



Title: Do large predators help forests to regenerate? An example of wolf.

Abstract: With the increase in the population of large herbivores, forest management is becoming increasingly difficult, as the browsing damage caused by these animals is becoming more and more serious in the youngest stands, slowing down their regeneration. With the recent return of large carnivores to forest ecosystems, an important question for researchers, conservationists, forest owners and managers is how large carnivores affect the behaviour of their natural prey and consequently the browsing pressure of cervids on forest regeneration. Can predators such as wolves support forest management via the trophic cascade phenomenon?

To investigate this question, we analysed the behavioural responses of red deer and roe deer to high and low predation risk in northern Polish ecosystems with and without permanent wolf populations. Both deer species responses to wolf odour were significantly more vivid in the ecosystems where wolves were present. Moreover, the reactions in the ecosystems where wolves have only recently been present were almost as strong as in the ecosystems where wolves have been present for a long time. This suggests that the wolves' prey, the cervids, return to their natural anti-predator responses within a very short time.

We have also studied game pressure on Scots pine and European beech plantations. In a forest ecosystem not inhabited by wolves, the spatial variation of browsing patterns in small-sized beech plantations was identical between the edge and the centre. In contrast, browsing pressure was higher at the edges. The presence of wolves reduced deer browsing on beech saplings and increased browsing on pine saplings. In addition, deer foraging behaviour changed in large pine plantations and browsing pressure increased only in the central areas of the plantations. We assume that the presence of wolves in a forest landscape is an important factor that alters browsing pressure on the youngest stands and their spatial pattern, and that this may be an important factor for stand regeneration, especially in small forest patches.

Biography:

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Adam Wójcicki, an environmental protection studies graduate, currently an assistant

professor at the Forest Research Institute. His work focuses on diverse scientific research, including ecology of terrestrial vertebrates and nature conservation. He has authored impactful articles in peer-reviewed journals and popular science articles, driven by a passion for advancing ecological knowledge and promoting sustainable practices for a balanced coexistence.