A tiger is captured in mid-leap, moving from left to right across a lush green field. The tiger's body is stretched out, and its tail is long and curved. The background is a dense forest of green trees and bushes. The lighting is bright, suggesting a sunny day.

What does the future hold
for Siberian tigers and
strictly protected areas in
the former Soviet Union?

Heart of **Russia**

By Gleb Raygorodetsky

As if in a pagan ritual, John Goodrich bows to a tree by the side of a winding trail through the *taiga* (the coniferous forest below the arctic zone). We're at the southern edge of Sikhote-Alinskyi Zapovednik—a strictly protected area in Primorye, a vast administrative region of the Russian Far East that, like a giant tiger's claw, peels the northeast corner of China away from the Sea of Japan.

A barely distinct stain on the bark draws Goodrich's attention. He leans slightly forward and takes a cautious sniff, as if sampling a delicate fragrance. He straightens, peers at the trunk for a few moments, and bows for another smell, this time from a stain a foot below the first one.

"It's an old one, but you can still catch a whiff of it," Goodrich announces, stepping aside to let me test my olfactory aptitude. A faint musky smell of cat urine mixed with the earthy odor of the tree bark tickles my nostrils.

"Tigers mark their territory by spraying urine on raised objects, like this tree next to the trail. A male's marks are higher than a female's," he explains.

His field gear strung around his belt and shoulders—everything from a knife to pepper spray to radio-tracking equipment—Goodrich is clad in camouflage pants, a faded khaki shirt, and Keds®. Slim and fair, he looks more like a Lands' End model than an academician. Since earning his doctorate in 1995, Goodrich has been working in Primorye as field coordinator for the Siberian Tiger Project of the Wildlife Conservation Society (WCS). The core area of this conservation initiative lies within the Sikhote-Alinskyi Zapovednik, designated as a World Heritage Site in 2001.

When the Russian government established the zapovednik in 1936, only 30 to 40 Siberian tigers still prowled the Russian Far East, and their numbers were dwindling. Today, a viable population of 300 to 400 *ambas*, as the local Udege call tigers, leave their tracks on the slopes of the Sikhote-Alinskyi range and along the coast. The cats' survival, as well as that of sable, saiga, beaver, and other species that were over-harvested throughout Russia in the early 1900s, is in large part due to the existence of the zapovedniks.

Zapovedniks epitomize the greatness of Russian aspirations—their existence was hailed by international environmental experts as one of the rare positive bequests of the "Evil Empire." The idea of the zapovedniks dates back to Grigoryi Kozhevnikov, a prominent Russian intellectual and professor of invertebrate zoology at Moscow State University. After visits to the United States and Germany in 1907, he was uninspired by the American concept of national parks—too anthropocentric—and pained by the realization that German nature monuments were minute islands

in the vast, human-dominated ocean of Western Europe. In a direct opposite approach, Kozhevnikov put forth an eccentric principle of *absolute inviolability* of large uninhabited natural spaces, still considered abundant in those days of Imperial Russia.

Supported by other prominent Russian scientists, Kozhevnikov conceived of zapovedniks as protected areas in which the unspoiled natural world could ebb and flow following its own rhythm, forever free of human interference. To the founders, this was akin to a sacred proscription—a *zapoved*—to voluntarily relinquish mankind's self-imposed "King of the World" title and surrender to nature's boundless and sacred wisdom.

Such lofty aspirations gradually sank in the quagmire of Soviet industrialization, collectivization, resource development, and nature enhancement policies. After 1930, the zapovedniks' founding principle of inviolability disappeared from legal documents on the protection of the environment. Yet, the ideal was kept alive and propagated through the teachings and examples of Russian environmentalists and ardent disciples of the founders' philosophy.

Various attempts to quash the system, first under Stalin in 1951 and then Khrushchev in 1961, almost led to a tenfold reduction in the size and number of zapovedniks. The system weathered these storms. By the time the USSR collapsed in 1991, the 15 republics boasted 160 zapovedniks covering 22.5 million hectares (56 million acres).

Goodrich and I amble along the trail, where every few years, WCS researchers and Sikhote-Alinskyi Zapovednik staff set humane leg-hold snares to catch new tigers for the long-term radio-tracking project. About half of the two dozen tigers that have home ranges entirely or partially within the zapovednik now wear radio collars.

Goodrich talks about how technological advances have allowed his team to collect thousands of fixed locations for the movements of 44 tigers, data on 27 litters from 13 tigresses, and 24 mortalities of collared tigers—all in a span of 13 years. This information is unmatched in detail and chronology anywhere in the world. Yet, he concedes, if it weren't for the solid foundations laid by Sikhote-Alinskyi Zapovednik scientists, many important questions about the

Biologist John Goodrich (right), field coordinator of WCS's Siberian Tiger Project in the Sikhote-Alinskyi Zapovednik, fits a radio-collar on a 395-pound male Siberian tiger, while Melody Roelke collects blood samples for disease and genetic analyses. Below: Russian student Roman Kozhichev listens for signals of collared tigers along the coast of the Sea of Japan in the preserve.



