

# THE NECESSITY OF TRANSBORDER CO-OPERATION AS A CONDITION FOR CONSERVATION OF THE NATURAL AND CULTURAL IMPORTANCE OF WESTERN-CENTRAL RHODOPE MOUNTAIN RANGE

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## 1. Introduction

The wider area of Rhodope mountain range attracts the interest of various scientific disciplines and international institutions. In this area exist a large number of Non-Governmental Organisations (NGOs) and several Public Awareness or Citizens Initiative groups with important and valuable activities both in Greece and Bulgaria.

The western-central part of the mountain range, along the Greek-Bulgarian borderline, is also the central part of the basin where Nestos/Mesta River flows. This river is an integral part of the mountainous area and together they form a unified system of mutual influence of:

- the river ecosystem and the quality of both underground and surface natural water resources;
- the mountainous areas around and, consequently of the function and character of the surrounding forests;
- the river-bed valley and, consequently of its suitability for cultivation that enable human activities in the area;
- the human presence in the area, that is its quality and potentiality for both northern and southern frontier areas.

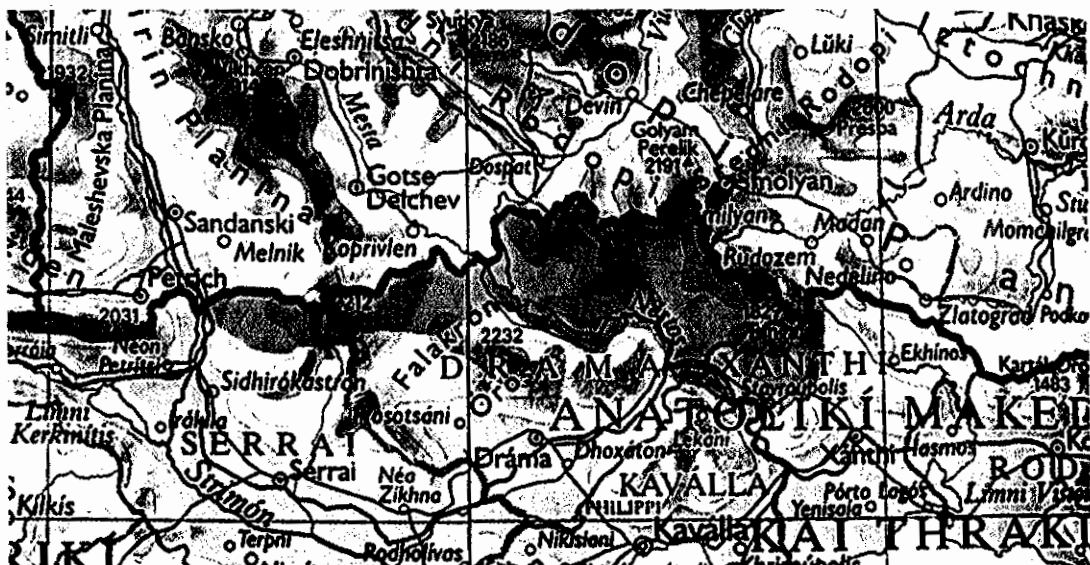
The wild species populations, especially of small or large mammals that are usually used as indicators of the nature quality, are practically isolated and could be not considered as viable in the long term, unless if the connectivity between them would be preserved or improved.

For example, it is scientifically documented that the brown bears pass the borders both ways. The conservation of this species in its natural habitat depends on transboundary co-operation regarding to restriction of human caused threats in this area.

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The creation of a "Transboundary Protection Area" will allow systematic and joined actions and management practices between the two countries.

## 2. Spatial definition of the study area

For simplification reasons, this paper focuses on the mountainous transborder area, which is included in a conceivable polygon including:

- In Greek territory: The area starting from the frontier station of Promachon, and heading east to Achladochori, Kato Nevrokopi, Potamoi, Nestos River, Paranesti, Stavroupoli and Echinus up to the border line and in the north of Dimario Community.
- In Bulgarian territory: The area starting from Smoljan and heading west to Berden, Borino, Dospat, Goce Delcev up to Promachon.

The total length of the common borderline in the suggested Transboundary Protection Area is estimated to 250-km approx.

Although this area has a quite extended surface, geographically it is a homogenous area as far as its climate, its biodiversity and its morphology concerned. In parallel it is an area that is quite diverse from the eastern part of Rhodope mountain range. Besides its homogeneity, the significance of this particular area is related to its character as important brown bear habitat. The European brown bear is a first priority-endangered species according to the European Legislation.

The main elements composing the significance of this area are briefly the following:

- a) The presence of uniform, comparatively extended and undisturbed by human activities natural ecosystems.
- b) The presence of large mammals populations (bear, wolf, lynx (?), chamois, red deer, roe deer etc.). Most of these mammals are endangered or threatened species. The area of Rhodope mountain range is one of the southernmost sites of distribution of all these species.
- c) The existence of a number of taxa, which are worldwide endangered, rare, locally endemic or endemic in the Balkans, sub-balkan, or protected by the E.U. Habitat Directive 92/43.

