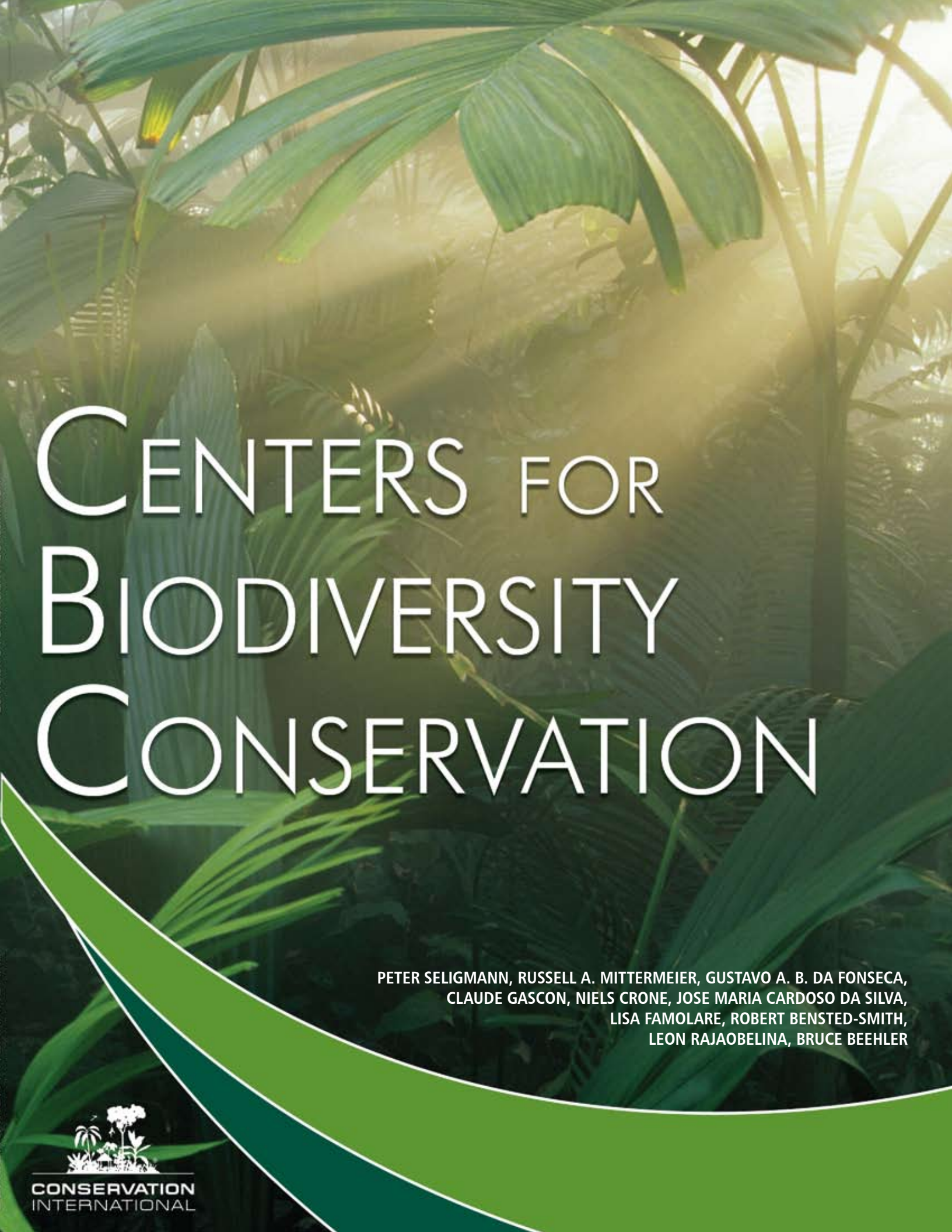

Centers for Biodiversity Conservation

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CONSERVATION
INTERNATIONAL

Seventy percent of the Earth's land animals and plants reside in tropical forests. Forests are also crucial for human life. They generate rainfall, regulate climate, and are rich sources of medicine. Frans Lanting captures the forest mist in Belize, Central America.

Centers for Biodiversity Conservation

Bringing together science, partnerships, and human well-being to scale up conservation outcomes

THIS PUBLICATION IS DEDICATED TO ALL THOSE WHO CONTRIBUTED TO THE DEVELOPMENT OF THE CENTERS FOR BIODIVERSITY CONSERVATION – OUR STAFF, PARTNERS, DONORS, AND BENEFICIARIES. WE ARE DEEPLY GRATEFUL TO EVERYONE, WHO BELIEVED IN THIS COLLECTIVE ENTERPRISE, PARTICULARLY THE GORDON AND BETTY MOORE FOUNDATION THAT PROVIDED GENEROUS SUPPORT FOR THESE ENDEAVORS.

The success of the Centers for Biodiversity Conservation as well as the production of this publication has drawn extensively on the knowledge of a large number of dedicated people. We want to highlight the contribution of the following: Keith Alger, Leeanne Alonso, Fabio Arjona, Ajay Baksh, Edith Bermudez, Curtis Bernard, Carlos Bouchardet, John Buchanan, George Camargo, Ines Castro, Roberto Cavalcanti, Luz Mery Cortes, Marcia Cota, Lissa Culcay, Free De Koning, Guilherme Dutra, Alfredo Ferreyros, Ana Liz Flores, Monica Fonseca, Eduardo Forno, Adrian Garda, Stephan Halloy, Frank Hawkins, Scott Henderson, Roger James, Thais Kasecker, Gai Kula, Olivier Langrand, Ricardo Machado, Chris Margules, Alison Marian, François Martel, Adriano Paglia, Yves Pinsonneault, Elaine Pinto, Luiz Paulo Pinto, Rosimeiry Portela, Paulo Gustavo Prado, Daniela Raik, Sahondra Rajoelina, Jose Vicente Rodriguez, Isabela Santos, Goetz Schroth, Joe Singh, Lela Stanley, Susan Stone, Luis Suarez, Jatna Supriatna, Jordi Surkin, Milena Valle, Wim Udenhout, Megan Van Fossen, Susan Williams, Barbara Zimmerman, Patricia Zurita.

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Conservation International (CI)

believes that the Earth's natural heritage must be maintained if future generations are to thrive spiritually, culturally, and economically. Our mission is to conserve the Earth's living natural heritage, our global biodiversity, and to demonstrate that human societies are able to live harmoniously with nature.

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Yellow-breasted musk parrot in Fiji

Photo: Patricio Robles Gil

CONTENT

Photo: Haroldo Castro

Six thousand Kayapó Indians control, legally and physically, a continuous block of 11 million hectares of the Amazonian forest - by far the planet's largest block of tropical forest protected by a single indigenous group.

PREFACE

Five years ago Conservation International was facing a sobering dilemma. Enormous development agendas were bulldozing their way into the last unspoiled places. Also under threat was conservation work, accomplished over the course of decades, to stave off the extinctions of plant and animal species. While the situation was bleak, a new global environmental consciousness was forming that showed the way forward. It would require a bold new approach, taking into account not just a particular national park or endangered species but entire landscapes and regions.

The Centers for Biodiversity Conservation (CBCs) were created to take up this challenge. Since 2001, the first four CBCs in the Andes, Brazil and the Guianas, Madagascar, and Melanesia have yielded impressive results, proving the power of collaboration. Concrete achievements include the unprecedented expansions of protected area systems. New scientific research has increased our knowledge of entire ecosystems and how their continued health is intricately tied to the health of all species, including humans. And hundreds of new partnerships with local communities, governments and the private sector have allowed the CBCs to leverage conservation outcomes that would have been impossible for any one group alone.

I am thrilled to see how this paradigm shift has allowed CI to ratchet up its efforts to preserve our natural resources and the future of all species. The CBCs have shown the power of large-scale conservation and the importance of marshalling allies to work together for the common good. By building bridges with public and private institutions over the long-term, we are taking an ambitious dream and transforming it into on-the-ground successes.

Gordon Moore
Gordon and Betty Moore Foundation

Reed frog in Botswana

Photo: Piotr Naskrecki

Introduction

The Centers for Biodiversity Conservation (CBCs) are the chief programmatic and operational units charged with carrying out Conservation International's (CI) mission of conserving the Earth's living natural heritage. Conceived as the platform for waging a full-scale conservation offensive, the CBCs emerged from discussions begun in the late 1990s about how best to increase the scale of biodiversity conservation. It had become increasingly evident that site-by-site conservation work could not keep pace with intense development pressures, human encroachment, and other threats to biodiversity. A big-picture approach was needed and time was short.

"The threats were so pervasive and large scale that if we didn't take a bigger angle all of our gains in protected areas would be wiped out," recalls Claude Gascon, Executive Vice President of the Programs and Science Division.

But how big was big enough? And how could CI reframe the debate to make allies of groups such as the business community, government officials, and farmers, who had often been wary of conservationists?

Since its founding in 1987, CI had strived for holistic ways to conserve nature while taking into account the well-being of indigenous communities and other rural people. The CBCs took a step farther. While science would continue to set the priorities, the CBCs added the social and economic sciences, policy analysis, and advocacy to their mandate and increased the emphasis on capacity building to put the tools of conservation in the hands of local people.

Four CBCs debuted in 2001 and 2002. They built on previous CI programs by taking a decentralized approach that relied on local and international partners and networks to lift conservation work to previously unimaginable levels. Instead of isolated, site-specific projects, the CBCs shifted the focus to entire landscapes that often crossed national boundaries and embraced regions. Instead of implementing projects with CI staff alone, they developed partnerships with nonprofits, local governments, research institutions and private sector companies. This decentralized approach distributed the workload and created a framework for transferring to the field the capacity to carry out conservation projects. The new strategy envisioned a corps of trained in-country professionals, who would direct and coordinate regional activities with technical, operational, and financial support from CI.

Thanks to the generous support from the Gordon and Betty Moore Foundation, CI has spent the last five years road-testing the CBC concept. The work of these first four CBCs in the Andes, Brazil and the Guianas, Madagascar, and Melanesia has transformed CI's role in those regions and allowed it to reach its goal of achieving conservation that crosses national borders and other boundaries.

Major Achievements. Today, the four CBCs operate in 19 countries. With the help of nearly 500 partners, they are contributing to create or manage 412 protected areas, making up a total of 100 million hectares.

But the statistics only tell part of the story. There have been many subtler gains. The CBC approach not only transformed the way CI operates but the way it is perceived. Its new role as a provider of financial and technical resources to incountry groups have increased CI's clout with governments and regional and international development agencies. The new stature has allowed CI to take the lead in developing common visions with the other funders and to use its own seed money to leverage financing for large-scale projects.

"Because we were bringing technical resources, we were no longer seen as project implementers. The government and other groups saw us as business partners," says Olivier Langrand, Senior Vice President of the Center for Conservation and Government.

In part, CI's new credibility with development agencies and policymakers has to do with the wider lens through which the CBCs focus on the regions where they work. Conservationists have long been criticized for putting the well-being of plant and animal species ahead of human beings. By taking into account socio-economic and political issues, not just conservation science, the CBCs can speak authoritatively about the links between healthy ecosystems and healthy humans, helping leaders grasp the importance

of the essential services such as crop pollination, freshwater, maintenance of livable climates and atmospheres, regulation of disease, and others that ecosystems provide. The holistic approach marks a new level of sophistication not before seen in the conservation world and one that becomes timelier as concerns about global warming grow.

One place where this new sophistication led to important conservation gains is Madagascar, one of the world's most biodiverse places. When the country's President decided to triple the amount of national territory under protection in 2003, it was an economic analysis – not a conservation assessment – that convinced him. The report, produced by the World Bank, was a cost-benefit analysis. It offered, among other things, the advantages of conserving Madagascar's remaining natural areas and laid out a plan for leveraging international tourism and a special trust fund to cover national parks management costs. Because it was a research paper published by a respected third-party, the World Bank report served as an effective tool for the Madagascar CBC, which helped the country's government implement many of its recommendations.

In other instances, scientific research conducted by the CBCs small but technically expert staff members have helped its partners achieve conservation goals, essentially implementing a common vision with CI. For example, the European Union and several European governments are currently making payments for ecosystem services provided by the Guayana Shield, in northwest South America. The priority areas benefiting from the payments were originally delineated at a workshop that CI co-sponsored with other conservation groups in 2002.

By developing a comprehensive blueprint for conservation over an entire region, then offering partners the opportunity to collaborate in achieving these goals, the CBCs set the stage for the large-scale gains seen in the Madagascar and the Guayana Shield.

Other examples include the Brazilian government's use of CI maps for determining where species are at risk. In South America, where plans for massive new infrastructure building across the region could create critical threats to biodiversity, CI produced a report detailing how such a overhaul of the region's environment could exacerbate the impact of climate change with devastating effects on South America's agricultural heartland.

Working successfully with partners is predicated on a higher level of diplomacy and continual learning than has traditionally been seen in the world of international conservation. When done well, however, this approach provides a rewarding multiplier effect. It can kindle a conservation consciousness in societies, where biodiversity riches have traditionally been seen as sources of food, firewood, or hard currency. By engaging networks of experts, the CBCs participate in an exchange of knowledge that can fuel innovation. But the challenges to conserving biodiversity remain enormous. They require strategies that rely on the best available scientific, organizational, and management practices.

This report examines the four mature CBC's efforts so far to implement a vision centered on science, partnerships and human well-being. While other regional programs – the Philippines, China, and Mexico and Central America – have begun to transition to the CBC model, and the rest of the regional programs will one day follow, we will focus on the mature CBCs in order to reflect on lessons learned over the last five years.

This report seeks to provide the basic recipe for the making of a CBC. But just as recipes have regional variations, each CBC should reflect the local flavor, so to speak. While they share certain ingredients, as we will discuss in the coming pages, the CBCs operating today, and undoubtedly those formed in the future, will reflect the particular social, economic, and political realities – as well as the perils to biodiversity – of the region where they work.

How to Use this Report. This document could also be viewed as a sort of a roadmap for arriving at a CBC. The first section focuses on how to establish an overarching vision inline with CI's priorities; build the internal structure, external partnerships, and networks to harness a decentralized conservation strategy; and how to continually improve on successes. The following section profiles the four mature CBCs. The final resources section offers references that can help you learn more about specific topics. Updated and new information on relevant issues, and lessons learned plus most of the resources mentioned here are available online at the CI Learning Portal. http://learning.conservation.org

The CBC remains a work in progress. The art and the techniques of managing biodiversity conservation are in permanent flux. Successful new approaches are to be reported and incorporated. We look forward to receiving your comments and suggestions. You can reach us at the following address: cbc@conservation.org

Canaima National Park in Venezuela is in the northeastern sector of the Guayana Shield, where table-top mountains, known as *tepuis*, formed three billion years ago.

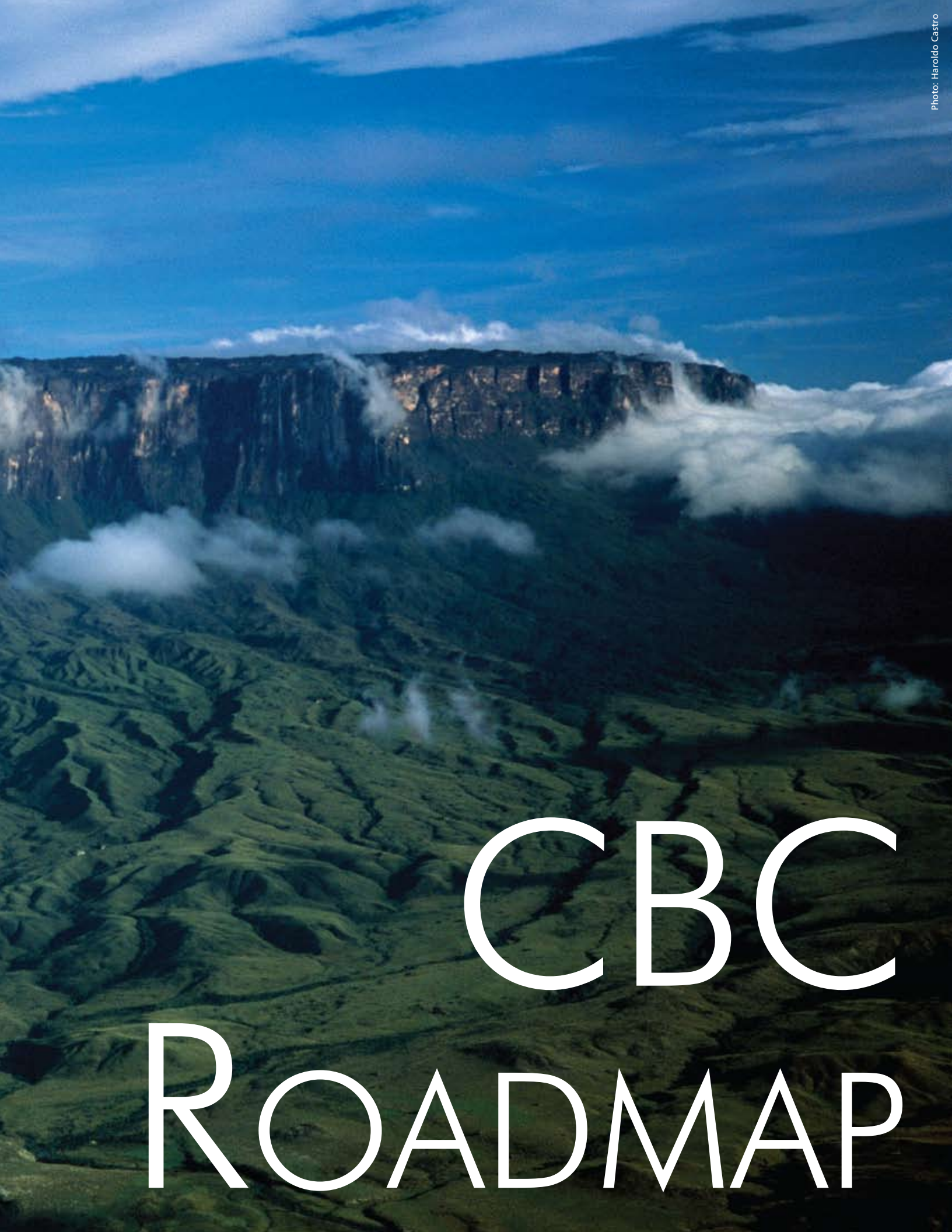


Photo: Haroldo Castro

CBC ROADMAP

Photo: Thomas Marent

Mangrove Black-Hawk in Gorgona, Colombia

Create and Implement a Regional Conservation Vision

To be successful, every enterprise – your favorite local market, giant corporations, governments and nonprofit organizations – requires a vision. This vision helps you figure out where you are; plan where you want to go; and define the best way to get there.

Conserving Earth's rich biodiversity is a huge enterprise, one that deserves a planetary vision and an ambitious allocation of resources. At the same time, it's an endeavor that must accommodate the unique realities and local capacities of each of the countries and communities, where it works.

The Centers for Biodiversity Conservation were developed as a response to the adage "think globally, act locally." CBCs provide a globally efficient model, while remaining flexible and decentralized enough to accommodate local patterns of government regulations, cultural trends, and socio-economic opportunities. The important first step when setting up a CBC is the creation and implementation of a regional vision coherent with CI's conservation mission. How do we do that? By using empirically-grounded science and developing multifaceted strategies.

1. A Science-driven Approach

Biodiversity is not equally distributed throughout the world. Hotspots and High Biodiversity Wilderness Areas (HBWA) have assemblages of unique plant and animal species found nowhere else. They hold irreplaceable ecosystems that are the targets of our global strategy.

The endangered Coquerel's sifaka lemurs live in the northwestern forests of Madagascar and are known for their characteristic "shih-*fak*" alarm call.

Photo: Russ Mittermeier

Hotspots and HBWA contain a large proportion of the world's biodiversity in a small area of the planet's surface. The 34 Hotspots cover only 2.3 percent of the Earth yet they harbor 75% of the most endangered mammals, birds, and amphibians. The Amazon, one of the five HBWAs, represents 53% of all tropical forests and encompasses the world's largest river system, which pours 175,000 m^3 of water per second into the Atlantic Ocean or one-fifth of the total discharge of all other rivers together.

Conservation efforts aim at protecting the biodiversity in these Hotspots and Wilderness Areas and reversing trends leading to their degradation and destruction. Strategic planning and definition of outcomes – based on the best available science – must be anchored at the scale of either Hotspots or HBWAs to be effective. Working at this scale ensures CBCs' ability to

Biodiversity Hotspots

01 Atlantic Forest
02 California Floristic Province
03 Cape Floristic Region
04 Caribbean Islands
05 Caucasus
06 Cerrado
07 Chilean Winter Rainfall-Valdivian Forests
08 Coastal Forests of Eastern Africa
09 East Melanesian Islands
10 Eastern Afromontane
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

High Biodiversity Wilderness Areas

A Amazon
B Congo Basin
C Deserts of North America
D Miombo-Mopane Woodlands and Savannas
E New Guinea

link field delivery with global strategy. It also guarantees that biodiversity is the driving feature of conservation planning.

