

Organization: Pontificia Universidad Católica del Ecuador

Project Location: Ecuador

Web address: www.puce.edu.ec

Title of Grant: “A Developing a biodiversity information system in Ecuador (BISE): Integrating taxonomic expertise, bioinformatics, and open access”

Grant Amount: \$ 200,000 over 2 years

Principal Investigator: Luis A. Coloma

Organization Background:

The current project will be developed by the Museo de Zoología de Vertebrados (QCAZ) of the Pontificia Universidad Católica del Ecuador (PUCE), in collaboration with the University of Kansas. PUCE was established in 1946. The Museo QCAZ is part of the School of Biological Sciences of PUCE. Since its creation QCAZ has focused on building and strengthening natural history collections, and making this information available through scientific publications and, more recently, a web portal.

Grant Description:

Ecuador is one of the most biologically diverse countries of the world. Unfortunately, it is also one of the most threatened, with many ecosystems and species disappearing or at risk. This situation is caused partially by a crisis in the use of biological information that affects policy making, advancement of biodiversity research, and implementation of conservation plans. Based on a strategic alliance between researchers working at the Museo de Zoología de Vertebrados and the University of Kansas, the project targets these problems by developing an open access information system, capable of integrating and providing updated and high quality biodiversity data.

The Problem:

Ecuador’s biodiversity includes 464 amphibians, 405 reptiles, and 1600 birds (7%, 5%, and 16% of the global diversity). Because of historical anthropogenic pressures, Ecuador is also the country with the highest deforestation rate in South America. This human footprint translates into an impressive amount of ecosystems, species, and genetic resources vanished or at great risk of disappearing. This critical situation demands conservation actions based on strategic use of scientific information.

However, the implementation of these actions is challenging, mostly as a consequence of: (1) limited access to biodiversity information prevents assertive decisions, (2) poor access to biodiversity information, (3) limited molecular information is available to assist species discovery and identification, and (4) limited resources for disseminating information.

The Solution:

In order to assist decision-making in research, conservation, and management of Ecuador's biodiversity, PUCE plans to develop an open access information system, capable of providing and integrating updated and high quality biodiversity data. Beneficiaries of this initiative include Ecuadorian and international researchers, governmental and non-governmental organizations, organized indigenous and non-indigenous communities, conservation biologists, policy makers, as well as educators, students, and the general public.

Global Impact:

The potential impact of BISE on biodiversity research and conservation is important in many ways. Completion of this project will accelerate the process of species discovery and description by providing reliable and updated taxonomic information and biodiversity tools. Training of human resources constitutes one of the most important contributions in catalyzing biodiversity research and conservation. Assembling of BISE will contribute to the global biodiversity infrastructure by providing open access to the QCAZ specimen database.

Implementation of BISE will enhance biodiversity knowledge at all levels. By providing information through a friendly interface, BISE will be a reference to be consulted by the general public; from elementary school students to scholars, from house keepers to university professors, from nature oriented tourists to the common citizen.

The products and tools developed will facilitate timely and sound implementation of conservation actions and resource management strategies. As a direct result of the project, a strategic alliance between the QCAZ and the University of Kansas will be established. This collaboration aims to promote the discovery, understanding, and communication of biological diversity through scientific research and information technology producing interactions are likely to create better scientists and to promote the generation of new projects.