Parks and Peoples: The Social Impact of Protected Areas

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Key Words

conservation, environment, virtualism, displacement, governmentality

Abstract

This review examines the social, economic, and political effects of environmental conservation projects as they are manifested in protected areas. We pay special attention to people living in and displaced from protected areas, analyze the worldwide growth of protected areas over the past 20 years, and offer suggestions for future research trajectories in anthropology. We examine protected areas as a way of seeing, understanding, and producing nature (environment) and culture (society) and as a way of attempting to manage and control the relationship between the two. We focus on social, economic, scientific, and political changes in places where there are protected areas and in the urban centers that control these areas. We also examine violence, conflict, power relations, and governmentality as they are connected to the processes of protection. Finally, we examine discourse and its effects and argue that anthropology needs to move beyond the current examinations of language and power to attend to the ways in which protected areas produce space, place, and peoples.

INTRODUCTION

NGO: nongovernmental organization

Over the past 25 years, anthropologists' focus has expanded from local social lives to included experiences of larger-scale processes. New areas of ethnography and analysis have proliferated as a result, with titles such as transnationalism, colonialism, postcolonialism, and globalization. One area that has also received increasing attention in recent years is environmentalism. Within this topic converge our discipline's recent interest in interactions between the local and the global and its long-standing concern with the relationships between peoples and their surroundings. This convergence, as well as the increasing involvement of anthropologists in applied issues, is at the heart of anthropologists' interests in conservation dating back to the 1970s (Orlove & Brush 1996).

By "surroundings" we mean the world around us that we, as human beings, have material, intellectual, and symbolic access to and that we work to alter and make sense of through our daily actions (Carrier 2004, p. 1). The term surroundings takes for granted that the world is made materially and symbolically through human action, a proposition anthropologists and other social scientists have accepted since Escobar's (1995) merging of political ecology and poststructuralism. By using the term we forgo conversations about the social construction of nature versus the material nature of the environment because the term allows for both: The world is out there, and we interact with it in ways that reproduce it, often altering it in the process (Smith 1990), yet the world only has meaning for us as language-using and symbol-making animals owing to how we intellectually apprehend it.

Within this disciplinary interest in environmentalism lies a subset of studies on the social effects of protected areas. The recent interest in protected areas as an anthropological subject also reflects a profound increase in the extent and complexity of protected areas. Official records list over 105,000 protected areas in the world, covering 20.3–21.5 million km^2, depending on how it is measured. Terrestrial protected areas cover 16.8 million km^2, or 11% of the world's land area (**Table 1**), whereas marine protected areas cover 4.7 million km^2. Of the former, approximately 6.4 million km^2 (4.3% of the land surface) are found in categories that can impose considerable restrictions on human use and occupancy. Globally, the spatial distribution and size-class distribution of protected areas are highly uneven (**Table 1**). Furthermore, many protected areas are recent creations (**Figure 1**). The establishment rate jumped to a new level in 1970 and peaked between 1985 and 1995. In the past ten years we have seen global activity on a par with levels in the 1970s.

Clearly, owing to this recent growth of protected areas, a review is timely, albeit demanding. Here we structure our work around two key questions and a central contention. Our questions are the following: What are the social, material, and symbolic effects of protected areas, and how do protected areas impact people's lives and their surroundings? Our contention is that protected areas matter because they are a way of seeing, understanding, and (re)producing the world. As such, they are rich sites of social production and social interaction. Contemporary protected areas not only affect the people living in them, adjacent to them, and displaced by them, but also the people working for the nongovernmental organizations (NGOs) and government agencies that create and manage the protected areas. They also change the face of the Earth by renaming places, drawing boundaries around areas, and erasing boundaries between states. In this review we begin by examining how protected areas are a form of "virtualism" (Carrier & Miller 1998). Then we review the anthropological literature on their social effects. Finally we offer suggestions for future research trajectories for anthropologists who wish to examine the social effects of protected areas.

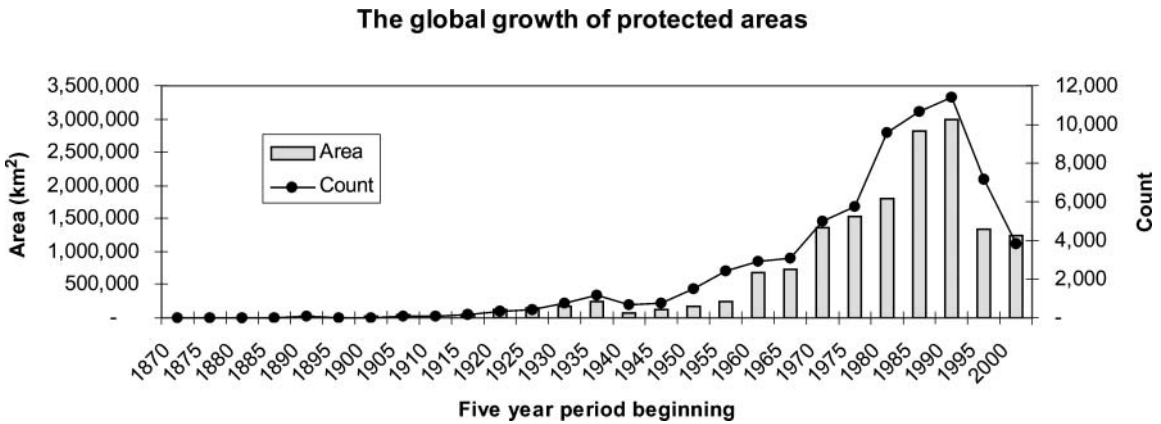

Figure 1

The global growth of protected areas.

