



EVALUATION OF FLORISTIC DIVERSITY OF DAJTI NATIONAL PARK

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SYNOPSIS

The biodiversity of Dajti National Park (Second category of IUCN), as one of the most important and interesting protected areas in Central Albania, is extremely high, not only in terms of floristic richness but in habitat types too. There are estimated not only some important general quantitative indicators of biodiversity, species and families richness, but qualitative as well, like biological and chorological forms and spectrum and presence of threatened species, based on the IUCN classification. This area is characterized, from our surveying, by a high level of the biodiversity. There are found 921 vascular plant species, distributed in 93 families, or 28.5% of the Albanian flora is found in only almost 1% of its surface. Biological and chorological spectrum analyze attests this region as an intermediary zone between Mediterranean and Sub-Mediterranean climate region. Dynamic viewpoint, flora of Dajti National Park is going toward degradation stages, because of fires, overgrazing, intensive harvesting and intensive traditional land use. In order to improve not only tourist values but scientific so far, taking into consideration the actual situation, would be important the implementation of a sustainable and multifunctional management plan based on the zoning principles of IUCN per protected area.

INTRODUCTION

Dajti National Park is one of the richest floristic areas in Central Albania. Located c.a. 5 km in northeastern part of Tirana city (capital of the country), with an area of 29347 ha, is represented by Dajti Mountain (1613m), Brari mountain (1513m) and Priska mountain (1365m). According to its high values of biodiversity, Dajti

National Park is considered a Corine Biotop (Site complex, kode Q07200100), very important for Albania.

This area belongs Skenderbej edge, composed mostly from calcareous stone, but up to the high of 500-550m, it is represented from sand stone and pudding-stone. NW-SE oriented, main altitude relatively high, (3-4 mountains highest 1500 m over the see level), various relief shapes, as well as cutting by profound valleys, create various micro-climate situations, in space and time. For the characterization of the general climate of this area and differences between low and upper part of Dajti National Park, Gaussen index is calculated. Two meteorological stations are taken in consideration (Dajti Mountain and Tirana meteorological stations:

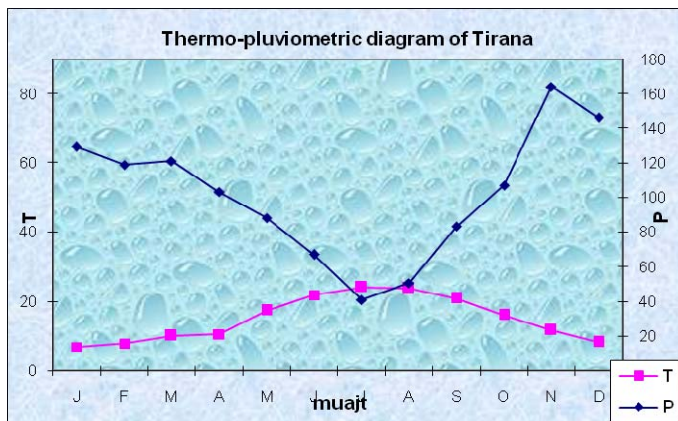
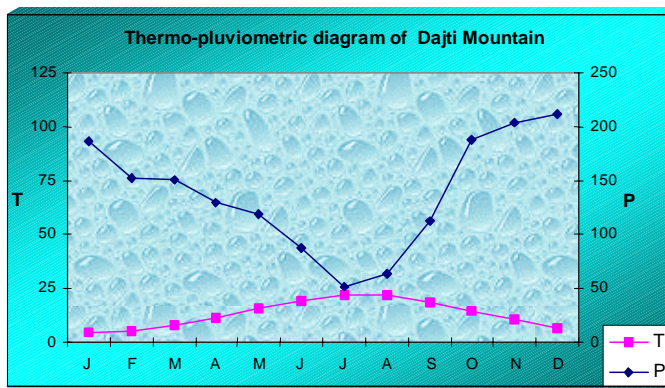


Fig.1 Thermo-pluviometric diagram (Gaussen indexes per Tirana and Dajti Mountain meteorologic station)

As it is shows in climatic diagrams, different climate conditions, with aridity (low part) and without aridity period in saummer gives this area an interesting and variability in altitudinal vegetation belts. The typical evergreen sclerophyllous shrub and forest belt, termophyllous broadlives forest belt (Oak forests), mesophyllous broadlives forest belt (Beech forests) and mountainous pastures belt in only one mountainous slope are found.

