

BIOLOGICALLY IMPORTANT FORESTS IN BULGARIA AND ROMANIA



Semi collared Flycatcher ©M. Gramatikov



A Biologically Important Forest in Strandza mountain, Bulgaria ©A. Anselin

European forests: a need for better protection of biodiversity and natural ecosystems

Forests are considered the most complex terrestrial ecosystems and play a crucial role in sustaining Europe's biodiversity. Natural forests are characterised by a higher level of biodiversity, in terms of their genetic resources, species and habitat diversity, than any other terrestrial ecosystem. Such forests are also among the most threatened biomes. Although the absolute area of European forests is expanding, the environmental quality of the forest ecosystems is in decline. The degradation and disappearance of the natural characteristics of European forests have caused serious losses in forest biodiversity and brought a great number of specialized species on the verge of extinction.

Improving forest biodiversity conservation requires identification of the remaining natural and near-natural forests as well as those with high potential to be restored to a natural state. This makes it possible to link such valuable areas throughout larger European regions and maintain the continuity of natural processes that shape the forests' structure.



Brown Bear ©L. Bereczky

Biologically Important Forests in Europe

A Biologically Important Forest is a concept proposed by the European Forest Task Force, of BirdLife International, in order to identify and map Europe's forest areas which have High Nature Values. A Biologically Important Forest (BIF) is defined as retaining features of natural forests or having started to develop such features. It is considered a key area for the protection of forest-dependent species which require a certain quantity and quality of suitable habitat to survive and maintain vital populations. The term BIF is a "basket" for all existing designations that refer to forests of high nature value or with important ecological functions, regardless of their legal conservation status. BIFs have already been mapped in Estonia, Latvia, Lithuania, Belarus and Poland. The maps of the distribution of BIFs in Europe are an invaluable tool for optimizing both forest conservation efforts and biodiversity friendly forest management

Mapping of Biologically Important Forests in Bulgaria and Romania

The goal of the Bulgarian - Romanian Forest Mapping Project (BRFM) was to locate Biologically Important Forests in Bulgaria and Romania, review their current protection status and propose concrete measures for management of the most important and valuable forests. The BRFM maps and database provide essential information in the development of rational forest conservation and management policies for protecting forest biodiversity in both countries. Furthermore, the results reveal to what extent the national networks of forest protected areas are complete, representative, functional and contribute to the overall picture of BIF distribution in Europe.

MAPPING BIOLOGICALLY IMPORTANT FORESTS IN BULGARIA AND ROMANIA

March 2007 – April 2009

The criteria are as follows:

Criteria for assessment of biological importance

The biological importance of forests is assessed on the general BIF ecological criteria, adapted nationally in Bulgaria and Romania at the beginning of the mapping project on the basis of local conditions, existing published data and best expert knowledge in both countries. Nine criteria were applied in Bulgaria and eight in Romania.



Forest where rare *Rhododendron pontica* is present ©D. Kostovska

N	General BIF criteria	Criteria applied in Bulgaria	Criteria applied in Romania
1	Little or no signs of human influence	Forests with no or limited human activities	
2	Average age of stand more than X years	Average age of stand more than X years, where X is at least 20 years more than the commercial maturity species specific age	Old growth forest with two indicators: Average age of stand more than X years, where X is at least 20 years more than the commercial maturity species specific age and Old growth forest with multi layer and multi age structure
3	Uneven age/canopy structure; presence of very old trees of previous tree generations	Forests with closed to nature spatial structure	
4	Considerable amount / long continuum of dead wood of different types, rich flora of wood rotting fungi	Considerable amount/long term continuum of dead wood	
5	Large blocks of unfragmented forests	Insufficient data	
6	Forests on steep slopes	Not applicable	Forests on slope > 35 degrees is one of the indicator of Criterion 1
7	Endangered vegetation types	Endangered forest ecosystems and habitats	
8	Rare forest-dependent species present	Forests that are habitats of endangered, rare and endemic forest dependent species of plants and animals Critical concentration of species	
9	Rare broadleaved tree species present in the dominating canopy layer	Forests where rare broadleaved and coniferous species are present	
10	Forests after large-scale natural disturbance and natural regeneration	Not applicable	
11	Small water courses; surface springs, flooded areas	Functional type forests with three indicators: Island forests in the lowlands Forest belts along roads and agricultural lands Forests on wooded islands and floodplain forests along the banks of rivers	Forests within floodplains, forest islands, specific forests on bogs
12	Limited access areas		