Additionally, the area is equally important for the following elements:

- The preservation of both Greek and Bulgarian natural and cultural heritage;
- The conservation of biodiversity in the South-eastern Europe;
- The utilisation of experience and knowledge gained so far by Governmental, Local Governmental, and Non-Governmental organisations in the area, given their already expressed interest to initiate joint actions and projects.

### **3. Human Environment**

#### **3.1 Human presence and activity in the study area**

The human activity in this area had always low-intensity and polymorphic nature and this is evident by the ruins that prove the existence of settlements from the Palaeolithic. In general, human activity had a positive influence on nature and created the conditions for the rich biodiversity in Western-central Rhodope.

Coercive movements of people due to many wars in the 20th century had a negative impact on human activities. One of the imminent consequences of the general insecurity and uncertainty over human life was the improvement and expanding of the forests recently.

The demographic decline and the depopulation of the mountainous settlements and communities in these recent years, is a fact, especially in the Greek territory. It is a fact though that cannot be taken as an excuse for the creation of a reality where only a few and privileged visitors have the possibility to approach the area. The same stands for private firms and entrepreneurs who make business in the area without any public control or long term planning.

The Transboundary Protection Area proposed by the Greek side includes administratively 96% of the prefecture of Drama, 2% of the prefecture of Xanthi and 2% of the prefecture of Serres. The total population of the inhabited parts of this area is approx. 30.000 inhabitants. This makes the area one the most sparsely inhabited area in Greece (if not the less inhabited area), with a density of 12 inhabitants per square kilometre according to the census of 1991.

In Table 1, included in the CD-Rom that accompanies this book, the Population data for the Greek part of the Transboundary Protection Area in Rhodope (census of 1991) is presented.

### 3.2 Society, Economy, Cultural Particularities

The majority of the Greek part of the Transboundary Protection Area (98%) belongs to the Region of Eastern Macedonia and Thrace. This is one of the most isolated and multinational Greek Regions. The economic decline, the rapid reduction of the population, the demographic degradation of the local societies, and the isolation from contemporary cultural and economic evolutions that occur today in the Greek-Bulgarian frontier area are in absolute contradiction with the Natural and the Cultural value of the area. Many historical events and above all the 2nd World War and the Greek Civil War that followed it contributed to the shrinkage of the human activity, the abandonment and the consequent decay of the area. This procedure was completed and stabilised in the sixties and seventies, and only in the recent years a potentiality for change in goals and development planning is revealed.

Today's societies in this area form themselves at a communal base. The coherence of these communities depends on family bonds, as well as on strictly nationality elements.

The local economy is based on low-intensity or traditional farming systems. Both agriculture and animal breeding holdings have a nature of self-preservation and of labour offered by members of the family. There are few exceptions of intensive cattle breeding in small holdings. The inhabitants occasionally eke out (increase) their income, especially after autumn, by logging activities. The forests that exist in the prefecture of Drama are some of the most productive ones of Greece's forests. The exploitable species in these forests are the following: firs, spruces, black pines, scotch pines, beeches and oaks. These trees produce industrial, technical and combustible timber.

Mountain tourism is a promising potentiality, however it still appears to be a quite undiscovered field. Given the fact that hiking and naturalist tourism in general are increasingly popular all over the world, it is only a matter of setting the appropriate infrastructure in the frame of new-established agencies and trained locals for the promotion of tourism.

The local cultural wealth is definitely a helpful element for the area's development. Nevertheless, the promotion of local eco-tourism depends mainly on whether the local authorities and societies will embrace the enactment of Transboundary Protection Areas.

It is worth-mentioning that the Municipalities of Paranesti and of Stavroupoli are considered as the cores of sustainable development in the wider area of the Greek-Bulgarian frontier area and this is justified by their continuous and sometimes very fruitful efforts against the status of underdevelopment.

Drama and Xanthi towns, the Elatia forest, the Falakro skiing-resort, Thermia's curative hot water springs (spa) in the Municipality of Paranesti, as well as Volakas and Kato Nevrokopi villages are the tourist centres of the territory.

## **4. Natural Environment**

### **4.1 Bas-relief - Altitude - Climate - Abiotic Character**

Greece has already officially proposed the incorporation of six "Natura 2000" sites in the suggested Transboundary Protection Area (Table 2, see CD-Rom that accompanies this book). A part of the perimeter of these sites coincides with the Greek-Bulgarian borderline.

