

Conservation and Community-Building
in the Costa Rica Rainforest
An Overview

Jeanette McDermott
Project Costa Rica '08

Jeanette McDermott
c/o Alice Zielonko
15 Fox Meadows
St. Louis, Missouri 63127

jeanette_mcdermott@mac.com
www.jeanettemcdermott.org

JEANETTE MCDERMOTT

November 26, 2007

Rainforests are the richest, oldest, most productive and complex ecosystems on Earth. Despite their monumental role, tropical forests are scraped raw at a rate of 54 acres per minute, or 28 million acres lost annually. Less than 20% of tropical forests remain.



A World Like None Other

Earth is like no other place in the entire universe. Among the countless stars, moons, asteroids, and other bodies arrayed across the vastness of outer space, only our tiny planet is known to support life.

And it does so everywhere: on the slopes of high mountains and on the floors of the oceans, in scorching deserts and at the frigid poles. Life on Earth comes in shapes and sizes ranging from blue whales and redwoods to butterflies and microbes.

This array of life is biodiversity, and is the foundation of a healthy and functioning ecosystem. Rich soils, clean air and water and abundant forests, as well as the myriad of species nature

supports are essential for stable and thriving societies. No matter how remote some of these storehouses of biodiversity may be, we are all connected to and dependent upon them; they are the foundation for our future.

Neotropical Rainforests

In no other place is this more evident than in the luxuriant rainforests, the world's most important natural regions. They contain most of the globe's plant and animal biodiversity, harbor key ingredients for tomorrow's medicines, and are home to indigenous peoples who have lived here for thousands of years.

The Neotropics are particularly important for biodiversity because they have a disproportionate number of species crammed into a relatively small

area. Conservation International has identified 34 of Earth's biologically richest places, with high numbers of species found nowhere else. Called "Hotspots," they face extreme threats.

We know 90 percent of life on Earth lives in 34 hotspots, the world's most biologically rich but most threatened places. To date, every hotspot has lost at least 70 percent of its original natural vegetation.

Neotropic Mesoamerica is the third largest among the world's hotspots. The region is best characterized as an ecological collage. Cloud forests and tropical rainforests, mangroves and freshwater lagoons, ancient crystalline

uplands, pine savannas, active volcanoes – no fewer than three biomes, two life zones and 33 ecoregions – make up this sprawling expanse.

The Two Percent Solution

The 34 hotspots once covered 15.7 percent of the Earth’s land surface. In all, 86 percent of the hotspots’ habitat has already been destroyed, such that the intact remnants of the hotspots now cover only 2.3 percent of the Earth’s land surface. Between them, the hotspots hold at least 150,000 plant species as endemic, 50 percent of the world’s total; 22,022 terrestrial vertebrate species call the hotspots home, or 77 percent of the world’s total. Unless we succeed quickly in conserving this small fraction of the planet’s land area, we will lose more than half of our natural heritage within the next few decades.

Habitat destruction is a pervasive threat affecting hotspots and is causing extinctions in many areas. Extinction is forever. Accelerating climate change will magnify the effects of habitat destruction and fragmentation. Predatory invasive species have already had a devastating impact on the island hotspots. Man’s introduction of exotic plant species into hotspots is wreaking havoc, and direct exploitation of species for food, medicine, and the pet trade seriously threatens all hotspots.

Hotspots are also notable centers of violent conflict. For example, areas in Mesoamerica, the Caribbean, Tropical Andes, Guinean Forests of West Africa, Eastern Afrotropical rifts, Horn of Africa, Caucasus, the Irano-Anatolian region, the Mountains of Central Asia, Indo-Burma, Sundaland, Wallacea, the southern Philippines, and the East Melanesian Islands all have been plagued by recent violence. The degree to which these conflicts cause biodiversity loss or are caused by biodiversity loss is unclear, but the correlation is unnerving.

THE MOST REMARKABLE PLACES ON EARTH ARE ALSO THE MOST THREATENED.

THESE ARE THE HOTSPOTS: THE RICHEST AND MOST THREATENED RESERVOIRS OF PLANT AND ANIMAL LIFE ON EARTH.
CONSERVATION INTERNATIONAL

Global Conservation Priority

In recent decades, Mesoamerica has seen some of the highest deforestation rates in the world. Scientists estimate that 80 percent of Mesoamerica’s forests have been scraped raw by large-scale agriculture, livestock and industrial developments. Widespread poverty among the region’s ever-swelling population has spurred poaching that undermines the integrity of the few protected areas in Central America.

Mesoamerica splits roughly into two regions. Northern Mesoamerica includes El Salvador, Belize, Guatemala and about one-third of Mexico. Southern Mesoamerica includes Honduras, Nicaragua, Costa Rica and the northern two-thirds of Panama. From the Sierra Madre Mountains in Mexico to the Panama Canal, Mesoamerica’s patchwork of terrain sustains some of Earth’s rarest wildlife. Today, the entire Mesoamerica hotspot region represents a global conservation priority.

Life on Earth faces a crisis of historical and planetary proportions. Unsustainable consumption in many northern countries and crushing poverty in the tropics are destroying wild nature.

Endemic species like the squirrel monkey in Costa Rica are in great danger of extinction.



The Causes Behind Rainforest Destruction

Tropical rainforests contain approximately 25 percent of the earth's insect, plant and animal known species. These extremely sensitive ecosystems are primary suppliers for much of the world's oxygen. The destructive process of deforestation is principally motivated by unfavorable economic conditions and short-sighted government policies.

The debt crisis of the 1970s and 1980s, which brought the vast majority of developing nations and Western banks to verge of total collapse, left many in the developing world economically devastated.

Beef Exports

In this period of crisis, many Latin American nations, including Costa Rica, began or expanded cattle ranching as an economic method for obtaining crucially needed foreign exchange. The demand for beef in the United States was extraordinarily high and these dollar-strapped nations chose clear-cutting and deforestation as a way to earn dollars.

In particular, Costa Rica deforested much of its tropical rainforests and Latin America in general lost 11 percent of its rainforests to cattle ranching alone. Beef exports from Costa Rica increased nearly 500 percent by the early 1980's, and cattle pasture land increased to 54 percent of total land mass.

Ranchers slash and burn rainforests to grow grass pasture for cattle. Once the cattle have grazed sufficiently, they are slaughtered and exported to industrialized countries to be made into fast food hamburgers and frozen meat products.

The deforestation in Costa Rica marks one of the most expansive and damaging environmental disasters recorded in modern history. With the loss of rainforests, Costa Rica has considerable topsoil erosion, which has depleted the land of its nutrients and



Nearly three-quarters of the world's most threatened birds, amphibians and mammals and over half of all the world's plants live in just a tiny fraction of the Earth's surface – the biodiversity hotspots. A majority of these species can't be found anywhere other than the 34 hotspots. Spectacular endemic species in the Mesoamerica hotspot include quetzals, howler monkeys and jaguars.

Since endemic species cannot be found anywhere else, the area where an endemic species lives is wholly irreplaceable.



Like its natural predator the jaguar, the tapir has suffered severely at the hands of man. The animal was once common in Costa Rica and ranged far and wide. Hunters have brought it to the edge of extinction.

reduced the land's productive life.

The Coffee Trade

Coffee is one of the most valuable products in world trade, in many years second in value only to oil as a source of foreign exchange to developing countries. It is Costa Rica's number one export. A new coffee plant that was

developed in direct response to the loss of forest shade from deforestation has changed coffee farming in Costa Rica.

The new sun coffee plant produces three times as much as a traditional coffee plant and requires a lot of sunlight. This has led to further loss of trees for sunlight to reach the plant.

When coffee plantations cut down shade trees for the new coffee plant, they lose approximately 90 percent of the bird diversity. Birds find food and shelter in the canopy of shade coffee plantations, while there is very little food and shelter in sun grown coffee plantations. In addition, coffee bean waste often ends up in Costa Rica's once pristine streams, where it sucks away oxygen, killing off all life in the water.

Most traditional small-scale shade-grown farmers cannot compete with the large sun grown coffee plantations. They must often sell their land or find a different trade. Some farmers sell their land to large-scale coffee growers who quickly convert it to sun coffee methods. Half of all Americans drink coffee and, therefore, have a tremendous influence over the world's coffee market. They can use this influence to buy sustainably-grown shade coffee and protect thousands of songbirds and other species in rainforest habitat.

Banana Republic

The large revenues of the Costa Rican banana industry have come at the expense of one of the world's most biologically diverse rainforests.

Massive monoculture banana plantations have devastated the Costa Rican ecosystem with the toppling of rainforests, heavy erosion of the soil-base and vast quantities of pesticides in the ground that kill off microbes, plants and wildlife. In addition, improper disposal of plastic bags that are used to protect bananas from inclement weather end up killing fish, smothering birds and choking turtles.

