

NATURAL ALLIANCES BETWEEN CONSERVATIONISTS AND INDIGENOUS PEOPLES

Kent H. Redford and Michael Painter

WORKING PAPER NO. 25
MARCH 2006

NATURAL ALLIANCES BETWEEN CONSERVATIONISTS AND INDIGENOUS PEOPLES

Kent H. Redford
Michael Painter

Kent H. Redford
WCS Institute
Wildlife Conservation Society
2300 Southern Blvd.
Bronx, NY 10460
(718) 220-5889
kredford@wcs.org

Michael Painter
Wildlife Conservation Society
Calle 13, No. 594, Obrajes
La Paz - BOLIVIA
(591-2) 278-6642
mpainter@wcs.org



WCS Working Papers ISSN 1530-4426

Online posting ISSN 1534-7389

Copies of WCS Working Papers are available
for download from <http://www.wcs.org/science>

or by mailing a request to:

Wildlife Conservation Society

International Conservation

2300 Southern Boulevard

Bronx, NY 10460-1099 USA

Suggested citation:

Redford, Kent H., and Michael Painter. 2006

Natural Alliances between Conservationists and Indigenous Peoples.

WCS Working Paper No. 25. Wildlife Conservation Society, New York.

Front cover photographs:

© H. Noss (main image)

Other images (from top) © H. Noss, © K. H. Redford, © A. Chicchon,

© K. H. Redford, © K. H. Redford, © Leonardo Maffei (WCS / camera trap)

Back cover photograph:

© K. H. Redford

Copyright:

The contents of this paper are solely the property of the authors, and cannot be reproduced without the permission of the authors.

The Wildlife Conservation Society (WCS) is dedicated to saving wildlife and wildlands, to assure a future for threatened species like elephants, tigers, sharks, macaws, or lynx. That mission is achieved through a conservation program that protects some 50 living landscapes around the world, manages more than 590 field projects in 53 countries, and supports the nations largest system of living institutions—the Bronx Zoo, the New York Aquarium, and the Wildlife Centers in Central Park, Queens and Prospect Park. We are developing and maintaining pioneering environmental education programs that reach more than three million people in the New York metropolitan area as well as in all 50 United States and on six continents. We are working to make future generations inheritors, not just survivors.

The WCS Working Paper Series represents preliminary results of basic and applied field work supported by the Wildlife Conservation Society. The purpose of WCS Working Papers is to distribute project reports, benchmark data sets of historical significance, and other timely technical material in its entirety, and with as little delay as possible. For a list of WCS Working Papers, please see the end of this publication.

ABSTRACT

The survival of both indigenous peoples and much of what remains of nature lies in the ability of both sides to find common ground. However, parks and protected areas have become the focus of conflict between conservationists and indigenous peoples. This antipathy is based on differing views about the nature of human impact on the natural world and masks the strong potential for these two groups to work together. In this paper we provide a case study illustrating how effective such cooperation can be. The Kaa-Iya del Gran Chaco National Park and Integrated Management Area was designed and implemented as the result of a collaboration between the Wildlife Conservation Society and the *Capitanía de Alto y Bajo Izozog*, the organization representing the 10,000 Guaraní people known as Isoceños. The park, encompassing approximately 3.5 million hectares of Bolivian Chaco, is the only national park in the Americas established on the initiative of a Native American People, and the only one where a Native American organization shares primary administrative responsibilities with the national government.

Keywords: indigenous people, parks, cooperation, conservation, alliances, NGOs

INTRODUCTION

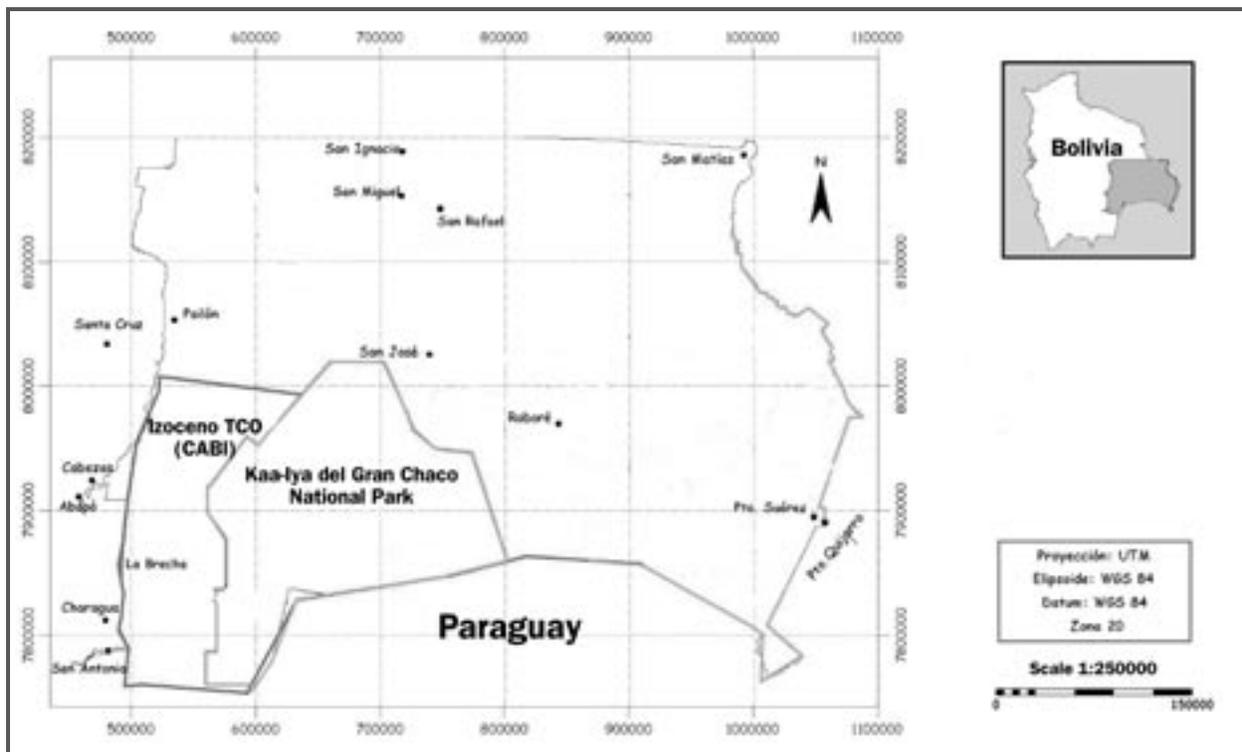
Both indigenous peoples and large natural areas are threatened by forces associated with expanding industrial society. The survival of both indigenous peoples and the natural world lies in the ability of people concerned with the two sets of issues to find common ground and work together. The map of this common ground is being obscured by suspicion, shortsightedness and politics. Advocates for both sides most often come into conflict over the creation and management of parks and protected areas.