THE STATE OF ANTHROPOLOGICAL ANALYSIS OF PROTECTED AREAS

In their review, Orlove & Brush (1996) found that the published literature on protected areas was limited primarily to journals of applied anthropology. A decade later, however, we also find relevant publications in the more-mainstream anthropology journals such as *Current Anthropology*, *American Anthropologist*, *American Ethnologist*, and *Cultural Anthropology*. There are also numerous edited volumes concerned with protected areas (Anderson & Berglund 2003, Anderson & Ikeya 2001, Brechin et al. 2003, Brosius et al. 2005, Chatty & Colchester 2002, Ghimire & Pimbert 1997, Greenough & Tsing 2003, Hulme & Murphree 2001), several single-author monographs (Adams 2004, Brockington 2002, Haenn 2005, Igoe 2004, Neumann 1998, Orlove 2002, Ranger 1999, Walley 2004, West 2006), an important overview work (Borgerhoff Mulder & Coppolillo 2005), and numerous recent dissertations (Austin 2003, Castagna 2005, Doane 2001, Ediger 2005, Erazo 2003, Garner 2002, Gustavo 2005, Kohler 2005, Nyhus 1999, Palmer 2001, Paudel 2005, Peterson 2005, Sodikoff 2005, Stern 2006, Stronza 2000, Van Helden 2001, Wagner 2002, Weiant 2005). Finally, anthropologists have become increasingly involved in the creation of institutions concerned with relationships between people and protected areas, including the International Union for the Conservation of Nature and Natural Resources (IUCN) Commission on Environmental, Economic, and Social Policy and the Society for Conservation Biology's Social Science Working Group.

IUCN: International Union for the Conservation of Nature and Natural Resources, The World Conservation Union

PROTECTED AREAS AS A FORM OF VIRTUALISM

The growth and extent of protected areas are recorded in the World Database on Protected Areas (**http://sea.unep-wcmc.org/wdbpa/**), hereafter referred to as the Database, and have been reported periodically in the anthropological literature (Borgerhoff Mulder & Coppolillo 2005, Geisler & de Sousa 2001, Orlove & Brush 1996, Zimmerer et al. 2004). These reports, however, use relatively old data, the most recent of which coming from the 1996 version of the Database. The current version of the Database contains over three times as many records as it did in 1996. The extent of protected areas reported has increased by at least 50%. This increase is not just a consequence of new growth, but also reflects improved surveillance of already existing protected areas.

Table 1 Distribution of marine and terrestrial protected areas in different IUCN regions

Terrestrial			Marine		Total		Proportion of land protected (%)[2]			
IUCN region[1]	Count	Area (km^2)	Count	Area (km^2)	Count	Area (km^2)	Category 1–4[3]	Category 5–6[3]	No category	Total
Antarctica	67	2265	59	68,054	126	70,318	0.00	0.00	0.01	0.02
Australia & New Zealand	9085	798,684	467	702,165	9552	1,500,849	6.88	3.11	0.04	10.04
Pacific	199	55,311	288	33,451	487	88,762	0.80	1.23	7.98	10.01
South Asia	1076	327,247	184	28,832	1260	356,079	5.41	0.30	1.59	7.30
Southeast Asia	2238	656,193	420	213,546	2658	869,740	5.11	4.50	4.99	14.60
East Asia	2986	1,921,762	295	64,675	3281	1,986,437	1.92	14.12	0.26	16.30
North Eurasia	17,642	1,610,320	82	430,708	17,724	2,041,027	5.24	0.48	1.56	7.29
Europe	43,159	662,995	745	162,969	43,904	825,964	3.13	6.30	3.28	12.70
North Africa & Middle East	1230	1,204,928	141	161,356	1371	1,366,284	2.11	6.85	0.41	9.37
Eastern & southern Africa	3924	1,789,578	152	116,942	4076	1,906,520	5.92	4.63	4.90	15.46
Western & central Africa	2554	1,290,420	43	60,908	2597	1,351,328	5.46	0.77	3.86	10.09
North America	12,863	3,147,172	760	2,189,346	13,623	5,336,519	6.07	5.09	3.08	14.23
Central America	548	117,954	129	38,317	677	156,271	6.90	8.01	7.64	22.55
Caribbean	494	18,836	473	69,309	967	88,145	5.22	1.55	1.25	8.02
South America & Brazil	2500	3,206,623	202	369,987	2702	3,576,609	4.65	4.48	8.87	18.01
Total	**100,565**	**16,810,289**	**4440**	**4,710,564**	**105,005**	**21,520,853**	**4.35**	**4.09**	**2.91**	**11.34**
										Area (km^2)

[1] The countries that make up each region are available at **http://sea.unep-wcmc.org/wdbpa/** (accessed September 23, 2005). We have modified these categories slightly in the following ways. The IUCN classifies Comoros, Djibouti, Madagascar, and Mauritius as part of as western and central Africa. We have assigned them to eastern and southern Africa. Brazil forms an entire IUCN region on its own, but we have grouped it with South America. Sao Tome and Principe, Anguilla, and the British Indian Ocean Territories have not been allotted regions by the IUCN, and we placed them in western and central Africa, the Caribbean, and South Asia, respectively.

[2] Only terrestrial protected areas are included as we only have data for the size of land areas within each country and therefore cannot express marine protected areas as a proportion of country size.

[3] The categories refer to IUCN protected area categories, defined as follows: category 1a, strict nature reserve. Protected area managed mainly for science; category 1b, wilderness area. Protected area managed mainly for wilderness protection; category 2, national park. Protected area managed mainly for ecosystem protection and recreation; category 3, national monument. Protected area managed mainly for conservation of specific natural features; category 4, habitat/species management area. Protected area managed mainly for conservation through management intervention; category 5, protected landscape/seascape. Protected area managed mainly for landscape/seascape conservation and recreation; category 6, managed resource protected area: protected area managed mainly for the sustainable use of natural resources.

