

# Protected areas from the region of Suceava and its touristic valorization\*

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**Abstract-**The study, based on specialised documentation of field research, of comparative analysis highlights opportunities within Suceava area and its surroundings regarding the touristic and scientific potential in the dendrological park Sipote and six natural reservations of flora and forests. As a result we can distinguish species of plants, glacial relics, trees and forested areas which are very valuable and attractive biologically, ecologically, educationally and touristically.

The endemic elements are very important from a scientific point of view for the researchers because they make it possible to reconstitute the evolution of flora and fauna. Together with the sheltered climate and the clean air, flora offers many opportunities to the polyvalent tourism through the charm and the vivid colours during flowering, providing a place of quietness and inner balance.

The ecosystems within Suceava area have a valuable and attractive potential which offers the opportunity to know, investigate and inform specialists from different areas such as ecotourism, educational tourism, agrotourism and rural tourism for other categories of visitors.

**Keywords** - ecotourism, educational tourism, monuments of nature, hayfields, polyvalent travel, the management reservations.

## 1. INTRODUCTION

The area studied is located around the town of Suceava, as the central place within a range of 20-30 km, in the geomorphological subunit of Suceava Plateau. The geographical conditions are given by hilly terrain platform, highlighting the structural and petrographical relief.

The climate is moderate temperate continental typical for hills with altitudes between 300-500 m. The natural vegetation is typical of forests and grassland hills [1]. There are two layers: the beech at altitudes above 400 m, and the oak at lower altitudes. The valley is lime (*Tilia cordata*, hornbeam (*Carpinus betuls*), maple (*Acer platanoides*), and water meadows which consist of species of poplar, alder, willow [2].

The sightseeing potential Suceava and its surroundings is shown by the historical monuments which belong to the world culture through traditional cultural values with absolute originality by landscapes with mild relief, restful and vegetation which calls for nature walks and relaxation. Over time, man lived in communion with nature and admiring its beauties, but in certain situations it exploited it recklessly

leading to the disappearance of rare plant and animal species of scientific interest.[3].

As a result, there appeared the need to protect biogeographic elements, limiting or restricting exploitation and tourist traffic, so they were declared and enacted a series of monuments of nature and there have been established protected areas.

The observations and studies on the knowledge and protection of flora and fauna in Suceava town have been performed since the mid-nineteenth century, by mentioning some elements of the flora by Blasius Krauner, in the magazine of the Suceava higher Gymnasium (1863) and in late descriptions flora species are listed, especially of angiosperms from Ponoare and Frumoasa by Aurel Procopianu-Procopovici [1] (1892).

At the beginning of the twentieth century, distinguishing by his studies, Professor Michael Guşuleac, who investigates floristic elements from Frumoasa and Ponoare and suggests establishing natural reservations in those places. In the aftermath, during the century, research is intensified regarding nature protection in the Bukovina, and therefore in the lands of Suceava [4].

Important contributions were made: 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), Taras Szeged (1969, 1970, 1983), Peter Brega (1977), Nicholas Boşcaiu (1978), and in 2002, in Suceava, Bucovina came natural reserves Guide [5], a project coordinated by Adrian Caesar Grozavu the Partnership's "Environmental Partnership program", in order to make known reserves of Bucovina [2].

Our study focused on potential reassessment of biogeographical area through field observations and research, collaboration with specialists from Suceava Environmental Protection Agency, Mr. Caesar - Demetrius Asurdului.

## 2. FORMULATION PROBLEM

Our approach aims to know and analyze components and natural ecosystems in the area of Suceava town highlighting the importance of their scientific, biological, ecological, educational and instructional opportunities. Through this study - based on expert documentation on field observations and research on the interpretation and comparative analysis of

information - we want to point out the opportunities they have to further develop ecotourism as a main lucrative activity.

### 2.1. Natural monuments and nature reserves.

In Suceava surroundings the following plant species have been declared as monuments and are protected by law : bloated (*Trollius europaeus*), wood lily (*Lilium martagon*), Siberian iris (*Iris sibirica*), frâsinelul (*Dictamnus albus*) and pasqueflower (*Pulsatilla nigricans*) found in Ponoare, Calafindesti, lily of the valley (*Convallaria majalis*) in the the Călinești făgetele, Pătrăuți and Dragomirna, variegated tulip (*Fritilaria meleagris*) Ilișasca basin, in the meadow Solonet and Suceava, lady slipper (*Cypripedium calceolus*) in the forest at deepened, Zamostea-meadow in Salt Cacica area, spring adonis (*Adonis vernalis*) (Fig.1) on the hill pits, near Valcele, with flowers solitary, yellow-golden, shiny [1], [2], [5], [6].