While park advocates are arguing with indigenous peoples and their advocates about the proper role for people in conservation, the forest they both wish to preserve is being destroyed. Despite a commonly shared realization of this loss of forest, the dialectic seems to be irresistible, spinning both sides towards mutual loss. The explanation for why potential allies see each other as enemies runs through history, politics, and science and is typified by short-sighted advocacy, conflicting discourses, political correctness, and a lack of perspective on large-scale threats and potential alliances.

In this paper we focus on forested settings declared by the State as parks and protected areas, particularly in the Amazon Basin, and the often acrimonious debate as to whether people should be excluded from these areas. This debate is framed in the larger context of human-nature interactions and contributes to the on-going discussion about the relationship between environmentalism and indigenous peoples. Brosius (1999) has emphasized the need to understand these larger contextual arguments, or environmental topologies – constructions of actual and metaphorical space – arguing that these lay the groundwork for



Kent H. Redford



intervention by defining political and institutional space, prescribing interventions and identifying appropriate agents of action. This paper is an effort to understand the interplay between the interests of indigenous peoples and their advocates and park advocates and to document a case study from the Bolivian Chaco, in which an indigenous community and a conservation organization have, by uniting efforts and forming a partnership, achieved significant progress towards their two sets of objectives. We hope that this will change the valence of the current, often sterile and acrimonious debate and encourage others to create, strengthen, and document other cooperative ventures.

THE CHALLENGE AND THE OPPORTUNITY

Both the natural world and indigenous and traditional peoples and their homelands are threatened. In all areas, indigenous peoples (see Colchester 2004 for definition) are going extinct, culturally and linguistically, if not demographically. They are being expelled from their lands and losing rights to resources necessary for their cultural survival. Despite this trend there remain an estimated 250 million indigenous people in more than 70 countries (Davis 1993) and the territories they inhabit are estimated to cover 12 to 19 percent of the earth's land mass (Durning 1993 in Davis and Dunn 1994). In more recent estimates, Molnar *et al.* (2004) state that at least 120 million hectares are contained in large

areas of natural forest owned or administered by indigenous and traditional communities, including part of the 130 million hectares of indigenous reserves or territorial lands in the Brazilian, Peruvian and Bolivian Amazon.

The lands inhabited by indigenous people are often also important areas for nature conservation, particularly in forested ecosystems. With the tropical ecosystems valued by both sides under threat from industrial forestry, extensive agriculture, plantation establishment and broad-scale fires, important opportunities exist for strong alliances between conservationists and indigenous peoples.

Given the mutual interests, why has collaboration remained so elusive? Impediments to collaboration have come from strong post-modern arguments that nature does not exist independent of humans and therefore its isolation from people is nonsensical (c.f. Ellen and Fukui 1996). This argument, used by the advocates of indigenous peoples, is built on claims that human influence has been so pervasive for so long that there is no nature not affected by humans (McKibben 1989, Denevan 1992) and that in largely undisturbed areas nature has been so influenced by people (Shiva *et al.* 1995, Ghimire and Pimbert 1997) that conserving 'nature' requires action to maintain the people who created it (Oilwatch and World Rainforest Movement 2004).

Some advocates of park-based conservation have created a different set of impediments to collaboration. To them, most types of significant modern human activity have been shown to have an impact on all components and attributes of biodiversity (Redford and Richter 1999) and therefore parks without people are seen as vital in conserving the full range of wild nature (Terborgh 1999). This is true for local people harvesting for limited use (c.f. Peres 2000 for hunting) as well as for the activities with more obvious impacts such as commercial logging and pasture creation.

It is clear that there are strong moral, value-based, and scientific differences between indigenous peoples and parks advocates on the role of parks (c.f. Oilwatch and World Rainforest Movement 2004 and Wilshusen *et al.* 2002). It is equally clear that both sides can muster the facts to buttress their arguments and to refute the arguments of the other side. But in clinging to their arguments and not admitting the larger context both sides are in danger of losing that which they value. The forces intent on destroying the Amazon forest can only be stopped by a strong coalition of mutually supportive partners. Both parks and indigenous reserves should play vital, related, but not identical roles.

CASE STUDY: A PARTNERSHIP FOR CONSERVATION IN THE BOLIVIAN CHACO

In the often acrimonious debates taking place in such fora as the World Parks Congress, indigenous peoples and parks advocates declare the impossibility of cooperation. However, such cooperation has taken place and may be more common than recognized or understood. In an effort to promote documentation of cooperation and to encourage what we see as vital, and natural, alliances, we



Kent H. Redford

describe a partnership developed in the lowlands of Bolivia between an indigenous group and a conservation organization. This study is a contribution to the literature of partnerships (e.g. Chambers and McBeth 1992, Sautter and Leisen 1999, Jamal and Getz 1995) and as such we discuss the drivers that brought about the partnership, the costs and benefits of working together, and the ways in which external issues, unexpected in the original partnership, were addressed.

The partnership involved the *Capitanía de Alto y Bajo Izozog* (CABI) and the Wildlife Conservation Society (WCS). CABI is an indigenous organization that represents over 10,000 Guaraní people living in 25 communities along the Parapetí River in the lowland Chaco of Bolivia. Because of their residence in the Isoso area, the people are known as Isoceños, or Isoceño-Guaraní (Fig. 1). WCS is an international conservation organization recognized for its work in the conservation of wildlife and wild lands.

The partnership was based on approaches to conservation that differed fundamentally (Winer 2001:19-23). Despite this, the two organizations defined a set of conservation issues around which their interests clearly converged, and they developed a program to address those issues. At the same time, each organization was respectful of the differences in their missions, and, over time, learned to draw on these differences as a source of strength for their shared program. Explicit recognition of where their respective interests do, and do not, overlap has contributed to a relationship of trust upon which the two organizations have built an effective partnership, which has to its credit important accomplishments on behalf of the conservation of biological diversity in the Bolivian Chaco.

Threats to Biological Diversity

The Gran Chaco of Bolivia, Argentina, Paraguay and Brazil covers about one million square kilometers, and is one of South America's most extensive biogeographical regions. It is characterized by diverse ecosystems that include palm savannas and marshes, semiarid thorn forests, and open grasslands on sand dunes. The Gran Chaco includes the largest expanses of dry tropical forests in the Neotropics, a biome that is under greater threat than the continent's moist tropical forests. The Chaco has been deeply affected by overgrazing by cattle and goats, and commercial hunting for the international pelt and skin trade. In many areas, land clearing and associated schemes to promote ranching and farming have resulted in the degradation of ecosystems on a scale seen in few other areas of South America (Taber *et al.* 1997; WCS 1997).

