

## Russell E. Train Education for Nature Program



# Climate Change in the Eastern Real Cordillera

by Olga Lucía Hernández-Manrique, Colombia, Russell E. Train Fellow (2006)

The Eastern Real Cordillera is located in the Upper Amazon basin of the Andes in Colombia, Ecuador, and Peru. Around 25 percent of the region is protected, mostly comprising of *páramos*—high Andean shrubland—and forests over two thousand meters above sea level. *Páramos* and montane tropical forests are currently one of the major global conservation priorities because of their biological richness and high level of endemism. These areas are also among the least known ecosystems in the tropics. Studying these Andean ecosystems is critical to conserving Amazonian forests, as this is where many important tributaries originate.

Current research will assess the vulnerability of these ecosystems and identify priority sites for conservation taking into account the effects of climate change. Vulnerability is the degree to which a system is susceptible to or unable to adapt to the adverse effects of climate change, including climate variability and extremes. This research is part of the project *A Living Landscape: conservation, regional integration and local development in the Eastern Real Cordillera Colombia, Ecuador and Peru* and is being conducted to mitigate threats from climate change. The project will model the effects of climate change on the Eastern Cordillera Real under three scenarios: current conditions



and two different climate change scenarios. The methodology developed by the Intergovernmental Panel on Climate Change (IPCC) will then be applied to the modeling results to quantify vulnerability throughout the region.

The Eastern Real Cordillera is both environmentally and culturally diverse. The study area encompasses 102 municipalities: 26 in Colombia, 69 in Ecuador and 7 in Peru. Seven large Amazon tributaries originate in the region, profoundly affecting the entire watershed: Caquetá, Putumayo, Napo, Pastaza, Santiago, Zamora-Cenepa, and Marañon. Many communities, including the indigenous Kamëntsá, Inga, Kofan, Shuar, and Achuar, inhabit the area. Climate change increases the likelihood that these communities will lose environmental services, compounding the poverty that already exists.

Olga Lucia Hernández Manrique

The Eastern Real Cordillera maintains a relatively high ecosystem integrity; almost 80 percent is covered by *páramos* and tropical forest and human intervention is limited to only 20 percent of the region. Severe pressures from infrastructure development, deforestation, and climate change

increasingly threaten biodiversity and human welfare in these ecosystems. Climate change, in particular, has been linked to increases in frequency and intensity of natural disasters such as storms, hurricanes, floods, avalanches, and wild fires. To model the effects of climate change, the project will use data from the Periodic Run Edge Compression for Image Systems (PRECIS) algorithm. The project will quantify changes across a range of systems under three broad geographic-information-system—based approaches to model the effects of climate change on local ecosystems. The systems studied are environmental (life zones and environmental niches) and physical (erosion and water balance). Based on these results and geo—referenced, socioeconomic data, the project will then estimate the adaptive capacity of communities in the Eastern Cordillera Real.

To learn more about the Russell E. Train Education for Nature Program, please contact:

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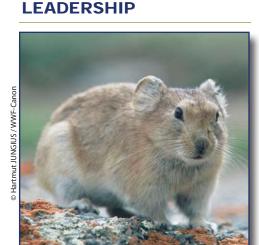
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disasters, will provide a quantitative map of vulnerability. This map will help decision-makers select priority sites to implement strategies for conservation of biodiversity and human welfare and mitigation under current and future risks linked to climate change.

Estimates of local adaptive capacity, together with measures of sensitivity and exposure to natural

## BUILDING CAPACITY

FOR CONSERVATION



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In 2006, Olga Lucía Hernández Manrique received a Russell E. Train Fellowship supported by the Moore Foundation to pursue a doctoral degree in biodiversity conservation at University of Alicante, Spain. In 2008, she received the Wings Across the Americas International Partnership Award from the US Forest Service for her work on the Cerulean Warbler Conservation Group. She spent three months working with the geographic team at University of Leicester and currently works with WWF Colombia in the Upper Amazon basin. She recently received a fellowship from the University of Alicante to finish her doctoral research

### **EFN Alumni Grants**

EFN Alumni grants are provided to former Russell E. Train Fellows and Scholars to support ongoing education and training. For more information, visit worlwildlife.org/efn/alumni.