Nevertheless, by its own standards, the Database could still be much improved. Size data for protected areas are not known for 12% of the records. Furthermore 35% of the entries lack an establishment date. Indeed, although in 2003 the fifth World Parks Congress celebrated the achievement of protecting 10% of the planet's land surface with some ceremony, the target may have actually already been reached when the fourth World Parks Congress set that goal in 1992. There are also clearly anomalies in the categorization systems the IUCN uses in the database. Chape et al. (2005) eschewed the marine/terrestrial classification and mapped existing protected areas onto a GIS (geographic information system) model of the Earth's lands and seas. They found that 18.4 million km^2 of protected areas covered the land, substantially more than the categorization system states.

The Database, therefore, is clearly a clumsy machine, but even if it was finely tuned, we would need to use it with caution. The Database is not just a record of practice, it is also a way of seeing the world with blindspots and blurred vision not easily perceived by its operators, but these blindspots become darker and fuzzier as the machine becomes better. For the Database to work best, it could erase or exclude precisely the sort of local practices that fuel our interests in the first place (Brosius 1999b).

The Database only records state activity. It is blind to individual, and informal collective, activity. For example, private protected areas are not included in the data. In South

Table 1 (*Continued*)

Count of all protected areas in each size class						
<1 km^2	≥ 1 km^2 <10 km^2	≥ 10 km^2 <100 km^2	≥ 100 km^2 <1000 km^2	≥ 1000 km^2 $<10,000$ km^2	$\geq 10{,}000$ km^2 $<100{,}000$ km^2	$\geq 100{,}000$ km^2 $<1000{,}000$ km^2
40	40	14	8	2	1	0
5242	2559	1165	425	123	20	2
83	101	93	43	23	1	0
161	236	370	384	63	5	0
230	509	831	786	166	12	0
259	413	1542	812	181	20	2
7166	3083	1507	1158	289	33	1
26,885	7678	2908	1137	141	2	0
223	217	303	239	57	13	2
527	926	1290	831	300	31	0
90	629	875	643	179	28	0
3118	3568	3069	1553	525	69	2
66	157	225	162	32	1	0
373	236	140	55	14	1	0
285	418	716	623	410	82	1
44,748	**20,770**	**15,048**	**8859**	**2505**	**319**	**10**
10,612	**75,767**	**539,300**	**2,895,756**	**7,591,812**	**6,960,583**	**3,447,024**

Africa. over 13% of the country is set aside as privately run game farms compared with only 6% set aside as state and provincial protected areas. Diverse forms of informal community conservation and natural resource management, from sacred groves to calf pastures and community conservation areas, are also omitted (Pathak et al. 2004). The Database can only recognize what its constituent countries providing information recognize as official conservation.

None of these observations mean we should disregard these data; all facts are shaped by the circumstances of their creation. Rather, as discussed below, records such as the Database become more interesting because they often transform the world into their own image. Although the goal to set aside 10% of the world's land surface was, probably, launched after that milestone had already been reached, it galvanized a large number of NGOs to actively extend protected-area networks in the early 1990s. Their activity and fund-raising gained authority and success because of the need to meet this target. The category system adopted by the IUCN (**Table 1**, footnote 3) is being used to rewrite and modify protected-area legislation in an increasing number of countries (Bishop et al. 2004). Management categories intended to describe a park's status are now used to prescribe and proscribe activities within it. Protected areas provide a means of seeing and governing the world that have myriad social effects.

Protected areas have increasingly become the means by which many people see, understand, experience, and use the parts of the world that are often called nature and the environment. This virtualizing vision (Carrier & Miller 1998), although rarely uncontested, has imposed the European nature/culture dichotomy on places and people where the distinction between nature and culture did not previously exist (Strathern 1980). As such, protected areas have become a new cosmology of the natural—a way of seeing and being in the world that is now seen as just, moral, and right. In effect, protected areas are the

material and discursive means by which conservation and development discourses, practices, and institutions remake the world (Brosius 1999a, Watts 1993). The implications of this cannot be analyzed merely by giving greater attention to the social construction of nature (see Nygren 1998), but also by examining the material effects of the production of our surroundings.

SEPARATION OF NATURE AND CULTURE

Throughout the literature one finds instances of the discursive and material separation of people and their surroundings into the categories nature, culture, environment, and society (Wilshusen et al. 2002). Chape et al. (2003, p. 10) show that through the IUCN process of listing and cataloging protected-area types, and IUCN's attempt to create a worldwide category system, national governments have to fit their protected lands into these international categories that separate people from their surroundings. This is a form of the generification (Errington & Gewertz 2001, West & Carrier 2004) of the external world—the IUCN takes an externally imagined set of categories and restructures the world to fit these categories with limited regard for national or local descriptive categories. Anthropologically speaking, these separations mirror Western imaginaries of nature and culture and impose them on much of the world (Gillison 1980, Johnson 2000, Seeland 1997, Strathern 1980).

Nygren (1998, p. 213) shows that NGOs rely heavily on the "western division between nature and culture." NGO publications frequently present nature as a static object, separate from human beings. By extension, they present the ecological effects of human activities—as part of culture—as unnatural. In other cases, they may present indigenous peoples as ecologically noble savages, whose cultures are somehow closer to nature. Whether indigenous peoples are imagined, or project themselves (see Adams 2003), as inside or outside nature, however, the imposition of this putative nature/culture dichotomy has had significant material and social impacts, either by forcefully excluding people from their land or holding them to discursive standards that are nearly impossible to live up to in practice (Igoe 2005, West 2001).

Some authors show how the discursive creation and subsequent separation of nature and culture are tied to the different worldviews of actors involved in conservation and the different kinds of liberation and sustainability narratives available on the global discursive scale (Dove 2003, Igoe 2005, MacDonald 2004, West 2001). Baviskar (2003) examines the ideas of Indian environmental activists and rural tribal peoples concerning relationships between people and their surroundings and shows that the negioations over discursive productions have material effects of land rights and land use. Stegeborn (1996) demonstrates how the idea of poachers, a discursive production of people as separate from and damaging to their surroundings, led to the removal of Wanniya-Laeto peoples from protected forests in Sri Lanka.

