

# The Natural Reservations within Suceava Area and their Importance \*

CONSTANTIN COCERHAN

Doctoral school "Simion Mehedinti", Faculty of Geography

University of Bucuresti

ROMANIA

constantincocerhan@yahoo.com

*Abstract:* - The tourism potential of Suceava and its surroundings is revealed by the historical heritage of world culture through traditional cultural values with absolute originality, landscapes with soothing relief and a vegetation cover that calls for nature walks and relaxation. Over the time, man lived in communion with nature and admired its beauty, but in certain situations he exploited it recklessly leading to the extinction of rare plants and animal species of scientific value. As a result, it was necessary to preserve bio-geographical elements, the limitation or restriction of operations and tourist traffic, so they were declared by law a number of natural monuments and nature reserves have been established.

*Key-Words:* - monuments of nature, pastures, reservations, endemic plants, glacial relics, polyvalent travel.

## 1 Introduction

Observations and surveys with a view to know and protect flora and fauna in Suceava town have been conducted since the mid-nineteenth century, by mentioning some elements of flora by Blasius Krauner in the journal Higher Suceava Gymnasium (1863), while at the end of the century there are recorded descriptions of flora species, especially angiosperms, from Ponoare and Frumoasa, by Aurel Procopianu-Procopovici (1892). In the early twentieth century Professor Michael Guşuleac distinguishes himself by researching the Ponoare and Frumoasa elements of flora and suggests the establishment of reservations in those places. In the ensuing period, during the century, research and nature protection concerning Bukovina increase, and therefore in Suceava area. Important contributions were made by: Emilian Topa (1925, 1965, 1970), and V. Cojocaru Mititelu D. (1970), Traian Ştefureac (1970), John Nemes (1970, 1972), Julius Morariu (1972, 1975), Clement Horeanu (1972), Szeged Taras (1969, 1970, 1983), Peter Brega (1977), Nicholas Boşcaiu (1978), and in 2002 appeared *Bukovina nature reserves guide*, a project coordinated by Adrian Cezar Grozavu, which is part of „ Environmental Partnership Program”, in order to make the Bukovina reservations known.

## 2. Problem formulation

Our approach seeks knowledge and analysis of components and natural ecosystems in Suceava town highlighting the importance of scientific, biological, ecological, educational, and their tourism. The present study - based on expert documentation on field observations and research, the interpretation and comparative analysis of information - we want to point out the opportunities the area has to further develop tourism as a main gainful.

### 2.1. Natural monuments and reservations

In Suceava surroundings the following plant species have been declared natural monuments and are protected by law following: goggled (*Trollius europaeus*), wood lily (*Lilium martagon*), Siberian iris (*Iris sibirica*), Frasinel (*Dictamnus albus*) and pasqueflower (*Pulsatilla nigricans*) Ponoare encountered, Calafindeşti; Lăcrămioara (*Convallaria majalis*) in beech forests from Călineşti, Pătrăuţi and Dragomirna, variegated tulip (*Fritilaria meleagris*) Ilişasca Basin, in the meadow Solonetz and Suceava; lady slipper (*Cypripedium calceolus*) in the deep forest, meadow Zamostea-in area Cacica Salina, Spring adonis (*Adonis vernalis*) pits on the

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hill, near Vâlcele, flowers solitary, yellow-gold, shiny.

Also, some trees are protected for their origin or circumference, height and age. In this respect we might refer to red beech forest at Călinești-Cuparencu and Suceava, in front of the Museum of Natural Sciences, Tulipan (*Liliodendron tulipifera*) and pagodas tree (*Ginkgo biloba*) from Schei Royal Manor yard, chestnut (*Castanea sativa*) in ILISESTI, the Thuy (Thuy) in the central park of Suceava, the secular oaks in Botosana and Cașvana.

Many items, especially those endemic, have a great scientific importance for researchers because they allow the reconstruction of the evolution of plant cover and fauna - supporting tourism, recreation and knowledge and attract more tourists with charm, tenderness and their vivid colors during flowering, giving their place of serenity and inner balance.

