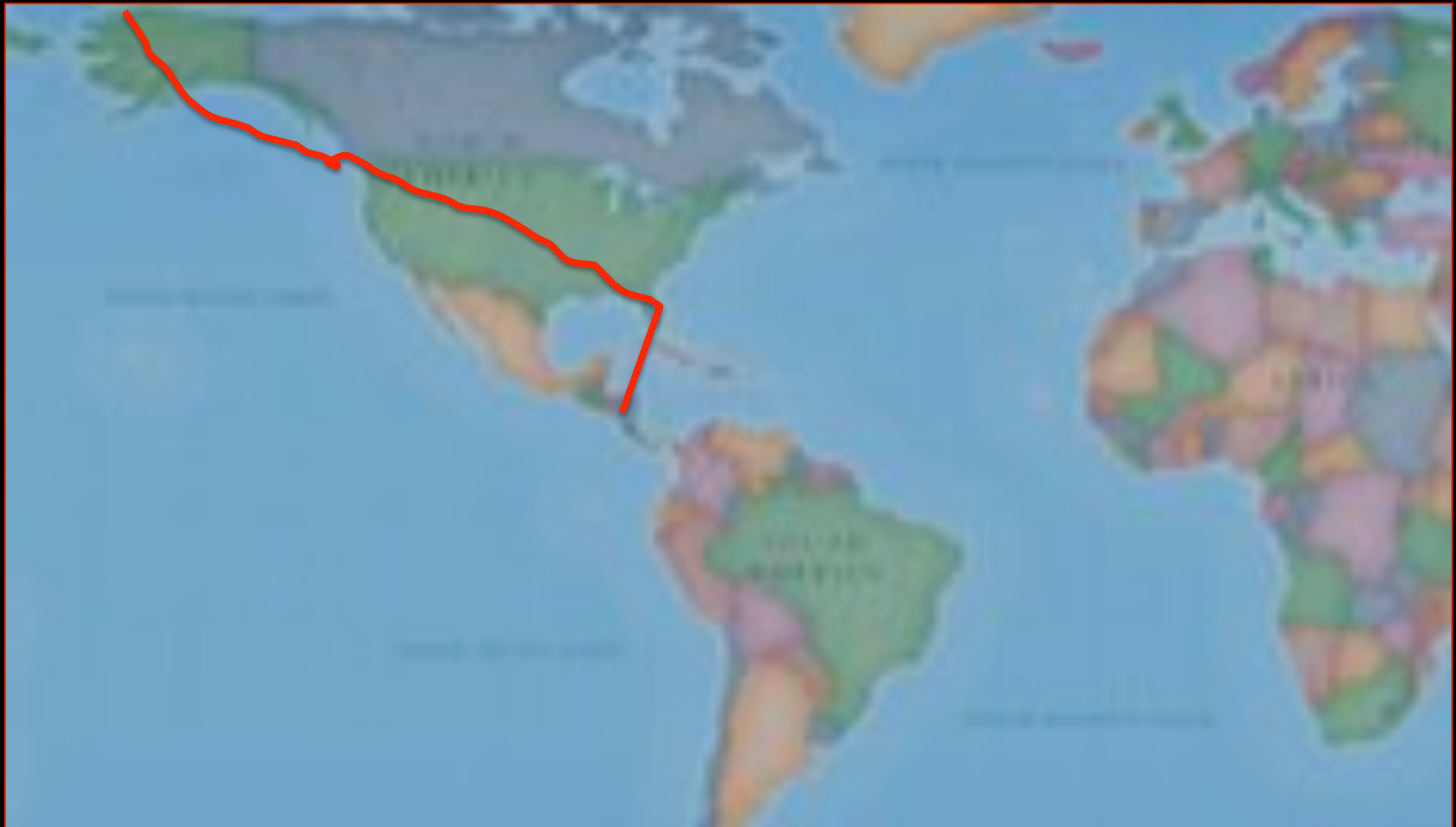
Elizabeth Eubanks
St. Mark Catholic
School
Boynton Beach Florida

Dr. Steve Oberbauer
Florida International
University Miami Florida

PolarTREC alumni 2008



From Barrow, Alaska
to (stop in Florida)
to Sarapiquí, Costa Rica



I am staying at place called La Selva Biological Station in Sarapiquí, Costa Rica

