

On the Trail of RUSSIA'S LEOPARDS

*Along the eastern edge
of Siberia, a band of
scientists learns critical
lessons from an endangered
cat named Svetlana*

By Howard Quigley
and Maurice Hornocker
Photographs by Yuri Shibnev

July 1993. Female leopard, three or four years old, captured on the night of 23 June. Immobilization completed with blow gun injection. To put it mildly, ambient conditions during handling were a complete nightmare: 1) it was darker than the inside of a cow; 2) the slope was steeper than the west face of the Matterhorn; 3) nobody spoke the same language; 4) gnats left my face a bloody mess, and 5) giant moths accumulated whenever the flashlights were trained on one spot more than three seconds. Ah, the romantic life of a wildlife field researcher. — Jack Whitman's field notes

THIS WAS THE ELECTRONIC MAIL passed on a computer disk through several hands and finally sent over electromagnetic passageways from the Russian port of Vladivostok to those of us at the Hornocker Wildlife Research Institute in Idaho. Whitman and our Russian colleagues had for the first time anesthetized a wild Amur leopard, fitted it with a radio collar and released it. Only 30 to 40 of these leopards remained in their native habitat. Now that we finally had one

**After a snowstorm, a male Amur leopard
prowls Kedrovia Pad in Siberia. This is the
only cold-climate subspecies of Asiatic leopard.
Others thrive in the tropics, even in deserts.**

collared, we could begin to study one of the rarest wild cats on Earth.

Our initial concern, which would keep us anxious for months, was to see whether Amur leopards required vast wilderness areas free of human intrusion. If, like North America's marbled murrelet or the northern spotted owl, or even the grizzly, they needed large tracts of wilderness, we could write off the Amur leopard and pen its requiem. In that case, all we could hope for was to document the creature scientifically and move on.

What we hoped to find instead was that the leopard could move comfortably amid human activity. Except in protected



Minutes after this photo was taken, Svetlana became the first Amur leopard with a radio collar (above). Russian scientists worked with Americans such as Jack Whitman (at right, in cap).

On a south-facing slope in Kedrovia Pad Reserve, a rocky outcropping draws Svetlana (right). Leopards seek craggy places for protection as well as for the comfort of basking in the sun.

reserves, economic development is already beginning in this part of Russia and is likely to increase. If the collared cat, which we named Svetlana, or Svetta for short, and other leopards roamed freely into these disturbed areas, we could find hope for leopards in this country. We knew that if the leopard could tolerate people, we could campaign to persuade people to tolerate the leopard.

We were working on the eastern edge of Siberia. To the Western world, the region is largely unknown, and, despite recent activity, it is still one of the least disturbed parts of the world's temperate climatic zone. As wildlife biologists, we

were already cooperating with Russian scientists in the region on a study of Siberian tigers. For the leopard project, we chose as a study area the Kedrovia Pad Reserve and the surrounding countryside, straight across a bay and 40 kilometers (25 mi.) south of Vladivostok.

March 1992. *To check proposed study area, drove to River Gadna. One tiger cub track in river bottom, one medium-sized tiger track and two scrapes on ridge.... Drove to River Eldega in afternoon, 25 kilometers [15 mi.] of worst road I've ever driven. The driver took War Wagon places I couldn't believe. Used winch attached to trees several times. Finally arrived at old hunter's cabin after 9 P.M. Late dinner of Dema's [Dimitry Pikunov's] famous boar borsch—delicious. Beautiful cat country.—Maurice Hornocker's field notes*

In a multicultural, multinational project, team building is important because political and cultural wobbling or intransigence can work against you. We were pleased with the mix of Americans and Russians on the leopard project. From the Russian side, Pikunov and Victor Korkishko are the world's experts on the natural history of the Amur leopard. And with these scientists came a solid group of young field biologists ready to contribute. On our side came years of experience with field techniques. For thirty-plus years, one of us, Maurice Hornocker, has worked with mountain lions and other carnivores in North America. The other one, Howard Quigley, has studied jaguars, black bears and giant pandas as well as mountain lions.

The Amur leopard is part of a complex of subspecies that make up the Asiatic leopard, *Panthera pardus*, sometimes called the African leopard. Lumping all the subspecies together, the leopard is the most successful naturally occurring land mammal in the Eastern Hemisphere, with the exception of humans. Unlike the house mouse and Norwegian rat, which hitchhike on ships and airplanes, the leopard colonizes naturally.

