

People or Parks: The Human Factor in Protecting Wildlife

Recent studies in Asia and Australia found that community-managed areas can sometimes do better than traditional parks at preserving habitat and biodiversity. When it comes to conservation, maybe local people are not the problem, but the solution.

by richard conniff

When the United Nations put out its Protected Planet Report in 2012, it touted the news that national governments have designated more than 177,000 protected areas around the world for the long-term conservation of nature, covering an impressive 12.7 percent of the earth's land surface. Just since 1990, the acreage under protection has increased by 48 percent.

But this encouraging news also masks a significant defect. Setting aside the question of how well officially protected areas actually protect anything, poor planning means these areas often completely omit critical habitats and key species. When a 2004 study in *BioSciences* looked at a representative sampling of wildlife from around the world, it found that protected areas included little or no habitat for about 90 percent of the threatened or endangered species in the sample. The list of outcasts included 276 mammal species, 940 amphibians, 23 turtles, and 244 birds. Even in parks specifically designed to accommodate certain species, The Nepal study found that tiger habitat improved in areas where local communities had a say in the management.

moreover, climate change could make conditions far less accommodating in 50 or 100 years.

Hence the increasing recognition that what happens outside protected areas matters at least as much as what happens within. And that has led to a worldwide upsurge in management of critical habitats by the people who live in them. This movement does not come easy to either side. Park managers have typically regarded nearby communities as a source of illegal logging, poaching, and other problems, not as part of the solution. Local people in turn have often seen the parks as a threat to their crops and livestock, as well as a usurpation of their traditional land rights.

But two studies published in recent weeks suggest that community-managed areas, or areas managed by communities in collaboration with parks, can sometimes do better than traditional parks alone at protecting habitats and species.

The first study, in the journal *Ecosphere*, looked at the status of tigers in and around Nepal's Chitwan National Park in the Himalayan foothills. That country has brought off one of the few tiger success stories, with a robust and increasing population, even as poaching eliminates tigers from traditional habitats in neighboring India. Nepal's Chitwan district in particular has seen its population of adult tigers increase from 91 just four years ago to 125 today, says the study's lead author Neil H. Carter, a conservation biologist at the National Socio-Environmental Synthesis Center.

The human population in the buffer zone around the park has, however, also tripled over the past 40 years, and tigers now kill seven or eight people a year there. It sounds like the classic recipe for conflict.

Under the 1996 management plan developed by the community and approved by the park, says Carter, livestock grazing in the buffer zone has ended. But the community now determines how to allocate other forest resources there, for fodder and firewood. To understand the effects of that shift, he and his co-authors set out camera traps at 76 locations both inside the park and in a 25-square-mile community-managed forest in the buffer zone. They also used satellite imagery to measure changes in different habitat types.

To their surprise, they found fewer tigers and a decline in habitat quality inside the park. But habitat actually improved, particularly after 1999, on land where local communities had a say in the management. The camera traps revealed more tigers there, too. Top-down, exclusionary policies had failed to discourage local people from gathering fuelwood and fodder in the park, the co-authors concluded. But bottom-up involvement of local people had given them a sense of ownership in the community land. People were also "surprisingly tolerant" of tigers there, says Carter, though continuing growth in the tiger population might change that. The hope, he says, is that

In Australia, researchers found it wasn't hunting that caused the extinction of small mammals, but the loss of hunting.

a corridor of community-managed lands might ultimately allow the tiger population to re-connect with populations in other parks.

The second study, published in the *Proceedings of the Royal Society B*, looked at aboriginal hunting practices in Australia's Western Desert. After the last nomadic hunters left the area in the mid-20th century, 10 to 20 species went extinct, and many more experienced sharp declines, according to Stanford University anthropologist Rebecca Bird and her co-authors. One possible factor was that the fires set by aboriginal hunters had averaged just 64 hectares in area, producing a mosaic of habitats. But with the hunters gone, the average size of lightning-caused fires leaped to 52,000 hectares by 1984.

That year, a group of Martu desert-dwellers returned to their traditional lands and resumed hunting. Bird and her co-authors set out with them to test the hypothesis that traditional hunting practices fostered diversity. They focused on the sand monitor lizard (*Varanus gouldii*), which is the chief object of the Martu hunt. The Martu hunters typically burn a small area of older-growth spinifex grassland, according to the co-authors, then search the area for fresh lizard burrows. Burning dramatically increases their catch — and the resulting patchwork landscape also provides better habitat for the lizards and other species.