About 95 percent of banana production in Costa Rica is

WHAT HAPPENS WHEN CONDITIONS BECOME INTOLERABLE FOR A SPECIES?

THE SILENT ANSWER SHOUTS
FROM THE MEMORIES OF THESE
BIRDS ...

SO QUICKLY GONE FOREVER.

THE SONGBIRD FOUNDATION
WWW.SONGBIRD.ORG

controlled by three U.S. based corporations: Chiquita, del Monte and Dole. The Costa Rican environmental movement has challenged the corporations to be more responsible and responsive to environmental degradation. Pressure from the environmental movement has led to some positive changes, including laws that require banana plantations to be no closer than 33 feet to a water source, as to protect soil and the fragile habitats of inland and coastal fish and coral reefs.

Environmentalists, the Costa Rican government and the banana trade industry continue to work on solutions, along with strong external coalitions and other sources that help to positively shape outcomes for the future of the rainforest.



400 million quarter pound hamburgers are made from beef raised on Neotropic rainforest lands each year. For every quarter pound hamburger made from rainforest cattle, 55 square feet of land was cleared, an area the size of a small kitchen.



The U.S. produces more than enough beef to satisfy its domestic demand. The issue is price. The U.S. purchases rainforest beef simply because of its cost.

THE ANIMALS OF THE
 PLANET ARE IN
 DESPERATE PERIL ...
 WITHOUT FREE ANIMAL
 LIFE I BELIEVE WE WILL
 LOSE THE SPIRITUAL
 EQUIVALENT OF
 OXYGEN.

ALICE WALKER
 AMERICAN WRITER



Among the most impressive solutions is the system of national parks in Costa Rica, which has led to a vibrant ecotourism industry. If conservation efforts continue, many believe ecotourism could soon rival banana production as the largest revenue-generating form of business in Costa Rica. The key will be to ensure that tourism is sustained with minimal impact on precious natural and cultural resources.

Creative Solutions

Creative solutions to save the NeoTropical rainforests and other biological hotspots have far-reaching social, economic and environmental effects for wildlife, local communities, governments and business. Creative approaches to problem solving inspire others and motivate them to demand from world leaders responsible policies that end species extinction.



NeoTropical Mesoamerica hotspot shown in red



Speckled Caiman are heavily hunted for their skins, and are becoming rare where humans have moved into their habitat.



As climate, landscapes, and oceans change, species must move or adapt. Those that can't simply die out.

UNTIL MANKIND CAN EXTEND
THE CIRCLE OF HIS
COMPASSION TO INCLUDE
ALL LIVING THINGS, HE WILL
NEVER, HIMSELF,
KNOW PEACE.

ALBERT SCHWEITZER
NOBEL PEACE PRIZE, 1950

**THE NATURAL WORLD
IS THE LARGER SACRED COMMUNITY TO WHICH WE BELONG.
TO BE ALIENATED FROM THIS COMMUNITY
IS TO BECOME DESTITUTE IN ALL THAT MAKES US HUMAN.
TO DAMAGE THIS COMMUNITY
IS TO DIMINISH OUR OWN EXISTENCE.**

FATHER THOMAS BERRY
ECO-THEOLOGIAN

Rainforest Medicine

Healing Powers of the Rainforest

The rainforest has been called the ultimate chemical laboratory, with each floral species experimenting with various chemical defenses to ensure survival in the harsh world of natural selection. Plants have been synthesizing these compounds for millions of years to protect against predators, infection, pests, and disease.

Rainforest plants have already proved their potential with remedies for all sorts of medical problems, from childhood leukemia to toothaches and heart attacks. Seventy percent of the plants identified as having anti-cancer characteristics by the US National Cancer Institute are found only in the tropical rainforest. Despite all their promise, fewer than five percent of tropical forest plant species have been examined for their chemical compounds and medicinal value.

An individual plant may contain over 1000 unique curative chemicals. This chemical diversity makes rainforest species a vital reservoir of medicines and chemical templates with which researchers can create new drugs. For thousands of years, indigenous groups have used rainforest plants extensively for their health needs; peoples of Southeast Asian forests have used 6,500 species for medicinal purposes, while Northwest Amazonian forest dwellers have used 1,300 species.

Biologists are just beginning to work with indigenous tribal healers to learn how they use plants in traditional medicines. We are losing Earth's greatest biological treasures just as we are beginning to appreciate their true value.



**IT IS SAID EACH TIME A
RAINFOREST MEDICINE MAN DIES,
IT IS AS IF A LIBRARY
BURNS DOWN.**





**THE EARTH IS THE FOUNDATION OF
INDIGENOUS PEOPLES. IT IS THE
SEAT OF SPIRITUALITY, THE
FOUNDATION FROM WHICH OUR
CULTURES AND LANGUAGES
FLOURISH. THE EARTH IS OUR
HISTORIAN, THE KEEPER OF
EVENTS AND BONES OF OUR
FOREFATHERS. EARTH PROVIDES
US FOOD, MEDICINE, SHELTER AND
CLOTHING. IT IS THE SOURCE OF
OUR INDEPENDENCE; IT IS OUR
MOTHER. WE DO NOT DOMINATE
HER; WE MUST HARMONIZE
WITH HER.**

**WORLD COUNCIL
OF INDIGENOUS PEOPLES**



Ancestral Relationship to the Rainforest

The Indigenous Movement

Although indigenous peoples make up only 4 percent of the world's population, they represent 95 percent of the world's cultural diversity. Still alive as part of their traditional lifeways, the Ngöbe (Guaymí) Indians in the center of Costa Rica's Osa Peninsula, continue several ancestral activities such as subsistence agriculture, making traditional arts and handicrafts, fishing, hunting and gathering forest products. They are the least acculturated tribe in Costa Rica and live in their world still very steeped in their particular aboriginal cosmology.

Nearly half of Mesoamerica's people live in rural areas, where they depend directly on local natural resources. Poverty and low levels of economic development lead to survival tactics that do not support conservation. Poverty is a major factor in hunting, illegal logging, archeological poaching, and illegal encroachment (squatting).

The various forms of neglect, exploitation and deprivation to which indigenous peoples are subjected have led to ethnic strife and rising violence. Alarming, such conflicts are already found in many parts of Africa, Asia and Latin America. The consequent breakdown of the social capital of communities and the disregard for human lives are matters of great concern.

Local communities in and around protected areas are not always aware of the importance of biodiversity, and many regard protected areas as impediments to their economic opportunity. But communities are the natural stewards of their surroundings; communities and the environment depend on each other for their health. The involvement of indigenous communities is the best way to guarantee a healthy future for people, wildlife and the entire planet, but conservation activities are often undermined by lack of tangible benefits to indigenous

peoples and local communities. Inequality puts the local social system at risk and threatens regional and global stability. Supporting the development and empowerment of indigenous peoples contributes to national and international stability and to conflict prevention.

In Costa Rica, the Indigenous Movement is fairly recent. The battle in

the 1980's, by the Guaymi Indians to be recognized as Costa Rican citizens and not as foreigners, led to the establishment of a growing number of non-governmental organizations working together to pressure the government to comply with national and international legislation and ameliorate social and economic crises within indigenous communities.



The Guaymi Indians are repositories of rich, varied and locally rooted knowledge systems. Their culture is extremely valuable in a world that is threatened by the homogenization of cultural value systems. Their technology, medicine, crops, art and music are an important contribution to the world heritage. But, as their homelands continue to be invaded and destroyed, they and their cultures, customs and knowledge are disappearing. When rainforests die, so do the indigenous rainforest people..

The Next Generation

In 1869, Costa Rica became one of the first countries in the world to make education both free and obligatory, funded by the state's share of the great coffee wealth. Many of Costa Rica's leaders have been educators and have placed great importance in the expansion of education. Today, Costa Rica has a 93% literacy rate and is the most literate population in Central America.

Although the country lacked a university until 1940, Costa Rica now boasts four state-funded universities and a score of small private ones. Opportunities abound for adults living in cities to earn the primary or secondary diplomas they failed to gain as children. There is less access to education among rural children and adults and indigenous peoples. Libraries are the only way for adults in rural areas to continue education beyond sixth grade. The country needs books and funds to support additional libraries, especially in the remote areas.



**NOW I SEE THE SECRET OF THE MAKING OF THE BEST PERSON: IT IS
TO GROW IN THE OPEN AIR AND TO EAT AND
SLEEP WITH THE EARTH.**

WALT WHITMAN
AMERICAN POET

Together, We Can Make a Difference



I ADDRESS THIS TO YOU BECAUSE YOU WOULD NOT BE ON THIS PAGE IF YOU WEREN'T INTERESTED IN DOING SOMETHING TO CONSERVE WHAT IS LEFT OF THE EARTH'S RAIN FORESTS. THIS IS NOT A FAR-FETCHED IDEA TO BE LEFT ONLY TO OTHERS.

