



# SMITHSONIAN CONSERVATION SCIENCE IN LATIN AMERICA & THE CARIBBEAN

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Smithsonian Conservation Biology Institute

PEER Latin America & Caribbean Forum  
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Smithsonian Institution

# THE SMITHSONIAN INSTITUTION

World's largest museum and research complex

*Mission: The increase and diffusion of knowledge*

- 9 research centers
- 19 museums
- 175+ affiliate museums
- The National Zoo
- 21 libraries & archives
- 137 million museum objects & specimens
- 500 scientists
- 500+ fellows
- 6,000+ employees
- 6,500+ volunteers
- \$1.1B Budget
- 28M visits in 2014
- 99M unique online visitors in 2014





**National  
Zoological Park**



**Smithsonian  
Environmental  
Research Center**



**Smithsonian  
Conservation  
Biology Institute**



**Smithsonian  
Tropical Research  
Institute**



**National Museum of  
Natural History**

# SMITHSONIAN RESEARCH AND CONSERVATION PROGRAM SAMPLING

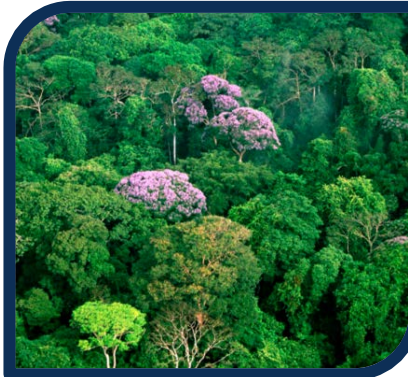
MarineGEO



Wildlife Health



Biodiversity Mapping



CTFS-ForestGEO



Climate Change Research

# SMITHSONIAN TROPICAL RESEARCH INSTITUTE (STRI)

- 1923: a biological station on Barro Colorado Island, Panama
- Facilities provide opportunities for long-term ecological studies
- Programs:
  - Center for Tropical Forest Science (CTFS)
  - Center for Tropical Paleoecology and Archaeology
  - Panama Amphibian Rescue and Conservation Project
- Marine laboratories on both coasts of Panama



*Andinobates geminisae*

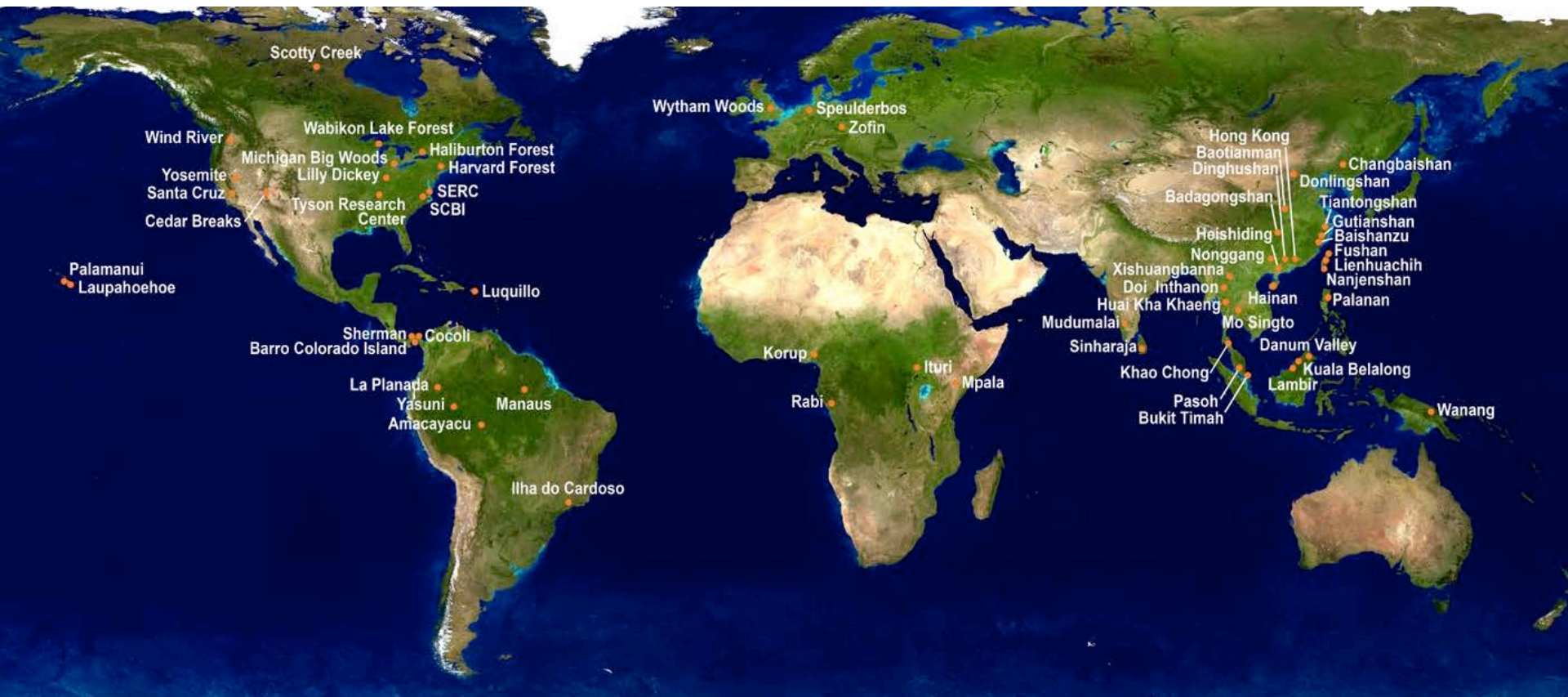
# SMITHSONIAN TROPICAL RESEARCH INSTITUTE



