



# EcoMinga Progress Report 2009-2010

Red de Protección de Bosques Amenazados

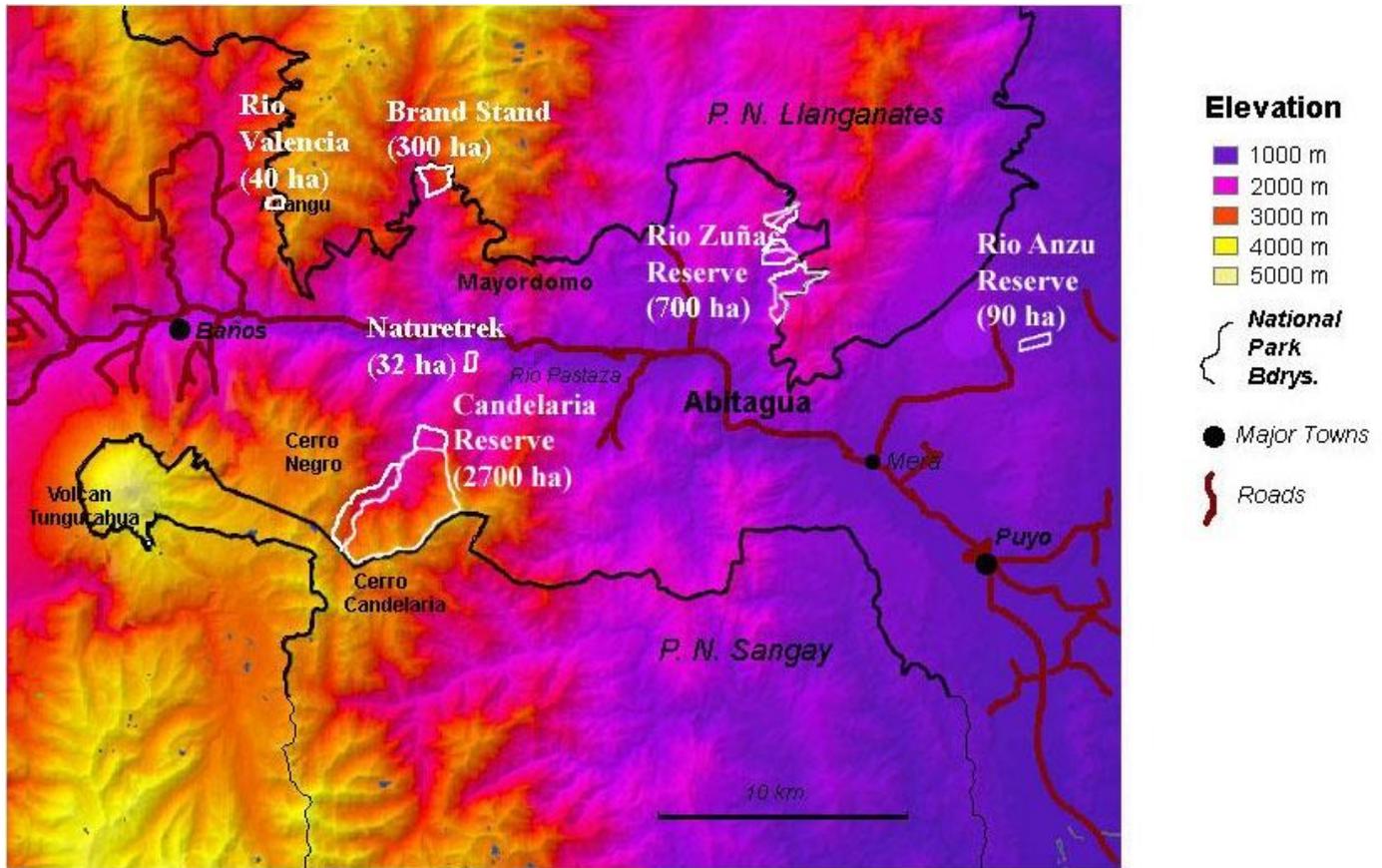
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The EcoMinga Foundation owns and manages a system of reserves protecting threatened cloud forest, tropical rain forest, and alpine grasslands on the western edge of the Amazon basin, in the provinces of Tungurahua and Pastaza in Ecuador. These reserves are strategically located in areas of high diversity and endemism, and high threat. Unlike many parts of South America, the local people here live primarily from tourism rather than timber or mining, so they are supportive of concrete efforts to preserve their forests. By working closely with them, we can preserve this region's biodiversity and simultaneously improve their standard of living.