THERE IS MUCH YOU PERSONALLY CAN DO TO HELP. EACH OF US IN OUR OWN LIFE'S SITUATION IS IN A POSITION TO CONTRIBUTE IN EVEN A SMALL WAY. WE ALL SHOULD HAVE THE SATISFACTION OF SAYING, "I MADE A DIFFERENCE!"

NANCY AITKEN,
DIRECTOR, PROYECTO CAMPANARIO
BIOLOGICAL RESEARCH STATION
COSTA RICA

Tamandua Anteaters and Capuchin monkeys are among rainforest species whose lives hang in the balance.





The Scarlet Macaw, native to humid forests in Central and South America, has been widely extirpated by habitat destruction and capture for the wild pet trade.

The Ocelot is a wild cat distributed over much of Costa Rica, South and Central America, and Mexico. The Ocelot's appearance is similar to a domestic house cat, and its fur resembles that of a Jaguar. Both of these traits contribute to human exploitation of the Ocelot.



Proyecto Campanario Biological Reserve

Conservation in the Osa Peninsula

Proyecto Campanario is a biological reserve and research station in the humid tropical Pacific lowland of the Osa Peninsula in southern Costa Rica. The non-profit organization works to preserve habitat in the Osa region, which is under increasing pressure from deforestation and development. National and international scientists and students work with Campanario to promote understanding and appreciation of Costa Rica's diverse landscape and customs of its people. Campanario also works with indigenous peoples and local communities to help families maintain their lands and understand sustainable land use.

The biological station stretches nearly 170 acres inland from coastal zones and supports many of the diverse terrestrial and marine habitats needed for the wide array of mammals, reptiles and amphibians, birds, and insects that are found in this remote area where no roads or electricity have reached. Access to Campanario is by boat and foot. Trails through the

primary and secondary forests weave through lush vegetation, including over 120 different tree species.

Community Outreach

Just north of the Campanario Biological Station is the local one-room elementary school for the few children in the rainforest. The school, with just one teacher, has no electricity and few materials. Inland from Campanario, at least a two-hour hike through the jungle, is a slightly larger school with two classrooms and a pre-school program. Campanario, its visitors and benefactors supply both schools with much needed materials. In addition, Campanario has built two libraries for the rural communities and continually seek to increase the libraries' book inventories.

Regional Cooperation

At the regional level, Proyecto Campanario works with the



Extinction is the gravest aspect of the biodiversity crisis: it is irreversible. While extinction is a natural process, human impacts have elevated the natural rate. Mass extinctions of this magnitude have only occurred five times in the history of our planet; the last brought the end of the dinosaur age.



Coalition of NGOs in the area for conservation of the Biological Corridor for the Osa Peninsula and the rational development within this designated area. Included in the development is the Osa Trails Project, which will eventually offer a network of trails throughout the Biological Corridor so tourists and students can see the spectacular forests of the peninsula's interior. Local farmers will receive a portion of the tourist dollars and be encouraged to maintain their forests, which are the attractions for visitors and students. Everybody wins in this situation. All those along the trail route benefit from tourism. The country benefits from local people defending their forests. Tourists and students benefit from being able to see beautiful forests and wildlife that they protect.

National Work

On a national level, Campanario has designed a tropical ecology field trip program for local Costa Rican students and teachers, so they may see what remains of the rainforest in their own country. Subsidies from local businesses help reduce costs and make it possible for families to travel to remote areas like the Campanario Biological Station. Proyecto Campanario is an active member of the Costa Rican Network of Private Natural

Reserves, which encourages private sector landowners to protect whatever lands they own and manage them in an unaltered and natural state.

To date there are more than 110 members in the Network, which total more than 5% of the total area of Costa Rica. The network also serves as an advocacy group for its members.

The movement for private protected areas is growing in Mesoamerica, especially in Costa Rica. The Costa Rican Association of Private Protected Areas has registered more than 81 private protected areas, and similar groups are just getting started in Nicaragua and Panama.

All seven Central American nations have ratified the Central American Biodiversity Treaty, and in 1997 all Central American presidents agreed to support the Central American Protected Areas System and the Mesoamerican Biological Corridor.

This example of regional cooperation was reaffirmed in March 2001, and reflects a strong commitment to environmental problem-solving at the regional level.

Why Costa Rica, You Ask?

Two years ago I heard renowned biologist Dr. E.O. Wilson speak about biodiversity hotspots. I hadn't heard of hotspots, but immediately following Dr. Wilson's lecture, things shifted in me.

For the next year and a half I delved into research about global hotspots and began altering my lifestyle choices after understanding their peril. Soon I began to think in earnest about what I could do to help protect the most important ecosystems in the world. Then I took steps toward action.

On January 6, 2008 I leave for the southern Mesoamerica hotspot in Costa Rica. I will work with Proyecto Campanario, a biological research station in the priority area of the Osa Peninsula, documenting their collaborative large-scale ecological processes, scientific fieldwork, and educational outreach efforts. I am going to the Osa region because wildlife is my deepest passion and Osa possesses critical conservation targets within the hotspot.

The region holds at least 37 threatened terrestrial vertebrate species. Of these, 28 are endemic to southern Mesoamerica. I chose Costa Rica in particular because it has the most stable government in Mesoamerica, a regional system of protected parks, and a broad alliance of organizations that have both a political focus and programmatic approach to biodiversity conservation.

I'm inspired by Costa Rica's capacity for finding creative solutions to complex environmental problems and Proyecto Campanario's community-based conservation actions.

I have skills that can contribute to important ecological and community-building efforts. Telling positive and constructive stories about Costa Rica and Proyecto Campanario may motivate others to do what they can to make the world a better place.



The Resplendent Quetzal is often held to be the most beautiful bird in the Western Hemisphere. Birdwatchers from around the world make the long and bumpy trek to the Monteverde Cloud Forest Preserve in Costa Rica to attempt to catch a glimpse of this magnificent migratory bird. It is essential that additional land be protected if this species is to survive.

Snakes are important to the balance of life in the lush tropical forests and make up almost half of all reptile species in Costa Rica.



Howler Monkeys are some of Costa Rica's loudest inhabitants. Their call can be heard for 3-4 miles even through the thick tropical forest. Compared to other monkeys, Howler Monkeys don't travel much. They stay within their small communities and spend their whole lives in the tree tops. This makes them very susceptible to habitat destruction. They cling precariously to existence in relic patches of forest.





Proyecto Campanario is a conservation initiative started by a small group of teachers who began their lives in Latin America over 30 years ago with the Peace Corps. Reachable only by water after traveling over land or debarking at the tiny airstrip in Sirena, it's a wild motorboat ride up the Sierpe River through the impressive mangrove forests to the camp. There are no roads, no docks, and no traffic at Campanario. There is also no electricity or plumbing at the biological station to negatively impact the fragile ecosystem. A few small solar panels on site come in handy for recharging batteries and operating emergency appliances. Travel in and out of Campanario to produce media may combine plane, bus, taxi, rental vehicle, chartered bus and boat. Trips will be frequent and costly. Benefactors can offset these expenses through sponsorship and cash donations.



How You Can Get Involved

I'm following a deep call to do something more with my life, to give something back to a world desperately in need of help. Traveling to Central America to volunteer in a remote area isn't for everyone. There are risks associated with tropical diseases and wildlife, and hardships from living in a steamy jungle with no creature comforts. But my goal is to use my skills as a photojournalist and filmmaker to create positive social change in a biodiversity hotspot while also having an unforgettable and life-changing experience there.

U.S. philosopher and poet Ralph Waldo Emerson once said, "It is one of the beautiful compensations of life, that no man can sincerely help another without helping himself."

So, come on along. Join with me in channeling our individual efforts into a powerful force for change I need sponsors to help finance my trip and am looking for benefactors who want to contribute to global conservation in a personal way.

This project provides a powerful connection to the world in which we all live and is an exciting way to re-imagine stories and shape attitudes of our role on Earth.

Here's How You Can Help

The most pressing needs associated with this project are protection of the video equipment and myself against the elements. I need to buy special camera cases and gear, purchase insurance and pay for food, malaria pills and shelter while traveling to produce the films.

The second pressing need is transportation. Travel combines plane, bus, taxi, rental vehicle, chartered bus, hiking and boat. A single boat ride one-way into or out of base camp at Campanario is \$145. I will be traveling often to many places in the course of a year to produce and edit the films.