Based on extensive field research in Argentina, Paraguay and Bolivia, WCS determined that Bolivia was the only country in the region that still contains large areas where Chacoan ecosystems and habitats remain relatively intact. But even in Bolivia the Chaco faces many threats. It is surrounded to the east, west and north by ranches and commercial farms, some of which are actively expanding and seeking to acquire new lands. It is also a key to Bolivia's efforts to develop its natural gas industry, as it contains several important hydrocarbon exploration and exploitation concessions, and lies at a critical intersection of a regional gas pipeline network that transports natural gas from fields in Bolivia and Argentina to markets in Brazil, and which is currently being expanded to serve Argentine markets as well. The overall degradation suffered by the Gran



Kent H. Redford

Chaco, and the mounting threats to the remaining wild areas of the Bolivian Chaco, led WCS to view the establishment of a protected area as an essential first step in the conservation of the region (Taber *et al.* 1997).

Threats to the Livelihoods of Indigenous People

The threats to biological diversity that constitute the fundamental cause for concern by WCS are also viewed by CABI as a threat to the livelihoods and lifeways of Isoceños. Independently of WCS, CABI's leadership reached the conclusion that the establishment of a protected area would provide a legal basis for halting the expansion of the agricultural frontier and provide a focal point for defining new production alternatives. For CABI the establishment of a protected area constituted part of a broader strategy to secure and manage the area the Isoceños regard as their historical homeland, which also includes a territorial claim filed under Bolivia's agrarian reform law and general support for the titling of indigenous lands. Within this vision, conserving biological diversity is important because it is part of the physical setting that Isoceños associate with their own identity as a people.

The expanding agricultural frontier, hydrocarbon development, and highway construction threaten areas that are important to Isoceños, and limit possibilities to construct productive alternatives that would allow them to prosper economically while maintaining their own identity. Thus, CABI's general goal was to construct production options that would permit Isoceños to satisfy livelihood needs without having to abandon values and practices that are important to their identity as a people. This goal reflected two major concerns: (1) that economic growth be equitable, to allow Isoceños to improve their standard of living as a people, as opposed to a small number of individuals accumulating wealth; and (2) that economic growth should not carry high environmental costs – defined in terms of deforestation, soil degradation, and the destruction of habitat of key wildlife species – characteristic of the farming and ranching activities that dominate the rural economy of Santa Cruz.



Hall Noss, 1999

ACCOMPLISHMENTS OF THE PARTNERSHIP

Based on distinct, but convergent, sets of interests regarding the future of the Bolivian Chaco, CABI and WCS began to work together in the area in 1991. The key accomplishment of the initial collaboration was the establishment of Kaa-Iya del Gran Chaco National Park and Integrated Management Area (KINP), in September 1995. CABI presented the proposal for the establishment of the park to the Government of Bolivia. WCS provided CABI with technical support to prepare the proposal, and assisted it in shepherding the proposal through the government's review process. Following successful establishment of the park, CABI was named co-administrator, under an agreement with the Ministry of Sustainable Development and Planning. Covering some 3.44 million hectares, KINP is the largest protected area in Bolivia, and at the time of its establishment

contained the largest area of dry tropical forest under protection in the world. It is also the only national park in the Americas established as a result of the initiative of a Native American People, and the only one where a Native American organization shares primary administrative responsibilities with the national government (Taber *et al.* 1997; WCS 1997: 1-4).

For CABI, establishment of the KINP was part of a larger strategy to consolidate the implementation of a regional land use strategy focused on the Bolivian Chaco. CABI played a leading role in Bolivia's indigenous movement to secure the recognition of the territorial rights of indigenous peoples, which, in 1996, succeeded in persuading the government to include the concept of indigenous territory in Bolivia's new agrarian reform law. Taking advantage of the provisions of the new law, CABI presented a claim for a 1.9 million hectare *Tierra Comunitaria de Origen* (TCO), the legal term used to refer to indigenous territories, in early 1997. The process of titling the area began in 2000. To date, over 560,000 hectares have been titled to CABI, and another 582,000 hectares are ready to be titled. Also, over 165,000 hectares have been titled to third-party landowners who have properly documented their land claims in the area. Together, the KINP and TCO cover approximately 5.3 million hectares, an area nearly the size of Costa Rica (Winer 2001).

The main focus of WCS's support for CABI has been to help the organization move beyond the political achievement of creating this vast area, to assume the technical and administrative challenges of effectively managing it. This effort has concentrated on four major areas: (1) strengthening CABI's technical and administrative capacities, (2) conducting participatory wildlife population and ecology research and defining appropriate wildlife management practices, (3) consolidating a land use planning and environmental monitoring program that includes the KINP and TCO, and (4) designing and implementing a permanent environmental education program, focusing on improving understanding of basic ecological concepts and their application in the administration of the KINP and TCO.

Working together, CABI and WCS have to their credit several notable conservation accomplishments. Their partnership has established the largest and most systematic research program on wildlife ecology that has ever functioned in the Chaco. Of equal or greater importance, the research methods utilized appear to be among the most participatory employed by a major conservation research program. One outcome of this has been the preparation of a team of Isoceño paraprofessionals who are capable of designing and implementing research activities to investigate the ecology of their lands, and themselves presenting the results of their research to scientists and professionals in national and international settings (Painter and Noss 2000; Noss and Painter 2004). This benefits CABI because they have the technical capability of studying and interpreting the environment in which they live for themselves, without relying on outside experts. This means that (1) when outsiders construct scientific arguments to support one or another form of land use, they are able to assess the argument and respond critically to the science employed, and (2) they are able to produce for themselves scientifically grounded proposals for how they want to use land.

CABI and WCS also worked together to complete the management plan for the KINP. The same approach used to prepare the zoning proposal that lies at the heart of the KINP management plan was also used to prepare the zoning



Sharon Deem

proposal for CABI's management of the Isoceño TCO, which extends the areas designated for conservation beyond the boundaries of the KINP. The main area outside the park (and in the TCO) designated for conservation is the Bañados de Isono wetlands, declared a RAMSAR site in 2001. Only about 15% of the wetlands are located inside the KINP, so CABI's decision to zone their portion of the wetlands for strict conservation contributes to WCS's objectives. At the same time, the Bañados de Isono wetlands are culturally important to the Isoceños. They refer to it as La Madre (The Mother), and associate life-giving properties with it. The major threat to the Bañados has come from third-party landholdings within the TCO that lay claim to portions of the wetland and have diverted water for agricultural irrigation. The zoning of the area for conservation, in combination with the establishment of the legal boundaries of the properties in question as part of the TCO titling process, asserted CABI's ownership and affirmed its intention to manage the area in accordance with the values it has historically attached to these wetlands.



Andrew Noss

JOINT RESPONSES TO NEW THREATS AND OPPORTUNITIES

The experiences gained by CABI and WCS as they worked together in these areas laid the groundwork to respond together to a new combination of threats and opportunities. Three of these responses, that went well beyond the initial definition of shared interests, are discussed below.

The Bolivia-Brazil Gas Pipeline

The first example involves the KINP and the Bolivia-Brazil Gas Pipeline in which the partnership with WCS has helped CABI to confront challenges arising from the rapid expansion of Bolivia's hydrocarbon industry. Beginning in the mid-1990s, development of this market was marked by the construction of the Bolivia-Brazil Gas Pipeline that either passes through or immediately borders the KINP for 250 kilometers.