This report summarizes our progress during 2009 and 2010.



*Young Black and Chestnut Eagle in our Cerro Candelaria reserve, photographed by our reserve guardian Luis Recalde.*



## New reserves

In 2008 we had four reserves: Rio Zunac, Cerro Candelaria, Brand Stand, and Rio Anzu. In 2009-2010 we added two new reserves, the Rio Valencia Reserve (40 ha) and the Naturetrek Reserve (32 hectares). These purchases were made possible by a grant from the World Land Trust, our main funding partner, based in the UK. The original donation to the World Land Trust came from Naturetrek, an important UK ecotourism company, and is earmarked for land purchases dedicated to conservation of biodiversity and offsetting of carbon emissions. The Rio Valencia Reserve near the town of Viscaya is a mix of high-elevation cloud forest and regeneration, adjacent to the Llanganates National Park. It contains special orchids endemic to the area, such as *Teagueia alyssana*. The Naturetrek Reserve is a bird-rich middle-elevation cloud forest on the south side of the Rio Pastaza, near the towns of El Placer and Rio Verde and near our Cerro Candelaria Reserve. We hope to be able to connect the Cerro Candelaria Reserve and Naturetrek Reserve eventually, to make a biological corridor between them.

In addition to these new reserves, we added several properties to our Cerro Candelaria reserve. That reserve is now one solid block, with no inholdings. These purchases were also made possible by grants from the World Land Trust. In this case the original donation to the World Land Trust came from PricewaterhouseCoopers, based in London.

We are currently working to get all of these forests declared as official “Protected Forests” (Bosque Protector) by the national government of Ecuador. We have been working more than

two years on this seemingly never-ending task, but we have been assured that the declaration is likely in the coming weeks. This will ensure that government programs and national planning initiatives will officially recognize and respect the special conservation importance of our reserves.

We also expanded our Rio Zunac Reserve by purchasing 100 ha as part of a joint project with the International Union for the Conservation of Nature, Netherlands Committee, through their Small Grants for the Protection of Nature program, sponsored by the Netherlands Postcode Lottery. The young Black and Chestnut Eagle below was photographed in our Rio Zuñac Reserve by one of our reserve guardians, Luis Recalde, using a donated point-and-shoot camera! Another photo of his (of a caecilian eating a giant earthworm) was published this year in the prestigious BBC Wildlife Magazine.



*Black and Chestnut Eagle in the Rio Zuñac Reserve. Photo by Luis Recalde.*

## New species

Our reserves are deliberately chosen to protect unique habitats and areas of high endemism. A measure of our success in choosing interesting areas is the steady stream of new plant and animal species we and other scientists keep discovering in our reserves.

Several years ago we discovered a striking new species of tree in the genus *Blakea* in our Cerro Candelaria Reserve. We decided to name it after Sir David Attenborough in recognition of his conservation efforts and his help in raising funds for the World Land Trust, our main funding partner. This species has now been published:

**Penneys, D., and Jost, L. 2009. *Blakea attenboroughii* (Melastomataceae: Blakeeae): A new species from Ecuador.** Proceedings of the California Academy of Sciences 60: 69-72.

Several new orchid species of the genus *Teagueia* from our Cerro Candelaria reserve were submitted for publication in 2010 and will be published in early 2011. These are members of one of the most remarkable plant radiations in the world, about 30 new species all restricted to the high mountains of the upper Rio Pastaza watershed. Our reserves protect more than half these species. Thanks to a small grant from World Land Trust, we have helped support a study by the University of Florida at Gainesville to analyze the DNA of these orchids, and we now have a nearly complete phylogenetic tree that is beginning to reveal the evolutionary history of this remarkable plant radiation. This radiation was the subject of an exhibit in the Smithsonian Institution (Jan 25-April 2009).