The climate conditions are appropriate for a good growth of forest species.

The main objective of this research is the inventory of flora in the respective area, as a most important steps to recognize different vegetation types (vegetation associations Braun-Blanquet sensu strictu), present in the area. The aprofondy scientific acknowledgement of vegetation types and their dynamism constitute the first important step for the sustainable management and rehabilitation of the vegetation (prone of degradation and erosion) of Dajti National Park.

METHODOLOGY

The study is realised in three following phases:

- a) Preparatory phase
- b) Analitic phase or the phase of data gathering (field work)
- c) Syntetic Phase or statistical analyse

Through the random sampling design necessary data are gathered in the/method, aiming to cover all vegetation types found in the repsective field study, as the following: hornbeam, .mediterranean shrub, oak forest beech forest etc. The releve has been the unit area of data gathering, which is the smollest area that the main characterisitics of the stand represents. The size of the releve, per vegetation type, is calculate based on the "minimum area", the position of the releve by the "marshrut" method is identify. All the vegetation types are represented on the sample design, as is mentioned above.. Is estimated that the minimal area achieve from 4-5m² (grass vegetation) to 100-200m² (forest vegetation)

All the plant species are inventoried within the releve area, without taking in consideration their practical properties. Per each plant inventoried the A-D index (Braun-Blanquet class) is identify too.

The gathered plant species are herbarised and identify, based on Albanian flora, Excursionist Albanian flora, Tirana's flora, Albanian trees and shrubs European flora, Italian flora etc.

Per each plant specie, there are given on the field card, biological form and corological form, in order to have an idea over their biology and natural area distribution. (Vangjeli 2003).

The assesment of conseravtion and endangerment status, through IUCN classification-Albanian red Book, has been done. (Libri i Kuq i Shqipërisë 1997). Other important informations are use so far (Markgraf, 1927, 1932, Flora e Tiranës 1962, Shkurti G., 1997, Dyrmishllari I., 2003)

RESULTS

There is found in this area a high variability of ecological diversity, represented by different vegetation types, as evergreen shrub formations (*Quercetalia ilicis*), mono culture or mix hornbeam stants (*Carpinion orientalis*, *Ostryo-Carpinion*), beech stands (*Fagion illyricum*), typical and interesting rocky vegetation of (*Ramondion*, *Satureion*), and grasslands (*Cynosurion*), distributet in four vegetation belts as evergreen

Mediterranean belt, thermophyllous broadlives belt, mesophyllous broadlives belt and mountainous pastures belt.

This variability in vegetation types encompass a very rich flora, given on the table below:

As result, the flora of DNP is compound by 900 vascular plant species, or 28% of Albanian flora. Taking in consideration the relatively small area of DNP (29347 ha) this variability must to evaluated considerably rich.

Is estimated that this number could be higher if the number of releves could be more and regularly distributed. There are still zones, difficult to reach, which are not enough covered by the releves. On the other hand the area od DNP, recently, is enlarge.

Regardless of the different number of species within the families, each of them represents biodiversity values. The most important are its which have few individuals or iits which are described on the Albanian red book.

On the DNP strategy and sustainable management plan for this species are forseen activities of priority protection and rehabilitation (in situ, ex situ).

Looking to the floristic list of DNP, beyond very valid species, in terms of used values, timber and wood production, medicinal values, recreative properties, geo-fond conservation, the vegetation frequently is prone of degradation and the slops prone of erosion and desertification. A lot of degradation bio-indicator species are present on this area.

The presence of a considerable thorny and dry tolerant species, as *Prunus spinosa*, *Pyrus amygdaliformis*, *Paliurus spina-cristi* *Rosa sempervirens*, *Rosa canina*, *Rubus ulmifolius*, *Ononis spinosa*, *Pyracantha coccinea* etj. dhe e atyre thatësi-duruese si *Salvia officinalis*, *Dittrichia viscosa*, *Cistus incanus*, *Cistus salvifolius* etj., are reflection of overgrazing, fires and intensive cutting on the past (Zall Bastar etj.).