JOHN GOODRICH/WCS; A. RYBIN/WCS (ABOVE); TIM FITZHARRIS/MINDENPICTURES.COM (PAGES 32-33)

ecology, behavior, and population trends of endangered Siberian tigers would still be unanswered.

“The level of Russian field expertise and training is phenomenal! Although their approach lacks the rigor of scientific testing, the descriptive data the Russians collected during the Soviet years is first class,” says Goodrich.

In particular he praises the wisdom of each zapovednik for having its own dedicated scientific department, entrusted with long-term wildlife research and monitoring of their territories. “The historic data collected by Russian experts is the main reason we can accurately assess changes in Siberian tiger populations over the years.”

But now, the future of science in the zapovedniks and the prospects for the protected areas worry Goodrich. “The lack of new blood among the Russian scientists is most troubling,” he says. “Most of the zapovednik scientific staff is nearing retirement age. When they go, there is pretty much no one to continue their important work.”

Relatively well-financed by the Soviet government, the zapovednik scientific staff used to have dedicated budgets that allowed them to implement research and monitoring programs approved in Moscow. Working in zapovedniks was a dream come true for many Russian biology students. Every summer, as many as 30 students would work in Sikhote-Alinskyi, learning the skills necessary for careers in environmental protection and management.

The situation today is radically different. Since 1991, the government has cut its support to the zapovedniks by as

much as 80 percent. Salaries were reduced to such low levels (\$80 per month) that staff could hardly support themselves or their families. In the past ten years, only two Russian students have worked in Sikhote-Alinskyi. Local people joke that, “Working for a zapovednik is not a career, but a diagnosis.” However, the zapovednik staff continued to work, driven by sheer enthusiasm and a belief in the sacred responsibility to safeguard the very heart of Russia for future generations.

Recognizing the serious deterioration of Russian protected areas, the international community responded in the mid-1990s. Non-governmental organizations (WCS, World Wildlife Fund for Nature, Pacific Environmental Resource Center), multilateral agencies (Global Environmental Facility, World Bank, U.S. Agency for International Development), private foundations (Rockefeller Brothers Fund and MacArthur), and others provided millions of dollars and expertise to reinforce the crumbling system. According to Sikhote-Alinskyi Zapovednik Director Anatolyi Astafiev, whom I meet at his office in the coastal village of Ternei, “If it weren’t for international support, we would have lost the battle with organized poaching. We had no federal funding to purchase and maintain the equipment necessary to go after poachers—cars, boats, radios, ammunition, or even uniforms. Neither would we be able to continue basic research and monitoring of the endangered Amur tigers.”

Unfortunately, today many international organizations have shifted their focus to other parts of the world con-

sidered to be more disadvantaged. And the Russian government appears unwilling to step up to the plate. Gains achieved in the late 1990s are being rapidly dismantled.

Since 2000, when Goskomecologia, the State Committee for Ecology and Nature Use Control, was transferred to the Ministry of Natural Resources, not a single new federally protected area has been created—a lull not seen since the Stalin years. The emphasis shifted to resource development, not protection, says Fsevolod Stepanitsky, the former head of the Department of Nature Reserve Management.

In 2004, the organizational structure of the entire Russian government was reconfigured, and zapovedniks were essentially thrown out like the proverbial baby with the bath water. Three new divisions in two departments were created to deal with protected area management. Unable to perform even basic tasks within the new bureaucracy and suffocating in the anti-environmental atmosphere at the Ministry of Natural Resources, most of the management staff, including Stepanitsky, left to work at environmental NGOs and research institutions. The few that remained couldn’t possibly manage 100 zapovedniks effectively.

“One might say that there is no centralized protected area management in Russia today,” Stepanitsky says, shrugging in exasperation. “It is not because there’s some hidden agenda to dismantle the protected area system by the business elite, although they are always eager to take a bite out of our zapovedniks. Sadly, the reasons are a lot more trivial and devastating. There is almost no understanding of envi-

ronmental issues by the government, and modern Russian politicians rarely consider the environmental consequences of their actions.”

