DYNAMICS OF OAK COPPICE IN SW SLOVAKIA: *PAST, PRESENT AND FUTURE*

Alexander Fehér

Dept of Sustainable Development FESRD, Slovak University of Agriculture, Mariánska 10, 949 01 Nitra, Slovakia,
Email: alexander.feher@uniag.sk

- Coppicing increases diversity of tree species, but this is true only to a certain limit. If oak stands are not supported by artificial planting or influence by coppicing, we can expect a natural retreat of oak.
- One reason of decline is also that oaks are light-demanding. If no clearings are created, oak seedlings will die in the shade of the forest and without the traditional uses, which did not allow full canopy closure, thus preventing the dominance of shade-demanding species, it is not possible to maintain their competitiveness.
- Hornbeam, which is more shade-demanding, can over-proliferate and suppress the oak seedlings. The retreat of oaks in the Carpathian Basin was attributed also to selective logging. Some authors do not consider oak-hornbeam forests at lower altitudes as climax forests at all.
- Unsuitable (micro)climatic conditions weaken trees, which are subsequently attacked by fungal diseases and misletoe hemiparasites.
- Reduction of oak cover was/is supported by introduction of other, often invasive species.
- Coppice forests can be considered as an important part of the landscape suitable for protection, including the declaration of protected areas or NATURA 2000 sites within them.
- It remains a challenge, whether to preserve forests with less intensive management and risk the decline of oak and or to manage the forests more intensively, even in protected areas, so that forests would be lighter and would maintain "their" rare species.
- Drier areas require simple management with thinning, wetter forests require more frequent management.

Species	Clear1	Clear2	Forest
Acer campestre	5	79,17	13,33333
Acer platanoides			5
Ailanthus altissima	117,8875	27,67	
Ajuga reptans	4,666667	2,00	
Anemone ranunculoides	6	4,00	30,85714
Arctium lappa		4,00	
Aster lanceolatus	2		
Astragalus glycyphyllos		4,00	
Brachypodium sylvaticum			4
Briza media		1,00	
Bromus benekenii	5,230769	5,00	4
Bryum caespitosum	50	141,11	
Lithospermum purpureo.	3		
Calamagrostis epigejos	5	5,00	
Carpinus betulus	15	116,94	314,1667
Cirsium arvense	4		
Cirsium vulgare		10,56	
Clematis vitalba	4	70,30	
Convallaria majalis			3
Cornus mas			100
Corydalis solida	5	4,40	7,6
Crataegus monogyna	5	4	5
Dentaria bulbifera	5,25		12,72727
Elytrigia repens	5		
Euonymus europaeus	5	4,00	
Euonymus verrucosus		4,00	5
Ficaria bulbifera	15,375	29,63	5,333333
Fragaria moschata	2		
Gagea lutea	4,4	3,00	
Galeobdolon luteum	7	5,85	5,428571
Galium aparine	8,529412	6,86	18,52941
Galium odoratum	4,2	11,43	126,3889
Galium sylvaticum			9,75
Geum urbanum	8,333333	17,50	14,33333
Glechoma hederacea		3,00	
Glechoma hirsuta	11		23,82353
Hedera helix	25	21,11	455,556
Heracleum sphondylium			5
Hypericum hirsutum	4	4	
Impatiens parviflora	4	4,00	
Inula conyzae		25,00	
Isopyrum thalictroides		1,00	
Lamium maculatum	21,66667	17,33	7,2
Lathyrus niger		2,00	
Ligustrum vulgare		5,00	
Melica uniflora	17,66667	17,67	43,33333
Mercurialis perennis	162,2222	23,33	281,6667
Milium effusum		4,00	
Myosotis sylvatica		1,00	
Poa trivialis		6,18	
Polygonatum multiflorum	6,75	2,00	6,6
Potentilla collina		1,00	
Pulmonaria officinalis	21,66667	91,67	20
Quercus cerris	15	147,78	23,33333
Quercus petraea agg.		25,00	
Rosa canina agg.	5	5,00	
Rubus fruticosus agg.	13,82353	15,00	
Sambucus ebulus	242		
Sambucus nigra	5		
Sorbus torminalis			5
Stelaria media		2,00	
Stenactis annua	8	4	
Tanacetum vulgare		2,00	
Tithymalus cyparissias	9,142857	8,31	
Urtica dioica	18,52941	16,76	
Viburnum lantanum	5		13,33333
Viola mirabilis	5	5,63	9,117647
Vitis vulpina		5,00	

Fig. 1. Biodiversity of clearings (from 2006 and 2014) and an oak forest (in 2015) (numbers: importance of species calculated from frequency of occurance and abundance of species, SW Slovakia, Fehér, Halmová, Končeková, Borlea 2016, unpubl.).

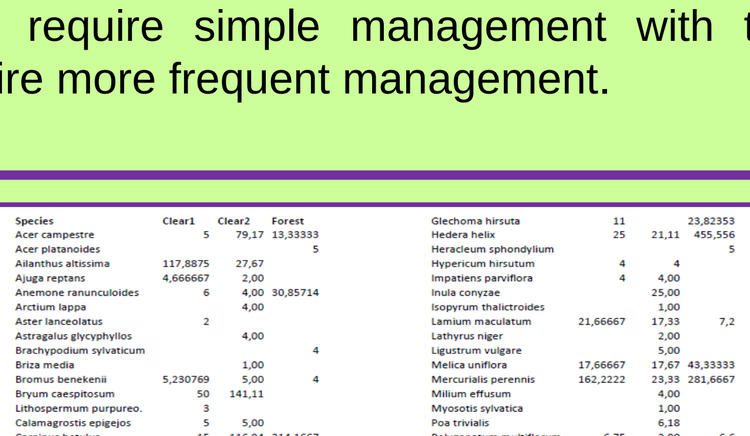

Fig. 2. Ellenberg values of herb layer species in 4 oak forests along ecological gradient (left-side: low intensity of historical use, right-side: high intensity of historical use, SW Slovakia).

