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Protected Areas and Equity Concerns

RICHARD J. BLAUSTEIN

Protecting areas to preserve biodiversity raises equity concerns for local and indigenous peoples. Conservationists and peoples' rights advocates are often at odds, whether miscommunicating or working in direct opposition. Policies for simultaneously safeguarding cultural and biological diversity can be achieved.



In a vivid evocation of what critics term "guns and fences" policies for protected areas, gates at the Periyar Tiger Reserve in the southern state of Kerala serve as a clear boundary against local people's access. However, equity relations are changing at the reserve, as formerly marginalized indigenous peoples play a growing role in conservation and consultation regarding reserve policy. Photograph: Ashish Kothari.

A clear link exists between cultural loss and diminished biological diversity. According to anthropologist Peter Brosius and conservation biologist Kent Redford, a common and epochal pattern of cultural and biological loss emerges as a sort of continuum: At one end is the loss of cultural emblems such as languages, villages, pilgrimage routes, and various traditions, while "at the more biological end of this spectrum," they write, "can be counted the extinction or erosion of genes, populations, species, and ecosystems, as well as the loss of migratory routes and ecological interactions." Both areas of loss—and the agricultural plant and livestock varieties in between—are spurred on by the homogenizing forces of globalization and its environmental corollary, global environmental change. The collective effect of the losses is a redundant and monoculture-like totality of locales, landscapes, and cultures, called a "homogocene."

Brosius and Redford decry the fact that advocates for redressing the two

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The Skukuza Symposium on Freshwater Protected Areas

Freshwater protected areas are an especially important, if little discussed, aspect of conservation. "Water is an essential resource for all life," explains Robin Abell, senior freshwater conservation biologist at the US branch of the World Wildlife Fund, "and excluding human communities from freshwater systems and the services they provide is untenable. It is to the benefit of people to protect freshwater systems so that they can continue to provide services long into the future." Policy investments for freshwater protected areas have been lagging behind protection of marine and terrestrial systems.

A unique effort to address the lack of attention given to science and policy for freshwater conservation was held in October 2006 at Skukuza Camp, at Kruger National Park in South Africa. Abell says, "The Skukuza workshop was unique first and foremost in its topic. There has never been an international conference focused on the topic of freshwater protected areas."

The conservation community has paid little attention to freshwater protected areas for a number of reasons, Abell continues: "because freshwater systems and species in general have been lower profile, despite their generally higher levels of threat; because protected areas are associated with complete exclusion from resources, and access to freshwater is a fundamental human need; and because we know that we can't put a fence around a freshwater system and call it protected." "The Skukuza meeting," she says, "addressed these issues head-on and concluded that protected areas can be a viable and effective strategy for conserving freshwater systems and their biodiversity, when applied in conjunction with other strategies."

Joshua Viers, an ecologist in the Center for Watershed Sciences at the University of California–Davis, also participated in the Skukuza symposium. "The Skukuza venue was appropriate and enlightening," he says, "given the very nature of it being a protected area with numerous freshwater resources which are not immune to activities outside the park boundary. For example, there are 3.4 million people—with freshwater needs—living upstream of where the Olifants River enters the park." Managers at Kruger National Park acknowledge the multiple impacts on freshwater resources that are outside their immediate control, which, he says, "requires an holistic approach to catchment management from source to seas."

The current state of science for freshwater sites was a topic at Skukuza. Viers comments, "We are now in a position to quantify freshwater ecosystem processes at the riverscape scale. Riverscapes encompass not only the longitudinal or downstream dimensions of water as a resource but also the lateral and vertical dimensions, its nutrients and sediments, and its dynamism over space and time." Flows are essential, he says, for maintaining ecosystem processes. "For conservation purposes," he stresses, "we must do a better job of valuing services provided by freshwater ecosystems."