With support from WCS, CABI led indigenous organizations in negotiating an agreement with the sponsors of the pipeline on the design and implementation of a program to address the project's environmental and socioeconomic impacts. A key element in this negotiation involved persuading the multilateral donors (World Bank, IDB and CAF) to agree with CABI's interpretation of what World Bank Operational Directive 4.20¹ on indigenous people had to say about how they should be involved in the efforts to address environmental and socioeconomic impacts. This determination led the banks to require the companies to triple the amount they were proposing to dedicate to the land titling program, and to reach an agreement with the indigenous organization regarding how the program should be organized and administered, as a condition for their

1. World Bank (1991). Indigenous People. Operational Directive 4.20. The World Bank Operational Manual. September.



support of the project. This provided an important incentive for the pipeline sponsors to engage seriously with CABI and the other indigenous organizations and reach an agreement. Signed in December 1997, the agreement included several groundbreaking provisions, including equal representation of indigenous organizations and the pipeline sponsors on the executive committee that would define and decide how to address environmental and socioeconomic impacts of the pipeline on indigenous lands.

The significance of the agreement was twofold. First, it set a new standard in Bolivia for local people being involved in defining what the major social and environmental issues associated with the pipeline were, and taking a leading role in defining what they wanted to do about them. This level of local involvement, developed by both CABI and WCS, had never occurred in Bolivia before this experience. Second, CABI demonstrated that they had a combination of empirical local knowledge, technical skills, and political weight that made it in the interest of the pipeline sponsors to build an effective partnership with them. The program to address the environmental and socioeconomic impacts of the Bolivian portion of the pipeline was recognized as an example of excellence by the International Association of Impact Assessment, and was written up by the World Bank as a case study in best practices for this sort of activity. CABI's vision and leadership in reaching an agreement with the companies and implementing the subsequent programs contributed to it receiving the Bartolomé de las Casas Prize from the Government of Spain, for tenacious and innovative defense of indigenous cultures and the natural environment, and to it being named the environmental grassroots organization of the decade (1992-2002) by the Museo de Historia Natural Félix de Azara, in Buenos Aires.

Land-titling

The second example of ways in which the partnership provided new unexpected benefits involved land titling and land management. Of particular importance to CABI and the other indigenous organizations in the pipeline's area of influence was the program funded by the pipeline sponsors providing \$1.5 million for titling indigenous lands. In addition, the pre-existing CABI-WCS partnership provided significant technical support. For example, CABI and WCS led the design of this program, a key element of which was to accompany the *Instituto Nacional de Reforma Agraria* (INRA) through the entire process to ensure its completion and that titles would actually be issued at the end. This was important because, at the time, no indigenous organization had received title to its territorial claim, despite substantial investments in INRA for this purpose by the World Bank and the Danish aid organization DANIDA. The resulting program also reduced the costs associated with titling indigenous lands from about US \$1.50 per hectare to about \$0.36. It titled the 273,000 hectare Ayoreode TCO, community lands for 43 Chiquitano communities, and the initial work to title the Isoceño TCO, described above.

Conservation Financing

The final example involves conservation finance and the pipeline's agreement to provide \$1 million to capitalize a private trust fund to provide a permanent source of revenue to support the KINP. WCS and CABI worked together to

design the organizational structure of the Kaa-Iya Foundation, a non-profit corporation that will be the permanent owner of the trust fund. Under this arrangement GTB agreed to accept responsibility to help ensure that the KINP continues to be able to meet the challenges that may arise from future hydrocarbon development. The Kaa-Iya Foundation will use the \$1 million from the pipeline agreement as a seed fund to attract additional revenues to support the park, either as contributions to the capital of the fund, or by offering the returns that the fund generates as matching funds to those raised by CABI, WCS or others from other sources. Since 2002, the matching funds made available by the Kaa-Iya Foundation have enabled CABI and WCS to raise over \$200,000 to support KINP programs that otherwise would not have been available.

The Kaa-Iya Foundation is one manifestation of CABI's general commitment to raising the money to support KINP operations, including covering the basic operating costs that should be provided by the Bolivian government under its co-administration agreement with CABI. Between 1998 and 2003, for example, using interest generated by the Kaa-Iya Foundation trust fund and other sources, CABI contributed US \$494,333, or nearly 43 percent, of the \$1,157,869 administered by the KINP. This amount was in addition to funds raised by WCS and CABI that helped support KINP programs.

LESSONS LEARNED

A successful partnership must be constructed with an explicit recognition of the differences in perspectives and interests of the two institutions yet foster the space where interests and perspectives overlap and mutual interests can be achieved. The concept of a TCO is rooted in successfully creating a physical space within which indigenous people have the possibility of defining an approach to development that is consistent with their sense of themselves as a people, and a broad definition of quality of life that considers culture and values. While the quality-of-life issues that are of primary concern to Isoceños are different in many respects from those of WCS, both institutions assert a value that the quality of human life is not reducible to economic factors.

Nonetheless, while WCS supports the efforts of indigenous organizations to secure justice for their constituencies, it remains a conservation organization, and its partnership with CABI is based on its assessment that supporting CABI's regional land management strategy offers the best hope for conserving the last large area of the Gran Chaco. For its part, CABI views environmental conservation as essential if its efforts to improve the quality of life of the Isoceños as a people are to be successful. There are, however, other essential elements related to access to health care and education, increases in available employment, and improvements in working conditions. Thus its concerns are broader than WCS's, and the priority that it assigns conservation in a particular setting is sometimes different.

At the same time, it is clear to both groups that the achievements resulting from their collaboration have far outweighed the significance of the compromises that each party has had to make with regard to their respective visions and



Hall Noss, 1999



Leonardo Marfisi (WCS / camera trap)

missions. This view has been reinforced by international recognition that has raised the profile of both organizations in ways that have generated additional incentives for them to continue working together. Shared achievements and recognition for them have contributed to the trust that each has in the other, and in the willingness of each to make the extra effort to find common ground based on the awareness that their respective long-term objectives are better served by continuing to work together to address current challenges.

One outcome of the recognition of this difference in perspectives is that conservation is placed within a broader context of territorial planning. WCS does not take a leading role in assisting CABI to solve problems associated with the broader set of issues of concern to Isoceños. But it does engage with CABI in considering how and where efforts to address this broader set of issues will be carried out, if the areas prioritized for conservation are to be protected successfully. For example, WCS recognizes that, in general, lack of clarity about land ownership and access rights constitutes a critical obstacle to effective management. It also recognizes that, among the competing land use visions associated with diverse regional actors that include municipal governments, private landowners, and the Bolivian army, CABI's integrated regional vision, based on the KINP and the Isoceño TCO, together with the strong political and nascent technical skills that support that vision, offers the best alternative for achieving long-term biodiversity conservation in the Chaco.