*Some of the new Teagueia species of the upper Rio Pastaza watershed.*

Many more new species of orchids and other plants have been discovered by us here, but we lack the time to write them up. Hopefully in the coming year or two we can do this.

Dr Rob Gradstein (University of Gottingen, Germany) discovered a new liverwort on limestone in our Rio Anzu reserve. This is currently being described by him.

Several new species of frogs from Cerro Candelaria and from Tungurahua, discovered by our reserve manager Juan Pablo Reyes and his associates at the Museo Ecuatoriano de Ciencias Naturales, were published:

**Yanez-Munoz, M., Cisneros-Heredia, D., Reyes-Puig, J.P. (2010) Una nueva especie de rana terrestre *Pristimantis* (Anura: Terrarana: Strabomantidae) de la cuenca alta del Rio Pastaza, Ecuador.** Avances en Ciencias y Ingenierias (Universidad San Francisco de Quito) 3: B28-32.

**Reyes-Puig, J. P., Yanez-Munoz, M., Cisneros-Heredia, D., Ramirez, S. (2010) Una nueva especie de rana *Pristimantis* (Terrarana: Strabomantidae) de los bosques nublados de la cuenca alta del Rio Pastaza, Ecuador.** Avances en Ciencias y Ingenierias (Universidad San Francisco de Quito) 3: B78-82.



*Some of the species of frogs found by us and by investigators from the Museo Ecuatoriano de Ciencias Naturales in our Cerro Candelaria Reserve. Several (eg L, N) are new to science. Photos by Juan Pablo Reyes.*

## New scientific stations

One of the highlights of 2010 was our joint project with the IUCN-Netherlands/SPN, sponsored by the Netherlands Postcode Lottery, to strengthen and expand our Rio Zunac Reserve. Besides buying land, we are helping the surrounding landowners get legal titles to their land, in return for legally binding promises to preserve 96% of their area. This will effectively add about 1000 ha to the protected area around the Rio Zunac, tripling the area protected, at a very low cost to the conservation community.

As part of this project, we have built a small scientific station deep inside the reserve at an elevation of 1600m, about 3-5 hrs walk (depending on one's fitness) from the nearest road. All its wood was recycled from fallen tropical hardwood trunks. This wilderness station will make the reserve useful for scientists and for select birders and lovers of wilderness. Already the Highland Woolly Monkeys visit trees next to the cabin, and Mountain Tapir, Spectacled Bear, and even jaguar are known from the area. The Black and Chestnut Eagle has been seen often, along with other rare birds. It provides painless access to the mysterious and remote Sacha Llanganates, one of the easiest places in the world to discover new species of plants and animals.



*Top row, Rio Zuñac cabin construction. Bottom left, nearly finished. Bottom right, our first guest. Photos by our wardens/caretakers/guards.*



*Additional day and night supervisors of our work on the Rio Zunac cabin, photographed by our reserve guards. Left, Rufescent Screech Owl (?). Right, the rare Band-bellied Owl.*

A second cabin is in the planning stages for our Cerro Candelaria Reserve, thanks to a pledge to the World Land Trust by Noel McWilliam.

### **Reforestation**

Our reforestation project for WLT-Trading, which we began in 2008, continues. It has been very successful. We are now supplying small numbers of seedlings to other reforestation projects in the area and in Quito. Some of our 2008 trees are now much taller than us!



## Education

Juan Pablo Reyes, our reserve manager, has worked to study and raise local awareness of our flora and fauna, especially the highly endangered Andean Tapir. He does this and other environmental education work jointly for us and for the Fundacion Oscar Efen Reyes, and for the Andean Tapir Conservation Project, with Finding Species, Centro Ecológico Shanca Arajuno and the Tapir Specialist Group of IUCN. In both 2009 and 2010 the Andean Tapir Conservation Project organized international training and monitoring workshops here in our town of Baños, focussing on the local people and the reserve caretakers of our foundation and other similar foundations in Ecuador.

