

# The Natural Tourist Potential in the Bilbor Depression

**George-Bogdan TOFAN<sup>1</sup>**

<sup>1</sup> Babeş-Bolyai University, Faculty of Geography, Cluj-Napoca, ROMANIA

E-mail: [george.tofan@ubbcluj.ro](mailto:george.tofan@ubbcluj.ro)

**Keywords:** *mineral waters, moffette aureole, temperature inversions, „borviz swamps”*

## ABSTRACT

Bilbor is a depression region, located between three mountainous massifs which surrounds it as walls do to a citadel. The depression is opened to all the cardinal points for practicing mountainous tourism as through its particular beauty it offers beautiful scenery to the visitor, with the fir trees coming down to the outer boundaries of the commune, inviting to hiking tours. The relief of the depression and its surroundings present a very diversified and equally, highly picturesque scenery that fully rewards the tourists' curiosity.

## 1. INTRODUCTION

Bilbor is a dam volcanic depression, located in the Eastern Carpathians, in their central group, between the Mesozoic-Crystalline area and the Neogene eruptive of Căliman Mountains, along the superior course of Bistricioara River. From the administrative point of view, the research area overlays the territory of the commune of Bilbor, the most northern settlement of Harghita County as well as the highest altitude settlement in the county, the precincts of the depression being located at about 950-1050 m altitude, thus being included in the group of high altitude settlements in our country.

In the northern and eastern part, Bilbor Depression is enclosed by Bistrița Mountains, in the southern part by Giurgeu Mountains and in the west by Căliman Mountains.

Being located inside the moffette aureole of Căliman-Harghita mountains, we can observe the existence of an important mineral water deposit, stored especially in the crystalline limestone from which most springs appear. Like other depressions, Bilbor Depression represents a connection nucleus between Transylvania and Moldova through mountain passes; under the Păltiniș and Bursucăria peaks it connects to

Drăgoiasa-Glodu Depression and along Bistricioara Valley, through Tulgheș pass it is ensured the connection to Neamț County. The communication with Borsec Depression is made through Bistricioara Valley as well as with the Giurgeu Depression through the pass of Mestecăniș, then Secu-Gura Secului narrow pass.

## 2. MATERIAL AND METHOD

The main methods used to evaluate the natural tourist potential of the Bilbor Depression were based both on the classical research methodology (dialectic method, deductive method), and on a series of modern methods such as diagnostic analysis and SWOT analysis. Through the diagnostic analysis there were identified and emphasized a series of factors which could encourage or restrict the development of tourist activities within Bilbor Depression, as well as the necessary measures that should be taken along with the efficient planning decisions in order to ensure the optimum level of development. Using this method, through direct observation in the field, there can be identified and drawn up a series of tourist elements describing the area from the localization point of view (accessibility, transport and communication, connections with other sub-systems), relief

(morphometric and morphologic elements), climatic characteristics (temperature regime, rainfall, solar radiation value, the air's quality, the snow's thickness), hydromineral and hydrological resources or simply from the point of view of biogeographical elements variety.

Eventually, all these elements represent an essential parameter of attraction, of different importance level according to the quality-quantity report present in their individual structure.

The SWOT analysis represents the starting point in conceiving and adopting the final decisions regarding plans and development strategies, on short, medium or long term.

The elements, parts of the natural frame, are capable of influencing an important part of the actual or potential tourists. All the outdoor activities, through determined territorial planning activities, have a significant role in changing the landscape, by sustaining its anthropogenic development.

### 3. RESULTS AND DISCUSSIONS

*The morphology potential for tourism* is reflected by the landscape's elements, the traits of the lithological substratum influenced by the action of the external factors, thus creating geographic diversity with distinct personality which forms certain categories of landmarks attractions.

The importance of relief for tourism is particularly illustrated by the remarkable number of geographic forms which, at the individual level or that of landscape associations, display multiple attractions. Among these, we can mention: slopes, ridges, passes and passages, defiles and craters.

