



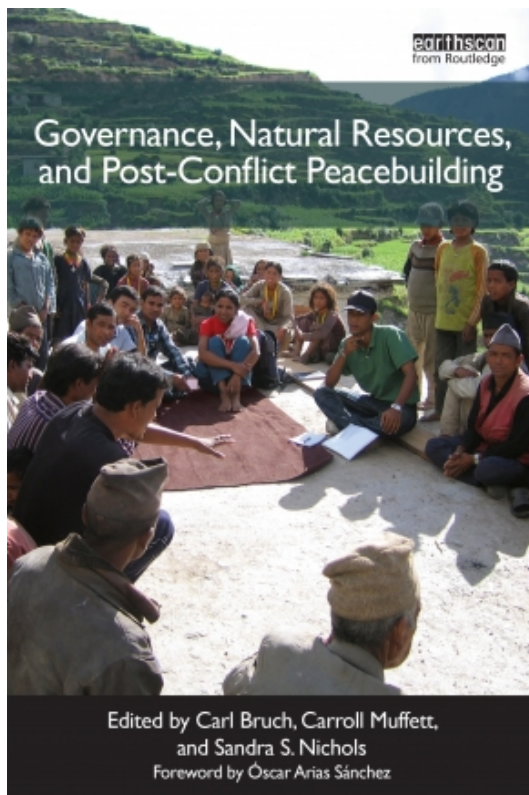
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Transboundary Collaboration in the Greater Virunga Landscape: From Gorilla Conservation to Conflict-Sensitive Transboundary Landscape Management

Johannes Refisch^a and Johann Jenson^b

^aGreat Apes Survival Partnership (GRASP)

^bGreat Apes Survival Partnership (GRASP)

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Transboundary collaboration in the Greater Virunga Landscape: From gorilla conservation to conflict-sensitive transboundary landscape management

Johannes Refisch and Johann Jenson

Conservation science is increasingly recognizing the importance of landscape-based and ecosystem approaches to managing certain protected areas. In some cases, implementing such approaches means transcending ecologically arbitrary boundaries and managing across national boundaries. Conservation-related activities—such as tourism, biodiversity monitoring, and law enforcement to curb illegal exploitation of natural resources—have an added benefit: they can provide a more comfortable focus for transboundary collaboration than more delicate issues, such as the minerals trade and the exploitation of energy resources. In regions suffering from armed conflict, transboundary conservation management has paved the way toward greater collaboration and stability. For instance, joint management of the Cordillera del Cóndor transboundary protected area (TBPA), a remote rainforest shared by Peru and Ecuador, helped to settle an intermittently violent border dispute that persisted for 170 years.¹ Some observers have recommended the creation of peace parks in similarly contested border areas—such as the K2-Siachen region, between India and Pakistan—to encourage cooperation and thereby reduce the risk of conflict.²

Despite a lack of empirical evidence, the case literature on TBPA's boasts an impressive array of potential benefits—suggesting, for example, that TBPA's can not only contribute to biodiversity conservation, but can also alleviate poverty and promote peace (Conca 2002; Busch 2007; Hanks 2003; Westrik 2014). While such claims may be difficult to prove, positive examples of transboundary collaboration do exist, among them the Greater Virunga Landscape, in East Africa.

Johannes Refisch is program manager for the Great Apes Survival Partnership (GRASP), an alliance of nearly one hundred nations, United Nations agencies, research institutions, conservation organizations, and private supporters. Johann Jenson is a program officer for GRASP. This chapter relies, in part, on the authors' experience in transboundary cooperation and in the Greater Virunga Landscape.

¹ For a discussion on the history of the Cordillera del Cóndor conflict and the role transboundary collaboration played in the conflict's resolution, see Yolanda Kakabadse, Jorge Caillaux, and Juan Dumas, "The Peru and Ecuador Peace Park: One Decade after the Peace Settlement," in this book.

² See, for example, Ali (2004).

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Successful transboundary processes involve landscape approaches that often focus on target species and include a high level of institutional coordination. Spatial configuration—that is, the geographic positioning of a protected area—may also increase the likelihood of success of transboundary processes (Hanks 2003; Busch 2007; Lanjouw et al. 2001).³

