Bibliography, SLOVENIA **Andrej Boncina, Jurij Diaci**

Accetto M. (1973): Stand dynamics of pedunculate oak and hornbeam in virgin forest reserve Krakovo (Zakonitosti v razvoju doba in belega gabra v pragozdnem rezervatu Krakovo)
Ljubljana, magistrsko delo, 62 pp.
Abstract: Accetto's work deals with the virgin forest reserve Krakovo, which covers an area of 40.5 ha, and is positioned in the South-eastern region of Slovenia, 153 m above sea level. The reserve is situated close to the river Krka, which causes high groundwater. In the reserve the main tree species are: *Quercus robur* (91 %), *Carpinus betulus* (6 %) and *Alnus glutinosa* (3 %). In the Krakovo reserve the research was carried out on stand development and regeneration of the main tree species.
Key-words: Natural regeneration, virgin forest, gap dynamics

Anko B., Mlinšek D., Robic D. (1976): Instruction for formation and maintenance of forest reservation in Slovenia
YU, IUFRO, Oslo
Abstract: The civilised landscape does not provide a healthy environment for man. Such a landscape can be improved only by conservation and establishment of as many natural ecosystems as possible, particularly forest ecosystems. Therefore forestry should devise appropriate silvicultural methods on the basis of observation and investigation of virgin forests. Since the existent remains of virgin forests do not suffice for the purpose, a network of forest reserves, a basis of future virgin forests, is being systematically developed. To single out forest reserves, the following criteria have been laid down: 1) research goals, 2) geographical characteristics of the country, and 3) distribution of the most significant forest plant communities. Up to now 241 forest reserves comprising 4600 hectares in total have been set apart.
Key-words: Forest reserve network, Slovenia, virgin forest, criteria

Boncina A. (1999): Stand dynamics of the Rajhenav virgin forest during the past century. Virgin forests and forest reserves in Central and East European countries - history, present status and future development.
Proceedings of the invited lecturers' reports presented at the COST E4 management committee and working groups meeting in Ljubljana, Slovenia, Ljubljana, (in print)
Abstract: The paper concerns developmental features of the Rajhenav virgin forest stands during the past hundred years. The study is based on the first data on forests from 1893, full callipering of forest stands in the period 1957-1995, stand inventories carried out in selected permanent sample plots, and maps of horizontal structure of the virgin forest made in 1985 and in 1995. The proportion of silver fir in the growing stock was the lowest in 1893 (27 %) and the highest in 1967 (61 %). It fell to 57 % by 1995, and all indices suggest a further decrease in the future. During the period analysed, d.b.h. structure of forest stands changed as well, and the proportion of the optimal stage was decreasing while the proportion of the terminal and juvenile stage was increasing, although the growing stock remained practically unaltered during this period ($800 m^3/ha$).
Key-words: Rajhenavski Rog, virgin forest, forest reserve, silver fir-European beech forest, stand structure

Boncina A. (1999): Research of structure and biodiversity in managed and virgin fir-beech forest in Dinaric region of Slovenia
Deutscher Verband forstlicher Forschungsanstalten, Sektion Forstliche Biometrie und Informatik, 11. Jahrestagung, Freiburg, 30.9-2.10. 1998 (in print)

Abstract: Author describes research methods for analysis and comparison of the structure of Rajhenav virgin forest and managed forest. There were no patches of pole stand in the virgin forest, the share of gaps is very small (1,2% of the total area) and they are significantly smaller when compared to the managed forest. The total amount of stand initiation patches in the virgin forest is smaller and the proportion of optimal and terminal stadia much higher compared to managed forest. The floristic composition and abundance of plant species is significantly different in the managed forest compared to the virgin forest, where fewer plant species were inventoried and their abundance is in principle lower; great differences in plant composition and the abundance of species in the managed as well in virgin forest were established between different development phases, which symbolise the forest development cycle.
Key-words: Rajhenavski Rog, forest reserve, forest structure, patch pattern, plant species diversity