"At the most basic level," Abell summarizes, "we know that freshwaters are embedded within landscapes and that effective freshwater conservation must incorporate catchments considerations. Freshwater ecology, a discipline rich in theory and practice, has a lot to offer the science of designing and managing protected areas for freshwater."

types of losses are often pitted against one another. "As we face this inexorable slide into the homogocene era," write Brosius and Redford, "our ability to respond is hampered by the fact that the solutions that have been offered have been fragmented and disconnected. For the most part advocates of one form of diversity are not speaking to advocates of other forms of diversity in any productive way. This state of affairs is made worse by the fact that when they do speak to each other, they often position themselves in direct opposition."

While it may seem self-evident that protected areas, the foremost embodiment of conservation, would yield many opportunities for simultaneously safeguarding cultural and biological diversity, their establishment has engendered disputes, discontent, and sometimes even violence. Moreover, what has been written about protected areas in the popular and academic press reveals deep divisions of outlook, reflecting the fundamental differences between disciplines. For example, social scientists often disagree with biologists and ecologists about what needs to be protected in a given area when both biodiversity and peoples' livelihoods are threatened. An example of this divide would be the current contention over protected areas in Central Africa.



The Skukuza workshop, located near the banks of the Sabie River, evoked challenges, opportunites, aesthetic rewards, and scientific advances for freshwater protected areas. Here, at the nearby Lake Panic bird hide, a pod of hippos congregates and supports stationary birds. Photograph: Joshua Viers.

Matching the need for protected areas with the matter of equity concerns is a compelling challenge for conservation. Protected areas, for the most part, are established in the most biodiverse areas of the world, in the tropics and other developing nation locales. Equity brings attention to the rights of indigenous and local peoples who live within or depend on these biologically rich landscapes to pursue livelihoods and secure their well-being. Protected areas policy has also led to the resettlement of peoples to areas away from the park, raising restitution issues, which in the past have been ignored. Other important procedural issues and norms have also been raised, such as

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prior informed consent, property and human rights, the relationship of rights holders and duty bearers, and emergency actions to save severely threatened species.

Most protected areas specialists agree that, for conservation to be successful and enduring, it must address equity concerns. Steven R. Brechin, a Syracuse University sociologist who has written on protected areas for nearly 20 years, says, "Using issues of equity to protect social justice in conservation is an important road to follow. Right now it is not the dominant role within conservation. Trying to find a systematic way that issues of good governance and equity enter the process is difficult but necessary."

Rationales and challenges

There are over 100,000 diverse protected areas that cover approximately 12 percent of Earth's land surface, and significant international mandates, such as the World Summit on Sustainable Development Action Plan and the Convention on Biological Diversity, call for more marine and terrestrial protected areas. The World Conservation Union (IUCN) defines a protected area "as an area of land and/or seas especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means." IUCN's chief scientist, Jeff McNeely, explains: "Given modern pressures on natural resources, protected areas seem an essential element to any significant biodiversity program. Protected areas can vary from those that exclude people to those where people are considered an essential part of the ecosystem but are enjoined from certain forms of resources exploitation, for example, industrial-level logging or converting rich native forests into monospecific plantations."

Ashish Kothari is founder of the Indian environmental group Kalpavriksh and cochair of IUCN's Theme on Indigenous and Local Communities, Equity, and Protected Areas. "Protected areas are extremely important," he says, "in conserving many of our last remaining representative ecosystems and wildlife populations, giving a chance to threatened species, and providing water security to tens of millions of people. They are the best defenses against large industrial or commercial enterprises such as mining and big dams."

Namibian-based environmental scientist and consultant Juliane Zeidler points out that the recent Southern African Millennium Ecosystem Assessment "indicates that overall in the southern African subregion biodiversity is faring better than it is usually asserted... [and] that protected areas contribute significantly to the conservation of biodiversity." In addition to standard protected areas, Zeidler points out, in Namibia there is an active Community-Based Natural Resource Management Program that establishes conservancies "where residents currently continue farming but collectively manage wildlife in order to benefit both from better natural resource management practices and from capturing tourism revenues." Namibia's network of community conservancies, which now number more than 40, has "reversed the prevalence of illegal hunting and poaching, promot[ed] the increase of wildlife and the maintenance of wild habitat, and helped to promote wildlife and tourism as legitimate and viable uses on communal land." However, Zeidler adds, "many of the economic benefits that come from the use of wildlife in conservancies accrue at the community level and do not necessarily offset the costs of losses to individual households caused by wildlife," which destroy crops and prey on domestic livestock. "These conflicts result in financial losses and disrupt the lives of local people."