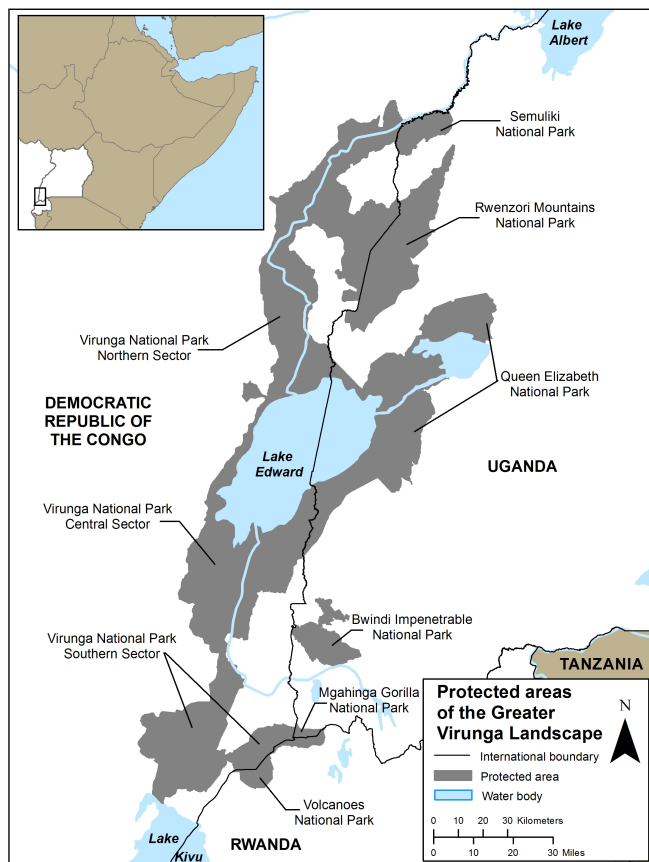
The World Conservation Monitoring Centre (WCMC) of the United Nations Environment Programme has calculated that the number of TBPA worldwide increased from 59 (involving 70 individual protected areas) in the late 1980s, to 169 (involving 666 individual protected areas) in 2001 (Lysenko, Besançon, and Savy 2007; Zbicz 2003). As of 2007, the WCMC estimated that TBPA represented approximately 17 percent of all protected areas worldwide (Lysenko, Besançon, and Savy 2007). In fact, some of the world's highest-profile protected areas and tourism hot spots straddle international boundaries: examples include Waterton-Glacier International Peace Park, between Canada and the United States (the world's first transboundary park); Kenya's Masai Mara National Park and Tanzania's Serengeti National Park; Virunga, Volcanoes, and Mgahinga Gorilla national parks in the Democratic Republic of the Congo (DRC), Rwanda, and Uganda, respectively; Brazil's and Argentina's Iguazu Falls national parks; and the Victoria Falls ecosystem, in Zimbabwe and Zambia.

Transboundary collaboration includes both the physical establishment of TBPA and the transboundary dialogue. This chapter focuses on the Greater Virunga Landscape transboundary process undertaken by the DRC, Rwanda, and Uganda, with particular attention to the mechanisms involved in transboundary collaboration and the peacebuilding potential of such initiatives.

Managing the Greater Virunga Landscape—where civil conflict has persisted since the early 1990s, where state institutions have been severely weakened, and where highly valuable natural resources abound—is a complex, multi-stakeholder process fraught with both risk and opportunity. From 2003 to 2007, it is estimated that as many as 1.3 million deaths occurred as the direct or indirect result of armed conflict in the five provinces of eastern DRC; and between 1999 and 2009, more than 150 park rangers were killed in Virunga National Park alone (IRC 2007; *Wildlife Extra News* 2009). Despite recurring conflicts throughout the region, conservation nongovernmental organizations and government authorities have cooperated across borders, sharing resources and lessons learned, while effectively managing and protecting wildlife populations and their habitats.

The chapter is divided into four major sections: (1) a consideration of the relationship between natural resources, conflict, and peace; (2) a discussion of transboundary cooperation in the Greater Virunga Landscape; (3) a summary of lessons learned; and (4) a brief conclusion.

³ Jonah Busch argues that it is possible, under some conditions, for TBPA to achieve measurable benefits through spatial configuration, and that by optimizing such configurations, countries may achieve greater conservation impacts while removing less land from production (Busch 2007).



Note: The Greater Virunga Landscape is also known as the Central Albertine Rift.

NATURAL RESOURCES, CONFLICT, AND TRANSBOUNDARY CONSERVATION

The relationship between conflict and the environment has been the focus of academic and international attention for several decades. A number of scholars from various disciplines have made the case that natural resource scarcity, unequal access to natural resource benefits, and general environmental degradation can lead to economic, political, and social tensions—and, ultimately, to violent conflict.⁴ Despite criticism that the empirical evidence does not entirely support causal links between high population growth, environmental scarcity, and conflict (Swatuk 2002, 2004), many researchers, multilateral institutions, and governments view environmental cooperation as central to preventing conflict, improving welfare, and creating peacebuilding opportunities (Conca 2002).

⁴ See, for example, Homer-Dixon (1991), Osborn (1953), and Brown (1954).

