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Basic principles for the optimization of wildlife management in 'Donau-Auen National Park'

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Summary

According to the international guidelines of the IUCN protected areas of category II ('National Parks') are primary managed to conserve an ecosystem and to enable recreation. In a long-term perspective this should apply to at least three-fourths of the area (EUROPARC & IUCN 2000) and involves the management aim to minimize anthropogenic interferences on the protected ecosystem including wild ungulates (NATIONALPARKS AUSTRIA 2011). The 'Donau-Auen National Park' (NPDA), reaching from city Vienna to the Austrian-Slovakian border, was founded in compliance to IUCN-criteria in 1996.

Diverse challenges can arise in National Parks such as the management of wildlife, especially of wild ungulates which are capable to impact the vegetation of the protected ecosystem and of the surroundings. Therefore, the regulation of the ungulate population by shooting might be necessary within a National Park. But consistent to IUCN criteria all wildlife management activities influencing the wildlife population (including population control) have to be reduced to a minimum. For this reason, non-intervention areas ('game reserves') are defined (NATIONALPARKS AUSTRIA 2011).

The NPDA additionally aims the observability of wildlife for visitors. However, due to the disturbance caused by the ungulate-regulation and recreational activities (JAYAKODY et al. 2008; REIMOSER 2012; MARCHAND et al. 2014), sensible game species tend to live reclusive by adapting their spatio-temporal habitat-use. Hence, these species are rarely visible for visitors. As a consequence of the concentrated distribution of ungulates, the local impact on the vegetation can increase. Once more the regulation of ungulates might be necessary.

In order to address the question of how other comparable protected areas deal with the mentioned conflicts in central Europa, a comprehensive literature research was conducted (December 2014 - February 2016) and complemented by personal communications with staff members. For the selection of protected areas following requirements were defined of which at least two had to be accomplished: (i) presence of game reserves, (ii) similar landscape, (iii) high frequency of visitors, (iv) observability of wildlife for visitors. Based on the findings basic principles for the optimization of the wildlife management in NPDA were deduced.

In general, the literature research revealed that a wildlife management approximating natural conditions (GÜNTHER & HEURICH 2013, DACHS 2013) has been rarely realized so far, although recent efforts seem to increase. In comparison to the six selected National Parks (one in Austria and five in Germany) the NPDA already investigated the impact of ungulates on forest vegetation comprehensively. However, most examined National Parks including NPDA lack surveys about interacting factors affecting the protected ecosystem. Furthermore, most methods used to determine the population size of game species are not able to count individuals accurately.

The number of ungulates shot per year within the National Parks indicates that population control is still seen as an essential part of the wildlife management. Manifold regulation strategies with diverse temporal and spatial restrictions as well as diverse forms of methods could have been found. In contrast, the game reserves are often comparatively small or / and the period without any regulations is relatively short. Recently, temporally and spatially flexible concepts for the population control achieved higher importance. Though game reserves are included partially on single days per year due to short and successful regulations of wild ungulates.

To observe wild ungulates visitors still depend on guidance by staff members in most of the examined National Parks, what indicates *i.a.* an ongoing unpredictability of the human behavior for wildlife species (JAYAKODY et al. 2008; REIMOSER 2012).

Most persuasive wildlife management concepts are based on verified research conducted within the National Parks. Studying local ecosystem dynamics and interactions, including management caused impacts, would allow most effective adaptations of the management. Moreover, scientific results can be used as well-founded arguments for public relations and in case of conflicts. From a wildlife perspective, future wildlife management concepts should still focus on the aim to minimize anthropogenic influences and should implement science-based and near-natural management strategies considering the management-caused impacts on the ecosystem critically. By implementing the last mentioned recommendations, NPDA could lead to seminal ways of wildlife management.

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