#### Gustavo Sebastián Cabanne,

Argentina—Researcher, Universidade de Sao Paulo - Instituto de Biociencias, Departamento de Biologia. Alumni Grant provided to attend the American Ornithologists' Union 2008 meeting hosted by the American Ornithologist Union in Oregon, USA.

Roberval T. de Almeida, Brazil—Researcher, PNUMA IUCN. Alumni Grant provided to conduct research on the distribution and ecology of jaguars in the south pacific landscape in Costa Rica in collaboration with the Osa SocioEnvironmental Center.

Vincent Medjibe, Central African Republic—Doctoral Student, University of Florida. Alumni Grant provided to conduct research in the Dzanga-Sangha Forest Reserve in the Central African Republic and use the results in a doctoral dissertation at the University of Florida.

Yang Lixin, China—Researcher, Kunming Institute of Botany. Alumni Grant provided to help conduct research as a visiting scholar in the Restoration Ecology Program at North Carolina State University, USA.

#### Pablo Granados-Dieseldorff, Guatemala—Knauss

Fellow, Texas A&M University Department of Geography. Alumni Grant provided to attend the 61st Gulf and Caribbean Fisheries Institute Conference hosted by the Gulf and Caribbean Fisheries Institute in

Guadeloupe, French West Indies.

Alicia Del Carmen Medina Hernandez, Honduras—Protected Areas Officer, WWF Central America. Alumni Grant provided to attend the International Union for Conservation of Nature (IUCN) World Conservation Congress hosted by IUCN in Barcelona, Spain.

Prativa Sapkota, Nepal—Research Student, Copenhagen University. Alumni Grant provided to attend the Carbon and Climate Change Workshop hosted by Australian National University in Canberra, Australia.

#### Mingma Norbu Sherpa, Nepal-

Executive Director, SPCC Nepal. Alumni Grant provided to attend the International Union for Conservation of Nature (IUCN)



EFN Alumni and Staff in Barcelona, October 200

World Conservation Congress hosted by IUCN in Barcelona, Spain.

Ali Juma Ali, Tanzania—Comunity Conservation and Extension Warden, Jozani Chwaka Bay National Park. Alumni Grant provided to attend the Monitoring and Evaluation Training Course hosted by the African Medical Research Foundation in Kenya.

Samira Juma, Tanzania—Community Forest Conservation Faciliator, Department of Commercial Crops, Fruits, Forests. Alumni Grant provided to attend the Monitoring and Evaluation Training Course hosted by the African Medical Research Foundation in Kenya.

#### Mwita Marwa Mangora, Tanzania—

Assistant Research Fellow, Institute of Marine Sciences, University of Dar-es-Salaam. Alumni Grant provided to conduct a research study on the livelihoods of coastal communities around Mnazi Bay-Rivuma Estuary Marine Park in Tanzania.

## **Professional Development Grants**

#### CHII F

**Yacqueline Montecinos**—Marine Biologist, Centro Ballena Azul. XIII Reunión de Trabajo de Especialistas en Mamíferos Acuáticos y 7º Congreso de la Sociedad Latinoamericana de Especialistas en Mamíferos Acuáticos, Sociedad Latinoamericana de Mamíferos Acuáticos, Uruguay.

#### **DEMOCRATIC REPUBLIC OF CONGO**

Collins Mayoni Madiamba—Forester and Manager, WWF-Democratic Republic of Congo. English language training course, Congo-American Language Institute, Democratic Republic of Congo.

Francois Makoloh—Forest Officer, WWF-Democratic Republic of Congo. International Seminar on Forest Administration and Management, Northern Arizona University, USA.

#### **GABON**

Edwige Eyang Effa—Geographic Information Systems Officer, Institut de Recherche en Ecologie Tropicale. Systèmes d'information géographique pour le développement local, Centre de Coopération Internationale en Recherche Agronomique pour le Développement, Senegal.

#### **INDONESIA**

Irwan Lovadi— Forest Specialist, Agency for the Conservation of Natural Resources. Introduction to Marxan training,

University of Queensland, Australia.



Nguyen Tran Vy teaching local students about forest resources in Vietnam.

#### **UGANDA**

Vincent Opyene—Senior Warden, Uganda Wildlife Authority. US Fish and Wildlife Service Mentor Fellowship Program 30 day Bushmeat Field Assessment, College of African Wildlife Management, Kenya.