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Since the mid-twentieth century, the thirty-four most biologically diverse regions on the planet have been the site of 81 percent of the world's major armed conflicts (Hanson et al. 2009). The risk that conflict poses to such regions is exacerbated by the fact that many states with a history of political unrest rely directly on their natural endowments to finance state institutions during conflict, and depend on these same natural resources, in post-conflict periods, for their national development strategies. In 1999, for example, following Charles Taylor's rise to power and during the second phase of the Liberian civil war (1999–2003), the forestry sector accounted for 50 percent of Liberia's export earnings (Boutwell and Klare 1999). Nevertheless, it would be mistaken to view natural resources as the root cause of armed conflict. While natural resources may fuel or exacerbate conflict, the real cause is more likely to be decades of corruption, misappropriation, and reckless leadership on the part of political elites—as exemplified by the history of the DRC, Liberia, Myanmar, Peru, and Sierra Leone since the early 1990s (de Jong 2008).

Although efforts to address transboundary environmental issues may spark or intensify disputes over the use of natural resources, they can also serve as catalysts for regional integration of state authorities and conservation actors, improved livelihoods, conflict prevention, and peacebuilding. As a largely non-political, technically driven process implemented at the local level, conservation is particularly well suited as a platform for regional cooperation. Research confirms that although the poor management of natural resources tends to exacerbate conflict, cooperative natural resource management on the part of communities, states, civil society, and international organizations can build cross-border dialogue and mutual understanding (Hammill and Crawford 2008; Hanks 2003; Conca 2002). However, transboundary initiatives that attempt to incorporate more contentious issues, such as the minerals trade or the exploitation of energy resources, may prove to be more complex, and may require greater political safeguards to avoid escalating existing conflicts or creating new disputes.

Cooperation theory identifies a number of pathways through which states can avoid conflict and build peaceful relations (Conca 2002). One such pathway involves changing the strategic climate that dominates existing relations. This may involve three kinds of shifts:

- Altering conditions to foster trust and convergent interests, and to decrease uncertainty.
- Creating interdependencies, opportunities for shared gains, and peaceful traditions.
- Establishing rules, procedures, and institutions to perpetuate peace.

Transboundary processes incorporate all three of these elements. Thus, regular transboundary discussions on matters of national interest, such as the management of protected areas and the conservation of biodiversity, can help change the strategic climate.

Because conflicts often spill over national boundaries, shared ecosystems are likely to be affected, and it is therefore in the interest of neighboring states

to participate in transboundary processes, to establish rules of procedure, and to engage in cooperative, conflict-sensitive management of natural resources. Conflict-sensitive natural resource management seeks to understand the links between human security and environmental conservation, and thereby avoid creating new conflicts, minimize the impact on existing conflicts, and exploit opportunities for peacebuilding (Hammill et al. 2009).

TRANSBOUNDARY COOPERATION IN THE GREATER VIRUNGA LANDSCAPE

The Greater Virunga Landscape, also known as the Central Albertine Rift, straddles the borders of the DRC, Rwanda, and Uganda, and contains more vertebrate species than any other single set of contiguous protected areas on the continent (Plumptre and Marris 2007). The region's landscape is diverse—ranging from glaciers to alpine moorland, mountain rainforests, and savannahs—and harbors charismatic species such as the chimpanzee, mountain gorilla, and okapi (the latter two are endemic to the region). The Greater Virunga Landscape once hosted the world's largest hippopotamus population, and is still an important wintering ground for Siberian birds. The region is currently under threat, however, from widespread illegal exploitation of its natural resources. Among the factors driving this exploitation are rapid human population growth, pervasive poverty, a high degree of dependence on natural resources for livelihoods, and regional political instability.

The foundations of collaboration

In 1925, after having been urged by Carl Akeley, an American biologist and nature photographer, to protect the mountain gorillas, King Albert of Belgium issued a royal decree creating a mountain gorilla sanctuary in what was then the Belgian Congo. The first research on mountain gorillas was undertaken in 1959, by George Schaller; seven years later, under Schaller's supervision, Dian Fossey began her research on mountain gorillas, dedicating almost eighteen years of her life to their study and conservation before her untimely demise in 1985.

In 1979, several international conservation organizations founded the Mountain Gorilla Project, a collaborative effort to protect the remaining mountain gorilla population, with a particular focus on Rwanda. Project staff engaged in antipoaching patrols and created educational programs to help change local attitudes toward gorillas (Warren 2001).

By the time the Mountain Gorilla Project was founded, it was already clear that the future of the mountain gorilla would depend on conserving habitat across the DRC, Rwanda, and Uganda, but the first program with a transboundary vision was the International Gorilla Conservation Programme (IGCP), which was established in 1991 by the African Wildlife Foundation, Fauna and Flora International, and the World Wide Fund for Nature. Unlike other transboundary initiatives, such as the Mayombe Forest Transboundary Initiative (in Angola, the

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DRC, and the Republic of the Congo), the IGCP started at a purely technical level, with regional meetings, and only later involved high-level government representatives and policy makers (see sidebar for levels of collaboration in transboundary initiatives).⁵ The meetings, which were held three to four times a year, initially focused on gorilla tourism, monitoring, and law enforcement, with the overall goal of harmonizing regulations and sharing best practices among the three partner countries.