Strategic directions and expected outcomes for the project are outlined on pages 18 and 19; a detailed budget is on page 17.

I can accept donations by check mailed to the address on the cover sheet of this proposal. I will use your donations to sustain my efforts in documenting conservation actions in Costa Rica and raising awareness of the urgent need to protect species and their habitat in the Mesoamerica hotspot.



Documenting ecological and community building efforts in Costa Rica is a profound opportunity in the context of a clear and present danger to our life-giving tropical ecosystems



Baby sloth happy in its natural habitat

Green Cathedrals

Take a walk in a healthy forest. Wherever you are, the experience is the same: vibrant sounds, fertile scents and stunning beauty. In the world among leaves, all species share a common experience: we feel “at home” there.

Healthy forests give life to us all. They give us food, water and medicine, moderate climate and clean the air. Green cathedrals shelter us and are a magical source for self-discovery and spiritual renewal.

We all have an inherent understanding that our lives are better because of forests, but tragically, they are disappearing at alarming rates, especially in the tropical rainforests. Never has the planet been more in need of forests, and never have the forests been under greater pressure than they are today. Throughout the world, ancient forests are in crisis. Many of the plants and animals that live in the forests face extinction. People and cultures who depend on these forests for their way of life are also under threat.

But the news is not all bad. Important conservation efforts are underway in many of the ancient and magnificent forests to protect the life they support. These are the stories that need to be told so that we are inspired and can feel hope for the future. By working together we can spread the word of these efforts and call others to action to defend the forests.



More Beautiful Wild

The future is in our hands. When we make wise lifestyle choices based on understanding, compassion and reverence for others, every living being on Earth benefits.



Indigenous peoples and tropical plants and wild animals cannot survive outside the rainforest.

Making Connections, Making Choices

Our choices matter. There are things we can each do to curb wholesale destruction of Earth's richest ecosystems.

Say No to Exotic Pets

Trapping and poaching of wild animals for the exotic pet trade contribute greatly to the decimation of wild populations. The "pet" trade and deforestation have brought parrots to the edge of extinction. Trafficking in rare and exotic wildlife is a global business, worth \$10-20 billion annually. The losers in the commodity exchange are the animals. Replacing the demand for "pets" with a demand for preserving wild habitat will reduce animal suffering while increasing support of conservation efforts such as ecotourism.

Buy Shade-Grown Coffee

Coffee has been traditionally grown under the canopy of high forest trees. Recently, farmers in coffee growing regions of the Americas have removed older, shade canopy coffee trees and replaced them with new high-yielding, sun-tolerant varieties. These full-sun coffee plantations are biological deserts. Even though full-sun farms are more expensive to maintain, and have significant environmental costs, government agencies subsidize the transition because they support the giant agri-business industry and service the national debt. Scientists believe that more birds have not become extinct because they can still

find patches of refuge in traditional shade coffee farms. Individual coffee choice can make an impact. Informed and concerned consumers can make a difference by buying organic, shade-grown coffee from specialty coffee stores.

Know the Wood You're Buying

Tropical timber that is used in products for the U.S. and European market can be either a cause of deforestation or a way to preserve tropical rainforests. The difference depends on many factors, such as how the forest is cut and the use of land after cutting. When shopping for nice wood furniture, hardwood flooring, boat fixtures and ornamental wood products, ask questions and find out where the wood came from. If you cannot determine where the wood originated and don't know how it was harvested, don't buy it.

Find an Alternative to the Hamburger

"Imports of beef by the United States from Central America during the past 25 years has been the major factor in the loss of about half of the tropical forests there, all for the sake of keeping the price of hamburger in the United States about a nickel less than it would have been otherwise." - MacArthur Foundation Report. Though Central American beef exports to the United States have declined in recent years, they still approach 100 million pounds annually.

WORLD OF BEAUTY

This rare tropical butterfly with transparent wings is used by rainforest ecologists as an indication of high habitat quality and its demise alerts them of ecological change.



**THE GREATEST, DEEPEST TRAGEDY
OF LOSING THE SPLENDOR OF THE OUTER WORLD,
IS THAT WE WILL ALWAYS HAVE AN INNER DEMAND FOR IT.
WE ARE GENETICALLY CODED TO EXIST
IN THE WORLD
OF BEAUTY.**

FATHER THOMAS BERRY
ECO-THEOLOGIAN



Shadow of the Rainforest

Part of my fascination with the jaguar stems from my interest in big predators. But like many large carnivores that live at the peak of their particular food pyramid, the jaguar also stands as a symbol of the disappearing tropical forest. Its varied diet alone demonstrates the diversity of the habitat it requires, preying as it does on at least 60 different

species. I've never seen a jaguar in the wild - only jaguar footprints in the jungle of Belize. But that somehow seems appropriate for this swift and solitary hunter. The jaguar once ranged from the southwestern United States to southern Argentina. Now, except in the still-vast rainforest of the Amazon basin, jaguars are very rare, their numbers

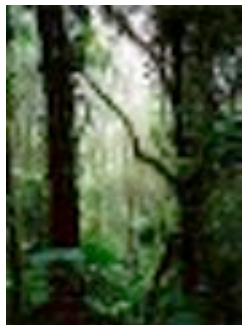
having been drastically reduced by big-game hunters and the vanishing habitat. I can't conceive of anything being more varied and rich and handsome than the planet Earth. And its crowning beauty is the natural world.

Robert Bateman
Canadian Artist

STRATEGIC DIRECTIONS	EXPECTED OUTCOMES	COST FOR 1 YEAR
<p>PRIORITY #1 Purchase protective gear for digital equipment and ship equipment to Costa Rica</p> <p>Meet basic needs for food, shelter and safety</p>	<p>Safeguard equipment to ensure safe arrival and ability to operate in tropical rains and humidity</p> <p>Ensure personal vitality for work productivity</p>	<p>\$6,100</p> <p>\$12,000</p>
<p>PRIORITY #2 Create media that recognize collaborative conservation efforts in southern Mesoamerica and the Osa region; allow stakeholders to promote their conservation actions</p>	<p>Strengthen existing regional conservation alliances and inspire development of new partnerships</p> <p>Spread awareness of conservation priorities and demonstrate that better, more lasting returns can come from sustainable systems</p> <p>Promote responsible tourism that conserves the environment and improves the well-being of local people</p> <p>Empower regional stakeholders to embrace conservation in order to minimize species extinction</p>	<p>\$9,000</p>
<p>PRIORITY #3 Produce media that document scientific research and fieldwork and educational outreach programs at Proyecto Campanario and the Osa region</p>	<p>Promote reputation of Campanario to increase visits by scientific teams, environmental educators, interns and students of all ages worldwide to foster understanding of and obtain assistance with efforts to preserve biodiversity in the Osa region</p> <p>Increase knowledge of biotic riches to promote species protection</p>	<p>\$10,000</p>

HEALING THE EARTH IS THE SPIRITUAL WORK OF OUR TIME.

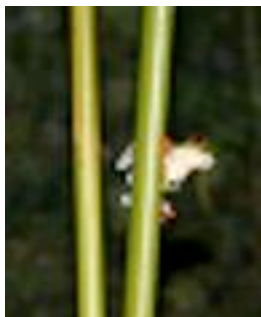
HENRYK SKOLIMOWSKI
POLISH ECO-PHILOSOPHER



STRATEGIC DIRECTIONS	EXPECTED OUTCOMES	COST FOR 1 YEAR
<p>PRIORITY #4 Produce media about indigenous peoples of the Osa region</p> <p>Produce media with youth in the Osa region, letting them tell their cultural story through digital media</p>	<p>Promote value of the contributions indigenous cultures make to the world and, in so doing, keep families on their lands and support the development and empowerment of native peoples</p> <p>Give voice to the new generation of leaders so they may advocate locally and globally for the protection and preservation of their natural and biological heritage</p>	<p>\$10,000</p> <p>\$7,500</p>
<p>PRIORITY #5 Duplicate and distribute completed media to regional stakeholders, government and business leaders, media outlets and benefactors of Project Costa Rica '08</p>	<p>Heighten sense of urgency to minimize species extinction in the southern Mesoamerican hotspot and inspire others to join efforts to protect and preserve the 34 hotspots identified globally by Conservation International</p> <p>Recognize publicly the vision and goodwill of benefactors of Project Costa Rica '08</p>	<p>\$5,000</p>
<p>PRIORITY #6 Purchase and ship books and school supplies to Proyecto Campanario to distribute in the Osa region</p>	<p>Expand book inventories at two rural libraries and two rural schools</p> <p>Assist rural youth with academic enrichment materials to improve their quality of education</p>	<p>\$3,000</p> <p>\$2,000</p>

NEVER DOUBT THAT A SMALL GROUP OF THOUGHTFUL, COMMITTED CITIZENS CAN CHANGE THE WORLD; INDEED, IT'S THE ONLY THING THAT EVER HAS.