To identify Hotspots and HBWAs, we apply scientific processes to map the biodiversity. We begin the examination of a given region by focusing on those species at highest risk of extinction. As we learn more about nature and conservation, our growing insights guide our policies and the development of conservation targets at three scales:

- **Species:** acknowledged as globally threatened with extinction, meeting The World Conservation Union (IUCN) Red List criteria.

- **Sites:** Key Biodiversity Areas (KBAs) hold vulnerable and endemic species and are therefore of global biodiversity conservation significance.

- **Corridors/Seascapes:** these are broad scale targets, that aim to preserve the viability of terrestrial and marine species by encompassing a matrix of habitat types required to conserve ecological and evolutionary processes.

"Science provides us with the conservation blueprints of what needs protection and where to focus that protection," says Claude Gascon, Executive Vice President of the Programs and Science Division.

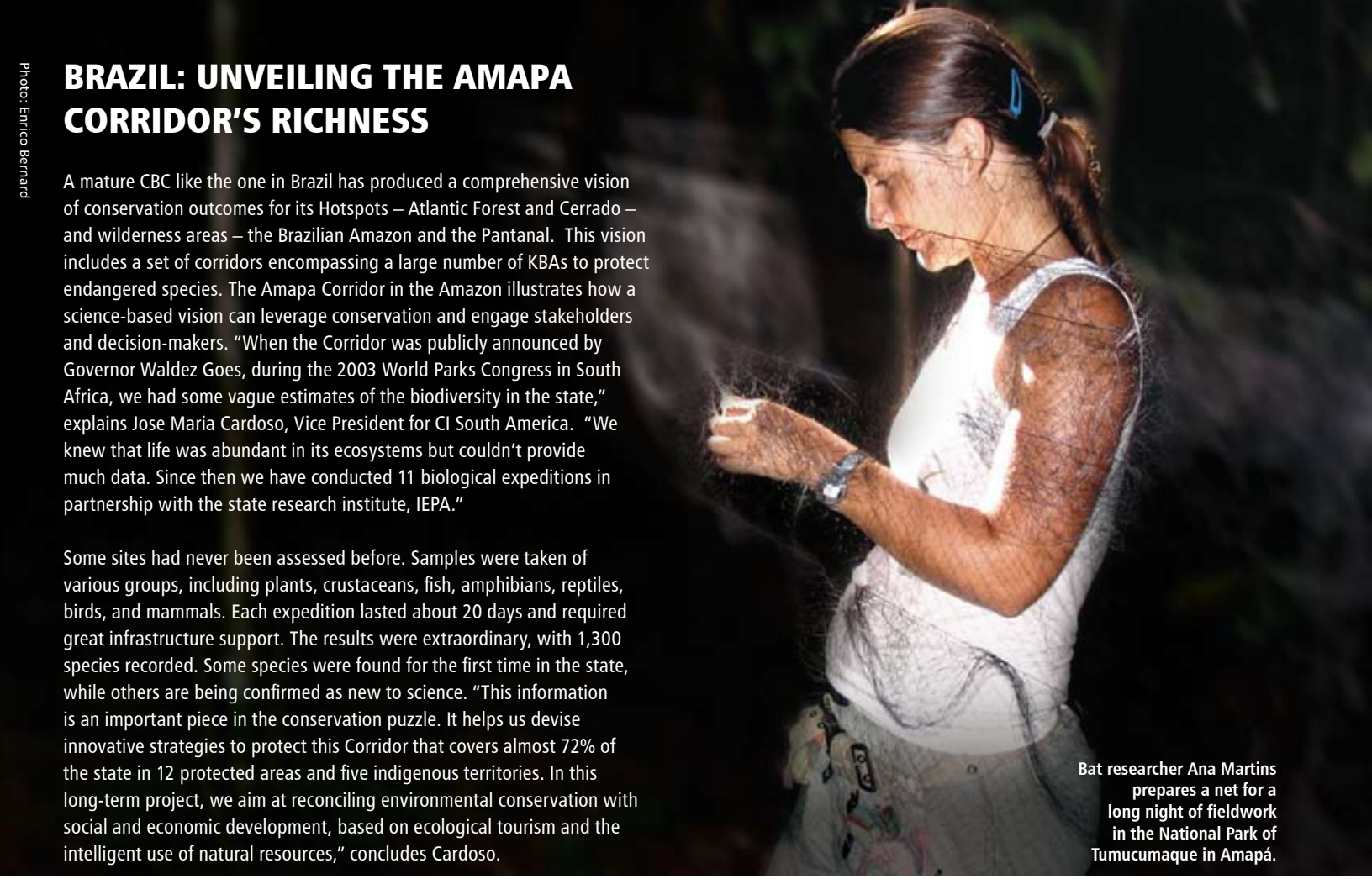
A fully developed portfolio of conservation outcomes (species, sites, and corridors) requires a significant investment on the part of the CBC. It takes investment in research and the development of partnerships to produce the analyses and set of outcomes described above. Resources are key to sustaining the work; to conducting periodic reassessments of outcomes and measure; and readapting conservation efforts.

Photo: Enrico Bernard

BRAZIL: UNVEILING THE AMAPA CORRIDOR'S RICHNESS

A mature CBC like the one in Brazil has produced a comprehensive vision of conservation outcomes for its Hotspots – Atlantic Forest and Cerrado – and wilderness areas – the Brazilian Amazon and the Pantanal. This vision includes a set of corridors encompassing a large number of KBAs to protect endangered species. The Amapa Corridor in the Amazon illustrates how a science-based vision can leverage conservation and engage stakeholders and decision-makers. "When the Corridor was publicly announced by Governor Waldez Goes, during the 2003 World Parks Congress in South Africa, we had some vague estimates of the biodiversity in the state," explains Jose Maria Cardoso, Vice President for CI South America. "We knew that life was abundant in its ecosystems but couldn't provide much data. Since then we have conducted 11 biological expeditions in partnership with the state research institute, IEPA."

Some sites had never been assessed before. Samples were taken of various groups, including plants, crustaceans, fish, amphibians, reptiles, birds, and mammals. Each expedition lasted about 20 days and required great infrastructure support. The results were extraordinary, with 1,300 species recorded. Some species were found for the first time in the state, while others are being confirmed as new to science. "This information is an important piece in the conservation puzzle. It helps us devise innovative strategies to protect this Corridor that covers almost 72% of the state in 12 protected areas and five indigenous territories. In this long-term project, we aim at reconciling environmental conservation with social and economic development, based on ecological tourism and the intelligent use of natural resources," concludes Cardoso.



Bat researcher Ana Martins prepares a net for a long night of fieldwork in the National Park of Tumucumaque in Amapá.

PHILIPPINES: SECURING KBAs PROTECTION

The Philippines is transitioning into the CBC model and has already achieved impressive results. In 2006, the CBC completed the outcomes definition process for the Hotspot, identifying 128 KBAs for 209 globally threatened, and 419 endemic species of freshwater fish, amphibians, reptiles, birds, and mammals. "We were the first program at CI to launch a major KBA publication, receiving significant attention from the media as well as government and corporate support," says Romeo Trono, Executive Director of the Philippines CBC. "Our most important accomplishment was the approval of Executive Order 578 by President Gloria Macapagal-Arroyo in November 2006."

The order set down the new National Policy on Biological Diversity, taking into account the information available thanks to the KBAs delineation. "This is a result of CI's dynamic partnership with the Department of Environment and Natural Resources (DENR) and its Secretary Angelo Reyes, who met with the CI Board of Directors in March 2006 to discuss his government's efforts to preserve and protect the country's biodiversity," Trono recalls. The wide-ranging discussion included such topics as programs on community-based environmental management, species conservation, habitat protection and a broader and more integrated terrestrial and marine management strategy.

CBC PROCESS

TO DEVELOP A SCIENCE-DRIVEN APPROACH

Identify and analyze conservation targets for the region (Hotspots, HBWA, threatened species, KBAs, corridors, seascapes)

Define first set of outcomes to develop alliances and inform decision-making at regional scale

Sustain efforts and ability to conduct periodic reassessment of outcomes and readapt strategies

2. Multifaceted Strategies

Achieving conservation outcomes in the field requires strategies that address the most direct and pressing threats such as encroachment in protected areas, natural resource extraction, and lack of management capacity. At the same time, CBCs must establish dialogue with governments, the private sector, and civil society to ensure that national and regional development policies take into account the value of biodiversity. Success at both extremes of scale – the individual species level and the highest levels of policy debate – are merely two examples of the components that go into a comprehensive strategy for affecting the conservation agenda in the regions where the CBCs work.

CBCs – by virtue of the technical and financial capital they bring to the table – are better positioned than CI's regional programs to develop alliances and partnerships with governments and regional and international organizations. Besides the ability to use its own seed money to leverage conservation initiatives, the center's enhanced access to heads of state and other decision-makers provides opportunity to advance its regional vision and jumpstart conservation at the landscape scale.

Human activities have been and continue to be the greatest threat to the world's biodiversity. However, this same biodiversity is necessary for our very survival. Humankind stands to suffer severe consequences from biodiversity impoverishment if ecosystems lose their ability to provide the services that generate irreplaceable economic, agricultural, public health, scientific, cultural, and spiritual benefits. Conservation solutions should protect ecosystems services while promoting sustainable livelihoods and economic development.

Ecosystem services are defined as benefits people obtain from nature, including human use of products such as timber, medicinal plants and food; and the functions ecosystems perform that are used and valued by human societies such as the following:

- provision of clean water
- maintenance of livable climates and atmospheres
- soil fertility
- pollination of crops
- regulation of disease
- ecotourism
- provision of options for the future, for example, genetic and biochemical information that will provide solutions to future diseases and energy needs

CBCs link human well-being with conservation by working to safeguard the basic ecological services people depend on. Moreover, the CBC strategies are guided by the belief that conservation actions must benefit people in order for them to be viable solutions. Without individual and community support, conservation is not sustainable. For instance, a protected area may exist in government law books, but without the local community's understanding of the vital importance of the protected area to their water supply, they may continue to disregard the area's legal protections and unsustainably harvest trees.

To evaluate pressures on biodiversity in a given region, CI has adapted a commonly used monitoring system known as the Pressure-State-Response (PSR,) first applied by the Organisation for Economic Cooperation and Development (OECD) and since adopted by the Convention on Biological Diversity (CBD.) As set out in greater detail in the CI Strategy Handbook (*Conserving Earth's Living Heritage: A Proposed Framework for Designing Biodiversity Conservation Strategies*, 2004,) the first step is to identify current and anticipated pressures on our biodiversity targets, their severity and scope; examine the sources of the pressures including the individuals and groups driving them. By understanding the factors propelling human behavior, we can establish measures to change the destructive trends and create conditions necessary to achieve our conservation goals.

Determining the major threats to and opportunities for implementing the regional vision and developing the appropriate strategies are crucial steps toward achieving lasting biodiversity conservation. By necessity, these strategies are evolving and dynamic in nature so that they can respond to changing political, social, and economic landscapes.

Most conservation strategies will need to occur at a landscape scale to safeguard habitats and ecological processes that enable species to persist in the wild. Such efforts can combine science and human dimensions by promoting community-based participation in conservation as part of the creation and expansion of protected areas. Encouraging land-use changes compatible with the needs of ecological processes is another viable approach to protecting healthy ecosystems and conserving the species – including people – within them. This often involves finding new ways to bring private sector companies into the conservation fold, as well.

Photo: Haroldo Castro

In 2006, 200 Kayapo chiefs and warriors representing over 19 villages gathered to renew their commitment to patrol and protect their land.

COMBINING CONSERVATION AND TERRITORIAL MANAGEMENT TO SAFEGUARD KAYAPO LANDS

Brazil's Kayapo indigenous people control official territories that span 11 million hectares in the southeastern Amazon. It is, by far, the largest single protected tract of tropical forest in the world. This fierce warrior people's stance offers an extraordinary opportunity for conservation. While the rainforest on all sides is vanishing, the Kayapo reserve, in Pará and Mato Grosso states, is holding the line on deforestation. Having won demarcation of much of their lands, today's Kayapo face the challenge of defending a 2,000-kilometer border against invasion by ranchers, loggers, and gold-miners.

Although the Kayapo managed to halt the expansion of the agricultural frontier along much of their eastern border for two decades, relentless deforestation pressure impinges now from the north and west. Logging is another major threat to Kayapo lands and culture because their lands are home to last great timber stocks of the region. In the past, lacking information and with limited contact with the outside world, the Kayapo succumbed to economic pressures and allowed predatory mahogany logging and gold mining on their land in exchange for presents and cash.

CI collaborates with the Brazilian Indigenous Agency (FUNAI) and the local Kayapo NGOs Protected Forest Association and Raoni Institute to help the Kayapo protect their lands and develop economic alternatives to logging. CI started providing financial and technical assistance in 1992, when the Kayapo Project began in a single community named A'Ukre. In this early effort, the project opened the Pinkaiti Research Station to generate scientific data and offer an economic alternative to mahogany logging. Despite intense pressure to cut down every mature mahogany (*Swietenia macrophylla*) in the forest, the community preserved a mature population of trees in about 8,000 hectares of undisturbed forest. Today, the A'Ukre's biological reserve protects one of the last populations of mahogany in the southeastern Amazon region. The success of the research center – both in conservation and development terms – showed the Kayapo that protecting the Pinkaiti mahoganies had more benefits than selling them. This initial success opened the door to more conservation and development projects across the Kayapo territory.

"The Kayapo have traditions of strong leadership that can be traced to their cultural history as a warrior nation and to their well organized collective social system," says Barbara Zimmerman, CI Director for the Kayapo Project. "Today, along with other indigenous groups of the Xingu Indigenous Park, to the south, the Kayapo are the greatest hope for the survival of a significant tract of forest in the southeastern Amazon."

Since that first project, CI has helped this indigenous people prevent invasions by establishing patrol expeditions, overflights, and remote monitoring. Besides territorial surveillance support, the project has established university-level field courses in tropical biology and conservation to prepare local indigenous people for jobs at an ecological research station. It has established brazil-nut collection and brazil-nut oil processing businesses. CBC experts are also creating business plans for non-timber activities such as gathering and processing of copaiba oil, honey, cocoa and mahogany seeds. Bird watching expeditions and bead jewelry operations are also planned. In keeping with Kayapo tradition, the enterprises generate benefits for the entire community. And the CBC is establishing the Kayapo Protected Forest Trust, an endowment that will coordinate financial and technical support to Kayapo communities into the future.

"CI's long-term commitment to invest in the Kayapo can be viewed as payment for the extraordinary ecosystem and biodiversity protection services that they are providing the world," Zimmerman says.

LAND USE STRATEGIES FOR CONSERVATION

From CI headquarters, Goetz Schroth, Senior Advisor on Land Use Strategies, helps the CBCs leverage market opportunities by reaching out to companies in the United States, Europe, and elsewhere and convincing them of the benefits of sourcing conservation-friendly products. The CBCs use access to export markets as an incentive to encourage farmers to conserve biodiversity in both forest and cultivated lands.

In the Andes and Mexico and Central America, the CBCs have capitalized on this program to bring together their farmer partners and foreign markets for conservation coffee. Schroth and his team are helping the Brazil CBC link cocoa farmers to companies interested in purchasing their conservation-friendly product. They are also assisting the Kayapo to line up buyers for the Brazil nuts and nut-oil discussed in the previous article. A European perfume company is partnering with the program to source aromatic oil extracted from forest seeds found in the Caura valley in Venezuela. "We help conservation products enter the international markets and make sure their production is linked to a conservation outcome," Schroth says.

Thanks to the success of the conservation coffee initiative in the El Triunfo Biosphere Reserve in Chiapas, Mexico, the program is now positioned to influence local government policies and include conservation-friendly land use practices in the management guidelines for neighboring reserves. "Over 10 years, the program built a strong relationship with the government," Schroth says. "It's because of the emphasis of the CBC model on the inclusion of partners in the private sector and government that we can now think about this type of scaling up."

CHINA: MAKING BIODIVERSITY CONSERVATION ATTRACTIVE AND BENEFICIAL TO PEOPLE

The Tibetan community of Doungma exists inside one of the last relics of temperate forest in the Mountains of the Southwest China Hotspot. The lives of local residents revolve around agriculture, cattle ranching, mushroom collection, and logging. Some of these practices are threatening the forest, especially since Chinese communities do not have property rights, which means outsiders often partake of the forest's resources without any control or supervision. The forestry bureau does not have the resources to patrol the area and enforce the law. Compounding matters, nowhere in China is the particular type of threatened ecosystem found in Doungma safeguarded by a protected area. It is unlikely that the government will create a new protected area in this part of the country anytime soon.

In response to these circumstances, CI China contacted the county Forest Bureau and proposed a conservation agreement that would grant management rights to the community so it could protect 5,000 hectares of pristine forest. The government accepted it in September 2006. As a result, the community hired patrol officers. CI scientists trained community patrol officers in the use of GPS, patrolling techniques and biodiversity monitoring. Once trained, the patrols began expelling outsiders and eliminating hunting and illegal logging. The project has led to a communal monitoring effort that has helped locals to learn about and take part in protection of the species that live in the Hotspot. The economic stimulus created by the project also helped reconnect the community to its culture via monthly events that revive Tibetan traditions such as dancing, singing and the use of traditional clothes. As part of the agreement, the community was also able to reinstate a teacher in the local primary school.

The Doungma project is one of a growing number of conservation agreements CI is piloting around the world via the Conservation Stewards Program in partnership with the Conservation Economics Program. The idea is to find new ways to make preserving biodiversity attractive and beneficial to local communities. Under one of these agreements, national authorities or local resource owners protect natural ecosystems in exchange for ongoing compensation from conservationists or other investors. Financial mechanisms such as endowments and trusts provide long-term provision payment. Rigorous monitoring ensures that both conservation and socio-economic results are achieved.

Tibetan in traditional clothes stands in front of his livestock grazing in Sichuan Province, Mountains of Southwest China Hotspot.

Photo: Will Crosse

CONSERVATION RESPONSE TO IIRSA

The plan to integrate the infrastructure of South America, commonly referred to as IIRSA, includes hundreds of road, bridge, dam, ports, and pipeline building projects that aim to link 12 countries like never before. It is expected to improve road transit, open new agricultural and grazing lands in remote areas, increase commerce and natural resource extraction within the region and reduce costs and clear away obstacles to bringing the continent's products to international markets. However, the myriad of construction projects – some already underway, others in planning stages – will open previously isolated areas of the Amazon wilderness to forces of development. Besides deforestation losses to the world's largest intact tropical forest, IIRSA also poses a threat to vulnerable local and indigenous communities and globally-important environmental services such as carbon sequestration and the regulation of climate and water resources.

Instead of opposing IIRSA without qualification, CI produced a report examining positive and negative impacts, going beyond a purely conservation-minded analysis to take into account the social, economic and cultural implications of the regional integration plan. In *A Perfect Storm in the Amazon Wilderness: Development and Conservation in the Context of the Initiative for the Integration of the Regional Infrastructure of South America*, (2007) conservation biologist Timothy J. Killeen concluded that, while the plan was visionary and offered the potential to improve lives in the region, it could eventually lead to widespread degradation of the Amazon Wilderness Area and negatively impact the very people. The report cautioned that IIRSA would have disastrous implications for both the people and the ecosystems of the region if decision-makers failed to look at the environmental impact not just for individual projects, but of IIRSA as a whole, and devise mitigation measures to offset the most serious threats to the environment and human well-being.

For the Andes CBC, the report is a valuable tool for advancing the dialogue with the governments and development bodies driving IIRSA. The thoughtful, science-based analysis has helped policymakers grasp the sobering environmental costs IIRSA could bring and the importance of mitigating the worst impacts, says Robert Bensted-Smith, the Executive Director of the Andes CBC.

"While IIRSA holds the promise of improving lives, it must include measures to avoid the most serious threats to the world's greatest tropical wilderness area and the ecosystem services the Amazon provides not only to local communities, but to the entire planet," Bensted-Smith says.

Keith Alger, CI Vice President of Human Dimensions, says the cross-border nature of the Andes CBC has positioned CI to engage regional and international development organizations, as well as individual country governments in debates such as the dialogue over IIRSA.

"What the Andes CBC can do that the country programs can't do is respond to issues on a regional scale. A "bird's eye view" provides a clearer vision of the broader effects that development and conservation have on human well-being," says Alger, who added that such a wide-angle helps decision-makers and society understand the interplay between development and conservation.