Goldman (2001), using materials from the Mekong region of Laos, shows how new definitions of land and land use imposed by the World Bank separate people and their surroundings in ways that do not clearly lead to sustainable development. Roth (2004) demonstrates that the Thai concept of nature includes humans but that international NGOs impose Western ideas about the separation of nature and culture in their work with Thai protected areas. This has led, on the one hand, to local people resisting the creation of protected areas. On the other hand, it has led to alliances between NGOs and local people built upon discourses of human rights and sustainable development (Roth 2004).

The idea of wilderness as a place that should not be commercially developed has presented other opportunities for alliances between local people and conservationists. The creation of Gates of the Arctic National Park in Alaska, for instance, was brought about by

an alliance between Inuit activists and conservationists seeking to block an oil pipeline (Catton 1997). Kakadu National Park in Australia's Northern Territory was brought about by a similar alliance to block uranium mining (Lawrence 2000). West (2005) further demonstrates the connections between these separations of people and surroundings and a neoliberal conservation agenda that needs biodiveristy or nature to become commodities and natives to become labor. In such settings, natives may also become commodities, as their culture becomes part of the selling point for people-centered conservation initiatives or ecotourism marketing (Igoe 2004).

CHANGING USE RIGHTS, DISPLACEMENT, AND CONFLICT

The Durban Action Plan, the central outcome of the fifth World Parks Congress, emphasizes the connection between dispossession and poverty, culture change, and social and subsistence losses on the part of people living in and around protected areas (MacKay & Caruso 2004). The creation of protected areas alters land-use rights in general (Agrawal & Ostrom 2001, Albers & Grinspoon 1997, Jim & Xu 2003, Panusittikorn & Prato 2001, Roth 2004, Wilshusen et al. 2002). Specifically we see the following examples: instances of increased elite control of resources historically (Cleary 2005, Sivaramakrishnan 2003) and contemporarily (Brothers 1997, Colchester 2003, Daily & Ellison 2002, Hitchcock 1995, Jeffery et al. 2003, Peluso 1993, Silori 2001), the alienation from land and sea and the influx of alien land and sea uses in places surrounding protected areas (Foale & Manele 2004, Haenn 2005, Peters 1998), and the criminalization of native peoples because of their land-use practices (Freedman 2002, Geisler et al. 1997). The overwhelming impression protected-area creation leaves is of restricted access and use for rural peoples through legislation, enforcement, and privatization (Greenough 2003, Horowitz 1998, Igoe 2003, Mahanty 2003, Negi & Nautiyal 2003, Santana 1991). Displacement from protected areas is one of the most controversial and contested aspects of protected areas. It has received a great deal of attention in recent years, particularly from anthropologists, but the literature is far from straightforward. Borgerhoff Mulder & Coppolillo (2005, p. 36) claim the literature on displacement represents a "massive cataloguing of past, recent and on-going abuses." This statement is simply wrong and surprising in a work devoted to tackling the problems conservation can cause. First, there are few studies compared with the number of protected areas; we have found just under 250 reports covering just under 200 protected areas. Second, the literature is not a catalog, for there is no system or order in the literature. Third, and most seriously, much of what is written is simply not informative. Nearly 50% of the works we examined merely mention the fact of removal, either to announce the establishment of protection or to warn activists that marginal rural groups, especially indigenous peoples, are facing further threats to their livelihood. Barely 25% undertake detailed examinations of the anatomy of the livelihood change experienced by rural groups following displacement (see Brockington 2001). This is unfortunate because these issues are often denied by states, NGOs, and others with an interest in the displacment of people from these areas. Defenders of protected areas complain, legitimately, of anecdotal critiques (Sanderson & Redford 2004).

Only a handful of individual studies detail the economic costs and/or the social impacts of people displaced by protected areas (Emerton 2001, Geisler 2003, Ghimire 1997, Olwig & Olwig 1979, Overton 1979, Shyamsundar & Kramer 1997, Tacconi & Bennett 1995). Only recently has there been any attempt to apply established means of assessing the impacts of displacement to cases of conservation-induced displacement and representatively assess its consequences (Cernea 2005, Schmidt-Soltau 2003, 2005).

The most productive bodies of literature give particular attention to select regions or individual protected areas. For example, there has been a flourish of studies in India (Ganguly 2004, Guha 1997, Rangarajan 1996, Saberwal et al. 2000). There has also been considerable attention given to Nepal, especially the Royal Chitwan National Park. McLean & Straede's (2003) work there is the source for probably the best study we have found of the ongoing consequences of eviction as it takes place.

There also have been many environmental histories reinterpreting the history of national parks and protected areas in the United States, focusing on the simultaneous containment of Native Americans onto reservations and the creation of national parks in the American West at the end of the nineteenth century (Burnham 2000, Catton 1997, Jacoby 2001, Keller & Turek 1998, Nabakov & Lawrence 2004, Spence 1999). Most notoriously, the creation of Yellowstone, the world's premiere national park, was instigated by eastern elites, but keeping it free of hostile indigenes required the services of the U.S. Army, and convincing tourists it was safe required the services of marketing experts (Burnham 2000, Spence 1999). Maintaining Yellowstone as the quintessential American wilderness experience has entailed the systematic erasure of this history. The Yellowstone model was quickly replicated throughout the American West (Stevens 1997), and American parks in turn "served as models for preservationist efforts and native dispossession all over the world" (Spence 1999, p. 5). More insidiously, Yellowstone became a model for the creation of virtual landscapes, in the form of theme parks, malls, international hotels, and other spaces designed to present consumers with generic experiences of sanitized histories and landscapes (Wilson 1992).