"Paradoxically, *V. gouldii* populations are higher where Aboriginal hunting is most intense," the co-authors write. It wasn't human hunting that caused the extinction of small mammal species, they conclude, "but the loss of human hunting."

The Martu now have a ranger system running in Karlamilyi National Park, in partnership with Australia's Department of Environment and Conservation. But when asked if scientific advisers guide the process, Douglas W. Bird, Rebecca's co-author and husband, just laughed. The aboriginal system of know-how, called Jukurr, is so ecologically detailed,

Community-managed forests in 15 tropical countries were more effective than traditional protected areas. the co-authors write, that the Martu are aware of "which species of skink returns to the same location to defaecate and which mouse prefers burnt spinifex." The government, which has no staff on the ground there, has asked the Martu to participate in co-management of the park, but the Martu have insisted instead on full ownership and management rights. Elsewhere in the world, indigenous communities and community conservancies already control 40 percent of the land area in Namibia, 50 percent in Mexico, and 90 percent in Papua New Guinea. And the evidence increasingly suggests that they can succeed at achieving conservation goals. A recent analysis in the journal *Forest Ecology and Management* found that community managed forests in 15 tropical countries were actually more effective than traditional protected areas at reducing deforestation.

Community conservancies are never, however, an easy fix, says Philip Muruthi, chief scientist for the African Wildlife Foundation (AWF). The habitat, the idiosyncrasies of the people and wildlife living there, and the

political and economic context around them mean that community management structures must be worked out one case at a time.

"Our projects are science-led," says Muruthi. "Before we go into it, we plan and talk about which are the key areas to connect." For instance, Amboseli National Park in southern Kenya is too small for its elephant population. But the elephants have nowhere to go because of the growing human population outside the park. AWF believes community conservancies there have the potential to open a migratory corridor south to Mount Kilimanjaro and Arusha national parks in Tanzania, with tourism providing both economic benefits to local populations and the budget for increased anti-poaching patrols.

Business considerations also count, says Muruthi. One proposed conservancy may be large enough to make its own contract with a tourism operator, while another may prosper only by forming an alliance with neighboring conservancies. Due diligence is also essential, so a deal with a lodge operator doesn't belatedly fall through when the conservancy turns

'We can't conserve everything within park boundaries. So how do we work with local people?' out not to own the land under negotiation. (It's happened, he says.)

Any community management or co-management scheme requires a land-use plan with detailed prescriptions for habitat and species. It's also essential to lay out a clear system of governance, both to enforce the rules and to share the economic benefits equitably within the community. "Otherwise people become disenfranchised and start disobeying the prescriptions," says Muruthi. To ensure success, AWF typically remains on a local conservancy board for the first 10 to 15 years, "because the ecological benefits can take that long to appear."

That careful process is likely to be repeated increasingly around the world, as park staffs and their neighbors learn to talk as collaborators rather than as enemies. The Indigenous Community Conservation Area Consortium, set up in 2008, is encouraging such conversations. So do schemes like the World Bank system of payments for ecosystem services, and the United Nations system of payments for avoided deforestation — that is, REDD, for Reducing Emissions from Deforestation and Forest Degradation. (Another study out last month found that trained members of local communities can

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be as accurate as professional foresters at monitoring REDD compliance — and will likely be less expensive in the long run.)

"The reality," says Jen Shaffer, a University of Maryland anthropologist who works in Mozambique, "is that we can't conserve everything inside park boundaries. So how do we work with local people? What do they know that we don't? And how can habitats benefit from encouraging those practices? What are they doing that harms the habitat? And how do we work with the community to improve or tweak those practices, so the community is benefiting and the biodiversity is benefiting?"

"It might mean moving the fences in, in some cases, or moving them out in others," she says. "But it involves understanding that landscapes have evolved with people, and that what people do is important."

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[Richard Conniff](#) is a National Magazine Award-winning writer whose articles have appeared in *Time*, *Smithsonian*, *The Atlantic*, *National Geographic*, and other publications. He is the author of several books, including *The Species Seekers: Heroes, Fools, and the Mad Pursuit of Life on Earth*. In previous articles for *Yale Environment 360*, he has reported on [pangolin poaching in Asia and Africa](#) and examined how [root microbiomes affect forest ecology](#).

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