Boncina A., Diaci J. (1998): Contemporary research on regeneration patterns of Central European virgin forests with recommendations for future research
Zbornik gozdarstva in lesarstva 56, 33-53
Abstract: The research of the natural regeneration of virgin forests enables the understanding of forest stand dynamics; the results can be applied to current silvicultural methods. In contemporary researches of virgin forests, two main approaches have been established: the Central European, based on partitioning forest developmental phases, and the North-American, which emphasises forest gaps. In our article, the general characteristics of gap dynamics and natural regeneration of forests are presented, based on research work of Dinaric fir-beech virgin forests. Natural regeneration is a continuous process, not limited to gaps only, but continuing within all the phases of virgin forest. The gap size is small, the forest cycle is less conspicuous and according to total are, optimal phase prevails. The authors point out the importance of comprehensive and complex studies of virgin forests, which would enable us to discover the forest structure and its function.
Key-words: Gap dynamic, natural regeneration, virgin forest (Rajhenav), Dinaric fir-beech forest, Slovenia

Dakskobler I. (1998): Vegetation of the forest reserve Govci on the north-eastern edge of the Trnovski gozd plateau (Western Slovenia) (Vegetacija gozdnega rezervata Govci na severovzhodnem robu Trnovskega gozda (zahodna Slovenija))
Gorski gozd (Diaci, J. edt), zbornik referatov, 19. gozdarski študijski dnevi, Ljubljana, 269-301
Abstract: According to standard Central European phytosociological method we researched the vegetation of the forest reserve Govci on the northeastern edge of the Trnovski Gozd plateau, above the Trebuša valley in western Slovenia. In the reserve and in its surroundings we described the following syntax: *Primulo carniolicae-Potentilletum caulescentis* nom. prov., *Potentillo clusianae-Campanuletum zoysii* Aichinger 1933 var. geogr. *Primula carniolica* var. geogr. nova, *Fraxino orni-Pinetum nigrae Martin-Bosse* 1967 var. geogr. *Primula carniolica* Dakskobler 1998, *Rhodothamno-Pinetum mugo* (Martincic 1977) Zupancic & Zagar 1980 (mscr.) var. geogr. *Primula carniolica* prov. and *Rhododendro hirsuti-Fagetum Accetto* 1996 var. geogr. *Anemone trifolia* var. geogr. nova subvar. *Omphalodes verna* subvar. geogr. nova.
Key-words: Forest reserve, phytosociology, *Fraxino orni-Pinetum nigrae*, *Rhododendro hirsuti-Fagetum*, the Trnovski gozd plateau, Slovenia

Diaci J. (1996): Untersuchungen in slowenischen Totalwaldreservaten am Beispiel des Reservates »Pozganija« (Brandfläche) in den Savinja-Alpen
Schweiz. Z. Forstwes. 147 (2), 83-97
Abstract: After forty years of growth, the fire site in the Mozirje mountains is covered by vegetation in both the shrub and tree strata. Progress in the first two decades following the fire

was very slow because of the damage of the soil. After the first successional stage and the important site amelioration role of small vegetation, succession accelerated with rapid establishment of pioneer shrubs and trees. the strategy of forest recolonisation is similar to that at the upper timberline. Clusters slowly take shape with the increased abundance of seedlings stems around trees which first colonised the favourable micro-sites. It is beneficial to study nature in extreme environments where the processes of preservation and development of life-forms differ greatly. Due to harsh living conditions the struggle for recolonisation of vegetation is most severe here.

Key-words: Forest fire, successional development of vegetation, pioneer tree species, forest reserves, Slovenia

Hartman T. (1987): Virgin forest Rajhenavski Rog (Pragozd Rajhenavski Rog)
Gozdni rezervati Slovenije. Strokovna in znanstvena dela, 89, Vtozd za gozdarstvo BF, Ljubljana, 80 pp.