#### **VIETNAM**

**Nguyen Tran Vy**—Researcher, Institute of Tropical Biology. Wisconsin Center for Environmental Education Short-Term Professional Study in Environmental Education Program, University of Wisconsin-Stevens Point, USA.

### Russell E. Train Fellowships AVAILABLE FOR MALAYSIA 2009-2010

EFN is offering Train Fellowships for master's and doctoral study to Malaysians working in the Heart of Borneo and the Coral Triangle. (see maps)

#### To be eligible for a Russell E. Train Fellowship, you must meet the following criteria:

- You must be a citizen or legal permanent resident of Malaysia.
- You must have at least two-year's work experience in conservation activities.
- You must be enrolled, be admitted, or have applied to a graduate degree program (master's or PhD) at an institution of higher education by the application deadline AND you must plan to begin your studies no later than one year after the application deadline.
- You must commit to working in conservation in Malaysia or a neighboring country for at least two years after the completion of your degree.

#### Your field of study must pertain to one of the following:

- A natural science discipline relevant to sustainable natural resource management, ecosystem services, or biodiversity conservation in the Heart of Borneo or Coral Triangle regions
- A social science discipline relevant to sustainable resource management, sustainable economic development or community-based participation in the Heart of Borneo or Coral Triangle regions
- Business planning, environmental economics and/or policy, or public-private partnerships that promote sustainable natural resource management or biodiversity conservation in the Heart of Borneo or Coral Triangle regions
- Endangered species protection and management in the Heart of Borneo or Coral Triangle regions



Heart of Born



The application deadline for Russell E. Train Fellowship Program is **DECEMBER 31, 2008.** All applications must be postmarked by this date. Applications sent after this date will not be considered.

For more information, please visit www.worldwildlife.org/efn or contact EFN by email at efn@wwfus.org.

## The Fuller Science for Nature Fellowships 2009-2010 DOCTORAL RESEARCH FELLOWSHIPS IN TIGER CONSERVATION

WWF's Kathryn Fuller Science for Nature Fund will award doctoral fellowships to scientists addressing research questions that will significantly improve the practice of tiger conservation.

To be eligible for a Kathryn Fuller Fellowship, you must meet all of the following eligibility criteria:

- Proof of acceptance into a doctoral program by May 1, 2009.
- A research plan that focuses on tiger conservation in one or more of WWF's Global Priority Tiger Conservation Landscapes
- A minimum of two years' prior conservation experience and demonstrated field work.
- Ability to correspond and publish in English.
- EFN Alumni who have completed all requirements under their grants are eligible. Current EFN Fellows are not eligible.
- A citizen of one of the following tiger range states: Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Russia, Thailand, or Vietnam.

#### Fellowships will be awarded in a merit-based competition: Applicants must have:

- Demonstrated ability, accomplishments, and potential to become a leader in his/her field,
- Scientific merit, feasibility, and significance of the research proposal, and
- Relevance of the research to WWF's mission in general and to tiger conservation in particular.

Applications are due JANUARY 30, 2009.

Awards will be announced in Spring 2009. Fellowships will begin in September 2009. For application and related information, go to: www.worldwildlife.org/tigerfellowship.

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# **Enabling Resilience to Global Climate Change in the Mesoamerican Reef**

by Nadia Bood, Belize, Russell E. Train Fellow (2005)

A significant portion of the people within the Mesoamerican Reef (MAR) rely heavily on its diverse resources for much of their livelihood and sustenance. Due to the abundance of natural resources in the area, the coastal regions of MAR have seen a strong increase in population, most of which has been due to individuals seeking jobs and a better quality of life from the tourism, agriculture, and fishing industries. However, with the increased prosperity and jobs has come a significant amount of stress placed on the ecosystems that produce these resources. Unfortunately, climate change will only exacerbate the impacts of the population spike as well as bring new threats to the regions biodiversity and systems.

The health and integrity of reefs and other coastal and marine ecosystems are under significant threat. The major threats include declining or depleted fisheries stocks, habitat degradation or loss, and declining water quality. Coral reefs within the MAR are also subject to increasing threat from global climate change, with more frequent coral bleaching events and potentially more frequent and violent storms. The region has already been considerably impacted by the 1995 and 1998 mass bleaching events, which both coincided with elevated sea temperatures and calm seas (well known promoters of bleaching) and a number of storms events. Hurricanes are fueled by warm sea surface temperatures and have had devastating ecological, economic, and human-health related impacts within the region. Under continued changing climatic conditions, it is projected that the frequency of intense storms will increase.