Similarly, there are important differences within the Isoceño communities themselves. For example, the 25 communities are characterized by five distinctly different approaches to production, in which the relative importance of wage labor, livestock, crop production and wildlife utilization vary significantly (Ben-ería-Surkin 1998). These differences underlie fundamental differences in views about land management issues ranging from their willingness to limit hunting off-takes to their commitment to implementing a regional land management strategy based on zoning for conservation and production (Proyecto Kaa-Iya 2001:36-52). Working through these levels of heterogeneity to construct a vision of land management supported by a critical mass of the population has been one of the greatest challenges to the Chaco program, and one of its most critical successes.

Finally, while partnerships need to be based on shared interests, the existence of these is not in itself a sufficient base for building a strong working relationship. Partnerships arise out of the experience of carrying out activities together, overcoming disagreements in a way that contributes to building mutual trust, developing a shared vision, and coming to understand what is, in fact, shared, and what is not (Winer 2003a, 2003b). CABI and WCS began to work together in 1991, and the relationship continues to require regular reinforcement by both parties to keep it strong. The need for sustainable partnerships to develop slowly, combined with the need for lengthy investments to achieve the interlinked biological, socioeconomic and institutional objectives, means that the partnership is necessarily long-term. Specifically, such partnerships require commitments that go well beyond the funding cycles of most donors. Thus, while donor funds can play a critical role in moving processes forward (as USAID support of approximately \$6.5 million has done in the case of CABI and WCS) the partnership cannot depend on donor funds alone.

Institutions need to be prepared to commit significant amounts of their own resources, independently of the ebb and flow of donor interest, and to invest significant effort in finding ways to build local sources of support for conservation. On the one hand, this requires the construction of the kind of vision of territorial management described above, which includes the participation of local governments, private landowners and other actors, to define areas for investment that are secure. On the other, it requires exploring how to work with private investors whose primary interests are in other areas, but who may see promoting conservation and sustainable land use as supporting their business objectives.

CONCLUSION

The world's attention, once riveted on the Amazon and the fate of tropical forests, has shifted towards such newly popular issues as poverty alleviation, free trade, and global terrorism. This makes it even more imperative that the two sides with the largest stakes in the future of tropical ecosystems begin to engage one another in a more constructive fashion. From a global or regional perspective, park advocates and forest-dwelling indigenous peoples have much more in common than either has with most other groups. As is clear from the Bolivian example, they have overlapping interests in land, natural resources, and a worldview different than many other parts of human society. Both groups are interested in maintaining the forest as forest, and not allowing its conversion to cattle pasture, soybean fields, or plantations, or to be degraded through mining and extensive burning.

But they do not agree on everything and do not share completely concordant views for the future. There are some components of biodiversity that will not be maintained in areas of human use, especially those that rely on large areas found in parks. And the desires for economic improvement and social continuity on the part of indigenous peoples cannot be achieved in parks. Unfortunately, it is the few differences that exist between the two groups that have been the sole object of attention, rather than the multitude of similarities. It is vital not to dismiss or wish away these differences. They must be woven in to the fabric of agreement, a fabric bound by a much stronger thread: the threat of complete forest loss.

Any alliance must be forged with a clear-headed appreciation for the role of politics and the political process. Much of the acrimony that has tinged this issue has not been about outcome, but about power (c.f. Conklin and Graham 1995).

Both the conservation and indigenous rights communities are weak political players. In their efforts to build strength and standing they have too often opted for the short-term tactic of raising their profile by stepping on the other group, competing for legitimacy in a dysfunctional conflict for the right to be considered the "true" conservationists (c.f. Redford and Stearman 1993, Schwartzman *et al.* 2000). The two groups must work together with a clear vision about the desired future and build bridges of cooperation to achieve this vision.

In this paper the discussion about parks has been restricted to only one type



Hall Noss, 2004



of protected area – that containing few or no people. There are, however, a wide range of IUCN protected area categories that explicitly incorporate conservation objectives and the land uses of local peoples (Beltran 2000, Ravenel and Redford 2005). The overlap between these two sets of objectives has been addressed by IUCN, which published a list of demands that indigenous and traditional peoples organizations have made of protected areas established on their lands/seas (Beltran 2000). This includes: effective protection of these domains and the people and cultures they contain from external threats; recognition of land and water claims of these people; recognition of their rights to control and co-manage these resources within protected areas; and recognition of the rights of indigenous and other traditional peoples to determine their own development priorities. This list builds a strong case for effective partnerships in protected areas that are explicitly designed to incorporate humans and biodiversity and to integrate protected areas without people together with those with people to ensure achievement of ecological and social goals.

If one looks, there is an encouraging trend towards recognizing the overlapping interests of indigenous peoples and conservationists. WWF-International's Statement of Principles concerning Indigenous Peoples and Conservation states that indigenous peoples and conservation organizations should be natural allies "in the struggle to conserve both a healthy natural world and healthy human societies" (WWF 1996: 3). The trend continues, with Conservation International publishing a set of "principles for partnerships" between CI and indigenous peoples (da Fonseca and Brandon 2003). Other organizations like WCS have been implementing programs like the one featured in this paper.

Great care must be taken, however, to ensure that this talk of agreement is based on an explicit acknowledgement of differences and transparent negotiations to find a common ground. Two decades ago there was a flurry of rhetoric concerning overlapping interests between conservation and indigenous peoples (see Redford and Stearman 1993) that led nowhere but to further recrimination and greater destruction of the Amazonian forests. The groups involved must find the basis for developing an integrated, effective partnership. There are numerous critical evaluations by one group of the performance of the other group (c.f. Forest Peoples Project 2003) and there are many valid criticisms of both sides. Both sides must attempt to transform a culture of conflict and criticism into one of informed cooperation based on specific, measurable goals and negotiated trade-offs. We must pay careful attention to the dangers of deploying what Brosius (1999: 280) has called "essentialized images" – ways of creating political value by strategically deploying images that stereotype or flatten the range of contradictions always present in conservation. Conservationists, indigenous groups, and the advocates of indigenous groups too often hurl these essentialized images at one another, little recognizing the harm that this does in creating broader political and social valorization.

Although this paper has concentrated on South America, the questions raised are vital to many other parts of the world, and the literature is rich on this subject (c.f. Kothari 1996). Some of these experiences may provide important lessons. In Australia (e.g. Thackway *et al.* 1996) lands owned and managed by Aboriginal and Torres Strait Islander peoples are co-managed as national protected areas. South Africa (Reid 2001) and Canada (Beltran 2000) are trying

similar experiments with contractual and co-managed national parks. And in Mexico, rather than investing in the establishment of new protected areas, local communities would be compensated for continuing to conserve their privately-held forest resources (White and Martin 2002).

