



BIODIVERSITY

As Isolation Ends, Myanmar Faces New Ecological Risks

Concerned about the path of foreign investment, homegrown environmentalists seek to protect threatened forests and wildlife and push for sustainable development

GWA, MYANMAR—Bouncing over stone-filled potholes in a four-wheel drive SUV, Myint Aung passes a cluster of huts in a glade hacked from what was once a vibrant bamboo forest. Children in threadbare clothes wave hello. “All these settlements are illegal,” says Myint Aung, a former forestry official who runs Friends of Wildlife, a homegrown nongovernmental organization (NGO) in the capital, Yangon. Here in Taung-nyo Public Protected Forest in western Myanmar, villagers subsist on hunting, illegal logging, and slash-and-burn farming that depletes topsoil. Hectare by hectare, Myint Aung says, they are laying waste to the landscape, where scrub thickets and charred hills stretch for kilometers into the distance.

Until recently, Myint Aung and colleagues could do little more than bear witness to an unfolding ecological crisis. For decades, Myanmar’s military rulers took a dim view of NGOs and outlawed them. But as part of the reforms sweeping the country, the government has cleared the way for NGOs to register legally. Friends of Wildlife is now openly courting foreign donors to support projects aimed at safeguarding biodiversity in Taung-nyo and elsewhere.

Myanmar’s environment is at a cross-

roads, its fate hinging on how recent reforms reshape the country. In his 17 months in office, President Thein Sein has legalized labor unions, rolled back censorship, and released hundreds of imprisoned dissidents. In April, Nobel Peace laureate Aung San Suu Kyi was allowed to run for parliament, winning handily after spending much of the last 20 years under house arrest. Encouraged by those developments, the United States and other countries have eased sanctions on the long-isolated country, opening the floodgates to foreign investment.

Some observers fear that will be bad news for biodiversity: The government, they contend, won’t try to keep developers on a short leash. Others are optimistic that Myanmar’s leaders will embrace a sustainable path. “Before the opening, the only direction for conservation in Myanmar was downwards. We didn’t have the money to defend newly protected areas, and we had no ability to bring international pressure to bear on the government’s environmental policy,” says biologist Alan Rabinowitz, who runs Panthera, a big cat conservancy in New York City. In 2001, he founded Hukawng Valley Wildlife Sanctuary in northern Myanmar. “I see this as a huge opportunity to stabilize Myanmar’s ecology.”

Life lessons. Local environmental advocates have teamed up with international groups to teach villagers how to succeed as farmers.

Running on empty

After 2 decades of international sanctions for human-rights violations, Myanmar lags behind neighboring countries in building an infrastructure. As a result, it retains some of the largest intact forests in Southeast Asia. With 1100 species, the diversity of Myanmar’s birdlife exceeds that of the United States and Canada combined. The country’s Asiatic elephant population—ranging from 1350 to as many as 5300 individuals according to various estimates—is second only to India’s. And Hukawng, a 21,833-square-kilometer swath of jungle in Kachin State, is a haven for many of the country’s 85 remaining tigers. “Myanmar is biogeographically and biologically one of the most exciting places in Asia,” says Peter Leimgruber, a biologist at the Smithsonian Conservation Biology Institute in Front Royal, Virginia.

On the other hand, the sanctions exacerbated the rampant poverty that now makes it harder to protect the country’s ecological resources. From 2001 to 2010, the Wildlife Trade Monitoring Network, or TRAFFIC, in Cambridge, U.K., documented more than 400 tiger, leopard, and Asiatic lion carcasses and body parts for sale in the eastern border towns of Mong La and Talchilek. Tigers face intense poaching threats; a single animal dried and packed in a box can net more than \$30,000 for medicine and other uses in Chinese markets, according to Robert Tizard, a Yangon-based technical adviser to the Wildlife Conservation Society (WCS) in New York City. Leimgruber and Smithsonian colleagues predict that the capture of wild elephants for use as draft animals in the logging trade could extirpate Myanmar’s elephant population within 30 years.

Enforcement is a huge problem. Of the country’s 36 protected areas, just 22 have forestry staff members, Tizard says. “That typically amounts to one or two rangers,” he says. “Not enough to patrol or manage these areas effectively.”

Scant data exist on just what the rangers are supposed to be protecting. Thanks to an agreement with Myanmar’s forestry department, WCS has maintained a low-key presence here since 1993. But neither WCS nor its collaborators have sufficient resources to track environmental changes nationwide. Some areas are too dangerous for fieldwork because of sporadic clashes between the army and rebel groups. A 2012 study funded by the MacArthur Foundation

concluded that Sumatran and Javan rhinoceroses are “probably extinct” in Myanmar—but it couldn’t be sure, because a few rhinos may have found refuge in conflict zones that haven’t been surveyed for years.