Abstract: The only constant factor in the life of the virgin forest is the change. Different developing trends are evident in the apparently similar stands. Extraordinary dynamics is setting in motion the system with the plurality of cells which are constantly changing their activity. Silver fir and beech are an unpredictable but a successful couple. The exchange of tree species, the mosaic pattern in the structure and in the development of the virgin forest - all this contributes to the many-sided stability of this type of forest.

Key-words: Virgin forest (Rajhenav), Dinaric fir-beech forest, Slovenia

Hartman T. (1999): Hundred years of virgin forest conservation in Slovenia. Virgin forests and forest reserves in Central and East European countries - history, present status and future development
Proceedings of the invited lecturers' reports presented at the COST E4 management committee and working groups meeting in Ljubljana, Slovenia, Ljubljana, (in print)

Abstract: A virgin forest - a mighty forest cathedral - is a precious natural heritage. Nowadays, at the time of human and environmental crises, a virgin forest besides other things represents a scientific workshop of great interest. It guards some ancient but well verified messages on stability, security and survival harmony. The primeval forests in the Kocevje region, which were established and preserved a hundred years ago (among the first ones in europe), are the outposts of today's numerous natural reserves in Slovenia.

Key-words: Virgin forest, virgin forest establishment, Slovenia

Hocevar S. (1985): Pre-Dinaric mountain virgin forest (Preddinarski gorski pragozdovi) Strokovna in znanstvena dela, Institut za gozdno in lesno gospodarstvo, Ljubljana

Abstract: In the Pre-Dinaric mountainous virgin forests Trdinov vrh and Ravna gora in the Gorjanci region, Kopa in the Kocevski rog, and Krokar on the ridge of Borovška gora - Planina above the river Kolpa, the ecology, the vegetation and the stands have been studied. The emphasis was given to the study of fungi which are, in the publication, differentiated into lignicolous and terrestic species. The terrestic group is further divided into terricole, litter, mycorrhiza, edible and poisonous species. The individually determined fungi species were also considered ecologically on the base of forest plant communities including also lichens and mosses.

Key-words: Virgin forest, Dinaric fir-beech forest, fungi, forest plant communities, Slovenia

Hocevar S., Batic F., Piskernik M., Martincic A. (1995): Fungi in the virgin forest reserves in Slovenia, part III the Dinaric mountain virgin forest reserves of Kocevsko and Trnovski Gozd (Glive v pragozdovih Slovenije, III. Dinarski pragozdovi na Kocevskem in v Trnovskem gozdu) Strokovna in znanstvena dela 117, Gozdarski institut Slovenije, Ljubljana, 320 pp.

Abstract: The ecological conditions, vegetation types and stand structures in the Dinaric mountain virgin forest reserves of Kocevsko and Trnovski gozd were analysed. The ecology of 25 species of macro fungi and 2 species of microfungi were analysed, indicating differences among the virgin forest reserves. Phytocoenological tables are made on the basis of 189 releves, in which a complete floristic inventory (flowering plants, pteridophytes, mosses, lichens, fungi) of forests is presented.
Key-words: Virgin forest reserves, Dinaric forests, fungus, lichen, moss

Kordis F. (1985): Bukov vrh virgin forest (Pragozd Bukov vrh.)
Gozdni rezervati Slovenije. Strokovna in znanstvena dela 85, Vtozd za gospodarstvo, BTF, Ljubljana.
Abstract: Research on beech virgin forest development phases in extreme mountainous limestone sites which are strongly influenced by the Mediterranean climate.
Key-words: virgin forest, beech forest, virgin forest development phases, Slovenia

Kotar M. (1993): The establishing of trees arrangement during the optimal forest developmental phase (Dolocanje nacina razmestitve dreves v optimalni razvojni fazi gozda)
Zbornik gozdarstva in lesarstva, Ljubljana, 42, 121-153
Abstract: The results of various methods as to the establishing of the methods of the arrangement of trees in forests are being analysed. Two plots in the Rajhenavski Rog virgin forest in Kocevje, where the forest is in optimal developmental phase, have been chosen as the object for the investigation. A method, based on the average distance between a tree and its three next neighbouring trees, and of standard deviations of these distances has been applied. The method is simple, relatively quick and not expensive and it offers test possibilities.
Key-words: Trees arrangement, spatial pattern