The transboundary process did encounter obstacles. The Rwandan civil war and genocide occurred during the early years of the IGCP, and the DRC experienced several periods of insecurity. Of greatest consequence to transboundary collaboration was the period from 2007 to 2009, when a rebel group in the DRC known as the National Congress for the Defense of the People (Congrès National pour la Défense du Peuple), under the leadership of Laurent Nkunda, occupied the Mikeno sector of Virunga National Park (the eastern region of the southern sector), an area inhabited by mountain gorillas. Throughout the occupation, the Congolese Wildlife Authority (Institut Congolais pour la Conservation de la Nature, or ICCN) had no access to this sector of the park.

During periods of heightened conflict, cross-border monitoring patrols, which were composed of rangers from the three countries, were not undertaken, but antipoaching patrols were coordinated in such a way that rangers patrolled bordering areas simultaneously. Whenever it was safe to do so, mountain gorilla monitoring was conducted in all three of the adjacent national parks.

Once conservation authorities from the three countries realized that they could obtain more revenue by marketing mountain gorilla tourism at the regional level, collaboration on tourism proved quite successful. Tourism numbers have risen steadily since the early 1990s.

Transboundary collaboration

Transboundary collaboration can be thought of as occurring along a continuum. At one end are informal arrangements in which countries agree to protect certain border areas to facilitate the migration of animals. Central Africa's Tri-National Dja-Odzala-Minkébé Landscape, for example, is an incipient transboundary initiative, meaning that it has yet to be formalized by the participating countries. And the governments of Cameroon, Gabon, and the Republic of the Congo are attempting to create biological corridors between isolated protected areas, including Dja, in Cameroon; Minkébé, in Gabon; and Odzala, in the Republic of the Congo (WWF 2010).

At the other end of the continuum are contiguous protected areas that (1) are overseen by a single management unit, (2) staffed by nationals from two or more countries, and (3) permit tourists to move freely within the entire protected area without needing visas to cross national borders (Sandwith et al. 2001). Transboundary protected areas of this type are often managed through long-term intergovernmental planning and implementation processes that are not limited by national boundaries. The Kgalagadi Transfrontier Park, which covers territory in both South Africa and Botswana, was the world's first transboundary park to be managed as a single unit (Hanks 2003).

⁵ In July 2009, Angola, the DRC, and the Republic of the Congo signed a tripartite declaration that created the Mayombe Forest Transboundary Initiative and established a transboundary platform consisting of national and regional committees. In this case, structures were in place from the beginning—but, at the time of writing, the technical work (in the form of a number of technical studies) was still ongoing.

Among the recommendations proposed by a regional tourism study conducted in 2005 were the following (Mehta and Katee 2005):

- Collaboration among tour operators, protected-area authorities, and local communities to diversify the tourism industry—specifically by creating a number of multi-attraction tourism circuits to complement mountain gorilla tracking.
- The development of community conservation tourism projects. (The Sabyinyo Silverback Lodge in Kinigi, Rwanda, is an example of one such project; the lodge is built on community land, and the revenue it brings in is partially reinvested and partially distributed to local communities.)

The Goma Declaration

In January 2004, the three protected-area authorities—the ICCN, the Rwandan Office of Tourism and National Parks, and the Uganda Wildlife Authority—signed a memorandum of understanding (MOU) to conserve the unique ecosystem within the Central Albertine Rift Transboundary Protected Area Network. The MOU recognized the Greater Virunga Landscape as a transboundary ecosystem. To achieve the ultimate goal of collaborative management, the three agencies agreed to develop a transboundary strategic plan (TSP) for the Central Albertine Rift Transboundary Protected Area Network.

In October 2005, the ministers in charge of protected areas in the DRC, Rwanda, and Uganda signed the Tripartite Declaration on the Transboundary Natural Resources Management of the Transfrontier Protected Area Network of the Central Albertine Rift, also known as the 2005 Goma Declaration. The declaration formally recognized the need for collaborative efforts; officially supported the development of a TSP; and committed the three countries to providing resources for the TSP's implementation.