South Africa's unusual history of thorough eviction under apartheid means it has both remarkably good records of who was moved where, and at what cost, and a restitution program of lands lost to biodiversity conservation. These records have been explored with detailed individual histories of specific protected areas (Carruthers 1995, Palmer et al. 2002), as well as overview studies (Fabricius & de Wet 2002, Magome & Fabricius 2004). Elsewhere in Southern Africa, the San bushmen's plight as a result of eviction from protected areas has received considerable attention (Hitchcock 2001, Ikeya 2001, Kuper 2003, Suzman 2002/2003). In East Africa, a great deal has been written about Maa-speaking pastoralists and conservation (Gavlin et al. 2002; Homewood & Rodgers 1991; Igoe 2003, 2004; Igoe & Brockington 1999; McCabe 2002).

The absence of some regions from the protected-area literature may reflect differences between countries. The lack of European regions in the literature demonstrates the relative lack of hardship created by protected areas on this continent. The plethora of African material, however, is testimony to the large individual size of African protected areas (**Table 1**), the continent's predominantly rural population, and the combination of weak states and colonial imposition, which makes planning for displacement so difficult. In Australia and Latin America, the lack of studies reflects the fact that protected-area dynamics and policies work differently in these areas. Australia has witnessed less displacement owing to conservation than places such as Africa and North America. However, there are significant conflicts over park-management authority and tourism's impact on aboriginal cultures and sacred places (Cordell 1993, Lawrence 2000, Toyne & Johnston 1991). In Latin America, indigenous communities have treated protected areas as an opportunity to protect their traditional homelands (Chapin 2000, Winer 2003), but they have also learned protected areas can be a front for outside commercial interests (Nugent 1994, Zamarenda 1998).

One surprising conclusion from our survey is that work on indigenous peoples is particularly uninformative as to the precise impacts of eviction. Although the achievements of indigenous peoples' activists in challenging

displacement are considerable (Brosius 2004), relatively few accounts provide detailed observations. Moreover, as Igoe (2005, pp. 7–8) has argued elsewhere, this conceptual enclosure of indigenous peoples as the primary victims of protected-area displacement conceals two fundamental inequalities. First, between indigenous groups, some indigenous people are more indigenous than others. San groups in Namibia, for instance, have become a permanent underclass of agricultural workers. Members of this group are unable to articulate the same claims to indigeneity as San groups in neighboring Botswana (Sylvain 2002). Second, indigenous people are not always the most-marginal people displaced and impoverished by protected areas. Studies from Indonesia (Li 2000, 2005) and South Africa (Kuper 2003) demonstrate that people descended from displaced groups frequently are a significant minority of the rural populations in developing countries. They are also frequently the most marginal and least ethnically distinct. Nevertheless, their relationships to the environment have profound implications for conservation.

There is a final lacuna with respect to our knowledge of displacement from protected areas: We have little knowledge of the protected areas' rates of use and occupation. Instead of a global overview of these rates, we have a smattering of individual surveys showing occupation rates of 56%–72% for national parks and wildlife sanctuaries in India (Kothari et al. 1989); 85% for national parks in South America (Amend & Amend 1995); 70% for protected areas in well-populated tropical areas (Bruner et al. 2001), and 70%–100% for protected areas in Myanmar, Mongolia, and East Kalimantan (Bedunah & Schmidt 2004, Jepson et al. 2002, Rao et al. 2002). Remote sensing of agricultural activities inside protected areas (using protected-area data from 2000, which had approximately 44,000 records) illustrates that agriculture is practiced in 29% of known protected areas (McNeely & Scherr 2003). Clearly it is difficult to understand the consequences of displacement from protected areas if a good overview of protected-area occupancy rates does not exist in the first place. If these surveys are representative, however, then current protest is but the thin end of the wedge. If existing conservation legislation is applied strictly in many countries, the level and rate of evictions should increase remarkably. Recent reports from India, for example, suggest that nearly 4 million people face eviction following amendments to protected-area policy (Kothari 2004). Geisler & de Sousa (2001) estimate that between 1 and 16 million people in Africa could become environmental refugees from protected areas. If this becomes true, the real challenge facing anthropology and conservation is how to deal with this portending displacement (Brockington et al. 2006).

Displacement then is more elusive and complex than it might otherwise seem. Indeed the ambiguities protected areas can create are remarkable. Protected areas can produce new sorts of lands that are owned by the state but used by local people for subsistence and social needs (Sato 2000). National parks are often ambiguous in this way because they turn historic hunting and grazing zones into areas that local people cannot use (Knudsen 1999). In Nepal buffer zones restrict traditional access rights and land use, lead to conflict and economic loss, and destroy traditional land-tenure systems, yet there is no evidence that buffer zones lead to conservation (Heinen & Mehta 2000). Chatty (2002) demonstrates that an oryx-reintroduction project on the Arabian Peninsula, although lauded a conservation success story, actually changed land-use rights, so the Harasiis people who have shared space with the oryx for centuries are now denied grazing rights and are put into a position where poaching is a financial and subsistence option. Rae et al. (2002) show how protected areas in Syria replace customary land-tenure systems with new regulatory systems that dispossess pastoral groups, alter intra- and intertribal relations, and affect local community dynamics. In Nepal and

Bhutan, land-management techniques used by national parks to protect wildlife disrupt local agriculture and create hostility among local people toward conservation in general (Seeland 2000).

Conflict is often at the heart of protected-area establishment and maintenance. In part this is because of clumsy top-down approaches by states that fail to appreciate, or work with, local practices and interests. Orlove (2002) has shown how villagers effectively resisted attempts to establish a national reserve in the reedbeds of Lake Titicaca in Peru either from the outset or because the new controls proved difficult to reconcile with the villagers' management of the reedbeds. The reedbeds were thoroughly anthropogenic environments with villagers planting, cutting, and tending the beds in accordance with fluctuating lake levels. On other occasions, protected-area creation hinges on the physical and symbolic erasure of former residents (Neumann 1998, Ranger 1999, Spence 1999). One central feature of the Yellowstone Model was the erasure of the social history of Native American land use and even Native Americans themselves (Meyer 1996, Rasker 1993). 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. The policing and funding of protected areas require continued state violence (Neumann 2004, Peluso 1993).

