DESCRIPTION FOR THE GENERAL PUBLIC

In this project we aim at explaining the mutual relationships among large intense disturbances in forests (like windstorms or bark beetle outbreaks), process of natural forest regeneration and browsing of young trees by ungulate herbivores, primarily deer. We assume, that disturbances by killing many large trees increase the light availability for the plants growing on the forest floor. That causes a rapid development of the young generation of trees; because the density of the young trees increases, and they produce much more shoots, the population of wild ungulates inhabiting given forest area is not able to arrest the growth of the young generation of forest trees. In such case even the species which are usually dwarfed or even killed by intense browsing, get a chance to grow rapidly and eventually make it to the forest canopy. We plan to conduct our research in four diverse areas in Poland, Central Europe (the Babia Góra mountain, Tatra Mountains, Roztocze, Piska Forest) where we had already established permanent research plots and collected data during our earlier research projects. From the preliminary analyses we know, that the browsing pressure is very unevenly distributed over the areas under study. In the current project we plan to analyze these data to determine, which environmental factors influence the spatial variability of browsing of young trees by ungulate herbivores. The main part of the project will be focused upon the estimation of the amount of forage and analysis of the intensity of ungulate browsing in various light conditions, from a closed-canopy forests to areas where the tree stand has been almost completely destroyed by a windstorm or bark beetle outbreak. We also plan to establish twin plots within the enclosures fenced against the undulates and outside the fence. That would allow us to compare growth rates of young trees affected by ungulate herbivores and excluded from their influence, but growing in almost identical environmental conditions. Explanation of the influence of large intense disturbances on the natural regeneration in the presence of ungulate herbivores will be an important contribution to the theory of dynamics of forest communities. With expected increase in the frequency and severity of natural disturbances, associated with the global climate changes, the results of this project can be a basis for a more close-to-nature management of forests affected by the large-scale intense disturbances.