MARGARET MEAD
AMERICAN ANTHROPOLOGIST



ABOUT JEANETTE

Jeanette devotes herself to natural resource conservation, wildlife rehabilitation, community-building, youth media and digital video productions focused on Earth-healing.



Passions and Skills

Jeanette McDermott is a career photographer, filmmaker and journalist. She is founder and president of an independent digital media production company, which specializes in youth media and documentaries that promote Earth-Spirituality.

After being inspired while on retreat with Franciscan Sisters in 2005, Jeanette formed Gubbio Studios, naming her company in tribute to the 13th-century story of St. Francis and the wolf at Gubbio. The story centers on issues of compassion, charity and compromise for the greater good. Since forming Gubbio Studios, Jeanette has produced a number of documentaries that embody these values.

Prior to forming Gubbio Studios,

Jeanette served as a media roster artist with the Kentucky Arts Council, and as Director of Media Arts for a community arts organization in Louisville and Executive Director of an environmental education non-profit organization in Kentucky.

For many years she worked as a photojournalist for newspapers and magazines, and as a television and radio personality and correspondent for the United Press International. In local volunteer capacities, Jeanette has developed and managed programs in forestry stewardship, wildlife habitat enhancement, environmental education and wildlife rehabilitation. She has served on the Board of Directors of the Kentucky Association of Environmental Education,

Kentucky Woodland Owners Association and several community preservation coalitions and neighborhood associations.

Jeanette has received public recognition for her leadership and vision, including awards for educational outreach and ecological restoration from the Kentucky Division of Forestry, Kentucky Department of Fish and Wildlife and Jefferson County (KY) Government. She has received extensive grant funding from diverse sources for youth programs in media arts, personal empowerment and environmental education.

Jeanette was nominated twice as “The Most Admired Woman in the Arts” by Today’s Woman magazine in Louisville, Kentucky.



Youth Media Projects

Jeanette began collaborating with schools and community organizations in 1992 to pass her knowledge of communications to the next generation of media makers. Since then, she has worked with hundreds of Middle and High School youth to create successful youth media programs.

Habitat Urban Greenspace (HUG)

More than 500 elementary, middle and high school youth transformed six vacant urban lots into lush outdoor classrooms through Project HUG, a three-year project Jeanette created. Youth documented the project through digital media. A 15-year-old director of one of the documentaries used her video to gain entry into a summer film institute. A 13-year-old participant's photograph of HUG won first place in the youth division of the Kentucky State Fair. Multiple sources funded HUG.

T-FORCE

Economically disadvantaged teens spent three years learning about urban forestry and planting more than 1,000 trees in a blighted downtown Louisville neighborhood. Jeanette managed the project and worked with youth to plant the trees and produce a video documentary with funds from The National Tree Trust.

Freedom Expressed

Immigrant and refugee youth from 11 countries explored feelings of isolation and issues of culture, race and identity through media arts and community dialogue. Jeanette designed the year-long project and received a grant for it from the U.S. National Endowment for the Arts.

Media Masters

Jeanette created Media Masters as a way to help instill pride among students in a middle school that is riddled with poverty and gangs. Media Masters began as a two-

Earth-Spirituality Video Projects

Nature's Wisdom

Sisters of Loretto use metaphors from nature to demonstrate sustainable lifestyle choices and promote Earth-healing consciousness in south-central Kentucky.

Santuario Sisterfarm

A sanctuary managed by Adrian Dominican Sisters in the Texas Hill Country embodies the Feminine Divine and promotes permaculture principles of living lightly on Earth.

Soul Quest

Tucked into southern California's San Jacinto Mountains is a warm and welcoming retreat center where people experience Earth's powers to heal and awaken us to our inner story.

Home to Me

A mountaintop monastery in rural eastern Kentucky is home to six Sisters from the Order of St. Benedictine who, for 25 years, have been meeting the needs of people living in the impoverished Appalachian region.

Present to Earth

The Oblates of Mary Immaculate conduct an Earth Literacy course each summer to foster understanding of the 14-billion-year-old story of the Universe and show how science and Spirit unite. The course takes place in Godfrey, Illinois, atop ancient sandstone bluffs that overlook the beauty and convergence of three great rivers.

week grant-funded summer project and evolved into a weekly after-school program and ultimately became part of the school's core curriculum, which was funded through the public school system. Youth in Media Masters have created three music videos and five short video documentaries about their school and neighborhood. Mixed Media, a program of Kentucky Education Television, featured Media Masters.

See Me

A grant from Kentucky Foundation for Women enabled high school girls living in a remote coal-mining town in eastern Kentucky to use photography and filmmaking to examine media stereotypes about Appalachian girls, and to explore their self-identity within a cultural framework. Jeanette created the project after teaching in a school in Appalachia and witnessing how the culture affects girls.

Help Me

Jeanette worked with high school girls in the Louisville Girls Leadership Summit to produce a video drama examining emotional pain girls suffer when they have no adult guidance or strong community to support them. The video won first place in a United Way film competition and garnered a \$10,000 grant from the Metro Louisville City Council for the girls to continue their work as media activists.

Brave Girls

Jeanette worked with teens in the Louisville Alliance for Girls to write and produce a radio drama about European Girl Guides who helped Jews escape Nazi persecution during World War II. Funding from the Kentucky Foundation for Women allowed the girls to produce the radio drama, digitally master it onto CD-ROM, and develop a companion Educators Guide. The girls packaged and distributed the product to girls' organizations worldwide and have marketed it for Internet sales on their website.

It Starts Here

Middle and high school girls in the Louisville Girls Leadership Summit tackle issues of leadership, equality and voice as imperatives to shaping young women's lives today. The girls have created a website and are working with Jeanette to produce a video that fosters understanding and deepens appreciation of issues that affect women and girls.

**THE FUTURE BELONGS TO THOSE
WHO GIVE THE NEXT GENERATION
REASONS TO HOPE.**

PIERRE TEILHARD DECHARDIN
FRENCH JESUIT PRIEST, PALEONTOLOGIST AND PHILOSOPHER

Dear Supporters:

Thank you for taking time to read about Project Costa Rica '08.

We've heard the news reports and have seen the headlines many times: the Earth's rainforests are in peril, and lives hang in the balance as people, plants and animals face imminent threats of extinction.

Scientists have identified critical conservation targets in the Osa Peninsula in southern Costa Rica, a place I will live for a while to tell the stories of people who are working to save this vital region. Stories breathe life into information people want to share with each other; it's how we understand our connection to others and ourselves. Through my stories I hope to empower and propel others to action so that, together, we can lessen the impact we make in the rainforest.

I am a career photographer and print and broadcast journalist, and have spent 35 years telling stories about people and places. While in Costa Rica I am donating my services to assist a non-profit biological research station with its powerful conservation and community-building efforts in Osa. The organization is called Proyecto Campanario (Project Bell Tower).

Until just a few years ago Osa was virtually untouched, and Campanario was able to focus on scientific research about rainforest plants, animals and people. But international land developers have changed that. Now Campanario is up to its ears in fundraising efforts to acquire and protect Neotropical rainforest land in Osa, so that the indigenous Guaymi Indians, migratory birds and endemic flagship species don't disappear forever.

I will focus on a number of strategic directions while in Costa Rica:

- Create media that recognize collaborative conservation efforts in southern Mesoamerica and the Osa region and allow stakeholders to promote their conservation actions
- Produce media that document scientific research and fieldwork and educational outreach programs at Proyecto Campanario and the Osa region
- Produce media about indigenous peoples of the Osa region
- Produce media with youth in the Osa region so that they may tell their cultural stories
- Duplicate and distribute completed media to regional stakeholders, government and business leaders, media outlets and benefactors of Project Costa Rica '08
- Purchase and ship books and school supplies to Proyecto Campanario to distribute to the two schools and two libraries that they have established in the Osa jungle

A Need for Help

While I am able to finance a portion of the yearlong expedition personally, I am requesting financial support to assist with the effort. The total amount I need for one year is \$64,600. Part of this budget includes personal costs for medications, insurance and equipment, but the bulk of the budget supports efforts at Campanario. Your financial help will impact the indigenous peoples, animals and plants, scientists, medicinal plant researchers, and countless people in the U.S. and around the world who will be inspired and moved to action through knowledge and awareness.

