

ACTO DEBATE ACTION PLAN TO PROTECT BIODIVERSITY

The member countries of the Amazon Cooperation Treaty Organization (ACTO) – Bolivia (Plurinational State of), Brazil, Peru, Ecuador, Colombia, Venezuela (Bolivarian Republic of), Guyana and Suriname – will work together on conservation and the sustainable use of biodiversity in the Amazon rain forest.

On 6 and 7 May, representatives from these countries met in Lima (Peru) to negotiate a Biodiversity Action Plan. The initiative encourages the exchange of experiences. One of the most debated topics was the management of protected areas.

The proposal of an action plan to be implemented in the region contributes to the preparations for the United Nations Conference on Biodiversity (COP-10), which will take place later this year in Nagoya, Japan.

“The countries will arrive in Nagoya with a plan specifically directed to the Amazon, responding to the desires of the members of ACTO and strengthening the regional vision, with a focus on the sovereignty of each nation,” explains the Director of the Department of Coordination of Policies for the Amazon at the Brazilian Ministry of the Environment (MMA), Mauro Pires. The plan will include research, technology and innovation in biodiversity; protected areas management; and monitoring and control of endangered species of wild fauna and flora.

For Giovanna Palazzi, from the Chico Mendes Institute for Biodiversity Conservation (ICMBio), the action plan will

strengthen national systems of protected areas. The plan will also encourage collaborative management, particularly in frontier areas. “Biodiversity knows no political boundaries,” stated Palazzi. [Source: MMA – Ministério do Meio Ambiente [Brazil], 17 May 2010.]

CHINA, NEPAL REACH HISTORIC BIODIVERSITY AGREEMENT

China and Nepal have signed a Memorandum of Understanding on environment and biodiversity conservation. The agreement was made between the State Forestry Administration of the People’s Republic of China and the Ministry of Forests and Soil Conservation of the Government of Nepal.

The World Wide Fund for Nature (WWF) notes that this is a historic moment for both countries as their governments have joined hands for the first time to promote cooperation in the field of biodiversity conservation, management of forest resources and protection of wildlife.

The two countries agreed to implement the obligations of international multilateral environmental agreements and conventions to protect the environment and conserve biodiversity. [Source: WWF, 9 June 2010.]

ECOLOGISTS UNVEIL PLAN FOR “BAROMETER OF LIFE”

An ambitious project to create a “barometer of life” to track the changing fortunes of the natural world will be set out tomorrow by some of the world’s leading ecologists.

The plan is for thousands of scientists to collect information on 160 000 of the world’s nearly 2 million known species – from great mammals, fish and birds to obscure insects and fungi – chosen to be representative of life on Earth.

The index would more than triple the scope of what is already the world’s biggest scheme – the International Union for Conservation of Nature (IUCN) Red List of Threatened Species – and would be updated every five years.

The cost of building the database would be about USD60 million (£39.3 million), but this would be “one of the best investments



for the good of humanity” says the proposal, published in the journal *Science* and co-authored by the great American ecologist and writer Professor Edward O. Wilson at Harvard University.

“The more we learn about indicator species (which can provide information on the quality of the environment around them), the more we know about the status of the living environment that sustains us all,” said Wilson. “Threatened species, in particular, need to be targeted to enable better conservation and policy decisions.”

The figures could be used to help companies carry out environmental impact assessments, allow national and international organizations to prioritize spending, and draw public attention to problems as a way of building support for policies to protect and improve biodiversity, said Simon Stuart, Chair of the IUCN’s species survival commission, and the paper’s lead author.

“Just think of the other uses USD60 million are put to by the world, and the amount of money spent on wars or banks, or advertising,” Stuart told *The Guardian*. “We can put our hands on our hearts and say this would be better for the good of humanity. First of all, it’s an indicator of the health of the planet. Second, in many parts of the world people depend on biodiversity for food or clean water or living wages. Third, I’d say because of their intrinsic value: there’s something inspirational about ecosystems and species being in good shape, and the diversity of them.”

The idea – informally titled the “barometer of life” – is supported by the IUCN and nine partner organizations, including Kew Gardens in London, and the Zoological Society of London.

Scientists have so far described 1.9 million of the estimated up to 10 million species of vertebrates, invertebrates, plants, fungi and other groups on Earth, and possibly tens of millions more bacteria and archaeans. [Source: *The Guardian* [United Kingdom], 8 April 2010.]