"Donors and local people are most likely to become conservationists, if they understand the link to their own well-being. Science can provide this clear vision to mobilize networks of NGOs, effect policy, and society's views," Alger says.

CBC PROCESS

TO DEVELOP MULTIFACETED STRATEGIES

Assess threats and opportunities affecting the regional portfolio of outcomes

Address threats or opportunities using the Pressure-State-Response framework and develop critical alliances for action

Implement strategies and adapt as social, political, and economic contexts change

Leaf-tailed gecko in Madagascar

Photo: Piotr Naskrecki

IMPROVE SUSTAINABLE REGIONAL CAPACITY

Building a critical mass of conservation professionals, particularly in regions where the conservation ethos is weak, is a demanding exercise. The resulting structures may vary widely according to local conditions. But CI's organizational experience suggests that a three-step process can help build an effective capacity. First, create a team with core competences. Second, consolidate strategic alliances. Third, tap into the knowledge of global networks. Crucial is the CBC's ability to become the hub of a strong and flexible distributed network for conservation. Once the CBC leadership has established solid partnerships, it must keep collaboration alive via dynamic exchange of information and ideas among stakeholders spread out both in terms of geography and areas of expertise.

3. Core Team

When the CBCs were conceived, the mandate was to move away from the regional program model of implementing site-specific activities and shift into big-picture gear. Today's CBCs orchestrate conservation on broader regional and corridor scales by working through local NGOs, government agencies, and other partners. As the center of distributed networks, CI has greatly increased its partners, projects, and number of the protected areas, where it has an impact.

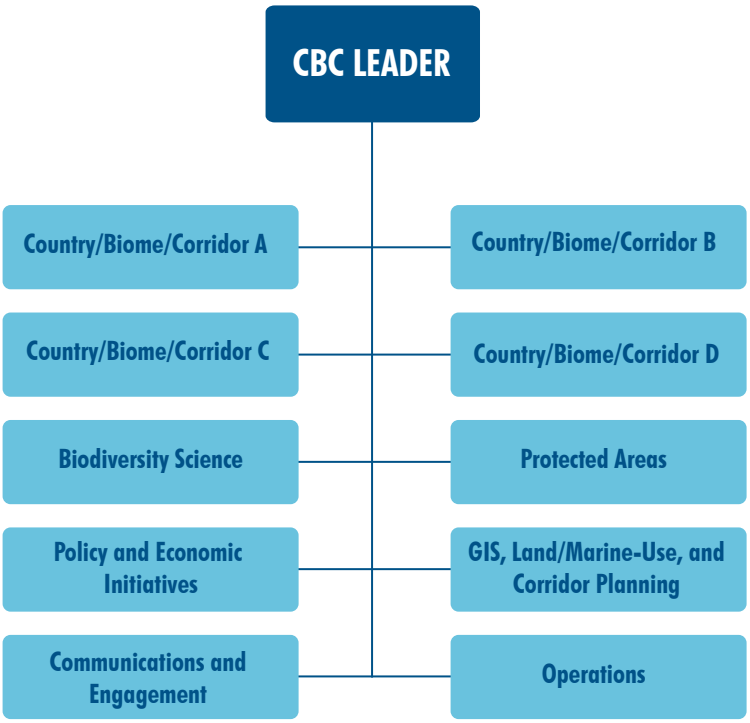
Key to the success of the CBC, however, is the work of its partners and the in-house grants management, operations, and finance staff who administer, monitor, and evaluate the relationship with partners. While this can be costly, the CBC's management structure ensures conservation outcomes are met.

Every CBC must adjust its operation to regional realities if it is to achieve large-scale conservation outcomes on the ground. Huge differences in baseline knowledge, scientific information, local and national capacities, and the extent to which biodiversity is threatened will dictate the approach in many instances. CBC leaders must pay close attention to these regional particularities and devise a unique blueprint of conservation action that capitalizes on local conditions.

However, certain required expertise remains constant from region to region: conservation science; protected areas management; socio-economic analyses; sound financial planning and management; to name a few. It is important to start with a detailed analysis of the required capacities in science, technical, and operational areas. This analysis should take into account the capacities of other organizations, especially potential partners, as they will play critical roles in implementing a common conservation vision. This analysis helps define the set of scientific, technical, and operational functions and positions.

The key functions outlined in the following organizational chart will form part of the CBC Management Team – the senior staff of the CBC, as well as positions within technical or geographical units, tasked with carrying out strategies and engaging partners.

Photo: Jason Anderson



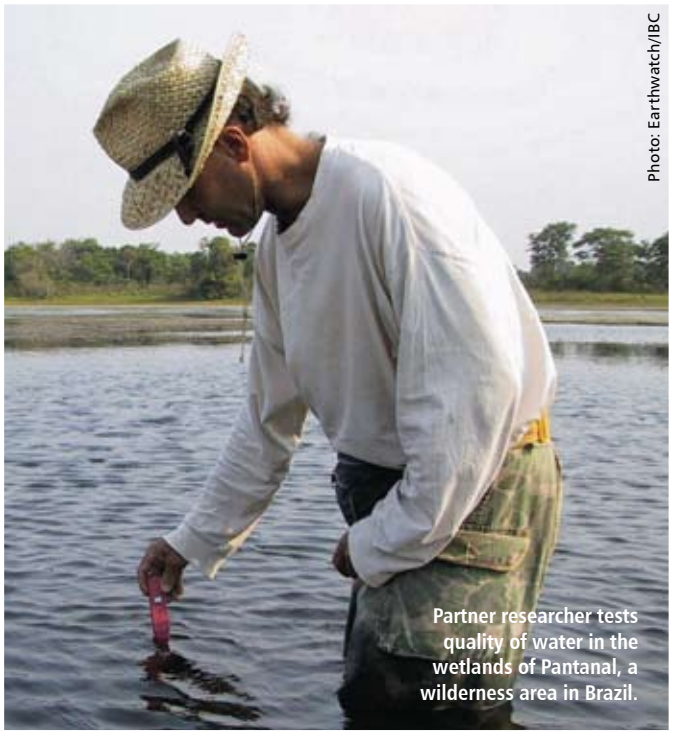


Photo: Earthwatch/IBC

Partner researcher tests quality of water in the wetlands of Pantanal, a wilderness area in Brazil.

Once defined, these positions need to be filled with professionals of the highest quality that bring complementary yet strategic skills and expertise to the CBC. But they don't necessarily need to be CBC staff members. CI Vice President for Africa and Madagascar Frank Hawkins, who was the first director of the Madagascar CBC, stresses the advantages of relying on partner organizations to do all but core operation, technical, and finance activities of the CBC.

Such a diffuse strategy achieves two of the CBC's major goals. First, it transfers conservation capacity to countries where the CBC operates, offering previously unavailable opportunities for training, job experience, and career development to in-country scientists and other experts. This approach also jumpstarts the goal of nurturing strong networks of like-minded individuals and organizations to work toward the common goal of achieving conservation on a large scale.

Such an approach creates a sort of web of activities with CI in a position to orchestrate conservation over a much wider area and in a comprehensive fashion, Hawkins observes. When a network truly does its job of rallying like-minded groups and individuals, many participants might not even notice that they are part of a network, yet the network grows and is strengthened, Hawkins says.

CBC PROCESS

TO CREATE A CORE TEAM

Assess CBCs capacities and those of the region's nonprofits and other partners and design organizational chart to cover core competences

Place key scientific and operational resources within CBC and define responsibilities of CBC staff and partners

Orchestrate fully functional scientific, technical and operational roles to implement strategic vision and leverage capacity of new partners

4. Strategic Partnerships

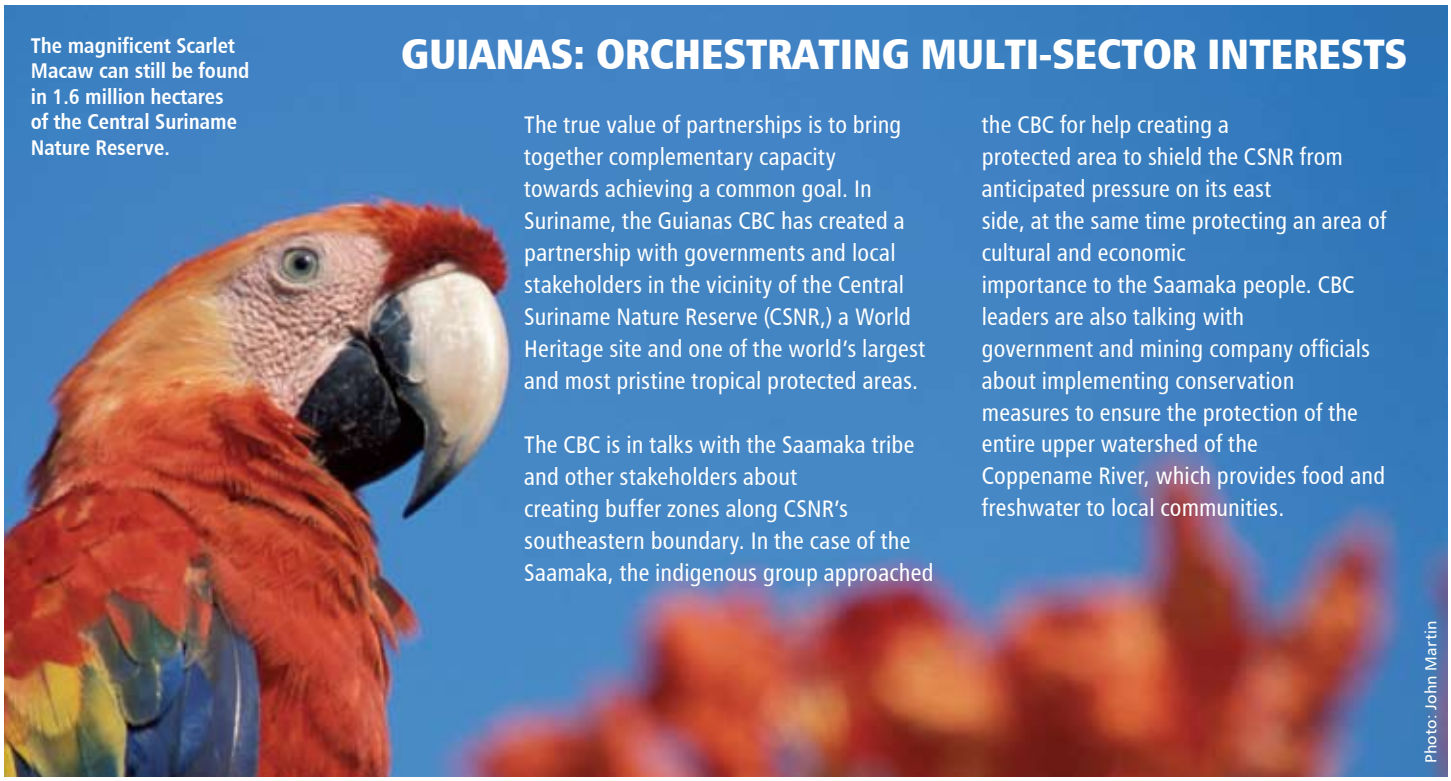
As the threats facing the Earth's remaining biodiversity grow, it is increasingly evident that no organization can succeed alone. Large-scale conservation strategies require large investments of time, human resources, and funds. To achieve its goals at the corridor and regional levels, the CBC must rely on partners. CBCs work together with communities, grassroots organizations, other NGOs, governments, and businesses with a wide range of objectives and expertise. By collaborating with such stakeholders uniting them in a common vision, the CBCs catalyze the development of major conservation plans and mobilize more resources to achieve significant outcomes.

Success at a large scale requires breaking down conservation action into manageable components and distributing them among reliable partners. In the process, the CBCs achieve the goal of transferring conservation capacity to the field by offering in-country partners opportunity to acquire training and experience. The Andes CBC, for example, has awarded more than 450 grants under the Threatened Species Initiative, benefiting nearly 320 species. "As part of our strategy to share information and construct alliances, we have produced 23 books and guides, incorporating contributions from 200 authors. And our efforts have led to publication of more than 30 scientific articles," says Jose Vicente Rodriguez, Andes CBC Species Conservation Director.

A three-year grant from the Darwin Initiative has also fomented creation of a regional network of about 250 amphibian experts. Such results illustrate the power of the CBC's decentralized approach. Inviting stakeholders to take part in data gathering and analysis also strengthens the CBC's knowledge base and the social capital of its participants. "It increases trust, understanding, transparency, and inclusiveness," Rodriguez says.

By empowering local groups to perform the conservation work in their own backyards, so to speak, the CBCs carry out their mandate of forming a corps of in-country professionals engaged in a full-out offensive on behalf of nature. Such local action also leads to a ripple effect as local people develop a sense of pride in their biodiversity.

In Madagascar, for instance, the country's status as one of the most biologically diverse places on the planet was a powerful factor in the 2003 decision by the country's president to launch the Durban Vision, in which he pledged to triple the area of land and forest under protection. Based on scientific analysis produced by the Madagascar CBC and its local partners, the plan set out to save remnants of tropical and dry forests that are home to many of the island's endemic species. As of 2007, the President made considerable progress toward the goal, setting aside more than two million hectares in new protected areas.



The magnificent Scarlet Macaw can still be found in 1.6 million hectares of the Central Suriname Nature Reserve.

GUIANAS: ORCHESTRATING MULTI-SECTOR INTERESTS

The true value of partnerships is to bring together complementary capacity towards achieving a common goal. In Suriname, the Guianas CBC has created a partnership with governments and local stakeholders in the vicinity of the Central Suriname Nature Reserve (CSNR,) a World Heritage site and one of the world's largest and most pristine tropical protected areas.

The CBC is in talks with the Saamaka tribe and other stakeholders about creating buffer zones along CSNR's southeastern boundary. In the case of the Saamaka, the indigenous group approached the CBC for help creating a protected area to shield the CSNR from anticipated pressure on its east side, at the same time protecting an area of cultural and economic importance to the Saamaka people. CBC leaders are also talking with government and mining company officials about implementing conservation measures to ensure the protection of the entire upper watershed of the Coppename River, which provides food and freshwater to local communities.

Photo: John Martin

"You really have to have a continental or country-scale vision broken out into little pieces. So you can zoom in to see the pixels of conservation yield all the way to the species level, and have a range of individuals, partners and institutions take on those tasks, according to their capacity, to make the overall vision a reality," says Frank Hawkins, CI Vice President for Africa and Madagascar. "The trick is to engage a network of partners." The CBC, thanks to its stature in the field and its ability to make direct grants to local groups, also has the clout to nurture local NGOs and help them find their voice in public policy debates, which, in turn, can help sensitize the wider public to the necessity of biodiversity conservation.

The CBC doesn't always have to take the lead in these endeavors. In fact, Hawkins and other experts stress the importance of being humble. The CBC approach involves a degree of diplomacy and an ability to inspire group effort lacking in previous approaches to international conservation work.

"A CBC is very hard to advertise," says Keith Alger, CI Vice President of Human Dimensions. "The more you take credit, the more you undermine your ability to leverage that collaboration. Our CBC leaders have to learn to strike a balance: giving credit widely and taking credit selectively."

While partners may be better positioned to carry out conservation in the field, this does not mean that the CBCs act as distant granting agencies, kicking back while partners do the work. Instead, CBCs strategically determine their involvement in conservation projects, seeking opportunities for critical "research and development" that emerging partners do not have the time or resources to pursue. Maintaining such demonstration sites and continually evaluating success allows the CBCs to discover new approaches to conservation and refine existing activities for greater impact with fewer inputs. These lessons learned are then shared internally and with partners. Moreover, this technical grounding attracts and helps partners and donors evaluate our work, as they can see real-world examples of our expertise.

Choosing the right partner for a given project can be challenging and time-consuming. Besides the need to strategically engage key stakeholders, collecting and analyzing the best available data is of great importance. As the CI Strategy Handbook (*Conserving Earth's Living Heritage: A Proposed Framework for Designing Biodiversity Conservation Strategies*, 2004) describes in greater detail, the planning process is only as good as the mix of reliable data collected and analyzed and the expert opinions consulted. The handbook cautions that "determining this balance is something of an art. Spending too much time and money behind closed doors collecting and analyzing information and reaching conclusions shared only internally is unlikely to result in a solution that is acceptable to key stakeholders. Spending too little time on data collecting and analysis, however, can result in poorly informed decision-making. Before moving forward with a planning process, a decision should be reached on a balance of data collection and analysis, internal processing, and expert consultation that will be necessary and sufficient to produce a solid, well-informed conservation strategy."

Network analysis can help CBC leaders maintain a well-rounded circle of partners by providing a visual map of the participants in conservation efforts. This type of analysis is an excellent evaluation tool, revealing areas where partnerships are most robust and others requiring more – or more dynamic – partners.

CI Brazil adapted a methodology called "Ecomapping" a few years ago to guide plans to increase the capacity of the environmental educators employed by strategic partners in the wetlands of Pantanal. As described in greater detail in the case study available at CI's Learning Portal, *Ecomapping, a Network Analysis of Partners in Pantanal*, the process helped the Brazil CBC expand its network in the region and improve the quality and quantity of the education efforts. CBC leaders continue to use the tool for monitoring and evaluation. Ecomapping has since been used in other projects in Brazil. The methodology has been transferred to the Andes CBC, as well.

Photo: Gina Buchanan

BRAZIL: COURT THE PRIVATE SECTOR

In Brazil, the CBC worked with the Center for Environmental Leadership in Business (CELB) based at CI's headquarters to recruit the agribusiness corporation Bunge. After a two-year courtship conducted both in Brazil and in Bunge's White Plains, New York headquarters, CI and the company had built up enough trust to move forward with a plan to encourage Brazilian soy farmers to establish private reserves on their lands in the Cerrado Hotspot. CI's objective was to preserve what little of the original vegetation remained and restore as much land as possible around the Emas National Park in a region, where at least 80 percent of the land is privately owned. Bunge, concerned about increasing political and public outcry over the expansion of soy farming in the Amazon, was looking to establish conservation credentials. The farmers needed technical assistance to comply with Brazil's Forest Code that requires them to set aside 20 percent of their land in private reserves, a law few were observing at the time. CI needed Bunge to make introductions with skeptical farmers. "Bunge could break down that barrier with the soy farmers," says John Buchanan, CELB's Senior Director, who worked with the Brazil CBC on the project.

Launched in 2003, the partnership has resulted in private conservation reserves on nearly 100 farms. The project continues to expand in the Emas-Taquari Biodiversity Conservation Corridor and has been replicated in Piaui state in northern Brazil, where Bunge opened a soy processing plant. It also served as the impetus in the fall of 2007 for the BioCerrado Alliance. The first of its kind in the region, the alliance was formed to bring together local and international nonprofit groups and corporations in a forum for exploring ways to work together to protect the Cerrado's biodiversity.

It also had a capacity building component. The Brazil CBC helped launch the Brazilian nonprofit Oreades, which assisted local farmers map their land, set up legal and private reserves, and file the paperwork with Brazilian government. The project contemplates passing on the mapping duties to municipal authorities, improving local capacity by transferring a valuable skill to local hands. Now Oreades is engaged in the start up of a new NGO – Abioten – in Piaui state, thus creating another local organization with vital technical capacity. The project has had other positive impacts at the local level. Nurseries were opened near the Emas park to grow seedlings of native plants for use in the restoration work. And the municipalities, where the new reserves were created, are eligible for tax credits from the Brazilian government.

A typical sunny day in the Emas National Park bounded by the Formoso River.

Photo: Haroldo Castro

CBC PROCESS

TO DEVELOP STRATEGIC PARTNERSHIPS

Identify key local and regional stakeholders and develop a common vision to collaborate on priority conservation outcomes

Ensure strategic fit with partners and implement conservation strategies jointly

Generate value with a large-scale network of partners facilitating and leveraging conservation outcomes; manage the relationship and the increasing level of engagement and scope of activities

5. Learning and Action Networks

CBCs are regional centers of excellence for the development and implementation of conservation strategies in priority regions around the world. Because conservation is a complex endeavor that involves many disciplines, and in which knowledge must be readily available, regional experts are needed in fields such as the biological and social sciences, management, and conservation tools.

However, this expertise alone is not enough. Continuous sharing of information, learning, experimentation, and innovation is critical to the successful conservation of biodiversity. Through interaction with specialists at other CBCs, other CI departments, and partners worldwide, the CBC can plug into a series of learning networks that share lessons of and generate new knowledge on conservation practice. These learning and action networks are part of an institutional effort to strengthen organization-wide innovation, removing barriers, and encouraging people, who may not know each other to work together toward a common goal. CBC staff take an active role in constructing new distributed networks and supporting broad participation both from experts in the region of operation and internationally.

