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Biodiversity of the Albanian national parks and its problems

B. Ruci[1], P. Hoda[2], J. Vangjeli[1], N. Dragoti[3], M. Xhulaj[4], K. Buzo[2], M. Mersinllari[4]

Summary

The Albanian National Parks are the most important places for the protection and preservation of habitats and plant species which are valuable for biodiversity. At present, there are 12 national parks in Albania, including almost all types of habitats and ecosystems, the rare and threatened species as well. We meet there more than 70 plant associations, belonging to 20 classes and 23 orders (series). Some of them are characteristic for Albania or the Balkans. 2/3 of the total flora of the country are in the National parks, together with some endemic (1/3 of the Albanian endemic species), nearly endemic and Balkan taxa. Some of the Albanian endemic species are probably only found in the national parks, many of them are reported in the Red Book of Albania. Maybe, in the future, the area of the national parks will enlarge.

Key words: protected areas, Albanian parks, physiognomic.

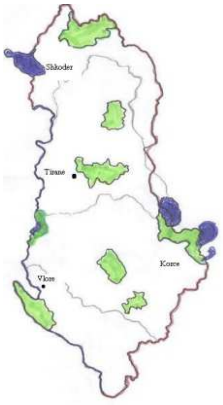
1. Introduction

In the context of the protected areas, the National Parks make up an important element for the protection and preservation of habitats, ecosystems and plant species of biodiversity value.

There are 12 National Parks in Albania today (Dajti, Lura, Thethi, Divjaka, Bredhi i Drenovës, Llogaraja, Lagoon of Valbona, Zall-Gjocaj, Qafë Shtama, Bredhi i Hotovës. Prespa, Tomorri), with a total area of 53,940 ha, equal to 1.96 % of the country territory (Fig. 1). They include all the zones and species of habitats and ecosystems, and many rare and threatened species as well. Up to date, forest areas of rare and special scientific, social and tourist value, in which the natural ecosystems remain virginal, mainly represent the national parks. By the end of 1995, after the "Ecological study of virgin forests of Albania" (Anonymous, 1997), the network of the country protected areas pictured a new and perspective idea about the protection of nature and biodiversity in Albania, and envisaged a further

[1]Institute of Biological Research, Academy of Sciences, Tirana (Albania)
[2]Botanical Garden, University of Tirana (Albania)
[3]General Directorate of Forest, Academy of Sciences,Tirana (Albania)
[4]Department of Biology, University of Tirana (Albania)

involvement in projects on the administration and management of the protected areas. By implementing "The Biodiversity Strategy and Action Plan in Albania" (anonymous, 1999), it is envisaged that the national parks should be no more than 8 (see map), by enlarging their territory up to 188,000 ha (6.5 % of the total country territory), accompanied by the improvement of the protection status.



Over the last years, as a result of the impact of several factors, especially the social and economic ones, the situation of the national parks in terms of their natural habitats, worsened to the point that any delay brings about losses.

Fig. 1 Map of the Albanian National Parks

2. Materials and methods

This study was based on the previous works related to the separate formations (Buzo, 1989; Hoda, 1989; Mersinllari, 1988; Mullaj, 1989; Vangjeli *et al.*, 1982) or certain places of the country (Hoda *et al.*, 1999; Ruci, 1986; Ruci *et al.*, 1995), which also refer to the National Parks. The nomination of the vegetation units was made according to (Hoda *et al.*, 1999; Horvat *et al.*, 1974), using the method of Zurich-Montpellier. In certain cases, when the information was not complete and confirmed by literature, we based ourselves on the physiognomic description of associations. These associations are given in italics. With regard to the level of threatening for the plant associations we mainly based on (Ruci *et al.*, 2000; Vangjeli *et al.*, 1999), while for flora we consulted (Anonymous, 1996; Anonymous 1964-1980) the "Red Book" (Anonymous, 1997; Vangjeli *et al.*, 1995) as well as the reports of the surveys made during the period 1996-2000. In order to give a clearer idea on the contrast among the main species of flora in terms of valuable genetic resources, we have presented only the major elements in a simple table (Tab. 1), according to the following criteria: the first column includes those species that determine the physiognomy of the national park; the second column includes the species that draw your attention (EN, VU); the third column includes those species that need a maximum care as they are critically endangered (CR); whereas the fourth one includes those species that have

local values i.e. those species that are widespread throughout Albania, but they are rare for a certain area, as well those species that have usable value.

