An Anthropological Perspective on Some Unexpected Consequences of Protected Areas

Introduction

One of the remarkable transformations of the conservation community in recent years has been the proliferation of sociocultural anthropologists in and around protected areas and in conservation meetings and organizations. Anthropologists have been increasingly involved in institutions such as the World Conservation Union (IUCN) and the Society for Conservation Biology's Social Science Working Group. This change reflects an increase in the extent of protected areas, their tendency to be located in remote rural areas where anthropologists have traditionally conducted long-term ethnographic field research, and academic and theoretical changes within anthropology, with its increasing interest on globalization, environmentalism, and political ecology.

This proliferation has had a mixed reception. Some believe it results in work that is eccentric at best or that dangerously diverts resources (and journal space); others believe it is an essential move. Anthropologists' interests may seem tangential (or opaque) to the practical work of saving nature. But we see protected areas not just as sites rich in biological diversity but also as rich sites of social interactions and social reproduction. By social reproduction we mean the maintenance and replication of social practices, beliefs, and institutions that would have been considered "culture" in anthropology in the past. We also see protected areas as sites that work to both meet conservation goals and restructure how people understand, use, and interact with their surroundings (P.W., J. Igoe, & D.B., unpublished). As such, protected areas affect people living within and adjacent to them and people displaced by them. They also affect the lives of people working for the agencies, governmental and nongovernmental, who create them and manage them.

Protected Areas as a Form of Virtualism

Thinking about the social effects of protected areas matters, in part, because of the sheer scale of protected areas worldwide and because of the ways in which they are coming to resemble each other, as a form of government, in different locations. There are now more than 100,000 protected areas covering more than 12% of the world's land surface, over 20 million km^2 (Chape et al. 2005). Our record of them (the World Database of Protected Areas, hereafter WDPA) has become more accurate and comprehensive. New technologies (e.g., remote sensing, GIS software) and better biological knowledge allow increasingly precise assessments of the effectiveness of existing protected-area networks in conserving valuable biodiversity (Rodrigues et al. 2004). This does not mean we have sufficient protected areas or that the existing protected areas do the job they were meant to. Regardless of their sufficiency or reality on the ground, protected areas are coming to form a way of *thinking* about the world, of *viewing* the world, and of *acting on* the world (a large and often contested part of the world), which in itself can have important effects. For many conservation biologists, this concept is illustrated by the discussions surrounding "paper parks." Implicitly, whether they work or not, we recognize the intellectual, and often legal and practical, aspects of such a definition.

In many ways protected areas have come to constitute a form of what Carrier (1998) calls *virtualism*, which he defines as the attempt to make the world around us look like and conform to an abstract model of it. He used the concept to criticize thinking and policies in economics in which there is a common tendency to abstract human decision making from its complex social context and to build models of the world and its workings that cannot take the full range or complexity of people's daily social activities, practices, and lives into account. This much is normal for modelers. But these abstractions become virtualism when the real world is expected to transform itself in accordance with the models:

> Perceiving a virtual reality becomes virtualism when people take this virtual reality to be not just a parsimonious description of what is really happening, but prescriptive of what the world ought to be; when, that is, they seek to make the world conform to their virtual vision. Virtualism, thus, operates at both the conceptual and practical levels, for it is a practical effort to make the world conform to the structures of the conceptual (Carrier 1998:2).

Conservation Biology Volume 20, No. 3, 609–616
©2006 Society for Conservation Biology
DOI: 10.1111/j.1523-1739.2006.00432.x

Protected areas necessarily seek to protect nature and biodiversity by abstracting them from their complex social contexts. Much protected-area legislation and policy is a practical exercise in virtualism—defining what human behavior and actions ought to be in a particular location and restricting it accordingly. But the legitimacy of this project is enhanced by other, subtler virtualisms. Individually, the histories of particular protected areas are often simplified by omitting the role people have played in forging these landscapes (Adams & McShane 1992; Gomez-Pompa & Kaus 1992). The impacts of their creation on residents and neighbors frequently have been ignored or underestimated (Brockington 2002). The visions of wilderness and nature in whose cause some protected areas have been gazetted have themselves much more complex social contexts than is first apparent (Cronon 1995). Collectively, when marshaled into databases or networks, they are a way of seeing, regulating, and governing parts of the world (West & Carrier 2004; Duffy 2005). Thus, their representation simplifies the realities while shaping policy and practice in ways that can be problematic for conservation (Rodrigues et al. 2004). A brief consideration of the WDPA illustrates this point.