For those who love nature, especially the mountainous regions, the mountainous frame of the region that includes the Căliman volcanic mountains and the Bistrița and Giurgeu heights offer spectacular and picturesque landscapes.



Fig. 1. Bilbor Depression-scenery view.

In the eastern part, the mountainous frame consists of Bistrița Mountains basically formed of crystalline limestone, these being the most massive as well (Harlagia peak, 1566 m). Here, tourists can notice the line of trenches and graves of the fallen soldiers of the First World War in the battles for liberating Ardeal region.

Towards the west, the sides of the Căliman Mountains have various aspects, the eastern side, raised above the depressions Bilbor and Drăgoiasa to a plateau of lava, dominated by large hillocks. The presence of a prominent caldera (10 km), marked by the peaks Pietrele Roșii, Tămău, Rățiș, Voivodeasa, Căliman Izvor, Căliman Cerbu, is dominant in the volcanic

landscape. Due to its geographical position in the mountainous area, Bilbor Depression also includes some sectoral transverse valleys represented by the Bistricioara Defile, a combination between the landscape's value and its role as the entrance/exit point of matter, human and information flows from the Northern side of the depression in the central part of the Eastern Carpathians. The landscape of Bilbor Depression is defined by the difference in altitude between the lower elevation, situated in Bistricioara Defile at the exit of the depression (860 m) and the upper one (1566 m), situated on the mountainous frame in the eastern part, with a value of over 700 m.

The village can be crossed, from south to north, along the Bistricioara Valley towards Aluniș pass or Bruscăria peak, to get to the Dorna Depression along the old road that used to link Ardeal region to the old kingdom. Towards the west you can reach the Căliman Mountains, which have its own charm.

Towards Moldova region, on the north-eastern side of the Căliman Massif, at the joint with Bistrița Mountains, the hiker will find out depression basins which favoured the setting up of important human settlements: Drăgoiasa, Păltiniș, Glodu, Panaci, where the population is grouped and connected to the valleys and paths along the high fields leading through hayfields, pastures, woods and clearings to the alpine gaps.

*The climatic potential for tourism* is directly influenced by the relief's position and can influence by stimulant or restrictive effects along with other elements of the natural potential, thus encouraging the development of certain types of tourism.

Being a concave form of relief it is characterized by higher air humidity, frequent dew deposits, calm atmosphere, evident thermal contrast between day and night, summer and winter, lower precipitations than in the surrounding mountains and also through temperature inversions.

Even though liquid precipitations are an unfavourable factor, therefore obstructing the development of the tourist activities in various forms, snow precipitations have a contrary effect.

They generate not only a beneficial state for tourism, but they create a particular condition intensely exploited for several recreation activities (skiing, sleighing), being able to practice them without having specially built tracks.



Fig. 2. Perfect places for ski lovers.

The annual average number of snowy days is of over 25, the annual average number of days with snow layer is of over 100 and the multiannual average thickness of the snow layer is of 50 cm.

From the bioclimatic point of view, the main values undergo a series of modifications in Bilbor Depression. Therefore, during summer the thermal comfort increases following the high temperature and the decrease of the atmospheric circulation. The air baths are similar to those in the open areas, but dynamically they are usually aerostatic or moderately dynamic.

The bioclimatic stress has relatively low values especially the cutaneous one. In winter, due to the low temperatures, it is stressful and hypertonic. There can be noticed a positive-negative ions charge with a remarkable presence of resinous aerosols due to the fact that the thermal inversions lead to an inversion in the forestry vegetation floors as well (the coniferous trees reach the depression area). The bioclimatic conditions within the depression are generally tonic, stimulating, slightly relaxing due to the shelter provided by the surrounding mountains.

Therefore, the mountain cure is recommended in anaemia, convalescences and insomnia and, up to -1000 m this bioclimate is recommended to those suffering from acclimatization deficiency of the cardiovascular system and respiratory system.