- The field station is run by the
Organization for Tropical Studies



Daniella

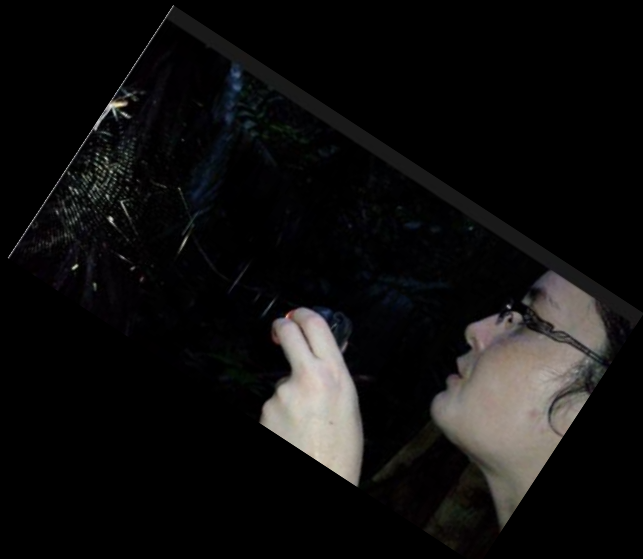


La Selva Biological Station

Sra. Shaheen



I have spent time with many researchers of La Selva





And I have been introduced to many new species



Green honey creeper	Spiny orb weaver	Variagated squirrel
Golden hooded Tanager	Crablike spiny orb weaver	Tropical kingbird
Summer tanager	Chestnut mandibleToucan	Yellow warbler
Black Vultures	Pale billed woodpecker	Melodious black bird call
Machaca fish	Grassqwit	White tailed kite- flight
Black headed	Ground seedeaters	Variable seed eater
- tody flycatcher	Ani	Blue black grassqwit
Black cowled oriole	blue black grassqwit	Yellow face grassqwit
Rufous tailed Hummingbird	laughing falcon	Ruddy woodcreeper
Bird eating snake	Chestnut billed toucan	Yellow hooded tanager
Two toed sloth	wood creeper	Vulture
Litter toad	White crowned parrot	Boat bill flycatcher
Army ants	yellow warbler	red legged honey creeper
Broad billed motmot	Chestnut woodpecker	Straked headed wood creeper
Crested guan	Long tailed orat	Northern rough winged swallow
Great curassow	Red eyed vireo	Broad Wong hawk
Squirrel cuckoo	White red head	Southern rough winged swallow
Collard Peccary	Swainson thrush	Swainsons Hawk
Strawberry poison arrow frog	Blackcapped tityra	Buffed throated saltatater
Spotted monkey	Black cheeked woodpecker	Clay coated robin
Howler monkey	Male snow cotinga	Dacuis
Pig nosed lizard?	Resident peewee	House wren call
Rufous mourner	Bronzed cowbird	Scarlet rumped
Crocodile	Olive footed parrots	tanager
Olive parrot	Crimson fronted parrot	Guapote or cicclid
		Crested Oropendola
		Golden orb weaver
		Glossophaga bat
		Argyrodes- thieves

Kingdom Anamalia

#1

Possible
Hawkmoth??

CRAZY

MOST BIZARRE CREATURE...



Back side of critter
Looks like a
mean snake

Front side of critter
Looks like poop



Dr. Steve Oberbauer

Florida International University



La Selva Biological Station run by the Organization for Tropical Studies

Trees Dr. O- planted in 1979



La Selva Biological Station

La Selva Biological Station (Estación Biológica La Selva) was originally created for scientific purposes in 1954. Since then it has been converted into a leading research center for Costa Rican ecology and has been opened to the public. Providing some of the most immaculate primary tropical rainforest available, the well-kept trail system extends over 31 miles (50 km) and provides visitors the opportunity of exploring La Selva with a knowledgeable guide.