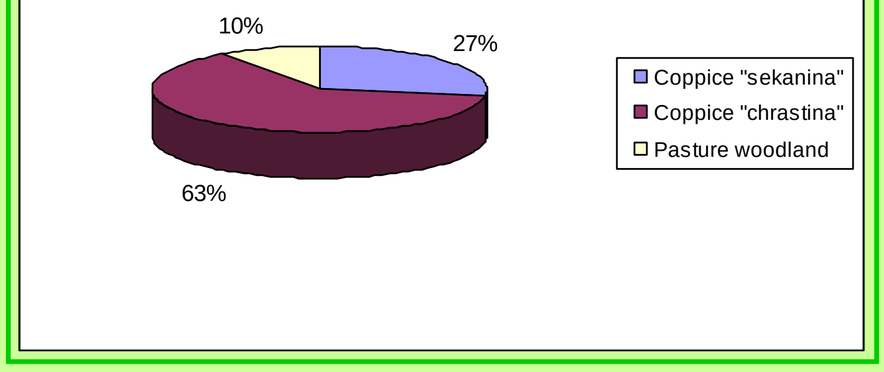

Fig. 3. Historical share of forest management strategies (based on ca. 800 traditional forest names).

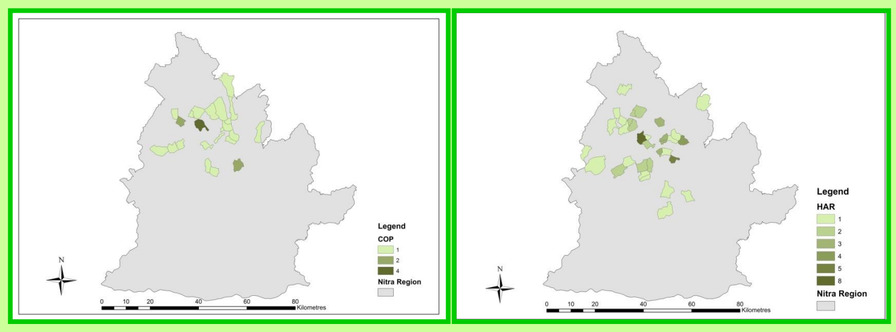

Fig. 4. Historical distribution of different coppicing methods (a: sekanina, b: chrastina) in the Nitra District.

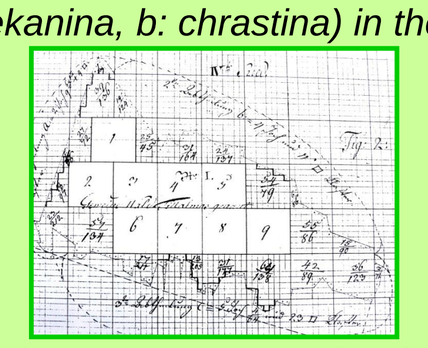

Fig. 5. Coppice management plan from the 18th century (Dolné Obdokovce).

Fig. 6. Coppice management type „sekanina“.

Fig. 7. Coppice management type „chrastina“.

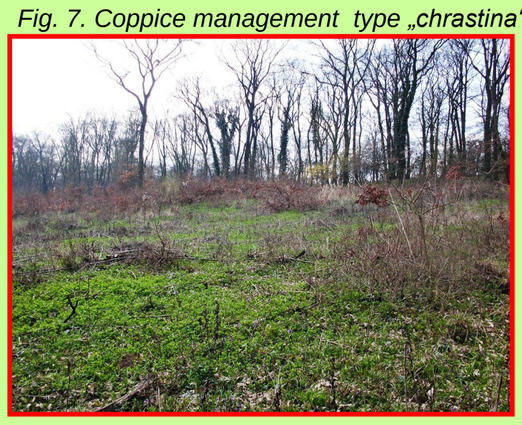

Fig. 8. Logged oak forest (SW Slovakia).

Fig. 9. Aged oak coppice (trend in Slovakia).

Fig. 10. Oak timber rafting.

Fig. 11. Oak bark collected for leather tanning.

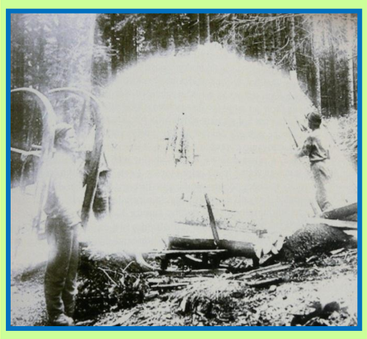

Fig. 12. Charcoal production.

Fig. 13. Pig masting.

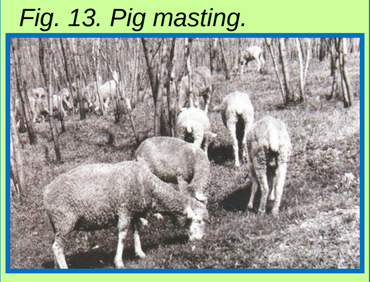

Fig. 14. Sheep grazing in coppice.

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