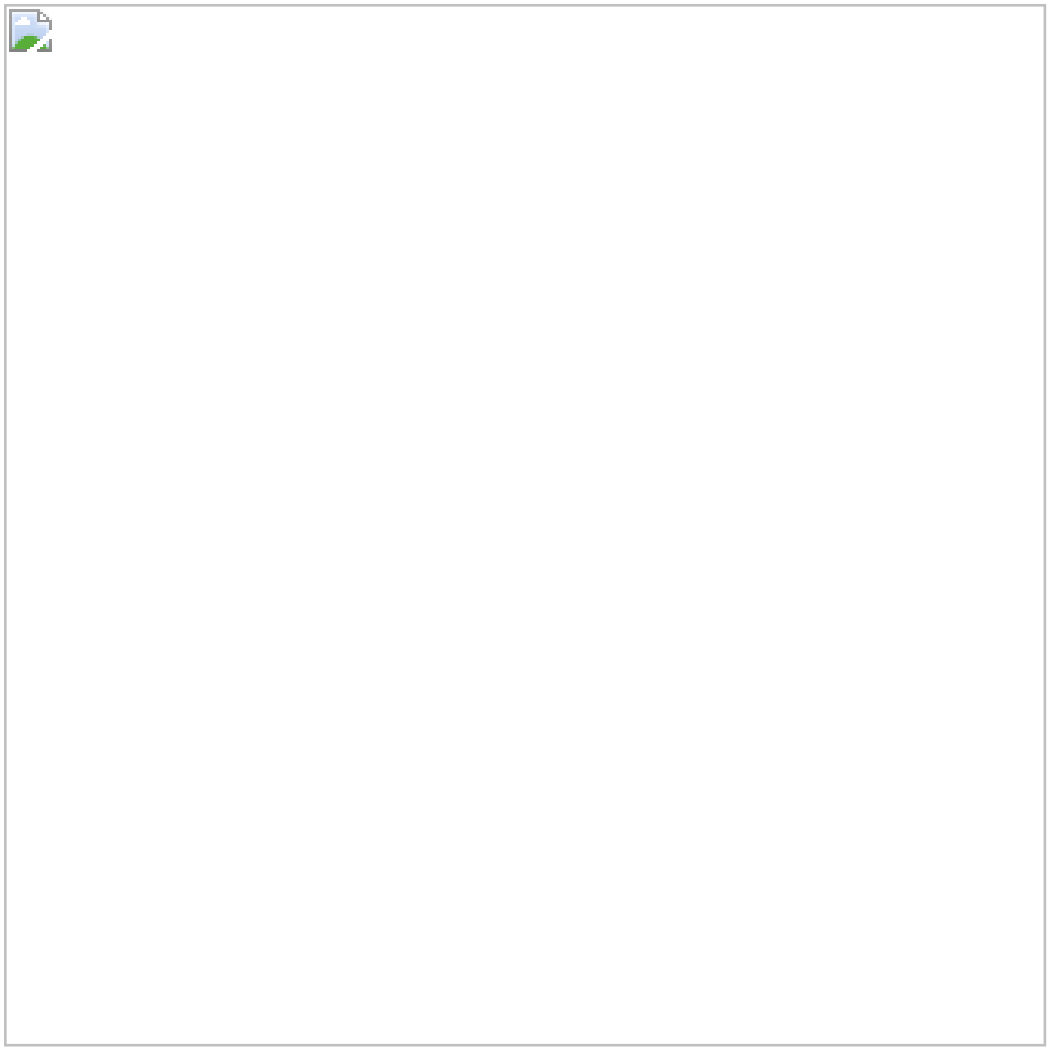

Diverse issues of tropical rainforest conservation

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Editorial

Diverse issues of tropical rainforest conservation

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The second issue of *Tropical Conservation Science* contains six papers that as a group are a good example of the diversity of conservation concerns regarding tropical forests. Tropical scientists suffer from lack of sufficient baseline information on local and regional biodiversity conservation. This barrier weakens the efficacy of conservation measures and the ability to predict future changes in the health of species and ecosystems.

This state of affairs is examined by Collen and colleagues in the first paper of this issue. They argue, in the context of the Convention on Biological Diversity's 2010 target to reduce biodiversity losses, that biodiversity datasets are still far from being a complete resource in tropical countries, and that this compromises the effectiveness with which local and regional biodiversity change can be measured. Major reasons for this, the authors point out, include insufficient funding, lack of adequate infrastructure and expertise for data collection, inaccessibility to research sites due to political upheaval, and difficulties in getting data published.

Collen and colleagues argue that the situation is exacerbated by the high rate at which tropical forests are being lost throughout the world, and that lack of pre-existing data in tropical countries limits the extent to which future changes can be successfully predicted. They also point out that some important information on biodiversity is stored locally in theses and technical reports, and that these could a useful addition to general datasets. The authors suggest that developing methods, filling existing gaps on key regions, habitats, and taxa, investing in local institutions, and formulating a global biodiversity observation system, systematically designed across regions and taxa, could provide an impetus to address the tropical biodiversity data gap.