# CENTER FOR TROPICAL FOREST SCIENCE–FORESTGEO

Taking the pulse of the planet for more than 30 years

- 61 forest plots in 24 countries
- 6 million trees of 10,000 species



# CTFS-FORESTGEO

- Builds local science research capacity
- Link into a global network of data and analysis for improved decision-making
- Measures carbon sequestration and other ecosystem services
- Promotes international collaborations
- 2014: 41 scientific articles and two book chapters



ForestGEO plot / BCI, Panama

ForestGEO plot / Manaus, Brazil



**HTTP://WWW.FORESTGEO.SI.EDU/**




*ForestGeo*

*Center for Tropical Forest Science*

## **Plot Data Access Form**

**CTFS-ForestGeo would like to make the forest dynamics plots data available to researchers, scientists, and students. Maintaining plots requires enormous field effort and ongoing financial commitments, and therefore ask that the principal investigators of the plots, as well as their funding agencies, be acknowledged. We ask that you fill out an online form describing briefly why and how you will be using the data, after accepting the terms and conditions for data use.**

**Select the research site you would like access to *forest plot* data from:**

AguaSalud 


Submit

**Select the research site you would like access to *dendrometer* data from:**

bci 

Submit

**Select the research site you would like access to *species trait* data from:**

bci 

Submit

# MARINEGEO

To take the pulse of the world's coastal marine environments

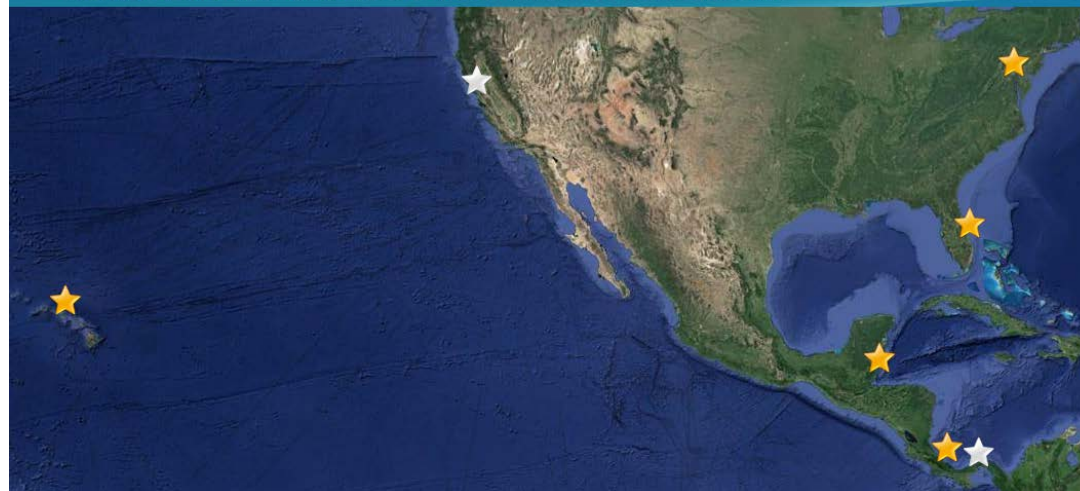
- Most abundant marine and highest human effects and demands
- 75% of the world's population lives on or within 100 miles of a coastline
- 50% of coral reefs, mangrove forests and a quarter of global seagrass meadows are gone
- 75% fisheries are at or beyond sustainable harvest



# MARINEGEO

- Long-term observations on physical characteristics and biodiversity
- Provide recommendations for sustaining and restoring these ecosystems
- Capacity development for scientists and practitioners
- Integrates science outcomes into management for global and local solutions

## MarineGEO & Tennenbaum Marine Observatories Network



Bocas del Toro / MarineGEO field station

# SPATIAL ECOLOGY OF MARINE PROTECTED AREAS

- Coastal ecosystems function in space and time
- Integrative ecological, social and economic approach
- Inform decision makers for marine management at multiple scales