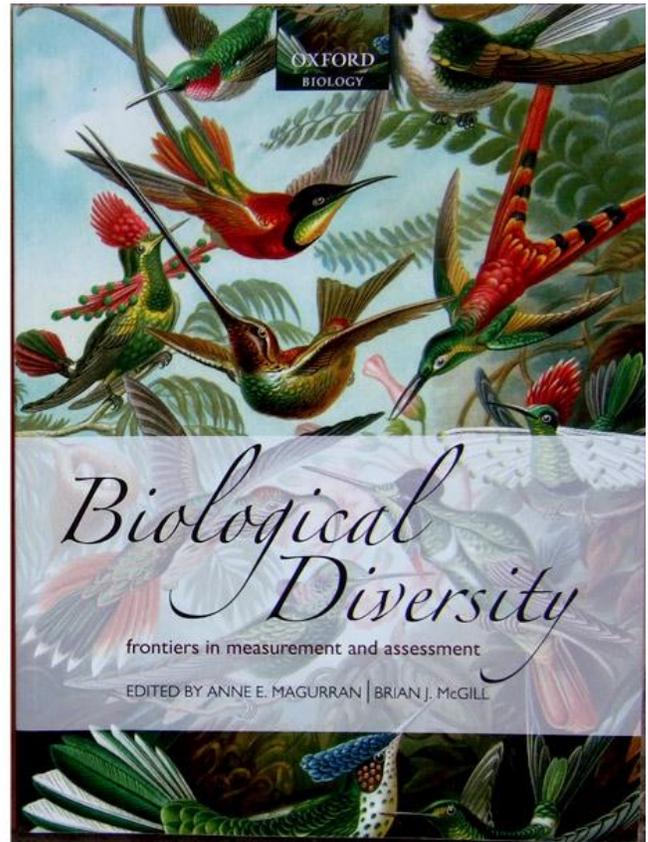
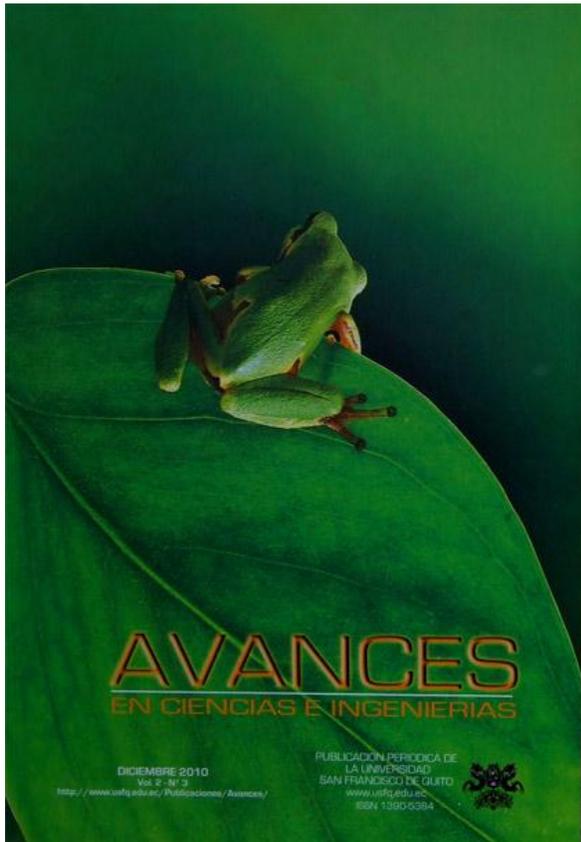
Our reserve caretakers/guards gave a presentation about their work to Ecuadorian university biology students and faculty in Quito, the nation's capital, during the XXXIV Jornadas Nacionales de Biología, where they were well recieved. Our Executive Director Javier Robayo also arranged for our caretakers to visit and exchange experiences with the caretakers of the Jocotoco Foundation's Tapichalaca Reserve in southern Ecuador. The Jocotoco Foundation does excellent work and has an approach similar to ours, and both foundations benefitted from this exchange.



