

RARE, THREATENED OR ENDANGERED ECOSYSTEMS THAT HAVE BECOME HIGH CONSERVATION VALUE FORESTS 3 (HCVF 3) MANAGED BY NATIONAL FOREST ADMINISTRATION – ROMSILVA

ECOSISTEME RARE, AMENINȚATE SAU PERICLITATE CARE AU DEVENIT PĂDURI CU VALOARE RIDICATĂ DE CONSERVARE 3 (PVRC 3), GOSPODĂRITE DE REGIA NAȚIONALĂ A PĂDURILOR - ROMSILVA

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Abstract. Forests have both environmental and social values, such as uniqueness of biodiversity, watershed protection, soil stabilization or certain archaeological sites. When these values are considered to be of high significance or critical importance, the forest can be defined as a High Conservation Value Forest. The HCVF concept was first introduced by the Forest Stewardship Council (FSC) in 1999. There are six categories of HCVs covering both environmental and social values of forests. In the process of forest certification in Romania, in twenty-three County Forest Administrations and one hundred fifty-five Forest Districts from the national forest fund, an area of approximately 6,521.64 ha HCVF 3 (Forest areas that are in or contain rare, threatened or endangered ecosystems), representing 3% of the total area of HCVFs, was identified. Thus, there have been identified thirteen (13) types of rare, threatened or endangered ecosystems, the largest area being represented by virgin forests (2,085.8 ha), followed by *Picea abies* Bog woodland (1119,5 ha), Forest ecosystems with high structural and functional complexity (1089,7 ha) and Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (694,7 ha), the remaining nine ecosystems having much smaller surfaces.

Key words: Conservation, identified, forest certification, ecosystems.

Rezumat. Pădurile au atât valori de mediu cât și valori sociale, cum ar fi unicitatea biodiversității, protecția apelor, stabilizarea solurilor sau anumite situri arheologice. Când importanța acestor valori este deosebită sau critică, putem spune că avem o pădure cu valoare ridicată de conservare. Conceptul de PVRC a fost introdus pentru prima dată de Forest Stewardship Council (FSC), în 1999. Există șase categorii de valori ridicate de conservare, care acoperă atât valorile de mediu cât și cele sociale ale pădurilor. În procesul de certificare a pădurilor din România, în fondul forestier național de pe suprafața celor 23 de Direcții Silvice (DS) și 155 de Ocoale Silvice (OS) s-a identificat o suprafață de 6.521,64 ha de PVRC 3 (Suprafețe forestiere care sunt în sau conțin ecosisteme rare periclitare sau amenințate), ceea ce reprezintă un procent de 3% din suprafață totală de păduri cu valoare ridicată de conservare. Astfel, au fost identificate treisprezece (13) tipuri de ecosisteme rare, periclitare

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sau amenințate, cea mai mare suprafață fiind reprezentată de pădurile virgine (2,085.8 ha), urmată de ecosistemele de Picea abies și tinoave (1119,5 ha), ecosisteme forestiere cu o mare complexitate structurală și funcțională (1089,7 ha) și ecosistemele naturale de zone umede de anin (694,7 ha), restul de nouă ecosisteme având suprafețe mult mai mici.

Cuvinte cheie: conservare, identificate, certificare forestieră, ecosisteme

INTRODUCTION

Every forest has multiple environmental and social values. It may contain rare species, recreational sites or resources harvested by local residents. If these values are considered to be of outstanding significance or critical importance, the forest can be defined as a High Conservation Value Forest (HCVF). The HCVF concept was first introduced by the Forest Stewardship Council (FSC) in 1999 when it included HCVFs in one of its requirements for timber companies seeking forest certification. According to Principle 9 of FSC, „management activities in HCVF shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach” (Mc Cracken et al, 2007). There are six categories of high conservation values (Rayden T., 2008). The studied ecosystems belong to the third category (HCV 3) - areas that are in or contain rare, threatened or endangered ecosystems. Application of the concept HCVF 3 can address environmental issues such as conservation of an area’s most valuable species, ecosystems and landscapes.

Research objectives were to identify forest areas with rare, threatened or endangered ecosystems or rare associations of species, even when the constituent species may be widespread and secure. These ecosystems must be managed with a precautionary approach in order to maintain or enhance their surfaces (Hayes and Finegan, 2003).