Protected areas, as with any development intervention, are also instrumental in fueling social conflict between groups. African transboundary conservation areas, which can require displacement and fuel ethnic tensions, ironically have sought popular support as peace parks (Duffy 2005, Wolmer 2003). Contests develop over the fortunes and misfortunes that protected areas can distribute. This can be between rich and poor (e.g., McLean & Straede 2003), castes (e.g., Paudel 2005), or ethnic groups (e.g., Nelson & Hossack 2003). Protected areas are frequently cited as one of the means by which violence is done to indigenous peoples (Colchester 2003, Colchester & Erni 1999, Gray et al. 1998, Nelson & Hossack 2003).

The creation of wilderness spaces, however, has often also resulted in the creation of liminal spaces, beyond the control of the state. Parks in Africa and Latin America have served as staging grounds for guerilla movements (Dunn 2003), as well as for drug trafficking (Stepp 2005). U.S. parks shelter marijuana plantations and methamphetamine labs, as well as being a preferred route for people seeking to enter the country illegally (Igoe 2005). Parks sometimes offer indigenous communities opportunities to elude state control and other incursions onto their land. The Ute Mountain Tribal Park in Colorado was created to preempt the expropriation of Ute land by the U.S. National Park Service (Igoe 2004). The 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 2000). Some conservation areas are created in partnership with local people and still change land- and sea-use patterns. The Seaflower Biosphere Reserve in Columbia was created as a result of the local identification of overfished areas and the local agreement to turn these areas into no-take reserves (Friedlander et al. 2003). In some cases protected areas meant to change land-use rights create a joint land management with rights and responsibilities falling to both residents of reserves and wildlife managers, but local people still lose important rights to agricultural lands (Maikhuri et al. 2000). This loss affects local lifeways and subsistence practices and often has negative consequences.

CHANGES IN SOCIAL PRACTICES

Protected areas and conservation efforts have profound effects on gender relationships worldwide (Agarwal 1997, Ghimire & Pimbert 1997, Schroeder 1993). In the Maya Biosphere Reserve in Guatemala, project

planners targeted the men as the "primary agents of social change," whereas the planners initially virtually ignored the women (Sundberg 2003, p. 733). The project worked, however, to "disrupt local power structures and gender relations, thereby creating spaces for new forms of environmental activism and political alliances" (p. 734). Because they were ignored, women began to build alliances and work outside of their immediate family. This allowed women new ways of constituting themselves as persons. Instead of making self only through family interactions, women broadened their social networks and their networks of self (Sundberg 2004). Similarly, in Costa Rica, women's participation in handicraft production projects aimed at tourist markets has given them economic power that they did not have in the past (Vivanco 2001). The kinds of handicraft projects that have emerged because of conservation and ecotourism in Costa Rica have changed the way women produce crafts and the imagery used in the crafts. Women now incorporate images of the quetzal into their designs, even if they have never seen the birds before (Vivanco 2001). In Tanzania, bride-price conventions and women's income earning have changed over time because of the fall in cattle numbers following displacement (Brockington 2001). Sullivan's (2000) work in Namibia has shown that attempts to deal with the economic exclusions of conservation policies discriminated against and devalued women's resource use.

Conservation efforts also change the ways people see themselves in relation to their surroundings. In the past, the Huaorani Indians saw the natural environment as inextricable from their social world (Holt 2005). Today, nature and culture are separate for them because of their involvement in conservation. In some instances local people have begun to monitor their own wildlife consumption (Noss et al. 2004). Peters (1998) demonstrates that deeply embedded socioecological practices such as tavy in Madagascar have been approached by conservation actors as environmental practices that have little or no social significance. These practices, seen as simply environmental usage by ecologists and conservationists, are stopped or changed to the detriment of local social life and custom. In some cases, of course, resource depletion causes social changes such as intensification of land use and dependence on market economies (Putsche 2000). Some authors show that the language of environmentalism and protection has come to permeate local language and speech. This appropriation of environmentalist discourse is used in Cerro Azul Meambar National Park in Honduras when people wish to gain access to the benefits of the park, yet it also works to change local views of peoples' relationships with their surroundings (Pfeffer et al. 2001).

In many projects people are made less complicated so as to make them understandable to outsiders and managers and so their socioecological practices will fit within the IUCN categories of protected landscapes (Harmon 2003). We take this process to be one of both generification, making people fit into already existing categories, and decomplexification, simplifying people's social practices and beliefs so they fit within certain policy structures. Conservation efforts often do not effectively respond to the changing social, political, and economic needs of communities (Egenter & Labo 2003). These efforts tend to fix communities and peoples in time and space and not allow for change. People are often judged as difficult and projects as failures when they do not conform to their created image at the project's inception (West 2001, 2006). In other instances indigenous peoples and their ecological knowledge and practice are fixed temporally in the past, and little attention is paid to their current understandings and uses of their surroundings (English 2000). A kind of virtualism is at play here—people are produced one way, and when they are not that way or change, they are seen as failing.

We also see shifting identity claims on the part of nonindigenous actors. In Australia there has been conflict over forest-protection planning because of the ways in which white

Australians react to arguments about Aboriginal spiritual and social ties to the land (Trigger & Mulcock 2005). With regard to the Aboriginal peoples' assertion of historic ties to the land, whites have begun to assert their social and spiritual connections to the land. Others show how people in wealthy nations come to configure their identity as environmentalists through NGO media representations of indigenous peoples and their use and understandings of their surroundings (Weeks 1999).