Climate change will undoubtedly increase the stress on this already vulnerable region. Increased frequency and intensity of mass bleaching incidences and storm events, sea level rise, and lowered ocean pH are some of the major impacts of climate change on local resources. All have disastrous effects on vital

reef survey.

biological communities and human livelihood. Coral reefs, for example, provide substantial socioeconomic benefits to MAR nations via fisheries and tourism economies; however, under continued impact from climate change, their ecological integrity, and the goods and services they provide, are likely to be compromised. The predicted increase in the frequency and severity of coral bleaching events (related to temperature increases associated with global climate

change) within this region poses a major threat to these critical resources and the livelihoods, socio-cultural, and physical benefits they provide to the local communities. If the social and ecological systems within the MAR are to cope with these impacts, wise—use of resources and exploration of measures to foster resilience within both the natural ecosystems and society are critical.

It has been suggested that building resilience into both human and ecological systems might be the best way to cope with these unknown risks. To do this, however, MAR nations will need to better understand their response capacity to climate impacts and fully accept identified strategies that can allow for building

resilience. Populations and local communities will need to enhance their response capacity to face future impacts that are likely to lie outside their experienced coping range. It would be wise to promote adaptive management in the context of sustainable development objectives even though it may be challenging to implement at the local natural resource management level and within national and regional agreements. Adaptive



management is a means of responding to expected or experienced impacts associated with changing climatic conditions to reduce their degree of effect or capitalize on new circumstances. MAR nations must explore response measures that are holistic and that consider both integrated conservation and development concepts within the adaptive management plan. Both adaptive management and resilience building are concepts strongly tied to the principle of sustainable response.

WWF Central America Regional Programme Office (WWF-CARO) launched a MAR Climate Change Program in April 2006 to facilitate building resilience and adaptation to climate change within the MAR ecoregion. The program focuses on elements such as social and ecological system vulnerability and response research, social networking (at both grassroots and upper levels), and capacity-building in the coastal communities and around the coral reefs and mangroves. Efforts over the past few years have focused on assessing the status of reefs, working with partners to advocate for conservation and management, raising awareness of the general public and stakeholders on climate change, and working with coastal communities to assess their vulnerability and identifymeasures to promote resilience. In addition, we have highlighted the importance of economic valuation of coastal resources as an important factor in getting support from the governments. The economic valuation is being carried out through collaboration with the World Resources Institute (WRI), and currently focused on Belize.

Climate change is a real threat to MAR nations. It is critically important that we identify and implement coping, mitigation, and adaptation strategies; however, even if we are able to identify functional coping strategies, there is a risk that such strategies will likely be overwhelmed by the extent of change and other livelihood pressures. Implementation of coping strategies is the key to reducing susceptibility to ongoing threats. Current pressures from resource overexploitation and coastal development are already undermining coastal ecosystems and the ability for these ecosystems to withstand the stresses of climate change. The program aims to address the issue of adaptation to climate change using the existing work on sustainable development and sustainable resource utilization.

In 2005, Nadia Bood received a Russell E. Train Fellowship to pursue a master's degree in marine sciences at the University of South Alabama, USA. She is currently working for WWF-CARO as a Mesoamerican Reef scientist and climate change adaptation advisor

## **Upcoming Conferences**

#### The International Conference on Climate Change: Impacts and Responses

Pointe aux Sables, Mauritius • 9-11 January 2009

s09.cg-conference.com/

The conference will work in a multidisciplinary way across the various fields and perspectives through which we can address the fundamental and related questions of sustainability. The Conference is cross-disciplinary in its scope, a meeting point for natural and social scientists, researchers and practitioners, professionals and community representatives. The perspectives presented range from big picture analyses which address global and universal concerns, to detailed case studies which speak of localized applications of the principles and practices of sustainability.

#### Climate Change: Global Risks, Challenges, and Decisions

Copenhagen, Denmark • 10–12 March 2009

climatecongress.ku.dk

The University of Copenhagen is hosting an international scientific congress on climate change in cooperation with nine other universities in the International Alliance of Research Universities. The main aim of the congress is to provide a synthesis of existing and emerging scientific knowledge necessary in order to make intelligent societal decisions concerning the application of mitigation and adaptation strategies in response to climate change. The congress will identify the science, technology, and policy advances required in order to ensure sustainability of global communities in the current and coming decades.