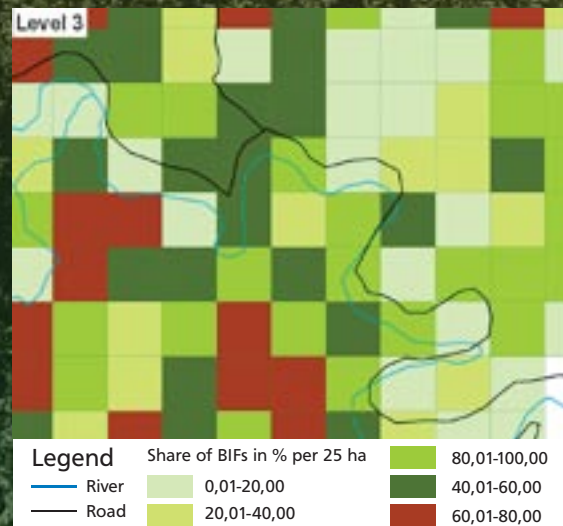
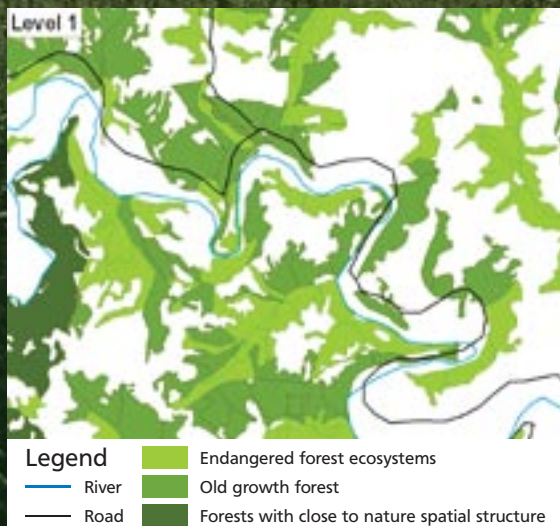
Sources of information

The main data source in Bulgaria and Romania were the forest inventory database, digital and geo-referenced maps of forest stands and topographic maps, supplemented by other spatial databases and descriptive information such as data on the Natura 2000 network, protected areas maps, pilot projects identifying High Conservation Value Forests used for FSC forest certification, information on the ranges of protected species, satellite images, scientific publications.

Structure of BIF database

The Biologically Important Forests database is organised on three levels:

- Level 1: **Forest stand level** covers the areas for which digital maps at the forest stand level were available
- Level 2: **Forest division level** covers the areas for which simplified digitalization of forest compartments (blocks) on the basis of topographic maps and forest maps was carried out. This level was not applied in either country, but was applied in the previously mapped countries.
- Level 3: **Generalised level** (with public access) is composed of a grid squares (500 x 500 m) which uniformly combines the data from Level 1 and Level 2 and covers the entire project region.