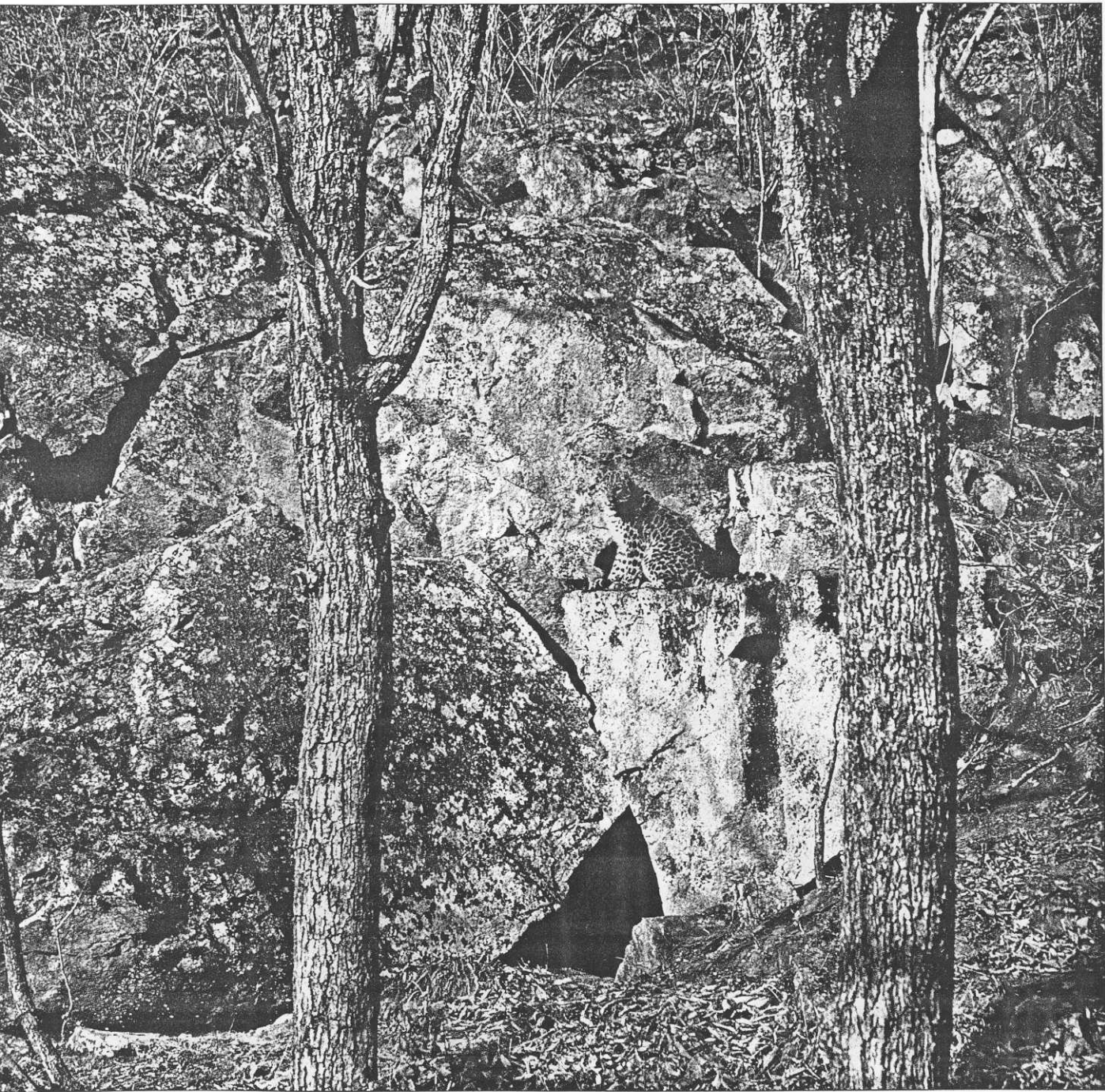
In the Eastern Hemisphere, the leopard is the king of adaptation and a cat of many hats. It walks the plains of southern Africa, competing with hyenas and African lions for prey. It stalks monkeys in the tropical forests of central Africa. In the deserts of northern Africa and the Arabian subcontinent, it defies heat and drought. In the tropical forests of India and Southeast Asia, it hunts among tigers,



sloth bears and dholes (a type of wolf).