In India, Kothari says, "protected areas face several equity challenges. Firstly, they continue to be planned and controlled by a small bureaucracy with inputs from a handful of NGOs....This needs to be opened out to more democratic processes involving many more civil society actors, including independent wildlife experts and local communities. Second," he continues, "the law governing PAs has very inadequate spaces for the participation of local communities. Third, and most serious, this law and its interpretation by courts and the bureaucracy has meant enormous livelihood deprivation, dispossession, and the disregarding of basic rights of millions of people."

In addition to issues of participation and dispossession, other weighty equity concerns include the assessment of property rights; excessive violence in the enforcement of a park's rules or boundaries; and the critical issue of access restrictions on natural resources, such as wood and various medicinal and dietary fauna and flora, that figure in the livelihoods of local peoples.

Divisions between disciplines

The equity challenges of protected areas have been debated for almost a generation. The intense attention in recent years comes from well-noted articles by writers such as journalist Mark Dowie and anthropologist Mac Chapin, who have strongly criticized neglect of the rights of peoples living in or near protected areas and the approach of large conservation organizations in the establishment of protected areas. Some in the conservation field have welcomed this criticism, while others feel that it is unbalanced and too narrowly aimed at conservation. Carter Roberts, president of the US branch of the World Wildlife Fund (WWF-US), gives a nuanced response to this criticism: "The real picture here is much more complex and not nearly so black and white as the articles to which you refer have portrayed it. Still, we welcome this conversation because it draws attention to and highlights the social justice issue in conservation.... Our main concern now is in strengthening and implementing [our indigenous peoples] policy, increasing our capacity on social issues and on expanding our partnerships and dialogue with indigenous organizations, social scientists, and social advocacy groups."

Differences and divisions regarding protected areas often run along professional and disciplinary lines. Social scientists and peoples' rights advocates often exhibit outlooks and emphases markedly different from those of conservation biologists and ecologists. This can lead to diminished cooperation or even embitterment.

"Many biologists still think that people are the problem," states McNeely.

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"Sociologists typically think that people are the answer. The solution probably lies somewhere between."

Common ground is hard to find, particularly in a field characterized by constant conflict. "Biologists have something to learn," continues McNeely, "from social scientists about the human impacts on landscapes. Compelling evidence collected by archaeologists and anthropologists, for example, indicates that many parts of the Amazon basin that today are considered 'untouched wilderness' were in fact densely populated by fairly large villages before the arrival of Columbus.... It is no exaggeration to say that the rich biodiversity of Amazonia is to a significant degree due to pre-Columbian activities of the native peoples."

"Social scientists, on the other hand," he says, "can learn more about the natural systems that support peoples and the ecosystems that underpin communities. Dialogue between the different disciplines offers great potential for finding productive solutions to resource management problems."

Redford, a conservation biologist for Wildlife Conservation Society, concurs: "We are increasingly recognizing that division between disciplines serves us poorly.... This is compounded by the differences between academics and practitioners, both within as well as between disciplines. Biologists need to realize we do not have a corner on conservation." Redford argues that the skills of biologists are complemented by the skills of others, from anthropologists and political scientists to poets and preachers. "We in the biological community need to shed the burden of responsibility for saving the world's biodiversity. We have stumbled and fallen and cannot carry the burden any further without help. And there are others willing to help."

Brosius is with the University of Georgia Department of Anthropology and is also the director of the university's newly established Center for Integrative Conservation Research. "There is a huge amount of social science work being done on conservation," Brosius says, "and it provides interesting and important insights about conservation that those in the conservation community have not recognized. In part this is because this work is published in academic journals, and in part because it is often very jargony." Social scientists can engage directly with the conservation community by going to conferences and doing the same things that are done within the disciplinary communities. "At the same time," he adds, we can "provide critiques honestly and unapologetically,...subject[ing] our own social science critiques to critique by those we are writing about—the conservation community."