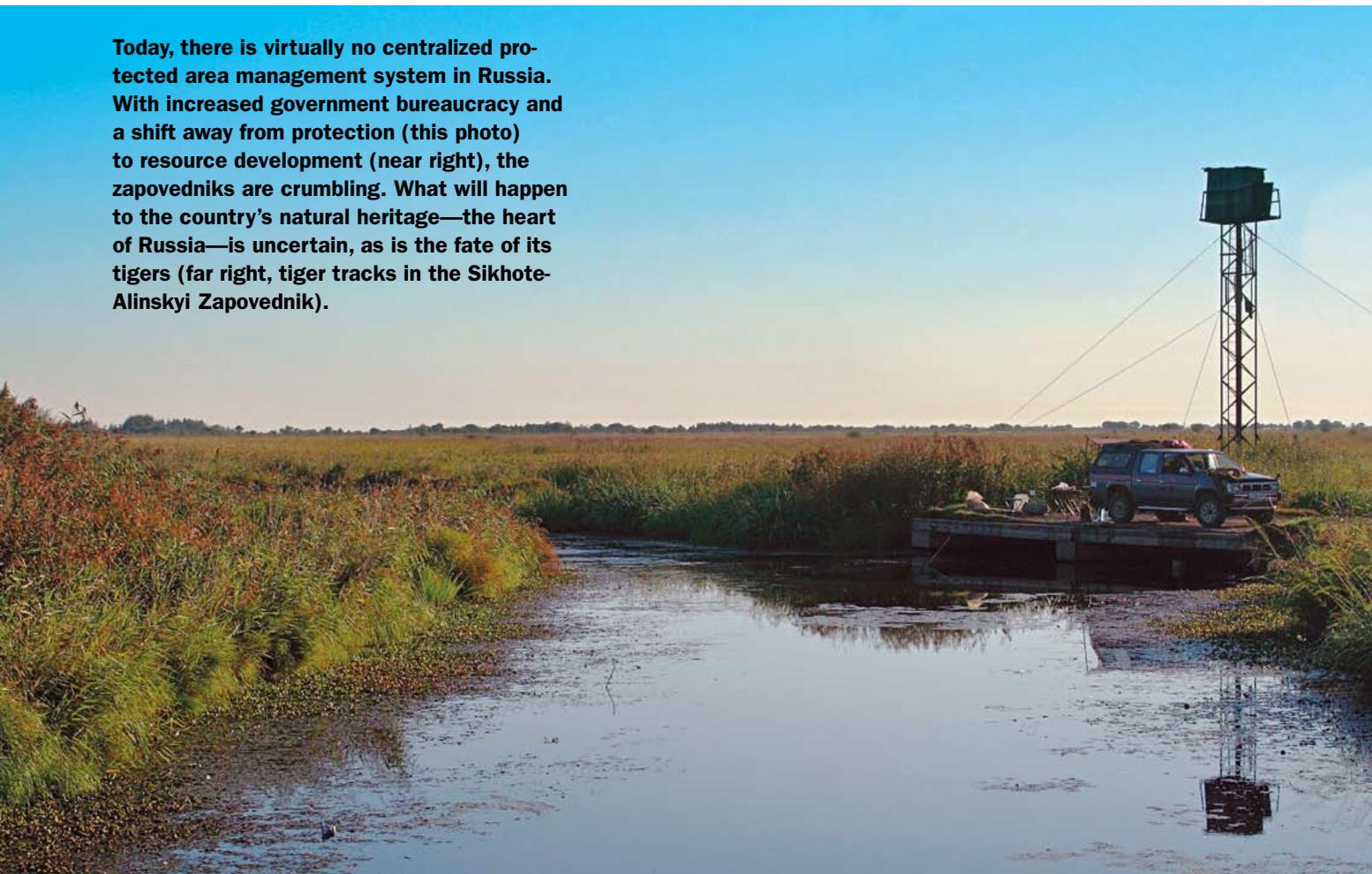
What has kept the zapovedniks afloat, concludes Stepanitsky, is the foundation built during the Soviet years and the momentum generated in the 1990s. But most of all, it is the everlasting enthusiasm and dedication of the local staff who remained in the zapovedniks. How much longer they can last under the current government policies of attrition is anybody’s guess.

Sacred comes in different guises, always longed for, rarely expected, not immediately recognized. On this September afternoon, I am filled with awe as I walk up to saucer-size pugmarks that skirt the seaward edge of a shrub, aglow in the setting sun.

The tracks are old, pressed into the rusty clay a couple of weeks before, when heavy downpours turned the old dirt road along this remote shore into a river of mud. Locals call this place “Blissful,” and while their reasons are obscure to me, I can’t help but agree. The tracks of Earth’s greatest living predator transform this place into a sacred landscape. The hope for tigers, however, remains as uncertain as the future of the *zapoved*, the commandment, to safeguard the unique natural legacy—the heart of Russia.

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Today, there is virtually no centralized protected area management system in Russia. With increased government bureaucracy and a shift away from protection (this photo) to resource development (near right), the zapovedniks are crumbling. What will happen to the country’s natural heritage—the heart of Russia—is uncertain, as is the fate of its tigers (far right, tiger tracks in the Sikhote-Alinskyi Zapovednik).



GLEB RAYGORODETSKY (2); JOHN GOODRICH/WCS (RIGHT)