These are my financial needs:

- Meet basic needs for food, shelter and medicines for tropical diseases to ensure personal vitality for work productivity; purchase overseas travel and medical insurance for emergency evacuation and/or hospitalization
- Purchase protective gear for digital equipment to ensure its ability to operate in tropical climate
- Pay local transportation costs for myself and my equipment to film location sites
- Pay hard costs associated with media pre-production, production, post-production and distribution, such as licenses, tariffs and taxes, legal, translation and copyright fees, etc.
- Purchase books and educational supplies and pay to ship them to Proyecto Campanario for distribution to children living in the Osa jungle

I am committed to excellence as a storyteller, environmental educator and conservationist and have a clear vision and passion for delivering outstanding results. I ask you to assist with my efforts to protect remaining rainforest land and the people and species that inhabit them by making a donation that allows me to reach my goals, and the goals of Proyecto Campanario.

My strategic directions are listed on pages 20 and 21 of this document.

With your financial assistance, I can help indigenous children and tribal leaders tell important stories about the rainforest, assist in the crucial efforts of Proyecto Campanario and shine a beacon on Costa Rica's collaborative efforts and national system of protected parks as inspiration for hope and action, so that people everywhere may see how others embody what American anthropologist Margaret Meade once said: "Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has."

The challenge at this stage is to seize the opportunity, to take the risk, to realize an innovative, new, rewarding and sustainable future for the whole Earth community. For me, the choice is an easy one – protect the remaining fraction of the rainforest, what scientists call the "lungs of the Earth," so that every living species on Earth can survive beyond the 21st Century.

Please support my goals and the efforts of Proyecto Campanario by clicking on the pay pal button on my blog site and making a donation today.

From the depths of my soul, I thank you.

Jeanette McDermott
Independent Film Producer
Gubbio Studios
jeanette_mcdermott@mac.com
www.jeanettemcdermott.org

BUDGET

Project Costa Rica '08

VIDEO EQUIPMENT & SUPPLIES

Shipping/Carrying/Storage Cases: used to transport and store equipment	1,500
Protective Rain Gear/Housing Casements: used when shooting	1,700
Equipment Insurance	1,600
Digital video supplies *	1,300
* silica gel, rainproof storage bags, mini DV tapes, camera batteries, camera poncho, tripod umbrella, blank DVDs, blank jewel cases, external media storage drives	
TOTAL VIDEO EQUIPMENT & SUPPLIES	6,100

BASIC NEEDS

Food & Shelter: base camp, media production locations, layover sites	8,700
Travel and Medical Insurance	2,500
Health & Safety: malaria, typhoid tablets	800
TOTAL BASIC NEEDS	12,000

MEDIA PRODUCTION

Stipends for production assistance	7,000
Pre-production: script, storyboard, pre-production meetings	2,500
Production: production meetings, narration, shooting, location fees, licenses, legal	9,000
Post-Production: editing, subtitles, music, copyright fees, licenses	8,000
DVD jacket designs: graphic design/printing jewel cases for media products	3,000
Distribution: DVD duplication, packaging/postage, Internet fees, screening fees	5,000
TOTAL PRODUCTION & FUNDRAISING	34,500

SHIPPING & TRAVEL/TRANSPORTATION

Shipping: transport equipment to and from Costa Rica; customs tariffs and taxes	2,000
Travel/Transportation: air, ground, sea, foot in-country: travel/transport equipment for media production	5,000
TOTAL SHIPPING & TRANSPORTATION	7,000

EDUCATIONAL BOOKS AND MATERIALS

Purchase and ship books, transport to jungle	3,000
Purchase and ship educational supplies, transport to jungle	1,500
Customs tariffs and taxes	500
TOTAL EDUCATIONAL BOOKS AND MATERIALS	5,000

TOTAL BUDGET AMOUNT **64,600**

NOTES:

Budget is for one year, beginning January 6, 2008 and ending December 31, 2008. Video equipment and supplies will be purchased in December 2007. Media refers to digital video products for distribution to radio, television, print, Internet, film screenings and public presentations. Media products will be produced in Spanish with English subtitles.

JEANETTE McDERMOTT

c/o Alice Zielonko ~ 15 Fox Meadows ~ St. Louis, MO 63127

jeanette_mcdermott@mac.com

www.jeanettemcdermott.org

JOB OBJECTIVE: Seeking media and teaching opportunities at a non-profit biological reserve in Costa Rica

SUMMARY OF EXPERIENCE

- 35 years experience working in print and broadcast media
- 18 years experience managing non-profit organizations (concurrent with media work)
- 11 years experience teaching media arts and environmental education (concurrent w/non-profit management)
- 20 years voluntarism in ecological restoration and wildlife rehabilitation

RELEVANT EXPERIENCE AND PROFICIENCIES

Teaching and Human Relations Skills

- Proven ability to work cooperatively and successfully with diverse populations
- Excellent skills developing innovative curriculum and service learning projects for environmental education and media arts
- Mentor youth to increase social skill development for empowerment and voice
- Professional Development training for teachers in media arts and environmental education
- Group training facilitation for adult learners of digital media and natural resource conservation

Media, Public Relations and Marketing Skills

- Seasoned journalist, photographer, graphic designer, scriptwriter, video producer and editor
- Direct development of products for interactive media and commercial and non-profit media outlets
- Broad participation in corporate communications and media, public and community relations
- Oriented toward meeting demanding time goals and production deadlines
- Proven ability to work efficiently and multi-task successfully under diverse conditions

Management Skills

- Founded a non-profit environmental education organization and served as Executive Director for 12 years
- Founded a non-profit arts organization and served as Director of Media Arts for 6 years
- Co-Founded a non-profit forestry stewardship organization and served for 10 years on Board of Directors
- Served 4 years on Board of Directors for Kentucky Association of Environmental Education
- Served 3 years as a Roster Artist with the Kentucky Arts Council
- Successfully written and received grants over an 18-year period to support non-profit organizations and myself as an individual media artist
- Process-oriented, orderly and detail-oriented to achieve outcome-based goals

EDUCATION

California State University, Hayward: Bachelor of Arts, Professional Writing, magna cum laude

Ongoing CEUs, college courses and Adult Ed. in media, teaching, and natural resource conservation

WORK HISTORY

2005 – Present	Media Artist and Filmmaker	Gubbio Studios, Self-Employed
1999 – 2005	Director, Media Arts	Kentucky Theater Project, Louisville, KY
1993 – 2005	Executive Director	Learning Pursuits, Inc., Louisville, KY
1972 - Present	Photojournalist/Media Artist	U.S. and Overseas

PERSONAL INFORMATION

Date of Birth: 1 February 1954

Single with no dependents; vegetarian; physically fit and in excellent health

Credo of the Peaceful Traveler

GRATEFUL
FOR THE OPPORTUNITY
TO TRAVEL AND
EXPERIENCE THE WORLD
AND
BECAUSE PEACE BEGINS
WITH THE INDIVIDUAL,
I AFFIRM
MY PERSONAL RESPONSIBILITY
AND COMMITMENT TO:

- JOURNEY WITH AN OPEN MIND AND GENTLE HEART
- ACCEPT WITH GRACE AND GRATITUDE THE DIVERSITY I ENCOUNTER
- REVERE AND PROTECT THE NATURAL ENVIRONMENT WHICH SUSTAINS ALL LIFE
- APPRECIATE ALL CULTURES I DISCOVER
- RESPECT AND THANK MY HOSTS FOR THEIR WELCOME
- OFFER MY HAND IN FRIENDSHIP TO EVERYONE I MEET
- SUPPORT TRAVEL SERVICES THAT SHARE THESE VIEWS AND ACT UPON THEM
- BY MY SPIRIT, WORDS AND ACTIONS, ENCOURAGE OTHERS TO TRAVEL THE WORLD IN PEACE