The WDPA has documented a dramatic increase in protected areas in the last decade such that the target set at the Fourth World Parks Congress in 1992—to set aside 10% of the world's land surface in protected areas—was achieved by 2003. Yet it is misleading to assume that the increase represents creation of new protected areas. Some of it reflects better record keeping. The 2005 version records more than 4 million km^2 of protected areas that existed in 1990 but which the 1992 version did not report (D.B., unpublished data). It is also misleading with respect to marine and terrestrial protected areas. The former officially covers only 4.7 million km^2, a tiny proportion of the world's oceans. But the category of marine protected area conceals substantial amounts of land (particularly in the world's largest park, the North East Greenland National Park). Mapping protected areas onto a 1-km^2 model of the world's oceans and seas, Chape and colleagues (2005) found that <1.9 million km^2 of seas are covered. It is possible, given the tendency of the database to underreport terrestrial protected areas, to omit data on the size of protected areas (12% of records), and to omit dates of establishment (35% of records), that the 10% target of 1992 had already been achieved at the time it was set (D.B., unpublished). Yet that target galvanized funding and lobbying for protected-area creation and provided a focus for NGO action worldwide.

But perhaps most important the WDPA is only a record of state activity. It has no records of individual action or the work of collectives. This means it can substantially underestimate land set aside in ways that are useful for conservation. In South Africa more than 13% of the country is set aside as privately owned and operated game farms, compared with only 6% set aside in state and provincial protected areas. Similarly in Scotland and New Zealand extensive hunting estates or covenants of private land exist, and none is recorded in the WDPA. Diverse forms of informal community conservation and natural resource management, from sacred groves, to calf pastures, to community conservation areas, are also omitted (Pathak et al. 2004). Yet recent estimates suggest that forests under community conservation in Africa, Asia, and the Americas cover 3.7 million km^2 and are at least as extensive as forested protected areas (Molnar et al. 2004). As with protected areas, the functions these lands provide are diverse and difficult to easily assess or categorize.

Within the WDPA, classification of protected areas is made based on the IUCN categorization system. The system sorts protected areas into seven categories from the most restricted access wilderness areas (1a, 1b) to sustainable-use areas (6). This taxonomy is being used in an increasing number of countries to rewrite and modify protected-area legislation (Bishop et al. 2004). Management categories intended to describe a park's status are now used to prescribe, and proscribe, activities within it. Descriptive categories end up having material effects.

All this matters because protected areas are increasingly becoming one of the benchmarks by which conservation activity is measured. This is visible in international policy in the aforementioned 10% target of the IUCN. In addition one of the indicators of goal 7 of the Millennium Development Goals is the ratio of area protected for the maintenance of biological diversity (Roe 2003). At the grassroots level this matters because protected areas are increasingly becoming the means by which people experience and interact with nature and the wild. This is clearly visible in the growth of ecotourism enterprises, which tend to be symbiotic with protected areas. Their chances of success are stronger if they can be associated with officially protected areas and are quite possibly weaker where they offer experiences within the same but unprotected landscape. An increasing proportion of tourists are therefore seeing beautiful landscapes and valuable biodiversity in protected landscapes.

Sometimes tourism is linked to protected areas because the beauty and diversity only persist where they have been protected. But this is not necessarily true and is by no means always so. A number of observers have voiced disquiet that attention to particular protected places can distract from the broader landscapes of which they are part to the detriment of broader-scale ecological processes beyond their borders (Proctor & Pincetl 1996). Perhaps in the long term this matters most because it is practical, experiential love of nature and being in nature that keeps conservation going. There is a danger that protected areas provide a way of eeing

and experiencing nature that excludes the more prosaic and mundane (Cronon 1995).

