Changing predation impact of reintroduced lynx (*Lynx lynx*) in Switzerland

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Case studies in predator-prey relationship do often not fit theoretical considerations. Testing hypotheses derived from theoretical models in field studies on large mammals is hampered by the difficulty to control side effects and to assess short-term findings in the light of unknown long-term dynamics. Reintroductions of carnivores offer chances for experimental approaches, but even such studies – typically designed to evaluate the founding of the population – seldom allow assessing long-term predator-prey relationship. We have studied feeding behaviour of Eurasian lynx in three reintroduced populations in Switzerland. Lynx were observed by means of radio-telemetry in five distinct studies starting 0-30 years after the release of the animals and lasting for 3-10 years. Although the predator-prey system is rather simple, with roe deer as the main prey and chamois as the only significant alternative prey, we found that the predation impact changes considerably over time: Lynx were responsible for 9-63 percent of known roe deer mortality. Lynx showed a considerable numerical and functional response to changing roe deer abundance. Winter mortality and hunting regime shaped the ungulate populations in the Swiss mountains for a long time. Lynx predation now adds a complex and dynamic element hard to cope with for wildlife managers.

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Implications of the Prey Preferences of Large Felids for their Conservation

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A new line of research has recently evolved that describes the prey preferences of individual predators and investigates why those specific preferences have evolved. This paper reviews the published data on the prey preferences of large felids and makes recommendations for their conservation based on these preferences. Amongst the African guild of felids, lions prefer prey the largest prey outside the megaherbivores, leopards prefer medium-sized prey from denser habitats which assist its solitary hunting strategy, and the morphological limitations of the cheetah restrict it to medium-sized prey from open habitats. The main conservation implication of this research is the fundamental importance of an adequate prey base of each predators’ preferred prey in order to conserve them. Thus, studies looking solely at habitat requirements based on vegetation communities may fail without cognizance of the habitat requirements of the prey of large felids. This research has also led to the ability to predict the diet and carrying capacity of large felids. Finally, African predators with the smallest preferred dietary niche breadth were more highly threatened with extinction (e.g., cheetah, lion) than those with a broader preferred dietary niche breadth (leopard).

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