Under the CBC model, CI has a small but experienced cadre of conservation professionals, underscoring the need to develop dynamic networks and partnerships. While interaction with networks of experts has a different look and feel than relationships with partners, many of the same principals of cooperation hold true. Like in partnerships, a shared purpose or frustration is key for a network to emerge. A sense of urgency is what pushes members to act. And technology breaks geographic, hierarchical, and time barriers allowing a more democratic flow of information.

Networks vary substantially in their structure and level of formal institutional participation. They are more fluid, voluntary, and unpredictable. And they are usually better suited than organizations to facilitate innovation because of their diversity and free-flowing exchange of information and experience among participants. Research indicates that networks can generate and mobilize capacity and have a greater impact on the processes of change than individuals or organizations acting alone. The way the CBCs support learning networks was showcased at the workshop "Strengthening Protected Area Planning and Governance Capacities in the Neotropics," held in Santa Cruz, Bolivia in October 2007. The workshop brought together participants from three CBCs – Andes, Brazil, and Mexico and Central America, as well as CI programs and partners in Colombia, Venezuela, Liberia and Cambodia. "The workshop allowed participants to discuss ways to innovate protected areas governance and orchestrate KBA protection," says Jordi Surkin, Andes CBC Protected Areas Expert.

Dynamic networks not only provide information to shed light on complex issues; when functioning at their best, they can create relationships between and among experts in different fields and different locations. Networks serve as accounts of social capital for the CBCs.

MADAGASCAR: BUILDING A TOURISM VALUE CHAIN

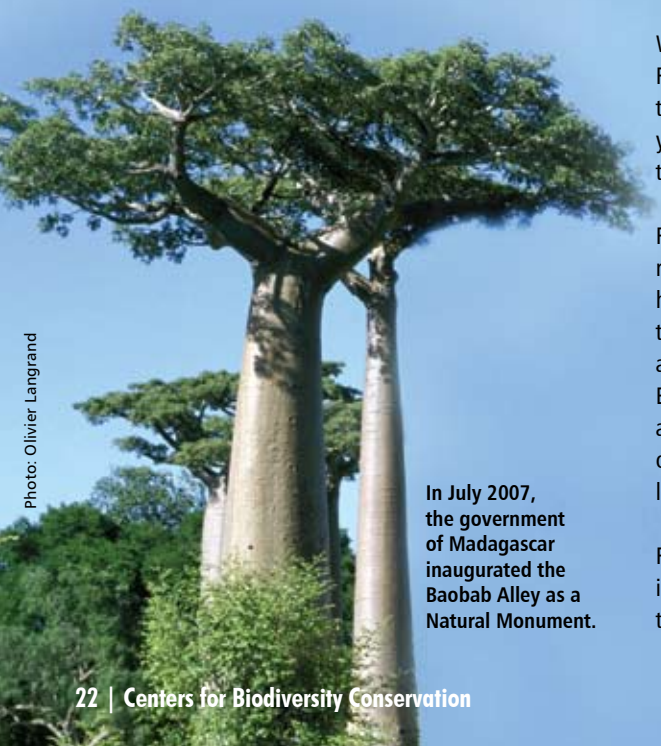


Photo: Olivier Langrand

In July 2007, the government of Madagascar inaugurated the Baobab Alley as a Natural Monument.

When Madagascar's President Marc Ravalomanana opted to dramatically expand the country's national parks system a few years ago, the stage was set for beefing up the country's tourism industry.

For instance, the forests of the Menabe region in western Madagascar harbor many highly-threatened species, among them three species of endemic Baobab trees, and the world's smallest primate, Madame Berthe's Mouse Lemur. These unique species are major regional tourism draws and offer opportunity to improve the well-being of local communities.

Fanamby, a key Malagasy partner NGO in this project, has provided conservation training to local farmers and operators and helped them position their businesses to capitalize on the growing sustainable tourism industry. "Fanamby has helped and guided us to cultivate products demanded by tourists visiting our region. With the revenue generated from these crops, we have conserved biodiversity because the money allows us to live without going to the forest to extract natural resources," explains Simonette Mahatsara, who leads Ampela Mihersika, a farmers association managed by women in western Madagascar.

With USAID financial support, Madagascar CBC is developing a tourism network to improve capacity and competitiveness of small businesses involved in the tourism supply chain in western Madagascar.

The waters of the Malpelo sanctuary in Colombia explode with life including schooling hammerhead sharks.

Photo: Yves Le Fevre

TROPICAL PACIFIC: PROTECTED AREAS MANAGERS LEARN TOGETHER

In the Eastern Tropical Pacific Seascape (ETPS,) meanwhile, the Andes and Mexico and Central America CBCs are tapping into networks that share a common concern about conserving this biologically rich but tremendously threatened marine region.

CI is embarked on a three-year project with UNESCO World Heritage Centre, the Walton Family Foundation, UN Foundation, Global Conservation Fund, and more than 100 partner organizations in six core marine protected areas. Utilizing the World Heritage Convention and other international and national legal instruments, the project has strengthened management by providing participants with training and technical assistance in instituting protection measures. Shared learning and networking has also been established among the sites. One network of tourism technicians, for instance, is collecting and analyzing data on the impacts of scuba diving by tourists off the Galapagos National Park and Malpelo Fauna and Flora Sanctuary.

Over the long-term, the information and the methodologies shared by this network will help protected area managers to come up with and continually improve best practices for reducing impacts of tourism activities. "The data supports decision-making. For example, should I open or close a site? Should I allow more or fewer divers? Should I rotate the sites that are open to the public? This type of monitoring gives you the information necessary to make these decisions," states Clara Esperanza Osorio, Tourism Specialist with Colombia's National Parks and the Facilitator for the ETPS Tourism Network.

GUAYANA SHIELD: SHARED KNOWLEDGE RAISES MONEY

In other cases, CBC science, shared with a network of experts, can lead to conservation investment by other organizations that share CI's vision. Such is the case in the Guayana Shield region that extends across parts of Colombia, Venezuela, Brazil and all of Guyana, Suriname and French Guiana. Starting in 2001, CI, the United Nations Development Programme (UNDP,) the Guiana Shield Initiative (GSI,) and several European funding organizations began mapping out a comprehensive set of conservation priorities for the Guayana Shield. The process culminated in a 2002 workshop co-sponsored by CI that produced a consensus document titled *Conservation Priorities for the Guayana Shield* and has since guided investment in sustainable development initiatives in the six countries.

The workshop led to the Paramaribo Declaration, in which CI, IUCN and UNDP reached a consensus on fair compensation for ecosystem services. The document lead to ecosystems services payments without CI having to expend any additional capital. In October 2007, the second phase of the initiative attracted 2.2 million Euros from the UNDP, the European Union, the Dutch Government, and the Netherlands' office of IUCN. The CBC is expanding its program and developing a Guayana Shield Action Plan that aims to establish a major conservation corridor across Venezuela, Guyana, Suriname, French Guiana, and Northern Brazil.

Photo: Haroldo Castro

The highest *tepui* in the Guayana Shield is Mount Roraima at 7,200 feet, a breathtaking spectacle.

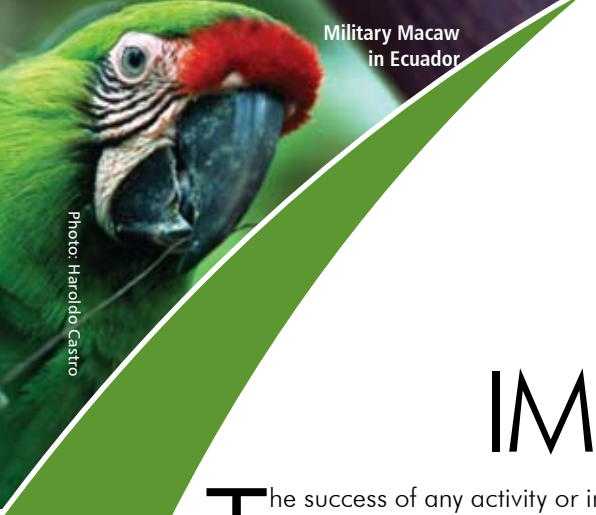
CBC PROCESS

TO HARNESS LEARNING AND ACTION NETWORKS

Map existing capacity to implement conservation outcomes and support emerging networks of partners and stakeholders to enhance knowledge and action

Strengthen leadership, communication and joint projects within networks that can potentially contribute to CBC outcomes; document and disseminate lessons learned

Encourage active participation of CBC staff in networks; incorporate innovations generated in networks and recognize results of joint action



Military Macaw in Ecuador

Photo: Haroldo Castro

GENERATE VALUE AND CONTINUALLY IMPROVE ON SUCCESS

The success of any activity or institution is determined by its capacity to add value to a system. It is no different with conservation. For a CBC to succeed, we have to understand its added value – what it brings to the table. That's where monitoring and evaluation comes in. CI has developed an outcomes monitoring framework adapted for each CBC. This process helps us continually assess and improve the CBC's contributions to conservation efforts in the region where it works. This may sound like a simple idea but measuring value is no easy task. We are constantly seeking ways to illustrate our effectiveness in simple and meaningful language. Monitoring and evaluation measures, however, go beyond proving the CBC's relevance. They help us make sense of our stories, improve our operations and gain insight essential for correcting course, when necessary. By keeping close tabs on our progress, we work toward long-term sustainability.

6. Measures of Progress and Effectiveness

The development and implementation of strategies for large-scale biodiversity conservation is challenging and ambitious. Equally challenging – and of no lesser importance – is building and demonstrating the capacity to monitor progress toward conservation outcomes. Monitoring provides information not only on the work of the CBCs and their partners, but also on humanity's changing impacts on global biodiversity. By systematically tracking trends in biodiversity, we can more forcefully articulate conservation successes and failures to governments, investment bodies, industry, and society as a whole and help shape future decisions on conservation policy and investment.

A monitoring framework exists within CI to track progress towards strategy implementation using simple but direct indicators of success. We use two categories: state indicators, which are directly linked to species, areas and corridors in need of conservation action; and progress indicators, associated with individual conservation actions within a CBC strategy.

CI has identified four priority state indicators as the most robust measures for monitoring the status of global biodiversity, as well as threats and interventions that affect it:

Extinctions Avoided
- Change in threatened status of species using the IUCN Red List Index

Areas Protected
- Change in protection status of Key Biodiversity Areas
- Change in habitat extent in Key Biodiversity Areas

Corridors Consolidated
- Change in characteristics in biodiversity corridors

By collecting data on these indicators, which are measured in three- to five-year timeframes, the CBCs determine progress towards meeting conservation objectives and report the results in a consistent and clear format.

Progress indicators are more closely related to conservation actions and measure advances towards conservation goals in a more real-time mode. For example, if the CBC strategy includes the creation of a new protected area, an indicator of progress would be the existence of a legally-binding decree or agreement with the owners of the particular area. Likewise, if the strategy dictates actions to improve the management of a protected area, indicators of success would include the existence of a management plan and the minimum resources and capacities to implement it. Given their one-year timeframes, these progress indicators allow for more dynamic adaptive management.

Monitoring and evaluation must be ongoing from the day the CBC opens its doors. By constantly evaluating the progress of conservation outcomes, CBC staff and partners can continually refine existing models and activities, embrace innovation, and scale up projects in size and scope.

MELANESIA: TURTLE ROOKERY CHAMPIONS

Measuring progress can often be a simple matter of assessing concrete results. For instance, the turtle rookery protection program in the Bird's Head Seascape, part of the mega-diverse Coral Triangle where the Melanesia CBC works, has saved at least 137 green turtle nests (and nesting females) since September 2006. Two recent CI biological surveys found the region contained critical habitats for globally-threatened marine species, including the largest leatherback turtle nesting area in the Pacific Ocean, as well as green and hawksbill turtle rookeries. The Melanesia CBC helped lobby for stricter protections in the area and now the rookery is part of a new 100,000-hectare marine protected area. The CBC has also convinced BP, one of the world's largest oil companies, to alter, by 300 nautical miles, the route of its liquefied natural gas tanker to avoid Raja Ampat.

The threatened Green Turtle (*Chelonia mydas*) is one of seven species of sea turtles found throughout the world.

Photo: David Lee

Photo: Sterling Zumbrunn

The Raja Ampat, or "Four Kings" in Indonesian, is the heart of the world's coral reef biodiversity.

CBC PROCESS

TO MEASURE PROGRESS AND EFFECTIVENESS

Become familiar with CI outcomes monitoring framework; and apply framework to develop CBC baseline

Refine CBC indicators for species, sites, corridors, and other conservation interventions and measure progress of action

Continually measure progress, analyze and communicate results to stakeholders and adapt strategy according to evidence of impact

7. Long-term Sustainability

In order to fully implement a CBC, resources are needed to fund core costs that cover the scientific, technical, and operational staff of the CBC, and enable it to perform most if not all of the features described herein. Without this financial support, a CBC will not be able to fully achieve excellence and will be limited in its capacity to reach significant conservation results. As the CBC succeeds in increasing the capacity of existing stakeholders and partners, its main function shifts from implementing projects to catalyzing a large-scale vision. Only then will we see biodiversity conservation at a scale equal to the challenge and the threats.

Conservation organizations have long been supported by donors whose objectives may not perfectly match the mission of the organization. Although grants from such donors are important, a more powerful approach to achieving large-scale conservation results comes from applying financial and human resources directly in support of one's mission. In CI's case, this means using the best science to guide strategy development; establishing the best technical and strategic capacities to accomplish conservation outcomes; and ensuring the financial sustainability to achieve lasting results.

Initial CBC structure and strategy can be implemented with existing donors and grants. In many cases, this results in partial implementation of the CBC with core staffing hired and priority strategies carried out first.

Once the staff is stable, new funding should be in line with the CBC mission and much less project-driven. It is essential to devise and implement a strategy for educating donors on the value of the CBC approach.

As the capacity grows of partners and allies under the CBC's guidance, the roles of many CBC staff members will shift to that of catalysts of a common vision among stakeholders. To maintain optimum stability, steps should be taken to keep turnover low and retain the staff leadership. As donors become numerous, the CBC's capacity to leverage resources both internally and from partners is greatly increased and plays a large part in the CBC's financial sustainability.

While there is no precise formula for achieving long-term sustainability, there are a few standard approaches. For starters, CBCs should pass on the sustainability ethic to in-country partner organizations. Since a significant portion of the budget is re-granted, CBCs should help its local grantees improve their fundraising capacity as a means of increasing the entire region's prospects for sustainable conservation.

Developing a matching funds mindset is another good way to grow the CBC budget. Donors, especially multilaterals and bilaterals, are often reluctant to fund overhead costs, particularly the personnel and operational structure expenses of an international NGO, but are willing to co-financing projects in which CI is investing.

CI has been improving its capacity to bring together public-private consortiums to carry out conservation. The CBCs have good track records in this area. One recent example took place in October of 2007 when CI, The Nature Conservancy (TNC,) and governments of the United States and Costa Rica signed an agreement hailed as the largest debt-for-nature swaps in history. The terms call for the United States to forgive $26 million of Costa Rica's debt, freeing Costa Rica to pour the same amount into tropical forest conservation programs over a period of 16 years, protecting the country's most critically threatened tropical forests. The U.S. government earmarked $12.6 million via the U.S. Tropical Forest Conservation Act (TFCA,) a framework the U.S. government uses when forgiving a country's foreign debt. The rest of the money came from CI and TNC, which chipped in another $1.26 million each to purchase the debt at a discounted rate. CI´s participation was possible thanks to the generous support from the Blue Moon Foundation, which granted $1.2 Million, with the remaining $63,000 contributed by an individual donor.

Trust funds, such as the fund Madagascar established to pay for managing its growing protected areas system, are also attractive vehicles for donors. Other examples of trust funds established with help from the CBCs include the Suriname Conservation Fund and the proposed Guyana National Protected Areas Trust, two funds that would pay for protected areas management in the Guianas region. The Kayapo Protected Forest Trust is an endowment that will coordinate financial and technical support to Kayapo communities into the future. In Ecuador, meanwhile, CI has joined forces with the U.S. Agency for International Development to create a trust fund that will cover the long-term costs of maintaining a forest reserve on Chachi indigenous lands.

Other funding mechanisms established by CI and its allies include the Critical Ecosystem Partnership Fund, a joint trust set up by CI, l'Agence Française de Développement, the Global Environment Facility, the Government of Japan, the John D. and Catherine T. MacArthur Foundation and the World Bank.

This fund invests in projects that increase public support for safeguarding biodiversity Hotspots. CI and the Gordon and Betty Moore Foundation have created the Global Conservation Fund to help finance, create and maintain long-term management for protected areas in Hotspots, High Biodiversity Wilderness Areas, and key marine regions, while Verde Ventures, capitalized by the International Finance Corporation, the Overseas Private Investment Corporation, and Starbucks Coffee Company, invests in businesses that offer strategic biodiversity conservation missions to the same key areas.

CI's Sojourns program that takes donors on eco-expeditions is a good way for CBC staff to showcase their region's natural beauties and cultivate personal relations with donors. Besides cultivating ties to donors, the CBCs may develop revenue-generating ecosystem services and tourism projects that could add to the funding streams. For instance, the Melanesia CBC has designed a tourism user fee for the Raja Ampat marine protected area network to begin in 2008. It is expected to generate US$75,000 in the first year.

CI's Center for Conservation and Government can help CBC staff navigate the funding options available from US, European and other government agencies and multilateral and bilateral organizations such as the World Bank and the Global Environment Facility.

CBC PROCESS

TO ENSURE LONG-TERM SUSTAINABILITY

Design initial CBC structure and strategy with existing donors and grants; establish collaborative relationships with fundraising support at CI's headquarters

Maximize fundraising to implement CBC strategy; align project-driven fundraising to mission; educate donors on value of the CBC model

Reposition staff to be common-vision catalysts; increase portfolio of donors aligned with CBC mission; leverage resources for CBC structure and partners

Photo: Piotr Naskrecki

Green iguana in Brazil

Photo: Cristiano Nogueira

The CBC Development Continuum

CBCs evolve through different stages. The following CBC Development Continuum can serve as a quick assessment tool for thinking strategically and aligning management priorities. As a CBC develops from stage to stage, it reaches greater capacity to deliver conservation. Progression along the continuum is not automatic. It is the result of conscious decisions and efforts to address the needs and realities of a region. The three stages are not single discrete locations. There are many points in between. Very frequently, CBCs cannot be fully categorized as Stage 1 or 2 or 3. They usually have some areas completely developed while others are in initial stages. We hope that this Continuum will help you figure out where you are; where you want to go; and how to get there.

CBC Development	Stage 1	Stage 2	Stage 3
SCIENCE-DRIVEN VISION	Identify and analyze conservation targets for the region	Define set of outcomes; develop alliances; inform decision-makers	Conduct periodic assessments and readapt strategies
MULTIFACETED STRATEGIES	Assess threats and opportunities affecting the regional portfolio of outcomes	Address threats or opportunities using the Pressure-State-Response framework and develop alliances for action	Implement strategies and adapt as social, political, and economic contexts change
CORE TEAM	Assess CBCs and regional partners' capacities and design organizational chart to cover core competences	Place key scientific and operational resources within CBC and define responsibilities of CBC staff and partners	Orchestrate fully functional team to implement strategic vision and leverage capacity of new partners
STRATEGIC PARTNERSHIPS	Identify key stakeholders and develop a common vision to collaborate on priority conservation outcomes	Ensure strategic fit with partners and jointly implement conservation strategies	Generate value with a large-scale network of partners; manage the relationship and increase scope of outcomes
LEARNING AND ACTION NETWORKS	Map existing capacity to implement conservation outcomes; support emerging networks of partners and stakeholders to enhance knowledge and action	Strengthen leadership, communication and joint projects within networks that can potentially contribute to CBC outcomes; document and disseminate lessons learned	Encourage active participation of CBC staff in networks; incorporate innovations generated in networks and recognize results of joint action
MEASURES OF PROGRESS AND EFFECTIVENESS	Familiarize with CI outcomes monitoring framework and apply framework to develop CBC baseline	Refine CBC indicators for species, sites, corridors, and other conservation interventions and measure progress	Continually measure progress, analyze and communicate results to stakeholders; adapt strategy according to evidence of impact
LONG-TERM SUSTAINABILITY	Design initial CBC structure and strategy with existing donors and grants; establish collaborative relationships with fundraising support at CI's headquarters	Maximize fundraising to implement CBC strategy; align project-driven fundraising to mission; educate donors on value of the CBC model	Reposition staff to be common-vision catalysts; increase portfolio of donors aligned with CBC mission; leverage resources for CBC structure and partners

The indigenous population of Papua New Guinea is one of the most heterogeneous in the world. Most Papua New Guineans adhere strongly to traditional social structure, which has its roots in village life.