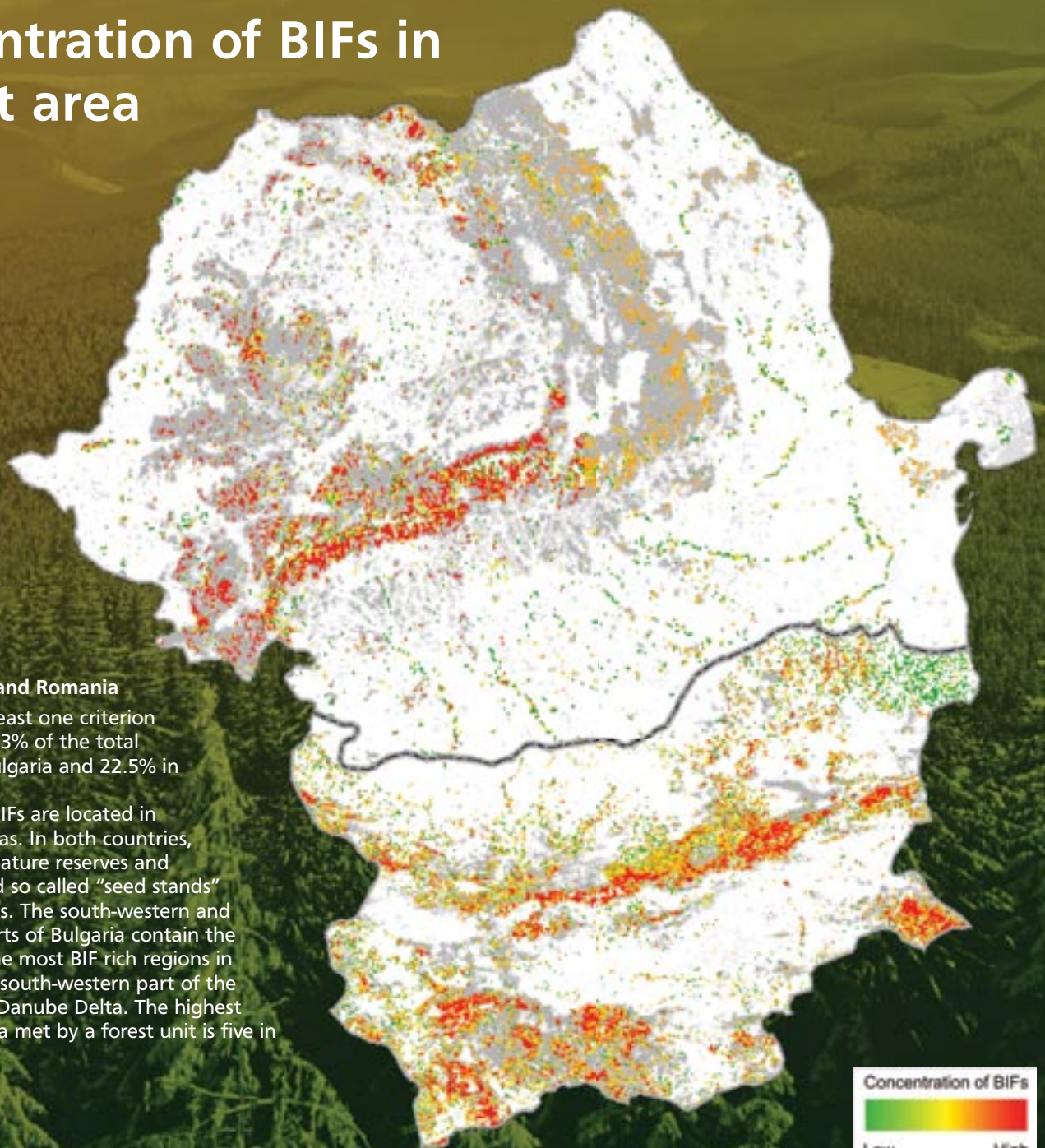
Forests in Bulgaria and Romania - Europe's richest ecosystems

Forests contribute to 34% and 27% of the country area in Bulgaria and Romania respectively. They are among Europe's richest and most diverse ecosystems. The physiography of the countries, a derivative of their climatic conditions topography and hydrology, has produced a great variety of forest habitat types. Additionally, the habitats are very rich in endemic plant and animal species. Vast, unfragmented primeval forests remain in the Carpathians and the Balkan mountains, and there are some almost untouched forests in isolated areas of the Danube Delta. These forests provide shelter for many rare and threatened species and harbour a significant proportion of European big carnivore populations such as: brown bears, wolves and lynx. In both countries the dominating types of forest ecosystems are broadleaved forests consisting of beech or oaks of several species.



Riverine forest on an island on the Danube on the border between Romania and Bulgaria ©S. Bugariu

Concentration of BIFs in project area



BIFs in Bulgaria and Romania

BIFs meeting at least one criterion make up about 23% of the total forest cover in Bulgaria and 22.5% in Romania.

The majority of BIFs are located in mountainous areas. In both countries, buffer zones of nature reserves and national park and so called "seed stands" contain many BIFs. The south-western and south-eastern parts of Bulgaria contain the most BIFs, and the most BIF rich regions in Romania are the south-western part of the country and the Danube Delta. The highest number of criteria met by a forest unit is five in both countries.