The transboundary strategic plan

The TSP, which was signed in May 2006, expands upon the earlier IGCP transboundary initiative, which had been focused on tourism and the protection of mountain gorillas (see sidebar for milestones leading to the TSP) (TCS 2006). For one thing, the TSP targets the central part of the Albertine Rift, which extends far beyond the habitat of the mountain gorillas. Furthermore, the

Milestones in the Virunga Transboundary Process

- | | |
|------|--|
| 1959 | Scientific studies on mountain gorillas begin. |
| 1966 | Dian Fossey begins her research on gorillas in the Virunga Mountains. |
| 1978 | The Mountain Gorilla Project is created to support collaboration for the protection of the remaining populations of mountain gorillas. |
| 1991 | The International Gorilla Conservation Programme is established. |
| 2005 | Rwanda, Uganda, and the Democratic Republic of the Congo sign the Goma Declaration. |
| 2006 | The three protected-area authorities agree to a revenue-sharing agreement for transboundary habituated mountain gorillas. |
| 2006 | Adoption of the Ten Year Transboundary Strategic Plan for the Central Albertine Rift Transboundary Protected Area Network. |
| 2008 | The Greater Virunga Transboundary Core Secretariat is constituted. |

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TSP has expanded the range of transboundary issues that are up for discussion—including, for example, transboundary fisheries and transboundary energy.⁶

The TSP's expansion of the issues subject to discussion was important for three reasons:

- The Virunga Volcanoes lie in a densely populated area, and the effects of human populations on gorillas and their habitat can best be addressed at a landscape level.
- The expansion of the mandate and of the issues subject to discussion reflected the success of the original IGCP transboundary initiative, which built trust among the three participating countries (Hammill and Crawford 2008). Such a positive outcome offers hope that protected-area authorities and their conservation partners may be able to apply the TSP framework to a wider area, to the benefit of other parks and species.
- The TSP addresses issues that may appear to be outside the original mandate but that may represent either (1) a threat to one or more of the national parks or (2) an opportunity for the transboundary process to provide assistance. For example, a history of violent conflicts between fishermen in the DRC and Uganda led to the decision to include fisheries in the TSP. (In the years since the creation of the TSP, evidence has mounted that it is important to address such spillover issues. There have been informal discussions among partners about the possibility of expanding the TSP's mandate even further, in order to tackle highly sensitive issues such as the illegal trade in timber harvested in the DRC.)

In the early planning stages of the TSP, a major obstacle emerged: a habituated mountain gorilla group from Mgahinga Gorilla National Park (MGNP), in Uganda, crossed into Rwanda, and the Rwandan parks authority used the gorillas for tourism. As this was the only habituated group in the MGNP, the financial implications for Uganda were significant. Ugandan officials accused Rwanda of having prevented the gorilla group from returning to Uganda. In talks facilitated by the IGCP, all three protected-area authorities agreed that if a habituated gorilla group crossed into another country, the national park authority where the gorilla group originated and the national park authority where the group relocated would share revenues from the sale of gorilla-tracking permits for this group (Hammill and Crawford 2008). This arrangement has resulted in significant redistribution of revenues among the three states.⁷

⁶ The goal of the transboundary energy discussions is to prevent, and present alternatives to, the charcoal trade, which has become a major driver of deforestation and a threat to wildlife in the Greater Virunga Landscape. Most of the charcoal that is traded originates within Virunga National Park.

⁷ Some time after the agreement had gone into effect, a second group of mountain gorillas, this time from the DRC, crossed into Rwanda; in keeping with the agreement, Rwanda shared 50 percent of the tourism revenues obtained from this gorilla group with the DRC.

The revenue-sharing agreement paved the way for the adoption, in May 2006, of the Ten Year Transboundary Strategic Plan for the Central Albertine Rift Transboundary Protected Area Network (TCS 2006). The plan highlights eight key areas for transboundary collaboration: enabling environment, landscape management, effective management capacity, collaboration, law enforcement, education and awareness, economic development, and financial sustainability.

The expansion of the mandate required adjustments to the implementation arrangements: to administer an organization with a more complex mandate, the three protected-area authorities agreed to establish an interministerial board, a secretariat, and technical committees. The interministerial board is the governing body and determines the strategic direction. The secretariat liaises with donors and coordinates the work of the partners, including conservation nongovernmental organizations (NGOs), civil society groups, and private-sector entities. By creating the secretariat, the TSP handed over to the protected-area authorities—who represent the governments of the three states—the role that the IGCP had filled for fifteen years. The new structure ensures a high degree of country-level ownership, with the IGCP serving a support function.

Technical committees were set up for four areas: (1) research, including ecological monitoring; (2) tourism; (3) community conservation; and (4) security and law enforcement. As of this writing, the Wildlife Conservation Society is facilitating the committee on research, and the IGCP is facilitating the committee on community conservation; lead organizations have yet to be found for the other two areas.

Financial arrangements

Through the concerted efforts of the three protected-area authorities and their conservation partners (in this case the conservation NGOs), sufficient funding was obtained from the Dutch Directorate-General of International Cooperation (DGIS) to establish the Transboundary Core Secretariat in 2008; the funding also covered the implementation of several elements of the TSP. Several decades of collaboration have generated enough trust and commitment for the transboundary process to have survived, and expand, but financial sustainability remains a challenge. At the time of writing, most activities under the implementation of the TSP, including the operational costs for the secretariat, were funded by the DGIS grant. The three protected-area authorities and the conservation NGOs are seeking support to establish a trust fund to cover basic operational costs for the secretariat and the protected-area authorities, but the fundraising target has not yet been met.