Fig. 1. *Adonis vernalis* (Photo C. Cocerhan)

.. Also, there are also protected rare trees, as far as their origin, circumference, height and age are concerned. In this regard there are worth mentioning: red beech specimens that are found in the forest at Călinești-Cuparencu and in Suceava, in the Museum of Natural Sciences, Tulipan (Fig. 2), (*Lliodendron tulipifera*) and pagodas tree (*Ginkgo biloba*) from Șcheia, Royal Manor yard, chestnut (*Castanea sativa*) from Ilișești, copy tuia (*Thuy*) in the central park of Suceava, the Liteni birches, and secular oaks in Cașvana and Botosana.

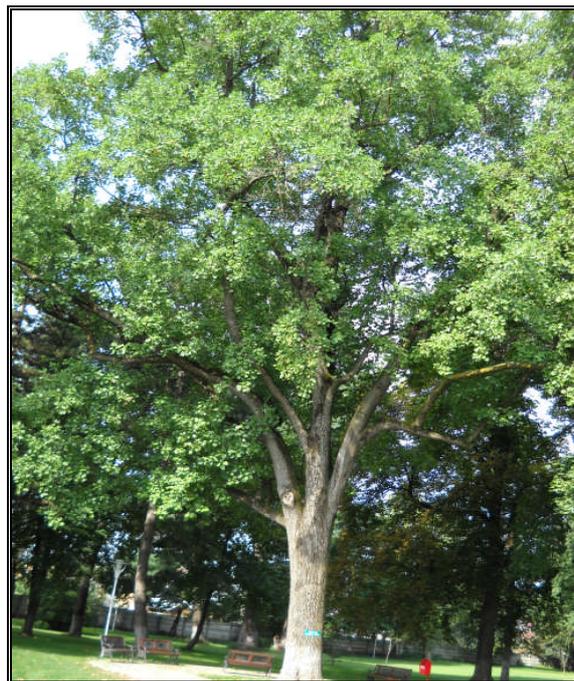


Fig. 2. The tulip tree - □cheia (Photo C. Cocerhan)

Many elements, especially the endemic, are of special scientific importance to researchers because they allow reconstruction of the evolution of plant cover and fauna - to support tourism, recreation and knowledge [3], while others attract tourists with its charm, tenderness and color of their time alive flowering, giving them a place of peace and inner balance

**2.2. The dendrologic park Șipote,** Forestry Pătrăuți property is located at the foot of the Fortress town of Stephen the Great, was organized between the years 1970 to 1974 on land affected by landslides. The planning work for an area of about 20 ha (155 ha of the total forest today) meant land consolidation activities by capturing sources, any surface slopes, drainage and sewerage of Șipote streams and fortress. Since 1975 they resorted to planting seedlings of native and exotic species. On an area of 7 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 silvestris*), larch (*Larix decidua*), and hornbeam (*Carpinus betulus*), common maple (*Acer campestre*), ash (*Fraxinus excelsior*), field maple (*Acer platanoides*), aspen (*Populus tremula*) linden (*Tilia cordata*), service tree (*Sorbus aucuparia*), (Fig. 3), cherry (*Prunus avium*). [1], [2], [4] - [6].

This green space, located near the center of the town of Suceava, the main leisure area for Suceava, a true "oasis" of peace and oxygen, is the promenade to the sights and attractions in the area (Fortress, equestrian statue of Stephen the Great Monastery of St. John, St. George Church - Mira, Saint John Spring - arranged), plus the importance of scientific and educational activities with students in some subjects the knowledge of nature [7].



Fig. 3. Șipote park – Sorbus aucuparia (Photo. C. Cocerhan)

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 the forest, the air and specific topoclimate (refreshing shelter). In Suceava surroundings there are points of scientific interest and opportunities to practice some forms of tourism (hiking, weekend recreation, ecotourism, rural tourism) natural reservations such as: the Frumoasa meadows - Mill, Ponoare, Calafindești, stands in Dragomirna and Crujana - Pătrăuți and Zamostea-Meadow reservation (Table no. 1).

Table no. 1. The natural reserves around the town of Suceava

Nr. crt	Reserve	Administrative location	size (ha)
1.	Ponoare Secular hayfields	Bosanci	24,5
2.	Frumoasa Secular hayfields	Moara	9,5
3.	The forest (Quercetumul) Crujana	Pătrăuți	39,4
4.	Secular hayfields from Calafindești	Calafindești	7,0
5.	Beech forest Dragomirna	Mitocul Dragomirnei	134,9
6.	Zamostea forest	Zamostea	107,6

**2.3. Frumoasa floral Reserve** is the Natura 2000 site: ROSCI0081 code, according OM of Community Environment and Sustainable Development no. 1964 / 2007. The protected area is of national interest, was declared a nature reserve nr.5/2000 Law, as mentioned in heading 2719 and classified according in IUCN Category III Classification - the natural reserve for habitat management [8].