WWW.SUSTAINABLETRAVEL.COM



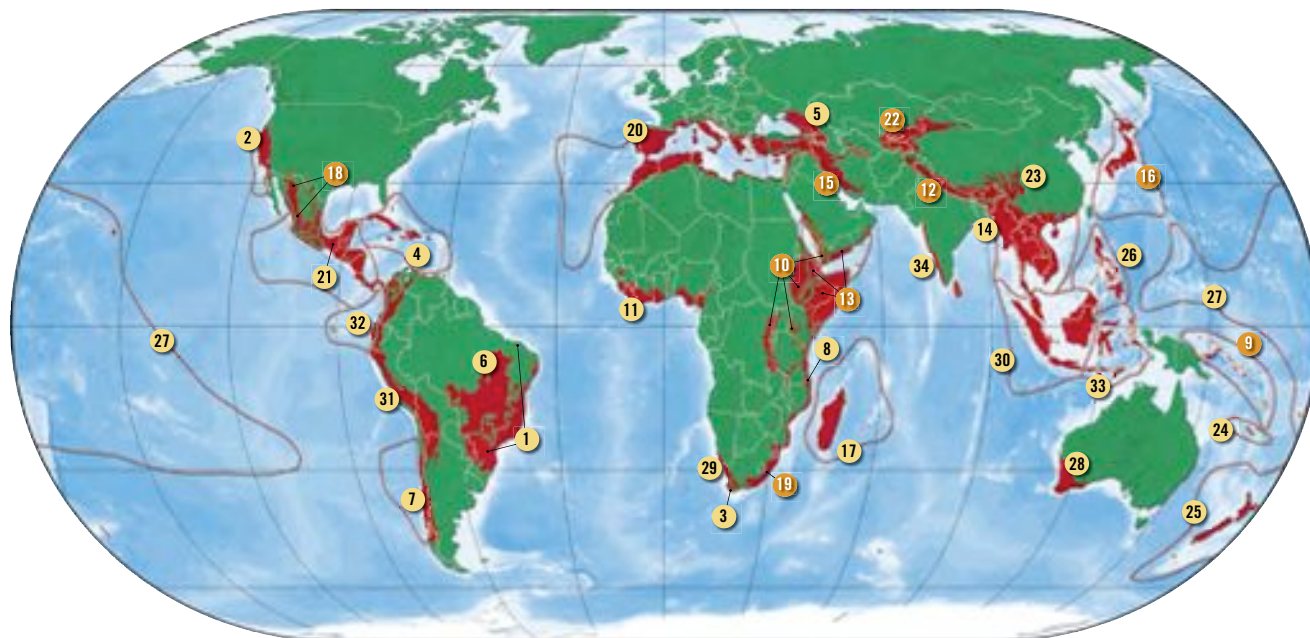
Jeanette McDermott

c/o Alice Zielonko
15 Fox Meadows
St. Louis, Missouri 63127

jeanette_mcdermott@mac.com
www.jeanettemcdermott.org



Biodiversity Hotspots



Biodiversity Hotspots

Earth's biologically richest places, with high numbers of species found nowhere else. Hotspots face extreme threats and have already lost at least 70 percent of their original vegetation.

- 1 Atlantic Forest
- 2 California Floristic Province
- 3 Cape Floristic Region
- 4 Caribbean Islands
- 5 Caucasus
- 6 Cerrado
- 7 Chilean Winter Rainfall-Valdivian Forests
- 8 Coastal Forests of Eastern Africa
- 9 East Melanesian Islands
- 10 Eastern Afrotropical
- 11 Guinean Forests of West Africa
- 12 Himalaya
- 13 Horn of Africa
- 14 Indo-Burma
- 15 Irano-Anatolian
- 16 Japan
- 17 Madagascar and Indian Ocean Islands
- 18 Madrean Pine-Oak Woodlands
- 19 Maputaland-Pondoland-Albany
- 20 Mediterranean Basin
- 21 Mesoamerica
- 22 Mountains of Central Asia
- 23 Mountains of Southwest China
- 24 New Caledonia
- 25 New Zealand
- 26 Philippines
- 27 Polynesia-Micronesia
- 28 Southwest Australia
- 29 Succulent Karoo
- 30 Sundaland
- 31 Tropical Andes
- 32 Tumbes-Chocó-Magdalena
- 33 Wallacea
- 34 Western Ghats and Sri Lanka

● New hotspots

- 1 **ATLANTIC FOREST** The Atlantic Forest of tropical South America boasts 20,000 plant species, 40 percent of which are endemic. Less than 10 percent of the forest remains. More than two dozen Critically Endangered vertebrate species are clinging to survival in the region, including three species of lion tamarins and six bird species that are restricted to the small patch of forest near the Murici Ecological Station in northeastern Brazil.
- 2 **CALIFORNIA FLORISTIC PROVINCE** The California Floristic Province is a zone of Mediterranean-type climate and has the high levels of plant endemism characteristic of these regions. The hotspot is home to the giant sequoia, the planet's largest living organism, and its taller but less massive relative, the coastal redwood. The region holds a number of threatened endemic species such as the giant kangaroo rat and the desert slender salamander.
- 3 **CAPE FLORISTIC REGION** Evergreen, fire-dependent shrublands characterize the landscape of the Cape Floristic Region, one of the world's five Mediterranean hotspots. Home to the greatest nontropical concentration of higher plant species in the world, the region is the only hotspot that encompasses an entire floral kingdom, and holds five of South Africa's 12 endemic plant families and 160 endemic genera. The geometric tortoise, the Cape sugar-bird, and a number of antelope species are characteristic of the Cape Floristic Region.
- 4 **CARIBBEAN ISLANDS** The Caribbean Islands support exceptionally diverse ecosystems, ranging from montane cloud forests to cactus scrublands, which have been devastated by deforestation and encroachment. The hotspot has dozens of highly threatened species, including two species of solenodon (giant shrews) and the Cuban crocodile. The hotspot is also remarkable for the diminutive nature of much of its fauna, boasting the world's smallest bird (the tiny bee hummingbird) and smallest snake (*Leptotyphlops bilineatus*).
- 5 **CAUCASUS** The deserts, savannas, arid woodlands, and forests that comprise the Caucasus Hotspot contain a large number of endemic plant species. Its rugged landscape is home to the two species of highly threatened Caucasian turs or mountain goats. Recent economic and political crises in the region are intensifying forest clearing for fuelwood, and together with illegal hunting and plant collecting, threaten the unique biodiversity of this region.
- 6 **CERRADO** The Cerrado region of Brazil, comprising 21 percent of the country, is the most extensive woodland-savanna in South America. With a pronounced dry season, it supports a unique array of drought- and fire-adapted plant species and a surprising number of endemic bird species. Large mammals such as the giant anteater, giant armadillo, jaguar, and maned wolf also still survive here.
- 7 **CHILEAN WINTER RAINFALL-VALDIVIAN FORESTS** A virtual continental island bounded by the Pacific Ocean, the Andes Mountains, and the Atacama Desert, the Chilean Winter Rainfall-Valdivian Forests harbor richly endemic flora and fauna. The Araucaria tree has been declared a national monument in itself, protecting it from logging. The rare Andean cat, mountain vizcacha, and Andean condor can also be found in the hotspot.
- 8 **COASTAL FORESTS OF EASTERN AFRICA** Though tiny and fragmented, the forest remnants that make up the Coastal Forests of Eastern Africa contain remarkable levels of biodiversity. The 40,000 cultivated varieties of African violet, which form the basis of a \$100 million global houseplant trade, are all derived from a handful of species found in the coastal Tanzanian and Kenyan forests.
- 9 **EAST MELANESIAN ISLANDS** The 1,600 East Melanesian Islands are a hotspot, due, sadly, to accelerating levels of habitat loss. The region is one of the most geographically complex areas on Earth. Isolation and adaptive radiation have led to very high levels of endemism, both within the whole hotspot and on single islands. Notable endemic species include the majestic Solomons sea-eagle and more than a dozen threatened species of flying fox.