MATERIAL AND METHOD

The study was conducted in 23 County Forest Administrations (CFA) from the national forest fund, of the range of one hundred fifty-five Forest Districts (FD) managed by National Forest Administration – ROMSILVA: Alba (AB), Argeș (AG), Bacău (BC), Bihor (BH), Bistrița Năsăud (BN), Brașov (BV), Buzău (BZ), Caraș Severin (CS), Covasna (CV), Dolj (DJ), Gorj (GJ), Harghita (HG), Hunedoara (HD), Ialomița (IL), Ilfov (IF), Mureș (MS), Prahova (PH), Satu Mare (SM), Sibiu (SB), Tulcea (TL), Vâlcea (VL), Vaslui (VS), Vrancea (VN). For HCVF 3 identification there were used: Plannings and forest districts maps; Biological studies; Annex 6, Annex 5 of the Toolkit (Jennings S., et al, 2003) and Meetings with the interested stakeholders: administrators, educational and research institutions, NGO, Environmental Protection Agency etc. The methodology involves three stages:

a) The first stage: **the planning of the process**: put up an evaluation team with experts from different fields: Biologists, ornithologists, sociologists, etc.

b) The second stage: **preliminary assesment** was carried out at the office. After consulting the management plan, it can be seen which forest types are present within the Forest Management Unit (FMU) (Rayden T., 2008). This information is now

analysed to identify potential forest regions in the FMU that are in or contain threatened or endangered ecosystems according to *Annex 5 and 6*;

c) The third stage: **full assesment**, on field, applied to forests identified in the second stage, as being potentially rare ecosystems, was carried out in order to establish if these ecosystems are effectively present in forest area.

RESULTS AND DISCUSSIONS

After the full assesment, an area of 6,521.64 ha HCVF 3 were identified, which represents 3 % of the total area with HCVF of the twenty-three CFA inventoried (fig.1). The 6,521.64 ha area with rare, threatened or endangered ecosystems, has 13 types of ecosystems. The largest area (2,085.8 ha) which represents 31% of the total area with HCVF 3, is the area with near-virgin forest ecosystems, followed by two ecosystems with approximately equal areas: Bog woodland (91D0) (1,119.5 ha) -17% and Natural forest ecosystems with a high compositional and structural complexity (1,089.7 ha) -17%. Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Pandion, Alnion incanae, Salicion albae) (91E0) has an area of 694.78 ha and represents 11% of the total area with HCVF 3. The rest of ecosystems have smaller areas, between 400 ha to 2.5 ha, representing between 6% and 0.03% of the total. The area covered by near-virgin forests (31%) was identified only in one CFA, CFA Argeş – here were delineated two forest areas: Near-virgin forest Munții Frunții – 287.2 ha and near-virgin forest Capra – 1,799.5 ha.

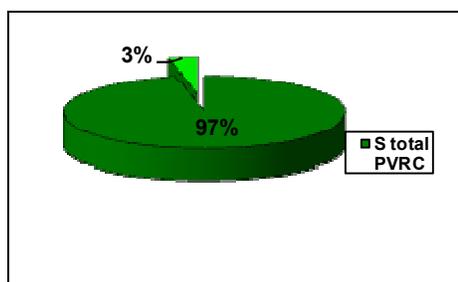


Fig. 1 - The area with HCVF3

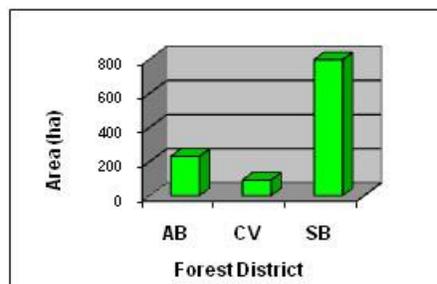


Fig. 2 - Bog woodland (91D0)

Bog woodland (91D0) (17 %) are present on the range of three CFA (fig. 2). The largest area with these ecosystems was identified in CFA Sibiu (796.9 ha). In CFA Alba was determined an area of 231 ha, and a smaller area of 91.6 ha is located in CFA Covasna. These ecosystems, has forest type (FT)1172 (Open wood spruce forest with *Sphagnum* and *Vaccinium myrtillus*) at the altitudes between 900 and 1600 m, in depressions, plateaus, rarely on the slightly slanted slopes (Lazăr and Stăncioiu, 2007).