The reserve is located in the village with the same name, 4 km from the town of Sfântu Ilie and 6 km from the town of Suceava county road to the village Berchișești. (Fig. 4.)

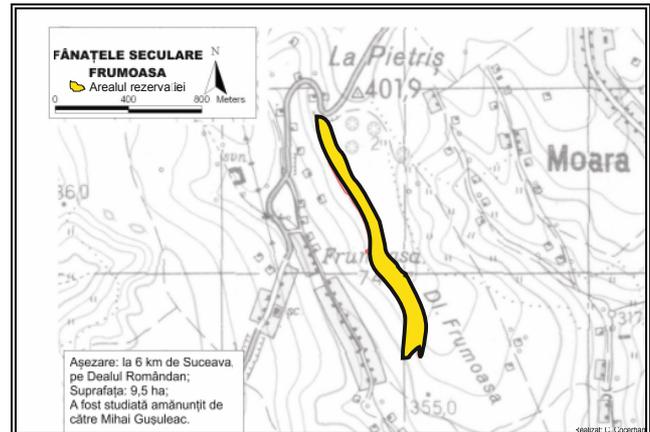


Fig. 4. Geographical location of Frumoasa reserve (Adapted from C. D. Asurdului, APM Suceava)

Old grassland occupies an area of 9.5 ha and are stretched on a long stretch of 1.6 km and in the altitude goes up to 395 m. In the reserve there are many species of circumpolar origin, Eurasian, European Central, Black Sea and Mediterranean. Here are some of the existing species are here: sedge (*Carex Diandra*) spălăcioasă (*Senecio integrifolius*), hatchet (*Viola pumila*), poroinicul (*Orchis ustulata*), water iris (*Iris Ruthenia*), pasqueflower (*Pulsatila 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 to science and with a limited distribution area within the fauna of Romania.

**2.4. The reserve flora from Ponoare** is Natura 2000 site: ROSCI0082 code, site of Community importance according OM Environment and Sustainable Development no. 1964 / 2007. The protected area is of national interest, was declared a nature reserve for habitat nr.5/2000 Law, of heading 2718, under category IV, according to IUCN classification [9]. The reserve is located 9 km south of the city of Suceava, in the the village Cumparatura, Bosanci village, 1 km from the European road E-85 (km 424.6). (Fig.5)

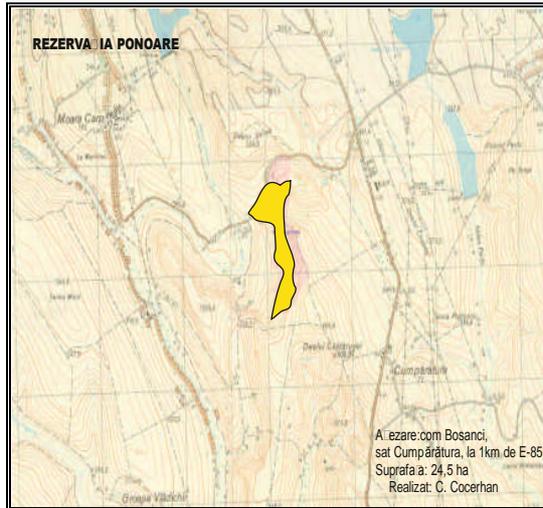


Fig.5 The geographic locat Ponoare reserve  
(Adapted from C. D. Asurdului, APM Suceava)

The Hill The reserve occupies a hayfield on Strâmbu hill at 324-405 m altitude in the area of 24.5 ha and has a great aesthetic value, historical and fitocenotic, here having been performed until recent years, research of plant associations. The reserve fund consists of Euro-Asian elements such as Siberian iris (*Iris sibirica*), frâsinelul (*Dictamus albus*), spring adonis (*Adonis vernalis*), ghost (*Veratrum album*) [2]. As European and Central European elements we mention bloated (*Trollius europaeus*) (Fig. 6), thimble (*Digitalis grandifolia*), willow (*Salix rosmarinifolia*).



Fig. 6. *Trollius europaeus* (Photo C. Cocerhan)

The continental species are represented by the shock of Bărâgan (*Cerasus fruticosa*), jaundice (*Serratula wolffii*) pasqueflower (*Pulsatilla patens*), Veronica (*Veronica Incana*)

[1]. Among the elements of Pontic-sub-Mediterranean and pontico Mediterranean we can mention: all-heal (*Crambe Tatar*), wild flax (*Linum flauum*), Cornel (*Rosa Galicia*), sage bent (*Salvia mutans*), yellow clover (*Trifolium pannonicum*), to which we can add circumpolar elements, such as marsh fern (*Dryopteris thelypteris*) blue grass (*Molina coerulea*), drăgaica (*Galium boreal*) [2].