Mlinšek D., Acceto M., Anko B., Piskernik M., Robic D., Smolej I., Zupancic M. (1980): Forest reserves in Slovenia (Gozdni rezervati v Sloveniji)
Institut za gozdno in lesno gospodarstvo, Ljubljana, 414 pp.
Abstract: The book contains a list of all forest reserves present in Slovenia in 1980 along with some recommendations on research in the reserves.
Key-words: Virgin forest, virgin forest development phases, Slovenia, research methods

Mlinšek D. (1967): Verjüngung und Entwicklung der Dickungen im Tannen-Buchen-Urwald Rog
IUFRO Kongress, Muenchen, Referate, Band 4, 436-442
Abstract: Dinaric silver fir - European beech forests often exhibit insufficient regeneration of silver fir, increasing distribution of European beech, and a bad quality of young beech trees, particularly in selection stands. These observations have also been reported by other authors who study regeneration of silver fir or investigate virgin forest stands in Central and Southern Europe. To get some light on the problem, we studied the structure of virgin forest stands and attempted to investigate regeneration of a Dinaric silver fir-European beech virgin forest in Slovenia and the development of the young growth stage.
Key-words: Forest regeneration, *Abies alba*, virgin forest, Slovenia, Dinaric fir-beech forest

Mlinšek D. (1967): Wachstum und Reaktionsfaehigkeit der Urwald-Buchen auf der Balkanhalbinsel IUFRO Kongress, Muenchen, Referate, Band 4, 425-435
Abstract: The natural growth of beech was studied in a virgin forest. Beech covers big areas in Europe. It has a great growth power and can overgrow other tree species. Why is it so strong? How to control it? That are the questions we need to answer if we want to manage beech forests. Answers to the following questions are presented in this article. Which are the beech growth characteristics in a virgin forest? What abilities has the beech in a virgin forest, to react to different conditions?

Key-words: Virgin forest, beech forest, Slovenia

Mlinšek D. (1972): Waldschadenuntersuchungen am Stammkern von erwachsenen Tannen im dinarischen Tannen-Buchen-Wald
Forstw iss Centralbatt
Abstract: Regeneration of silver fir in Dinaric silver fir - European beech forests is often rather modest, but on the other hand the impact of roe deer is considerable despite low population density. A study of the marrow of adult silver fir trees shows that browsing damage is common in these forests. Of 239 analysed silver firs as many as 180 show browsing damage to young growth. The oldest damage dated back to 1668. Most of the damaged silver firs were browsed up to five times.
Key-words: Browsing, *Abies alba*, roe deer, Dinaric fir - beech forests, virgin forest

Mlinšek D. (1985): Natural forests in Slovenia (Naraven gozd v Sloveniji)
Gozdni rezervati Slovenije. Strokovna in znanstvena dela, 84. Vtozd za gozdarstvo BTF, Ljubljana, 48 pp.
Considerations and survey of the life characteristics of virgin forest in the phytogeographical Slovene area. The importance of virgin forest development characteristics for forestry.
Key-words: Virgin forest, virgin forest development phases, Slovenia

Mlinšek D. (1989) Virgin forest in our landscape (Pragozd v naši krajini)
Biotehniška fakulteta, VTOZD za gozdarstvo, Ljubljana, 157 pp.
Abstract: The book discusses virgin forest in general. It analyses the life and structure of virgin forests in Slovenia and shows how important role they play as an immune system of the landscape.
Key-words: Virgin forest, Slovenia

Robic D., Anko B., Mlinšek D. (1976): New forest reservation in Slovenia. Description of reservation areas (Forms and instructions for filling in the forms)
14. IUFRO, Oslo, 16 pp.
Key-words: Forest reserves, forms, instructions