**Sipote Arboretum Park**, property of Forestry Department Patrauti, located

at the foot of the Throne Citadel of Stephen the Great it was established between the years 1970-1974, on land affected by landslides, Șipote arboretum park, owned by Forest Pătrăuți. Work planning area of about 20 ha (out of 155 ha of forest at present) are meant for land consolidation measures, capture spring sources, consolidation of slopes, drainage and sewage of Sipote and cetatii streams.

Since 1975, they resorted to planting the seedlings of native and exotic species. On an area of seven hectares, there are over 100 species of various species of conifers, deciduous and ornamental trees: Douglas fir (*Peudotsuga*), spruce (*Picea abies*), black pine (*Pinus nigra*), sivestru pine (*Pinus sylvestris*), larch (*Larix decidua*), and hornbeam (*Carpinus betulus*), maple (*Acer campestris*), ash (*Fraxinus excelsior*), field maple (*Acer platanoides*), quaking aspen (*Populus tremula*) linden (*Tilia cordata*), service tree (*Sorbus aucuparia*), cherry (*Prunus avium*).

This green space, located near the center of the city of Suceava, is the main leisure area for Suceava, a true oasis of peace and oxygen, it is the place of passage to and from the touristic sights (the Residence Fortress, the equestrian statue of Stephen the Great Monastery of St. John, St. George Church - Mirauti, St. John Spring - arranged plus the importance of scientific and educational activities with students undergoing themes for understanding nature.

So, Șipote Park is an attractive destination for all tourists, from all age groups, both local and from other parts of the country and abroad through

attractive forest landscape, refreshing air and specific topoclimatic (housing).

Suceava surroundings offer opportunities to practice some forms of tourism (hiking, weekend recreation, eco-tourism, agro) nature reserves: Frumoasa Moara Ponoare, Calafindești, trees from Dragomirna and Crujana - Pătrăuți and Zamostea.

**The floral reserve from Frumoasa village** is located in the hamlet of the same name, 4 km from the village Sfintu Ilie and 6 km from Suceava on the county road to Berchișești. Secular grassland occupies an area of 9.5 ha and are spread over a long stretch of 1.6 km in altitude and climbs up to 395 m. In the reserve there are many species of circumpolar, Euro-Asian, Central European, Black Sea and Mediterranean.

Here are some of the existing species here: sedge (*Carex diandra*), spălăcioasa (*Senecio integrifolius*) bluebells (*Viola pumila*), poroinicul (*Orchis ustulata*), water iris (*Iris Ruthenia*) pasqueflower (*pulsed patens*), bearded squire (*Ajuga laxmanii*), wild garlic (*Allium flavum*), knotweed (*Centaurea banatica*). Nemes Ion, a researcher from Suceava found here a species of insect, *Coleophora bucovinella*, new science and with a limited distribution area in the fauna of Romania.

**Reserve flora from Ponoare** is located 9 km south of Suceava, next to Cumparatura village, the village Bosanci, 1 km from the European road E-85 (km 424.6). The reserve occupies a hayfield on Strâmbu Hill at 324 - 405m altitude, with an area of 24.5 hectares and has a particular aesthetic, historic and phytocenotic importance, this being the place where, until recent years, research on plant associations has been done.

The reserve Fund is the Euro-Asian elements such as Siberian iris (*Iris sibirica*), Frasinel (*Dictamnus albus*), Spring adonis (*Adonis vernalis*), ghost (*Veratrum album*). As European and Central European elements we should mention bloated (*Trolius europaeus*), thimbles (*Digitalis grandifolia*), willow (*Salix rosmarinifolia*). Continental species are represented by unruly Calandra (*Cerasus fruticosa*), jaundice (*Serratula wolffii*) pasqueflower (*pulsed patens*), veronica (*Veronica incana*). Among the Pontic Pontic Pontic-Mediterranean and Mediterranean items we note: all-heal (*Crambe Tatars*), wild flax (*Linum flaum*), wild rose (*Rosa Galicia*), sage bent (*Salvia mutans*), yellow clover (*Trifolium pannonicum*), to which circumpolar elements are added, such as marsh fern (*Dryopteris thelypteris*) blue grass (*Molinia coerulea*), drăgaica (*Galium borealis*).