It is in the *taiga*, or boreal forests, of Russia, however, that the species' adaptation seems most impressive. There, the leopard takes on characteristics similar to those of its cousin the snow leopard. The Amur leopard has long fur and behavior patterns that conserve energy and precious heat in winter.

Although it has successfully adapted to the area over centuries, available habitat is getting smaller and people less tolerant of its presence. Like the Florida



panther in the United States, the Amur leopard has been forced into a corner that is shrinking by the day.

Populations or subspecies like these living on the edge of a species' range are frequently the first to succumb to human pressures and the most difficult to save. But often these are the subspecies that show the highest degree of genetic difference—or diversity—when compared to other populations of the same species. With genetic samples we were taking from Svetta and other captured animals

we would document this diversity—and hope to find some idea of how to protect it.

Shortly after the capture of Svetta, Jack entered dense vegetation near her radio-locations and discovered that she had given birth. Over the following 10 months, our team found tracks of Svetta and her cub throughout the north end of the reserve in the same areas where signals from her collar verified her presence.

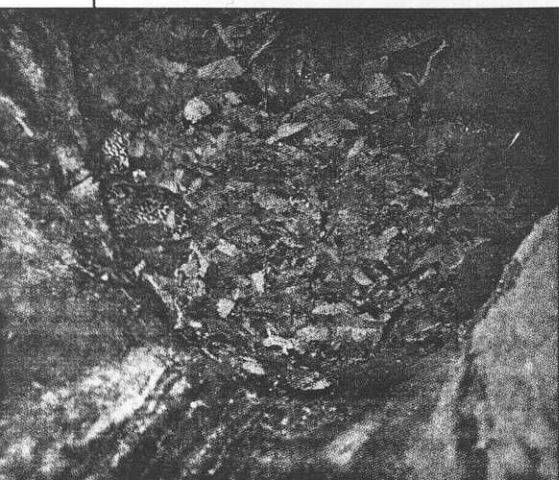
Two months after Svetta's collaring, we received word of a second leopard

capture. This time it was a male, and one that was already known to our field team by his distinctive tracks. When this leopard marked the ground defining his territory, instead of two parallel scrapes with his back feet next to where he urinated, the scrapes formed a V. Thus, the newly collared male became Ooglati (in English, "angle").

December 1993. *Picked up two sets of leopard tracks on north side of sika deer farm, west of Kedrovia Pad. One track*

set with blood in it almost every stride. Appears right front leg injured. Ten centimeters [4 in.] of fresh snow, so difficult to get good measurement of tracks. One set probably Ooglati's. ...After three hours, too dark to track; returned to cars. Blood had continued to show on the tracks, but whatever the injury, it didn't hamper the cat from jumping the 3-meter [10-ft.] fence of the deer farm. —Howard Quigley's field notes

As we made our way back to our lodgings that night and thawed from the winter chill, the theories flew about the



In a well-hidden den, Svetlana's two cubs await her return (above). Barely 10 days old, they haven't opened their eyes yet. Trackers later reported that only one cub survived its first year.

Svetlana dines in a protected nook in rocks (right). Trackers found that she rarely ate prey on the spot where she caught it but dragged the catch to some shielded cranny before tearing into it.

tracks and the blood. The Russians preferred the explanation that Ooglati was being chased from the area by a larger male whose territory encompassed the deer farm and that the blood was the result of a fight.

There was no way to know for sure, but we Americans liked the theory that Ooglati was pursuing a female and that the blood came from an unrelated accident, possibly from stalking an animal. Preying on large deer can have its drawbacks, one of which is the chance of injury if the deer runs, sometimes with the predator attached, or if the deer makes a counterattack of its own.

For leopards, deer farms are points of conflict. These operations appeared years ago as government-run economic ventures. Now thousands of hectares are fenced. Farmers saw off deer antlers in velvet and sell them by the kilogram to be powdered and marketed in Asian pharmacies. The farms make an important, stable economic support for many communities.

