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Extent of the area and tree-species changes in the forests of Iván

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Abstract. There are no exact data on the extent of the forests of Iván; even the size of the attached fields has changed through the ages. A forest cover test was carried out there by selected permanent points around the village, and we investigated the proportion of forests in this area. The research started with the three military surveys; altogether concluded that the forest cover decreased to 13.5% to the third survey, and started to increase again in the 20$^{\text{th}}$ century. This time, experts preferred mainly acacia (*Robinia pseudoacacia*) and Scots pine (*Pinus sylvestris*).

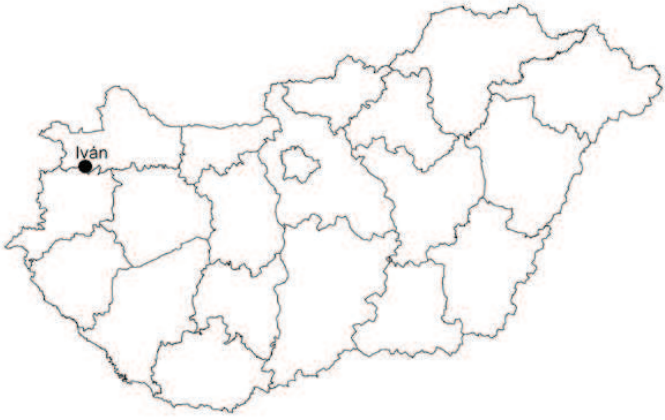
Keywords: forest history, changes of landscape, tree-species distribution

1 Introduction

Our research was made around Iván village, which is situated in Győr-Moson-Sopron County in Hungary, in the south-western part of the county.

The life of the villages around Iván was determined through centuries by the surrounding forests: the Iváni Nagyerdő. The settlements were separated from each other and enclosed by this forest; therefore, the jobs in the forest and forest grazing were the consequent acts. Citizens got field by uprooting; this is

the reason why this settlement is called “uprooting villages”. Transportation and all kind of traffic were made on paths in the forest, what concluded a very dense road-system, which still exists. Forest rules became decreasing in villagers’ life by the decreasing occupied area, we tried to follow these changes on the chosen area researching the changes of the forested areas and tree species.



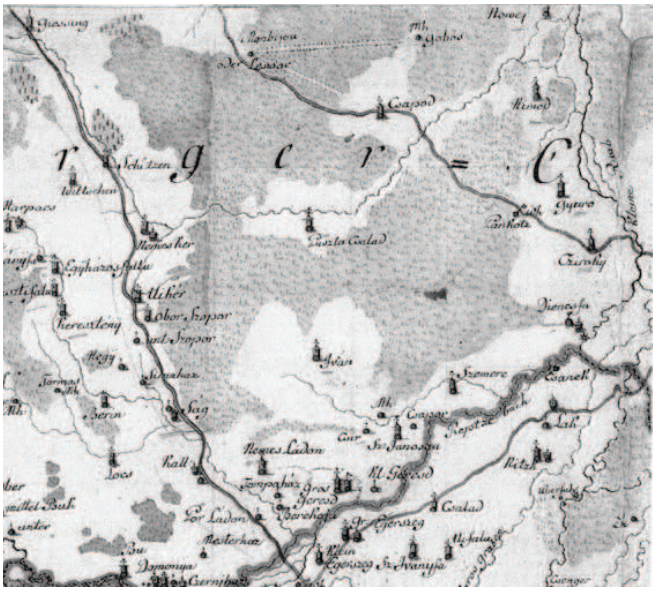
Map 1. The location of Iván in Hungary

2 Materials and methods

There are not exact data about the size of Iván forest from the past, even the so-called forests and fields have changed through the centuries. Therefore, the forest cover test was carried out by selecting permanent points around the village and we investigated the proportion of forests in this area. Before we started the research, we had to find permanent points, which did not change their position in the period under review. We used the following settlements for this kind of permanent points: Sajtoskál, Nick, Gyóró, the line led by Gyóró and Pusztacsalád closed by the line through Sajtoskál in the north-south direction.

3 Results and discussions

The research was started with the first military survey (Map 2.). On this map, we found that the forest cover of the area was 48%. Considering the monographs of Soproni E. [10] and Firbás O. [3], we concluded that it has taken out even bigger area in the past.

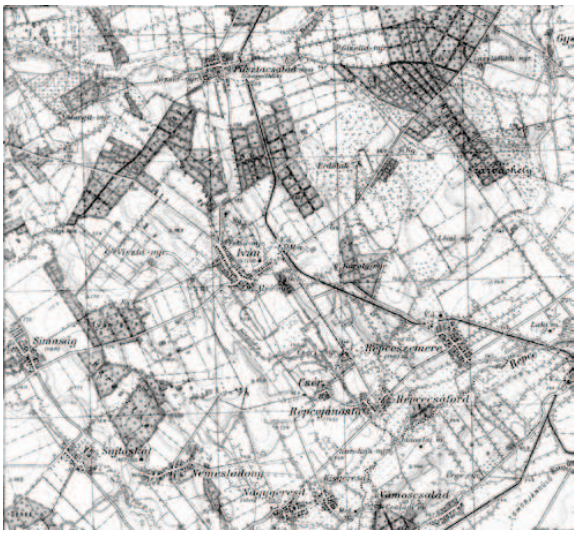


Map 2. Iván and its territory on the first military survey [5].

