



Research and Conservation of the Persian Leopard in Armenia

By Igor Khorozyan and Alexander Malkbasyan

It was a dreary and misty day in late January, like all other days during this month in the rocky mountains of southern Armenia. We hiked over the wind-swept trails along the southern slopes, where the snow melts quickly and wild animals move around more easily. Suddenly, we came across a set of large, round clawless footprints and other similar, but smaller ones, which comprised clear tracks stretching along the trail in both directions. Scrapes, which were dug into the ground to attract a mate, were numerous. We made similar finds over the course of the next several days, and later again in early February and early March. From these signs, we deduced that a large male and slender female of the species were moving around to meet each other. From their fresh scats, it appeared that they had been feeding on wild boar (*Sus scrofa*) and Indian crested porcupine (*Hystrix indica*). Following the tracks and scrapes, we reconstructed a fuller picture: in one place, the male had scratched the bark of a Christ's thorn (*Paliurus spina-christi*) and left some of its fur on the barbs. In another, a female had dragged a sorrel foal through the barbed-wire fence of an abandoned orchard, leaving on the barbs blood stains and fur of the prey, as well as some of her own grey-black-white fur. These few observations are among the most informative that

we might hope to glean about the notoriously elusive and rare Persian leopard (*Panthera pardus saxicolor*).

Since prehistoric times, the leopard's beauty, strength, and grace have evoked a mixture of admiration for and fear of its stealthy, nocturnal, and cryptic life. African tribes gave this big cat such vivid epithets as: "Gentle hunter, whose tail plays on the ground while he crushes a skull;" "Beautiful death, who dons a spotted robe when he goes to his victim;" and "Playful killer, whose loving embrace splits the antelope's heart." Scientists claim that the hypnotizing effect that leopard spots have on humans is genetically programmed, similar in this way to the panic and stupor that snakes excite in monkeys. It is not surprising that leopard skin mantles, amulets made of the beast's teeth and claws, and medicines made from its bones are so very popular among indigenous

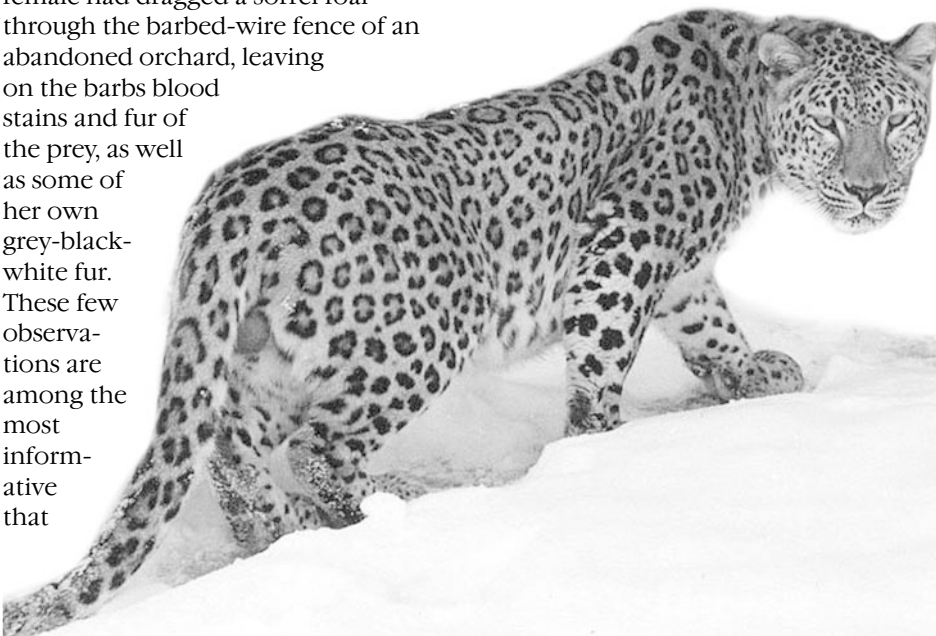


The current range of the leopard in southwestern and southern Armenia. Map provided by I. Khorozyan and S. Asmaryan and adapted by M. Dubinin.

peoples that live side by side with this predator.

The Persian leopard is the only large felid species still surviving in southwestern and southern Armenia, albeit in meager numbers. Here, the large cat inhabits sparse juniper forests, arid and mountain grasslands, sub-alpine, and alpine meadows, while it avoids semi-desert, nival (abounding with snow), and harsh nival environments. Its current range extends from the Khosrov Reserve southwards to the Arax River on the state border with Iran. As late as the mid-1970s, the leopard also inhabited northern Armenia. The northern boundary of its current range stretches along the Azat River and along the Geghama and Vardenis Mountain Ridges.