Conflict-related implementation challenges

Several examples highlight the complexity of the interface between conflict and the environment: the food-for-work program, the murder of gorillas, and ranger training.

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In 2004, in partnership with the World Food Programme and the ICCN, the IGCP recruited villagers to build a wall to prevent buffalos and elephants from leaving the Mikeno sector of Virunga National Park and destroying crops; the wall also helped to mark the park boundary (Languy 2004). On the day that the laborers were scheduled to be paid, rebels attacked, seizing money and personal goods from the laborers. Although the IGCP and its partners had acted in good faith, they had inadvertently created a source of income for the rebels. The question raised by this event is whether better foresight and a conflict-sensitive approach to conservation would have helped to identify potential risks.

In 2007, ten gorillas were massacred in the DRC; subsequent investigations revealed that the killings had been undertaken by ICCN rangers who were involved in charcoal production and trade (both of which are illegal in Virunga National Park), as a means of warning their colleagues not to interfere in the charcoal business (Jenkins 2008). This episode demonstrates that the gorillas' high economic value renders them vulnerable to being exploited—in this case, in an attempt to protect the charcoal trade. As with the food-for-work program, one must ask to what extent careful planning and a conflict-sensitive approach could have helped conserve the peace.

Ranger training offers a third example. In response to increasing threats to Virunga National Park, including poaching, charcoal production, illegal farming, and general insecurity, an elite ranger force was trained and equipped. The members of the force benefited from a number of privileges, such as better equipment, higher salaries, premium training, and new uniforms. Although professional training and equipment are prerequisites for successful park management, it is unclear whether the process by which this was achieved was appropriate. Some rangers later joined either the rebels or the government army, where their status as members of the elite ranger force made them eligible for higher compensation.

Workshop on transboundary fisheries

The border between the DRC and Uganda runs through Lake Edward, on which many people on both sides of the lake depend for their livelihoods. As a result of the conflict in the DRC, the institutions that were responsible for protecting Virunga National Park were rendered largely ineffective; this institutional weakness, combined with rapid human population growth, poverty, and illegal fishing practices, led to the collapse of fishing stocks on the Congolese side of Lake Edward. Congolese fishermen then began to exploit the fish stocks in neighboring Uganda; at the same time, Ugandan fishermen ventured into the Congolese side of the lake. The result was violent cross-border conflicts (Arumadri 2010).

In 2009, the World Conservation Society convened a transboundary workshop, during which stakeholders—including local fishermen, communities, the park authorities (for Virunga National Park, on the Congolese side, and Queen Elizabeth National Park, on the Ugandan side), the ICCN, and the Uganda Wildlife Authority—agreed on priority interventions. With facilitation from the World

Conservation Society, the two protected-area authorities, conservation NGOs, and fishermen's associations are now seeking funding to implement the planned activities.⁸

LESSONS LEARNED

The Greater Virunga Landscape represents an ideal opportunity to assess the biodiversity and peacebuilding impact of a transboundary approach to managing natural resources. The principles outlined in the following six sections played a key role in the successful implementation of the Virungas initiative, and may offer guidance to other incipient transboundary initiatives in Africa. Among the incipient transboundary initiatives for which the Virungas approach may serve as a model are the Sangha Trinational Protected Area (in Cameroon, the Central African Republic, and the DRC), the Tri-National Dja-Odzala-Minkébé Landscape (in Cameroon, Gabon, and the Republic of the Congo), the Mayombe Forest Transboundary Initiative (in Angola, the Republic of the Congo, and the DRC), and the Tai-Sapo Forest Complex (in Liberia and Côte d'Ivoire).

Technical collaboration and a bottom-up approach

By allowing the transboundary initiative to continue even when high-level political cooperation was difficult, technical collaboration and a bottom-up approach appear to have been crucial to the success of the Virungas process. In 2002, for example, Uganda and Rwanda were engaged in combat; even so, modest technical cooperation, from park warden to park warden, was still possible. Of course, during periods of political tension, patrols made up of rangers from different countries had to be suspended; even so, rangers coordinated patrols with their counterparts on the other side of the border. It would be interesting to compare the efficiency and the degree of political buy-in associated with the Virungas approach with the inception of the Mayombe Forest Transboundary Initiative, where implementation structures were put in place before the completion of technical studies or a TSP.