- Focus on tropical marine resources and artisanal and industrial fisheries of Central and South America



Lead Smithsonian researcher:  
Dr. Steven Box, Smithsonian Research Station at  
Fort Pierce

# CLIMATE CHANGE RESEARCH

From a wide range of disciplines drawing on our extensive collections and field sites

- Paleobotany collection to predict effects of climate change on biodiversity
- Impact of climate change on sensitive populations (e.g. Arctic peoples)
- Methods to study the role of forests in carbon capture and storage

NMNH Scott Wing in Wyoming, showing an image of what the basin looked like 50 million years ago



# GLOBAL GENOME INITIATIVE & BARCODE OF LIFE

Global network of biorepositories and research organizations to:

- Collect, barcode, and cryo-preserve a sample of Earth's genomic diversity
- Make collections available for research
- Increase computational support and technological capacity to sequence genomes
- Train next generation of genomics researchers in biodiversity science



Photo: Donald Hurlbert, Smithsonian Institution

## WILDLIFE HEALTH RESEARCH & CAPACITY-BUILDING

To maintain health of endangered species and study relationships between wildlife and human health

- Builds skills of local veterinarians, park staff and pathologists to collect samples
- Connects into global network of health workers to prevent infectious diseases
- Sets links between biodiversity loss and increased health risks
- Helps build national wildlife and necropsy labs



Smithsonian researcher  
studying the Przewalski horse

# BIODIVERSITY RESEARCH & MONITORING

## Programs in Gabon & Peru

- Science-based biodiversity research and monitoring
- Determine drivers and risks of land use change
- Best practices to avoid, minimize, restore, and offset impacts
- Engage governments, private sector and local communities in long-term solutions for biodiversity conservation and sustainable development

Monitoring biodiversity along the  
LNV pipeline in Peru







## *Opportunities for collaboration with the Smithsonian*

- 2013 – SI signed an MOU with USAID
- 2015 – First year as a collaborating institution for PEER
- 13 inquires advanced to proposal stage, including 4 from Central & South America (fisheries, community-based wildlife management, climate change impact assessment)
- We welcome new collaborations!



# THANK YOU



## FOR MORE INFORMATION:

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