

Red Deer Confirms Global Warming

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The red deer is recorded in the Red Book of Sakha Republic (Yakutia) as a species inhabiting only South Yakutia. However, Valentina Stepanova, specialist of the Institute of Biological Problems of Cryolitozone, Siberian Branch, Russian Academy of Sciences, has discovered that the red deer persistently moves up northward. To collect this data, V.V. Stepanova has spent several years making enquiries among natives and keeping observations in the territory of the National Natural Park called "Lensky Pillars" in Central Yakutia and in the valley of the Amga River.

Apparently, the red deer came to Yakutia from the southwest and from the south, from the Irkutsk, Chita and Amur Regions. Yakuts used to know this animal already back in the 20s of the last century, although at that time red deer was met only in the very southern part of Yakutia. In the 1950s, red deer moved up as far as latitude 58 North, and in the 60s-70s, the borders of species occurrence shifted by 2 to 3 more degrees north and continue to move in the north-eastern direction. Within the last 30 to 40 years, the red deer extended its natural habitat by more than 70 thousand square kilometers. The penetration goes in two "main" routes: through mountain and taiga landscapes of the Amga and Buotama River valleys.

Seemingly, two factors are favorable to red deer. The first one is warming. In the 1950s-1960s, the average January air temperature in Yakutsk used to reach minus 47.1°C, absolute minimum making minus 63°C. At present, according to meteorologists' data, the average and minimal temperatures make minus 36.8°C and minus 46.1°C

respectively.

The second factor that impacts the distribution of many ungulates is the depth and thickness of blanket of snow. The animals would be unable to move in deep snow. The length of legs determines the critical depth of blanket of snow. Thus, the advancement of red deer would be stopped by blanket of snow being 60 to 70 centimeters deep, as for marals - 80 to 85 centimeters of snow. The length of Yakutia's red deer fore-extremities makes 80 to 90 centimeters, that of young animals is 60 to 70 centimeters. Consequently, the depth of snow of 60 centimeters should significantly complicate movement of young deer, and the depth of 80 centimeters should hamper movement of adult ones. In the territory of southern and south-eastern parts of Yakutia, precipitations are more extensive than those in other parts of the republic (350 to 500 millimeters per year). In winter months, snowfall makes 30 to 40 millimeters, the total height of blanket of snow reaches 40 to 60 centimeters. The relief in that area is split, in low places snow makes a 1.5-meter blanket. However, in Central Yakutia, where the red deer migrates, precipitations are twice lower, and shallow snow blanket lies evenly due to the flat relief and does not create snow traps.

So, neither frost nor deep snow hinder the red deer. There is no threat of lack of food in the north. Therefore, red deer occupies previously uninhabited territories and successfully adapts itself to the new land.

Source: Informnauka

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