

Институт проблем экологии и эволюции им. А.Н. Северцова РАН  
Териологическое общество при РАН  
Постоянно действующая экспедиция РАН  
по изучению животных Красной книги Российской Федерации  
и других особо важных животных фауны России

A.N. Severtsov Institute of Ecology and Evolution RAS  
Russian Theriological Society RAS  
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**

**25–27 НОЯБРЯ 2015 Г., МОСКВА, РОССИЯ**

**PROCEEDINGS OF THE INTERNATIONAL WORKSHOP  
ON REHABILITATION AND REINTRODUCTION  
OF LARGE CARNIVORES**

**25–27 NOVEMBER 2015, MOSCOW, RUSSIA**



Товарищество научных изданий КМК

Москва, 2015

Материалы международной рабочей встречи по реабилитации и реинтродукции крупных хищных млекопитающих 25–27 ноября 2015 г. М.: Т-во научных изданий КМК, 2015. 160 с.

Proceedings of international workshop on the rehabilitation and reintroduction of large carnivores 25-27 November 2015. M: KMK Scientific Press, 160 p.



## **SOCIAL ENRICHMENT OF ENVIRONMENT AND USE OF OPEN-AIR CAGES SPACE IN PERSIAN LEOPARDS (*PANTHERA PARDUS CISCAUCASICA*)**

**Yachmennikova A.A., Rozhnov V.V.**

A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences, Russia  
*felis.melanes@gmail.com*

The Persian leopard rehabilitation program in the Caucasus region (Lukarevskiy, Rozhnov, 2007; Rozhnov, Lukarevskiy, 2008) is related to the breeding of these animals in the Center for Breeding and Rehabilitation of Leopards in the Sochi national park, with subsequent release to the wild. In 2011, one of the tasks was to normalize the physical and mental condition of animals that were potentially fit for breeding. One of the necessary conditions is that they should have a sufficiently large open air enclosure at their disposal when factors reducing environment predictability are introduced (Popov, 2011). Changes are recorded by means of monitoring the leopards' social behavior and the trends in their use of the enclosure space. This practical work is based on a survey of the leopards' social behavior, which also analyse the possibility to work out the principles for couple formation.

The common belief is that leopards, like many large felines, have low social needs: the animals actively keep the borders of their home territories and communicate largely through mediated and remote channels (olfactive, acoustic). Almost all direct contacts among adult animals are confined to sexual contacts during estrous periods; and for females – to communication also with the cubs. However, in spite of such special features of leopard ecology, the intensity of their social communication is not determined by physiological cycles and estrous periods alone, but has an independent rationale, too.

Environment enrichment in enclosures is normal and necessary practice during keeping animals with highly developed psyche, such as leopards are. Long-term studies conducted in numerous zoos demonstrated that regular enrichment of environment has a favorable effect on the mental and physical condition of animals. In the system of enclosures in the Sochi national park, animals lived in a poor environment (2009-2011). An experimental variety was initially introduced by moving opposite-sex animals into enclosures separated from each other with a metal grid. A series of observations over three leopards, a male and two females, was conducted (the male lived in the enclosure located between the enclosures with the females and had an opportunity to communicate and choose any of them for this).

Each enclosure has a skirting along its inner perimeter, a water trough, a feeding trough, a hiding place, tree stubs, bushes, stones (elements of biological signal area). A system of trails forms as a result of the animals' movements inside the enclosure. The area of each enclosure was at least 300 m<sup>2</sup>. Observations were made in the periods from 28 February to 31 March, 2011, from 1 to 31 May, 2011, and from 20 June to 9 September, 2011. We analyzed the leopards' evening activity period (longer than 3 hours, it is the longest period of activity and covers part of the evening twilight). We compared how animals use the space of an enclosure in the presence and absence of a "neighbor" in the adjoining cage. Furthermore, the variety of the evening activity was evaluated. The results we revealed: during the days when the neighbor was in the adjacent enclosure or was expected to appear, all animals demonstrated a clearly higher frequency of visiting the places along the enclosure borders. This intensity was higher in the male than in both females. The variety of behavior during the evening activity is higher in the leopards living in adjoined enclosures. For animals living in isolation (with no chance of social contact with a species-mate) the variety of behavior is significantly lower.