

HIGH CONSERVATION VALUE FORESTS (HCVF) FROM VLADEASA MOUNTAINS

Burescu Laviniu Ioan Nuțu

University of Oradea, Faculty of Environmental Protection, General Magheru Street, no.26

Abstract

This paper is a study of high conservation value forests in the Vlădeasa Mountains - Western Carpathians. Investigated forests are managed by Remeți Forestry, Forestry Department of Bihor County. According to forest planning, they are within the following units of production (UP) and improvement (Ui) V UP Iadului Valley, Ui 70A, UP IV Iadolina Ui 93B, UP I Boceasa - Devil's Mill, Ui 140C, Ui 140D.

Forests have been investigated by us were not covered with forest work owned by virgin forest that represent rare ecosystems that shelter in their phytocoenosis, endangered, threatened, relict, endemic plant species. They fall into the category of high conservation value forests (HCVF) in the groups HCVF 1.2, HCVF 3.1, HCVF 3.3.

Keywords, Forest, value, high, conservation, Vlădeasa Mountains.

INTRODUCTION

Limits of Vlădeasa Bihor Mountains generally conspicuous forms are given. The North of Crisul Repede Valley net defines Vlădeasa Mountains to Meseșului Mountains. East depression of Huedin (with Hențului Valley affluent of Crisului Repede) borders Vlădeasa Mountains and Belis Valley (affluent of the Somes Cald) and Albac Valley (affluent of Aries) delimits the Bihor Mountains from Gilau Mountains. To south of Bihor Mountains stretch till Small Aries Valley, and at west to Beius depression. To northwest of Meziad Valley and the average and lower course of Iadului Valley delimit Vlădeasa Mountains by Piatra Craiului Mountains.

Vlădeasa Massive includes the northern part of Bihor Mountains and takes its name from its most important peak level of 1836 m, and is one of the largest units in the Apuseni Mountains, Crisul Repede from which gathers up its main affluents, Secuelul, Drăgan, Iad (it constitutes thus water castle of Crisul Repede).

Vlădeasa massive consists of crystalline schists, sedimentary permiezozoic (conglomerate, sandstone, limestone) and eruptive mesozoic (predominantly riolitic, dacite) last dominating formation and giving lithologic character of the mountain. The dominance of rhyolite and eruptive dacites especially in upper cretaceous massif Vlădeasa taken as a whole is

distinguished by Bihor Mountains, although geographically belonging to their northern mountain range.

Remeți Forestry identifiers

Remeți Forestry is part of Oradea Forestry Directorate within the National Forest - Romsilva.

The forest in the area of 16503.5 ha managed by O.S. Remeți includes forest property located in the northwest, the upper and middle basin of the river Crisul Repede, on the left slope, the eastern limit of Bihor county, in the Apuseni Mountains, Vlădeasa massive and Craiului Forest, in the river valleys Drăgan, Iad and Bratca, left affluents of Crisul Repede.

Forest neighborhoods of O.S. Remeți are at North O.S. Aleșd, O.S. Huedin, at East O.S. Huedin, at South O.S. Belis, O.S. Sudrigiu and West O.S. Beius, O.S. Aleșd.

In the O.S. Remeți there were six production units: UP I Boceasa, U.P. II Moliviș, U. P. III Remeți, U.P. IV Iadolina and U.P. V Iadului Valley, U.P. VI Brățuța, Surface production units range from 1517.2 ha (U.P. III Remeți) and 4949.1 ha (U.P. I Boceasa).

MATERIAL AND METHODS

- It was researched scientific literature to establish high conservation values (Stanciu, E., M., Mihul, G., Dinicu, O., Iorgu, I., Abrudan, I., Biriș, M., Dragoi, M., Dragoș, N., Doniță, L., Filip, F., Jenő, T., Papp, M., Păucă-Comanescu, M., Sandor, L., Tănăsie, V., Tatole).

