
Population monitoring and management

Natural and anthropogenic factors influencing the Tatra chamois (*Rupicapra rupicapra tatrica*) in the Nízke Tatry (Low Tatras) Mts. (Central Slovakia)

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Tatra chamois (*Rupicapra rupicapra tatrica*, Blahout 1972) is a rare glacial relict and endemic mammal subspecies. An autochthonous population of this ungulate occurs in the alpine zone of the Tatra Mts., in their Slovak and Polish parts. In geographical terms, local populations represent the northern most natural limit of the species' range in Europe. As the Tatra chamois subspecies may be considered an evolutionarily significant unit it requires conservation management. The native chamois population became extinct in the Low Tatras in consequence of natural climatic changes in the mid-Holocene (about 10,000 years ago). However, anthropogenic deforestation has once again created suitable conditions for its redistribution in the western part of the mountain. Reintroduction of the Tatra chamois from the Tatras to the Low Tatras Mts. took place in the years 1969-1976. In total, 30 chamois were released into the wild during this conservation translocation. This founding population has increased in number since release to the current 130-160 individuals.

The chamois population in this mountain range, which has been a national park since 1978, is threatened by several natural and anthropogenic factors. Of the natural factors, in addition to predators and avalanches, it is mainly the gradual shift of the upper krummholz-line to higher mountain altitudes mostly due to succession. The period of grazing boom that took almost five centuries ended in the second half of the 20th century (1960-1970s) when there was a gradual decline in sheep and cattle grazing on alpine pastures. After 1989, there was literally no grazing left on the national park pastures.

Hybridization between the Alpine chamois (*R. r. rupicapra*) and the *R. r. tatrica* is a major concern for the Low Tatras population. Genetic analysis indicates that interbreeding has occurred. Conservationists' proposals to remove the Alpine chamois as an alien form, which is a legal game, have been resisted because of conflict with hunting interests.

In addition, the centre of the chamois area is divided by cable cars, lifts and ski slopes of the Jasná resort (Chopok - north and Chopok - south), which were established in the middle of the last century and have been significantly expanded since 2010. The main anthropogenic impact for Tatra chamois in the Low Tatras is a higher intensity of tourism, winter free (off-piste) skiing, ski mountaineering, motorized and non-motorized airplanes and paragliding, etc. Activities involving overnight camping away from designated huts, and dog-walking, are thought to be particularly disturbing, especially during rutting, birthing, and nursing seasons.