In line with the need to fill this gap, the article by Parthasarathy and coauthors in this issue provides important information on the little-known tropical dry evergreen forest (TDEF) of peninsular India. The authors provide data on plant biodiversity, structure and functional ecology, and bioresource potential, particularly of medicinal plants, and emphasize the conservation needs and significance of TDEFs on the Coromandel coast of India. They also report that human disturbance has an important impact on plant species richness, reducing the number of plant species present and available for various uses. But they also indicate that the sacred-grove status of many of the sites studied helps preserve biodiversity.

Dung and carrion beetles play an important ecological role in tropical forests (e.g., soil aeration, secondary seed dispersal, and parasite control) and have been used as indicator species of ecosystem health. However, insufficient documentation is available on the configuration of dung beetle species assemblages in various tropical forest types. The paper by Vulinec and colleagues provides new information on the dung beetle species assemblages present in ancient dry forest fragments surrounded by native savannas in the region of Alter do Chão, Pará, Brazil. The authors found that species richness decreases with increasing isolation of forest fragments, but suggest that the presence of a still-rich mammalian fauna (primates, ungulates, and large rodents, among others) in some of these fragments may favor the presence of dung beetles.

The article by Lapenta and Procópio-de-Oliveira deals with two conservation problems: the conservation of the highly fragmented and biodiversity-rich Atlantic forests of Brazil and the conservation of the golden lion tamarin, an endangered and endemic primate. The authors approach this by investigating the role played by golden lion tamarins as seed dispersal agents in the natural process of rainforest regeneration. The study brings to light not only the importance of conserving particular plant and animal species, but also the need to document and preserve ecosystem processes, such as those related to the natural process of tropical forest regeneration. The study reports that the small-bodied golden lion tamarin disperses the seeds of a broad spectrum of plant species at varying distances from the parent tree and into habitats where they may have a greater chance of surviving and becoming established.

Northern Argentina harbors the southernmost distribution of tropical vegetation in the American continent, and much of its territory has been transformed to pasture lands and agricultural fields. Remaining forests occur in a fragmented pattern and still harbor a rich biodiversity. The paper by Zunino and Kowaleski reports on an initiative in northern Argentina aimed at studying and preserving remaining forests. The establishment of the EBCo field research station is fostering the orderly and long-term accumulation of information on the biodiversity of the forests and on the primate populations that exist in this area. The station is improving the technical training of undergraduate and graduate students in biological and related sciences, and, by involving local communities, is raising capacity building and conservation awareness.

Although the preservation of undisturbed habitat in protected tropical areas (e.g., parks and reserves) is crucial for biodiversity, it has been argued that these areas alone may not meet long-term conservation goals. The average landmass protected is not large enough in many cases, and the protected areas often are not be suitable for habitation by particular species. In other cases, species of interest may not be found within park boundaries. In spite of these arguments, the United Nations Environmental Program (UNEP) considers habitat conservation vital for curtailing the decline in biodiversity and believes the establishment of protected areas to be an important mechanism for achieving this aim.

In addition to protecting biodiversity, protected areas have become places of high social and economic value, and tropical nations have been making steady progress in building up their systems of protected natural areas. Many of these areas (e.g., biosphere reserves and national parks) protect important segments of local and regional biodiversity, including endemic and endangered species. The article by Muñóz and collaborators illustrates this point very well. Spider monkeys are one of the most endangered primates in the Neotropics, and populations have become extinct in many places as a result of deforestation, hunting, and the pet trade. Muñóz and coauthors report demographic features for a population of spider monkey in the Sumidero Canyon National Park in southern Mexico and stress the value of the protected area in

conserving this population over several decades, along with many other species of mammals and birds inhabiting various types of tropical forest in its realm.

In sum, the second issue of *Tropical Conservation Science* includes papers encompassing a variety of topics:

- Global patterns of data gaps and their impact upon conservation approaches
- Plant biodiversity inventories in India
- Profiling dung beetle species assemblages in ancient forest fragments in Brazil
- The role played by endemic primates in the natural process of forest regeneration in Brazil's Atlantic forests
- Research and conservation of primates and tropical forests in northern Argentina
- The value of a natural protected area in preserving populations of endangered primates in southern Mexico

Highlighted in this collection of papers is the participation of scientists and graduate students from tropical countries.

As Collen and colleagues rightly point out, filling the data gap on tropical biodiversity is essential for improving our capacity to produce well-grounded conservation science. It's equally important to make such data available to the global scientific community and to the general public. In line with this, *Tropical Conservation Science* invites the global community of scientists, advanced graduate students, and conservationists working in the tropics to submit results of their research for possible publication in future issues of the journal. Further information is available at www.tropicalconservationscience.org

Tropical Conservation Science has been registered in several indexing databases. Its inclusion has been accepted in CAB Abstracts and in the Directory of Open Access Journals (DOAJ). Currently, TCS is under evaluation in Thomson Scientific (ISI Web of knowledge, Science Citation Index, Web of Science) and in Scopus.

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