- We have consulted the OS Remeți improvements that occasion I selected production (PU) and improving (IU) units that may contain high conservation value (HCV).

- Field check was made of these units, making phytocoenoses description they contain and then drafted the list of units improving containing high conservation value forests (HCVF).

- Were chosen plots with trees and absolutely protected species account by 5% of each UP.

RESULTS AND DISCUSSION

Next we present HCVF sites for Remeți Forestry established under Practical Guide to identify high conservation value of forests.

High conservation value forests most representative river basin have been identified in Iadului Valley, Drăgan Valley, Remeți Forestry, which we grouped in Table 6.

We chose to study Forestry Remeți for HCVF sites because it is located on a mountainous terrain with steep valleys and streams in the basin which meet old forest, virgin forest, endangered and rare ecosystems, which

survive in extreme conditions, natural forest ecosystems host a representative number of plants are included on red listed as rare, vulnerable, relict, endemism, natural monuments.

Description of some situations

Next we present some descriptions of natural forest ecosystems containing high conservation value, forests which survive in extreme conditions of life, forests that hosting rare species, old virgin forests.

O.S. Remeti U.P. V Iadului Valley

Ui 70A Iadolina Waterfall **HCVF 1.2**, (fig.1)

Exp. E p-45°-50° alt. 710-800 m

Rock, massive shale with steep rocky road upstream and downstream road mobile debris.

Syringa josikaea bushes by 63 copies, located near the debris stands adjacent to the river.

Habitat: Southeastern Carpathian scrub with *Syringa josikaea* Doniță et al. 2005.

Vegetable Association: *Alno incanae* - *Syringetum josikaeae* (Borza, 1965; Ratiu et al., 1984).

Ecosystem type: Scrub of transylvanian bat (*Syringa josikaea*). Rare ecosystem, endangered-dependent spruce-faget-fir trees, which develops the shelter.

Trees

Picea abies 1-2 H=18 d=18 H=20 d=20

Abies alba 2-3 H=25 d=40-44 H=32 d=70-80

Fagus sylvatica 1-2 H=18 d=60-80

Betula pendula + H=15 d=22

Acer pseudoplatanus + H=20 d=60

Ulmus glabra + H=17 d=30

Sorbus aucuparia + H=12 d=8

Pinus sylvestris +

Shrubs

Corylus avellana +

Salix caprea +

Spiraea chamaedrifolia +-1

Herbaceous layer

Digitalis grandiflora +

Campanula persicifolia +

Leucanthemum waldsteinii +

Doronicum austriacum +

Poa nemoralis +

Luzula luzuloides +

Melica nutans +

Fragaria vesca +

Dryopteris filix-mas +

Dryopteris cristata +

Campanula rotundifolia ssp. *kladniana* +

Gentiana asclepiadea +

Aconitum vulparia ssp. *lasianthum* +

Geranium robertianum +

Galium schultesii +

Rubus hirtus 3

Solidago virgaurea +

Mercurialis perennis +

Athyrium filix-femina +

Polystichum lobatum +-1

Pulmonaria rubra +

Polypodium vulgare +

Calamagrostis arundinacea +

Galeopsis tetrahit +

Sambucus racemosa +

Asarum europaeum +

Eupatorium cannabinum +

Asplenium trichomanes +

Muscinal layer 5-10%

Dicranum scoparium 2-3



Fig.1. Virgin trees: Faget-Fir multi-year, rare ecosystem that survives under extreme conditions of life strongly inclined slope (photo:Burescu Laviniu).

O.S. Remeti U.P. IV Iadolina

Ui 93B Dealu Mare, **HCVF 1.2**, (fig.2).

Exposition V, slope 40 °, altitude 700-750 m, area 7.7 ha, shale rock, acid brown soil, Faget-Carpino stand, age 80-90 years.

Habitat: Scrub with southeastern Carpathian *Syringa josikaea* Doniță et al., 2005.

