Nature protection and sustainable conservation of *Rupicapra rupicapra* L. in the Retezat National Park area

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**Abstract** The *Rupicapra rupicapra* L. can be found in the whole area of Retezat Mountains, with an irregular array, having a larger density in hunting fields which are situated in the Western part of the massif. Its robustness and the size of its horns are the basic reasons for which the chamois is very famous in hunting fields from our country and abroad. By comparison with other massifs from Romania (Fagaras, Piatra Craiului, etc) which are characterized by very hard and dangerous slopes, where the chamois isn’t protected against bad weather conditions and poachers, Retezat has large and circular valleys, where the slope of the field is low with a lot of streams and glacial lakes; this mountain is also characterized by a large landscape and geo-morphological variety. All these reasons contributed to a high number of chamois in this area, with the excess number of female chamois. The species conservation becomes alarming and adequate nature protection management measures are required.

**Key words** landscape variety, nature protection, geomorphological variety, bent trophies, female chamois, he-goats

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Nature protection development and sustainability in Romania is very much related to the establishment of Retezat National Park, the chronologically first National Park and the most beautiful protected area of the country. Numerous important flora and fauna protected species were identified in Retezat area and is the subject of numerous research studies. One of the interesting species in the area is the chamois (*Rupicapra rupicapra* L.), a mammal belonging to the *Artiodactyla* (Ungulate), Bovidae family (Cavicorne), Rupicaprinae (photo 1).
Two million years ago, during the Quaternary Ice Age, the climate was favorable for its living. The melting of the glaciers and the global warming did not scare her so the chamois (Alexa, 2007; Baumann et al., 2004; Couturier, 1964; Genov et al. 1990; Michallet & Toigo 2000; Rivals 2002) retreated on the alpine heights of Eurasia, winning also the title of the oldest mammal in our country (Popescu, 1981; Spiess, 2005; Stavros, 1989). Nowadays, the chamois can be found in Romania in only few mountain peaks, one of them being found on the top of Retezat Mountain (Ionescu 2002; Spiess, 2005) (photo 2).

![Photo 2. Rupicapra rupicapra L. in Retezat Mountains - Stâna de Râu area (photo Dumitrescu Viorel - 2012)](image)

**Material and Methods**

Wildlife observations and morphological measurements of the trophies were made in the area of Retezat Mountains between 1985-2016. A related literature selection was made in order to discuss the results.

**Results and Discussions**

Most of the chamois found in the Retezat National Park are living in flocks of 5-30 goats, leaded by the oldest experienced female goats (Dalmau, 2005; Fivo, et al., 1984; Gerard & Richard-Hansen, 1992; Spiess, 2005; Šelaru et al. 1997) (photo 3). All the herds have their own sentinel which in case of a dangerous situation will alert the other members by whistling or by kicking the ground. Usually the sentinel is a he-goat. As soon as the members get the signal all of them are hiding through the sharp cliffs (Ionescu, 2002; Nussberger & Ingold, 2006). When needed, the chamois are also capable of swimming from one side to another of the alpine lakes (Pflieger, 1982; Spiess, 2005). Living in the mountains it is pleasant for the chamois, but it is not easy because the alpine areas situated over the coniferous forests require special conditions (Nussberger & Ingold, 2006). However it seems that nothing stopped the chamois to survive over time (Fivo et al., 1984; Papaioannou & Vassiliki, 2005). The successful adaptation to this climate it was possible especially due to the hooves. The large hooves are splitted apart helping them to walk easily in the snow. The sides of the hooves are sharp and strong so it is easy for them to keep a better balance on the ground and it is also very adherent allowing them to run down on the rocks without difficulties (Ionescu, 2002; Nussberger & Ingold, 2006; Pflieger, 1982; Spiess, 2005). Besides these advantages it must be noticed the fact that the chamois has a very developed smell and a very good hearing. Furthermore this mammal has good sight, being able to see far away even moving objects (Blaj-Voinescu, 2009; Cociu,1982; Couturier,1938).

The high number of the chamois in the Retezat National Park is also possible due to morphological condition of the Retezat Mountains and more over to the variety of local conditions as main source of the outstanding biodiversity of this area (Spiess, 2005). It is well noticed that unlike other mountains as: Bucegi, Piatra Craiului or Fagaras, the Retezat Mountain is defined by wide depression (cauldrons), gentle slopes
and lots of glacial lakes (over 82). All of these aspects mentioned above are creating the suitable climate for the growth of the chamois population (Georgescu, 1989; Giurescu, 1976; Ichim, 1994; Ionescu 2002; Speiss 2005).

Another important factor helping the development of the mammal is the prohibition of the grazing (Georgescu, 1989;) in the Retezat National Park. However it must be given a special attention to overpopulation because it could be a problem as serious as under population (Catusse, 1997; Cotta et al., 1997). Between 1980s and 1990s the black goat population from the Retezat Mountain decreased with approximate 2000 specimens. Having in mind that the black goat is a big salt consumer can become a problem because in the Retezat National Park there is no source of salt and the mammals have to leave the park in order to find it, so we are also talking here about migration and fragmentation of the areal (Cheroiu 2003; Crestanello et al., 2009) as source of species diversity. There are about 1500 chamois in Retezat, number which can be slightly changed from year to year. Today, the high number of chamois, with the excess number of female chamois, becomes alarming because the high number of these leads to a forcing of the young be-goat; the robustness and the value of trophies will suffer (photo 4, photo 5).
As a result, he-goats with high and thin trophies and small span of the horns were hunted; also, females with strong and bent trophies (close to those of he-goats) were hunted; these trophies show a very strange/bizarre light concerning the character of these two equality. In comparison with chamois which are hunted in Parang, a mountain which is situated nearby Retezat, which has horns with a large span and big thickness, the trophies obtained from chamois hunted in Retezat are characterized by large height, small span and thin horns (figure 1, table 1).
Fig. 1. The situation of *Rupicapra rupicapra* L. in Retezat Mountains (data recorded in Forest District Retezat)

Table 1

The evolution of sex-ratio of hunted *Rupicapra rupicapra* L. from Retezat Mountains (data recorded in Forest District Retezat)

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**Conclusions**

In comparison with chamois which are hunted in Parang, a mountain which is situated nearby Retezat, which has horns with a large span and big thickness, the trophies obtained from chamois hunted in Retezat are higher with small span and thin horns. There is an important wildlife management strategy envisaged by local foresters, hunters and Retezat National Park Administration but also the ongoing project „Watching the Chamois”, initiated in 2004 by Ecosilva Retezat, WWF Romania and Unesco Pronatura has been beneficial to the specie and to the Retezat Mountains nature protection in general. In the future the sustainable conservation of the *Rupicapra rupicapra* in the Retezat National Park will depend most likely of the continuous implementation of measures that have to be taken in order to keep the area safe for a suitable environment as the following: the prohibition of grazing in strict protected areas and its control, a suitable tourism management and control and also the strict limitation of building special feeding places and salt places at a distances bigger than 1 km from the National Park Retezat. The above-mentioned measures are determinant for the future of chamois in Retezat Mountains and also will highly contribute to an adequate nature protection management in the area, if implemented.

**References**

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