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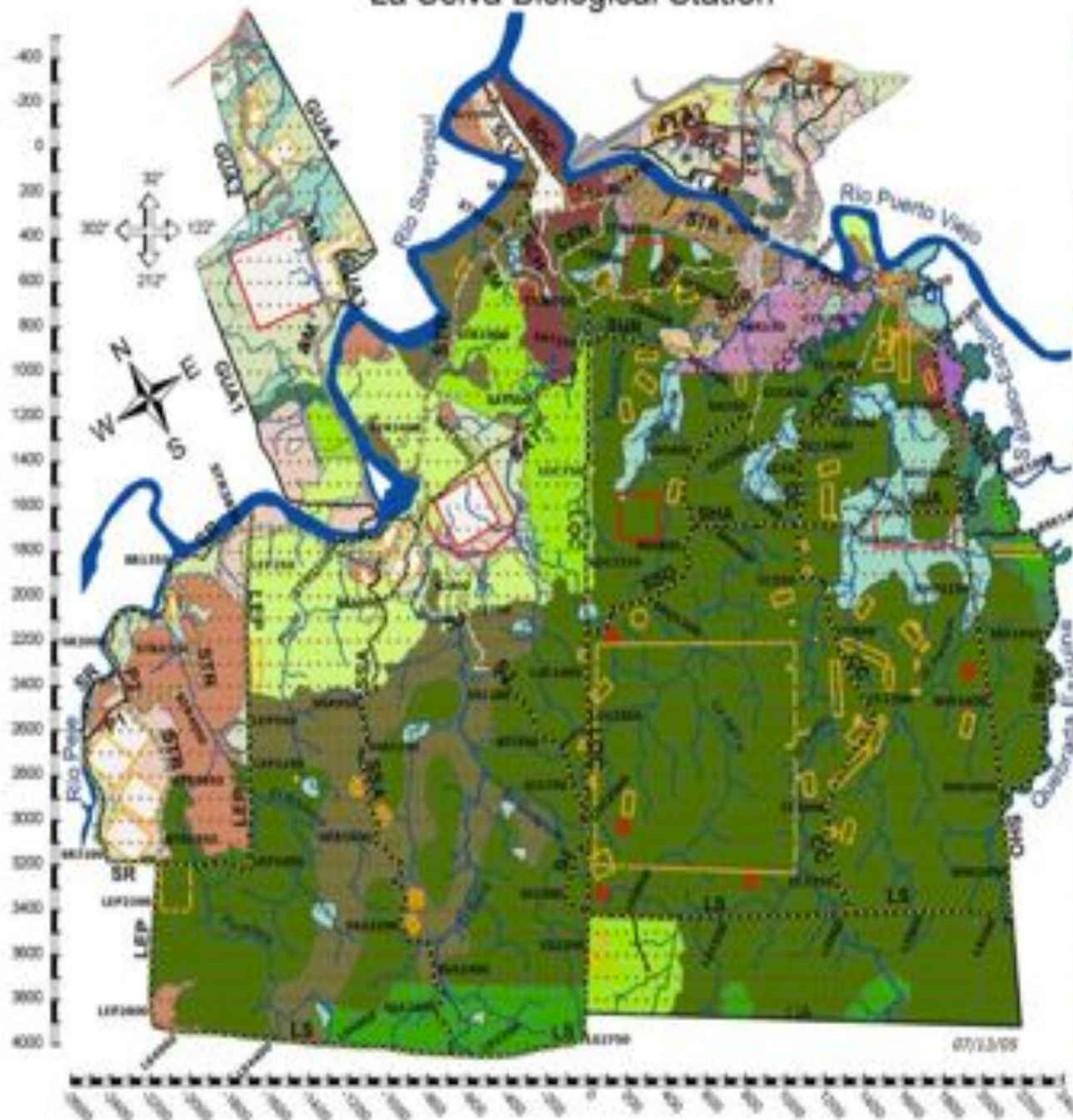
Home -> OTS History

Articles on OTS History, Historical Documents, and the Obituaries of OTS Founders and other Personages Involved with OTS

1. 1957 May - Report on proposed center for tropical studies, issued by the University of Michigan. Letter by Dr. Theodore H. Hubbell, Chairman.
2. 1964 December 18 - Letter from T. Hubbell, University of Michigan to Botany Department, Duke University on importance of OTS.
3. 1967 Article on The Organization for Tropical Studies by Theodore Hubbell, University of Michigan. BioScience, Vol. 7, No. 4, pp 236-240.
4. 1967 January 17 - Letter from James Bethel to Donald Stone on state of OTS consortium w attachment.
5. 1967 November 24 - Report to Provost, Duke University, from Donald Stone on OTS November 11-12, 1967 Meeting.
6. 1970 May 21 - packet to OTS Executive Committee from Donald Stone on Duke University accrediting OTS graduate courses.
7. 1973, March 21 - Letter from Donald Stone requesting scholarship support from Duke due to loss of NSF funding for grad courses.
8. 1988 Article on The Organization for Tropical Studies, A Success Story in Graduate Training and Research, by Donald Stone, Trop. Forestry.