According to rough estimates, no more than ten to fifteen leopards, of which five to eight are adults, currently live in Armenia. The most stable group of the population is located in the southern part of the country, on the Zangezour, Bargushat and Meghri Ridges, from where they are able to move to and from Azerbaijan's Naxcivan Republic and northwestern Iran. The Zangezour Ridge and its branches serve as linkages between this group and the other group in



A male Persian leopard (*Panthera pardus saxicolor*) in the Yerevan Zoo. Photo by A. Malkbasyan.

Khosrov Reserve and the Vayots Dzor Province.

The primary threats that have brought the leopard to the brink of extinction in Armenia are disturbance, poaching, and habitat destruction. More specifically, this entails livestock grazing, edible plant and mushroom gathering, destruction of wildlife by firearms and traps, and dry grasses and conifer fires during the hot summer. All these factors pose a great risk to the leopard and the species upon which it preys, the bezoar goat (*Capra aegagrus*), wild boar, roe deer (*Capreolus capreolus*), Indian crested porcupine, and European hare (*Lepus europaeus*).

Concerned over the fate of the leopard in Armenia, we began researching the species in 1999-2000 by studying its diet, feeding competition, and distribution. We have since incorporated new research methods, including GIS mapping, camera photo-trapping, scat counts and use of lures. We initially began our work in Khosrov Reserve, and subsequently expanded our study areas to include other important "hotspots" of the cat's range such as Mt. Gbndasar/Noravank Canyon, Meghri Region, Vayots Dzor Province, and the Sisian Region. We published a number of scientific papers, monographs, and conference proceedings, which are mainly in English. Three years ago, we established a website, www.persianleopard.com, which we regularly update.



Fresh leopard tracks found on Meghri Ridge. Photo by A. Malkbasyan.

Thanks to financial support provided by international foundations and zoos, our efforts continue and ensure the quite stable status of the leopard in Armenia. However, this situation is very fragile and can worsen at anytime if even just one leopard is lost to poaching or another human factor.

For example, recently in 2005, we faced a real threat of losing the leopard and other biodiversity in southern Armenia because of the national Ministry of Transportation's plans to build a road, the Kapan-Meghri Highway, right through the Shikahogh Reserve, which protects habitat important to the leopard and its prey. To avert the danger, all available resources were mobilized to promote cooperation between the Ministry of Nature Protection, environmental NGOs, and mass media. As this road is essential for Armenia, the coalition did not press for the complete cancellation of the project, but instead insisted that planners implement a second, less damaging option, which would affect the reserve to a lesser extent. This option would lengthen the road by seven kilometers (from thirty-five to forty-two kilometers) and increase costs, but would significantly shorten the segment of road passing through the reserve (from 16.6 to 0.5 kilometers) and reduce the numbers of trees and saplings to be cut (from 19,085 to 681 and from 117,000 to 4,178, respectively). In June 2005, policymakers officially adopted the more reserve-friendly option.

Our ongoing research project aims to identify and describe Priority Leopard Conservation Areas (PLECAs), which leopards currently and constantly inhabit, and which, therefore, require priority conservation actions. This project is necessary because we must know where the leopard presently inhabits in order to direct financial, human, and technical resources specifically there. The first candidates for PLECA status are the central and eastern parts of Khosrov Reserve in



Leopard habitat in Khosrov Reserve. Photo by A. Malkbasyan.

southwestern Armenia and the Shvanidzor-Nuvadi area in the extreme southern part of the country. The search for other PLECAs is underway. In this work, we combine field research, lab techniques and GIS mapping. Once we have identified PLECAs, we will divide them into priority regions, where focused protection measures will be implemented. It is still premature to specify which measures, such as the creation of protected areas or strengthened infrastructure, may be realized and when; this will be determined on a case-by-case basis.

Leopard conservation activities have been underway in Armenia since 2002 and include technical support, raising awareness among local people and the border guards, and the operation of anti-poaching squads and population monitoring. These efforts must be intensified and expanded in their scale.

Armenian citizens should be proud that such a wonderful and rare animal as the leopard still lives in their country. Hopefully, people are gradually coming to understand that a leopard seen for a few seconds in the shadows of the wilderness looks far better than any leopard skin rug or moth-eaten stuffed specimen in a museum.

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