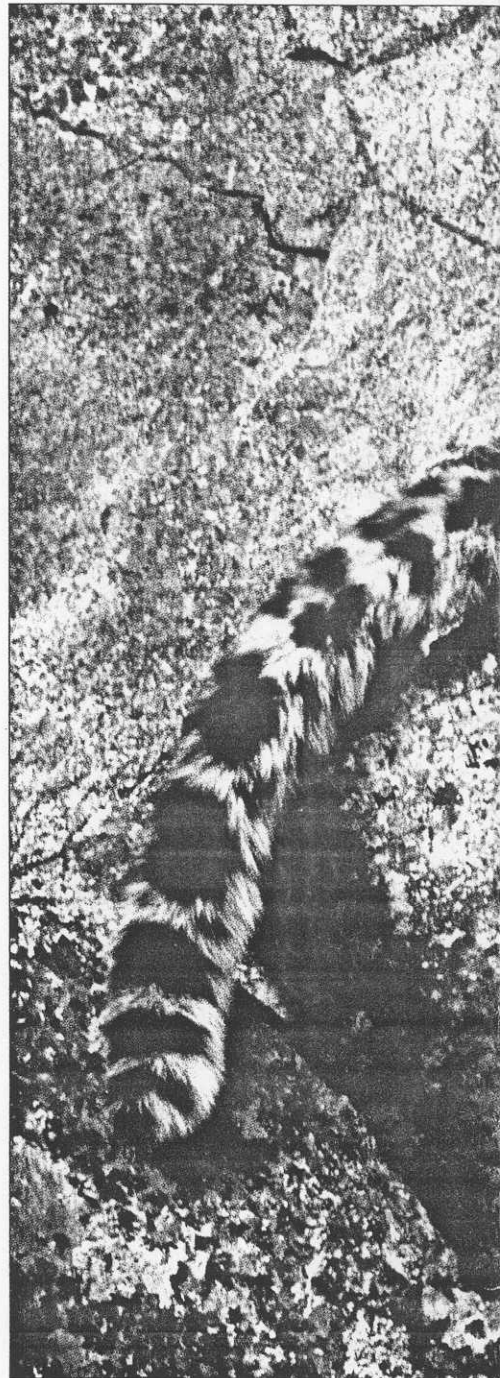
But a 3-meter (10-ft.) fence is little deterrent to predators like tigers—and maybe our leopard—when their natural prey occurs inside the farm in large numbers. Predators strike more often, as deer poaching and overharvesting outside the farms reduce wild prey. The struggling economy of a new society has created dramatic contrasts on opposite sides of the fence; we hope our science can create solutions to this and other conflicts.

January 1994. Tracked Svetta through snow where she and her cub had hunted Manchurian hares. Found two temporary dens, rock outcrops where both leopards bedded in dry leaves. Picked up raccoon dog tracks where the animal dove into hole under boulder to escape Svetta. Then, it appears, while she was digging out snow from around the rock, the raccoon dog broke from the opposite side and was killed almost instantly by the leopard. Thirty meters [100 ft.] away, Svetta and cub had found a secure spot and feasted. —Winthrop Staples' field notes

In the first winter after we captured Svetta and Ooglati, Jack Whitman returned to his job in Alaska. Winthrop Staples replaced him in Russia, bringing insights from his work on lynx as well as a special interest in the food habits and hunting behavior of cats.