The consequences of protected areas, their material impacts on cultures and societies, their consequences for ideologies, policy, and thinking, therefore, matter. In the following we review a small portion of the anthropological literature that examines these, often unexpected, consequences.

"Deep" Social Effects of Protected Areas

Social scientists often get into trouble with natural scientists because of the way they talk about nature and the environment as socially produced. This does not mean there is no real, material world out there to be altered, destroyed, restored, and conserved. Nor does it mean humans are not out there affecting the world. It means that different sociocultural groups, based on history, language, and social practices, understand and relate in very different ways to what European-derived cultures have thought of as nature (Strathern 1980; Seeland 1997). Throughout the anthropological literature on protected areas there are instances of local ways of seeing, understanding, and relating to people's surroundings being discussed in categories such as nature, culture, and environment (Nygren 1998; Wilshusen et al. 2002; Chape et al. 2003). We think conservation might, in some places and instances, be more successful if conservation planners and practitioners learned local idioms for understanding people's surroundings before they begin to think about things in terms of nature and culture.

When NGOs rely on a strict division between nature and culture and pose both as static, there is a tendency to see people and their activities as unnatural (Nygren 1998). The flip side of this is the presentation by some of indigenous peoples as "ecologically noble savages" who are closer to nature (Redford 1991). Both of these kinds of images of people and their surroundings fail to grasp the complicated ways that people interact with what they rely on for food, shelter, and spiritual, social, and economic needs. In Papua New Guinea, Gimi-speaking peoples have no notion of nature or culture (Gillison 1980, 1993; West 2005, 2006). Gimi see themselves as in an ongoing set of exchanges with their ancestors. They see their ancestors as animating and residing in their forests, infusing animals, plants, rivers, and the land itself with life. Forests provide the cosmological material that makes people's souls and the ecological material that provides for and makes people's bodies (e.g., food through hunting and gathering, housing materials, new plots for gardens). When people die, their spirits go back to their forest and infuse themselves into plants, animals, rivers, and the like. When the living use these natural resources they do not see it as depletion but rather as this ongoing exchange. For example, they may kill an animal and consume it, but they understand it to have been generated by their ancestor's life forces and that it will work to make their life force during this lifetime. When they die, that life force will go back to the forest and replenish it. This understanding of the relationship between humans and their surroundings is extremely difficult to reconcile with arguments about the decline and loss of biological diversity (West 2005, 2006).

Some authors have shown the material effects of these kinds of separations of nature and culture quite clearly. We have seen conflicts over land rights and land use emerge between people with different understandings of the relationship between people and their surroundings in India (Baviskar 2003), the negative effects of these separations in the Mekong region of Laos on sustainable development projects (Goldman 2001), and the ways conflict over these sorts of categories lead to resistance to the creation of protected areas in Thailand (Roth 2004).

Holt (2005) examined the ways in which conservation works to enforce a kind of subsistence primitivism on Huaorani communities in Ecuadorian Amazon. She argues that contemporary environmental protection has located indigenous peoples in an impossible position that she calls a "catch-22" in which "the cultural conditions deemed compatible with biodiversity conservation (i.e., low densities, limited technology, and subsistence production) are precisely those under which a common property theoretical framework would not predict conservationists practices to emerge. Conservation awareness arises when people exert use pressure on resources and recognize the potential for overexploitation, conditions concurrent with population growth, adoption of Western technologies, and market production" (Holt 2005:201). In this instance, Western ways of seeing and being in the environment are implied to be both the problem and the solution.

In some instances we see those concerned with protection attempting a form of conservation that tries to use local social practices or understandings of surroundings to contribute to conservation. In one case ecologists attempted to incorporate local social taboos into conservation management plans without an understanding that taboos are part of a social system of interactions among people and between people and their surroundings (Colding & Folke 2001). The ecologists saw taboos as disembodied practices concerned with environmental actions and nothing else (Colding & Folke 2001). In another case biologists attempted to change local subsistence strategies and turn local and rural people into labor through, for example, "year-round employment" on tea plantations that will have "significant spin-off economic effects" (Masozera & Alavalapati 2004).

