A Virtual Tour of Mangal Cay’s Mangrove

There is a significant need for public education about often inaccessible, yet seriously endangered mangrove ecosystems. Smithsonian ecologist Candy Feller and graphic designer (and retired Smithsonian illustrator) George Venable have produced a Virtual Mangrove Tour of Belize’s Mangal Cay. Using state-of-the-art digital imaging and virtual reality techniques, they developed an effective teaching and learning tool that is now available on line at <http://www.serc.si.edu>.

The project was funded by a grant from the National Science Foundation as an educational element of a larger, five-year, multidisciplinary biocomplexity project to investigate microbial and nutrient controls on mangrove ecosystems. Many of the Smithsonian marine scientists and their collaborators who are working on the biocomplexity project at the Smithsonian’s Carrie Bow Cay Field Station in Belize contributed many of the stunning digital photographs for the Virtual Tour. Much of this input represents decades of research discovering and describing the plants, animals, and microbes living in these marine ecosystems and understanding the factors that control their distribution and abundance in the physical environment.

Mangrove forests are intertidal wetlands that once existed along 75 percent of the world’s tropical and subtropical coasts, largely between 30 degrees North and South latitude. These marine systems, which are often associated with coral reefs, perform a number of vital ecosystem functions, such as protecting shorelines, filtering pollutants, and providing nursery areas for marine fishes. Despite their critical role in sustaining healthy ecosystems, mangrove forests are being increasingly assaulted by shoreline development, increased sediment runoff, oil spillage, sewage discharge, global warming and sea level rise, and garbage dumping. As a result, over half of the world’s mangroves have been destroyed.

While about 70 percent of the people in the world live in coastal areas, mangrove forests can be inaccessible to the casual visitor and are poorly understood. The new Smithsonian Virtual Mangrove Tour endeavors to bring the mangrove experience to those who might not get the opportunity to see them in person, and to provide a resource for teachers, students, and environmental managers.

New Publications

Götz Schroth and Heraldo L. Vasconcelos of Smithsonian Tropical Research Institute’s Biological Dynamics of Forest Fragments Project (STRI/BDFFP) with colleagues from Conservation International, CATIE, Costa Rica, and CIRAD, France, edited the new book *Agroforestry and Biodiversity Conservation in Tropical Landscapes*, recently published by Island Press, Washington, D.C. The book brings together 46 scientists and practitioners from 13 countries with decades of field experience in tropical regions to explore how agroforestry practices can help promote biodiversity conservation in human dominated landscapes, to synthesize the current state of knowledge in the field, and to identify areas where further research is needed. The book is available at <http://www.islandpress.org/>.

By 2020, the world will be eating almost as much farmed as wild fish, marine bacteria could yield the cure for cancer and deep sea bacteria may be exploited to consume oil spills. The demand for genetic resources is growing rapidly - yet governance and policy lag far behind. *Blue Genes: Sharing and Conserving the World’s Aquatic Biodiversity*, by D. Greer and B. Harvey, is the first book to tackle the ownership and trade in aquatic genetic resources, including who’s collecting aquatic genetic resources and why. Special attention is paid to the rights of indigenous and local communities providing access to those resources. *Blue Genes* presents case studies from four continents, and concludes with policy recommendations specifically tailored to aquatic resources. The book is available at <http://www.earthscan.co.uk/>.
Elizabeth A. Colburn’s book *Vernal Pools: Natural History and Conservation*, published by The McDonald and Woodward Publishing Company, is the most comprehensive synthesis ever written of the natural history, ecology and conservation of the myriad seasonally wet pools that occur throughout the formerly glaciated region of eastern North America—essentially the Great Lakes Basin, New England, and adjacent areas of Canada and the United States. The information on pool history, content, and ecology—and conservation issues relevant to vernal pools—is applicable to pools in any geographic region. For more information, please visit <http://www.mwpubco.com/VernalPools.htm>.

**Current Literature**


Evans, K.L., Warren, P.H., and Gaston, K.J. 2005. Does energy effect diversity (but not dynamics) of speciose tropical pyraloid...


Mosseler, A., Rajora, O.P., Major, J.E., and Kim, K.H. 2004. Reproductive and genetic characteristics of rare, disjunct pit pine populations at the northern limits of its range in