Concluding a wide review, Colchester (1994) points out that the one lesson that conservationists need to learn is that decisions about how to allocate the uses of nature are unavoidably political. The question is, who is going to decide about the allocation of the earth's dwindling resources? But we must also be alert to the more subtle issue of who defines what is being threatened. Both the biodiversity valorized by society and the lifeways of indigenous peoples have been subjected to extensive manipulation by advocates (Brosius 1997) and long-term cooperation can only come from an honest, critical perspective alert to issues of history, power, culture, and money (Brosius and Russell 2003).

Are conservationists and indigenous peoples going to continue to fight and allow the decisions to be made by those interested only in personal, economic gain and national hegemony? We are now trying to save from the juggernaut of modern civilization not only the Amazon forests, but also traditional agricultural settings, pilgrimage routes, monuments, and old urban centers. We are both attempting to valorize natural and cultural communities that have historically been disregarded, destroyed, subjugated, and in other ways denied standing (Brosius 1999). Humans have a bigger fight than just saving the Amazon. We must find and strengthen non-traditional alliances wherever we can before much of what we value is destroyed.

ACKNOWLEDGEMENTS

We would like to thank John Robinson, Allyn Stearman, and three reviewers. We are deeply appreciative of all of the hard work done by those who developed the ideas and implemented the work described in this paper.

REFERENCES

- Alvard, M.S. 1993. Testing the “ecologically noble savage” hypothesis: Interspecific prey choice by Piro hunters of Amazonian Peru. *Human Ecology* 21: 355-387.
- Balée, W. 1994. *Footprints of the forest*. New York: Columbia University Press.
- Balee, W. 1998. Introduction in W. Balee (ed.). *Advances in historical ecology*. New York: Columbia University Press.
- Bauchet, S., F. Grenand, P. Grenand, and P. de Maret. 2001. *Tropical Forests, Human Forests: An Overview*. Brussels: Avenir des Peuples des Forêts Tropicales.
- Beneria-Surkin, J. 1998. *Socio-economic study of five Isocoño communities*. Informe Técnico #6. Santa Cruz: Proyecto Kaa-Iya.
- Beltran, J., ed. 2000. *Indigenous and traditional peoples and protected areas. Principles, Guidelines and Case Studies*. Gland: IUCN.
- Brosius, J.P. 1997. Endangered forest, endangered people: environmentalist representations of indigenous knowledge. *Human Ecology* 25: 47-69.
- Brosius, J.P. 1999. Analyses and interventions. *Anthropological engagements with environmentalism*. *Current Anthropology* 40: 277-309.
- Brosius, J.P. and D. Russell. 2003. Conservation from above: an anthropological perspective on transboundary protected areas and ecoregional planning. *J. Sustainable Forestry* 17: 39-65.
- Cabrera, E., C. Mercolli and R. Resquín, eds. 2000. *Manejo de Fauna Silvestre en la Amazonía y Latinoamérica*. Asunción: Ricor Grafic, S.A.
- Carey, C., N. Dudley and S. Stolton. 2000. *Squandering Paradise? The importance and vulnerability of the world's protected areas*. Gland: WWF-International.
- Chambers, R.E. and M.K. McBeth. 1992. Community encouragement: returning to the basis for community development. *Journal of the Community Development Society* 20: 101-111.
- Chase Smith, R. 1996. Biodiversity won't feed our children. Biodiversity conservation and economic development in indigenous Amazonia. Pp. 197-217 in Redford, K.H. and J.A. Mansour, eds. *Traditional Peoples and Biodiversity Conservation in Large Tropical Landscapes*. America Verde Publications, The Nature Conservancy.
- Colchester, M. 1994. Salvaging nature. Indigenous peoples, protected areas and biodiversity conservation. UNRISD Discussion Paper.
- Colchester, M. 2004. Indigenous people and the new ‘global vision’ on forests. Implications and prospects. Discussion paper. <http://www.fern.org/pubs/archive/globvis.htm>
- Conklin, B.A. and L.R. Graham. 1995. The shifting middle ground: Amazonian Indians and eco-politics. *American Anthropologist* 97: 695-710.
- Coomes, O.T. and B.L. Barham. 1997. Rain forest extraction and conservation in Amazonia. *The Geographical Journal* 163(2): 180-188.
- Davis, R. and W. Dunn. 1994. Report on the International Workshop on Natural Resource Management on Tribal Lands. Washington, D.C.: Forest Service, United States Department of Agriculture.
- Davis, S.H. 1993. Indigenous views of land and the environment. World Bank Discussion Papers. Washington, D.C.: World Bank.

- El Deber. 1997a. Avance del gasoducto a Brasil enfrenta problemas con étnias. El Deber. P. A21, 13 de noviembre de 1997.
- El Deber. 1997b. Indígenas afirman que no entorpecen avance del ducto: paralización fue por “inconsulta” ingreso a zona protegida. El Deber. P. A12, 18 de noviembre de 1997.
- El Deber. 1997c. Inspeccionarán avance del gasoducto a Brasil. P. A9, 17 de noviembre de 1997.
- Denevan, W.M. 1992. The pristine myth: The landscape of the Americas in 1492. *Annals of the Association of American Geographers* 82(3): 369-385.
- Durning, A.T. 1992. Guardians of the Land: Indigenous peoples and the health of the earth. *Worldwatch Paper* 112: 1-62.
- Ellen, R. and K. Fukui. 1996. *Redefining Nature. Ecology, culture and domestication.* Berg, Oxford, U.K.
- Da Fonseca, G.A.B. and K. Brandon. 2003. Indigenous peoples and Conservation International: Principles for partnerships. www.biodiversityscience.org/xp/CABS/research/human_dimensions/indigenous_peoples.xml.
- Forest Peoples Project. 2003. www.info@fppwrm.gn.apc.org (consulted June 2003).
- Ghimire, K.B. and M.P. Pimbert, eds. 1997. *Social Change and Conservation: Environmental Politics and Impacts of National Parks and Protected Areas.* London: Earthscan.
- Jamal, T.B. and D. Getz. 1995. Collaboration theory and community tourism planning. *Annals of Tourism Research* 22: 186-204.
- Kothari, A. 1996. Is joint management of protected areas desirable and possible? Pp 17-49 in Kothari, A., N. Singh, and S. Suri (eds.). *People and Protected Areas. Towards Participatory Conservation in India.* New Delhi: Sage Publications.
- Linzer, A.K. 1998. *Caracterización de los sistemas de producción de las propiedades privadas ubicadas en el área de influencia del Parque Nacional Kaa-Iya.* Informe Técnico #42. Santa Cruz: Proyecto Kaa-Iya.
- Lu, F.E. 2001. The common property regime of the Huaorani Indians of Ecuador: Implications and challenges to conservation. *Human Ecology* 29: 425-447.
- McKibben, B. 1989. *The End of Nature.* New York: Anchor Books.
- Molnar, A., S. Scherr and A. Khare. 2004. Who conserves the world's forests? Community-driven strategies to protect forests and respect rights. Washington, D.C.: Forest Trends.
- Moore, J.L., L. Manne, T. Brooks, N.D. Burgess, R. Davies, C. Rahbek, P. Williams and A. Balmford. 2002. The distribution of cultural and biological diversity in Africa. *Proc. R. Soc. Lond. B.* 269: 1645-1653.
- Neumann, R.P. 1998. *Imposing Wilderness. Struggles over Livelihood and Nature Preservation in Africa.* Berkeley, CA: University of California Press.
- Nietschmann, B. 1992. The interdependence of biological and cultural diversity. Kenmore, Washington: Center for World Indigenous Studies.
- Noss, A.J. and M.D. Painter. 2004. Community-based wildlife management in the Gran Chaco, Bolivia. Pp. 59-75 in R. Bodmer, K. Silvius and J. Fragoso, eds. *Wildlife conservation and management in Latin America.* New York: Columbia University Press.
- Oilwatch and World Rainforest Movement. 2004. Protected areas. Protected against whom? Oilwatch and World Rainforest Movement. http://oilwatch.org.ec/english/documentos/protected_areas.pdf