Park rangers, whether in charge of tourism, monitoring, or law enforcement, met three to four times a year to share their experiences. Because the participants realized that they often encountered the same problems, these regional meetings helped to foster a shared vision and reinforce common goals. The meetings also generated a number of measurable results with respect to collaboration on law enforcement, monitoring, and tourism. Government decision makers were made aware of these results; eventually, after many years of informal collaboration, the partner countries agreed to formalize the transboundary process—first through

⁸ Other activities undertaken during the 2008–2010 implementation period included a 2009 transboundary meeting on energy and a 2010 cross-border mountain gorilla survey (IGCP 2011).

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the 2005 Goma Declaration, and later through the adoption of the TSP and the establishment of a transboundary secretariat.

Financial sustainability

Donor funds permitted the transboundary process to be sustained. As a result of continuous transboundary work, confidence in the process and the results has increased—as have donor funding levels and government commitment. It will be important, in the future, for the partner countries to finance transboundary activities through revenue from protected areas, rather than by depending on external funding. A combination of trust fund income and revenues from park entry fees should be sufficient to achieve long-term financial stability; however, further research into financing opportunities, such as payments for ecosystem services, will be required.⁹

Flexibility

The political environment has been extremely difficult and unpredictable, particularly in the DRC—where, as noted earlier, park authorities had no access to the Mikeno sector of the park for two years. During this period, park rangers had to cope with a military and political problem that transcended their mandate and expertise. At the same time, rangers continued to feel committed to the welfare of the mountain gorilla populations. The only solution was to obtain information through an informal network; in this delicate situation, a history of collaboration with many partners and stakeholders proved helpful. Ultimately, for many reasons not necessarily directly related to partnership engagement, the mountain gorillas survived the crisis—and even increased their numbers between the 2003 and 2010 surveys (IGCP 2011).

Quick actions and contingency plans

Because transboundary negotiations can require years or even decades, it is necessary to take short-term measures to mitigate current environmental threats, while at the same time upholding the social, political, and economic principles enshrined in a constantly evolving transboundary process. The buffalo wall in the Mikeno sector of Virunga National Park, an example of such quick-impact projects, protected crops from elephants and buffalos and set a clear boundary around the park sector, to the benefit of both local communities and park authorities.

Transboundary processes are highly complex and politically volatile and can be sidetracked for any number of reasons; contingency plans that allow quick and decisive action are therefore essential. During the crisis period in the Virungas,

⁹ Ecosystem services, the benefits that people obtain from ecosystems, fall into four main categories: provisioning, regulating, cultural, and supporting services.

the Congolese protected-area authority, ICCN, and several conservation partners developed an emergency plan, pooled resources, and jointly agreed on urgent actions. The emergency plan, an annex to Virunga National Park's management plan, is a dynamic document that is constantly amended in light of the current situation.

Mixed committees

Mixed technical committees, consisting of experts from all three partner countries, facilitate information exchange and help prevent narrowly focused national interests from sabotaging the transboundary process. Another benefit of the mixed committees is that experts from the country that is most advanced in certain technical areas are able to advise their colleagues in partner organizations, including NGOs, government ministries, and protected-area authorities. For example, a decision-support system for wildlife monitoring and law enforcement, which was first developed and piloted in Uganda, is now used throughout East and Central Africa.

Conflict-sensitive conservation

Because conservation is inextricably linked to the natural resources on which communities depend for their livelihoods, it can spark conflict. On the basis of a 2007 study carried out in the Greater Virunga Landscape by Anne Hammill and Alec Crawford, the International Institute for Sustainable Development (IISD) found that many conservation practitioners, including park authorities, encounter a range of conflicts, from violent conflict during periods of instability to daily tensions with local populations (Hammill and Crawford 2008). The IISD also found that many conservation practitioners working in conflict and post-conflict situations are not necessarily experts in preventing and managing conflict. To address this issue, IISD and its partners developed a manual to guide the daily conservation work of both decision makers and practitioners (Hammill et al. 2009).

The manual is based on a conflict-sensitive conservation (CSC) approach, which is designed "to demystify and operationalize" links between human security and environmental conservation (Hammill et al. 2009, 1). The methodology was piloted and field tested in Queen Elizabeth National Park in Uganda, and in Virunga and Kahuzi-Biega national parks in DRC (the latter located southwest of Lake Kivu) (Hammill et al. 2009).

The manual is guided by three principles:

- Protecting human life and avoiding bodily harm.
- Minimizing the risk of sparking conflict, and ensuring that conservation does not aggravate existing conflict. This is particularly important in regions with recent histories of political instability or conflict, where tensions can rapidly escalate into violence.
- Maximizing the value of conflict-prevention measures by creating opportunities for peacebuilding.

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Thus, the overall goal is not only to ensure that conservation efforts do not exacerbate existing conflicts, but to use such initiatives to help build peace.