All six "Natura 2000" sites belong to the Mediterranean biogeographical zone, while the climate type is considered as an intermediate type of both Mediterranean and Central-European climate type. In general, all areas with altitude higher than 1400 m. belong to a high-humidity zone with frequent snowfalls and very cold winters, whereas the areas with lower altitudes belongs to the sub-humid zone with softer winters and less snow.

The suggested Transboundary Protection Area as a total belongs to the crystal mass of Rhodope mountain range from the geological point of view, and only partially presents local diversification in the geological pedestal.

### **4.2 Flora of the forests**

Forests mainly cover the suggested Transboundary Protection Area. More or less all forest types of the European ecosystems exist in it: From the boreal forests of the Scandinavian zone, to the characteristic evergreen broad-leaved plants of the Mediterranean vegetation type. The tree species that are dominant in this area are boreal and deciduous broad-leaved. These are mainly pines, beeches, oaks, spruces, birches hop-hornbeam, hornbeams, chestnuts and poplars. All these species are found in pure or mixed stands that form visible vegetation zones and partial forest ecosystems.

Due to the multiform relief there is an important number of streams. The western-central part of Rhodope mountain range belongs to the District of Thrace, as well as the water basin of Nestos River. The tributaries and the streams, which have relatively extensive length, represent a significant environmental and hydrologic value, enabling rich vegetation and biodiversity at their beds.

The six sites of the Transboundary Protection Area suggested for incorporation in the "Natura 2000" represent the basin's general character, as they compose the 86% of it. In these six sites there are 12 types of protected habitats of the 92/43 European Union's Directive (Table 3, see CD-Rom that accompanies this book).

Seven additional habitat types that are not included in the aforementioned Habitat Directive were discovered and studied in this Transboundary Protection Area. It is evident that all seven of them are rare to find in Bulgaria or Greece and generally in Europe.

The nature of the important vegetation taxa of the area within the six "Natura 2000" sites (according to the national, European and international environmental legislation) is shown in Table 4 (see CD-Rom that accompanies this book).

## 5. Fauna of the Transboundary Protection Area - General information

The wide and rich biodiversity of the area is due to its bio-climate singularity, of the soil morphology, as well as the social and political conditions existing there. Lots of endemic and rare species are found in this area. The whole Rhodope mountain range is a dynamic place of species' creation and of evolutionary processes. Invertebrates lists for example are constantly updated the last decade to include more new species.

The different species of mammals in the Transboundary Protection area, as well as the status concerning their protection in Greece, in Europe, and internationally are shown in Table 5 (see CD-Rom that accompanies this book).

The presence of middle-European character forests is the reason for appearance of rare bird species. Some of them are found only in this area and in no other part of Greece. Rhodope is the southernmost place of distribution for most of them, worldwide. Such species are the following: *Tetra urogalus*, *Bonasa bonasia*, *Ficedula parva*, *Graucidium passerinum* (App. I, 79/409/E.U.). Moreover, other rare species of birds are present and reproducing in the area: *Aegolius funereus*, *Dryocopus martius sibilatrix*, *Parus montanus* and *Nucifraga caryocatactes*. Birds of prey were overpopulated some years ago but now they only appear in low numbers. One of them is *Aquila chrysaetos*. Only few are found in large populations: *Accipiter gentillis* (App. I, 79/409/E.U.), *Accipiter nisus* and *Buteo buteo*. All of them nest in forests.

Reptiles and amphibians of the area and some data on their protection status are shown in Table 6 (see CD-Rom that accompanies this book).



## 6. Threats - Human caused problems and enacted Protection Systems

Threats for species and habitats in the Transboundary Protection Area are related to regulation/control of human activities. More specifically:

**Forest exploitation - Construction of Roads - Hunting:** In spite the fact that Rhodope's forests happen to be the most productive ones of Greece, their exploitation is not controlled and their management has not integrate basic conservation principles to benefit the wildlife as well as the local people interests. There are specific principles that ought to characterise the management of such important forests:

- The principle of multi-functioning and multipurpose use of forests;
- The sustainability principal;
- The principle of economic use of resources;
- The common good principle;
- The principles of global approach and of integrated management.

Moreover, the way logging is practised today entails additional degradation threats for the area. The fact that the logging activities in these vast forests and the construction of roads in them are both uncontrolled, creates conditions for habitat fragmentation. Even if this is not the case, these conditions allow easier access, and, consequently, for easier practise of both legal and illegal hunting (poaching). Anybody is free to explore any part of the virgin forests of Rhodope. As a result of this hunters (or poachers) use the loggers' settlements after their evacuation in the winter. As there is no sound monitoring and wardening system, forest areas become totally uncontrolled hunting areas and only a minority of cunning persons really benefits from this situation. They keep inventing and exercising different illegal, but profitable activities.

**Illegal Hunting/Poaching:** In the wide area of Rhodope there are six enacted wildlife refugees, where hunting is forbidden. However, several cases of poaching have been recorded, and, consequently, the small populations of bears, birds, roe deer, chamois and other species are seriously damaged.