The richness grasslands attract large fauna: deer and rabbits are nestled in clumps of willow around the swamp vegetation richer and with a higher waist, foxes and badgers have dug holes on the sunniest slopes; we can also mention ferrets and mice field [1]. Among birds there are partridges, owls, hawks, magpies, jackdaws. It was reported the presence of pheasants, alien species, migrated from Mihoveni forest [1]. The reserve area is also a place of passage for flocks of white storks staying here in their south flight. Professor John Nemes identified here several species of butterflies and fauna new to science in Romania [4] - [5].

Herbaceous species diversity creates a special floral polychrome (Fig.7.). Some species bloom from late March (*Rusca, dediței*), immediately after snow melts until early August.



Fig. 7. Ponoare Reserve (Photo C. Cocerhan).

Meanwhile the hayfield colors go from green mosaic in summer to autumnal yellow and the charm of color is an attractive item for tourists. During winter because of the snowstorm from the highway the access to the reserve is made on foot.

**2.5. The hayfields from Calafindesti** with a total area of area of 17 ha, is on stream Hora, 6 km from Siret, a local place known to the locals as - "to the oaks" at an altitude of 350-430 m. This designation certifies that there are some stretches of forests of oak (*Quercus petraea* and *Quercus robur*) which have been preserved after the former deforestation of the oaks , which have been replaced by the current hayfield. Access to the reserve is from DN2 [1] - [2].

Interest on this reserve is associated with a very rare relict glacial flora of our country namely cabbage rabbit (*Ligularia glauca* [1].

A feature of these meadows is the remarkable persistence of a number of plants which characterize the xerothermic forests (Fig. 8.) Tail Cocos (*Poligonatum odoratum*), five finger (*Potentilla alba*) and some nemoral species: bell (*Campanula persicifolia*) and mountain lily (*Lilium martagon*) [2]. Rare species are variegated tulip (*Fritillaria meleagris*), bulging (*Trolium europaeum*), Siberian iris (*Iris sibirica*), crow onions (*Muscari botryoidea*).

Tourists and scientists can visit the reserve in spring, early on, with the wonderful eye-catching azure flowers of the onion crow, forming a dense carpet, the cowslip, a yellow and variegated tulip. Beginning with May, there are other plants, including cabbage rabbit, Siberian iris, various grasses and many species which complete the original hayfields, but also provides shelter for some animals in the area (rabbits, foxes and birds) [1].



Fig.8. Calafindesti Reserve (Photo C. D. Asurdului – APM)



Fig. 9. Dragomirna beech forest (Photo. C. Cocerhan).

**2.6. The Reserve Fagetum Dragomirna** is Natura 2000 site code ROSCI0075, preserves forest habitat of the FOIA, and is classified according to IUCN category IV classification

[10]. The reserve is located in the village Mitocu Dragomirna in Suceava Forestry in the body of Chilia forest, with an altitude ranging from 380-450 m (Fig. 9.). The area of the reserve is about 134 ha. Access to the reserve is on two tracks: the asphalt road passing through Suceava-Dragomirna Ițani district, crosses the village of Dragomirnei Mitocu and reaches the monastery, and from here it follows the road through the forest, known as "Three apples" for a distance of 1.8 km, the highway Siret to Suceava-branch to the town Pătrăuți and then the asphalt road that reaches the forest canton "Crujana" forest road to Dragomirna reserve [4].

The route has the circuit that includes both reserves, and sightseeing in the area: the Dragomirna Monastery, founded by Anastasius Crimca at the beginning of the eighteenth century, the Hermitage "Holy Apostles Peter and Paul" reserve "Stejăretul Crujana" - Pătrăuți and Stephen the Great Church "Holy Cross" in Pătrăuți (1487), the oldest "Stephen the Great" Orthodox church, UNESCO monument since 1993, impressive by fresco "Cavalcade of the Cross" or "The Cavalcade of Holy Soldiers" [5].

Within the reserve most of the trees are between 110-130 years old, some are between 50-60 cm diameter and reach heights of 35 m for beech and 40 m for larch. In the monographic study "The fagetum the Dragomirna" Peter Brega distinguishes four types of forest: the hill with flowers Faget Mull (Forest), Faget with sedge (*Carex rosa*), bluntly of oak and oak hill with flowers of Mull and the mixture of alder with ash and other deciduous trees [1]. The stand of the reserve has a natural origin of 97%, and regeneration was achieved by natural sowing installed as a result of forest treatments. The fauna is represented by Carpathian deer, roe deer, deer, wild boar, fox, wild cat, marten, and as for birds we can mention pheasants, ciurari, owls, ratter, crow, jay. Here, and in other reserves, we can find the green frog, the only arboreal frog species in our fauna (Fig. 10).