## **ENVIROENERGY 2009:** International Conference on Energy and Environment

Chandigarh, India • 19-21 March 2009 www.enviroenergy2009.org

The Conference focuses on the challenges in the emerging areas of energy and environment to achieve sustainable development. EnviroEnergy 2009 shall provide a useful forum to academics,

technologists, entrepreneurs, and policy makers worldwide for exchange of concepts and emerging technologies in the fields of energy and environment. The Conference shall attempt to evolve an agenda for environmental policies, identification of green technologies, and their subsequent implementation for sustainable development.

### Fifth World Environmental Education Congress

Montréal, Quebec, Canada • 10–14 May 2009

www.5weec.uqam.ca

This Congress creates a forum for dialogue and synergy among educators from all sectors of the field. The main objectives of the conference are to promote the role of environmental education in developing and enriching human identity; highlight the contribution environmental education brings to social innovation; and emphasize the role environmental education can play in public policy development, and how public policy can strengthen environmental education.

## **Conservation Workshop Grants**

**Biodiversity Conservation and Research Forum,** 

Nepal—capacity building workshop for biodiversity conservation in the Dovan Bottleneck Area

**Cameroon Environmental Watch, Cameroon**—workshop on poaching threats facing protected areas in southeast Cameroon

Conservation International - Pangolin Conservation Support Initiative, Cambodia—Cardamom Mountain Pangolin Conservation Stakeholder Workshop New Light Awareness Club, Nepal—workshop on community-based wildlife conservation at the Dhulikhel Training Center in Dhulikhel, Kavrepalanchok

Okhaldhunga Development Society, Nepal—Local Community Awareness Training on Snow Leopard Conservation in Sagarmatha National Park

## Conservation Workshop Grants in China

These workshop grants were made possible through a generous gift from Alcoa Foundation to support workshop grants in China.



Napahai Nature Reserve, China—Community Ecotourism Workshop

**WWF China**—workshop on concept and methods of payment for ecosystem services in Lancang-Mekong River Basin

Yunnan Baimaxueshan Nature Reserve, China—training and experience workshop on sustainable management of non-timber forest product in Baimaxueshan Nature Reserve



**Yunnan Environmental Science Society, China**—workshop on saving energy, emissions reduction, and corporate social responsibility

Yunnan Institute of Environmental Sciences, China—training workshop on environmental protection for highway project design in Yunnan

Yunnan Provincial Environmental Protection Bureau, China—training workshop on urban and rural ecological planning and construction

## Creation of a New Protected Area for Anadabolava

by Fleuria Monique Randriatsivery, Madagascar, EFN Professional Development Grantee

Madagascar is an island located in the Indian Ocean off the eastern coast of Africa. More than 90% of the animal species and vegetation are endemic to the island. Because of this amazing biodiversity, a new priority of the Malagasy government is to increase the number of protected areas in Madagascar to safeguard the future of these species. The Missouri Botanical Garden (MBG) chose to focus their conservation work on Madagascar's "orphan sites"—sites that do not have a designated party maintaining the area or where the responsible party does not have sufficient funds to secure or rehabilitate the land. These sites are normally neglected by the larger conservation organizations because of their size, isolation, and lack of highvisibility animals, or because of the perceived difficulties in implementing effective programs.

MBG is working in partnership with the Malagasy government and the conservation community to gather data on the biodiversity and socio-economic status of select orphan sites in Madagascar. The data will be used in October 2008 to grant temporary protection for these sites until a more permanent plan of protected areas can be completed.

#### PROTECTION OF ANADABOLAVA FOREST

Anadabolava forest is one of the sites that was selected for data collection and temporary protection under the new protected area initiative in Madagascar. The forest is in the Amboasary Sud district located in the Anosy region, the south-eastern part of Madagascar. Anadabolava is composed of two forests blocks consisting of about 26,000 hectares located in the upper valley of Mandrare. In the east of the Mandrare River is Anadabolaba, and in the West of Mandrare River is Betsimalaho. This forest been threatened by the actions of communities, especially by slashand-burn practices and wood and timber collection. Although there are regulations on what flora and fauna can be extracted, the forest still faces a massive threat from these activities.

