



April 2008

Media only: Monica Alvarado (011) 507-212-8023 (Panama) or (703) 487-3772 ext. 8023
Beth King (011) 507-212-8216 (Panama) or (703) 487-3772 ext. 8216

Media Web site: <http://www.stri.org>

Smithsonian Tropical Research Institute Fact Sheet

The Smithsonian Tropical Research Institute is the world's premier tropical biology research institute, dedicated to increasing the understanding of the past, present and future of tropical biodiversity and its relevance to human welfare.

STRI's focus is curiosity-driven basic research conducted primarily in tropical forest and coral reef ecosystems. STRI scientists discover new organisms, test scientific explanations for ecological adaptation and evolutionary innovation, develop methods to restore degraded ecosystems, train students and promote conservation of tropical ecosystems.

Headquartered in the Republic of Panama, STRI provides a comprehensive tropical sciences library; a network of research stations in the American tropics and a station in Kenya, protected under international treaties and equipped for sophisticated studies; a 96-foot oceangoing research vessel and two construction-crane canopy access systems.

STRI also coordinates the Center for Tropical Forest Science Observatories, a global network of more than 20 tropical forest research and monitoring stations in Asia, Africa and Latin America.

History

STRI's roots in Panama can be traced to President Theodore Roosevelt's mandate to "Make the dirt fly!" By 1904, entomologists were working to understand the biology of malaria and yellow fever that had crippled French canal building efforts. In 1923, a rustic field station was constructed on Barro Colorado Island in the Panama Canal waterway. The Smithsonian was one of several organizations participating in research there. In 1946, BCI became a bureau of the Smithsonian dedicated to conducting long-term studies in tropical biology. The organization changed its name to the Smithsonian Tropical Research Institute in 1966 and expanded by establishing field stations throughout Panama, including marine science laboratories on both coasts.

Budget and Staff

STRI's fiscal year 2008 operating budget is approximately \$19 million. Research at STRI is conducted by an international group of 35 scientists and a full-time staff of 290 employees.

Scientific Research

Tropical Diversity and Its Origins—Tropical biodiversity is at first bewildering due to the astronomical number of species. Recent sampling of insects in forest canopies, for example, suggests that the number of species is perhaps 10 million or more. Scientists do not know the biology of most of them; yet they may harbor potential pest control or sources of new medicines and other compounds. Panama has one of the world’s best-known tropical floras, which is now being screened for biomedical compounds.

Marine Ecology and Evolution—STRI studies how marine organisms become genetically different with time and how they become reproductively isolated via behavioral and molecular mechanisms.

Ecology and Physiology of Tropical Forests—STRI’s Center for Tropical Forest Science coordinates forest ecology research sites in 20 nations, providing a “Global Observatory” fundamental to understanding forest dynamics. STRI’s plant physiology program reveals the myriad ways that plants respond to environmental stresses. STRI is researching how plants respond to elevated concentrations of carbon dioxide, including the first large-scale study of multiple tree species in the tropics. STRI pioneered the use of construction tower cranes to explore tropical forest canopies.

Behavior and Adaptive Evolution—Successful conservation efforts depend on understanding animal behavior, such as how far a bee carries the pollen of a rare orchid or how mammals disperse seeds. STRI’s new neurobiology lab allows researchers to take advantage of Panama’s high insect diversity in a study aimed at understanding the links between brain miniaturization and behavior.

Archaeology, Anthropology and Human Ecology—The accumulated knowledge of tropical forest peoples allowed them to flourish, yet their knowledge and environments are rapidly disappearing. By studying the history and development of regional economies and social formation, STRI researchers identify the conditions that lead either to the depletion of local resources or to their more sustainable use.

Paleoecology—At STRI, paleoecologists study the biological consequences of the closing of the Panamanian Isthmus, which created two marine realms and linked previously distinct floras and faunas of North and South America. STRI has developed a century-long record of coral growth rates, showing that coral growth has been declining due to increasing turbidity of the water from increasing sediment of the runoff from the coast, itself a result of massive deforestation.

Publications

STRI research is reported in more than 300 scientific journal articles per year, including many in the journals *Science* and *Nature*, as well as in numerous books and edited volumes.

Education and Public Programs

A fellowship program provides training opportunities to students worldwide, and STRI offers advanced graduate studies with affiliated institutions. A bilingual public education and outreach program interprets STRI research and promotes conservation, offering site visits, a weekly newsletter, public lectures, media releases and seminars for decision makers.