Armed civil conflicts in the Albertine Rift have created acute threats to biodiversity, but research demonstrates that continued transboundary management—such as regular meetings and joint activities on the part of park authorities during conflict periods—is not only possible but can also foster biodiversity conservation (Hammill et al. 2009). In the Greater Virunga Landscape, the use of the CSC approach appears to have confirmed that conservation-related peacebuilding opportunities do exist—and that in many instances, peace could be better sustained through greater conflict sensitivity in general, and through the application of the CSC approach. More importantly, where conflicts (conservation related or otherwise) were identified, strategies—including training for conservation officers—were developed to mitigate the conflicts' impact.

In October 2009, the CSC approach was successfully applied at a workshop for the establishment of transboundary corridors in the Taï-Sapo region, between Côte d'Ivoire and Liberia. The use of CSC became a key element in the recommendations included in the workshop report, and the workshop participants expressed the view that the CSC approach should be built into all elements of the Taï-Sapo transboundary process. Case studies from Kahuzi-Biega and Queen Elizabeth national parks (Hammill et al. 2009), as well as the experience of Côte d'Ivoire and Liberia, have demonstrated to donors, NGOs, and wildlife authorities that further research should be undertaken on the use of the CSC approach in other regions, particularly in areas with a history of violent conflict. Ideally, the case studies and the Taï-Sapo experience will inform the development of a best-practices guide for natural resource managers worldwide, both within and outside of conflict areas.

CONCLUSION

In light of a growing global trend toward the creation of TBPAs, it is important to learn from past experiences, both failures and successes. To further refine transboundary conservation management to support peacebuilding, it is necessary to capitalize on local and international interest in protecting natural assets, and to develop management tools that simultaneously reflect local concerns, prevent conflict, and minimize the risk of exacerbating existing tensions. Sound technical studies, effective information exchange, and practical guidelines for these heavily context-dependent processes are essential.

In the case of the Greater Virunga Landscape, mountain gorilla populations have increased, despite several decades of intermittent conflict. This is an extraordinary achievement—both in light of the threats and pressures to which the mountain gorilla population is subject, and when one considers the fate of many other species: according to monitoring data collected by rangers, many of the region's lion, hippopotamus, and elephant populations are in decline and could soon face extinction (Plumptre and Marris 2007). So why did the mountain gorillas fare relatively well? One possibility is that their habitat is reasonably well

protected; another is that revenues from gorilla tourism have given the mountain gorilla populations a fighting chance. But are the mountain gorillas genuinely enhancing biodiversity conservation by attracting attention to their habitat, or will they alone prosper, while other species that inhabit the same area, but have lower tourism value, become endangered or extinct?

Compared with traditional conservation, transboundary collaboration requires more technical and political interest from elected officials and appointed government authorities. It demands a shared vision among the disparate actors—including both communities and state authorities, who are the ultimate guardians of the ecological assets in peril—along with a willingness to commit human, financial, and technical resources to transboundary collaboration. In post-conflict or politically unstable states, conservation is particularly challenging and complex, and is inherently accompanied by the risk of conflict. Lack of clarity with regard to land tenure, in particular, often creates complex moral and sociopolitical settings in which conservationists, government authorities, and international organizations must balance biodiversity goals, conflict sensitivity, and socioeconomic sustainability, while garnering support from and for tribal, local, regional, and national-level authorities—all within an environment of mutual respect.

New economic incentives for conservation, coupled with conflict-sensitive transboundary processes, could go a long way toward improving the management of protected areas and ensuring the sustainability of conservation projects in conflict zones worldwide. By focusing on conservation models that incorporate payments for ecosystem services that support the entire transboundary ecosystem, conservationists and protected-area authorities may be able to transition from strategies focused on isolated protected areas and single species to more sustainable, ecosystem-based planning.¹⁰ Holistic approaches are especially critical where conflict heightens the already pressing threats to ecological conservation.

In post-conflict areas throughout equatorial Africa, which are home to some of the world's most impressive levels of biodiversity, the threat of reignited conflict is ever present. But lessons from the Greater Virunga Landscape and other transboundary processes suggest that strengthening cooperation on “soft” issues, such as conservation, can serve as a pathway to peace—specifically, by leading to collaboration in other areas that have been more traditionally associated with peacebuilding. Anecdotal evidence suggests that, in the Greater Virunga Landscape, improved cross-border communication between protected-area authorities and NGOs has strengthened cooperation, which is essential to peacebuilding. The implementation of a trilateral revenue-sharing agreement and the expansion of the TSP's mandate to include joint law enforcement, emergency planning, economic development, and research into energy needs and the drivers of deforestation are steps in the right direction. Nevertheless, two tasks continue

¹⁰ An example of such a model is the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (known as the UN-REDD Programme). For more information, see www.un-redd.org.

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to pose a considerable challenge: providing conservationists and other stakeholders with the appropriate tools to understand the potential impact of their work on peace and conflict, and helping them to recognize and exploit peacebuilding opportunities.

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