It is clear that the Anadabolava forest plays an important role in maintaining the hydric system in the region, which is characterized by extremely moist soil, which serves as a natural barrier to forest fires, and the ability to support the growth and reproduction of several plant species. The forest also preserves the river basin and the valley from erosion. The landscape of this spectacular area is different from any other forests in the Mandrare Valley because of the presence of charismatic plant species like baobab tree and Madagascar palm.

The connectivity of the main forest complex is currently threatened. In addition, the Mandrare Valley has been explored and mined for many years and this continues to add to the possibility of breaking the connectivity of the forest. This is exacerbated by the slash-and-burn practices of the local communities at low elevations, which has severely degraded the area. Considering the present threats and the rich biodiversity in the region, it seems very important to create the Anadabolava New Protected Area to promote integrated landscape management of the Mandrare Valley and Mandrare Biosphere Reserve and mitigate these threats.

Anadabolava-Betsimalaho forests represent an ecosystem that contains important natural resources and biodiversity that support

the livelihoods of local communities. Sometimes the communities have resorted to illegal or destructive activities in order to sustain these livelihoods. The creation of this new protected area

will provide the conditions that would promote landscape management in the Mandrare Valley and thereby allow the conservation and sustainable use of the resources in the forest. The sustainable use of this forest will benefit local people by generating on-going revenue from timber, tourism, and secondary forest products. The conservation of the rare habitats and species found at this site will benefit scientists and all whose livelihoods are enhanced by natural diversity.

#### PRELIMINARY STEPS

In October 2007, MBG and the Environment, Forest and Tourism Service conducted a preliminary rapid assessment in the site. They developed guidelines for field inventory work covering three main themes: 1) biological importance focused on the richness and intactness of the flora and fauna and identification of key habitats within the protected area network; 2) conservation challenges and appreciation of threats including an enumeration of current threats, the control of these threats, and an account of land use; and 3) conservation opportunities including the interest of local communities in creating a new protected area, the availability of managers and institutional partners to aid in the management of the forest, and the potential for economic development and sustainable, revenue-generating activities.

The next step was to complete the documents required for a formal request to grant temporary protection under the System of Protected Areas of Madagascar (SAPM). MBG and the Environment, Forest, and Tourism Service conducted local meetings with the community and organizational partners and with various authorities at local, communal, and regional levels. The goal of the meetings was to receive a letter of approval from each of the fokotany (counties), communes, districts, the regional authority, and each organizational partner for the creation of the park to be submitted to the government to affirm the commitment to creating the protected area.

The last step was to lead a validation workshop at the local and regional levels to allow the partners to officially confirm the project with all the stakeholders.

The following table shows the place were we conducted a meeting and we received an approval letter.		
Level	Location	Details
Local	8 Fokotany	Manandima, Behalomboro, Ankamena, Antsonjo, Befihamy, Besavoa et Adabolave, Mahazoarivo
Communal	4 Commune	Tsivory, Mahaly, Ranobe, Marotsiraka, Forest Direction, PHBM
District	District Amboasary Sud	Chief Forest
Regional	Region Anosy	WWF, CEL

#### **CONTINUING EFFORTS**

After the regional workshop to validate the protected area, the Chief of the Region gave approval to the stakeholders to request that the Ministry of Forest, Environment, and Tourism in Madagascar grant temporary protection of the Anadabolava forest. Currently, MBG is preparing all the reports for the Ministry of Forest, Environment, and Tourism that include the presentation of the site, a management plan, a simplified environmental impact study and protection plan, and the outcomes of the workshops and meetings with the stakeholders to approve the protected area. Those reports will be submitted by October 2008 with the anticipated outcome that the Ministry will commit to protecting this vitality important area in Madagascar.

In 2006, Fleuria Monique Randriatsivery received an EFN Professional Development Grant to attend an Ecovillage Training Workshop hosted by Findhorn Foundation, UK. She is currently working with the Missouri Botanical Garden and the government of Madagascar on protected area management.

