

# THE FOREST TAKES CARE OF ITSELF

**W**e talk to **Prof. Dries Kuijper** from the PAS Mammal Research Institute about how different elements of forest ecosystems affect one another and about mutual respect in the relationship between humans and wolves.

## What goes on in Poland's forests? What kind of animals dwell there?

**DRIES KUIJPER:** Forests are places where a lot of things are happening. Based on my own research, I have most experience with ungulates – different species of deer, bison, moose and wild boar. In Poland, just like in other parts of Europe, there are growing concerns that populations of several species are becoming too large. In my view, reducing these numbers by hunting is justified to solve or prevent human-wildlife conflicts. However, I also believe that people often make overly rash decisions on reducing ungulate densities or maintain them at too low densities, in particular in forest ecosystems. Much more often we should learn to better appreciate the natural role they play in forests and make sure we don't prevent them from fulfilling it.

## Do you think we should increase the public awareness of the role played by ungulates in forests?

Yes, but more importantly, I think we should raise awareness about what we have forests for. First of all, we have to decide whether a given forest is to be used for wood production or not, because this fundamentally affects how we should manage it. If the goal is timber production, we shape the forest accordingly. However, when the aim is to conserve or stimulate natural processes, we should refrain as much as possible from interfering in these processes. There is nothing wrong with using forests for wood production; I am only urging people to be consistent in their choices and the connected management actions.

In several cases this decision has already been made. This is for example the case with the Białowieża primeval forest, that has been protected under the European Habitats Directives and assigned as a World Heritage site by UNESCO. Then there should be no doubt that preserving natural processes in such a unique forest are the priority, and the ecosystem should be left as much as possible alone to allow it to function according to its own rules.

## Please tell us about your current research.

Broadly speaking, my research is focused on so-called trophic cascades. I try to understand how large carnivores, such as wolves and lynxes, structure the entire ecosystem through their interactions with their herbivorous prey. The presence of predators affects the number of herbivores but also has very important effects on their (spatial) behavior. In turn, that modifies the role that is played by herbivores in affecting forest regeneration. These trophic cascades driven by large carnivores have been well studied in large, relatively undisturbed ecosystems such as the Yellowstone National Park in the US. However, we still know very little how large carnivores influence ecosystem functioning in European systems. In Europe with its high human population density, humans generally have much more pronounced impact on ecosystem functioning, through activities such as forestry and hunting, and simply by being present. Even in the Białowieża forest, despite the fact that it belongs to the

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works at the PAS Mammal Research Institute. He has conducted research on salt marshes in the Wadden Sea area in the Netherlands, Germany and Denmark, and on the tundra of Spitsbergen. He currently studies how large herbivores (bison, moose, red deer, roe deer, wild boar) in the Białowieża Forest affect natural tree regeneration. These studies also include how large carnivores affect behaviour, the spatial distribution of these herbivores, and the way humans modify these trophic interactions.  
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A wolf in the Białowieża Primeval Forest

most natural forest in Europe, we observe that these effects of human activity on the ecosystem occur. For example, human activity determines to a large extent the (spatial) behavior of wolves, which in turn has consequences for how wolves affect other species. Forests are complex systems where everything is intertwined.

We have recently started a new project entitled ‘Can wolves regulate the behavior, distribution, and activity of mesocarnivores in the anthropogenic landscape in Poland?’ This project focuses on another way how wolves can structure ecosystems. We study how the presence of wolves affects the number and behavior of smaller predators such as foxes, badgers and raccoon dogs. These impacts have yet been little studied.

**Have you been surprised by any of the results of your research?**

Let me start by saying that as a Dutchman, I am incredibly fascinated by the Białowieża Forest. It is a rare place where many natural processes still occur and can be studied. It consists of one of the best preserved and largest fragments of primeval forest of the European lowlands. There is no other place on our continent that would allow us to study natural processes on such a vast scale. Almost everywhere else humans regulate the numbers of herbivores by hunting, reduce the number of predators and plant and fell trees. In the Białowieża National Park, we can observe how nature manages itself. An example is the recent bark beetle outbreak, which killed many spruce trees. Despite the large impact this has on the forest, this is a completely natural process that is part of the dynamics of forest ecosystems, and the response of the forest to this process can be observed here.

What surprises me is how powerful human influences are, even here. Even in the Białowieża National Park, where there is a total ban on hunting, the presence of people affects wolves and the role they play in the ecosystem. The very fact that the Park is surrounded by villages affects what happens within its borders. You can identify areas of the forest which are visited by wolves most frequently. Our latest study shows nicely that wolves avoid places which are close to hu-

man settlements. People don’t have to do anything; wolves will try to stay away from villages. This means that they are most frequently found in places farthest away from people, and that’s where their effect on the ecosystem is most powerful. In these places where wolves are most often present, we found that red deer abundance is reduced and also their browsing impact, which leads to a better regeneration of young trees.

**Wolves have a bad reputation and even in children’s fairytales they are portrayed as a symbol of evil. How does this terrible reputation affect how people think about wolves?**

Unfortunately that’s true. What’s more, this bad PR also occurs in the Polish media. I frequently hear that wolf numbers are too high and that this poses a problem. Similar concerns over the growing populations of wolves arise in other parts of Europe. There is growing conflict between groups who appreciate the positive influence exerted by wolves on forest ecosystems and those who focus mainly on the problems, such as the livestock depredation and perceived competition with hunters.

In densely-populated regions, in particular in Western Europe, we should not ignore that wolves can easily conflict with people. One reason for this is that it is in wolves’ nature to roam. And of course they are not confined by boundaries of nature reserves. Once they venture beyond them, they can easily clash with humans. I think such situations are to be expected and should be prevented; the question is how to do this? We recently published an article in the journal *Biological Conservation*, analyzing a range of strategies of managing conflict with wolves in human-dominated landscapes in Europe. We hope the article stimulates an objective, knowledge-based discussion on available solutions to solve human-wolf conflicts. Our study reveals that while culling wolves may appear to be a simple solution, it frequently does not solve the conflict and often even exacerbates human-wolf conflicts. Shooting in one region increases the immigration by individuals from surrounding, no-hunting areas. Moreover, it increases the number of lone individuals, and it is those isolated animals which are most likely to kill livestock. We should explore other ways of coexistence with wolves and preventing conflicts. First and foremost, there are many extremely effective ways of protecting livestock against wolves, and we should make much better use of this existing knowledge. Additionally, people should be more aware of wolves and their habits in order to avoid coming into contact with them. Mutual respect reduces the likelihood of conflict situations. Finally, it’s extremely important that wolves have access to abundant wild prey to prevent them from killing livestock.

INTERVIEW BY DR. JUSTYNA ORŁOWSKA