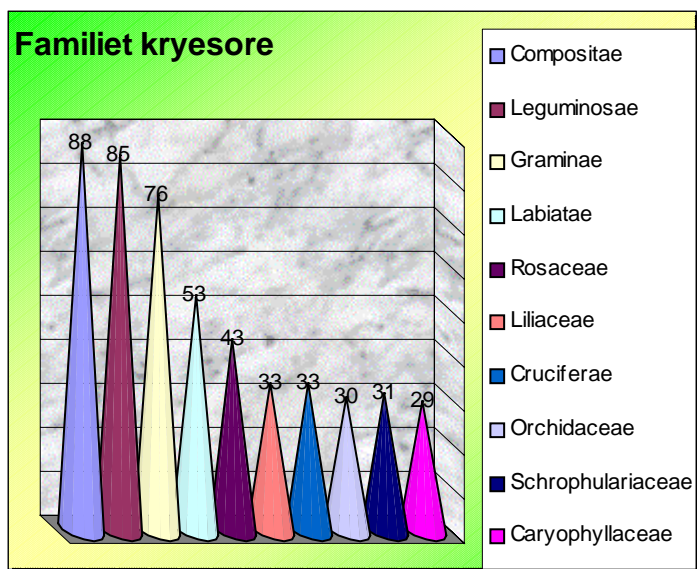


Fig. 3 Distribution of species according to families.

On the new conditions and the efforts to increase the tourism and scientific values of DNP, is important the implementation of “close to nature” silviculture treatments, especially for the Beech (*Fagus sylvatica*), Balkan pine (*Pinus leucodermis*), Barbed Oat (*Atropa belladonna*), Common Sage (*Salvia officinalis*), Chestnut (*Castanea sativa*) etc.

It would be mentioned a number of naturalized species with ornamental and recreative properties, like *Mentha pipërita*, *Laurus nobilis*, *Vinca minor*, *Acacia dealbata*, *Acer negundo*, *Cydonia oblonga*, *Iris germanica*, *Mentha x pipërita*, *Olea europaea var. europaea*, *Vitis vinifera* etj., which increase the biodiversity value of DNP.

In addition, the biologic and chorologic spectrum, perform better the overview of DNP flora.

Percentagewise values of biological species clearly demonstrate the intermediary position of the area, between Mediterranean and Sub-Mediterranean climate belts.

As is shown on the below grph, flora Of DNP is dominated by Hemichriptophytes (H), Therophytes (T) and Geophytet (G), in logical ratio, evidencing the variability of the present vegetation types.

Phanerophytes (Ph) have a particular importance as the edificator of forest and shrub vegetation, monophytic, biphytc e poliphytic as well.

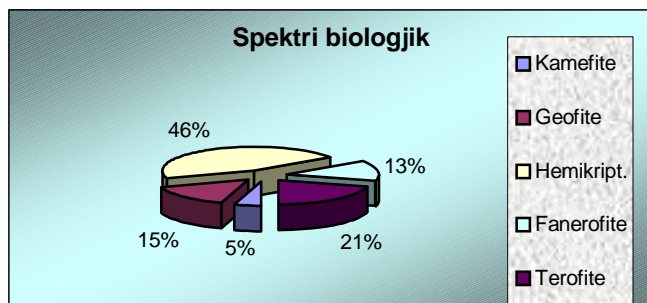


Fig.4 Biological spectrum

Meanwhile, natural for the geo-position of the DNP, chorological spectrum from the Eur/Mesditerranean origin species is dominated.

Some unnatural examples, the presence of some mediterranean species in relatively high altitude, are closed conected with degraded processes in some areas.

Furthermore, the elevated Euraziatic and European species indicate the “entertainer” character of this area, in terms of farthest or sub-cozmopolit species.

The high presence of the Balkanic species witness the specific character of the DNP flora.

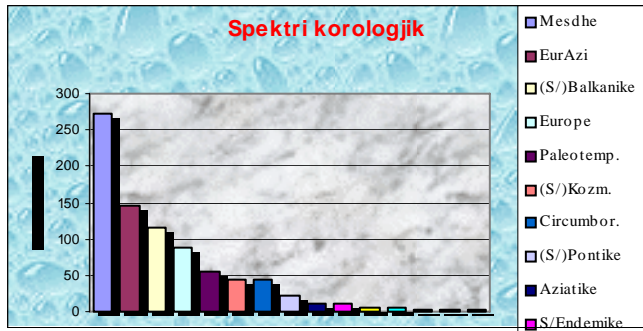


Fig. 5 Chorological spectrum

Looking from the side of the Albanian Red Book (Vangjeli, Ruci, Mullaj 1997, 1997), there are a considerable rare, endangerment and endemic species (IUCN classification), result of specific natural micro-environments, but also because of the careless management, and the lack of the policies and strategy, concern the rehabilitation and conservation of biological diversity.