Dr. Oberbauer is the chair
of the advisory board for OTS

La Selva Biological Station



Organization for Tropical Studies



- Buildings
 - Rivers
 - Non-restricted Access
 - Semi-restricted Access
 - Restricted Access
 - Tubes
 - Trail Signs
 - Concrete Trail
 - Gravel Road
 - Paved Road
 - Dirt Trail
- Trail Code**
- AM = Avenida Main
 - CC = Camino Central
 - CCA = Camino Carretera
 - CCC = Camino Circular Central
 - CCL = Camino Circular Legajo
 - CES = Camino Experimental Sur
 - LEP = Linder El Peje
 - LR = Linder Las Riberas
 - LD = Linder Occidental
 - LS = Linder Sur
 - SR = Sendero Sur
 - SAZ = Sendero Antares-Zampazo
 - SC = Sendero Casas
 - SCN = Sendero La Chanchera
 - SEDR = Sendero Estrella-Rio
 - SH = Sendero Harbor
 - SHD = Sendero HotSpring
 - SI = Sendero Jaguar
 - SLV = Sendero Los Vegas
 - SM = Sendero Muralista
 - SOC = Sendero Occidental
 - SOR = Sendero Oriental
 - SR = Sendero Riberas
 - SSA = Sendero Sarapiquí
 - SSB = Sendero Sabana-Exuma
 - SSD = Sendero Surwede
 - STR = Sendero Tree Rise
 - SLA = Sendero Swamp
 - SR = Sendero Sur
- Land Use**
- Abandoned Agroforestry
 - Arboretum
 - Forested Swamps
 - Open Swamps
 - Developed Areas
 - Selectively logged Forests
 - Old-growth Forest
 - Secondary Forests 1-12 yrs
 - Secondary Forests 13-17 yrs
 - Secondary Forests 18-24 yrs
 - Secondary Forests 25-29 yrs
 - Secondary Forests 30-34 yrs
 - Successional Plots
 - Shaded Feature
 - Open Feature
 - Abandoned Plantations
 - Current Plantations
 - Ecological Reserve



Interbasin Flow

DICs DOCs CO₂



Weir Project

The Towers

View from
Carbano Tower

From tower 3
to tower 2



Central Tower/
Oberbauer Tower



On tower #3

Most important “Dr. O” fell in LOVE
here at La Selva...



