

# HEATHLAND FIRE



This photo shows a very intense fire that in 1996 burnt nearly one-third of the Kalmthoutse Heide, a large heathland area in Northern Belgium. This fire was, however, not an isolated case, as during the last three decades, at least three large and intense fires (1976, 1996, and 1997) have burned substantial areas of the Kalmthoutse Heide and have led to increased abundance of the perennial tussock grass *Molinia caerulea*. A similar increase in fire frequency has also been observed in other heathland areas in Belgium.

Fire is an important perturbation that may dramatically affect population dynamics and invasive spread of plants. Using integrodifference equations, we show how fire affected invasive spread of *M. caerulea*. Invasion speed was on average three times larger in burned compared to unburned plots. Dispersal distances, on the other hand, were not significantly different between burned and unburned plots, indicating that differences in invasive spread were mainly due to differences in demography. Our results clearly show increased invasive spread of *M. caerulea* after fire and call for active management guidelines to prevent further encroachment of the species and to reduce the probability of large, accidental fires in the future. Mowing of resprouted plants before flowering is the obvious management tactic to halt massive invasive spread of the species after fire.

The photograph supplements the article by Hans Jacquemyn, Rein Brys, and Michael Neubert, “Fire increases invasive spread of *Molinia caerulea* mainly through changes in demographic parameters,” which will appear in *Ecological Applications* 15(6), December 2005.