Illicit timber trades also cut heavily into the forests. In 2009, Global Witness, a London-based NGO, estimated that more than 90% of Myanmar’s timber exports to China are illegal. China is Myanmar’s biggest trading partner; it imports timber, minerals, and other natural resources, and invests in hydropower schemes. By boosting economic ties with the West, Myanmar may be able to wean itself off that dependency, Rabinowitz says.

Myanmar of late has not shied from sacrificing trade with China to protect the environment. Last October, for instance, the government indefinitely postponed the Myitsone Dam, sponsored by China Power International. Opposed by Kachin rebels, conservationists, and political activists, the \$3.6 billion dam would have flooded 26,000 hectares at the headwaters of the Irrawaddy River, displacing thousands of villagers and degrading habitat of fish and the critically endangered White-bellied Heron. Earlier this year, Thein Sein declared that the dam would never be built during his term in office, which ends in 2015. The government has continued with a string of ecologically favorable policies this year. Last March, it canceled a 400-megawatt, Thai-sponsored coal-fired power plant near Dawei, on the southern coast, on environmental grounds. Then it passed a comprehensive environmental law, the country’s first, which requires environmental impact assessments before the approval of development projects. Mining within 100 meters of Myanmar’s four largest rivers—the Irrawaddy, the Thanlwin, the Chindwinn, and the Sittaung—is now banned by a Ministry of Mines decree.

These changes are a positive shift favoring conservation, Tizard says. But it’s unclear how effective some changes will be without substantial investments for conservation and enforcement. “Top-level officials say what they want done, but they don’t supply enough money to carry out their policies,” says one ex-forestry official. Forest rangers on minuscule wages routinely risk their lives confronting well-armed poachers, Rabinowitz adds. WCS is supplying technical and financial assistance to the forestry department to boost wildlife patrols. “What tiger, elephant, and other species in the parks need is protection,” says Than Myint, WCS country program director. “With more patrols, my personal feeling is their numbers will rebound.”

Than Myint and his WCS colleagues have found that illegal hunting earns more than farming for villagers living in or near two protected areas: Hponkanrazi Wildlife Sanctuary on the Indian border, and Hkakaborazi National Park bordering China. Interviews they conducted point to sharp declines in commercially valuable species in these areas, including tiger, otter, musk deer, bear, and pangolin. Most wildlife products leaving Hkakaborazi—including 376 carcasses from 13 species identified during patrols and checkpoints over 8 months in 2006 to 2007 were headed to China, the team reported in *Environmental Management* in 2010 and 2011.

More patrols will curtail the bush meat trade, Than Myint says. But the government, he says, must also confront the root cause



Getting by. Some Chin families are planting sustainable crops in western Myanmar, where opportunistic hunting was the rule. Charcoal burners (*right*) still practice an illegal trade, burning trees for fuel.

of the wildlife trade: a lack of alternative income sources or land tenure for impoverished villagers. In Myanmar, the state owns all the land, so villagers have little incentive to care for it.

The government has said it intends to change that. In 2001, it pledged to hand 930,776 hectares—about 1.5% of the country’s area—to communities with sustainable management plans by 2031. Degraded land now can be held for 30 years by community groups that agree to restore depleted soil. But villagers lack the resources and organizational capacity to work the land sustainably, says Saw Htun, WCS deputy country program director. For community forestry to succeed, he says, more outside support is needed.

Now that it’s a legal entity, Friends of Wildlife says it can step up efforts to help communities. It’s now working with 24 Chin families whose lifestyle, until recently, was to migrate through Western Myanmar’s for-

ests in pursuit of Asian bison, or gaur. Using hunting dogs and spears, the warriors would take three or four gaur in a good week. “But they would also take anything else of value they could find,” Myint Aung says. “Cats, tortoises, whatever they could sell.”

Thanks to Friends of Wildlife, the Chin have settled in huts surrounded by cash crops. After an 8-hour drive from Yangon, Myint Aung and two colleagues arrive in Gwa Township to check on the settlers. Myint Aung greets a shy teenage girl who has just completed the equivalent of a high school education. “She’ll be the first Chin family member here to go to university,” he says.

Myint Aung secured 80 hectares of degraded land for the Chin, who have signed onto a stewardship program. In exchange



for giving up hunting and slash-and-burn farming, the Chin receive schooling and technical support from Friends of Wildlife to help them shift to sustainable agriculture. Camera traps show less human disturbance in the forest now compared to 5 or 6 years ago, says Myint Aung, who hopes that this approach can be replicated elsewhere in Myanmar.

Rabinowitz and others say they’re optimistic that Myanmar’s evolving legal framework can tilt the balance in favor of conservation. Not long ago, the government was among the most secretive in the world. “Now it’s like they’re on C-SPAN,” Tizard says. But Leimgruber cautions that political reforms elsewhere in Southeast Asia paved the way for developers to pounce while NGOs squabbled. “To protect biodiversity in Myanmar,” he says, “everyone’s going to have to work together.”

—CHARLES SCHMIDT

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