

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.



**AN ESSAY IN EVALUATION OF PERSIAN LEOPARD'S  
(*PANTHERA PARDUS CISCAUCASICA*) SOCIAL BEHAVIOUR IN CAPTIVITY**

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Practical works aimed at forming a breeding pair of Persian leopards in the specialized Center for Subsequent Releasing of Animals in the Wild have been based on fundamental studies of their social behavior, which allow elaborating the principles for pair formation. This was one of the main tasks in 2011, when the Program for Rehabilitation of the Persian Leopard in the Caucasus region commenced (Rozhnov, Lukarevskiy, 2008).

Stabilizing living conditions in course of managing animals in captivity (continuous availability of main resource, i.e. food, and its accessibility) results in stabilization of the organism's inner cycles, including sexual cycles. The intensity of social communication in leopards reaches the highest values during the estrus period in females, gradually reduces after it and so reaches its minimum. However, in spite of such special features of leopard ecology, the intensity of their social communication is not determined by physiological cycles and estrus periods alone, but has an independent rationale, too.

The mechanisms of social interactions in big felines may be defined more precisely in analyzing the behavior of wild animals in captivity. Such conditions have been created in the Center for Breeding and Rehabilitation in the Sochi national park. Two leopards, male and female, were observed in the course of 2011. Each animal was put into an individual open-air cage; the cages were separated by a common net. Monitoring was conducted by means of remotely controlled video cameras using the time slices method (Popov, Ilchenko, 2008); a total of 101.5 hours of observations (1386 slices) were carried out in the postestrus period in the female. Social behavior, play behavior and marking behavior were selected as social disposition parameters because they can be quantified. Microsoft (Excel.2007, Access.2003) and Statistica 8.0 were used to process the data.

In both animals (Wilcoxon-test), generalized social activity in May is higher than in March; however, the number of social contacts proper stays unchanged; the number of individual play behavior forms reduced, and the number of contacts in course of social play behavior definitely increased. The number of social contacts proper constantly exceeds the number of individual play behavior ( $T_{1>} = 25.0$ ;  $Z_{1>} = 4.1$ ) and social play behavior ( $T_{2>} = 3.5$ ;  $Z_{2>} = 4.4$ ):  $N = 29$ ;  $p = 0.00$ . The intensity of play behavior in the female is higher than the same in the male ( $T_{+1} = 18.0$ ;  $Z = 3.4$ ;  $p = 0.00$ ). During each separate month, nonmanifest-type interaction trends were revealed both in the male and in the female: in March, interaction trends of the male and the female were similar, and in May they were different. The differences can be attributed to the fact than the female used to initiate social contacts by drawing attention to herself and starting a play with the male; the male could be both responsive or remain irresponsive to such initiation.

Thus, leopards not only demonstrate high level of individually-oriented social activity (existence of social ties), but also have a need to maintain contacts with their species-mates, also outside the rutting period. We may assume there exists a complex annual cycle of social activity and the animals' interest in each other; such a cycle may consist of numerous similar simple cycles occurring within one month, that only partially depend on such categories as "sexual behavior" or "sexual activity" and the rutting period in females.