Regarding *the water resources potential for tourism* within the analyzed territory, it is emphasized the importance of the mineral water resources with particular properties, the peaty silts with mineral waters, and also Bistricioara River, a good place for fishing practice.

Bilbor mineral waters fall into the category of bicarbonate soda (*borvizuri*), located in the moffette aureole of Căliman-Harghita mountains, where the most interesting and rich deposits of this kind in our country are located.



Fig. 3. Mineral water spring Simion Lungu.

Throughout the depression the mineral water springs are located to the west of it, on the right side of Bistricioara River and forms a relatively small area, where there are about 15 mineral water dawns, stored



mostly in the hollows fir (*știubea*) or concrete pipes. Most springs bear names that belong to local people with important contributions in hydrographic sources and affirming care.

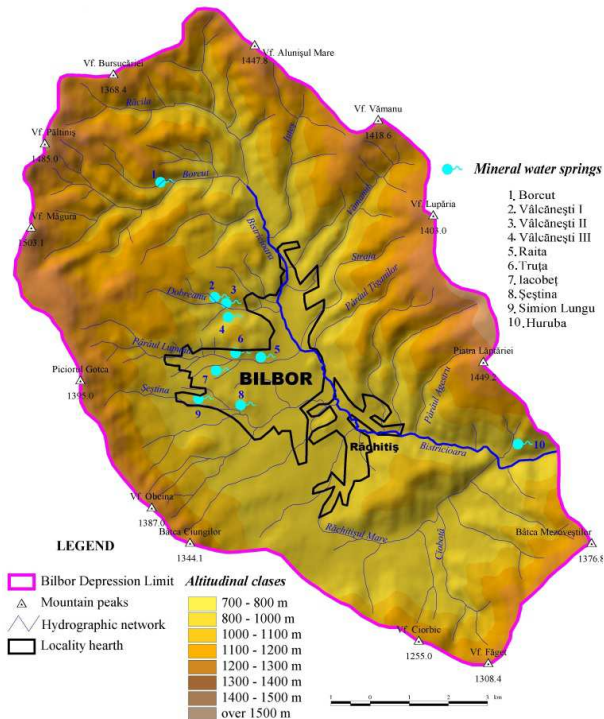


Fig. 4. Location of mineral springs in the Bilbor Depression.

The most important springs are: *Simion Lungu*, *Șeștina*, *Iacobet*, *Raita*, *Truța*, *Vălcănești*, *Borcut*, *Huruba*, each of them presenting distinct particularities. The mineral water spring of Simion Lungu is the only water resource that stands out by its definite continuity and intensity of CO<sub>2</sub> emission, characterized by its “noisy boiling” aspect.

The mineral water is recommended in the affections of the digestive tube and the corresponding glands, in curing the digestive hyperacidity and the chronic affections of the renal apparatus and urinary tracts. Some of the mineral water sources contain water, which is indicated in treating neurosis, physical and mental overexertion, such as the Vălcănești spring.

The popular name for the mineral water from these springs is called „borcut” and „borviz”.

Near the mineral water source Vălcănești there are two basins called by the locals „Băile Dobreanu”, with waters rich in carbon dioxide, calcium, magnesium, hydrogen sulphide, indicated for the treatment of rheumatic pain in external cure. Currently they are used only by elderly residents, except during the summer.

Here we also find the „Borviz swamp of Dobreanu”, (eutrophic swamp), declared a natural reserve, situated at an altitude of 910 m, with a thick peat layer of 2.3 m, powered by carbonated springs, an area that contains a series of glacial relicts: dwarf willow

(*Salix repens*), birch (*Betula nana*), Siberian tongue (*Lingularia sibirica*), clover otter (*Manyanthes trifoliata*).



Fig. 5. Lady's slipper and dwarf birch.



Fig. 6. „The Dobreanu borviz swamp”.