By the time of the second military survey, the forest cover has decreased to 27.5% (Map 3.). This significant reduction was the result of "soil need of peasantry", which is also reflected in the increased volume of uprooted fields.

Map 3. Iván and its territory on the second military survey [6].

By the time of the third military survey, the forest cover has decreased even more, to 13.5% (Map 4.).



Map 4. Iván and its territory on the third military survey [7].

These facts clearly show that the forest cover decreased to less than 1/3 in the researched area in about 100 years.

In the first part of the 20th century, reforestation began on this bad quality, "cseri" soil, especially after the 2nd world war, when grazing lost its former importance. There was a massive reforestation campaign in the area from the 50s till the end of the 80s. In the 60s and 70s, Scots pine (*Pinus sylvestris*) was preferred, from the end of the 70s and in the 80s, Oak (*Quercus robur*) and Turkey oak (*Quercus cerris*) were rather preferred. Turkey oak (*Quercus cerris*) was planted by seeding.

On 31 December 1983, the Agri-Co-operative of Iván was closed down and its fields were given to forest management, as the surrounding farmers' co-operatives did not receive these fields from the former one because of the very low quality of soil. Altogether that meant 860 ha, and from this just 60 ha was covered by forest. The forest management was not able to reforest the whole area in one piece; therefore they had to carry on the agricultural production [9]. Thus, forestation was completed in the 80s: almost all of these fields were afforested.

Consequently, the forest cover grew to 28% in 1980, which was equal to the amount of it in the middle of the 18th century. The reforestation wave was continued till the beginning of the 90s.

In the following decades, the size of forest cover continued to increase (Map 5.).

Map 5. Iván and its territory in 1981 [4].

The appearance of forests has changed for more reasons. First of all, because of the originally very low quality of the soil deteriorated by agriculture and grazing use. On the other hand, the wood structure has also gone through great changes. In the 12^{th}–13^{th} centuries, oak, especially turkey oak, was present in a significantly high percentage in the area, which is proven by the naming habits of several surrounding settlements [2].

The grazing in forest and the scion operation method favours the Turkey oak, as it is usually characterized by abundant acorn crop and a good budding ability, unlike other types of oaks. Unfortunately, we have not found accurate data on species distribution from this time.

In the 20^{th} century, there were more tree planting waves; during those times, experts mainly preferred acacia (*Robinia pseudoacacia*) and Scots pine (*Pinus sylvestris*). In the 50s, these two species populated more than a third of the forests of Iván [Oak (*Quercus robur*) and more than a quarter: Turkey oak (*Quercus cerris*) Fig. 1]. By the end of the century, acacia (*Robinia pseudoacacia*) and Scots pine (*Pinus sylvestris*) have equally reached 20% due to repeated plantations and species shift; meanwhile, the rate of Turkey oak (*Quercus cerris*) decreased to 14%. The rate of Oak (*Quercus robur*) increased only by a few percents.

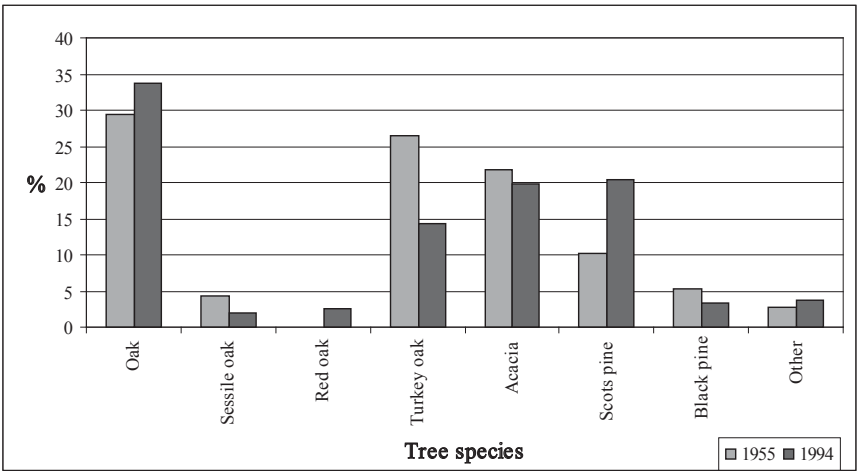


Figure 1: Species distribution of the forests of Iván between 1955 and 1994 LÁSZLÓ [1] based on data [8]

A minor forestation is still going on because of the low quality and inefficiently cultivated soil. The main tree might still remain acacia (*Robinia pseudoacacia*) for easy plantation, versatile use, and short harvesting period. As for Scots pine (*Pinus sylvestris*), its rate will decrease because of the low prices of choice of wood shavings.

4 Conclusion

In this research, we surveyed the changes of the forests' extension in the chosen area from the 18^{th} to the 20^{th} century. The forested field from the initial 48% has decreased to 1/3 by the beginning of the 20^{th} century (13,5%). Owing to the mass reforestation wave of the 50s and the impact of expiry of Iván Agri-Co-operative (1983), the forest area extended to 28%. The species distribution has changed because of reforestation; the rate of acacia (Robinia pseudoacacia) and Scots pine (Pinus sylvestris) have immensely increased in the last decades.

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