The richness of grasslands attract a large fauna: deer and rabbits are nestled in a willow clumps around the swamp vegetation richer and higher class, foxes and badgers have dug burrows on sunny slopes, one can also meet ferrets and mice field.

Among birds we can mention the owl, hawk, magpie, jackdaw. It was reported the presence of pheasant, alien species, migrated from the forest Mihoveni.

The reserve area is a place of passage for the flocks of white storks that stop here in their flight south. Professor John Nemes here identified several new species of butterflies which are important for the science and fauna in Romania.

Herbaceous species diversity creates a special floral polychromy. Some species bloom in late March (*ruscuta deditei*) immediately after the melting snow, by early August.

During this time the colors go from green grassland mosaic summer to autumn yellow, color and charm is an attractive feature for tourists. In winter, because of the blizzard on the road from highway, access within the reserve is on foot.

**Calafindești meadows** an area of 17 hectares, is located on the creek Horait, 6 km from the town of Siret, the place known in local place names - The oaks' spot; at an altitude of 350-430 m. This designation certifies the existence of oak forests (*Quercus petraea* and *Quercus robur*) that have been preserved after clearing the former oak trees, which were replaced by the existing grassland. The access to the reserve is from DN2.

*The interest in this reserve is associated with an extremely rare glacial relict flora of our country namely cabbage rabbit (*Ligularia glauca*).*

A feature of these meadows is the remarkable persistence of a number of typical xerotherm forest plants: rooster tail (*Poligonatum odoratum*), five finger (*Potentilla alba*) and some species nemoral: bell (*Campanula persicifolia*) and mountain lily (*Lilium martagon*). Here are rare species which are protected: motley tulip (*Fritillaria meleagris*), bloated (*Trolium europaeum*), Siberian iris (*iris sibirica*), onion crow (*Muscari botryoidea*).

Tourists and scientists can visit the reserve in spring, early on, when the eye-catching beautiful azure flowers of onion crow, forming a dense mat with flowers such as cuckoo's boot, a yellow and the variegated tulip.

Since May, there are other plants, among which cabbage rabbit prevails, siberian iris, various grasses and many grassland species which reveal the originality and attractiveness of meadows, but also provides shelter for some animals in the area (rabbits, foxes and birds).

**Dragomirna Fagetum Reserve** is located in the village Mitocu Dragomirnei, in Suceava Forest in the body Chilia forest, at an altitude ranging between 380-450 m. The reserve has an area of, approx. 134 ha. Access to the reservation is made on two routes: the asphalt road that passes through Suceava-Dragomirna Ițcani district, runs across Mitocu Dragomirnei and gets to the monastery, and from there follows the road through the forest, known as 'Three apples' on 1.8 km; on Suceava-Siret highway to the branch to the village of Pătrăuți, and then the paved road to reach the forest canton 'Crujana'; the forest road to Dragomirna to the reserve.

Tourists who are fond of nature can take a loop route that includes both reserves, but also the local sights: Dragomirna Monastery, Anastasie Crimca's foundation from the beginning of the seventeenth century, the Hermitage Holy Apostles Peter and Paul; the Reserve Stejăretul Crujana - Pătrăuți and Stephen the Great Church of Holy Cross in Pătrăuți (1487), the oldest Orthodox church erected by Stephen the Great, UNESCO world heritage site since 1993, impressive fresco "Cavalcade of the Cross" or "Cavalcade of Holy Soldiers".

Within the reserve, most of the trees are between 110-130 years, some have diameters of 50-60 cm and heights of beech trees reach 35m while the larch tree 40 m. In the monographic study "Fagetum Dragomirna", Peter Brega distinguishes four types of forest: hill beech with Mull flora (forest), sedge beech (*Carex rosa*), holm and oak with mull flora and the mixture of alder with ash and other deciduous trees.

The coppice in the reserve has a natural origin in 97% and seedling regeneration was accomplished by natural seedling installed as a result of installed natural treatments (Fig. 1). Fauna is represented by the Carpathian stag, deer, roe deer, wild boar, fox, wild cat, marten, and birds such as pheasants, woodcock, owl, forktail, crows, jays.