- Painter, M. y A. Noss. 2000. La conservación de fauna con organizaciones comunales: experiencia con el pueblo Izoceño de Bolivia. Pp. 167-180 en E. Cabrera, C. Mercolli y R. Resquin, eds. *Manejo de fauna silvestre en Amazonía y Latinoamérica*. Asunción, Paraguay: CITES Paraguay, Fundación Moises Bertoni, University of Florida.
- Peres, C.A. 2000. Evaluating the impact and sustainability of subsistence hunting at multiple Amazonian forest sites. Pp. 31-56 in J.G. Robinson and E.L. Bennett, eds *Hunting for Sustainability in Tropical Forests*. New York: Columbia University Press.
- Proyecto Kaa-Iya. 2001. Plan de Manejo Kaa-Iya del Gran Chaco. Parque Nacional y Área Natural de Manejo Integrado. Preparado por la Capitanía de Alto y Bajo Izozog y Wildlife Conservation Society con el apoyo de la Agencia de los Estados Unidos para el Desarrollo Internacional (Donación No. 511-0000-G-00-6031 y Acuerdo Cooperativo No. 511-A-00-01-00005. Santa Cruz: Ministerio de Desarrollo Sostenible y Planificación, Viceministerio de Medio Ambiente, Recursos Naturales y Desarrollo Forestal, Servicio Nacional de Áreas Protegidas.
- Ravenel, R.M. and K.H. Redford. 2005. Understanding IUCN protected area categories. *Natural Areas Journal* 25(4): 381-389.
- La Razón 1977. Suspendieron obras del gasoducto a Brasil. *La Razón*, Sección de Economía y Negocios, 14 de noviembre de 1977.
- Redford, K.H. 1991. The ecologically noble savage. *Cultural Survival Quarterly* 15: 46-48.
- Redford, K.H. 1996. Getting to conservation. Pp. 251-265 in Redford, K.H. and J.A. Mansour, eds. *Traditional Peoples and Biodiversity Conservation in Large Tropical Landscapes*. America Verde Publications, The Nature Conservancy.
- Redford, K.H. 1999. Who gets to decide? Pp. 1-6 in K.H. Redford, ed. *Culturally conflicting views of nature*. Gainesville, FL: Conservation and Development Forum.
- Redford, K.H. 2000. Natural areas, hunting, and nature conservation in the neotropics. *Wild Earth* 10: 41-48.
- Redford, K.H. and A.M. Stearman. 1993. Forest-dwelling native Amazonians and the conservation of biodiversity: interests in common or in collision? *Conservation Biology* 7: 248-255.
- Redford, K.H. and J.A. Mansour, eds. 1996. *Traditional Peoples and Biodiversity Conservation in Large Tropical Landscapes*. America Verde Publications, The Nature Conservancy.
- Redford, K.H. and B. Richter. 1999. Conservation of Biodiversity in a world of use. *Conservation Biology* 13: 1246-1256.
- Redford, K.H., J.G. Robinson, and W.M. Adams. 2006. Parks as shibboleths. *Conservation Biology* 20(1): 1-2.
- Redford, K.H., K. Brandon, and S.E. Sanderson. 1998. Holding ground. Pp. 455- 463 in K. Brandon, K.H. Redford, and S.E. Sanderson, eds. *Parks in Peril*. Washington, D.C.: Island Press.
- Reid, H. 2001. Contractual national parks and the Makuleke community. *Human Ecology* 29: 135-155.
- Sanderson, E.W., M. Jaiteh, M.A. Levy, K.H. Redford, A.V. Wannebo and G. Woolmer. 2002. The human footprint and the last of the wild: a quantitative evaluation of human influence on the land's surface and its implications for conservation. *BioScience* 52(10): 891-904.
- Sautter, E.T. and B. Leisen. 1999. Managing stakeholders. A tourism planning model. *Annals of Tourism Research* 26: 312-328.

- Schwartzman, S., A. Moreira and D. Nepstad. 2000. Rethinking tropical forest conservation: perils in parks. *Conservation Biology* 14: 1351-1357.
- Shiva, V., P. Anderson, H. Schucking, A. Gray, L. Lohmann, and D. Cooper. 1995. *Biodiversity. Social and Ecological Perspectives*. New Jersey: Zed Books.
- Spense, M.D. 1999. *Dispossessing the Wilderness. Indian Removal and the Making of the National Parks*. New York: Oxford University Press.
- Stocks, A. 1996. The BOSAWAS natural reserve and the Mayangna of Nicaragua. Pp. 1-32 in Redford, K.H. and J.A. Mansour, eds. *Traditional Peoples and Biodiversity Conservation in Large Tropical Landscapes*. America Verde Publications, The Nature Conservancy.
- Taber, A., G. Navarro and M.A. Arribas. 1997. A new park in the Bolivian Gran Chaco – an advance in tropical dry forest conservation and community-based management. *Oryx* 31(3): 189-197.
- Terborgh, J. 1999. *Requiem for Nature*. Washington, D.C.: Island Press.
- Thackway, R., S. Szabo and D. Smyth. 1996. Indigenous protected areas: a new concept in biodiversity conservation. *Biodiversity – Broadening the Debate* 4. Australian Nature Conservation Agency Publication.
- WCS. 1997. Project Kaa-Iya: Isoceño Institutional Capacity Building, Wildlife Conservation and Natural Resource Management in the Gran Chaco, Santa Cruz, Bolivia. Phase III Technical and Cost Applications. Santa Cruz: Wildlife Conservation Society.
- White, A. and A. Martin. 2002. Who owns the world's forests? Forest tenure and public forests in transition. Washington, D.C.: Forest Trends and Center for Environmental Law.
- Wilshusen, P.R., S.R. Brechin, C.L. Fortwangler and P.C. West. 2002. Reinventing a square wheel: critique of a resurgent 'protection paradigm' in international biodiversity conservation. *Society and Natural Resources* 15(1): 17-40.
- Winer, N.P. 2001. Assessment of the Kaa-Iya de Gran Chaco Project. Report prepared for USAID/Bolivia, CABI and WCS under Cooperative Agreement No. 511-A-00-01-00005. Santa Cruz: Wildlife Conservation Society.
- Winer, N.P. 2003a. Comanagement of Protected Areas, the Oil and Gas Industry and Indigenous Empowerment – the Experience of Bolivia's Kaa-Iya del Gran Chaco. *Policy Matters* 12 (September): 181-191.
- Winer, N.P. 2003b. Review and Strategic Planning Consultancy: Kaa-Iya del Gran Chaco. Produced for the Wildlife Conservation Society and the Capitanía de Alto y Bajo Izozog. Funded by USAID/Bolivia, Fundación Kaa-Iya and Wildlife Conservation Society. Santa Cruz: Wildlife Conservation Society.
- Wood, A., P. Steadman-Edwards and J. Mang. 2000. *The Root Causes of Biodiversity Loss*. London: Earthscan.
- WWF. 1996. *Indigenous Peoples and Conservation: WWF Statement of Principles*. Gland: WWF-International.