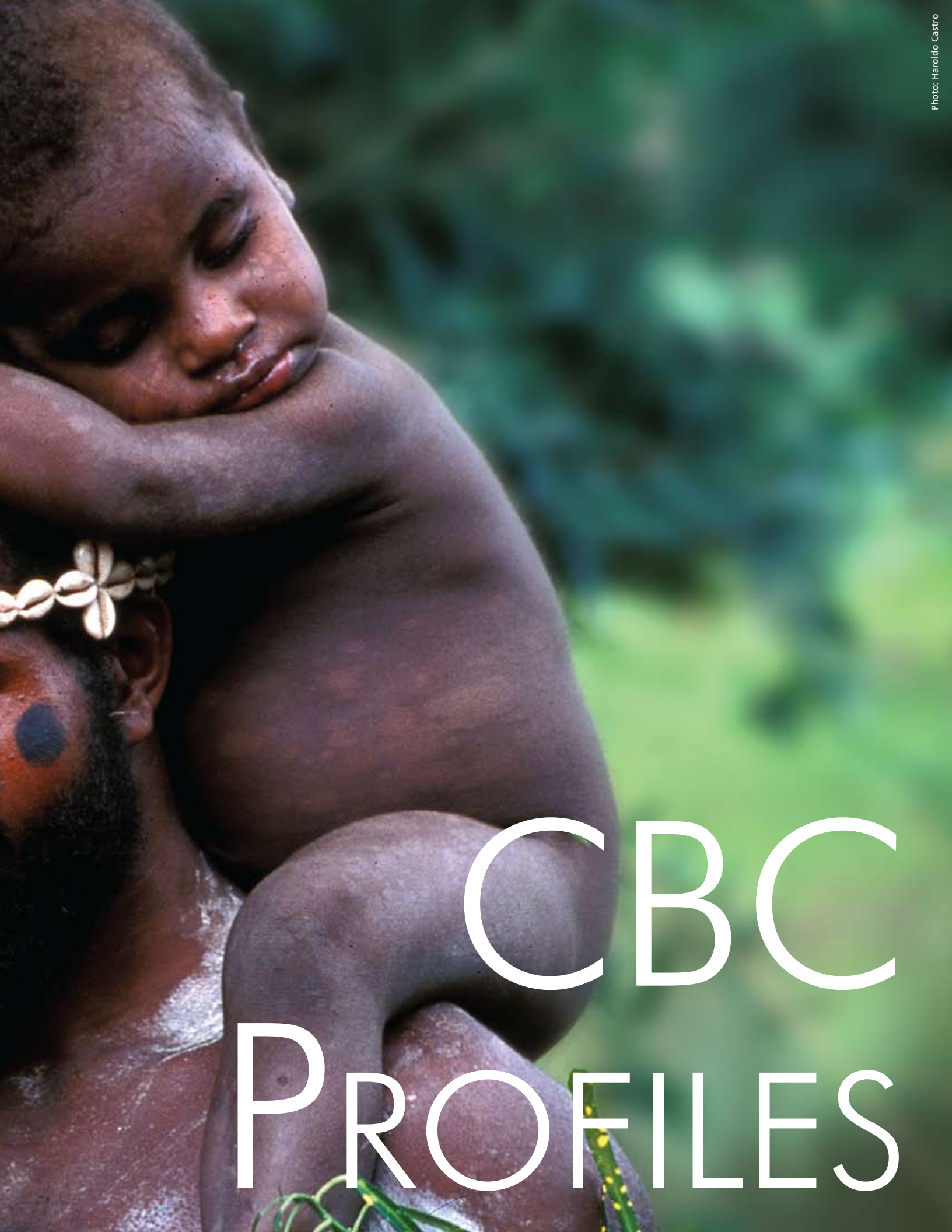


Photo: Haroldo Castro

CBC Profiles

Photo: Pete Oxford

Andean Marsupial Frog in Ecuador

Andes Center for Biodiversity Conservation

With four of the top ten megadiverse countries – Venezuela, Colombia, Ecuador, Peru, and Bolivia –, the Andes stand out as the most important place on Earth for terrestrial biodiversity. One in every ten of the world's mammal, bird, and amphibian species is only found in the Andean countries, a region that covers less than four percent of the planet's land area. These countries encompass two Hotspots: the Tropical Andes, which stretches along the Andean mountain range, and the Tumbes-Chocó-Magdalena, which runs from the Panama Canal south through the coastal regions of Colombia, Ecuador, and northern Peru. In addition to these two Hotspots, the Andean countries contain wonderful wilderness areas: the biologically rich, western part of the Amazon Basin; Los Llanos in Venezuela; parts of the Guayana Shield; Chaco; Pantanal; and the Coastal Deserts of Peru and Chile.

One in every ten of the world's mammal, bird, and amphibian species is only found in the Andean countries, a region that covers less than four percent of the planet's land area.

The marine realm is equally impressive. The Eastern Tropical Pacific Seascape, centered on the protected areas of Galapagos, Cocos, Malpelo, and Coiba (all of them World Heritage sites), is renowned for the rich, upwelling waters that support an abundance of diverse and unique marine life. On the eastern side of the continent the region has some of the most biologically important areas of the Caribbean including Colombia's Seaflower Biosphere Reserve, by far the biggest protected area in the Caribbean; the extensive coral reefs around Venezuela's many islands; and extraordinary deep-water biodiversity, about which we are only just beginning to understand.

However many threats imperil the survival of these important treasures. Some are driven by the needs of rural people to make a living, others by global demand for the region's natural resources – oil, gas, minerals, timber, and land for agro-industries such as oil palm, soy, and bio-fuels. Transport infrastructure, especially mega-projects intended to promote regional economic integration, threatens to fragment the remaining wilderness of the South American continent including the Andes. Climate change poses a huge menace to the region's biodiversity. The marine realm in particular is marked by vulnerability to climate change. In the Caribbean, coral reef bleaching is severe, while on the Pacific side, the intensification of the "El Niño" phenomenon could devastate cold-water wildlife. This, combined with over-fishing of many species, notably sharks for shark-fin soup; by-catch of threatened species like sea turtles; and a host of human pressures in coastal areas are putting marine biodiversity at risk.

In this context, the Andes CBC's approach to conservation of the region's biodiversity combines major investment in field programs with intensive collaboration with the governments and peoples of the region, as well as engagement of global actors driving the pressures on natural resources.

The Andes CBC was launched in 2002. Its central office is located in Quito, Ecuador. Today, the Andes CBC has a staff of nearly 100 highly-qualified professionals. Each country, headed by an outstanding national leader in conservation and development, has an operational team that serves as catalyst of large-scale conservation projects in partnership with local and national governments, NGOs, research institutions, communities, indigenous peoples, and the media.

Cross-cutting staff positions also support actions in biodiversity science; species conservation; conservation strategies (including policy, tourism and development;) and marine conservation in the five countries.

In five years, the Andes CBC has helped create 30 protected areas and improve the management of another 80. It currently works to consolidate the Eastern Tropical Pacific Seascape, which encompasses more than 200 million hectares, as well as five conservation corridors, home to at least 469 threatened species and 1,890 endemics. Roughly three-quarters of the species of the Andean region occur entirely or partially within these five corridors. Of the region's threatened species, the CBC is helping to protect 320 animals and plants.

200
in-country and regional partners

110
29 million ha
protected areas

5
80 million ha
conservation corridors

320
threatened species

Science

Since its inception, the Andes CBC has carried out rigorous scientific inquiry to ensure conservation decisions and actions are targeted and effective. Such scientific research and monitoring is conducted at regional as well as local levels.

The Andean region produces the water that sustains the Amazon rainforest. But deforestation – mainly for agriculture and big infrastructure projects – is taking a heavy toll on the hydrological system and the biodiversity. In recent years, the Andes CBC has conducted three aquatic biological assessments (AquaRAPs) in Caura, Ventuari, and Paragua. These expeditions have yielded surveys of more than 800 species of animals and plants including 150 new records and 41 species of fish, frogs, invertebrates, and lizards altogether new to science. Through its Threatened Species Initiative, the CBC has contributed to the conservation of two manatees; two dolphins; two otters; caimans of the Orinoco and Magdalena Rivers; five endangered species of fish and two of turtles. The turtles (*Podocnemis lewyana* and *Batrachemys dali*) have seen their populations increase after four years of community projects on their behalf.

The work of the Andes CBC has also led to discoveries and rediscoveries of amphibian species once thought extinct and others close to extinction. One example is the golden frog of Supata once thought to have disappeared from a mountainous region in Colombia after its forest habitat had been reduced to a mere three hectares.

Deforestation is one of the main concerns in the area. "We've developed a deforestation analysis in collaboration with CABS, which compares a 10-year period of vegetation coverage (1990-2000) in the largest surface yet analyzed (4.7 million square kilometers) in all five countries. The Colombian government has already adopted this analysis for measuring the performance of its autonomous regional corporations," says Robert Bensted-Smith, Andes CBC Director. "We also expect this analysis to be useful for assessment of avoided deforestation and the long-term impact of infrastructure projects and to formulate scenarios for future development projects."

In the marine realm, the Andes CBC has made a lot of progress in researching the behavior of sharks, a highly threatened group throughout the world. "Fortunately, in the Eastern Tropical Pacific, there are still large and impressive populations of sharks. Therefore, it's very important to ensure that what is left in this region receives adequate protection," says Scott Henderson, CBC Andes Marine Program Director. Through a shark tagging effort with institutions in four countries – Ecuador, Colombia, Panama, and Costa Rica – the marine program is collecting data on the movements of several shark species.

Photo: Aaron Cubis


Photo: Haroldo Castro


Photo: Fund. ProAves


Photo: Haroldo Castro

"These studies help us detect when the sharks are in or around the islands of the Eastern Tropical Pacific Seascape; how long they stay; how they move; and most importantly, when they leave a particular island, where are they headed, what route they take, and how long it takes them to get there. We need to find out how they move in the open ocean between these different islands, so we can define smarter ways to protect them."

The Andes CBC is also implementing a research project on adaptation to climate change in the Caribbean islands and the Colombian Páramo, a high altitude region of valleys and plains with a large number of lakes and wet grasslands intermingled with forest patches.

Other climate change initiatives include collaborations with two global programs – the Global Observation Research Initiative in Alpine Environments (GLORIA) and Assessing Large-scale Risks with Tested Methods (ALARM) – to create a regional network of sites to monitor the impact of climate change on biodiversity and human productive systems. "We recently completed two workshops. One was a pilot project with the indigenous communities of Sajama, Bolivia, to seek feedback from ancient and traditional knowledge and perceptions of indigenous peoples to climate change," says Stephan Halloy, Andes CBC Biodiversity Science Director. "The other was a training and networking course, which brought together all the Andean countries except Chile. Researchers and conservationists were trained in GLORIA methods and have returned to each country to establish new sites and widen the network."

Partnerships

In the field of climate change mitigation, the Andes CBC has made significant progress in coordination with national and international partners. In March 2007, the Kyoto Protocol's Clean Development Mechanism (CDM) approved the project ChoCO2 and a methodology that allows for reforestation projects on active agricultural and pasture lands. The new methodology was created via collaboration among several groups including CI, the Ecuadorian organization Fundación Maquipucuna, the Ecuadorian Environmental Ministry, and Ricoh, a Japanese office solutions company. The carbon estimation methodology was carried out by EcoSecurities, a British-based company that sources, develops, and trades carbon credits. This is the first reforestation project in Ecuador to attain official approval and only the seventh of its kind in the world. As a result, 265 hectares of native trees will be grown in a KBA of extreme diversity and endemism.

"Partnerships are vital in large-scale conservation processes. By investing time and attention in our partners on the ground, these relationships are sure to provide dividends well into the future," says Bensted-Smith. In a 12-month period alone, agreements with municipalities, communities, and national governments allowed the creation of more than a million hectares of protected areas.

The CBC efforts also support implementation of the Programme of Work on Protected Areas (POW) of the Convention on Biological Diversity (CBD.) CI, international and national NGOs, and several governments in the Andes have signed onto the program. "It has been an excellent means to strengthen alliances with NGOs such as TNC, WWF, WCS, and others, as well as with government agencies and national protected area funds," says Jordi Surkin, Andes CBC Protected Areas Expert. "These alliances have helped contribute to protected area financing, capacity building, and identification of gaps in national protected areas systems."

Partnerships are vital in large-scale conservation processes. By investing time and attention in our partners on the ground, these relationships are sure to provide dividends well into the future.

Robert Bensted-Smith

CI's collaboration with the Roman Catholic Church to save both the yellow-eared parrots (*Ognorhynchus icterotis*) and the birds' habitat is an inspiring example of the power of working together. Research shows that the parrot is extraordinarily dependent on the Quindio wax palm (*Ceroxylon quindiuense*,) Colombia's national tree. But centuries of selling the palms for church services in Colombia and abroad threatened to wipe up the remaining trees and leave the parrots homeless. The situation was bleak until CI called on the church for help. Parish priests took up the cause, sharing the news of the palms and the parrots. Soon people nationwide understood the threat and quickly accepted changes to a time-honored religious custom.

In Colombia today, people eschew using the wax palms for church services and have replaced them with fronds of more common palm species. Rural communities no longer cut down wax palms. Instead they plant them and sell the seedlings. Some U.S. churches have joined the ban, switching to non-threatened palm varieties sustainably harvested in Guatemala and Mexico. The alliance is now lauded as one of the most successful biodiversity conservation campaigns in Latin American history. Started by CI and Fundación ProAves, a local organization supported in part by CI, it has grown to more than 35 organizations. ProAves also operates a "Loro Bus" that travels to rural communities to teach how to better protect parrots. CI and partners have trained about 200 conservation guides. What were just 81 surviving birds have rapidly reproduced and today's population stands at 660 individuals.

Meanwhile in Bolivia, the Municipal Government of Santa Rosa de Yacuma, in the northeastern Department of Beni, has created the largest Municipal Protected Area in the country. The 616,453 hectare protected area, known as the Yacuma River Pampas, inside the High Biodiversity Wilderness Area Amazonia, is home to many endangered species including the Blue-throated Macaw (*Ara glaucogularis*,) and two species of titi monkeys *(Callicebus modestus and Callicebus olallae*.)

Moving to the Vilcabamba-Amboró corridor, which spans the Peru-Bolivia border, the Andes CBC works to strengthen the management of the already extensive network of protected areas and harmonize it with local development programs. "For example, in Bolivia, we are working with local people, local governments, and park authorities to develop municipal land-use plans to better integrate the community's development aspirations with the conservation of protected areas in the corridor, including Madidi National Park one of the world's most biologically diverse protected areas," Surkin says.

The CBC also got involved on the Peruvian side of the Vilcabamba-Amboró corridor, where construction and operation of the Camisea gas pipeline could open a largely intact wilderness area to colonization. CI responded in partnership with national NGOs and local stakeholders to press the authorities in Lima, as well as the regional and international financiers and commercial interests propelling the pipeline project, to take into account key environmental and social conditions.

Photo: Fundación ProAves

Loro Bus engages community of Santa Elena, Colombia, in the protection of the yellow-eared parrots.

Collaboration with indigenous peoples is of crucial importance in the Andes. The CBC has helped to define a common agenda with indigenous peoples and other ethnic groups in Colombia and Venezuela, in conjunction with CI's Indigenous and Traditional Peoples Initiative. A workshop with indigenous and afrocolombian organizations in the Pacific region of Colombia, for example, gave birth to a strategy that links conservation to issues of local interest such as autonomy, territorial control, as well as management and land-use planning.

Human Well-being

The Convention on Biological Diversity states that "biodiversity is the foundation for human well-being; not only does it provide the materials we need for food, clothing and shelter, but also gives us security, health and freedom of choice." The Andes CBC has been working with national governments in the region and civil society to establish the regulations, incentives, policies, and institutional capacities necessary to align biodiversity conservation with social, economic, and political considerations. Of utmost importance is integrating conservation outcomes with human well-being, economic development, poverty alleviation and regional integration.

"The political scene in the Andes is quite complex," Bensted-Smith says. "Working in a region with distinct national governments, local histories, political and cultural realities is challenging. A key has been the quality of the leadership we have in each country program. By combining expertise in biodiversity conservation with an ability to build consensus with national governments and society, we can have a greater impact on preserving the region's amazing biodiversity."

A Colombian Clean Development Mechanism (CDM) project is an example of finding innovative ways to address both human and ecosystem needs. The Santa Ana mini hydro project in Bogota's water services utility produces carbon credits which are partly being used for biodiversity conservation. The utility provides drinking water and wastewater treatment for the city of Bogotá and 13 nearby municipalities. The project will generate carbon credits by replacing the use of fossil fuel and reducing local greenhouse gas emissions. The certificates will be sold on the international market. CI has helped draw up an agreement between the water utility and the National Parks System in which a portion of revenues will be utilized for Chingaza watershed restoration, thereby conserving crucial Páramo biodiversity.

Another example of the power of the Andes CBC's regional reach can be found in CI's response to the Integration of the Regional Infrastructure of South America (IIRSA,) a plan to build hundreds of road, bridge, dam, ports, and pipelines linking 12 South American countries. IIRSA has been promoted for its potential to stimulate economies and export revenues, predictions that led to strong political and public support. However, the plan also threatens the existence of rural communities and globally-important environmental services such as freshwater, carbon sequestration and the regulation of climate that could devastate South America's agricultural production and provoke a myriad of other unexpected problems. CI responded by producing a carefully-researched report that went beyond a purely conservation-minded analysis to take into account the social, economic, and cultural implications of the regional integration plan. The Andes CBC leaders have capitalized on the report's wealth of data to caution decision-makers at the national, regional and international levels about the IIRSA's potential to cause harm and call for mitigation measures to offset the most serious threats.

In each country, the CBC also works on more local scales to implement projects that meet both human and conservation goals. A project in association with the indigenous Chachi tribe in a remote region of northern Ecuador offers an example of a novel approach that can save forests and improve rural lives. The Chachis denied a logging company the right to harvest timber on traditional land in favor of establishing a conservation agreement with CI and its partner Die Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ,) an organization owned by the German government and dedicated to sustainable development. Under the arrangement, three local Chachi communities receive compensation payments of US$5 per hectare per year from the project, plus technical and planning assistance for setting up a buffer zone next to the 200,000-hectare Cotacachi-Cayapas Ecological Reserve. The annual conservation compensation is paid into a fund that the communities allocate for priority needs. Since the project began in 2004, the community fund has paid for school supplies, medicine, technical assistance, and tools for planting shade-grown cocoa, among other activities. It has also financed community-specific projects such as a new running water system, a gas station and a general store.

To assure future financing for this innovative pilot project, the U.S. Agency for International Development's Conservation of Managed Indigenous Areas project is helping create a trust fund and raise resources to endow it with US$2 million to cover the long-term costs of the reserve. Other financial support for the reserve and its management is provided by partners including the Fundación Ecuatoriana de Estudios Ecológicos (EcoCiencia), a local nongovernmental organization; and the Critical Ecosystem Partnership Fund (CEPF) and Global Conservation Fund (GCF.)

In Bolivia, the Chalalan Ecolodge proves that conservation can generate economic benefits to local people. Managed by the indigenous community of San Jose de Uchupiamonas inside the Vilcabamba-Amboro Conservation Corridor, it has become an important local employer. Between 1999 and 2002, community members working at Chalalan earned a total of more than a US$100,000. The lodge has contributed close to US$10,000 in social benefits such as school supplies and infrastructure improvements. And it has helped local residents purchase agricultural products and obtain titles to communal lands.

There have also been notable biodiversity conservation benefits. Today, community members are much more aware of their responsibility to care for biodiversity since without it, they would lose income from ecotourism. In the area surrounding the ecolodge, the presence of fauna is increasingly evident. The use of crop rotation systems, meanwhile, has contributed to a decreased expansion of the agricultural frontier. The Andes CBC has shared lessons learned from Chalalan to help establish similar projects throughout the region.

Photo: Haroldo Castro

Chachi community plants shade-grown cocoa in the Province of Esmeraldas, Ecuadorian Pacific region.

Toco Toucan in Brazil

Photo: Haroldo Palo Jr.

Brazil-Guianas Center for Biodiversity Conservation

The Brazil-Guianas Center for Biodiversity Conservation has scaled up CI's action in the region with the development of a 130-million-hectare Guiana Transboundary Conservation Corridor extending from the Brazilian Amazon into Suriname, Guyana, French Guiana, and Venezuela. While CI has worked in these countries for many years, the CBC approach shifted its focus to a regional perspective and fomented international political and technical linkages. It has also increased regional capacity to identify, monitor, and mitigate threats, as well as recognize and prioritize opportunities and create conservation-based economic alternatives.

Given the immense variety of the biological diversity in Brazil and the Guianas and markedly different challenges to their conservation, separate profiles are provided for each of the regions.