There are identify, on the new strategy of DNP, *Agrimonia eupatoria* L. (E), *Atropa belle-dona* L. (E), *Cerastium grandiflorum* W. et K. (R), *Chamaecytisus tommasinii* Roth (R), *Colchicum autumnale* L. (E), *Colchicum ligulatum* Boiss et Spruner (K), *Corylus colurna* L. (E), *Dictamnus albus* L. (E), *Digitalis lanata* Ehrh. (E), *Dryopteris filix-mas* (L) Schott (E), *Fritillaria macedonica* Bornm. (R), *Hypericum perforatum* L. (E), *Ilex aquifolium* (R), *Juglans regia* L. (E), *Juniperis communis* L. (E), *Laurus nobilis* L. (E), *Orchis albanica* Goelz. et Reinhard (R), *Orchis sp.divaricata* (L.), R., Br., (E), *Origanum vulgare* (E), *Pedicularis brachyodonata* Schlosser et Vuk (R), *Pinus sylvestris* L. (E), *Quercus ilex* L. (E), *Ramonda serbica* Pancic (R), *Salvia officinalis* L. (E), *Sambucus nigra* L. (E), *Satureja montana* L. (E), *Taxus bacata* L. (Ex?) to be object of *in situ and ex situ conservation*

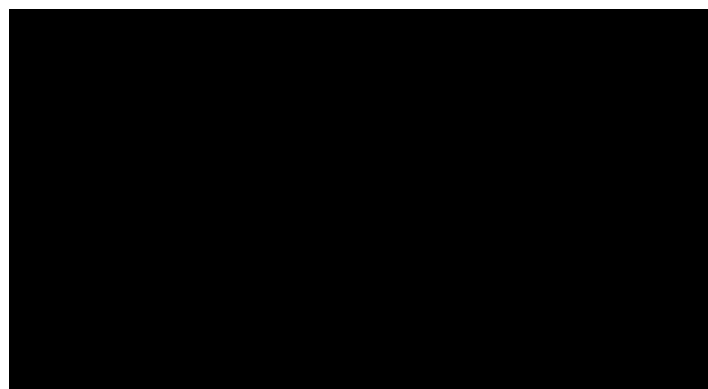


Fig.6 Distribution of ndangered species according to IUCN categories

The draw of a specific red list for DNP is needed, because some species, even not part of Albanian red book are, specific and under the risk within the area park. Could be mentioned as most important: *Pinus leucodermis*, *Quercus trojana*, *Teucrium arduini*, *Viscum album*, *Allium ursinum*, *Narcissus poeticus*, *Laburnum alpinum* etc.

The DNP flora become more interesting, taking in consideration the fact that some species are described to be present within DNP territory, from other foreign botanists (Markgraf 1927), but which are still not confirmed on the actual Albanian or European lectures. Could be mentioned: *Campanula pallescens*, *Centaurea rhenana*, *Colchicum kochii*, *Dactylis hispanica*, *Fumana procumbens*, *Geranium tinctorium var. virgata*, *Gladiolus reuteri*, *Lycopodium clavatum*, *Myosotis alpestris*, *Rubus nemorosus*, *Rubus candicans*, *Berberis vulgaris*, *Centaurea rhenana*, *Erysimum helveticum*, *Erysimum strictum*, *Orchis morio susp. picta.*, *Sternbergia lutea etj.*

CONCLUSIONS

- Thanks geo-physic position, soil components, micro-climate variability as well as human impacts DNP is floristic richness area. The presence of 900 vascular plant species is a very clear indicator of biological diversity richness.
- DNP area is home of a lot species very important for Albanian gene-found, especially of these rare, endangerment, endemic or medicinal plants.
- Being in proximity of Tirana city (capital of the country) and some universities, DNP play an important role on the environmental education of the population, students and pupils. In this frame the draw of a specific red list of DNP, including not only these of National red list but also other specific species could be a priority for nature conservation.
- Biological and chorological analyze of DNP evidence the intermediary position of this area between Mediterranean and Sub-Mediterranean zones
- Beside of the high biologic and ecological variability, the presence of scientific and recreative habitats, there are several degraded area, prone of erosion and desertification. These are result of some negative phenomenon as the illegal logging, overgrazing, quarries, construction of the restaurants and hotels without any criterion. These make important strengthening of managerial measurements and especially the awareness and involving of indigenous population in decision-making process.

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