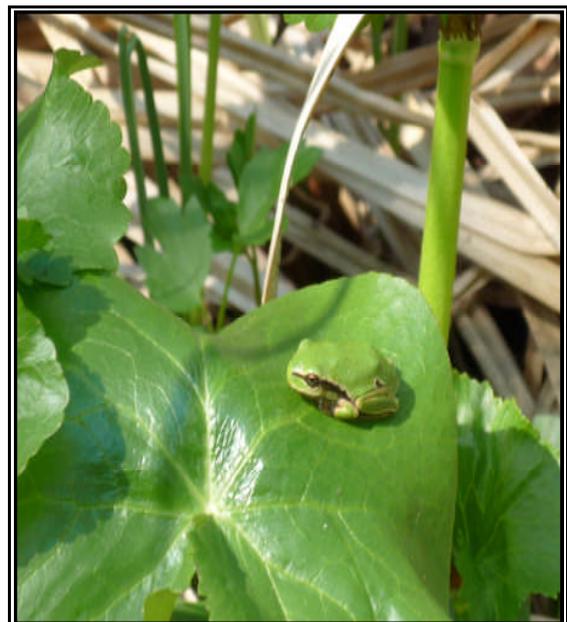


Fig. 10. *Hyla arborea*. (Photo. D. Băncescu)

**2.7. The Crujana reserve** is located in Pătrăuți area at an average altitude of 370 m (Fig.11).

Access to the reserve can be done both on the European road E-85, by Pătrăuți DJ 208 / V – up to the forest range as well as on the forrest road from Dragomirna reserve across the place called “Three Apples”.

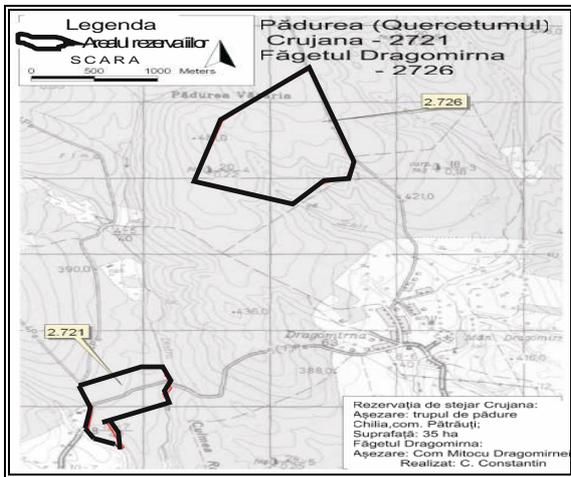


Fig. 11. Geographical location of Ponoare (Adapted from C. D. Asurdului, APM Suceava)

The stand of oak (*Quercetum*), (Fig.12.) stretched over an area of 35 ha, comprises a mixture of deciduous species, where oaks prevail, with the average height of 28 m and 45-50 cm diameter range. For amateurs and tourists in the area there are other recreational opportunities offered by the Forestry Department of Suceava, the Forestry Pătrăuți, which offers accommodation in two tourist chalets (Crujana Crujana 1 and 2) and comfort [4].

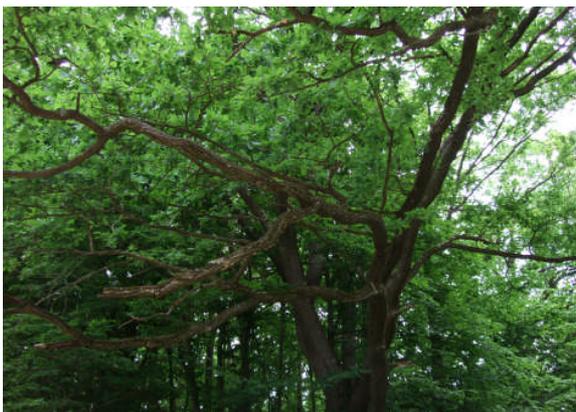


Fig. 12. Oak trees from Crujana (Photo C. Cocerhan)

**2.8. The reserve Zamostea** - meadow is Natura 2000 site code ROSCI0184, preserves forest habitat of the FOIA, is registered according to IUCN category IV classification [11]. The reserve is located on the right bank of the Siret River, 12 km north of Suceava-Dorohoi national road, passing through the village Zvorăștea (Fig. 13.). The reserve was established in 1973 and covers an area of 115.3 ha.

The relief is given by the meadow area and terraces of Siret and climatic conditions (air flow northwest, precipitation high, 700-800mm annual average annual temperature of 6-8° C) causes the local vegetation to bear the mark of authenticity.