Brazil

The transition to a CBC in 2001 transformed CI-Brazil's activities from mostly small, short-term projects carried out by CI employees into a program encompassing a regional and then a national scale in a very short time. Organizational culture changed significantly with the realization that large-scale biodiversity conservation is a social enterprise that requires strong and well-organized institutions working at different scales and in an integrated fashion.

With an area of more than 8.5 million square kilometers, Brazil is home to one of the world's largest biodiversity assemblages. Approximately 200,000 species have been recorded by scientists in Brazil thus far, but the actual number of species in the country is probably ten times larger. Brazil is a megadiverse country, ranking first in richness for vascular plants, freshwater fish, and mammals. It is in the top five for amphibians, reptiles, birds, and butterflies. Brazil has six major terrestrial regions – Amazonia, Cerrado, Caatinga, Atlantic Forest, Pantanal and Southern Grasslands (Pampa) – and an extensive marine zone along its 7,367 kilometers of coastline. Around 68% of Amazonia, the world's richest ecological region, lies in Brazilian territory. Two of the most important South American Hotspots – the Atlantic Forest and the Cerrado – and the word's largest wetland – the Pantanal – are almost entirely within Brazil. The Caatinga, a unique dry forest region with hundreds of endemic species, is a genuine Brazilian ecosystem, not found anywhere else. In addition, Brazil is also home to Abrolhos, a marine priority area with the richest coral reefs of the Southern Atlantic. This extraordinary Brazilian biodiversity coexists with one of the world's largest national populations. The CBC carries out its

mission in a context of rapid habitat conversion to high-yield agricultural systems, plantation forestry, industrialization, and urbanization. These changes are supported by fast-growing transportation, energy and communications infrastructure. Brazil's population of over 180 million people is fifth in the world and its gross domestic product is among the ten largest. Conservationists are concerned about the future of all of Brazil's biomes, since approximately 45% of them have already been strongly impacted by human action during the last 500 years. The one-million km^2 Atlantic Forest region, for example, has been reduced to 7.3% of its original cover, making it one of the most endangered Biodiversity Hotspots in the world. Another Hotspot, the Cerrado, has suffered changes to approximately 80% of its area, with a current deforestation rate of 1.1% per year. The Pantanal wetland is threatened by agricultural expansion along its borders and river canalization. Amazonia has lost 270,000 km^2 of forests during the last few decades. The average annual rate of deforestation, estimated by the National Institute of Space Research (INPE,) has varied dramatically. It has been decreasing since 2005 and is now around 10,000 km^2. It is the lowest annual rate of deforestation in ten years, but it's too soon to celebrate. The Caatinga dry forests are being destroyed through desertification due to excessive grazing by cattle and goats; and habitat conversion to irrigated and dryland agriculture.

To achieve our major goal of ensuring long-term conservation of the unique Brazilian biodiversity, the CBC strategies are tailored to each ecological region with special emphasis on selected biodiversity corridors in Amazonia, Cerrado-Pantanal, Atlantic Forest, and a broad seascape in the Abrolhos region. All together, Brazil CBC is contributing to the creation or management of 262 protected areas encompassing about 64 million hectares of diverse landscapes. It has also been working to consolidate 16 terrestrial biodiversity corridors covering more than 115 million hectares. In addition, the CBC currently helps protect 239 threatened species.

Organizational culture changed significantly with the realization that large-scale biodiversity conservation is a social enterprise that requires strong and well-organized institutions working at different scales and in an integrated fashion.

100
in-country and regional partners

262
64 million ha
protected areas

16
115 million ha
conservation corridors

239
threatened species

Science

A small team of 50 qualified staff members, most with PhD or Masters degrees, conduct biological surveys; identify ecological processes; and socio-economic connections that are critical to achieving conservation outcomes. Recent highlights include the Brazil CBC efforts set conservation priorities for freshwater ecosystems. Scientific analysis by the CBC has provided a first step towards the development of a national strategy for freshwater conservation. The data has been used to compile the only list of freshwater fish in Brazil. The country's most important ichthyologists led the project, which resulted in a survey of 2,587 species. The number represents 55% of all species recorded in the Neotropics, making Brazil the most important country for freshwater conservation in the entire region. From this list, the CBC is using nearly 700 species with restricted ranges to map its freshwater KBAs.

Brazil has 789 threatened animal species, one of highest levels of threat in the world. Most of these species are distributed in small areas, especially in the Atlantic Forest Hotspot. Brazil CBC has provided long-term technical and financial assistance to projects aiming to protect them. "With the Critical Ecosystem Partnership Fund (CEPF,) the CBC supported the conservation of 65 species listed in the IUCN and Brazil's Red Lists and contributed to increase knowledge and definition of conservation strategies for 13 mammals, 16 birds, five reptiles, three amphibians, four fish, five invertebrates, and 19 species of plants," says Luiz Paulo Pinto, CBC Director for the Atlantic Forest.


Photo: Tim Werner


Photo: Bruno Pimenta


Photo: Haroldo Palo Jr.

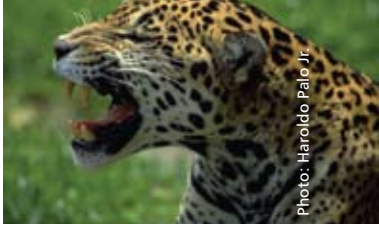


Photo: Haroldo Palo Jr.

The Amazon is extremely rich in biodiversity but still poorly known by science. Enhancing this knowledge is part of the CBC's focus. Since the creation of the Amapa Biodiversity Corridor in 2002, CI has conducted 11 field expeditions to gather key biological data to help devise the management plan for the nearly 10.5-million-hectare corridor. The protected areas in Amapá and Pará states together with others in Venezuela, Suriname, French Guiana, and Guyana are within one of the largest forest corridors in the world. CI is in the forefront in promoting the management of this corridor.

"We can only sustain high-quality biodiversity science with local centers of excellence, run by local people," says Jose Maria Cardoso, Vice President of CI South America. In 2005, the CBC helped establish a two-year graduate program in tropical biodiversity at the Federal University of Amapa. Located at the mouth of the Amazon River and surrounded by tropical forests, mangroves, savannahs, and wetlands, the program will soon graduate its first class. "We expect the students to become leaders in the process of consolidating the Amapa Corridor."

"Research and assessments are core in a CBC but getting decision-makers to understand the findings and take action can sometimes be an uphill battle," says Paulo Gustavo Prado, CBC Senior Director of Environmental Policy.

The Brazil CBC supports a large range of events. It also produces documents to help governments, NGOs and businesses make informed decisions. These include the most recent lists and data on the threatened fauna of Rio Grande do Sul state and a Red List workshop in the state of Espírito Santo. In 2004, the CBC published the updated Red Lists for Paraná and São Paulo. The CBC is also contributing to a Red List of flora for Santa Catarina, while the Red List for Bahia is in the planning stages. All of these states are part of the Atlantic Forest Hotspot. Moreover, the CBC publishes a bi-annual scientific journal called *Megadiversidade* that includes studies and recommendations on biodiversity conservation and the magazine *Politica Ambiental*, which provides straightforward analysis in environmental policy. This magazine has covered themes like reforestation; protected area networks; the impacts of IIRSA on Brazilian biodiversity; and the budgetary policy of the Environmental Ministry.

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Paulo Gustavo Prado

Partnerships

The Brazil CBC has engaged with a wide variety of stakeholders to create one of the country's most effective networks dedicated to promoting biodiversity conservation. The CBC has established partnerships with governments, academia, and other local and national NGOs. It acts as catalyst, building connections and promoting collaboration among more than 100 organizations throughout the country. "With governments, the most emblematic alliances are those with the states of Amazonas, Amapá, and Pará in establishing and managing an enormous system of protected areas. We have also established partnerships with prominent research institutions, including the Goeldi Museum in Belém and the University of Brasília. "With the Goeldi Museum, the CBC catalysed a set of research activities that shaped the conservation of biodiversity in Pará," Cardoso explains. With the University of Brasília, the CBC has created a biodiversity program that generates key information to identify the most important areas for conservation in the Cerrado Hotspot.

CEPF has also supported the consolidation of strategic alliances with many top Brazilian NGOs, such as the SOS Atlantic Forest Foundation, Biodiversitas, IESB, and the Golden Lion Tamarin Institute. These alliances spawned 292 conservation projects and programs that strengthened a network of more than 500 organizations in two

corridors of the Atlantic Forest Hotspot. "Besides the concrete results of this initiative in species conservation, capacity building and new private reserves, CEPF funds leveraged US$9.6 million from various sources, more than doubling the initial investments," Pinto says.

Inspired by the existing CEPF model for the Atlantic Forest, the CBC has partnered with the Private Protected Area Association (REPAMS) in the wetlands of Pantanal to spur the creation and management of private reserves. The program has brought the CBC into association with 29 partners protecting 117,380 hectares in the Pantanal and surrounding areas.

"We have made a lot of progress in the establishment of protected areas and corridors where they were most needed. Now we have a long way to go on governance," Cardoso says.

"Governance is related to control, relationships and accountability so we need to support different types of protected areas run by governments, communities, indigenous peoples, and the private initiative". In October 2003, CI and the local NGO IESB, helped create the Protected Area Managers Network in the Atlantic Forest Central Corridor. One of the Network's objectives is to share knowledge and experiences on governance.

Human Well-being

Large-scale and long-term conservation requires participation from local communities. In the Amazon, the CBC is working in the 100,000 km2 Kayapó Indigenous Reserve with approximately 6,000 Kayapo living in 16 villages. "We are strengthening the Kayapo's capacity to control their territories so that their lands are not invaded," says Barbara Zimmerman, CI Director for the Kayapo Project. "We are also supporting development of sustainable economic alternatives that generate income in communities, while conserving ecosystems. These alternatives make it possible for the Kayapo to buy what they need from the outside world without having to resort to destructive practices such as logging. In essence, we are supporting empowerment of the Kayapo people to continue to protect their lands and culture in the midst of the Amazonian frontier." The Brazil CBC is helping the Kayapo establish small enterprises such as the gathering and processing of Brazil nuts and other non-timber forest products. The project also provides equipment, fuel, training, and supplies for surveillance along a 2,000-kilometer border.

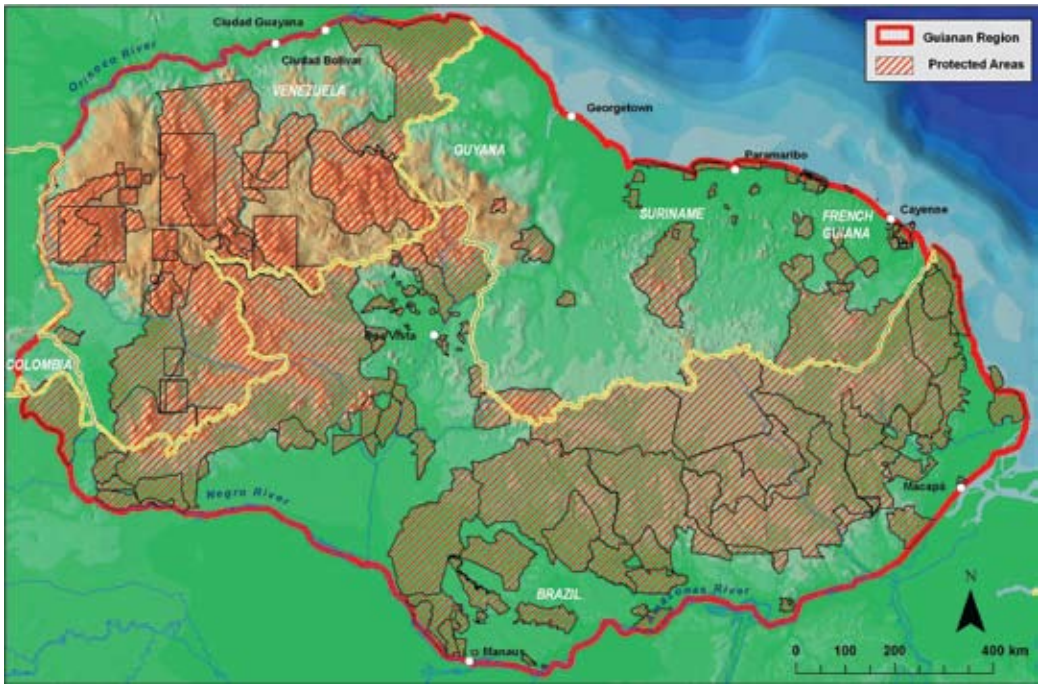
In the Amazon's Cujubim Sustainable Development Reserve, meanwhile, the CBC is supporting the efforts of nearly 300 people living in the area to protect their natural heritage and increase their quality of life. Most families in the reserve live in small settlements amid the nearly 2.4 million hectares. Their only contact with the outside world is through salespeople, who hawk food and other manufactured goods at exorbitant prices, trapping these rural people in a constant cycle of debt. With assistance from the state government and CI, the residents have created the Reserve Association to develop basic community services such as education and health care. The association is also exploring options for bringing factory-made goods into the area at fair prices. At the same time, biological assessments, conducted by CI and regional partners, are helping them strengthen their capacity to use nature sustainably.

In the wetlands of Pantanal, the CBC supports the Jaguar Conservation Fund in a pioneering program to protect jaguars in the Rio Negro Basin. The initiative compensates ranchers for cattle lost to jaguars on nine properties. In return, farmers signed an agreement to cease killing jaguars. The objective is to create a 300,000-hectare jaguar conservation unit on private land. The compensation money is used to pay for social services like medical and dental care and environmental education for ranchers and their families. The community of more than 150 people is also invited to participate in annual campaigns held on the Rio Negro Farm, a research center managed by CI. This project has created a concrete link between species conservation and community benefits.

Rivers play an essential role in lives of the Amazon communities; they serve as a means of transport and communication, route for trade, and source of fish and freshwater.

Photo: Enrico Bernard

GUIANAS



Luis Barbosa, CI-Brazil

The Guianan Region, part of the Amazon Wilderness Area, is an expanse of more than 250 million hectares. It represents the largest block of intact tropical forest on Earth. This vast area presents a remarkable opportunity for a bold initiative to protect ancient landscapes and ecological and evolutionary processes, as well as rich and extraordinary faunas and floras found nowhere else. The overall region is as much as 85 percent intact, the core more than 98% intact. It contains the highest percentage in the world of undisturbed tropical habitat – with huge expanses of closed-canopy forest, tropical savannah, and wild, unpolluted and unexploited river systems. The human population density is just 0.8 people per square kilometer – the lowest of any moist terrestrial region. The core forest is populated by indigenous communities and has even lower population densities (.02 people/sq. km.) Accessible only by small boat, plane, or on foot, these remote areas are vital to the hydrological equilibrium of the lower Amazon, the Orinoco, the Rio Negro, and the headwaters of the region's national freshwater systems. They are among the most diverse ecosystems on the planet.

The Guianan Region represents the largest block of intact tropical forest on Earth.

The gradual expansion of timber cutting, mining, and oil drilling, however, is starting to take a toll on this wilderness area. The commercial animal trade and poachers pose increasing threats to the region's wildlife species. Seeking to preempt further destruction, Guianas CBC focuses on helping policy and other decision-makers increase their conservation expertise; supporting the stewardship of indigenous communities; and alerting the public and private sectors to the comparative advantages of protecting this unspoiled place.

In 1990, CI began a project with indigenous people in Suriname to document medicinal plant knowledge for future generations. The same year, work began in Guyana to study and protect the Harpy Eagle (*Harpia harpyja*.) In 1993 CI formally initiated the Guianas program, broadening our engagement in Suriname and Guyana by promoting new protected areas and supporting their management. The Guianas CBC received initial funding in 2001 and started operations the following year. The CBC has two central offices, one in Paramaribo, Suriname; and another in Georgetown, Guyana. Today, the Guianas CBC employs 48 highly-qualified professionals in the two countries. Since inception, the Guianas CBC has helped create and manage four protected areas, covering 2.4 million hectares and it is working to create two others. By protecting key biodiversity areas in the Guianas, the CBC is contributing to the protection of 35 IUCN threatened species and thousands of animals and plants that live in those KBAs. The CBC is also working to consolidate conservation corridors in Guyana and Suriname, which encompass an area of 19 million hectares.

Through policy initiatives and in partnerships with national governments, the Guianas program has helped integrate conservation into high-level policymaking in Suriname and Guyana. The Brazil-Guianas CBC and the Andes CBC regularly work together to demonstrate the benefits of transboundary conservation. The two CBCs work in concert to improve monitoring of threats; strategize about how to respond to development projects such as the Integration of the Regional Infrastructure of South America (IIRSA) program; and promote regional land-use plans with local communities and top policy makers. They also exchange ideas on alternative economic development opportunities such as ecotourism and carbon and ecosystem service credits.

Suriname and Guyana, with their large standing wilderness, have unprecedented and growing opportunities to generate revenue by preserving these forests, rather than selling or logging them. The CBC has discussed with leaders in both countries of climate change, carbon markets, and the new movement towards "avoided deforestation" markets. As international carbon trading grows and other market-oriented responses to global warming emerge, the CBC's efforts in the region have laid the groundwork for strong CI advisory role. In Guyana, key CBC staff members serve as the official carbon experts designated to advise the Office of the President in Guyana. The country's government is pressing for a new international treaty that goes beyond the Kyoto Protocol by establishing a framework to reward countries preserving their forests. The CBC is helping top decision-makers formulate their position and stay abreast developments in the fast-moving international debate.

"Things are happening so quickly with carbon and its potential to support conservation of standing forests and biodiversity," says Lisa Famolare, Vice President of Guianas CBC. "If we really want to conserve this vast wilderness area of the Guayana Shield, we must find economic alternatives that will bring in revenue comparable with logging and other extractive activities. Carbon has that potential. It is our role to make sure that countries like Suriname and Guyana, with high forest and low deforestation rates, benefit economically from their conservation efforts. "

42
in-country and regional partners

6
3.1 million ha
protected areas

2
19 million ha
conservation corridors

35
threatened species

Science

The Guianas CBC carried out an important Rapid Assessment (RAP) expedition with the indigenous community of Masakenari in 2007. Indigenous people also participated in a biological expedition in the Wai Wai Community Owned Conservation Area in Southern Guyana in partnership with the RAP program and the Smithsonian Institution. In addition, the Wai Wai village council selected community members to receive training as protected area rangers. The rangers and the Wai Wai village council are now working with the CBC to develop long-term operations and a biological monitoring plan for this Community Owned Conservation Area.

In 2005 and 2006, the Guianas CBC working with Surinamese scientists, conducted two biological assessments in Lely and Nassau plateaus, finding a total of 467 species. Among them, participants documented at least 27 endemic and 24 previously unknown species. Several are now undergoing a peer review process to verify their status as new to science. Expedition members also rediscovered a rare armored catfish (*Harttiella crassicauda*) that had not been seen for more than 50 years and was thought extinct. "Our study will be a vital component in determining how to promote economic development in Suriname while protecting the nation's most valuable natural assets," says Leeanne Alonso, a CI Vice President and Head of the Rapid Assessment Program. The RAP team also found that small-scale mining has already had a negative impact on the two unprotected plateaus visited during the expedition, 80 miles south of the Suriname capital of Paramaribo. The RAP was financed by BHP-Billiton Maatschappij Suriname (BMS) and Suriname Aluminium Company LLC (Suralco,) a subsidiary of Alcoa Inc., part of a corporate partnership launched to help mining companies understand their potentially harmful impacts on the environment. The information gathered on these trips enabled conservationists to give miners guidance on protecting unique plants and animals before they plan any investments. "Where current economic imperatives dictate mining, our responsibility is to ensure that operations are kept within the bounds of our benchmarks," says CI-Suriname Executive Director Ambassador W. Udenhout.

With help from their CI colleagues in Brazil, the team in Guianas also trained two local biodiversity analysts, one from Suriname and one from Guyana, to carry out KBA analysis and documentation and other technical work in 2007. Next, they will learn to use new technology to monitor forest cover and threats to the region. They will train in the use of scientific modeling programs to estimate future change in forest cover as roads are built and other threats grow such as mining and logging activities and forest fire.

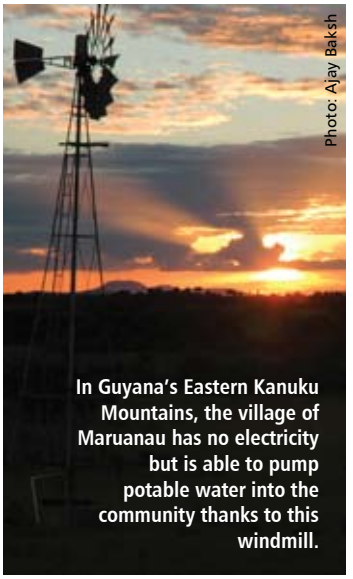


Photo: Ajay Baksh

In Guyana's Eastern Kanuku Mountains, the village of Maruanau has no electricity but is able to pump potable water into the community thanks to this windmill.