Forest officials meet and talk with a nomadic pastoralist from the Gujjar community in the Sitanadi Sanctuary and the Corbett Tiger Reserve, in Uttarakhand, India. New efforts to bring greater equity considerations into conservation management practices have made significant progress with regard to tiger conservation in India and Nepal. Equity efforts include discussions on natural resource access and conservation goals with local, indigenous, and nomadic peoples. Photograph: Ashish Kothari.

In the field: New synergies

Protected areas in India, Nepal, Papua New Guinea, and Panama, while not necessarily representative of the whole, highlight some of the encouraging policies and continuous challenges that feature in programs in the developing world. In the Himalayan subcontinent, for example, the effort to conserve rare tigers was especially controversial, as the conservation proponents clashed with local peoples over the latter's access to natural resources and residential displacement. Roberts, McNeely, and Kothari all note recent advances in tiger conservation that are due to greater attention to local peoples' needs.

Roberts describes a WWF program in Nepal as an example of success: "One of the most effective ways we have found to protect the forest habitat of Asian tigers and rhinos...has been to supply Nepalese villages with biogas stoves and generators." The 200 villages in the program now have electricity and cleaner sources of energy than burning trees for fuel. "It is a simple solution for people and nature."

Kothari adds complexity to this picture, describing a new policy enacted in India: "One major recent breakthrough is an amendment to India's Wildlife [Protection] Act, setting up a National Tiger Conservation Authority, which contains civil society representatives and provides for a more participatory process by which

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Students of the University of Papua New Guinea combine the collection of field data with computer statistical analysis during a field course in Herowana, in the Crater Mountain Wildlife Management Area (left) and at Gulf Province, Papua New Guinea (right). University courses, undertaken in partnership with the Wildlife Conservation Society, focus on field data collection, biological analysis, and technical report writing. Photographs: Ross Sinclair.

to notify and manage tiger reserves.... Such provisions are needed for all protected areas. However, there are also some aspects of the amendments that may undermine certain essential conservation provisions of the existing act, so these need to be reviewed."

Papua New Guinea offers another vivid example. Equity concerns are a priority in Papua New Guinea, as 97 percent of the land is held in title by indigenous peoples, according to Paige West, an anthropologist from Barnard College and Columbia University. West works not only with local peoples but also with conservation scientists. "There are over 800 living languages in Papua New Guinea," West relates. "This makes working in Papua New Guinea difficult, because conservation areas always cover land held by more than one sociolinguistic group and because conservation ecologists have to work with people with sometimes radically different societies and conventions."

West's colleague in Papua New Guinea, Wildlife Conservation Society ecologist Andrew Mack, says, "I share many common concerns with Paige for the well-being of people in Papua New Guinea, and she has a great deal of insight and experience that complements mine. I suppose our collaborations evolved because we both worked in the same geographic area, which put us in contact, and in the course of that contact we could see that each of us has things to offer for the goals we share. Conservation ultimately requires people to modify how they use and impact the environments, so working with someone who studies human culture and behavior clearly enhances conservation."

Daniel Suman, an oceanographer with the University of Miami's Rosenstiel School of Marine and Atmospheric Science, works on protected areas in the Americas and offers examples from Panama that clearly indicate continuing equity challenges. The Coiba National Park, for example, features several islands, 240 kilometers (km) of coastline, and a large marine area. As the central island was a former penal colony, there was minimal and restricted settlement, so rich tropical forest flourished. In 2005, Coiba National Park was designated a World Heritage Site.

At Coiba, restrictions on fishing and efforts to reduce the number of small-scale fishers have caused local resentment. Complicating matters, some small-boat catch is exported to Miami buyers, and sport fishing for wealthy customers is allowed in the reserve. "Equity concerns," Suman says, "are alternatives for poor peoples." Suman is developing a new management plan for the national park with the Smithsonian Tropic Research Program, the Panamanian government, and the Panamanian conservation group ANCON (Asociación Nacional para la Conservación de la Naturaleza), with funding from Conservation International. "This planning process includes a significant amount of public participation," says Suman. "AVINA [a foundation working in 14 Latin American countries] and ANCON are engaged in a project to provide microfinancing to small business in the areas as alternatives for local communities."