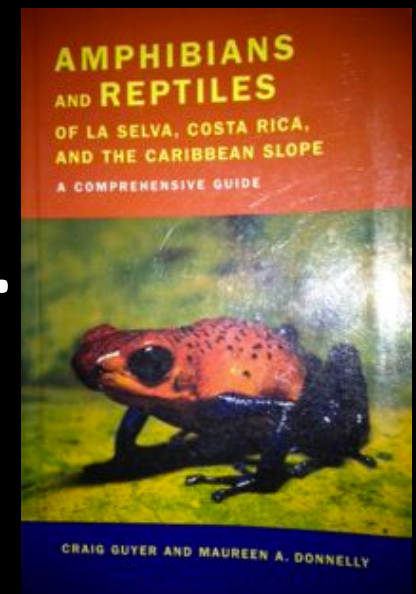
His wife calls it

JUNGLE LOVE

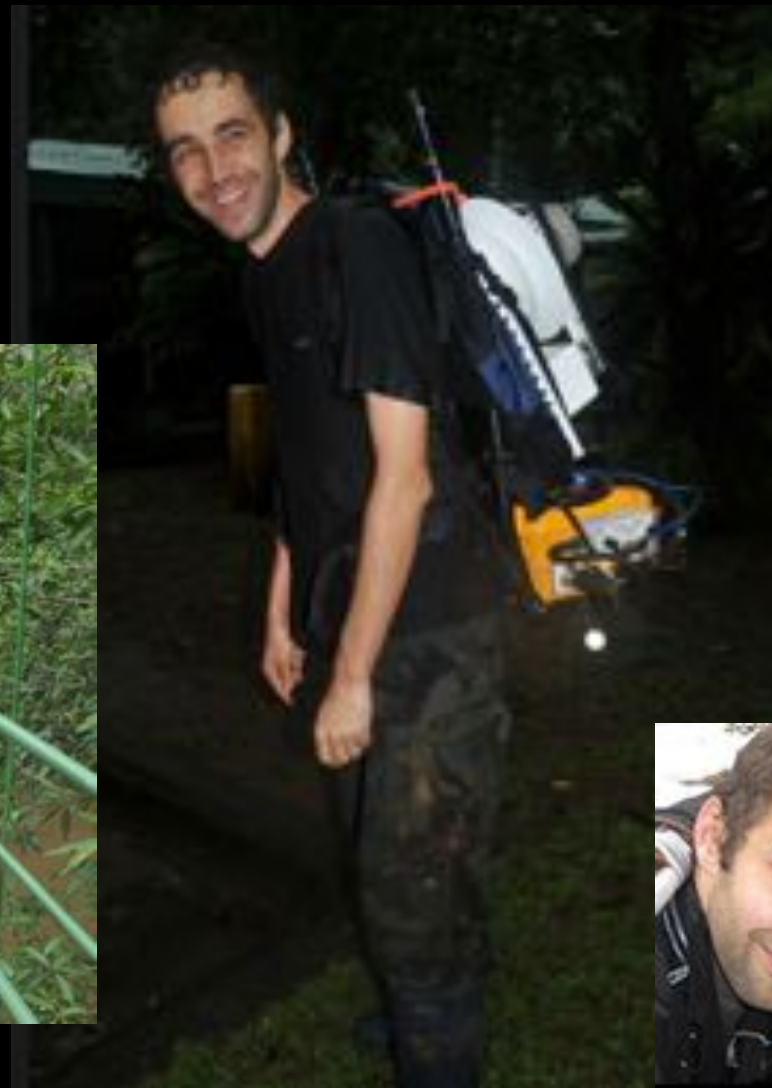
- She, “MO” is also a scientist.

Mo studies reptiles

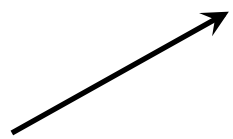
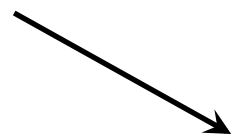
- she even wrote a book!



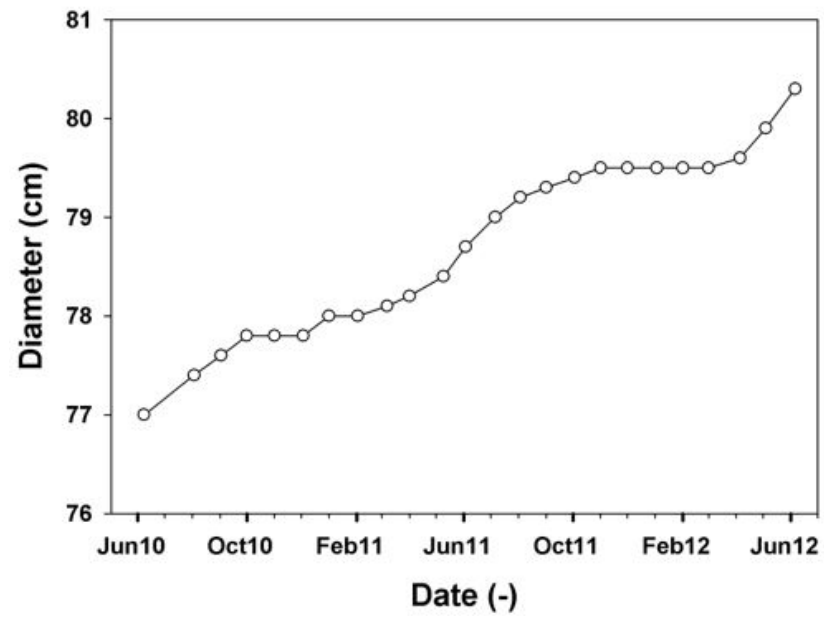
Meet Dr. Diego Dierick Florida International University



