



The LIFE Rohrhardsberg Fire Management Project: The use of Prescribed Fire in Maintaining Endangered Habitats and Landscape Features in the Foothills of the Black Forest

The LIFE-Nature-Project "Rohrhardsberg, Obere Elz und Wilde Gutach", funded by the European Commission in 2006, is led by a consortium, in which the Fire Ecology Research Group / Global Fire Monitoring Center (GFMC) is participating, and is coordinated by the Regional Council Freiburg. In the frame of this project the testing phase for the use of controlled burning in the habitat management of grouses was initiated in the Rohrhardsberg area in the Black Forest on 20 April 2007. Objectives of the project are amongst others the development, optimization and linkage of valuable habitats as well as the protection and the development of viable populations of capercaillie (*Tetrao urogallus*) and hazel grouse (*Tetrastes bonasia*). Particular attention is focused on the participation of the local population in the implementation of activities in the *Natura 2000* area.

The area of the Rohrhardsberg mountain is a territory between the Northern and Southern Black Forest that has a significant value in terms of landscape and biodiversity. However, the habitats of a number of important species have been affected by land-use change and forestry practices. The ongoing trend of the abandonment of traditional land-use and pasture management practices has resulted in the elimination of disturbances, which have characteristically shaped many valuable landscape types and ecosystems. The hazel grouse has suffered a massive decline in its population in the past few years, so that measures have to be taken urgently. The crucial factor for the reduced number of the grouses is the decrease of open and semi-open areas in the forested landscape of the Black Forest, which are of vital importance as natural habitat for both species. This reduction of appropriate areas is not only a result of intense forest management but also a consequence of the reforestation of abandoned agricultural areas, including pastures. After the hurricane "Lothar", which caused massive wind throw in December 1999, open areas were generated that were – in combination with the old remaining stands – rapidly populated by the grouses. These are, however, temporal succession stages that are replaced by closed high forest formations over time if targeted interventions are not employed to maintain this structural mosaic. Moreover, a massive regeneration of spruce has been observed in many places, which will have significant negative impacts on the characteristics of the habitat in the following years by rapid succession towards dense forest.

To counteract a new loss of habitat, the application of prescribed burning on the wind-thrown areas was first planned in 2007 with the aim to maintain, modify or strengthen structures, which have been developed after the storm. The objectives of the prescribed burn are:

- to control the of abundant regeneration of spruce (*Picea abies*) to maintain general openness
- to create vegetation-free areas (mineral soil exposed) for food search / scratching
- to maintain refuge areas (small groups of young stands and thickets)
- to foster berry/shrub cover, particularly blueberry (*Vaccinium myrtillus*), as a key source of nutrition
- to foster softwoods
- to foster structural diversity through a detention of the development of closed high forests in parts of the stands
- to maintain tree stumps and snags as sitting places
- to maintain appropriate trees as sleeping and singing places

The first experimental fire took place on 20 April 2007 after two years waiting for appropriate weather conditions. Only an extraordinary long lasting high pressure situation with east winds, the driest month April since the beginning of the weather records in Germany, enabled a good drying-up and flammability of the dead wood and the target vegetation on an altitude approximately 1000 m above sea level on the area of the Rohrhardsberg.



Figure 1. Prescribed fire aimed at maintaining open habitat space for capercaillie by reducing abundant regeneration of spruce. Photo: GFMC.



Figure 2. Fire effects immediately after the prescribed burn of spruce regeneration. Photo: GFMC.

First Conclusions

At the time of reporting the evaluations have not been completed yet but show that burning is very difficult on areas affected by wind throw as well as on pastures in these altitudes. There are clear limitations by soil, duff and other fuel moisture under the site conditions of forest stands at altitudes of ca. 1000 m a.s.l. The first experiments in abandoned pasture burning, however, are more promising (Figures 2 and 3).



Figure 3. The use of prescribed fire in maintaining openness of mountain pastures, which are partly abandoned or less intensively grazed. Photo: GFMC.



Figure 4. The first burning trials on abandoned pastures were conducted in April 2009. Photo: GFMC.

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References

LIFE Rohrhardsberg Project Website:
<http://rohrhardsberg-life.de/>

Project web page on prescribed burning:
<http://rohrhardsberg-life.de/artikel/feuereinsatz>

First Forest Fire Experiment (2007):
<http://www.fire.uni-freiburg.de/feueroekologie/EU-Life-project.html>