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X Congresso Italiano di Teriologia

Acquapendente (VT), 20–23 Aprile 2016

edited by

R. Chirichella, S. Imperio, A. Molinari, G. Sozio, S. Mazzaracca, D.G. Preatoni

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The award will be assigned yearly, in the second semester of the year following that of reference (i.e., Best Paper Award for 2013 will be assigned in the second semester of 2014). The Editorial Committee is responsible to assign the award. A written motivation will be made public on the journal website.

X Congresso Italiano di Teriologia

Teatro Boni, Acquapendente (VT), 20-23 Aprile 2016

Riassunti: Comunicazioni e Poster

edited by

R. Chirichella, S. Imperio, A. Molinari, G. Sozio, S. Mazzaracca, D.G. Preatoni

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Riassunti: Comunicazioni e Poster
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X Congresso Italiano di Teriologia

Ecological factors affecting Alpine chamois population recruitment: remote sensing can support adaptive management

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The analysis of ecological factors able to affect the life history traits of ungulates is important to reveal key information on population dynamics of wild herbivores. As regard to bovids, it is often crucial for juveniles and yearlings to gain quickly body size and mass, as such growths primarily increase chance to reach reproductive maturity (i.e., an increase in the survival probability). Accordingly, we modeled a set of ecological factors accounting for the variation of Alpine chamois (*Rupicapra rupicapra*) population recruitment through three indexes: i) the ratio kids/adult females (NK/NF), ii) the ratio yearlings/adult females (NY/NF), and iii) the yearlings eviscerated body mass (YBM). These indexes were derived respectively from block count census and from hunting records in the last 45 years in different ecological contexts in the South-West Trento province. These indexes were associated to forage quality/quantity, winter harshness, and local chamois density. In detail, we considered NDVI (Normalized Difference Vegetation Index) as a proxy for the quality of Alpine meadows used by chamois in spring and summer and snow cover data belonging to the National Aeronautics and Space Administration (NASA) remote sensing dataset (TERRA-MODIS). The reproductive success of these populations was strongly influenced both by the quality of meadows during births period

(May) and by the space-time pattern of growth and maturation of Alpine pastures in spring and summer periods. Even winter harshness played an important role in this process. In particular, i) the NK/NF was positively influenced by the average quality of the grazing season previous to the births period and by the maximum NDVI value recorded in May (i.e., births period); ii) the NY/NF was negatively affected by the extent of snow cover in the first winter of kids and positively related to the average quality of the pasture in the subsequent spring and summer (i.e., the feed intake period in which individuals had to recover weight loss derived from previous winter); and iii) the YBM revealed a negative trend during the study period suggesting a difficult adaptation to climate and environmental changes taking place. Contrary to our expectations, local density was not able to influence these variables. This result may suggest that local density are not exceedingly high in the study area and therefore are not able to promote density dependent phenomena. In conclusion, these results contribute to increase the knowledge of the mechanisms underlying Alpine chamois population dynamics and give insights to plan adaptive management and conservation of this species.

X Congresso Italiano di Teriologia

Many Italian Mammals are likely to be at risk from water pollution

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The use of pollutants from agriculture and industry has increased steeply over the last 50 years, causing serious environmental consequences. Water pollution is caused by the introduction of contaminants to a system, and it can be determined by the addition of organic and inorganic material, floating matter, pathogens and increases in water temperature. Chemical runoff from farms and industries is leaching into nearby rivers, streams and groundwater, killing thousands of animals. Many species of mammals use aquatic habitats for foraging and for drinking water. These species often play a fundamental ecological role and can be considered as environmental indicators. In this study I analysed

the relationships between the distribution of mammal species in Italy known to be sensitive to water pollution from the literature, and the distribution of both legal and illegal dumps, agricultural areas, industries and the pollutants they release. In this way, I found that most of the species considered in the study can suffer from water pollution in at least part of their range. This is mainly due to the fact that they live in proximity to sources of pollution, and this is likely to influence their presence in the most at risk sites. In order to avoid losing mammals that play a key role in the ecosystems, we should pay particular attention to emissions in sites that host large number of sensitive species.



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