These western-derived portrayals of nature and culture sometimes,

however, present opportunities for connections between locals and conservation organizations. The idea of wilderness as a kind of nature that should not be commercially developed has allowed for alliance between these groups in Alaska (Catton 1997) and Australia (Lawrence 2000). Ferrari and de Vera (2003) show how indigenous peoples on one of the Calamianes islands of North Palawan have used conservation legislation and the language used to separate nature and culture to gain control over terrestrial and marine resources that were under threat from encroaching migrations, tourism operators, and resource-extraction interests.

The indigenous peoples, the Tagbanwa, organized themselves into an NGO and applied to turn their traditional territory into a community forestry area (a category under Philippine conservation legislation) so as to counter these social and environmental threats (Ferrari & de Vera 2003). Another alliance in Brazil effectively blocked the damming of the Xingu River, which would flood Xingu National Park, homeland of the Kayapo and other indigenous groups (Turner 1995). Ute Mountain Tribal Park in Colorado was created to preempt the expropriation of Ute land by the U.S. National Park Service (Igoe 2004). Kuna Park in Panama was created to preempt the invasion of Kuna land by peasant agriculturalists entering the Atlantic coast from the center of the country (Chapin 2004). The key variable in these—and similar—examples is that local people were allowed to remain living inside these parks once they were created. Parks sometimes also offer indigenous communities opportunities to elude state control and other incursions onto their land.

The symbolic value of protected areas has also been powerfully exploited by indigenous groups representing themselves as nature's guardians. The machinations of this debate in the Amazon and elsewhere and its consequences for forest conservation will be familiar to readers of this journal (e.g., Alcorn 1993; Alvard et al. 1997; Redford & Sanderson 2000; Schwartzman et al. 2000; E. N. Anderson 2001; Bodmer & Lozano 2001). We do not ask whether indigenous peoples are allies of conservation or what sort of nature they protect; instead, we draw attention to the ways in which protected areas become instrumental in shaping battles over identity, residence, and resource use. In East Africa, where residence in protected areas was restricted to a particular ethnic group, immigrants responded by changing their ethnicity (Brockington 2002). In South Africa, the granting of access to the Kalahari Gemsbok Park to a small group of ≠ khomani caused tensions with local groups who were reformulating their identity to facilitate access (Kuper 2003).

A number of authors observe that attention to only indigenous voices in these debates risks excluding people who cannot or will not call themselves indigenous (Nugent 1994; Suzman 2002/3). Consider, for example, the preservation of the last great wild European reindeer herd in Siberia (D. G. Anderson 2001). This project is part of a campaign by the World Wide Fund for Nature to establish some large, new protected areas in which indigenous people's traditional hunting will be allowed. The difficulty here is that this Siberian society is the product of generations of state-sponsored migration, in part to work on the reindeer farms whose collapse (following the withdrawal of state subsidies) has produced the wild reindeer herd. It is a cosmopolitan and open society that now faces a sorting exercise on the grounds of some yet-to-be-defined criteria of indigeneity.

Protected Areas and Development

Protected areas that are tied to development projects also have significant social effects. In Sri Lanka the Mahaweli Accelerated Development Project was aimed at Wanniya-Laeto peoples who had been removed from their ancestral forests so that a national park could be created (Stegeborn 1996). Historically hunters and gatherers, the Wanniya-Laeto were forced to become agriculturalists when they were dispossessed of their land. This subsistence change radically altered the ways they saw themselves as persons and their views of their surroundings. It also had dire social effects on their health and economic well-being.

In contrast, Sherpa peoples living around the Sagarmatha National Park have become relatively prosperous because of the Mount Everest tourism and trekking industry (Weber 1991). Yet many still voice concerns over the social effects of the park. Some Sherpas who do not wish to work in the tourism industry find it extremely difficult to pursue more traditional lifestyles. Their economic possibilities are limited if they do not want to take part in the industry, and their subsistence options are limited because of resource-management regulations that limit wood cutting and yak grazing, in particular, because of the park.