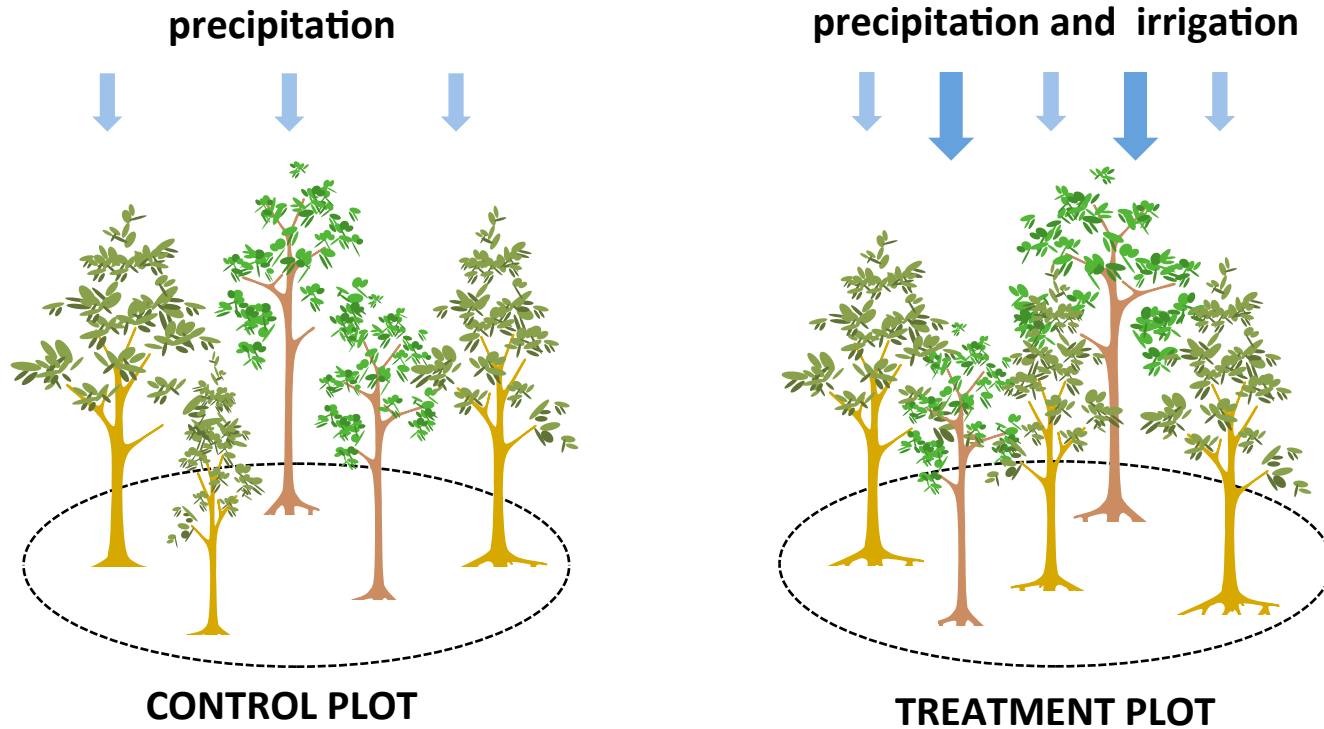
Project VERANO



Tree growth vs. time



Project VERANO



- 3 sites in primary forest with control and treatment plot
- circular plots of 900 m² or about 25 large trees (DBH > 10cm)
- irrigation from Jan-Apr in treatment plots