WCS WORKING PAPER SERIES

WILDLIFE CONSERVATION SOCIETY

WCS Working Paper No. 1

Bleisch, William V. (1993) Management Recommendations for Fanjing Mountain Nature Reserve and Conservation at Guizhou Golden Monkey & Biodiversity. (38 pp.)

WCS Working Paper No. 2

Hart, John A. & Claude Sikubwabo. (1994) Exploration of the Maiko National Park of Zaire, 1989-1994, History, Environment and the Distribution and Status of Large Mammals. (88 pp.)

WCS Working Paper No. 3

Rumiz, Damian & Andrew Taber. (1994) Un Relevamiento de Mamíferos y Algunas Aves Grandes de la Reserva de Vida Silvestre Ríos Blanco y Negro, Bolívia: Situación Actual y Recomendaciones. (40 pp.)

WCS Working Paper No. 4

Komar, Oliver & Nestor Herrera. (1995) Avian Density at El Imposible National Park and San Marcelino Wildlife Refuge, El Salvador. (76 pp.) (English and Spanish)

WCS Working Paper No. 5

Jenkins, Jerry. (1995) Notes on the Adirondack Blowdown of July 15th, 1995: Scientific Background, Observations, and Policy Issues. (93 pp.)

WCS Working Paper No. 6

Ferraro, Paul, Richard Tshombe, Robert Mwinyihali, and John Hart. (1996) Projets Integres de Conservation et de Developpement; un Cadre pour Promouvoir la Conservation et la Gestion des Ressources Naturelles. (105 pp.)

WCS Working Paper No. 7

Harrison, Daniel J. & Theodore G. Chapin. (1997) An Assessment of Potential Habitat for Eastern Timber Wolves in the Northeastern United States and Connectivity with Occupied Habitat on Southeastern Canada. (12 pp.)

WCS Working Paper No. 8

Hodgson, Angie. (1997) Wolf Restoration in the Adirondacks? The Question of Local Residents. (85 pp.)

WCS Working Paper No. 9

Jenkins, Jerry. (1997) Hardwood Regeneration Failure in the Adirondacks: Preliminary Studies of Incidence and Severity. (59 pp.)

WCS Working Paper No. 10

García Viques, Randall. (1996) Propuesta Técnica de Ordenamiento Territorial con Fines de Conservación de Biodiversidad en Costa Rica: Proyecto GRUAS. (114 pp.)

WCS Working Paper No. 11

Thorbjarnarson, John & Alvaro Velasco. (1998) Venezuela's Caiman Harvest Program: A historical perspective and analysis of its conservation benefits. (67 pp.) (English with Spanish Abstract)

WCS Working Paper No. 12

Bolze, Dorene, Cheryl Chetkiewicz, Qui Mingjiang, and Douglas Krakower. (1998) The Availability of Tiger-Based Traditional Chinese Medicine Products and Public Awareness about the Threats to the Tiger in New York City's Chinese Communities: A Pilot Study. (28 pp.)

WCS Working Paper No. 13

O'Brien, Timothy, Margaret F. Kinnaird, Sunarto, Asri A. Dwiyahreni, William M. Rombang, and Kiki Anggraini. (1998) Effects of the 1997 Fires on the Forest and Wildlife of the Bukit Barisan Selatan National Park, Sumatra. (16 pp.) (English with Bahasa Indonesia Summary)

WCS Working Paper No. 14

McNeilage, Alistair, Andrew J. Plumptre, Andy Brock-Doyle, and Amy Vedder. (1998) Bwindi Impenetrable National Park, Uganda. Gorilla and large mammal census, 1997. (52 pp.) (English with French Summary)

WCS Working Paper No. 15

Ray, Justina C. (2000) Mesocarnivores of Northeastern North America: Status and Conservation Issues. (84 pp.)

WCS Working Paper No. 16

Kretser, Heidi. (2001) Adirondack Communities and Conservation Program: Linking Communities and Conservation Inside the Blue Line. (62 pp.)

WCS Working Paper No. 17

Gompper, Matthew. (2002) The Ecology of Coyotes in Northeastern North America: Current Knowledge and Priorities for Future Research.

WCS Working Paper No. 18

Weaver, John L. (2001) The Transboundary Flathead: A Critical Landscape for Carnivores in the Rocky Mountains. (64 pp.)

WCS Working Paper No. 19

Plumptre, Andrew J., Michel Masozera, Peter J. Fashing, Alastair McNeilage, Corneille Ewango, Beth A. Kaplin, and Innocent Liengola. (2002) Biodiversity Surveys of the Nyungwe Forest Reserve In S.W. Rwanda. (95 pp.)

WCS Working Paper No. 20

Schoch, N. (2003) The Common Loon in the Adirondack Park: An Overview of Loon Natural History and Current Research. (64 pp.)

WCS Working Paper No. 21

Karasin, L. (2003) All-Terrain Vehicles in the Adirondacks: Issues and Options. (72pp.)

WCS Working Paper No. 22

Clarke, Shelly. (2002) Trade in Asian Dry Seafood, Characterization, Estimation & Implications for Conservation. (92 pp.)

WCS Working Paper No. 23

Mockin, Miranda H., E.L. Bennett, and D.T. LaBruna. (2005) Wildlife Farming: A Viable Alternative to Hunting in Tropical Forests? (32 pp.)

WCS Working Paper No. 24

Ray, Justina C., Luke Hunter, and Joanna Zigouris. (2005) Setting Conservation and Research Priorities for Larger African Carnivores. (203 pp.)

Copies available from:
Wildlife Conservation Society
International Conservation
2300 Southern Boulevard
Bronx, NY 10460-1099 USA
www.wcs.org/science