Photo: Russ Mittermeier


Photo: John Martin


Photo: Piotr Naskrecki


Photo: John Martin

Partnerships and Human Well-being

The Guianan Region is characterized by little NGO and civil society capacity. Most of conservation interest in the Guianas lies in areas, where indigenous communities are the primary force, prompting the CBC to focus its partnership efforts on indigenous groups and government agencies to increase conservation capacity throughout the region. Communicating the connections between biodiversity conservation and human well-being is central to our mission in the Guianas.

"We work closely with local communities, so they can decide what development path they want to take at the same time conserving biodiversity and, of course, their natural resources," says Patricia Fredericks, Guyana Capacity Building and Awareness Coordinator based in Lethem. "A lot of it is education and working together with the local communities to try to build a consensus of what is best. We're learning from them and they are learning from us." The CBC has also established partners in areas such as conservation science and priority setting; protected areas planning and management; and ecotourism planning, development and marketing.

In Suriname, the CBC is working to create a major conservation corridor across the southern region of the country that will eventually expand northward to incorporate the Central Suriname Nature Reserve, which was created on CI's initiative. In the Central Suriname and the Sipaliwini Nature Reserves, the CBC completed management and operational plans with the national government and local tribal and indigenous communities. In South Suriname, at the request of the community of Kwamalasemutu, the CBC has been working with the Tirio people to create the 16,000-hectare Werephai Indigenous sanctuary, carrying out biological and archeological assessments and developing small scale community owned ecotourism operations. Recently, the community decided to establish additional conservation areas on their land and requested assistance from CI Suriname.

In Guyana, the Southern Guyana Community Owned Conservation Area is truly precedent setting. It is the first indigenous owned protected area in the country and the entire Guayana Shield region. At Shell Beach, meanwhile, through small grants to a local NGO, the CBC is supporting the establishment of a protected area to conserve Guyana's most important sea turtle nesting beach. The country's proposed Kanuku Mountain Protected Area would set aside an additional 700,000 hectares of pristine rainforest that will be co-managed by the indigenous communities in the region and the government of Guyana. The participatory processes to establish the Kanuku Mountain Protected Area provide a model for Guyana's National Protected Area System. It has created a framework for working closely with indigenous communities to protect key biodiversity areas, while respecting and supporting traditional rights to natural resources.

As part of its efforts to establish new protected areas, the CBC has created funding mechanisms such as the US$15-million Suriname Conservation Fund and the proposed Guyana National Protected Areas Trust. In Guyana, the CBC is helping the government move forward with plans to launch the trust in 2008 with an initial commitment from CI for US$5 million and 2.5 million Euros in matching funds from the German government. The money will go toward building an endowment of US$15-US$20 million needed to cover the cost of the management of Guyana's proposed protected area system. The CBC, the government and KfW (the German development bank) signed a tri-party aide memoire committing to the trust; to the drafting of protected

We work closely with local communities, so they can decide what development path they want to take at the same time conserving biodiversity and, of course, their natural resources.

Patricia Fredericks

areas legislation; and development of the Protected Areas Management Authority. The legislation will be the first of its kind in the country. The agreement also established consensus for the delineation and management planning for the proposed Kanuku Mountain Protected Area. The next step, to be completed by mid-2008, involves reengaging 18 Macushi and Wapishana indigenous communities in Kanuku region.

The CBC's multifaceted partnership with the Wai Wai indigenous community enabled creation of the first Community Owned Conservation Area totaling 625,000 hectares in the far-south of Guyana. The project also helped the Wai Wai establish their legal land tenure. In so doing, it has set an important precedent for other indigenous communities and the government, which is now prepared to designate additional conservation areas.

The Guianas CBC also does the bulk of its capacity and awareness building work with partners in dozens of indigenous communities, proving them with training and support. Besides collaboration on the community conservation area and the RAP (previously mentioned,) the Wai Wai community, for example, received support in completing the management plan for its conservation area.

Conservation Concessions.
CI and the Government of Guyana pioneered the world's first Conservation Concession in July 2002, an agreement that protects 200,000 acres of high biodiversity-value rainforest. CI obtained a 30-year logging license for a portion of the upper Essequibo River watershed, with the objective of managing the area for conservation. The government obtains annual fees in line with what a logging company would have paid, plus a Voluntary Community Investment Fund (VCIF) to ensure benefits to local communities. Under the terms of the agreement, three communities near the Upper Essequibo Conservation Concession (UECC) – Rewa, Apoteri and CrashWater – receive training and employment. They have also benefited from investments in an Ecotourism lodge in Rewa; sheep-rearing facilities in Apoteri; and a handicraft center in CrashWater. The Concession was originally financed with support from the Global Conservation Fund and later received additional funding from Save Your World, a private sector company that has donated a portion of revenues to the project. Now the CBC is establishing an endowment to guarantee long-term financing for concession fees, management costs, and community benefits.

The CBC has launched a major ecotourism development program to help Suriname revamp its economy away from logging and mining and toward ecotourism, carbon, and other environmentally and conservation-friendly alternatives. The initiative has included constructing state of the art tourism facilities, conducting product development, and creating interpretive materials for the Central Suriname Nature Reserve. The Tirio people, with support from the CBC and the Inter-American Development Bank's Japan Fund, is building an Ecolodge at Iwaana Saamu near Kwamalasamutu in southern Suriname. The CBC is now working with Surinamese tour operators to train the community members to operate the lodge and provide them with insight into developing tourism products. The CBC has also been instrumental in ecotourism efforts in the Raleighvallen region of the Central Suriname Nature Reserve.

Scientists and the indigenous community working together in a biological assessment of the Wai Wai Community Owned Conservation Area.

In addition, the CBC has developed ties to private sector firms such as mining companies with plans to launch operations to the west of the Central Suriname reserve. For example, the CBC worked with BHP Billiton in Suriname (the mining company funding the RAP that led to the catfish discovery) to identify probable threats to biodiversity and has helped the mining company draw up an Initial Biodiversity Action Plan (IBAP) for Lely, Nassau, and Brownsberg bauxite areas. In a more unusual association, the CBC helped a team of BBC producers with ideas, research and field support for a three-part television series that will publicize the beauty of the region and the importance of avoiding its deforestation. The program, which began filming in the fall of 2007 and will be aired on the U.S.-based Discovery Channel as well as in Europe, will be a good public education vehicle inside the region and internationally. It has the potential to spur public support and understanding of the importance of Guyana's rainforests and the Guayana Shield.

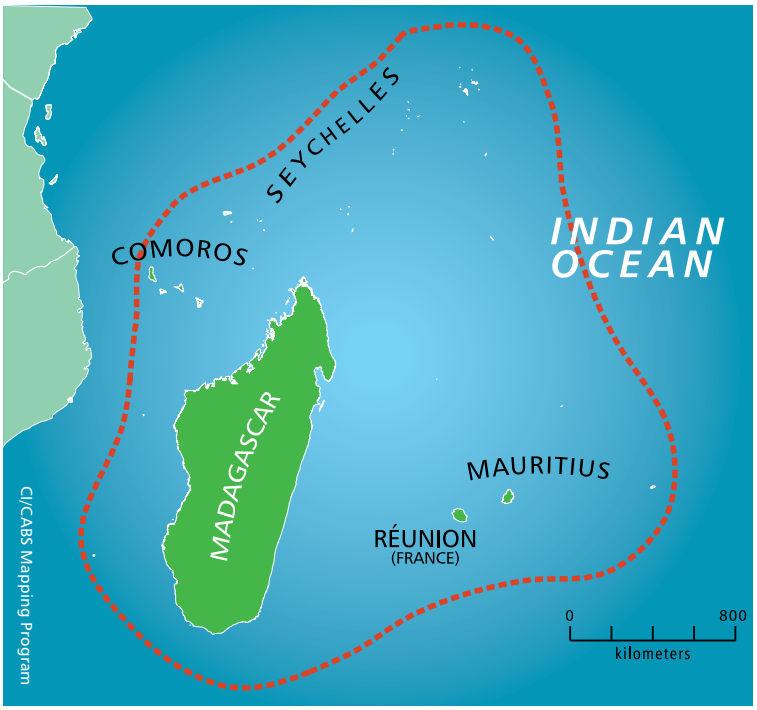
Dwarf chameleon in Madagascar

Photo: Piotr Naskrecki

Madagascar and Indian Ocean Islands Center for Biodiversty Conservation

Transitioning to the CBC model has allowed CI to operate in a more strategic and effective manner in the Madagascar and Indian Ocean Islands Hotspot. Specifically, CI has extended its vision and standards beyond its own staff to influence policies, projects, and programs on many levels, resulting in positive biodiversity outcomes.

The Madagascar and Indian Ocean Islands Hotspot is one of the most important on the planet because of the number of endemic families and genera of plants and animals. The Hotspot includes the island nations of Madagascar, Comoros, Reunion, Mauritius, and the Seychelles. Within the Hotspot, Madagascar contains the most biodiversity, with over 12,000 species of plants, 400 species of reptiles, 199 species of amphibians, and 209 species of birds. The island is home to 169 species of mammals, including more than 85 species of endemic lemurs. This extraordinary biodiversity coexists with a predominantly rural population, whose activities include agriculture, hunting, logging and fishing. Threats to biodiversity include habitat loss from subsistence practices, as well as commercial logging and fishing. Climate change and other global factors also pose a threat to Malagasy biodiversity.



One of the original objectives of the CBC model was to create a place where Malagasy conservation professionals can develop a career.

Leon Rajaobelina

CI was working in 14 sites around the island when it launched the Madagascar CBC in 2002 to scale up development of environmental policy and strategy, as well as to support national capacity in biodiversity conservation and management. Its central office is in Antananarivo, the country's capital, located in the center of the island. Today, the Madagascar CBC has a staff of 79 people. "One of the original objectives of the CBC model was to create a place where Malagasy conservation professionals can develop a career," states Leon Rajaobelina, Vice President of the Madagascar CBC. "We have cultivated a cadre of top-notch professionals with a deep commitment to conservation and extensive, nuanced knowledge of environmental issues in Madagascar. Staff members are secure in their long-term employment and can therefore dedicate themselves 100% to excelling at their work."

In September 2003, the President of Madagascar Marc Ravalomanana made an unprecedented commitment to

increase protected areas from a surface area of 1.7 million hectares to 6 million hectares over five years. This vision has resulted in the System of Protected Areas in Madagascar. The CBC has played a leadership role in making this vision a reality. Through sound science, long-range planning, strategic partnerships, and committed fieldwork, the CBC has supported the creation of more than two million hectares of new protected areas to date. Since its inception, the Madagascar CBC has contributed to the conservation of 376 threatened species and currently works to consolidate five conservation corridors.

The CBC has also cooperated with Malagasy authorities to help the country fulfill commitments to international conventions related to biodiversity. Whereas 10 years ago, little was known about these conventions and they were rarely implemented or enforced, a sea change has occurred. Today, a general understanding exists of the responsibilities associated with these conventions. The CBC has invested much of its energy to support Madagascar's participation in the Convention on Biological Diversity (CBD,) the Convention on International Trade in Endangered Species (CITES,) the Ramsar Convention on Wetlands, the Kyoto Protocol, and IUCN standards. We provide technical assistance to ensure Madagascar lives up to its responsibilities under these conventions. For instance, the CBC assists in strategy development regarding implementation and enforcement. It supports attendance at international meetings and contributes to communication campaigns regarding these conventions.

"As concerns CITES, for instance, we have worked with other international NGOs to provide technical and financial support for updating national legislation on Malagasy wildlife, classifying species, and defining hunting seasons for various species. We have also played a lead role in providing data to update the IUCN Red List," Rajaobelina recalls.

87
in-country and regional partners

23
2 million ha
protected areas

5
conservation corridors

376
threatened species

Science

The CBC's main objective is to conserve the remainder of the Hotspot's biodiversity through cutting edge science and state-of-the-art conservation techniques. The CBC conducts and supports rigorous scientific inquiry to ensure conservation decisions and actions are targeted and effective. Research priorities have included conducting biodiversity inventories; understanding ecological processes upon which species depend; assessing the conservation status of threatened species and developing an action plan; and exploring socio-economic dynamics that influence and are impacted by conservation decisions.

With support from the MacArthur Foundation, the CBC is working in partnership with WWF on an assessment of the vulnerability of Madagascar's biodiversity to climate change. The project will bring together international and national experts on climate, terrestrial biodiversity, and oceanography to model impacts in both terrestrial and marine ecosystems. The ultimate goal is the creation of a network of protected areas resilient to the potential future effects of global warming. The project will result in a comprehensive climate change vulnerability assessment for the island's biodiversity and a capacity building program on climate change and its impacts. Activities include data compilation, stakeholder outreach, an expert workshop, field assessments, and modeling. This project responds to the research component of CI's climate change strategy insofar as it constitutes a research activity. But it will also illuminate areas needing further inquiry. "We will use the results of the vulnerability assessments to guide future research priorities in collaboration with the University of Antananarivo and other partners," Rajaobelina affirms.


Environment Day celebration in communities sourrounding the Nosivolo river.

Photo: Luciano Andriamaro

Other projects include one on the Nosivolo, a river that transverses about 120 kilometers of the isolated Marolambo region in central-eastern Madagascar. The Nosivolo sits within the eastern forest that runs down the spine of the island, a region where few NGOs are involved in health, education, or development. In concert with the Durrell Wildlife Conservation Trust and the University of Antananarivo, we are inventorying the river's fish species and implementing a conservation program. The inventory process has led to the discovery of a new fish species and confirmed the river's importance in terms of biodiversity. In the survey, 19 species have been identified; four are endemic and most others are listed as threatened by the IUCN. Local communities are now implementing a conservation plan developed in light of the scientific findings. These research and ecological monitoring activities are conducted in partnership with the South African Institute for Aquatic Biodiversity.

Along the same lines, the CBC Marine Program with CABS' support conducted the first in a series of Global Marine Species Assessments with a focus on reef fish and invertebrates. The emphasis is meant to concentrate conservation activity on the most threatened species and the sites that harbor them.

The CBC is also conducting socio-economic analyses of an ecotourism project in Menabe and Ankehineny-Zahamena funded by the U.S. Agency for International Development. The project, part of a holistic strategy for achieving conservation outcomes, is taking a value chain approach. The goal is to ensure that investments in local tourism services directly respond to market requirements. Among the partners are members of the tourism industry, who are providing input into how to integrate the value chain while providing benefits to community micro-enterprises.

Partnerships

Since its creation, the CBC has increasingly looked toward partnerships to reach conservation outcomes. "These partnerships take many forms including strategic (with government,) collaborative (with other NGOs,) and multiplier effect (with grantees and nodes,)" explains Frank Hawkins, Vice President for Africa and Madagascar. Partnerships have enhanced the CBC's ability to effect change at different scales and sites and over a longer period of time. This approach brings together the strengths of our partners with those of the CBC to result in synergy, effectiveness, and efficiency.

The CBC has served as a base for the best scientists in the region including top biologists, foresters, economists, and social scientists. In addition to these professionals, it is a beacon for stakeholders nationwide and internationally. These stakeholders include decision-makers, community members, NGOs, and local associations, who together create a critical mass in favor of biodiversity conservation. An example of the CBC's leadership in facilitating dialogue and catalyzing decision-making was the Global Symposium, themed "Defying Nature End: the Africa Context," which brought more than 350 people from 40 countries to Antananarivo in June 2006. One of the principal achievements of the conference was the Madagascar Declaration, which calls on international development organizations and the world to recognize that conserving Africa's rich biodiversity is the key to sustainable development and poverty reduction in the region. It also calls for creating new and expanding existing markets for Africa's nature. The declaration has proved extremely powerful in the CBC's strategic planning and has helped engage stakeholders.

CI has developed its Node Small Grants Program to involve communities in conservation; provide economic benefits to local people; and catalyze an economy based on conservation activity. This program provides small grants to community associations for activities that directly contribute to conservation outcomes.

The Node Program is innovative in that it achieves two major objectives simultaneously: supporting local conservation action and helping to increase the capacity of national NGOs to administer and manage grants at the local scale. The first objective is achieved through the small grants themselves and the important local conservation activities completed. The second objective is achieved through the mechanism CI uses to disburse funds. Rather than having a centralized system of grant-making controlled by CI employees in the capital, we have partnered with Malagasy NGOs working in regional centers. These regional NGOs receive and review proposals, issue grants, and monitor activities.

This mechanism provides Malagasy NGOs with an opportunity to hone grant management skills and build expertise in supporting conservation. Since 2004, CI has provided more than US$1 million to Nodes in seven regions of Madagascar and is in the process of adding two additional regions.

The Nodes Program provides tangible and lasting benefits for the people, who live near, work with, use and protect the nation's extraordinary natural resources and treasures.

Luciano Andriamaro

The Node Program has achieved what many aid programs have failed to do – reach down to the community level. It provides tangible and lasting benefits for the people, who live near, work with, use, and protect the nation's extraordinary natural resources and treasures. The Nosivolo project, for instance, has benefited from the Node program to support community conservation action. "It has been a real success to date," says Luciano Andriamaro, the CBC's Species Specialist. "Currently, 25 village associations have emerged along the Nosivolo to manage this unique biodiversity resource. They have created rules governing access and use of the river and its fish and are organized to monitor and sanction rule breakers."

The Mahavavy-Kinkony Complex is a wetland mosaic covering 268,236 hectares in the western biome that includes forest, a lake, bays, mangroves and a river. It is home to 185 fauna species, of which the most important are fish and birds. It also has the highest concentration of aquatic and terrestrial plants in Madagascar. In 2003, the CBC started working with Birdlife International's Madagascar Programme to survey the site and confirm the presence of endemic and threatened species.

Thanks to the CBC's intervention, Mahavavy-Kinkony is on its way to becoming a new protected area. The CBC has supported development of a general management vision for the site, which includes facilitating the establishment of a regional platform that regroups all stakeholders. This platform has helped local authorities and communities hone best-practices in their management approach. Progress toward this vision led to the inter-ministerial order of January 2007, officially granting the site protected status for two years. "We will continue to work with Birdlife to ensure permanent protection of this site including local-level consultations, zoning, ecological monitoring, and tourism development. In addition, we have established a small grants Node program to support local conservation actions by communities," says James MacKinnon, Technical Director of the CBC.

Human Well-being

The well-being of local communities is the keystone of the CBC approach. In a carbon sequestration project in Mantadia, the CBC is addressing community livelihood and food security issues by rehabilitating degraded lands and increasing the productivity of areas under cultivation through improved agricultural and agroforestry techniques. "We also work with donors and NGOs to orient national rural development policy such that it addresses poverty alleviation in a manner consistent with biodiversity conservation and natural resources issues," Rajaobelina says.

These successes have been possible thanks to long-term, secure, core funding from the Moore Foundation. Sustainable core funding has allowed continuity and sustainability in CBC activities. "These funds enabled us to avoid mission drift," Rajaobelina affirms. "We recognize the value of our financial resources and go to great lengths to maximize the impact of every dollar."

Photo: Russ Mittermeier

Crimson shining parrot in Fiji

Photo: Patricio Robles Gil

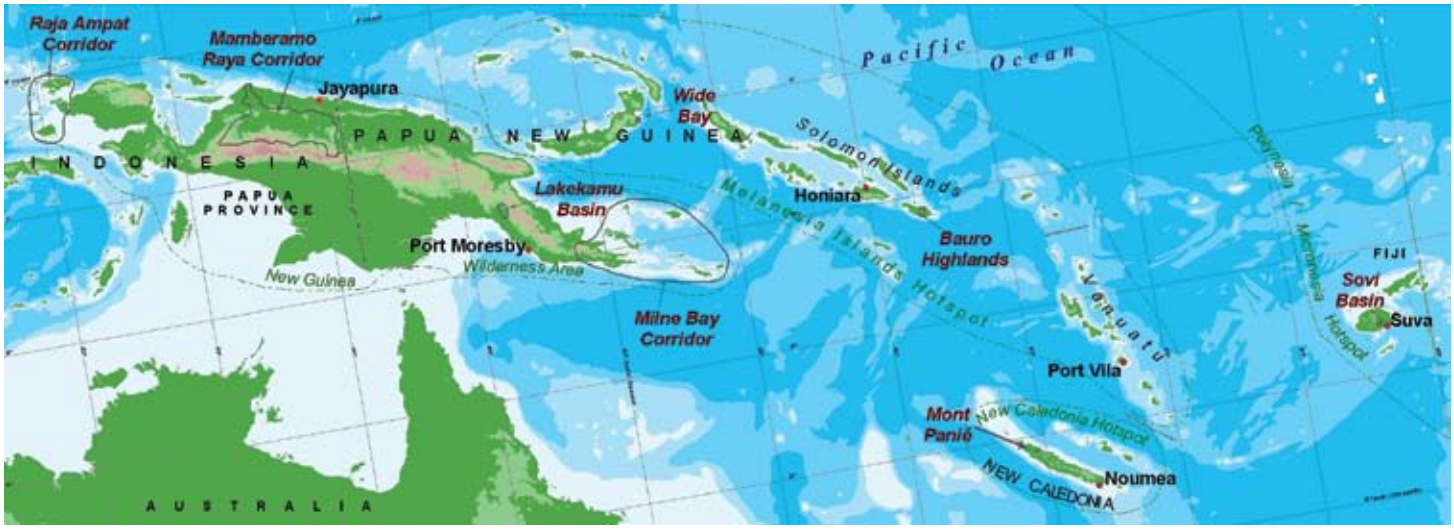
Melanesia Center for Biodiversity Conservation

The development of the Melanesia CBC has greatly expanded the program's scope and has created a credible opportunity to address biodiversity conservation at scale in the great forested wilderness of New Guinea and throughout the huge marine ecosystems of the Coral Triangle.