## Notes from the Field

#### Karma Yangzom, Bhutan, Russell E. Train Fellowship (1999)

Karma received her master's degree in

environmental management, specializing in integrated conservation and development, from Yale support from



University with Karma Yangzom, Bhutan (center)

EFN. Karma works for BioBhutan—the first enterprise in Bhutan that specializes in product development and marketing of natural and organic certified products cultivated or collected by farmers. She also provides consultancy services for environmental assessments and studies for development projects such as rural electrification and urban development. Since 2005, Karma has conducted training sessions for farmer groups across Bhutan on environmentally friendly cultivation and has played a major role in the development of the existing natural and organic certified products under Bio Bhutan. She is currently completing a project that is developing guidelines for hazardous wastes in Bhutan.

#### Mathura Khanal, Nepal, Russell E. Train Scholarship (2001)

In 2001, Mathura received a Russell E. Train Scholarship to pursue bachelor's degree in forestry from Tribhuvan University in Nepal. After graduating, Mathura went to work for Nepal's Forest Department for two years. She recently completed her master's degree at the University of Natural Resources and Applied Life Sciences in Vienna, Austria. Since completing her degree, she has returned to Nepal and is currently working for Rural Reconstruction Nepal in a variety of remote areas in the mid-west development region.

#### Praveen Singh, India, EFN Professional Development Grant (2002)

Prayeen's first film, In the Shadow of the Tiger, was created with the help of an EFN Professional Development Grant in 2002

and 2003. He has recently finished two new films including The Future Beneath Our Feet, a documentary on geothermal energy in India which aired on India's National television Network and a film on WWF India's Satpura Maikal Landscape project to highlight the conservation efforts in the region. Praveen has recently been commissioned to do a film on Rajaji National Park, which is one of the few protected areas in the Terai Arc Landscape. He is also working on a film that explores conservation efforts of the Asiatic Lion and the effort to relocate the lions from the Gir National Park Sanctuary in Gujarat to Kuno-Palpur National Park in Madhya

#### Maureen Ewai, Papua New Guinea, EFN Professional Development Grant

Maureen received an EFN Professional Development Grant in 2003 to attend an environmental leadership course conducted by the Smithsonian Institution, USA. In 2006, she completed her master's degree in natural resources studies at the University of Queensland with an Australian Development Scholarship. She recently received an Australian Leadership Award from the Australian Government to support her doctoral studies on climatology at the University of Southern Queensland. Her study will focus on the implications of climate change on tropical ecosystems and biodiversity in Papua New Guinea. Maureen has also worked for Conservation International in the region.

#### Lia F Montti, Argentina, EFN

Professional Development Grant (2003) Lia is currently a doctoral student at the University of Buenos Aires, Argentina. In 2004, she received an EFN Professional Development Grant to attend a postgraduate course on tropical ecology and conservation coordinated by the Organization for Tropical Studies in Costa Rica. In November 2008, she is planning to attend the Seminario Internacional de Bosques Tropicales y Desarrollo in Colombia where she will present her most recent work, Understanding the role of the native bamboos in the Atlantic Forest

and its conservation implications. The paper explores the invasive behaviors of Chusquea ramosissima, a species of bamboo that grows in the Atlantic Forest ecoregion. Her work has significant implications for forest and natural resource management practices in the Atlantic Forest.

#### Phaivanh Phiapalath, Laos, Russell E. Train Fellowship (2005)

In 2005, Phaivanh received a Russell E. Train Fellowship to pursue his doctoral degree in environmental biology from the Suranaree University of Technology in Thailand. His thesis explores the distribution, abundance, and behavioral ecology of the Red-shanked douc langur in Nakia Nam Theun Protected Area. While finishing his thesis, Phaivanh is working as a consultant for IUCN and the government of Laos to update the country's protected area management system with a focus on enhancing sustainable financial mechanisms and building stronger governance.

#### **Rosemary Olive Mbone Enie**,

Cameroon, EFN Professional **Development Grant** (2006)

Rosemary Olive Mbone Enie received an EFN Professional Development



Grant in 2006 to attend an international environmental management course at Galillee College, Israel. She is currently the CEO and President of the Woman's International Coalition Organization (WICO)—an international NGO that works to protect the rights of individuals, improve the quality of life of communities, and advance education and training. She presented her work at the IUCN International Women Environmental Entrepreneurs Fair. Rosemary hopes to continue her work as a leader for grassroots projects to help woman across Africa who are addressing social and political issues in their communities.

OCTOBER 2008

## You can be a star!

Help us celebrate EFN's 15th anniversary by sending us video footage of your work in the field and tell us how EFN has helped your career and your work in conservation.

Write to efn@wwfus.org for more information.