Vegetable Association: *Alno incanae* - *Syringetum josikaeae* (Borza, 1965; Ratiu et al., 1984).

Type of ecosystem: Transylvanian lilac scrubs (*Syringa josikaea*).
Endangered and rare ecosystem, which grows to shelter of Făget with *Festuca drymeia*.

Tree layer 90%

Fagus sylvatica 4-5 H=18 m d=60-80

Carpinus betulus +-1 H=16 d=30-40

Acer pseudoplatanus + H=18 d=60-80

Ulmus glabra + H=16 d=18-20

Fraxinus excelsior + H=16 d=28

Shrubs layer 15-20%

Syringa josikaea +-1 H=2-3 m the number of 63 specimens

Corylus avellana +

Herbaceous layer 30-40%

Festuca drymeia 2-3

Athyrium filix-femina +-1

Oxalis acetosella +

Lamium galeobdolon +

Rubus hirtus +

Asarum europaeum +

Polystichum lobatum +

Dryopteris cristata +

Symphytum tuberosum +

Gentiana asclepiadea +

Doronicum columnae +

Dryopteris filix-mas +

Galium odoratum +

Luzula luzuloides +

Polygonatum odoratum +

Lilium martagon +

Carex brizoides +-1 at the edge of forest stand

Filipendula ulmaria +-1

Hypericum montanum +



Fig.2. *Josikaea syringa* bushes at the edge of Carpino-Faget forest stand, HCVF 1.2, (photo: Burescu Laviniu).

U.P.I Boceasa – Moara Dracului (Devil's Mill)

Ui 140C, HCVF 3.1, (fig.3).

Area: 9.2 ha, altitude of 1500m, where the left side downstream of the Devil's Mill Cascade.

Exhibition north slope of 40-45 °, with clusters on acidic rock shale debris with semi-mobile and fixed slope.

Shallow skeletal soil permanently wet oligo-basic but drained coated muscle, consistency 0.9 Class IV-V production.

Habitat: Southeast Carpathian spruce forests *Picea abies* and fir (*Abies alba*) with *Luzula sylvatica*.

Vegetable Association: *Hieracio rotundati* - *Piceetum* Pawl. Et Br. - BL. 1939 (*Luzula sylvaticae* - *Piceetum* Wraber 1953).

Type of ecosystem: Spruce with *Luzula sylvatica*.

Relief: rocky versant strongly inclined to the surface and large clumps of semi-mobil and mobile debris.

Rock: shale silicon boundaries.

Trees:

Spruce with *Luzula sylvatica* with an age of 100-110 years.

Secular virgin forests, rare forest ecosystem, endangered the life survives in extreme conditions on rocky slopes strongly inclined and more debris, to limit of the subalpine gap.

Tree cover layer 90%

Picea abies 5 h=25-28 m d=40-45 cm

Sorbus aucuparia + h=6 d=8

Herbaceous layer 100%

Luzula sylvatica 4-5

Oxalis acetosella +

Athyrium filix-femina +-1

Polystichum aculeatum +

Gymnocarpium dryopteris +

Lamium galeobdolon +

Calamagrostis villosa +-1

Deschampsia flexuosa +-1

Homogyne alpina +

Vaccinium myrtillus +-1

Ranunculus platanifolius +

Saxifraga rotundifolia ssp. *heucherifolia* +

Aconitum firmum ssp. *firmum* +

Shrub layer is absent.

Muscinal layer 50-60%

Polytrichum juniperinum 2-3

Hylocomium splendens 3-4

Rhytidiadelphus triqueter +-1

Dicranum scoparium +-1

Pleurozium schreberi +



Fig.3. Spruce with *Luzula sylvatica* forest ecosystem, rare, endangered, to limit the subalpine gap; secular virgin forest on the strongly inclined slopes, HCVF 3.1, (photo: Burescu Laviniu).

