

OLD MANOR PARKS – FROM CULTURAL HERITAGE TO REFUGIA OF BIODIVERSITY

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Introduction

The historical and cultural importance of old manor parks has been revived lately (Abner et al. 2007, Eesti parkide almanahh 2007, Külvik & Maiste 2009) with a notion that the nature value of parks is still not properly estimated. The majority of efforts has been paid to dendroflora in parks (last reviews by Abner et al. 2007, Relve 2009, Tamm 1972, 2009). We expect, however, that more densely wooded parts of old manor parks could act as habitats for forest specific species – function as stepping stone habitats for dispersal in the landscape or become a newly formed habitat for stable populations. Thus, parks can obtain a potential to become the refugia for forest biodiversity, considering the fact that most of the contemporary forest land is comprised of secondary stands and intensively managed mono-cultures (Adermann 2008).

Latest studies have shown that small dispersal ability might be the major limitation for forest flora and that the formation of optimal environmental conditions for forest specialists last for about a century (Jacquemyn et al. 2003, Aparicio et al. 2008). In the light of continuingly increasing fragmentation of old-growth forests, this means that these old parks, currently mostly valued as the objects of cultural heritage, can obtain additional value from the aspect of biodiversity conservation.

Methods

We aimed to quantify the effects of habitat conditions, habitat connectivity and anthropogenic disturbance on immigration success of forest species into old manor parks. For that, we selected densely wooded parts of old manor parks as model target habitats, since they have all been established approximately at the same time (mostly in 18th and 19th century; Abner et al. 2007; Eesti parkide almanahh 2007), consisting of mature trees, but the parks had to vary by the structure of surrounding landscape. Within selected forest(-like) park fragments, we made stand, field layer and epiphytic cryprogam flora surveys according to sampling methodology used in forest studies (Kohv & Liira 2005, Liira et al. 2007, Jüriado et al. 2009,) and comparable to statistical forest surveys (Adermann 2008, Liira 2009).

Results

We realized that those selected park fragments resembled the old managed or unmanaged deciduous stands especially by their structure and species composition (Liira & Sepp 2009, Sepp & Liira 2009), containing regular forest plant species and several old-growth indicators, such as *Lobaria pulmonaria* or *Neckera pennata*. The nature quality of these ecosystems was dependent of management intensity and surrounding landscape.

Discussion

We concluded that the presence of the species in these well developed stands of parks seems to follow the patterns of island biogeography (MacArthur & Wilson 1967, Jüriado et al. 2006). However, we also saw that the over-intensive management of these parks can jeopardize the existence of obtained valuable biodiversity.

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