

# IMPACT OF WOLF (*CANIS LUPUS* L.) ON UNGULATE GAME POPULATIONS AND INTERACTION WITH OTHER LARGE PREDATORS IN THE NORTHERN PART OF KALOFRERSKA STARA PLANINA

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## (Summary)

In the period 2018-2020, a study on the biology and ecology of the wolf (*Canis lupus* L.), was conducted in the northern part of the Kaloferska Stara Planina - State Game Enterprises (SGE) 'Rositsa' and 'Rusalka', and the National Park 'Centralen Balkan'. The study was focused on the food of the wolf and its relationships with other predators in the studied area. A total of 200 excrement samples were collected to determine the victims' species composition and their relative participation. A number of 44 photo traps were used in SGE 'Rositsa'. On the taken images, the density of the wolf and the wild ungulates (*Cervus elaphus*, *Capreolus caperolus*, *Sus scrofa*) was determined, as well as their diurnal activity. The choice of their habitats were also clarified. Data for the type and quantity of wolf victims' remains, were collected. Competitive relationships between the wolf and other predators, were identified.

It was established that the food of the predator included mainly ungulates (49%) and livestock (43.2%). Of the wild ungulates, the remains of red deer (20.9%) were the most common in the excrement samples of the wolf, followed by ones of roe deer (15.6%) and wild boar (12.6%). Remains of young horses (33.5%) predominated in the share of the domestic livestock, followed by calves (7.3%) and sheep (2.4%). The incidence of rodents in wolf food is 5.8%, and the participation of wild rabbit (*Lepus europeus*) (1.5%) and wild cat (*Felis silvestris*) (0.5%), is random. The wolf uses the most biomass from horses (34.3%), followed by roe deer (19.2%), red deer (18.0%), wild boar (11.0%) and calves (8.8%). Of secondary importance in the wolf's diet were rodents (4.6%) and sheep (2.6%), and casual victims - wild rabbit (0.7%) and wild cat (0.7%).

In winter the main victims of the wolf are red deer, wild boar and roe deer, and in spring, summer and autumn - horse, cow and to a lesser extent deer, red deer, wild boar and sheep. The wolf shows a preference for red deer and wild boar.

The northern part of the Central Stara Planina is inhabited by 17 wolves, united in three packs - one of seven and two of five individuals. The population density of the wolf was 0.03 ind./km<sup>2</sup>, the red deer - 2.37 ind./km<sup>2</sup>, the roe deer - 2.83 ind./km<sup>2</sup>, and wild boar 2.07 ind./km<sup>2</sup>. Their activities were mostly nocturnal, but in the quiet areas, the animals were active during the day, especially in the winter season. The wolf mostly used the same habitats with red deer ( $p=0.001$ ) and roe deer ( $p=0.0001$ ), and rarely with wild boar where fewer registrations were reported in places with the presence of the wolf ( $p=0.257$ ).