Fig.1. Dragomirna beech area

**The Crujana reserve** is located in the village Crujana Pătrăuți at an average altitude of 370 m. Access to the reserve can be made both from the European road E-85, by DJ Pătrăuți 208 / V - up to Canton forest and the forest road from Dragomirna reserve over "Trei Meri".



Fig. 2. Crujana oak area

The oak forest (*Quercetum*) (Fig. 2), occupying an area of 35 ha, comprising a mixture of deciduous trees, among which oak prevails, with an average height of 28 m and a diameter ranging from 45-50 cm.

For amateurs and tourists in the area there are other recreational opportunities offered by the Forest Department Suceava represented by Pătrăuți Forest range, which organizes hunting and offers accommodation in two tourist cottages (Crujana Crujana 1 and 2) with all facilities.

**Zamostea-Meadow Reserve** is located on the right bank of the Siret River, 12 km north of highway Suceava-Dorohoi, passing through the village of Dorohoi. The reserve was established in 1973 and has an area of 115.3 ha. The relief is given by the meadow area and terraces of Siret while the climatic conditions (north-western air currents, high precipitation, 700-800mm annually, annual average temperature 6-8°C) influences the character of local vegetation which bears the mark of authenticity.

Throughout the reserve the following species are to be noticed: oak (*Quercus robur*), ash (*Fraxinus excelsior*), hornbeam (*Carpinus betulus*), lime (*Tilia cordata*), wild cherry (*Cerasus avium*), field maple (*Acer platanoides*), aspen (*Populus tremula*). The shrub elements are made up of shrub species of maple (*Acer campestre*), hazel (*Corylus avellana*), dogwood (*Cornus sanguinea*), hawthorn (*Crataegus monogyna*), soft chain (*Evonymus europaea*), dwarf chain (*Evonymus nana*) and ivy (*Hedera helix*).

The herbaceous flora is made up of snowdrops (*Galanthus nivalis*), violets (*Scilla bifolia*), lily of the valley (*Convallaria majalis*), rooster tail (*Polygonum latifolium*).

As monuments are variegated tulips (*Fritillaria meleagris*) and lady slipper (*Cypripedium calceolus*), which flower in spring.

The characteristic of floodplain forest dominated by oak and ash trees resulted in the presence of animals (deer, rabbits, boars, foxes, martens, wild cats), a large number of birds that make up a well-stabilized ecosystem (pheasants, starlings, etc.). The pheasant is a naturalized alien species through repeated colonization.

The Zamostea-Meadow Reserve is of major scientific and educational importance for the conservation of relict species, which requires the monitoring and protection thereof, and "under the circumstances modernizing access roads, the area can be exploited for tourism.

### 3 Problem solution

The existing biogeographically resources in Suceava and its surroundings have a high scientific and touristic importance in the composition of plant associations, the presence of endemic and relict plant, the size of shrub species, the color of the landscape during the flowering meadows, biocenoses structure associated with different species of animals, by indirect attractiveness of the forest thanks to the topoclimatic factor, fresh air and ozone, but also the link between Man and vegetation reflected spiritually.

All these elements associated with the hilly landscape, cultural objectives, and ecclesiastical history provides a valuable and versatile tourist potential to practice different types of tourism: investigation, knowledge and information for specialists from different fields, but also leisure and recreation, eco tourism, wildlife tourism, agrotourism and rural tourism for backpackers.

Suceava - county capital - can be regarded as the region's tourist capital, not only by natural and human heritage value available, but also because it possesses a sufficiently developed infrastructure for tourism, representing a communication hub and a starting point for the region's key destinations for domestic tourism and international transit.

### 4 Conclusions

For the future, in order to preserve biogeographical features and the development of

tourism we must carry out projects aimed at sustainable management measures and the necessity of environmental tourism recovery. The measures must be found to harmonize the ecological balance of different types of associations, flora and fauna and tourism operational capacity. They will be fully effective if the know-how is applied, meaning that detailed analysis will be performed regarding the impact on the environment.

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