Some of the most pervasive and far-reaching changes wrought by protected areas are visible in the spread of ecotourism and commodification. Ecotourism enterprises are symbiotic with protected areas. If there is a protected area, some form of ecotourism likely uses it, and if ecotourism enterprises are present, some protected areas likely exist in the vicinity. Because of this connection, people living in and around protected areas interact with ecotourism as a revenue source, as a set of social relationships that bring nature and culture to areas where they did not exist before, and as a conduit for visitors from other places. It brings new ways of seeing and using people's surroundings to already existing socioecological landscapes and creates new boundaries (Forbes 1995, Vivanco 2001, West & Carrier 2004).

Ecotourism works to create simplistic images of local people and their uses and understanding of their surroundings. Through the lens of these simplified images, officials direct policies and projects toward the local people, and the local people are blamed with the projects fail (Belsky 1999). Ecotourism also works to change the ways people understand their surroundings (Vivanco 2001), and it can lead to pressure on local resources because of the numbers of tourists and increasing tourist activities (Panusittikorn & Prato 2001, Puntenney 1990). Ecotourism can also lead to increased economic expectations on the part of local people (Chapin 1990, Foucat 2002). In the Yucatan, it has contributed to changes in Mayan diets that include increased dependency on purchased items and a decline in overall nutrition (Leatherman & Goodman 2005).

The money that tourism can generate often ties parks and park management to ecotourism (Walpole et al. 2001). But there is a tension in this relationship because ecotourism often causes conflict and changes in land-use rights (Bookbinder et al. 1998), fails to deliver promises of community-level benefits (Alexander 2000, Kiss 2004, Kruger 2005, Stone & Wall 2004), actually damages environments (Carrier & Macleod 2005, Karan & Mather 1985, Quiros 2005, Savage 1993, Zurick 1992), and has myriad other social impacts (Wallace & Diamante 2005). Indeed, many argue repeatedly that ecotourism is neither ecologically nor socially beneficial (Carrier & MacLeod 2005, West & Carrier 2004), yet it persists as a strategy for conservation and development.

In Cuc Phuong National Park, where some Muong villagers have been relocated outside the park to buffer zones, ecotourism has caused conflict between Muong villages by creating class differences between people who have money because of tourism and those who do not; it created images of people living in the park as indigenous and those moved outside of it as villagers; and it created a dependency on conservation for jobs and income (Rugendyke & Son 2005). This park is not the only place where people have been displaced by ecotourism (Weinberg et al. 2002) or where an economic dependency on tourism exists (Macleod 2001, Putsche 2000). In Costa Rica, 70% of regional income near Monte Verde comes from ecotourism (Vivanco 2001). We also see the creation of socioeconomic differences between communities involved in park-related ecotourism enterprises and those not given the same opportunities in Jordan (Schneider & Burnett 2000) and Neapl (Mehta & Kellert 1998), and unequal benefit distribution in Nepal (Bookbinder et al. 1998) and Indonesia (Walpole et al. 2001). Conflict also arises over ecotourism in Australia (Slattery 2002),

Tasmania (Kirkpatrick 2001), and Papua New Guinea (West 2006, West & Carrier 2004). Abel (2003) demonstrates that, in Bonaire, ecotourism presents an enormous disruption to socioecological systems by changing social relations between peoples and relations of production across the island. Abel also shows how ecotourism internationalizes economies in ways that are not necessarily beneficial to people living in and around protected areas, whereas Dixon et al. (1993) demonstrate how dive tourism in Bonaire has negatively affected reef health and thus subsistence for some people.

Even without ecotourism, protected areas at times provide employment for rural peoples (Whitesell 1996), although in some instances protected areas turn people into labor in ways that create new sorts of subjectivities (Sodikof 2005), employment for expatriates (Peters 1998), and employment for in-country elites (Baviskar 2003). Protected areas also provide some in-country scientific-capacity building (Aguilar-Stoen & Dhillion 2003, Danielsen et al. 2005, Sivaramakrishnan 2003). However, NGOs do not always meet these promises of capacity building (Haley & Clayton 2003). Protected areas also, at times, create a dependency on conservation projects for employment opportunities for both rural peoples and landholders (Brandon et al. 2005, Charles 1999, Lane 2002, Lawson 2003, Westman 1990).

More significant than the creation or distribution of employment, however, are the consequences of commodification that incorporation into market systems can bring. (Peters 1998, Sundberg 2003, Toly 2004, West 2006, Wilshusen et al. 2002). Ecotourism can make protected areas, and experience and interaction with them, into things that have an economic value on the basis of visitors' consumption of them (Alexander 2000, King & Stewart 1996, Panusittikorn & Prato 2001, Vaughan 2000). Whereas rural peoples' previous interactions with plants and animals were unique social ways of relating to their surroundings, these plants and animals' instillation into economic valuation erases local ways of seeing and being (Brown 1998, Jeffery et al. 2003, King & Stewart 1996, Tsing 2003).

MacDonald (2004) has shown that the international sport hunting of ibex in Pakistan, driven by shaky narratives of scarcity, displaces local hunting practices and beliefs. The commodity of trophy species becomes a means of control and domination. Indeed, integrated conservation and development projects (referred to as ICDPs or ICADs) are premised on the idea that people living in and around protected areas can come to value their surroundings as "in situ biological diversity" if they intellectually connect it to markets and cash income (Filer 2004; Van Helden 1998, 2001; Wagner 2003; West 2005, 2006).

These projects always focus on some sort of commercialization of plants, animals, places, or peoples (Brandon & O'Herron 2004, Cameron 1996), but they rarely take local systems of evaluation into account (Sillitoe 2001, West 2005). In addition, ICAD projects often exacerbate already existing social differences (Cameron 1996, Horowitz 1998) and create expectations that are not met (Foale 2001). The conservation literature can be skeptical of these projects' effectiveness for conservation (Wells et al. 1999).

