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и других особо важных животных фауны России

A.N. Severtsov Institute of Ecology and Evolution RAS
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Permanent Expedition of RAS for study of Russian Red Data Book animals
and other key animals of Russian fauna

**МАТЕРИАЛЫ МЕЖДУНАРОДНОЙ РАБОЧЕЙ ВСТРЕЧИ
ПО РЕАБИЛИТАЦИИ И РЕИНТРОДУКЦИИ
КРУПНЫХ ХИЩНЫХ МЛЕКОПИТАЮЩИХ**

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GENETIC TESTING OF REHABILITATING ANIMALS: NEEDS FOR SUBSPECIES AND POPULATION DETERMINATION

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The Amur tiger (*Panthera tigris altaica* Temminck, 1844), Persian leopard (*Panthera pardus ciscaucasicus* Satunin, 1914) and Amur leopard (*Panthera pardus orientalis* Schreber, 1857) have played an outstanding role in the history of human culture and are the symbols of biodiversity preservation. These cats attract the attention of both ordinary people and representatives of environmental institutions more than any other animals. Apart from conserving wild populations, efforts also should be made to reintroduce these animals from captivity, using all animals available for this purpose. Often they do not have authentic breeding background information and require molecular genetic testing to determine subspecies and population they belong to. Currently this testing is most often conducted by sequence analysis of one or several fragments of mitochondrial DNA and by microsatellite analysis. For instance, this approach proved effective in determining subspecies of the Persian leopards from wild populations of leopards inhabiting the Russian part of Caucasus, South Caucasus (Azerbaijan, Armenia), Iran, Turkmenia and Afghanistan. Presence of haplotypes in all examined leopards from the single group and closeness of analyzed nuclear DNA loci against each other suggest that these animals belong to one subspecies (Rozhnov et al., 2011). Detailed studies of their population structure and elaboration of efficient measures for big mammal conservation require data on the frequency of the surveyed microsatellite alleles for each locus in the population. The database we have collected for 11 microsatellites for the Persian and Amur leopard from natural populations, zoological gardens and museum specimens from Russia, Armenia, Azerbaijan, Iran and Turkmenistan allowed us to determine a set of specific alleles of certain loci in order to conduct subspecific identification of animals with unknown breeding background and to use them in reintroduction programs (Rozhnov et al., 2011). Studies of 9 microsatellite loci conducted on Amur tiger from the wild and on the other subspecies of tiger from the Zoological Museum of Moscow State University and animals from zoological gardens, helped to select new and use already known mitochondrial markers for identification of animals with hybrid background (Luo et al., 2004; Krasnenko, Sorokin, 2014). We also used these methods when performing numerous expert evaluations in criminal trials related to cat species listed in the Red Book of the Russian Federation.

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