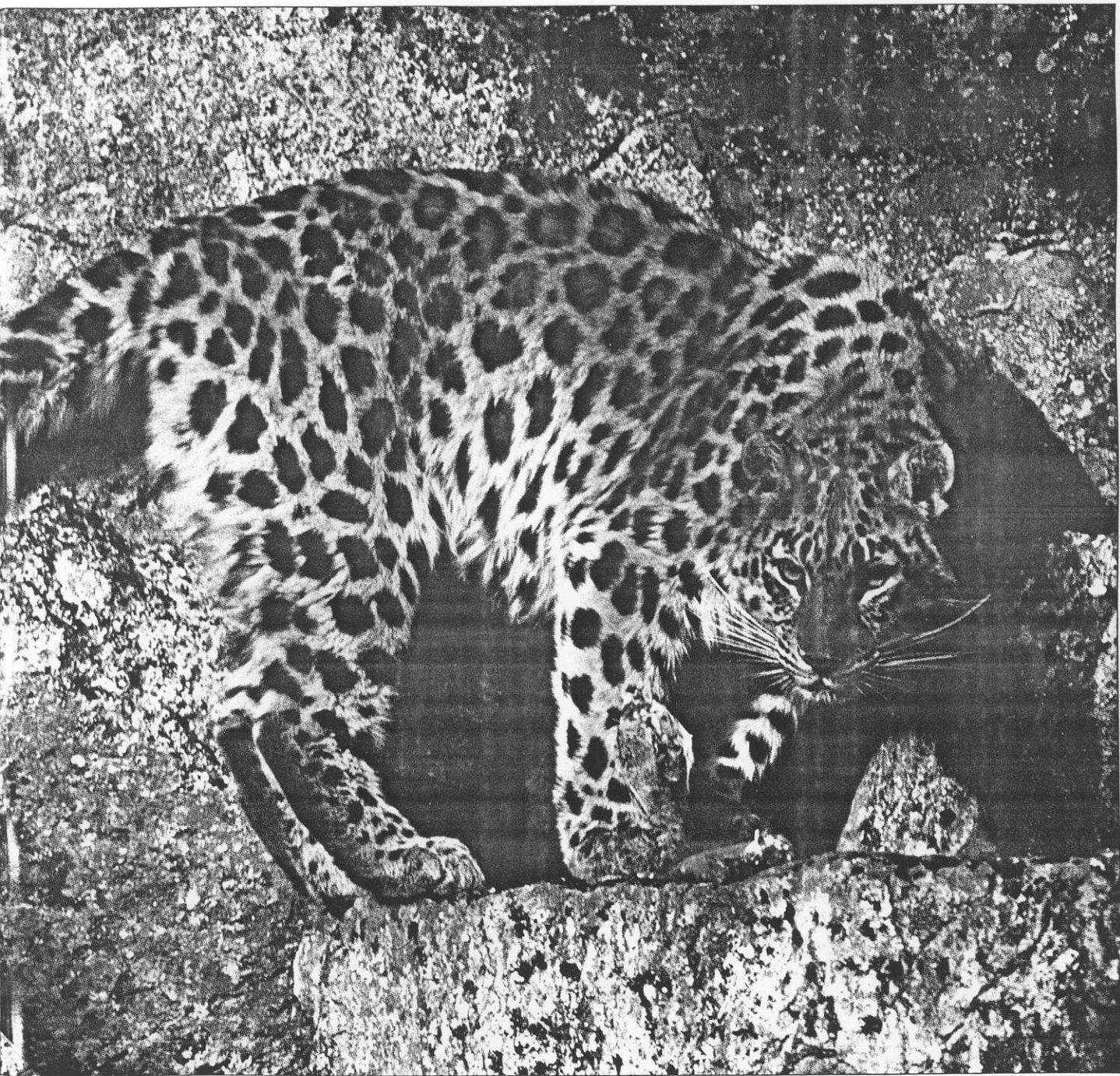
During the last half of 1993, Svetta continued to stay in Kedrovia Pad, and we became more anxious about the conservation of leopards in Russia. Were female leopards attached to protected areas, we wondered. Ooglati spent about half his time outside the reserve and the other half inside. At least, that hinted that we had a fighting chance at protecting the species.

In the second half of 1994, Svetta reassured us. She began spending more of her time on the extreme northern edge of the reserve, then outside it. We assumed that her cub from the year before had dispersed and that Svetta was probably in the company of a male to the north. Without radio collars on her compan-



ions, though, we could not confirm our suspicions.

As for Ooglati, he continued to make his angles in soil and snow. Meantime, with Svetta away, another female leopard appeared in the central section of the reserve. She began to overlap parts of what used to be Svetta's territory. We captured her to fit a radio collar and discovered from her teeth and general body condition that she was slightly younger than Svetta. The Russians nicknamed her Eleasia, and we hope she too will produce



young in the protection of Kedrovia Pad.

Of course, a few leopards and a few years of work do not define all the needs of a population. However, from our year-and-a-half following Svetta and Ooglati, we were continuously learning that Amur leopards can coexist with people and that there is indeed a chance for these far-northern cats.

One confirmation came in August 1994. We sat in the field station at Kedrovia Pad discussing almost three weeks of radio-locations of Svetta in an area

north of the reserve. She was within less than 2 kilometers (1.25 mi.) of human activity at times. In the midst of the discussion, a reserve guard named Igor arrived from the north end of Kedrovia Pad. We asked if he'd heard of any recent disturbances in town caused by leopards. No, he said, but about two weeks earlier he had found tracks of a leopard coming from the direction of the reserve. The cat had walked to a logging road, sat and preened for a bit, moved about 100 meters (100 yds.) east on the road and

then headed north, straight into human-altered landscapes. □

Maurice Hornocker is director, and Howard Quigley president, of Hornocker Wildlife Research Institute in Idaho. Yuri Shibnev is naturalist/historian for the Kedrovia Pad Reserve and a wildlife photographer. NWF supplies major funding for the institute's work in Russia. Additional funding comes from the National Geographic Society, Exxon and the National Fish and Wildlife Foundation.