In the United States some Navajo and Hopi peoples have benefited economically from tourism in Glen Canyon, Grand Canyon, and Black Mesa national parks, yet this does not offset the degradation done to these sacred areas by tourists (Begay 2001). The parks also limit access to land that is needed for ritual and ceremony. The preservation of sacred landscapes and access to them on the part of native peoples is crucial for the maintenance of native cosmology, and restrictions on access affect social lives in important ways (Begay 2001). Some U.S. laws also affect native socioecologies in that they limit what people can hunt (Boradiansky 1990). Native peoples argue that hunting of animals covered by these laws is crucial for the maintenance of traditional cultures.

Integrated conservation and development projects (ICDPs) are one development strategy that has been carried out in or around protected areas.

Their effectiveness in terms of conservation and development has been reviewed (e.g., Van Helden 1998, 2001; Wilshusen et al. 2002; Brechin et al., 2003; Brandon & O'Herron 2004; Wells & McShane 2004; Haenn 2005; West 2006). Some of the social effects of ICDPs include exacerbation of already-existing social differences (Cameron 1996; Horowitz 1998), creation of expectations that are not met (Horowitz 1998; Foale 2001; West 2006), and practice of what some might see as social engineering (Kremen et. al. 1999).

Although the notion of community has been recently critiqued by anthropologists working on environmental issues (Berkes 2004; Brosius et al. 2005), community-based conservation is still often another way in which people living in and around protected areas are affected socially. Community-based marine conservation in the Philippines—in which people were fined for fishing inside conservation areas—seems to negatively affect the health and nutritional status of children (Gjertsen 2005), just as conservation efforts in Madagascar negatively affect the health and well-being of entire villages (Harper 2002). In Pakistan community-based conservation (CBC) projects have displaced people from traditional grazing areas (Knudsen 1999). In the Caribbean CBC projects have targeted some members of communities and left others at the wayside, exacerbating social differences within communities (Geoghegan & Renard 2002). The unequal distribution of CBC project benefits is also evident in Honduras (Nygren 2005). A CBC project tends to import Western notions of nature and culture to places where these categories do not exist (Berkes 2004). There are also some cases, albeit few, where CBC has brought clear benefits to rural people while promoting conservation (Murphree 2001). In most cases, outcomes, for either livelihoods or conservation, are hard to evaluate for want of good data.

In addition to these highly localized social effects, protected areas sometimes affect the structure of extralocal governments and policies in unexpected ways that can be considered development. In Madagascar there has been an increased integration of national development and conservation legislation and policy with the U.S. Agency for International Development and multilateral and bilateral agency goals (Peters 1998). Policy in Madagascar has come to look like policy in other places—there is a deep intertwining of local, national, and international "goals" based on donor interests and funding points (Peters 1998). Sometimes protected areas change the decision-making structures and authority of governments (Dearden et al. 2005), and sometimes they work to change how governmental and international agencies understand things such as property and the social relations that encompass it (Gatzweiler 2005). The creation of protected areas can also work to encourage the growth of bureaucratic structures in general (Oates 1999; Bajimya 2003), at the local level (Oates 1999) and in urban areas (Oates 1999; Bajimya 2003). They can also help create new social institutions and ways of celebrating nationhood (Boza 1993). These structures and institutions may or may not be helpful for future conservation.

Some Further Perceived and Real Negative Effects of Protected Areas

Conflict is sometimes an unexpected social effect of protected-area establishment and maintenance. In part this is because of top-down approaches by states that fail to appreciate, or work with, local practices and interests. Orlove (2002) has shown how attempts to establish a national reserve in the reedbeds of Lake Titicaca in Peru were effectively resisted by villagers either from the outset or because the new controls proved difficult to reconcile with their management of the reedbeds. These were thoroughly anthropogenic environments with villagers planting, cutting, and tending the beds in accordance with fluctuating lake levels.

On other occasions the creation of protected areas hinged on the physical and symbolic erasure of former residents (Neumann 1998; Ranger 1999; Spence 1999). One of the central features of the Yellowstone model was erasure of the social history of land use on the part of Native Americans and even Native Americans themselves (Meyer 1996). Native Americans, as with people displaced by protected areas around the world, were then made to reappear in these landscapes as purveyors of arts and craft, entertainment, and other services required by visitors to protected areas. Also, the policing and funding of protected areas in some places require continued state violence (Peluso 1993; Neumann 2004).