Natural forest ecosystems with a high compositional and structural complexity (Silver fir, pine, beech, oak, ash, elm) (17%), which have an area very close to Bog woodland (1,089.7 ha) were identified in three CFA, as observed in figure 3. The largest area of these ecosystems is located in CFA Gorj (698.7 ha).

In CFA Vâlcea there was identified an area of 363.1 ha and the smallest area is in CFA Argeş (27.9 ha).

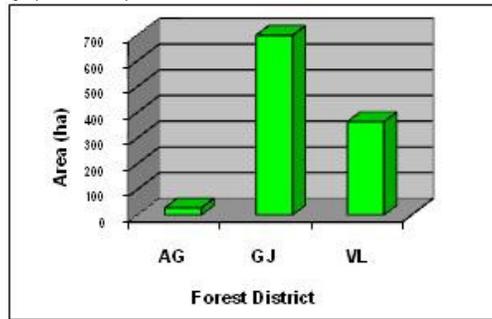


Fig. 3 - Natural forest ecosystems with a high compositional and structural complexity

Alluvial forests with *Alnus glutinosa*, having an area of 694.78 ha were identified in 16 CFA (fig. 4). The largest area with Alluvial forests is in CFA Vâlcea (165.5 ha), followed by CFA Argeş (109.4 ha) and by CFA Prahova (93.3 ha). In the other CFA, the areas are between 51 ha (CFA Vrancea) and 2.6 ha (CFA Gorj). Alluvial forests are characterized by FT: 9721, 9821, 9713 (Grey alder on sandy alluvium and gravels, Black alder riverside coppice), in narrow mountain meadows, wet slopes and alluvial terrace, river banks (Lazăr and Stăncioiu, 2007).

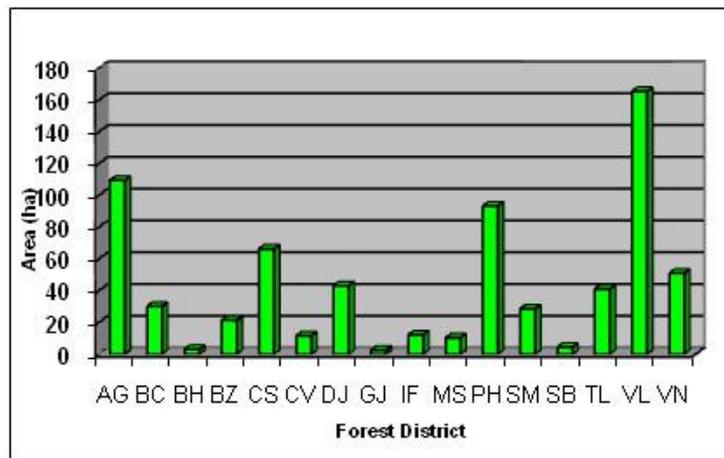


Fig. 4 - Alluvial forests with *Alnus glutinosa*

Acidophilous *Picea* forests of the montane to alpine levels, with an area of 404 ha, were identified only in CFA Sibiu with forest type (FT) 1611 (Carpathian spruce forest) at altitudes between 1200–1600 m. (Doniță N., Biriș I.A., 2005).

Eutrophic wetlands ecosystems were found on an area of 307.96 ha, spread in nine CFA (fig.5). The largest area is located across CFA Dolj – 93.7 ha, followed by CFA Gorj with a surface of 64.9 ha eutrophic wetlands ecosystems.

In the other CFA, these ecosystems have the areas between 37.62 ha (CFA Prahova) and 0.7 ha (CFA Vâlcea).

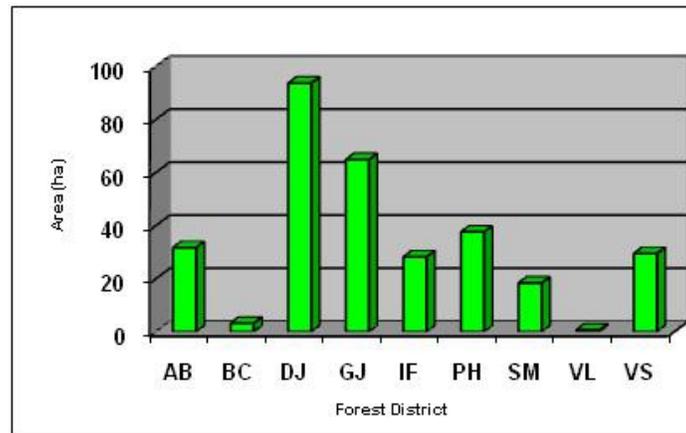


Fig. 5 - Eutrophic wetlands ecosystems

The Old growth forest areas which are not declared protected areas and thus are not HCVF 1.1. (Forest areas from protected areas), are declared HCVF 3.