EXTINCTION OF SEED DISPERSERS THREAT TO FORESTS AND FOREST COMMUNITIES

There are few areas of research in tropical biology more exciting and more important than seed dispersal. Seed dispersal – the process by which seeds are spread from parent trees to new sprouting ground – underpins the ecology of forests worldwide. In temperate forests, seeds are often spread by wind and water, although sometimes by animals such as squirrels and birds. But in the tropics the emphasis is far heavier on the latter, as Dr Pierre-Michel Forget explains to mongabay.com/

“[In rain forests], a majority of plants, trees, lianas, epiphytes, and herbs are dispersed by fruit-eating animals. [...] As seed size varies from tiny seeds less than 1 mm to several centimetres in length or diameter, then a variety of animals are required to disperse such a continuum and variety of seed size, the smaller being transported by ants and dung beetles, the larger swallowed by cassowary, tapir and elephant, for instance.”

Forget, a French tropical ecologist, is chairing the Fifth Frugivore and Seed Dispersal International Symposium in Montpellier, France from 13 to 18 June. He has studied the relation between seeds and fruit-eating species both in South America and Central Africa, focusing mostly on mammals. “Indeed, when you observe the understorey and see that profusion of seedlings, it is not always obvious that there is some type of order, seedlings being not really randomly dispersed, rather directed-dispersed at some peculiar microhabitats,” he says.

Yet, the species so important to spreading tropical seeds successfully are also some of the most threatened. Their decline – and in some case absence altogether – spells a fall in forest richness.

“If you consider large-bodied, plant-dependent and seed-dispersing animals, they are all threatened by hunting,



deforestation, fragmentation, mining, dam and road construction,” Forget says. “Many fragmented forests, even some natural parks and reserves, now lack the large ungulates, primates and birds that disperse seeds. Extinction is sometimes very recent due to uncontrolled development of large-scale agriculture, poaching and logging.”

Forget points out that when it comes to seed dispersers, it is not global extinction that one must focus on, but local extinction and even a decline in wildlife abundance.

“If spider monkeys are protected in a remote forest of the Peruvian Amazon, it won’t much help those trees of French Guiana,” he says. “Additionally, when large frugivores are exterminated, because it’s also an important source of protein for native people inhabiting the rain forest, we are also endangering the survival of autochthonous populations. And that has to be considered in conservation plans. Not only will we lose natural diversity, but humanity will also lose cultural diversity.”

Forget argues that to date the role of seed dispersers has largely been left out of conservation discussions, even though these species’ actions underpin entire ecological communities. (*Source: www.mongabay.com, 7 March 2010.*)

“REWILDING” THE WORLD: A BRIGHT SPOT FOR BIODIVERSITY

Despite numerous campaigns by the United Nations and other organizations to stem the loss of habitat and species, the world’s biodiversity – and the ecosystem services supported by it, including carbon sequestration and flood control – is approaching what the United Kingdom’s Environment Secretary, has called “a point of no return”.

Happily, however, there is more to the story. A group of solutions is emerging under the rubric of “rewilding”, and this new movement has made considerable progress over the past decade. A Marshall Plan for the environment, rewilding promotes the expansion of core wilderness areas on a vast scale, the restoration of corridors between them (to fight the “island” effect of isolated parks and protected areas), and the reintroduction or protection of top predators.

Known by a shorthand formula – “cores, corridors and carnivores” – rewilding was first proposed in 1998 by the founder of



conservation biology, Michael Soulé, and his fellow conservation biologist, Reed Noss. It was quickly adopted by grassroots initiatives, such as the Yellowstone to Yukon Conservation Initiative (Y2Y), a plan to protect and restore connectivity of ecosystems throughout the Rocky Mountains.

Since then, its central tenets have found their way into the programmes of international conservation organizations, which have embraced “continental-scale” conservation and growing bolder in the size of their preservationist programmes. As both a conservation method and a grassroots movement, rewilding has taken hold in every inhabited continent, with projects stretching from densely populated Western Europe (the European Green Belt, on the path of the former Iron Curtain) to the remote reaches of southern Africa. What’s more, it has proved to be an adaptable model, bringing conservation to people and places outside the traditional system of parks and protected areas that lack the resources to succeed on their own.

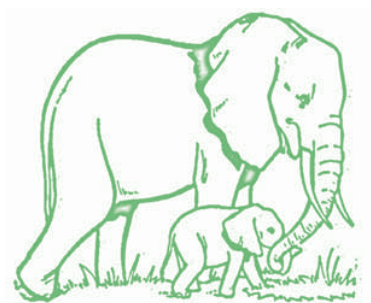
Encouraging new revenue streams and conservation on private lands, rewilding has achieved notable successes, along with instructive failures. In northern Kenya, an area plagued by lawlessness and drought, the Craig family turned their struggling cattle ranch into the Lewa Wildlife Conservancy, protecting endangered rhinos and building a popular ecotourism business. Eleven group ranches have since joined the Northern Rangelands Trust, with eight of those creating their own conservancies, setting aside a percentage of their grazing land for wildlife and planning ecolodges. Those with lodges have already dedicated revenue for community improvements, such as schools and medical clinics. A million-and-a-half acres (607 028 ha) of northern Kenya have thus been set aside for wildlife management, and security for people and wildlife has improved.