One of the most controversial aspects of conflict and protected areas has been the problem of displacement. This has been particularly prominent in recent international meetings, and some observers even suggested that there is now "a massive cataloguing of past, recent and ongoing abuses" (Borgerhoff-Mulder & Coppolillo 2005:36). This is not the case. Few cases are documented and many that are mentioned in the literature cover the briefest of details. There is instead a clear need to address the social impacts of displacement from protected areas more rigorously and systematically (Brockington et al. 2006).

Protected areas, like many development interventions, are sometimes instrumental in fueling social conflict between groups. It is ironic that African transboundary conservation areas, which can require displacement and fuel ethnic tensions, have sought popular support as "peace parks" (Wolmer 2003; Duffy 2005). Contests develop over fortunes and misfortunes that protected areas can

distribute. These contests can be between rich and poor (e.g., McLean & Straede 2003), castes (e.g., Paudel 2005), or ethnic groups (e.g., Nelson & Hossack 2003). Yet the creation of wilderness spaces has often also resulted in the creation of criminal spaces, beyond the control of the state. Parks in Africa and Latin America have served as staging grounds for guerilla movements (Dunn 2003) and drug trafficking (R. Stepp, personal communication). Parks in the United States shelter marijuana plantations and methamphetamine labs and are a preferred route for people seeking to enter the country illegally (Igoe & Kelsall 2005).

In addition to these social impacts protected areas have adverse and unexpected consequences on nature. Villagers in Uganda set about killing as much wildlife as they could to try and avert the re-creation of the Mburo National Park (Hulme & Infield 2001). In Tanzania villagers are alleged to have systematically destroyed chimpanzees in their local forest after a visit from a parks official was misinterpreted to portend gazettement (Murray 1992 cited in Walsh 1997). Rural peoples in China, Nepal, Nicaragua, and Norway have felled trees in protest of conservation restrictions (Brandon 1998; Harkness 1998; Nygren 2000).

Working Together as a Way Forward

We have outlined some of the social and material effects of protected areas. This is by no means an exhaustive review of the literature. Rather, we wish to point toward our vision for the future of protected-areas design and management. We wish to advocate a nuanced set of relationships between anthropologists and conservation biologists, as well as a more nuanced approach to anthropological examinations of protected areas, in which collaboration is seen as the norm and not as an exception. We also wish to advocate approaches to protected-area design in which the complexity of the social is given as much attention as the complexity of the biological.

Our vision of collaboration is not one of people from different disciplines coming together because funding agencies mandate it or because after the fact there is a need for social-impact analysis. Rather, we want to advocate collaborations before protected areas are made or before new projects are designed. Better discussion of interventions—whether in establishing a protected area or to mediate perceived and real threats to protected areas and the people who live in and rely on them—is critical to improving the success of conservation efforts. One of the persistent issues with regard to the social effects of protected areas is that social and natural scientists do not have sustained conversations about why deep social effects matter and how methodologies could be designed so that they take certain social beliefs and practices into account before projects are implemented.

Take, for instance, the example of Gimi ideas about the forest. If traditional Gimi cosmology holds that nothing ever goes away, that all matter is here for all eternity and it simply changes form over time, then how might conservation biologists work with Gimi to create and implement conservation plans for threatened animals? One possibility is that anthropologists and ecologists might conduct research together to find out who is hunting, when they are hunting, where they are hunting, and how they are hunting (Mack & West 2005). They might also include components in their methodology that examine what the hunters believe with regard to plants, animals, and cosmology (West 2005). If old men who still hold traditional cosmological beliefs are hunting, there should be one approach to conservation planning. But if young men who are fully incorporated into contemporary belief systems are hunting, there should be a different approach. By working together we can begin to tease out the social nuances that affect conservation success and design management plans and protected areas that take them into account. We think this is a positive step toward more successful conservation.

Acknowledgments

P.W. thanks J. Ginsberg, E. Dus, L. Legra, M. Kigl, S. Opiang, A. Mack, D. Wright, and the students from her Fall 2006 Parks and Protected Areas seminar. D. B. acknowledges the support of an ESRC fellowship (RES 00270174) held while working on this paper.

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