These forest were identified in four CFA: Alba Iulia, Bacău, Dolj and Vrancea (fig.6). The largest area with Old growth forests are in CFA Dolj (91.6 ha): Old growth forests of *Quercus pedunculiflora* from Ciuperceni – 11.3 ha, Cioace – 5.8 ha and Bratovoiești 74.5 ha. In CFA Alba (83.5 ha) there are two Old growth forests: The Beech forest from Groza of 51.2 ha and the Silver fir-Beech forest from Gotu of 32.3 ha. CFA Vrancea has an 52.4 ha Old growth forest area of *Quercus pedunculiflora* in Foçșani and the smallest area in CFA Bacău– The Beech forest from Cambur with an area of 23.8 ha.

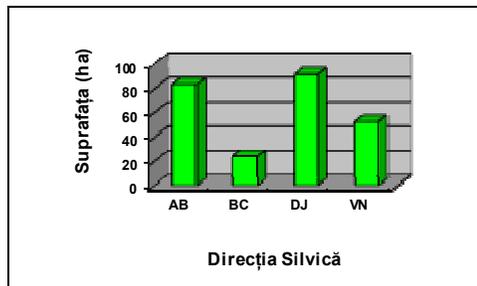


Fig. 6 - The Old growth forests

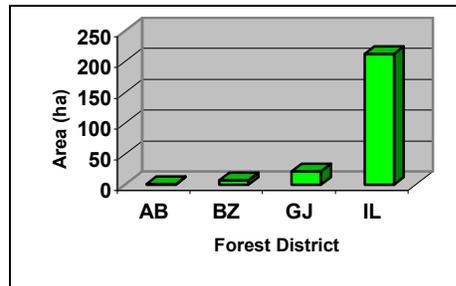


Fig. 7 - Standing water ecosystems

Standing water ecosystems were identified on an area of 243.6 ha, in four County Forest Administration (fig.7). The most important area is contained in CFA Ilfov: 212.6 ha. In the other CFA, the areas are much smaller, respectively 22.3 ha in CFA Gorj, 7.8 ha in CFA Buzău and 0.9 ha in CFA Argeș.

Pannonian woods with *Quercus pubescens* are present only in two CFA of the twenty three CFA investigated, on the area of 185.8 ha (fig. 8.). The largest

area is contained in CFA Sibiu, 132.5 ha, with forest type: *Quercus pubescens* open woods and gaps of steppe, and in CFA Tulcea on the 53.3 ha area, with forest type: *Quercus pubescens* open woods and gaps of steppe from Defileul Dunării.

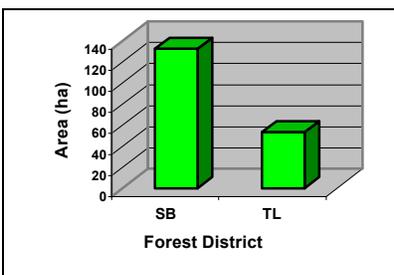


Fig. 8 - Pannonian woods with *Quercus pubescens*

CONCLUSIONS

1. The researches from the twenty three County Forest Administrations led to the identification of an area of 6,521.64 ha HCVF 3, with 13 types of rare, threatened or endangered ecosystems.

2. Virgin forest ecosystems have the largest area (2,085.8 ha), and can be found in a single CFA (CFA Argeş).

3. The smallest areas with HCVF 3 were identified in those CFA where it was found only one type of ecosystem, respectively in CFA Mureş (10.4 ha) and CFA Bihor (3.2 ha) – Alluvial forests with *Alnus glutinosa* and CFA Harghita (6.7 ha) – Open woods and alpine shrubs.

4. These ecosystems are a small part of rare, threatened or endangered ecosystems, because the largest area is included in HCVF 1.1. in Protected Areas, Natural Reservations, National and Natural Parks .

5. The HCVF 3 management will be done in the context of a precautionary approach, and monitoring will be done by a careful analysis of ecosystems and periodic observations on field.

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