In some instances, when animals are turned into commodities in local peoples' minds, they retaliate against national parks because of the financial burdens imposed on them through the killing of wildlife (Seeland 2000). Certain species have gone from being little known or valued by local people to being highly valued commodities (Vivanco 2001). The commodification of plants may erase their social value and lead to overproduction within protected areas (Merlin & Raynor 2005). Local people and their image can also be turned into commodities (Krech 2005), as can their intellectual property that is concerned with their surroundings (Brush 1993, Filer 2000).

CONCLUSIONS

How might anthropologists think more carefully about the material effects of protected areas in future research? Lefebvre (1991), Smith (1990, 1996), and Harvey (1989) all argue that space is produced through social practices, science, planning, and technology, and space is lived and understood through symbols, language, and images (see Lefebvre 1991, pp. 38–39). By space these authors mean the world around us as it is experienced materially and symbolically. Here we take space to mean the same as surroundings, the term we use to think about how one should describe the world people live in and with when discussing protected areas, so as to not replicate culturally biased terms such as environment, nature, natural resources, or wilderness.

Anthropologists have used ideas about spatial production productively to move beyond debates about social construction and material effects in other nonenvironmental realms of analysis (Low 1996), and geographers have used these ideas to think about the production of natural spaces in preservation projects (Katz 1998). We would like to see more analysis of the ways in which protected areas produce space both discursively, as Brosius (1999a) suggests, and materially. How do protected areas bring particular types of space into being? What does the creation of new places through conservation intervention do to the places being symbolically and materially remapped by conservation topologies? How do these productions of space alter local social relations with people's surroundings? How do they alter how people use and make meaningful their surroundings?

Some of this type of analysis exists in the literature on protected areas in an embedded form, but it is not, for the most part, explicitly discussed as the formation of new kinds of space and place (Arias & Nations 1992, Austin et al. 1997, Baviskar 2003, Bryant 2000, Duffy 2005, Silori 2001, Slattery 2002, Westman 1990). Some authors have specifically addressed spatial productions with regard to the following: the creation of nature in general (Braun 2002, West 2006), ecotourism (Carrier & Macleod 2005), mapping and conservation (Hughes 2005, Sletto 2002), the fixation of local people in particular kinds of spaces (Whitesell 1996), implications of and for NGOs (Sundberg 1998), displacement (McLean & Straede 2003), and finally the work of discursive practices online and in offices in New York and Washington, D.C., to remake the world (Weeks 1999).

Moore's (1998) study of the environmental politics and history surrounding the Kaerezi River Protected Area in Zimbabwe's Eastern Highlands serves as a good example of where we would like to see future work headed. He argues for "viewing the landscape as the historical sedimentation of symbolic and material processes," emphasizing "competing cultural constructions that assert resource rights and environmental entitlements" (p. 379). He demonstrates the ways in which landscapes come into being, how they are profoundly social, and how the push for conservation changes the social nature of people's surroundings. He also problematizes the state, the community, peasants, and conservationists in ways that show the complexity of social productions of space.

Additionally, Brockington (2002, p. 18, 25, 28) shows how these sorts of spatial productions then work to mold and shape who claims to have membership in or is claimed by others to be of a particular ethnic group. The social is made to seem less complex so it can fit into the new spatial productions of conservation. This is done for ease of policy making and management (Brockington 2002, p. 25) and to make people's socioecological practices fit within the IUCN categories of protected landscapes (Harmon 2003). Therefore, conservation, similar to colonialism, solidifies certain identities and ethnicities (Hodgson 2001, Li 2000) and incarcerates them in space and place (Appadurai 1988).

These spatial productions also affect what kinds of evaluation systems of the surroundings' value are in place and/or taken seriously. Kaus (1993) demonstrates that the Mapimi

Biosphere Reserve in Mexico, with its division into eight different zones, is a new production of space that is profoundly different from local peoples' divisions of lands. She also shows that local people and researchers have vastly different ideas about what the land in the reserve contains and its importance and that they have vastly different systems for evaluation of the value of plants, animals, and natural processes.

Additionally, we also want to encourage more work on the production of value by and for people living outside of protected areas. Harmon (2003) discusses 11 intangible values derived from protected areas: recreational, therapeutic, spiritual, cultural, identity, existence, artistic, aesthetic, educational, peace, and scientific research and monitoring. These values can be seen as social effects of protected areas as they change the social lives and well-being of the people who visit parks and the people living in them. The recreationists, tourists, artists, scientists and others who use protected areas need to be studied.

Finally, we would like to see more work specifically focused on what we see as a simplification process that takes place when biologists and other natural scientists write about, think about, and attempt to legislate the social relations between people and their surroundings. In this simplification process, rich and nuanced social interactions connected to what natural scientists see as the environment are condensed to a few easily conveyable and representable issues or topics. We see this process taking place on two levels. First, people's uses of and understandings of their surroundings are simplified so they are seen as resource use (Tsing 2003, West 2005), and, second, people's uses of their surroundings are simplified so that they are seen as falling on a scale of authenticity that ranges from ecologically pristine native to fallen-from-grace native to peasant, and so on (see Igoe 2005, West 2001). In some ways this is a retelling of the unilinial evolution paradigm from eighteenth-century anthropology.

To conclude, we reiterate our assertion that protected areas are a form of what has been called globalization. The contemporary focus on the technological aspects of globalization (such as the rapid communication and information systems and networks, rapid transportation, and the movements of people, money, and ideas) has perhaps made globalization seem less relevant in a field where the aim appears to be the preservation of a natural state. At the same time, political economic critiques such as those of Marxist geographers are cast at such a scale as to not take into account the individual (idiosyncratic) practices and beliefs of local populations. We argue for an anthropology of protected areas that bridges this gap, one that attends to the political economies of globalization and the subtle but profound local social effects of the creation of nature and environment in places where those categorizations of people's surroundings did not exist until recently.

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