U.P.I Boceasa – Moara Dracului (Devil's Mill)

Ui 140D, **HCVF 3.3**, (fig.4).

Area: 5,2 ha altitude of 1550 m, Devil's Mill Cascade place.

Exposition north, slope of 40-60°, acid shale rock, heavy rock with 90° tilt of 50-60m high, ranch and large blocks of fallen stone on the slope.

Habitat: Southeast Carpathian spruce (*Picea abies*) Forests with *Leucanthemum waldsteinii*.

Vegetable Association: *Leucanthemo waldsteinii* - *Piceetum* Krajna 1933.

Type of ecosystem: Spruce with *Leucanthemum waldsteinii*.

Relief: Versant strongly inclined to the rocky mass of 60-80 m high, 90° tilt with ranch and large blocks of stone fallen on the entire surface.

Rock: shale silicon boundaries.

Soil: skeletal, shallow, acidic, wet with moderate humus mull-moder.

Trees: spruce with *Leucanthemum waldsteinii*, age 100-110 years. Secular virgin forests, rare forest ecosystem, endangered the life survives in extreme conditions on steep rocky slopes strongly inclined and detritus are concentrated a large number of rare species, endemism, relict, endangered (*Heracleum palmatum*, *Laserpitium krapfii* ssp. *alpinum*, *Adenostyles alliariae* ssp. *kernerii*, *Aconitum moldavicum*). 0.6 Consistency production class V-VI.

Tree cover layer 60%

Picea abies 3-4 h=18-20m d=30-35cm

Sorbus aucuparia + h=12 d=22

Shrub layer coverage 1-2%

Salix silesiaca+

Salix caprea+

Lonicera nigra +

Spiraea chamaedrifolia+

Rubus idaeus+

Adenostyles alliariae ssp. *kernerii*+

Petasites albus+

Doronicum columnae+

Heracleum palmatum+

Laserpitium krapfii ssp. *alpinum*+

Solidago virgaurea+

Hypericum maculatum+

Herbaceous layer 80-90%

Luzula sylvatica +-1

Calamagrostis villosa 2-3

Gentiana asclepiadea+

Oxalis acetosella+

Deschampsia flexuosa+

Huperzia selago+

Vaccinium myrtillus+

Polystichum aculeatum+

Dryopteris dilatata+

Dryopteris cristata+

Homogyne alpina+-1

Senecio germanicus+-1

Aconitum moldavicum +

Ranunculus platanifolius +

Aconitum firmum ssp. *firmum*+

Doronicum austriacum+

Leucanthemum waldsteinii+

Myosotis sylvatica+

Veratrum album+

Muscinal layer 70-80%

Polytrichum juniperinum 3-4

Sphagnum girgensohnii 1-2

Mnium undulatum +-1

Dicranum scoparium +-1

Hylocomium splendens +-1

Rhytidiadelphus triqueter+



Fig. 4. Spruce with *Leuchanthemum waldsteinii*, secular virgin forests, endangered forest ecosystem that survives under extreme conditions of life on the edge of the subalpine rocks gap, HCVF 3.3, (photo: Burescu Laviniu)

CONCLUSIONS

1. Analyzing the results of research that we met in OS Remeți high conservation value forests as HCVF 1.2, HCVF 3.1, 3.3, HCVF 4, HCVF 6.

2. According to the Practical Guide to identify high conservation value forests were chosen to cover the 5%, forests with high conservation value absolutely protected, HCVF 1.2, HCVF 3.1, the rest of 10% remaining high conservation value forests HCVF 4 with special management, which refers to drinking water sources, water catchments.

3. Were described phytocoenosis representing rare, relicts, threatened, endangered ecosystems in three production units (PU) and 4 improvement units (IU): UP I Boceasa - Devil's Mill, 140C UI, UI 140D, UP IV Iadolina, Ui 93B, UP V Iadului Valley, Ui 70A.

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