- 10 EASTERN AFROMONTANE** The mountains of the Eastern Afromontane Hotspot are scattered along the eastern edge of Africa, from Saudi Arabia in the north to Zimbabwe in the south. Though geographically disparate, the mountains comprising this hotspot have remarkably similar flora. The Albertine Rift harbors more endemic mammals, birds, and amphibians than any other region in Africa. The geological turmoil that created the mountains of this hotspot has also yielded some of the world's most extraordinary lakes.
- 11 GUINEAN FORESTS OF WEST AFRICA** The lowland forests of West Africa are home to more than one-quarter of Africa's mammals, including more than 20 species of primates. Logging, mining, hunting, and human population growth are placing extreme stress on the forests, however, threatening species such as Jentink's duiker, pygmy hippopotamus, and scattered populations of western chimpanzees. Five Endemic Bird Areas lie partly or entirely within the hotspot.
- 12 HIMALAYA** The Himalaya Hotspot is home to the world's highest mountains, including Mt. Everest. The mountains rise abruptly, resulting in a diversity of ecosystems that range from alluvial grasslands and subtropical broadleaf forests to alpine meadows above the tree line. Vascular plants have even been recorded at more than 6,000 meters. The hotspot is home to important populations of numerous large birds and mammals, including vultures, tigers, elephants, rhinos, and wild water buffalo.
- 13 HORN OF AFRICA** The arid Horn of Africa has been a renowned source of biological resources for thousands of years. One of only two hotspots that is entirely arid, the area is home to a number of endemic and threatened antelope species and more endemic reptiles than any other region in Africa. The Horn is also one of the most degraded hotspots in the world, with only about 5 percent of its original habitat remaining.
- 14 INDO-BURMA** Encompassing more than 2 million square kilometers of tropical Asia, Indo-Burma is still revealing its biological treasures. Six large mammal species have been discovered in the last 12 years: the large-antlered muntjac, the Annamite muntjac, the grey-shanked douc, the Annamite striped rabbit, the leaf deer, and the saola. The hotspot also holds remarkable endemism in freshwater turtle species, most of which are threatened with extinction due to overharvesting and habitat loss.
- 15 IRANO-ANATOLIAN** Forming a natural barrier between the Mediterranean Basin and the dry plateaus of western Asia, the mountains and basins that make up the Irano-Anatolian Hotspot contain many centers of local endemism. Nearly 400 plant species are found only along the Anatolian Diagonal, a floristic line that crosses Inner Anatolia; many of Turkey's 1,200 endemic species occur only to the immediate east or west of it. The hotspot includes four endemic and threatened species of viper.
- 16 JAPAN** The more than 3,000 islands that make up the Japanese Archipelago stretch from the humid subtropics in the south to the boreal zone in the north, resulting in a wide variety of climates and ecosystems. About one-quarter of the vertebrate species occurring in this hotspot are endemic, including the Critically Endangered Okinawa woodpecker and the Japanese macaque, the famous "snow monkeys" that are the most northerly living nonhuman primates in the world.
- 17 MADAGASCAR AND INDIAN OCEAN ISLANDS** Madagascar and its neighboring island groups have an astounding total of eight plant families, five bird families, and five primate families that live nowhere else on Earth. Madagascar's 72 lemur species and subspecies are the island's charismatic worldwide ambassadors for conservation, although, tragically, 15 species have been driven to extinction since humans arrived. The Seychelles, Comoros, and Mascarene islands in the Indian Ocean support a number of Critically Endangered bird species.
- 18 MADREAN PINE-OAK WOODLANDS** Encompassing Mexico's main mountain chains and isolated mountaintop islands in Baja California and the southern United States, the Madrean Pine-Oak Woodlands is an area of rugged mountainous terrain, high relief, and deep canyons. One-quarter of all Mexico's plant species are found here, many of them found nowhere else on Earth. The pine forests of Michoacán provide famous overwintering sites for the annual migration of millions of monarch butterflies.
- 19 MAPUTALAND-PONDOLAND-ALBANY** Stretching along the east coast of southern Africa below the Great Escarpment, this hotspot is an important center of plant endemism. The region's warm temperate forests are home to nearly 600 tree species, the highest tree richness of any temperate forest on the planet. The rescue of the southern subspecies of white rhinoceros from extinction, which took place in this hotspot, is one of the best-known success stories in African conservation.
- 20 MEDITERRANEAN BASIN** The flora of the Mediterranean Basin is dramatic. Its 22,500 endemic vascular plant species are more than four times the number found in all the rest of Europe; the hotspot also supports many endemic reptile species. As Europe's vacation destination, populations of threatened species are increasingly fragmented and isolated to make way for resort development and infrastructure. The Mediterranean monk-seal, Barbary macaque, and Iberian lynx, which is Critically Endangered, are among the region's imperiled species.
- 21 MESOAMERICA** The Mesoamerican forests are the third largest among the world's hotspots. Their spectacular endemic species include quetzals, howler monkeys, and 17,000 plant species. The region is also a corridor for many Neotropical migrant bird species. The hotspot's montane forests are important for amphibians, many endemic species of which are in dramatic decline due to an interaction between habitat loss, fungal disease, and climate change.
- 22 MOUNTAINS OF CENTRAL ASIA** Comprising two of Asia's major mountain ranges, the Mountains of Central Asia were known to early Persians as the "roof of the world." The hotspot's ecosystems range from glaciers to deserts and include a highly threatened type of walnut-fruit forest, unique to this region, which contains ancestors of domestic fruit varieties and is an important storehouse of genetic diversity. The hotspot is also home to a rich variety of ungulates, including the threatened argali wild sheep.
- 23 MOUNTAINS OF SOUTHWEST CHINA** With dramatic variations in climate and topography, the Mountains of Southwest China support a wide array of habitats including the most endemic-rich temperate flora in the world. The golden monkey, giant panda, red panda, and a number of pheasants are among the threatened species endemic to this hotspot. Dam construction, illegal hunting, overgrazing, and wood gathering are the primary threats to biodiversity in this region.
- 24 NEW CALEDONIA** An island the size of New Jersey in the south Pacific Ocean, New Caledonia is the home of no less than five endemic plant families. It claims the world's only parasitic conifer and nearly two-thirds of the world's species of Araucaria trees, all of which are endemic. Nickel mining, forest destruction, and invasive species threaten fauna like the kagu, an Endangered bird with a distinctive crest that is the only surviving member of its family.
- 25 NEW ZEALAND** A mountainous archipelago once dominated by temperate rain forests, New Zealand harbors extraordinary levels of endemic species, including its most famous representative, the kiwi. None of its mammals, amphibians, or reptiles is found anywhere else in the world. Invasive species pose the most serious threat to the flora and fauna of New Zealand's islands, and the hotspot has suffered 50 bird extinctions since the island's colonization by humans 700 years ago.
- 26 PHILIPPINES** More than 7,100 islands fall within the borders of the Philippines Hotspot, identified as one of the world's biologically richest countries. Many endemic species are confined to forest fragments that cover only 7 percent of the original extent of the hotspot. These include the Cebu flowerpecker, the golden-crowned flying fox, the Philippine cockatoo, the Visayan wrinkled hornbill, the Negros forest frog, and the enormous Philippine eagle.
- 27 POLYNESIA-MICRONESIA** Comprising 1,415 islands stretched across the southern Pacific Ocean, the Polynesia-Micronesia Hotspot is the epicenter of the current global extinction crisis. Twenty-five bird species have gone extinct here since the arrival of the Europeans 200 years ago, victims of introduced invasive species and overhunting. The spectacular endemic honeycreepers are among those that are seriously threatened but still surviving in this hotspot.
- 28 SOUTHWEST AUSTRALIA** The forest, woodlands, shrublands, and heath of Southwest Australia are characterized by high endemism among plants and reptiles. Its unique vertebrates include the numbat, honey possum, and red-capped parrot. The western swamp turtle, which hibernates for nearly eight months of the year in response to dry conditions and hot temperatures, may be the most threatened freshwater turtle species in the world, although a successful conservation program has allowed its numbers to increase.
- 29 SUCCULENT KAROO** The Succulent Karoo of South Africa and Namibia boasts the richest succulent flora on Earth, as well as remarkable endemism in plants, reptiles, and invertebrates. It is one of only two entirely arid ecosystems to earn hotspot status and is home to the mysterious tree-like succulent, the halfmens, as well as many unique species of lizards, tortoises, and scorpions.
- 30 SUNDALAND** The spectacular flora and fauna of the Sundaland Hotspot are succumbing to the explosive growth of industrial forestry in these islands and to the international animal trade that claims tigers, monkeys, and turtle species for food and medicine in other countries. Populations of the orangutan, found only in this hotspot, are in dramatic decline.
- 31 TROPICAL ANDES** The richest and most diverse region on Earth, the Tropical Andes region contains about one-sixth of all plant life in less than 1 percent of the world's land area. The threatened yellow-eared parrot, yellow-tailed woolly monkey, and spectacled bear are all endemic to the Tropical Andes. Although one-quarter of its habitat still remains, the region's forests are threatened by mining, timber extraction, oil exploration, and narcotics plantations.
- 32 TUMBES-CHOCO-MAGDALENA** Tumbes-Chocó-Magdalena is bordered by two other hotspots: Mesoamerica to the north, and the Tropical Andes to the east. Endemic animal species like the bare-necked umbrellabird and the brightly colored poison dart frogs are characteristic of the region. The white-winged guan of southern Ecuador and extreme northern Peru is threatened with extinction.
- 33 WALLACEA** The flora and fauna of Wallacea are so varied that every island in this hotspot needs secure protected areas to preserve the region's biodiversity. The hotspot is second only to the Tropical Andes in terms of bird endemism, which is particularly impressive given its relatively small land area. The world's largest lizard, the Komodo dragon, is restricted to the islands of Komodo, Padar, Rinca, and Flores in the Wallacea Hotspot.
- 34 WESTERN GHATS AND SRI LANKA** Faced with tremendous population pressure, the forests of the Western Ghats and Sri Lanka have been dramatically impacted by the demands for timber and agricultural land. Remaining forests of the Western Ghats are heavily fragmented; in Sri Lanka, only 1.5 percent of the original forest remains. The region is home to a rich endemic assemblage of plants, reptiles, and amphibians, as well as important populations of Asian elephants, Indian tigers, and the Endangered lion-tailed macaque.