Conservationists in Kenya are seeing a marked improvement in formerly

overgrazed areas. Elephants have rebounded from the poaching of years past, resuming their migratory routes, and the highly endangered Grevy's zebra – which suffered severe habitat loss in recent decades – is returning to old haunts. Lewa now serves as a model for other conservancies in southern Kenya, and visitors from Uganda, the United Republic of Tanzania and Ethiopia have come to study it. A similar community forestry programme in Nepal is restoring corridors there for tigers, the one-horned rhino and the Asian elephant.

Breaking away from the standard fund-raising model – a never-ending cycle, since most money is spent immediately on short-term grants and projects – several rewilding groups have embraced the endowment as a way of supporting conservation's long-term needs. University of Pennsylvania biologist Daniel Janzen has been instrumental in the phenomenal success of the Area de Conservación Guanacaste (ACG) in northwestern Costa Rica, which accomplished what was once thought impossible by restoring former cattle ranches to dry tropical forest and rain forest.

But rewilding's greatest potential may lie in the creation of green jobs. ACG pioneered "parataxonomy", providing local people with a six-month "bioliteracy" training course in collecting and processing insect specimens that could then be passed on to taxonomists for identification. The parataxonomists are valued contributors to Costa Rica's National Biodiversity Institute and instrumental in the country's massive effort to compile an inventory of its extraordinary biodiversity. They have served as foot soldiers in "bioprospecting" the collection of specimens that may prove useful in medicines or cosmetics. Extracts from the quassia tree, for example, have yielded both a treatment for stomach-aches and a



promising natural pesticide. The parataxonomy programme has been copied in other biodiverse areas in Central Africa and Papua New Guinea. (Source: Yale Environment 360, 11 February 2010.)

THE KEYS TO FOREST CONSERVATION

Daniel Janzen – conservation biologist – made his name in 1965 by discovering the extraordinary coevolution and "mutualism" between two rain forest species, a study so well-known it goes by its own shorthand: "the ant and the acacia". In the ensuing decades, Janzen has gone on to additional groundbreaking research in the forests of Central America.

But, by the mid-1980s, Janzen had grown so alarmed at the rapid rate at which forests were disappearing in the region that he and his wife and research partner, Winifred Hallwachs, threw themselves into conservation projects. They worked to expand a small national park in northwestern Costa Rica into a 300 000-acre (121 405-ha) reserve – the Area de Conservación Guanacaste (ACG) – encompassing dry tropical forest, rain forest, cloud forest and marine areas. With Costa Rican colleagues, including President Oscar Arias, Janzen demonstrated that denuded tropical forest can be regrown, a landmark achievement in ecological restoration.

Janzen – who leveraged a USD3.5 million donation into a permanent USD30 million endowment for the park – recently set the ambitious goal of raising half a billion dollars to endow the entire Costa Rican park system in perpetuity.

Now 71 – and still pursuing a decades-long inventory of moths, butterflies and caterpillars of the ACG – Janzen has recently turned to another significant endeavour: the development of a "barcoder" device, a kind of taxonomic iPod designed to identify quickly the world's organisms (viruses, invertebrates, plants, animals and birds) by their DNA in conjunction with a vast database to deliver that information to users. Janzen and his partner, Paul Hebert, have championed the device as a way to open the public's eyes to the world's biodiversity and the growing threats to it.

Speaking on REDD (Reducing Emissions from Deforestation and Forest Degradation), Janzen says: "If the world



does get serious about what is packaged under the acronym of REDD and puts in a big bucket of money that is used to lock down big chunks of forest in a permanent carbon storage state, that has the potential – and I have to underline the word 'potential' – for truly saving big blocks of wild areas. And there are a lot of ifs between the big picture wish or international agreements and actual on-the-ground doing it."

"But if there were a bucket like that available so that people like me, who are seriously out there trying to lock down big chunks of forest, that could become a financial instrument for actually doing it."

"My feeling is that all the science I see says that the only places that are going to survive in the long run are big conserved pieces. Small pieces may be very pretty, but they die, just because of insularity." (Source: www.mongabay.com, 23 March 2010.) ♣

Nothing is more expensive than a missed opportunity.

H. Jackson Brown Jr