Another example is Punta Patiño, a private reserve owned by ANCON. Punta Patiño has rainforest and mangrove forests and is a Ramsar site (listed by the Ramsar Convention on Wetlands of International Importance). "The issues concern several communities adjacent to Punta Patiño," says Suman. Punta Alegre is an Afro-Caribbean fishing community of about 1000 people that borders the reserve. "Villagers claim that the lands where they used to cultivate crops are now claimed by ANCON as part of the reserve.... Moreover, there is no supply of potable water in the village." In addition, there are Embera Indian communities on the western side of the reserve, and



In Punta Alegre, locals have to collect pumped water several times daily. The coastal town is situated adjacent to the Punta Patiño Natural Reserve, which has cut Punta Alegre villagers off from their historic source of potable drinking water. The actual boundaries of the reserve are contested by native residents. Photograph: Daniel Suman.

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they assert that ANCON has taken what were traditionally Embera lands. When ecotourists visit the villages, ANCON pays the village chief only five dollars per person. "In other words," says Suman, "there is almost no benefit to the Embera village from ecotourism activities, and the community claims to have lost its land to ANCON. "

A final example is Bastimentos Island National Marine Park, a small, 16-km^2 island with 300 km^2 of marine reserve that features mangroves, seagrass beds, and coral reefs. The indigenous people, the Ngobe-Bugle, fish in and around the park, and the small-scale fishing is highly regulated. Development going on outside of the park, largely for expatriate retirement housing, is degrading the environment, causing sedimentation, mangrove removal, sewage, and coral reef loss. "The equity concerns are about the extremely poor fishers and local residents alongside an extremely wealthy expatriate community," Suman explains. "Due to the development, the natural resource base of the indigenous peoples and other local Bocas del Toro residents is being degraded. The people that are losing out are the poor people."

Future hopes

Notwithstanding the numerous equity challenges, institutional commitments have set new markers and directions for protected-area policy. For example, the Convention on Biological Diversity, signed by over 180 countries, launched its protected-areas program in 2004; one of its four program elements is centered on equity concerns.

The best hope for protected-area policy resides in cooperation. "There is a real need for social scientists and conservationists to sit down and work on issues," Brechin says. "We need a dialogue, very sustained, to hash things out, [and] a sincere effort to promote this dialogue."

Redford stresses the work in the field. "At the front line of innovation are people working at individual sites to answer questions rich with the texture of local ecology, culture, history, politics, and opportunity," he says. "The answers will not come from broad policies but from these case-specific examples where heroic people are bucking the tide and trying to work together to save the world from the true global threat of homogenization."



In the vicinity of the Patiño Reserve in Panama, artisanal fishers fish in the Gulf of San Miguel, in the Pacific coast's Darién Province. The government has restricted part of the Gulf of San Miguel to artisanal fishing and prohibits industrial shrimp trawling, although enforcement of the trawling ban is questionable. Sport fishing is allowed in another area of the Darién coast, where artisanal fishing activity is largely restricted. Photograph: Daniel Suman.

Likewise, West, who works with students from diverse disciplines on conservation and equity projects, believes that a combination of education and actual experience holds great promise for conservation. "For these students," she says, "I don't know whether they are social scientists or ecologists, [but] the future of socially equitable conservation is with our students and their projects."

Similarly, Kothari maintains real possibility for equity and conservation in the future. "My biggest hope," says Kothari, "is that we will get to a situation, across the world, where indigenous and local communities will demand the creation of protected areas, to protect themselves against outside destructive forces, and to derive social and economic benefits from them without compromising on their conservation values. This is beginning to happen in some countries and will hopefully spread as the new conservation paradigms of collaborative management and community conserved areas gain strength."

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