

# Abstract

Wetlands are significant centres of biodiversity, but they are also under extreme pressure from the side of human activities, which have in many cases caused their complete disappearance or a significant deterioration of conditions for living organisms. The question is therefore what management practices are best suited to support wetlands' biodiversity functions. In my thesis I therefore focus on wetland management and its impact on wetland bird populations in European conditions, as a comprehensive review of the results of studies on this topic is still lacking. Specifically, I focus on mowing, grazing, burning, land-cover changes, large-scale restoration, predation control, protected areas and the absence of management.

Management is required in most of European wetlands and is most often carried out in the form of grazing and mowing. Each of these types is suited to slightly different conditions. However, biodiversity benefits are greatest if grazing and mowing are applied simultaneously. Mowing and grazing can be recommended due to their non-invasive nature, highly positive outcomes when applied in suitable time intervals, and the possibility of cooperation with farmers. Burning, on the other hand, has only rarely been tested in conservation practice in Central Europe and the results of studies show rather negative impacts. Intervention in the form of water control channels is a very promising management option and the studies that have focused on this type of intervention conclude that it is suitable for mitigation of the effects of adverse water regimes, whose frequency is increasing in Central Europe. Large-scale wetland restoration, which also addresses the changes in water regimes and pollution, shows modest positive impacts on wetland birds. This is due to the fact that these financially demanding projects are not primarily aimed at wetland birds. However, if specifically tailored for wetland birds, this management type would be more successful than small-scale interventions. Protected areas are often designated in wetlands, but they can only be successful if their surroundings are also controlled to prevent further pollution, or in combination with other types of management. Predation control, primarily of invasive species, is a controversial management issue from the ethical perspective. However, drastic solutions in the form of active hunting could be replaced by reintroductions of top predators. The absence of management can only be successful if no primary and secondary pollution is present in wetlands, which is practically impossible in the conditions of Central Europe. Only areas that have been depopulated for a long time, or areas with extreme conditions that are not affected by secondary pollution in the form of nutrient runoff from human activities and do not have dominant vegetation species such as scrub or reed, have been reported as successful examples.

For the conditions of the Czech Republic, grazing and mowing at an appropriate intensity and the introduction of tools to regulate the water level in wetlands can be recommended on the

basis of the reviewed studies. It is appropriate to apply these types of management in protected areas where the protection creates suitable legislative and practical conditions for their use. Burning, predation control and the absence of management, on the other hand, appear to be difficult to apply.