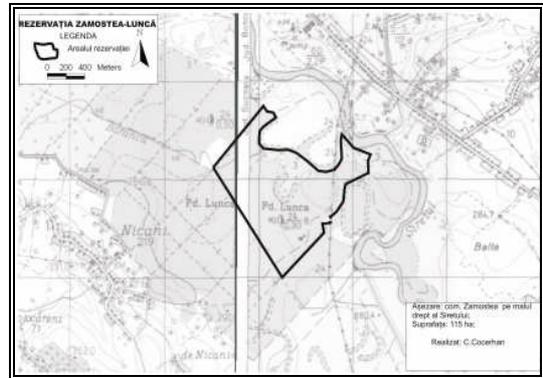


Fig. 13. Geographical location of Ponoare (Adapted from C. D. Asurdului, APM Suceava)

Throughout the reserve we meet the following species:the oak (*Quercus robur*),the ash (*Fraxinus excelsior*),the hornbeam (*Carpinus betulus*), lime (*Till cordata*), wild cherry (*Cerassius avium*),the field maple (*Acer platanoides*),the poplar (*Populus tremula*). The elements are made up of shrub species maple (*Acer campestre*), hazel (*Corylus avellana*), carp (*Carnus sanguinaea*), hawthorn (*Crataegus monogyna*), soft chain (*Evonymus europaea*), dwarf chain (*Evonymus nana*) and ivy (*Hedera helix*) [1].

Herbaceous flora is made up of snowdrops (*Galanthus nivalis*), violets (*Scilla bifolia*), lily (Fig.15) (*Convallaria majalis*), cock tail (*Polygonum latifolium*). As natural monuments we can find variegated tulip (*Fritillaria meleagris*), (Fig. 14) and papucul doamnei. (*Cypripedium calceolus*) which bloom in spring [2].



Fig. 14. *Fritillaria meleagris* (Photo C. Cocerhan)



Fig. 15. *Convallaria majalis* (Photo. C. Cocerhan)

The characteristic of meadow forest dominated by oaks in association with ash ensured a natural habitat for animals (deer, rabbits, wild boars, foxes, martens, wild cats), a large number of birds that make up a well-stabilized ornitho cenosis (pheasants, starlings, etc.) [1], [4], [13]. The pheasant is a naturalized species through repeated colonization. The Zamostea-Meadow reserve is of major scientific and educational importance for the conservation of relict species, which requires their monitoring and protection, and "under the circumstances of modernizing access roads and an adequate media" [12] the area can be exploited for tourism.

### 2.9. Recovery through ecotourism and education.

A tourist optimal space utilization of the protected areas is possible through ecotourism or green tourism. This is a form of sustainable tourism, focused on the rediscovery of nature taking into account the urban ecology [20] (organic gardens, organic garden, urban nature reserves and other areas of urban ecology). This kind of tourism aims to discover or rediscover nature, landscapes or special areas, with full respect for ecosystems and contributing to their recovery. Ecotourism involves an educational side designed to make people, regardless of age, to realize the need to preserve natural resources. That is why we believe that young people must become aware and sensitized by the possibilities that science provides, the need to protect and preserve the environment through environmental education and sustainable development. The environmental education is a process which combines science and humanities in which science blends with art, and theoretical concepts are useless if they are not closely related to practical activities. You must choose approaches to help young people understand the impact of their behavior on the environment. With this type

With this type of education we can form responsible adults, able to be actively involved in environmental protection and conservation issues. We need to see the natural environment as a source not only economic, but rather as an asset that requires special attention and protection, to provide us the means for a decent existence. Indeed, our planet has natural resources and amazing regenerative capacity. With the technology we currently possess and appropriate policies and plans, the earth can offer the chance of a prosperous future for all its inhabitants. But a sustainable environmental education requires young people to connect with community members, citizens who come into contact, and where appropriate to get involved to change something or to suggest the public authorities solutions for a change..

From this perspective, ecotourism should have positive consequences and increase the wellbeing of the population [19]. Tourism is one of economic sectors with the highest degree of development in the world, the ecotourism side of could be a powerful current means for future recovery of biodiversity [14] - [18].

Eco-tourism is an industry that has been growing steadily in recent years. In the last two decades ecotourism activities have grown rapidly, more or less homogeneously throughout the globe. Bukovina opened its doors to the reception of a large number of tourists, a number which evolved upward through this area to promote natural resources [18]. The area is characterized by beautiful landscapes of great wealth which are often associated with flora and fauna and valuable elements of anthropogenic origin.

The idea of ecotourism has appeared late and with difficulty in Bucovina area. National and international Bodies should be entitled to adjust their policy in this area by including certain areas in the international circuit of this type of tourism investment and by limiting other (than tourism) in those areas. Having mentioned these reasons we assert that eco-tourism in Bucovina has made the first steps and it is imperative to define the areas in which this kind of tourism is possible as well as drawing some development strategies taking into account a sustainable development [17], a policy which also refers to the protection of the environment.