The CBC's area of operation is spread across thousands of islands where more than 1,300 different languages are spoken.

The Melanesia CBC includes Papua (formerly Irian Jaya,) Indonesia's easternmost province; Papua New Guinea (PNG;) the Solomon Islands; Vanuatu; New Caledonia; and Fiji. This insular sweep of the tropical western Pacific harbors rich terrestrial biodiversity, high levels of endemism, breathtaking cultural diversity, and unsurpassed marine ecosystems. The region encompasses a High Biodiversity Wilderness Area (HBWA) and all or parts of three Hotspots. The New Guinea HBWA is one of the Earth's three remaining major tropical areas in pristine condition. Its forest tracts dwarf those of the rest of Melanesia. "Our goal is to see that New Guinea remains a wilderness area and doesn't degrade into a Hotspot," says Bruce Beehler, CI Vice President for Pacific Programs. The remarkable forest resources of New Guinea are perhaps only surpassed by its rich and diverse coastal and marine ecosystems. The New Caledonia Hotspot incorporates the main island of New Caledonia ("Grande Terre") along with the affiliated Loyalty Islands. New Caledonia is Melanesia's hottest Hotspot, with incredible terrestrial endemism and rich coral reef resources. The East Melanesian Islands Hotspot links the large islands of northern and eastern Melanesia. The Polynesia-Micronesia Hotspot includes the Fiji Islands. Fiji is a center of evolution and radiation of life forms that followed dispersal from Australia and the western Pacific over the course of millions of years. The region also uniquely showcases island evolution. The country consists of more than 300 different islands representing a variety of formations from volcanic to sedimentary to coral reef atolls in many different ages and stages of development. Fiji's geological diversity, in turn, accounts for a remarkable variety of climates and species.

A number of pressures threaten the richness of these areas. Habitat degradation is a major concern. The Bismarck Islands of New Britain and New Ireland have been heavily logged, as have the Admiralties and Solomon Islands; Vanuatu has suffered from clearing for plantations, timber extraction and



long-term degradation from subsistence activities coupled with high population growth. Much of the lowland forest on these islands has been altered or removed and introduced predators have had adverse impacts on the fauna of the remaining upland forests. Melanesia's marine habitats remain largely intact. However, burgeoning threats include the live reef fish trade; overharvesting of sedentary species such as bêche-de-mer and giant clams; over-fishing of sharks; and destruction of mangrove forests.

CI began its activities in Melanesia in 1991, only a few years after the organization was formed. The Melanesia CBC was launched in 2001. Its central office is located in Atherton, Australia. Today, the CBC's area of operation is spread across thousands of islands where more than 1,300 languages are spoken. The diversity of languages, cultures and governing structures, two time zones and the vast distances between sites are among the operational challenges. "With the great travel distances, it's very difficult and expensive to get to these places," Beehler explains. But he says the distances don't prove too much of a problem as staff are spread out among offices in six countries and much communication goes on via phone and the Internet. The Melanesia CBC has more than 40 staff members. Among the CBC staff is a technical team, moved to the region at the time the CBC was formed, to provide on-the-ground scientific analysis. Most CBC staff members have years of experience in the region and formidable understanding of the local cultures, use rights, and conflicting claims.

"The major challenge is achieving conservation in a place where traditional people live on the land and own it. Our persistence is one source of our success," Beehler says. "We've stayed in these places through ups and downs, so we've gained trust with the local people. They are the stewards, who are doing the conservation work on the ground in many places."

Since its inception, the Melanesia CBC has contributed to the creation and management of 11 protected areas, and the conservation of 107 globally threatened species. It is currently working to consolidate four terrestrial conservation corridors and one seascape. In January 2007, seven new marine protected areas were declared in the Raja Ampat archipelago of the Bird's Head Seascape. Totaling 900,000 hectares, this is the single largest conservation achievement of the Melanesia CBC to date.

60
in-country and regional partners

11
2 million ha
protected areas

5
11 million ha
conservation corridors

107
threatened species

Science

Scientific analysis and field research has figured prominently in Melanesia and has included Rapid Assessment (RAP) expeditions to Papua, Papua New Guinea, and New Caledonia. In December 2005, Beehler and an international team of scientists, including many from the Indonesian Institute of Science (LIPI,) conducted the first thorough survey of biological diversity in the Foja Mountains of western New Guinea. Once inside what is the largest tropical forest in Asia, where the core forest block is apparently untouched by human influence, they discovered many new and "missing" species including the legendary Berlepsch's Six-wired Bird of Paradise (*Parotia berlepschi,*) and the Golden-fronted Bowerbird (*Amblyornis flavifrons.*) They collected the first photographic and biometric documentation on these species. They also logged a new species of honeyeater – the first new species of bird found in New Guinea in more than 60 years – as well as 20 new frog species and four new butterfly species. A large mammal, the Golden-mantled Tree Kangaroo (*Dendrolagus pulcherrimus,*) was also found for the first time in Indonesia, as well as possibly the largest rhododendron flower on record – almost six inches across.

Working closely with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) the Melanesia CBC has also mapped the habitat of 84 critically endangered and endangered species. Species-habitat mapping has been essential to define KBAs for Melanesia principally because knowledge of the sites of each species has been biased by a limited number of collection areas. A second reason is that generalized range maps offer insufficient detail for accurately setting site-scale targets. Without the sufficient detail, experts run the risk of defining areas as having conservation value when in reality they don't, explains Roger James, Melanesia CBC's Technical Director. "By making clear models of species-habitat preferences at known and predicted areas, the identification of KBAs can be much less prone to errors." More than 60 KBAs have emerged in New Guinea Wilderness from this exercise. Additional KBA delineation is being made for two


Photo: Sterling Zumbrunn


Photo: Haroldo Castro


Photo: Sterling Zumbrunn


Photo: Haroldo Castro

Hotspots – the East Melanesian Islands and New Caledonia – which will enable the CBC to review and reassess future priorities.

The Melanesia CBC has conducted two additional research activities that will help drive action in Fiji and New Guinea. The Ecosystem Profile for Fiji, created by the Critical Ecosystem Partnership Fund (CEPF,) contains biological and socio-economic information, as well as outcomes definition. Moreover, a study modeling climate change in the HBWA has been developed in collaboration with The Nature Conservancy (TNC.) It has identified areas of major temperature and precipitation change predicted for New Guinea. But the information has not yet been applied to habitat models for threatened species; therefore its significance to current conservation outcomes is still to be tested.

Partnerships

Since 2001, CI has worked towards conservation in Melanesia with more than 60 institutional partners. These include large NGOs like The Nature Conservancy and WWF, small national NGOs like Conservation Melanesia and the East New Britain Social Action Committee and national, provincial, and district governments. The Melanesia CBC has awarded to partners more than 70 grants totaling US$3.5 million dollars. The grants have been disbursed to partner NGOs, communities and local governments, based on strategic priority and need. They support research, community engagement, policy development, legislation, and protected area creation.

The CBC has provided experienced staff for community workshops and landowner meetings, expert guidance on protected areas legislation, and input on our scientific research. Every time we are in Port Moresby we meet with staff at the CBC to review our work. By providing a strong base of operations in PNG, the CBC plays an essential role for partner conservation programs. We could not accomplish our goals without working together with our CBC colleagues," says Lisa Dabek, the Director of Conservation at Woodland Park Zoo.

The success of the Tree Kangaroo Conservation Program has been due, in large part, to the excellent partnership we have with CI's Center for Biodiversity Conservation in Papua New Guinea.

Lisa Dabek

Melanesia CBC is supporting the Tree Kangaroo Conservation Program, run by the Woodland Park Zoo, to establish the PNG's first Conservation Area of approximately 60,000 hectares in the Huon Peninsula. The program will protect the habitat of the endangered Matschie's Tree Kangaroo by working with local villagers, who have pledged portions of their land to the Conservation Area in exchange for education and healthcare benefits such as scholarships to community teachers, vaccination workshops, and jobs as research and project assistants. "The success of the Papua New Guinea Tree Kangaroo Conservation Program has been due, in large part, to the excellent partnership we have with CI's Center for Biodiversity Conservation in Papua New Guinea.


Mammal expert Kristofer Helgen holds a golden-mantled tree kangaroo found in the first biological expedition to the Foja Mountains in December 2005.

Photo: Bruce Beehler

Human Well-being

"We have to recognize the two sides to the conservation coin," says Chris Margules, Melanesia CBC Executive Director, who explains that one side is conservation planning and management (ie: outcome definition, KBA delineation, corridor planning, conservation actions, and monitoring,) which deals with the biodiversity supply – where it is and how to protect it. The other side involves people, biodiversity, and ecosystem services. It deals with the biodiversity demand – linking livelihoods to the sustainable use of natural resources; quantifying the link between healthy ecosystems and healthy human communities; and promoting the recognition and understanding of that link. "We are working on increasing recognition among governments, industry, and the wider community of the role of biodiversity and ecosystem functions play in supporting sustainable social-ecological systems," Margules says.

The CBC has begun to integrate research results into its corridor planning. The pilot Milne Bay terrestrial corridor uses KBAs as anchor points and key ecosystem functions such as hydrological processes to devise a sustainable natural resources plan.

Community Conservation Agreements in YUS, Lakekamu, Papua Barrier, Makira Island and other parts of Melanesia have hinged on developing estimates of ecosystem services and plans for their sustainable management. Most recently residents of the Mamberamo Basin have signed a community conservation agreement with the Melanesia CBC covering 100,000 hectares of tropical lowlands. With CI's technical help, community members have created maps of their traditional lands and received assistance with conservation planning, Beehler says.

In the coming years, community conservation agreement planning will include collection of data on, for example, hunting, fishing, and gathering and marketing of non-timber forest products in Lakekamu and Milne Bay. The idea is to find a way to integrate conservation outcomes and local livelihoods so that communities may derive income from their ecosystems in ways that assure that those systems remain intact for the future. The commodities could include such traditional goods as fish, oil palm, and timber as well as innovative "products" like carbon, water filtration, and biodiversity credits traded on emerging global markets.

This same approach will be used to implement the Bird's Head Seascape strategy to create a single marine management zone in the heart of the Coral Triangle. The Bird's Head Seascape is immensely productive and biodiverse. It supports artisanal fishing resources for tens of thousands of local families, a large commercial fishery, and a growing dive tourism industry. We plan to extend the Milne Bay Marine project to engage the community of Nuakata Island and develop a community conservation agreement that will incorporate sustainable harvesting of fish stocks along with protection of high biodiversity areas. In Mamberamo and the New Guinea Headwaters, where strategic goals are similar to the Bird's Head Seascape, an ecosystem services component, involving the two large-scale freshwater projects, has been built into the community conservation agreement.

In 2007, the CBC partners at the Centre for International Forestry Research (CIFOR) have also implemented the Multidisciplinary Landscape Assessment (MLA) to document what the environment, habitats, and species mean to local communities in Mamberamo. The MLA aims to promote awareness and therefore conservation through sustainable use of nature. The information (especially "natural resources use" maps) is then used to broker Community Conservation Agreements, voluntary statements from the communities about how they wish to utilize and conserve their lands. In 2008, these CCAs will help local communities draw up village-based regulations and conduct regional spatial planning. "The MLA, as a tool to help communities document ecosystems services, has been well received by the local and provincial governments. It fulfils the good governance model promoted by the province and UN Millennium Development Goals, and could prove a model for sustainable conservation in Papua for the future," Margules explains.

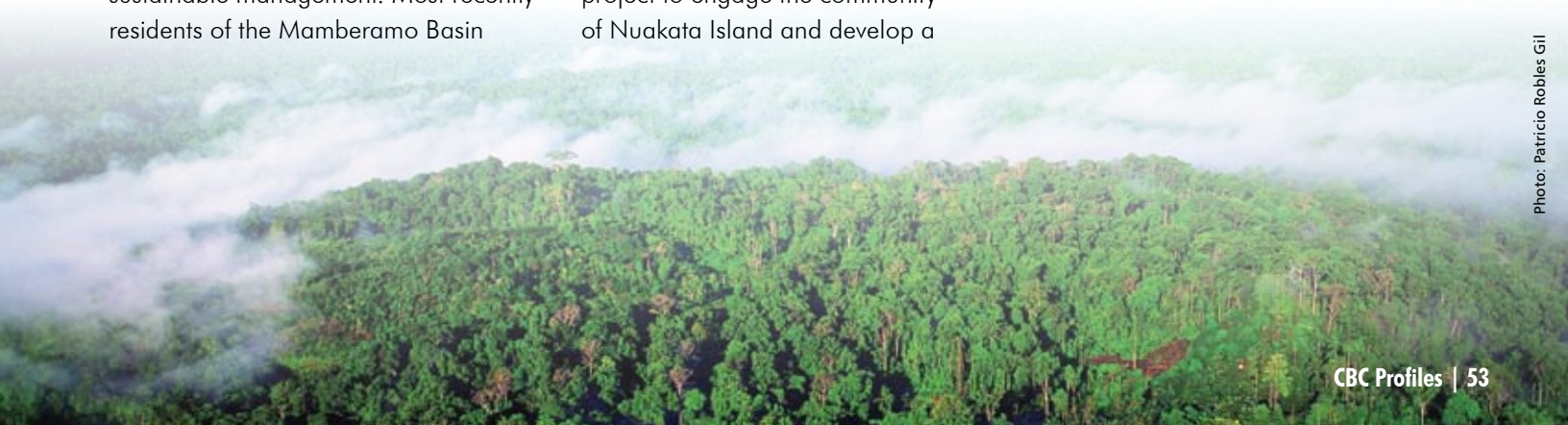


Photo: Patricio Robles Gil

Photo: Gerry Allen

Leopard Blenny in Madagascar

CBC KEY FACTS

	Andes	Brazil	Guianas	Madagascar	Melanesia
YEAR ESTABLISHED	2002	2001	2002	2002	2001
COUNTRIES	5	1	2	5	6
OFFICIAL LANGUAGES	Spanish	Portuguese	English; Dutch	English; French; Malagasy; Seychellois Creole	Bislama; English; Fijian; French; Hindi; Hiri Motu; Indonesian; PNG Tok Pisin; Solomon Islands Pijin
OFFICES	11	6	3	6	7
NUMBER OF STAFF	100	50	48	79	40
IN-COUNTRY AND REGIONAL CONSERVATION PARTNERS	200	100	42	87	60
HOTSPOTS	2	2	None	1	3
HIGH BIODIVERSITY WILDERNESS	1	1	1	None	1
MARINE PRIORITY REGION	Eastern Tropical Pacific Seascape	Abrolhos Complex	None	Nosy Hara Complex; Grand Recif Toliara; Ambodivahibe Bay	Bird's Head Seascape; Milne Bay Province
CONTRIBUTION TO CONSERVATION CORRIDORS	5 Corridors (80 million ha)	16 Corridors (115 million ha)	2 Corridors (19 million ha)	5 Corridors	5 Corridors (11 million ha)
CONTRIBUTION TO CREATION OR MANAGEMENT OF PROTECTED AREAS	110 (29 million ha)	262 (64 million ha)	6 (3.1 million ha)	23 (2 million ha)	11 (2 million ha)
NUMBER OF THREATENED SPECIES BENEFITING FROM CBC INITIATIVES	320	239	35	376	107

Spotted Cuscus in Papua New Guinea

Photo: Haroldo Castro

References and Resources

In the last five years, the Centers for Biodiversity Conservation have generated a wealth of information. Since a single report provides only a limited forum for conveying this knowledge, below is a list of reference documents used to construct this narrative. They are available for future reference. Our partners, donors, decision-makers, and CI staff require continually updated and relevant data. Therefore, we have created an online section at the CI Learning Portal. The portal will maintain a section on the CBCs, offering an opportunity for further discussion, as well as an electronic library of documents, news, a calendar, and other resources.

To access this information, please visit http://learning.conservation.org CI staff members can gain entry to the site by using CI username and password. If you can't find what you are looking for, please contact cbc@conservation.org

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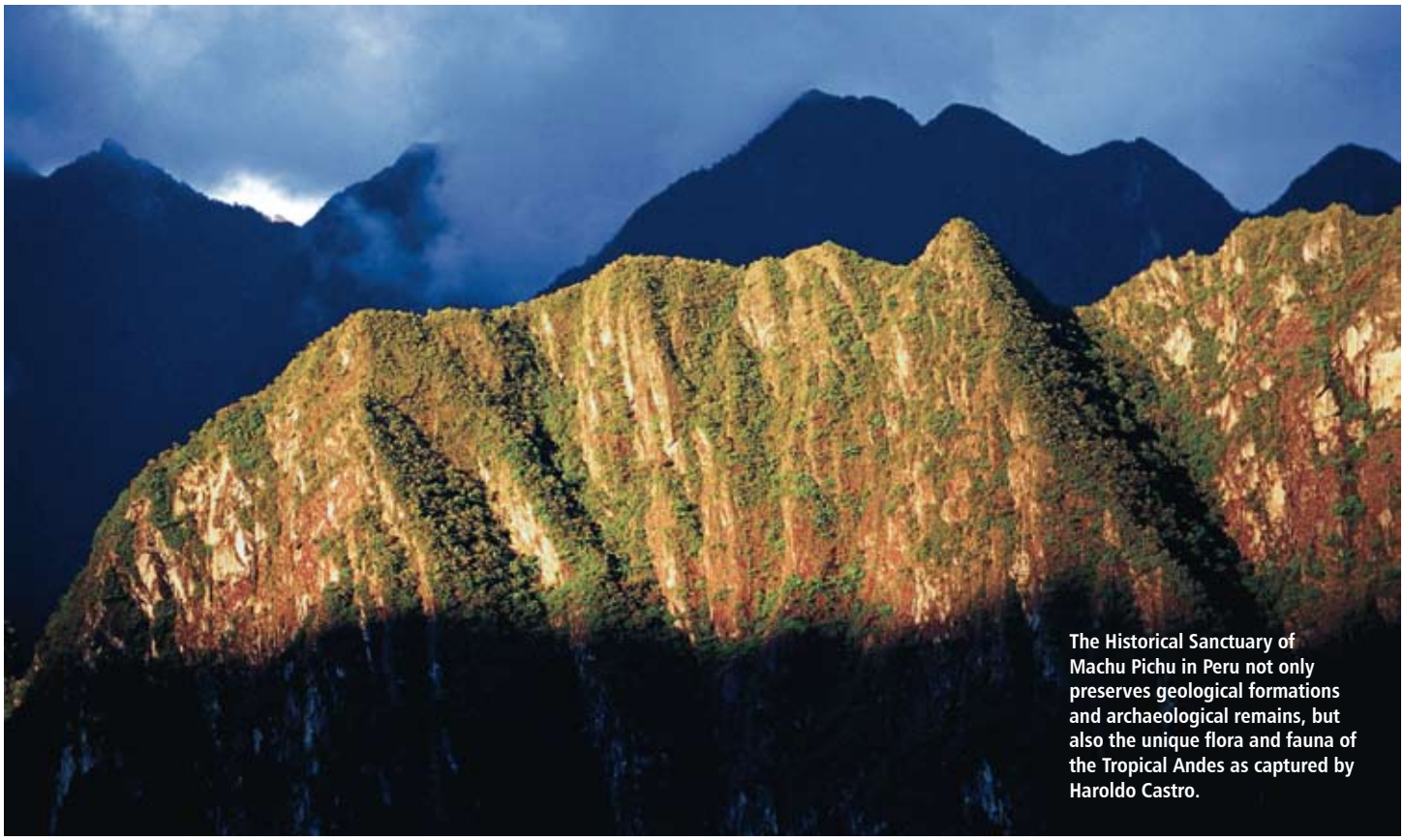

The Historical Sanctuary of Machu Pichu in Peru not only preserves geological formations and archaeological remains, but also the unique flora and fauna of the Tropical Andes as captured by Haroldo Castro.

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