The specific climatic conditions, the complex geological composition and the landform diversity reflect in the vegetation of Bilbor Depression. The natural resources it provides are exploited in the pastoral economy and forestry.

An item of particular importance in the basin is the natural forest, the spruce (*Picea excelsa*), being dominant in proportion of 85-90%, sometimes their upper limit being anthropogenic, following pastoral activities. Then the fir (*Abies alba*), at a more modest rate, the pine (*Pinus sylvestris*), the larch (*Larix decidua*), the juniper (*Juniperus communis*). Among the rare species, there can be mentioned quite exceptional examples of yew (*Taxus baccata*).

Hardwoods are rare in the category: dwarf birch (*Betula nana*) and dwarf willow (*Salix repens*), glacial relicts existing in the „borviz swamp” of the Dobreanu Creek and the confluence of Rușilor Creek with Bistricioara, being species characteristic of tundra zone.

The peat in swamps caused by the advanced decomposition can be used in balneotherapy. Among the rare grassy plants within the depression we can mention: the lady's slipper (*Cypripedium calceolus*), the mountain globeflower (*Trollius europaeus*), the Siberian golden ray (*Lingularia Sibirica*), and the bog-bean (*Manyanthes trifoliata*).

The presence of herbs and forest fruits which find proper conditions in the Bilbor Depression is not without an interest, among these we can mention: cowslip (*Primula veris*), yarrow (*Achillea millefolium*), arnica (*Arnica montana*), oregano (*Origanum vulgare*), tutsan (*Hypericum perforatum*), fireweed (*Epilobium angustifolium*), bilberry (*Vaccinium myrtillus*), redberry (*Vaccinium vitis-idea*), barberry (*Rubus grosularia*) and raspberry (*Rubus idaeus*).

Regarding fauna, the forests around the basin have important hunting resources that are rationally exploited, thus maintaining ecological balance between species.

Here we can find the Carpathian maximum density areas in the country of species like: bear (*Ursus arctos*), wolf (*Canis lupus*), Carpathian stag (*Cervus elaphus carpathicus*), lynx (*Lynx lynx*), wild boar (*Sus scrofa*), deer (*Capreolus capreolus*), fox (*Vulpes vulpes*), hare (*Lepus europaeus*), polecat (*Mustela putoris*), capercaillie (*Tetrao urogallus*), hazel (Aquila chrisaetos).

The aquatic fauna in Bistricioara hydrographic basin is important and it consists of trout (*Salmo Trutta fario*), grayling (*Thymallus thymallus*), minnow (*Phoxinus phoxinus*), bullhead (*Cottus gobio*), gudgeon (*Gobio fluviatilis*). The involvement in wildlife tourism is much stronger and more direct in some forms of its practice. Hunting and fishing trips are envisaged.

Hunting tourism is practiced by a particular category of participants, relatively small in number.

The main recreational and hunting activities are given by the presence of large animals or those with valuable fur. Trophies are one of the key motivations of its practice. Target animal species are brown bear, fox, Carpathian stag, deer, wild boar, grouse, marten, etc.

Angling has its group of practitioners and it is carried on along the streams and fisheries. Among all the species, the trout is primarily caught. Unfortunately the species of the Depression Bilbor are constantly reducing their numbers, due to pollution resulting from wood processing waste and accidental discharges of toxic substances in water, which destroyed not only the fish fauna but also its food resources.

The special sensitivity to this anthropogenic impact, however, imposes stringent measures to control hunting and fishing by providing a status of absolute protection of those endangered species.

Bilbor Depression provides a natural setting, with opportunities for access through a series of tourist routes, to all directions. Its barely touched natural green spaces, the presence of mineral springs, the botanical reserves like the „Dobreanu borviz swamp” and dwarf birch reserve, the vast forests of spruce, with large meadows, with mushrooms and berries, they are all part of the strengths of the depression.