The association of ecotourism with the imperatives of sustainable development and nature conservation must meet several criteria: conservation of biodiversity and cultural diversity and the justification of this conservation, encouraging sustainable development by giving people local jobs; the division of social and economic benefits with local communities, obtaining consent and their participation in management activities [18].

Forest vegetation and ecological tourism Taking into account that Suceava county is still a strong forested area and that many areas remained outside the major investment target, it is possible to develop eco-tourism using this resource. Looking at the forest heritage of the area likely to be support tourist activity, we defined the following associations vegetable

- flood plain forests;
- beech forests;
- mixed forests;

- coniferous forests;
- planted forests.

The premises covered by forests are used for touristic exploitation. Many tour operators offer services starting from the simple discovery of natural and cultural heritage of Bucovina to the practice of sports and activities in the forest environment (rafting, kayak, paintball, walking and hiking, etc.). These activities offer at the same time the opportunity to discover the natural environment and to acquire knowledge about fauna, flora, the interaction between these elements. Even if the area protected by law is reduced, there is still a will to protect the natural environment which represents a guarantee of the quality of the environment in the future, an essential criterion for ecotourism development [19]. The natural assets of protected areas in Suceava area, in order to develop ecotourism, are undisputed and can be a real market. To these may be added to residential accommodation in traditional cuisine and last but not least, the vocation of welcoming hosts which is a characteristic of the locals.

### 2.10. The benefits of practicing ecotourism

Eco tourism is a viable alternative to "traditional" tourism that has managed to concentrate a large number of individuals in relatively small spaces, with associated negative issues. Practicing this form of tourism will be a recognition of the fact that in the Suceava area there are a multitude of landscapes and possibilities apart from those offered by the cultural resources, with historical resonance. Ecotourism and the forest ecotourism in particular will dissipate to a larger extent the tourists in the area, avoiding overcrowding of some areas and thus there will be eliminated negative impacts, tourism pressure on both sites and the host population. Another advantage is that the infrastructure [20] - [21]. Which is necessary for this type of tourism needs a tourism capital lower than the "classic" one. In fact, this infrastructure is developing around protected areas, consisting of hostels and hotels with a small capacity, access roads on less frequented routes. Viewed from this angle tourism development should be aiming to achieve a closer link between objectives and the need for environmental protection.

Solutions should be found on a regional scale which should not be harmful for biological balance of different types of plant associations and also not to hinder the development of tourism. Measures will be fully effective only if they are taken with a full knowledge of the subject which means after carrying out detailed studies on the impact on the natural environment.

Ecotourism, by the principles it promotes, is not yet a form of tourism that attracts large numbers of people. Therefore, it will remain as a complementary form of "classic" tourism. It draws only a specialized group of tourists (geographers, geologists, biologists, botanists) and a small part of ordinary tourists who wish to diversify their activities during their stay. The existing natural resources of tourism in the city of Suceava and the surrounding area has a valuable fund which, through qualitative and quantitative characteristics is favorable for tourist use.

The main elements of the natural environment providing tourist suitability are given by hilly terrain, with hills between 300-500m, the cuestas and structural plateaus, inter-sprinkled with panoramic views and the valley of Suceava with its terraces distributed on both sides; to this we add the favorable climatic conditions, especially during the summer period, a rich hydrographic network consisting of streams and ponds, arboretum and forests surrounding the Șipote park with specific wildlife.

All these elements provide a valuable tourism potential that allows the practice of various types of tourism, from the relaxation tourism to leisure tourism, weekend tourism, scientific and educational one. Suceava can be considered as the tourist capital of Bucovina because it is the starting point for the wonderful and charming area of Bucovina hosting unique painted monasteries which belong to the UNESCO World Heritage

### 3. PROBLEM SOLUTION

The research conducted in conjunction with field visits and observations allowed us to do a SWOT analysis in which we identified a number of strong points weak points opportunities and threats.

As strong points and opportunities we identified the possibilities offered by the biogeographic elements for scientific tourism, knowledge, investigation and research for professionals in various fields. The protected areas provide elements of great interest - rare plants, century-old trees, species of fauna - which can be known by visitors during tourist trips. We recommend the forms of organized tourism which have an educational value as well as those carried out under the guidance of specialists: biologists, environmental agents, foresters, geographers and other authorized persons in the field. There was a very good ecological status of protected forest ecosystems in the reserves of Dragomirna Crujana and Zamostea.