Project VERANO



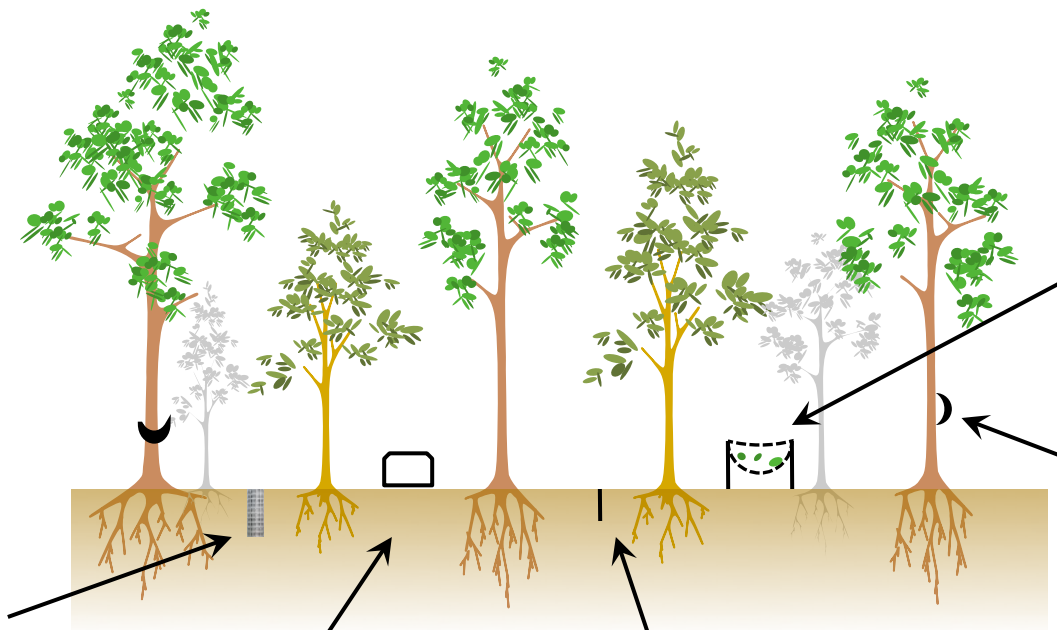
- irrigation at 1 or 2 day intervals during the dry season
- 10 mm day⁻¹ or about 9000 litres per plot day⁻¹

Project VERANO

dendrometers



root growth



soil respiration



soil humidity



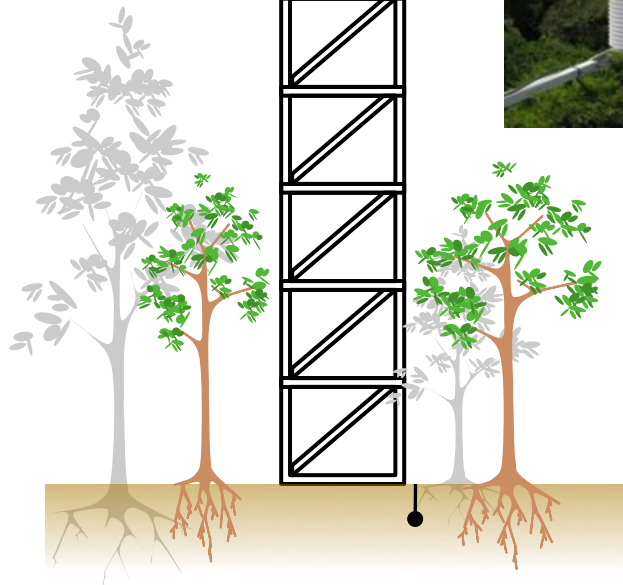
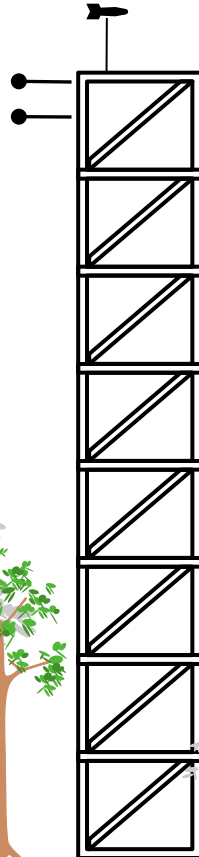
litter trap



sap flux



Project VERANO



- canopy towers give detailed meteorological data

- light
- temperature
- humidity
- wind
- etc...

- have a system to measure CO₂ uptake by the forest

MEGA SPECIAL Thanks to PolarTREC



Janet
and Sarah 😊

Dr. Steve Oberbauer



and all the folks
at La Selva/OTS



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Questions

During the Presentation:

- Type your question in the text chat box

At the End of the Presentation:

- Raise your hand with the “hand button”.
- PolarTREC staff will call on you.
- Speak loud and clear and directly into the phone to ask your question.

Click on the Talk button to speak.

Unclick when you are done.



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Teachers: Join PolarTREC!

www.polartrec.com/about/join

Every teacher can participate in different ways:

- **Following Expeditions**
- **Participate in PolarConnect Events**
- **Join the Polar Education Email List**
- **Take Online Professional Development Courses**
- **Become a PolarTREC Teacher!**



TEACHERS AND RESEARCHERS
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Upcoming Events

Watch for and register for upcoming events at www.polartrec.com!



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Thank You!

An archive of the event will be available shortly.
<http://www.polartrac.com/polar-connect/archive>