**Road networks:** The construction of large roads paved with asphalt in the area is generally considered to be the main development indicator. However, compared to the forest dirty roads are extremely dangerous and lots of wild animals die in car accidents, because of the intensive traffic and the high speed of the vehicles in these paved roads. Moreover, many of the roads fragment the wild animals' habitats. From now on the construction of roads for the new road network in Greece should be planned with great caution, especially in the mountainous areas. From an aesthetic and environmental point of view, tunnels and bridges in mountainous areas have been proven to be very efficient. There are cases where they should be chosen for economic reasons also. In general they allow connection and movements of wildlife specimens. The main roads and highways threatening Rhodope's wildlife and nature are the ones related to the "Via Egnatia" highway, that is road axis connecting Kato Nevrokopi village (Greece) with Goce Delcev (Bulgaria), and the one connecting Xanthi city (Greece) with Smoljian (Bulgaria). Transboundary co-operation in order to minimise negative impact is obvious and indispensable.

**Dams:** There is a planning for construction of new dams in the area. In theory, they could be considered as technical projects that will contribute to the water resources management in the area. Nevertheless, as in the case of road networks, they also consist barriers on natural movement of wildlife species. For this

reason, their planning should be followed by proper measures for minimisation of the negative impact on wildlife. What is more alarming is the recent national legislation developments on liberalisation of power plants construction. Namely, private firms can construct power plants and dams, while in the past the State Electric Power Company (DEI) was the only firm entitled to realise such projects.

**Excessive grazing:** Illegal or uncontrolled grazing in areas where afforestation or natural revival of forests occur creates the necessity of the animal breeding control.

## 7. Protection status (Greece)

### Currently protected areas and protection statuses in the proposed Transborder Protected Area

Name of the Site (and prefecture)	Protection status (and notes)	Area (in Km <sup>2</sup> )
<b>Beech Forest of Chaidou-Koula</b> (Prefecture of Xanthi)	<b>Natural monument</b> (IUCN 1980: Category III. Has been proposed it's extension from the forest service of Xanthi. It's included the "Natura 2000" site)	0,18
<b>Virgin forest of Frakto</b> (Prefecture of Drama)	<b>Natural monument</b> (IUCN 1980: Category Ib. It's included the "Natura 2000" site)	5,5
<b>Forest of Paranesti</b> (Prefecture of Drama)	<b>Game reserve</b>	53,1
<b>Aetorachi</b> (Prefecture of Drama)	<b>Game reserve</b> (Was expanded recently by 16,4 Km <sup>2</sup> )	48,9
<b>Tsanak Dere</b> (Prefecture of Xanthi)	<b>Game reserve</b>	9,03
<b>Gerakas-Oreo</b> (Prefecture of Xanthi)	<b>Game reserve</b>	32,7
<b>Forest of Karlofito</b> (Prefecture of Xanthi)	<b>Game reserve</b>	22
<b>Total area (in Km<sup>2</sup>)</b>		<b>171,4</b>



## **8. Proposals for transboundary co-operation on protection of the Western-Central Rhodope's biodiversity, and its natural and cultural values**

Transboundary co-operation in Western-Central Rhodope, both in theory and in practise, is a very complex issue. The declaration of the area as a Transboundary Protection Area would contribute substantially to the definition of the objectives, the width and the extent of such co-operation. Mostly, this is dependent on the political will and the courage the competent services and decision-makers in both countries will present.

Some proposals that would possibly contribute to overcoming important problems are the following:

### **Joint actions for conservation of brown bear (*Ursus arctos*) in the area**

- Scientific monitoring of the species at an annual basis: Utilisation of all monitoring techniques (radio-telemetry, signs of presence and activity, damages in agricultural and livestock farms etc.)
- Scientific recording and evaluation of the human impact, especially of negative one (hunting, poaching, tourism, development projects etc.)
- Unification of the protected areas and common efforts for monitoring and wardening the area, especially in sites of permanent presence of brown bear and for all phases of its biological annual circle.

### **Joint actions for conservation of other rare, threatened or endangered mammals**

- Scientific monitoring of the populations (size, construction, reproduction rate, deaths caused by natural or other reasons etc.), as well as the movements of the roe deer, chamois and wild boar specimens.
- Unification and specification of the areas where the hunting of the aforementioned species is forbidden.
- Co-ordination of Transboundary wardening.
- Assignment of common periods for legal hunting in both countries.

### **Joint cultural events and actions promoting peaceful co-existence**

- Annual meeting of the environmental, non-governmental organisations and of cultural or artistic associations: To be organised one year in Greece and next year in Bulgaria (turn and turn about).
- Organisation of a Conference on the rich culture of the Rhodope Mountain range, its natural particularities and values, and the peaceful co-existence of the people.