They provide environmental conditions of forest knowledge, to practice hiking, ecotourism activities, relaxing, resting, and sports activities organized on marked trails, which strengthens the body (orientation contests, shooting, cycling). The existence of cultural attractions in the area makes it possible to practice a versatile travel [3] (complex).

The weaknesses and threats are caused by legislation and management, and the second due to human activities and tourism. The reserves located in agricultural areas by restricting are threatened with the decrease of the protected areas (Nice, Calafindesti). This is an effect of the Land Law that led to the return of private land. In some cases, especially where protected areas are administered by local authorities, the lack of security and monitoring of reserves leads to aggressive actions by community members. Thus, illegal farming activities, and forestry are carried on. For all flora reservations grazing activities are recorded, mowing and harvesting protected species. Among the species which are sold we can mention the tulip, a plant that has long restricted its area and the pasqueflower is increasingly rare. Another matter of preserving biodiversity in these areas relate to aesthetics,

protection and landscape protection, environmental components in general. In this sense, pollution is present in these areas due to tourism weekend of the picnic sites in the pasture, but also visitors and locals negligence. The impact of these actions and the inaction of the authorities result in the degradation of soil and vegetation from fire, pollution, waste of water resources, landscapes.

Table no. 2. The management of reservations.

Nr. crt	Reserve	Type reserve	Custodian	Sit Natura 2000 which is overlaid on the reserve
1.	Secular hayfields Ponoare	Flora species of community interest	Agency for the protection of environment Suceava	Secular hayfield Ponoare
2.	Secular hayfields Frumoasa	Flora species of interest for community	Suceava Agency for the protection of environment	Secular hayfield Frumoasa
3.	Forest (Quercetumul) Crujana	Secular oak	Forestry Department Suceava	-
4.	The hayfields from Calafindești	Species of interest for community	Local Council	-
5.	Beech of Dragomirna	Secular beech	Forestry Department Suceava	Oak Dragomirna
6.	Zamostea-Meadow forest	Meadow trees	Forestry Department Suceava	Forest Zamostea-LMeadow

Regarding the management of protected areas (Table no. 2.) although there are plans made, this requires a greater involvement of authorities and policy makers at local and county level, application and enforcement of legislation concerning the exploitation [21] - [23], control and monitoring of protected areas. The management of protected areas in Suceava area must be consistent with the framework established by the IUCN. In this respect the following measures are necessary: monitoring scientific research, protection of species and habitat, providing recreational facilities, sustainable resource management, promoting participation in decision making, monitoring behavior and attitudes of visitors and local population [24]. The above - mentioned desiderata can be achieved through sustainable development of local communities, which is a priority of quality of life, the way they develop and manage their resources. At the same time, aspirations are also a challenge in the sense that a community must be responsive to internal and external transformations and changes that can affect their adapting to local initiatives and strategic actions [25].

#### 4. CONCLUSIONS

The biogeographical resources of Suceava and its surroundings are of special scientific and tourist value. The composition of plant associations, the presence of endemic and relict plant, shrub species size, color of the landscape during the flowering hayfields, biocenoses structure associated with various species of animals, indirect attractiveness of the forest, topo climate, fresh air and ozone, increase the connection between human and nature, reflected on the spiritual side. All these elements associated with the hilly landscape, cultural, historical and ecclesiastical goals provide a valuable and versatile tourism potential that allows the practice of various types of tourism: investigation, training, knowledge and information, rest and relaxation [3].

For the future, in order to preserve biogeographic elements and development of tourism activities projects aiming at efficient development measures should be carried out.. The measures must be found to harmonize ecological balance of different types of flora and fauna associations and tourist exploitation ability. They will be fully effective if they are knowingly decided which means after carrying out detailed studies on the impact on the natural environment. Suceava – the county capital - can be considered as the capital's tourist area, not only by natural and anthropogenic value, but also because it has a tourist infrastructure [19]. now sufficiently developed for representing a node of communication routes and key destinations for the transit region and international tourism [4].

#### APPENDIX

Appendix I – Schiță de hartă „Protected areas from the region of Suceava”

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## ABBREVIATIONS

APM – The Agency for the Protection of the Environment  
 Cf. – according to  
 Coord. - coordinator  
 Fasc. – fascicle  
 m – meter  
 Nr. – No. – number  
 OM – Ministry Order  
 pp. – pages  
 SWOT.....the analysis of strong and weak points  
 UICN – The world Conservation Union/ Uniunea Internațională pentru Conservarea Naturii  
 UNESCO – United Nations Educational, Scientific and Cultural Organizations  
 vol. – volume

### 1.\*Invest in people!

This paper was presented thanks to POSDRU/88/1.5/S/61150, "Doctorate studies in life and earth sciences", a project co-financed from Social European Fund through the Sectorial operational programme "Developing human resources 2007-2013".

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