Among the weaknesses there can be noted: inadequate financial resources, lack of concern from citizens and local authorities on environmental conservation, low recovery of mineral water springs, the unmodernized main access road Toplița-Bilbor, poor maintenance of roads, deforestation with negative consequences in changing landscape.

The opportunities that can be mentioned are: building a tourist and leisure complex in the village, encouraging new forms of tourism (recreational, rural, and ecological), exploitation of medicinal plants, mushrooms and berries and winter sports opportunities.

In the threats category there can be included the weak promotion of the area in order to attract tourists, the driving to extinction of plant and animal species as a result of irrational deforestation, environmental pollution due to forestry activities and storage in unsuitable places, inappropriate exploitation of mineral water springs.

#### 4. CONCLUSION

Being a remote settlement, its tourism development has always stayed under the sign of regress and only in the present have there been efforts to get over this difficulty more easily.

The absence of a connection between Toplița and Vatra-Dornei via Bilbor leads somehow to the isolation of the commune, this being a terminal station, not a transit one. The existence of a connection to the northern part of Moldova towards Vatra-Dornei would bring the commune out of isolation and would shorten

the distance between Toplița and Vatra-Dornei with more than 100 km, this representing one of the few solutions for the development of the commune.

Thus, local mineral waters represent the business card for this area, which is why we believe that this constitutes the essential prerequisite of tourism development which will lead to a particular type of accommodation and travel to a specific type, namely spa tourism.

In 1955, the Bilbor settlement was declared „resort (spa) of local interest”, but due to reduced accommodation capacity, lack of equipment and spa facilities, as well as medical centre, determined Bilbor to become a health resort with no treatment facilities. With the launch of mineral water Bilbor on the market, this town receives an intense media coverage that will propel future spas in the category of those of national and even international interest. Here it is possible to achieve a treatment centre and spa complex, which besides ensuring proper treatment it will give us the opportunity for relaxation and leisure time throughout the entire year.

Therefore, we think it would be useful for the competent authorities to give greater importance to the future therapeutic use of mineral waters from Bilbor, given that they, in term of composition are not left with anything from the Borsec mineral waters.

## 5. ACKNOWLEDGEMENTS

Investing in people!

Ph.D. scholarship, Project co-financed by the SECTORAL OPERATIONAL PROGRAM FOR HUMAN RESOURCES DEVELOPMENT 2007 – 2013

Key area of intervention 1.5: Doctoral and post-doctoral programs in support of research;

Contract POSDRU/88/1.5/S/60185 – “INNOVATIVE DOCTORAL STUDIES IN A KNOWLEDGE BASED SOCIETY”

Babeș-Bolyai University, Cluj-Napoca, Romania.

## REFERENCES

- [1] **Ciangă, N.** (1997), *Turismul din Carpații Orientali. Studiu de Geografie Umană*, [Tourism in Eastern Carpathians. Study of Human Geography], Presa Universitară Clujeană, Cluj-Napoca.
- [2] **Ciangă, N.** (2002), *România. Geografia Turismului*, [Romania. Geography of Tourism], Presa Universitară Clujeană, Cluj-Napoca.
- [3] **Tofan, G. B.** (2010), *Apele minerale din Depresiunea Bilbor* [Mineral waters in the Bilbor Depression], Contemporary Trends in Teaching and Learning Geography, the 5th Edition, Volume 9, Presa Universitară Clujeană, Cluj-Napoca.
- [4] \*\*\* (1984), *Geografia României, II, Geografie Umană și Economică* [Geography of Romania, II, Human and Economic Geography], Editura Academiei R.S. România, București.
- [5] \*\*\* (1987), *Geografia României, III, Carpații românești și Depresiunea Transilvaniei* [Romanian Carpathians and Transylvania Depression], Editura Academiei R.S. România, București.
- [6] \*\*\* (2005), *Mic Dicționar Enciclopedic* [Small Encyclopaedic Dictionary], Editura Univers Enciclopedic, București.