Dominance hierarchy in feral horses in Rostov Region

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Horses maintain the social structure through the establishment of dominant-subordinate hierarchical relationships, both within and between groups. The object of study was the feral horse population, living on the Vodnyi Isl, Manych-Ghudilo Lake, on the territory of Rostov Region, S Russia the State Nature Biosphere Reserve "Rostov". The social structure of this population is represented by the harem and bachelor groups, and their variety - the "mixed" groups, the presence and composition of which is atypical for the populations of feral horses. The main objectives of this work were to identify the hierarchical structure of different types of social groups and the role of the stallions in them, defining the dominance rank of animals. The method of continuous logging occurred aggressive reaction, ritualized interaction between stallions, take into account the direction of interactions between individuals. We observed 5 harem, 3 bachelor and 3 mixed groups. Each group was studied for a total of 60 h (8 h per group per days). Behavioral observations were carried out in summer 2009-2011. Based on the number and direction of aggressive interactions the hierarchical coefficient was calculated for individual horses (Ivanov et al, 2007).

Harem group consists of an adult stallion (<5 years old) and a few mares with their offspring. Our observations of harem groups confirm the previously known information about this type of social groups (Berger, 1986; Carson, Wood-Gush, 1983, Keiper, 1983). Hierarchical system between mares is close to linear with reversal. The stallion is not included in the hierarchy of the mares; he is the leader and serves to maintain the integrity of the group and inter-group hierarchy, and has reproductive function.

Bachelor groups consist of stallions 2-3 years and older who do not have their own harem. It is known that dominance hierarchy in these groups is linear, young males or males who recently had joined the group have low ranks (Berger, 1977; Houpt, Keiper, 1982; Kirillov Paklina, 1990). In observed bachelor groups dominant stallion have a significantly higher rank in the hierarchy. However, among other stallions is not always observed strict linear hierarchy - some individuals have very similar ranks. Function of managing the group and maintaining the intergroup hierarchy can be distributed among the all stallions in the group.

Mixed groups are composed of several mature stallions, one or more mares (sometimes with the offspring). In the study population in this type of social groups animals may be mature (age 5 and older) and semi-mature (2-5 years). The hierarchy of these atypical groups has not been studied. In the studied 3 mixed groups stallions have very similar hierarchical rank, dominant and subordinate stallions share a function of managing the group, participation in ritualized interactions.

Our studies have revealed the plasticity of the hierarchical structure of groups of horses and the need to further investigate the distribution of social roles among stallions.

Key words: feral horse, island population, dominance, hierarchy

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