*Juan Pablo Reyes-Puig, reserve manager, teaching children about our plants and animals.*

## Staff scientific work

In addition to the articles mentioned on p. 4 describing new species from our reserves, our staff (Jost, Reyes-Puig, and Robayo) has also published the following scientific articles during 2009 and 2010:



**Jost, L. (2009) Mismeasuring biological diversity: Response to Hoffmann and Hoffmann (2008).** *Ecological Economics*, 68, 925–928.

**Jost, L. (2009). D vs. GST: Response to Heller and Siegismund (2009) and Ryman and Leimar (2009).** *Molecular Ecology*, 18, 2088-2091.

**Jost, L. (2010). The relation between evenness and diversity.** *Diversity*, 2, 207-232.

**Jost, L. (2010). Independence of alpha and beta diversities.** *Ecology*, 91, 1969-1974.

**Jost, L., DeVries, P., Walla, T., Greeney, H., Chao, A. and Ricotta, C. (2010). Partitioning diversity for conservation analyses,** *Diversity and Distribution*, 16, 65-76.

**Chao, A., Chiu C.-H. and Jost, L. (2010). Phylogenetic diversity measures based on Hill numbers.** *Philosophical Transactions of the Royal Society B*, 365, 3599-3609.

**Jost, L., Chao, A. and Chazdon, R. L. (2011). Compositional similarity and beta diversity.** In: Biological Diversity: Frontiers in Measurement and Assessment (eds A. Magurran & B. McGill) Oxford: Oxford University Press.

**Yáñez-Muñoz, Meza-Ramos, P., Ramírez, S., Reyes-Puig, J.P. y Oyagata, A. (2009) Anfibios y Reptiles del Distrito Metropolitano de Quito.** en: MECN. 2009. Guía de Campo de los Pequeños Vertebrados del Distrito Metropolitano de Quito (DMQ). Publicación Miscelánea N° 5. Serie de Publicaciones del Museo Ecuatoriano de Ciencias Naturales (MECN)- Fondo Ambiental del MDMQ, 1-89 pp. Imprenta Nuevo Arte. Quito-Ecuador.

**Sandoval, L., Reyes-Puig, J.P., Tapia, A., Bermúdez, D. (2009) Manual de Campo para el estudio y monitoreo del tapir de montaña (*Tapirus pinchaque*).** Grupo Especialistas de Tapires UICN/SSC/TSG, Fundación Oscar Efrén Reyes, Centro Tecnológico de Recursos Amazónicos-Centro Fátima, Finding Species. Quito, Ecuador.

**Reyes-Puig, J.P., Jost, L., Robayo, J., y Recalde., J. (2010) Fundación Ecominga: Una red de protección de bosques amenazados en la cuenca alta del Pastaza.** XXXIV Jornadas Nacionales de Biología. Sociedad Ecuatoriana de Biología. Universidad Central del Ecuador. Quito.

**Chapungal, M., Reyes-Puig, J.P., Reyes-Puig. M. (2010) Reserva Natural Chamanapamba.** XXXIV Jornadas Nacionales de Biología. Sociedad Ecuatoriana de Biología. Universidad Central del Ecuador. Quito.

**Yáñez-Muñoz, M., Meza-Ramos, P., Cisneros-Heredia, D., Reyes, J.P. (2010) Descripción de tres nuevas especies de ranas del género *Pristimantis* (Anura:Strabomantidae) de los bosque nublados del Distrito Metropolitano de Quito, Ecuador.** Avances en Ciencias y Ingenierías (Universidad San Francisco de Quito) 3: B16-27.

**Yáñez-Muñoz, M., Meza-Ramos, P., Ortega-Andrade, M., Mueses-Cisneros, J., Reyes-Puig, M., Reyes-Puig, J.P. , y Durán, J. (2010) Nuevos datos de distribución de ranas de cristal (Amphibia:Centrolenidae) en el oriente de Ecuador, con comentarios sobre la diversidad en la región.** Avances en Ciencias y Ingenierías (Universidad San Francisco de Quito) 3: B33-40.



