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SÉMINAIRE

The behavioral ecology of predators and dangerous prey

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The study of predator-prey behavior is of primary importance to the field of ecology. However, few studies measure interactions between predators and their most dangerous prey. Our team used long-term datasets from Yellowstone National Park and Scandinavia to evaluate 1) the role of cooperative hunting in the ability of predators to hunt dangerous prey, 2) how predator preference for differentially dangerous prey species changes in relation to their relative abundance, and 3) how the kill rate of a top predator was affected by the presence of another. We found that 1) wolves (*Canis lupus*) were more cooperative when hunting bison (*Bison bison*), their most dangerous North American prey, than when hunting elk (*Cervus elaphus*). 2) Contrary to the prey switching hypothesis, wolves in northern Yellowstone attacked and killed disproportionately more of the rarer, but safer species; wolves maintained a strong preference against bison, even when this species was more than twice as abundant as elk. Analyses of wolf-bison behavioral interactions indicate that wolf preference against bison reflected an inability to consistently overcome bison antipredator defenses. 3) Finally, although brown bears (*Ursus arctos*) can monopolize wolf kills, we found no support in either Yellowstone or Scandinavia for the common assumption that brown bears cause wolves to kill more often. On the contrary, our results showed the opposite effect, suggesting that brown bear presence actually reduces wolf kill rate. One potential explanation for decreased wolf kill rate is the energetic costs associated with prematurely abandoning a kill to hunt dangerous prey. This research contributes to the current body of work addressing the effects of wolf reintroduction in Yellowstone, and sheds light on the behavioral relationships at play in a special type of predator-prey interaction: predators that hunt dangerous prey.