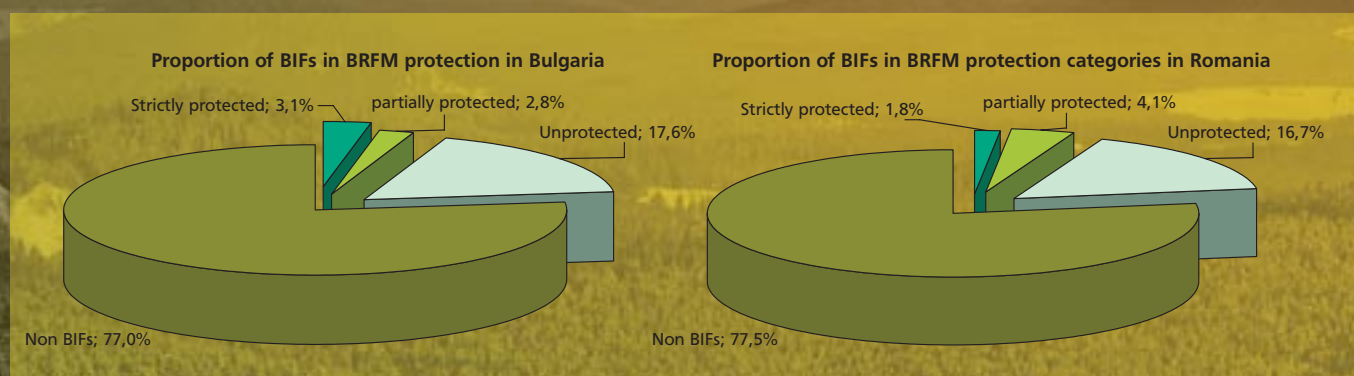
SELECTED RESULTS FROM THE BULGARIAN - ROMANIAN FOREST MAPPING PROJECT

The most common BIF type in Bulgaria is *Central European montane beech forest* (23.5% of total BIFs). The prevalence of the forest types *Sessile oak-hornbeam forest* and *Turkey oak, Hungarian oak and Sessile oak forest* is also relatively high. About 45% of BIF's belong to one of these three types, as a result of the dominance of deciduous forests in Bulgaria. The most common BIF type in Romania is *Mesophile forests of mixed beech and coniferous species*, representing 21.9% of all BIFs in Romania, followed by *Mesophile forest of beech in mountain areas* (17.8% of total BIFs) and *Meadow forests of alders, poplars, willows, ash and oaks* (15.5%).

The most commonly met BIF selection criterion in Bulgaria is *Endangered forest ecosystems and habitats* (72%). Many forests under this criterion are endangered and rare at the European level, but are relatively widespread in Bulgaria. The most common BIF criterion in Romania is *Forests with no or limited human activities* (53%).

Approximately 15% of the total area of BIFs in Bulgaria are strictly protected (3.1% of the total forest area in the country); a further 10.4% of BIF's total area are partially protected, and the rest have no protection status at all. Best protected (more than 60% lying within protected areas) are BIF types: *Shrub vegetation of dwarf pine Pinus mugo*, *High oro-Mediterranean pine forest*, *Chestnut forest* and *Juniper forest* due to their limited occurrence in the country. Less protected are *Turkey oak forests* and *Downy oak forests* (more than 90% are unprotected). Seventy percent of BIFs by area are part of the Natura 2000 network.

In Romania only 8% of the total area of BIFs are strictly protected which is less than 2% of all forests in the country; 18% of BIFs are partially protected. Best protected (about 18%) are the BIF forest type *subalpine spruce forest with Larch*, *Swiss pine and Scots pine*, followed by *Mesophile and thermophile forest of Pedunculate oak* and *Thermophile forests of Turkish oak and Hungarian oak*. Fifty three percent of BIFs in Romania are within Natura 2000 network, however they were not considered "protected" unless real protection is secured through the Natura's protection plan or the existing national designation.



Major recommendations to conserve BIFs in Bulgaria and Romania:

- The national protected area network must be improved in two aspects: (1) increasing the area of protected forest areas and (2) improving the representation of different forest types in the network, particularly lowland oak dominated forest types;
- Better management of BIFs requires incorporation of biodiversity protection into standard forest management practices;
- Study of the dead wood inventory in different types of forests as well as in protected and managed forests must be implemented and integrated into forest inventory programmes;
- BIFs in Bulgaria and Romanian should be considered as a key component of Europe's wild landscapes.

The project is a part of the BirdLife European Task Force's initiative to identify and map Biologically Important Forests throughout larger European regions. For more information about the BIF concept and forest mapping projects in Europe, please visit <http://www.forestmapping.net>. Here you will find the complete final report of the project in English and local languages and the interactive Bulgarian - Romanian forest map.

The Bulgarian-Romanian forest mapping project was implemented in co-operation with the Bulgarian Society for the Protection of Birds (www.bspb.org) and Romanian Ornithological Society (www.sor.ro).

This project was supported by the Aage V. Jensen Charity Foundation, which we gratefully acknowledge. ESRI Inc. very graciously made ArcView software available to the team at a reduced price. The coordinators thank volunteers, experts and all the supporters who gave help and encouragement.