## Finances

Our income for 2009 was \$25603, and our expenses in 2009 were \$112377. (We received a donation of \$77470 from WLT on Dec. 30, 2008, so the apparently enormous deficit is not real.) Our income for 2010 was \$102337 and our expenses for that year were \$106039. We are living close to the edge financially, but considering the worldwide economic crisis of the last two years, we are doing relatively well compared to other foundations. It helps that our staff salaries are kept low: no one earns more than \$660/month, and the average salary is \$420/month take-home pay plus 20% for government mandated health insurance and social security payments.

Most of our funding continues to come from the [World Land Trust](#), with additional major support in 2010 from the [IUCN-Netherlands Committee](#) and the Netherlands Postcode Lottery. [The World Land Trust-US](#), the [Orchid Conservation Alliance](#), and the [Montreal Botanical Gardens](#) have also given major support in 2009 and 2010. Private individuals have also given us very important support, without which we may not have survived. Special thanks to Albertino Abela, chairman of the board of the World Land Trust, for his offer to cover our operating expenses deficit in 2010. Several other individuals have given us significant assistance, including some people who have donated annually for several years. We wish to thank especially Nigel Simpson, Henri Botter and Ardy van Ooij, Mark Wilson, Sam Crothers, and Anne Chao for their generosity. All donors, past and present, are listed at the end of this report; we are grateful to all of them.



Our website, [www.ecominga.com](http://www.ecominga.com), has not been updated recently because of constant computer and internet problems. A recent donation will enable us to solve these problems and maintain a web presence.

## Our staff

In 2009 we had four reserve guardians/caretakers working full time in the reserves: Jesús Recalde, Luis Recalde, Fausto Recalde, and Israel Valencia. Israel left and was replaced by Santiago Recalde. In 2010, thanks to a grant from the Orchid Conservation Alliance, we were able to add a fifth caretaker, Rafael Rivera. They not only make sure that nobody hunts or cuts trees, they also explore and photograph and learn about the wildlife of the reserves. They also act as our ambassadors in their communities. In addition to them, we have a 3/4 time reserve manager, herpetologist and tapir specialist Juan Pablo Reyes-Puig; a quarter-time Executive Director, botanist Javier Robayo; a quarter-time coordinator, Lou Jost; a part-time accountant, Matilde Alban; and a hire-as-needed lawyer, Oscar Valenzuela.



*Staff and family at our annual staff meeting, in the home of one of our wardens.*

## **Thanks**

The authors of this report want to give our warmest thanks to our team: Jesús Recalde, Luis Recalde, Fausto Recalde, Santiago Recalde, and Rafael Rivera (reserve caretakers), Matilde Alban (accountant), Pablo Hermida (San Lorenzo project), our lawyer Oscar Valenzuela, and our directors, especially Nigel Simpson, Lori and Juan Miguel Espinoza, and Francesca Rota.

Special thanks to our partners and donors, without whom none of this would be possible:

**World Land Trust** (and specifically their corporate supporters: PriceWaterhouseCoopers, Miko Coffee through their Puro brand, Brand Stand Chocolate, BSKyB, Naturetrek, and their many individual supporters, particularly Dr Noel McWilliam)

**IUCN- National Committee of the Netherlands and Netherlands Postcode Lottery**

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**Dr. Malli and Vera Lee Rao**

**Dr. Steve Beckendorf and Cindy Hill**

**Dr. Nigel Simpson, O.B.E**

**Orchid Conservation Alliance**

**South East Pennsylvania Orchid Society (SEPOS)**

**Jardin Botanique de Montréal**

**Orchid societies of the Bay Area, California**

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**Henri Botter and Ardy van Ooij**

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**Hilo Orchid Society, Hawaii**

**Pauline Brault**

**Atlanta Orchid Society**

**Dr. Anne Chao**

**Dr. Chris Stringer**

**John Little**

**Dr. Mary Gerritsen**

**Angela Mirro**

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**Edward Keith**

**Barry Barker**

**Metamorf**

**Orchid Conservation Coalition**

**Centro de Estudios, Quito**

**Fundación Oscar Efrén Reyes (FOER)**

**Proyecto Conservación del Tapir Andino (Finding Species, Centro Ecológico Shanca Arajuno,**

**Tapir Specialist Group-IUCN)**

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