Tab. 1. Physiognomy and situation of species in Albanian parks

Dominating species	Species deserving attention	Species deserving much attention	Local resources
Divjaka National Park			
Pinus halepensis *Pinus pinea*	*Juniperus macrocarpus* *Aster albanicus subsp. Paparistoi*	*Quercus robur* *Fraxinus angustifolia*	*Populus alba* *Pinus pinea*
Myrtus communis	*Orchis albanica*	*Clathius ruber*	*Pancreatium maritimum*
Pistacia lentiscus	*Ammophila arenaria*	*Sarcosphaera crassa*	*Morchella conica*
Erica verticillata	*Lepiota procera*		
Tomorri National Park			
Fagus sylvatica	*Achillea frasi*	*Corylus colurna*	*Colchicum autumnale*
Pinus leucodermis	*Astragalus autrani*	*Sideritis raeseri*	*Gentiana lutea*
Juniperus ssp. Nana	*Aubretia intermedia*		*Fritillaria graeca*
Sorbus graeca	*Campanula hawkinsiana*		*Ribes multiflorum*
Festuca adamovici	*Carduus cronicus* ssp. *Baldaccii*		*Primula veris*
Stipa pennata	*Centaurea graeca*		
	Centaurea pindicola		
	Crepis baldacci		
	Nepeta spruneri		
	Centaurea grisebachii		
	Cerastium grandiflorum		
	Melampyrum heracleoticum		
	Viscum album		
Dajti National Park			
Arbutus unedo	*Aruncus dioicus*	*Narcissus poeticus*	*Galanthus nivalis*
Carpinus orientalis	*Castanea sativa*	*Colchicum lingulatum*	*Lilium martagon*
Erica arborea	*Orchis* sp. *Div.*	*Ramonda serbica*	*Moltkia petrea*
Fagus sylvatica	*Colchicum autumnale*	*Corylus colurna*	*Pinus leucodermis*
Acer pseudoplatanus	*Ilex aquifolium*	*Dictamnus albus*	*Epimedium alpinum*
	Salvia officinalis	*Viburnum tinus*	*Cantharellus cibarius*
	Ostrya carpinifolia	*Hericium erinaceus*	*Amanita caesarea*
	Quercus ilex	*Fistulina hepatica*	
	Atropa belladonna		
	Sambucus nigra		
	Cerastium grandiflorum		
	Origanum vulgare		

%

Dominating species	Species deserving attention	Species deserving much attention	Local resources
	Lura National Park		
Fagus sylvatica	*Campanula tymphaea*	*Oxytropis prenja*	*Gentiana lutea*
Abies alba	*Nuphar lutea*	*Narthecium scardicum*	*Festucopsis serpentini*
Pinus peuce	*Nymphaea alba*	*Amanita echinoceppala*	*Forsythia europaea*
Pinus leucodermis	*Achillea frasi*	*Anthurus archeri*	*Suillus luteus*
Pinus nigra	*Arabis bryoides*		
	Bornmuelleria baldaccii		
	Trifolium pilczii		
	Minuartia baldaccii		
	Campanula tymphaea		
	Pinus peuce		
	Viscum album		
	Bornmuelleria baldaccii		
	Melampyrum heracleoticum		
	Paeonia mascula		
	Phallus impudicus		
	Llogora National Park		
Abies borisii-regis	*Hypericum haplophylloides*	*Taxus baccata*	*Sideritis raeseri*
Pinus nigra	*Quercus ilex*	*Lilium chalcedonicum*	*Petteria ramentacea*
Buxus sempervirens	*Sambucus nigra*	*Gomphus clavatum*	*Crataegus heldreichii*
Quercus coccifera	*Orchis* sp. *div.*		*Sinapis pubescens*
Ostrya carpinifolia	*Sambucus racemosa*		*Ilex aquifolium*
	Colchicum autumnale		*Euonimus europaeus*
	Origanum vulgare		*Licoperon echinatum*
	Pterocephalus perennis subsp. Bellidifolius		
	Viscum album		
	Rhodopaxillus nudus		
	Lactarius deliciosus		
	Thethi National Park		
Pinus leucodermis	*Aquilegia amaliae*	*Wulfenia baldaccii*	*Vaccinum myrtillus*
Fagus sylvatica	*Aquilegia dinarica*		*Gentiana lutea*
Abies alba	*Teucrium arduini*		
Vaccinum myrtillus	*Aquilegia vulgaris*		
Juniperus nana	*Haplophyllum boisserianum*		
	Plantago renifo rmis		
	Viola dukadjinica		
	Valbona National Park		
Picea abies	*Achillea grandiflora*	*Pinus sylvestris*	*Juniperus foetidissima*
Pinus leucodermis	*Melampyrum heracleoticum*	*Salix fragilis*	*Picea abies*
Fagus sylvatica	*Plantago renifo rmis*		
	Scrophularia balcanica		
	Trifolium pilczii		

%

Dominating species	Species deserving attention	Species deserving much attention	Local resources
Prespa National Park			
Fagus sylvatica *Acer pseudoplatanus* *Nymphaea alba* *Quercus cerris* *Quercus frainetto*	*Colchicum autumnale* *Helichrysum plicatum* *Juniperus excelsa* *Juniperus foetidissima* *Hydrocharis morsus-ranae* *Achillea frasi* *Nuphar lutea* *Nymphaea alba* *Sagittaria sagittifolia* *Centaurea soskaea* *Crocus cvijicii* *Crocus scardica* *Oxytropis prenja* *Phlomis herba-venti*	*Berberis vulgaris* *Celtis tournefortii* *Sempervivum ciliosum* *Coryllus colurna* *Trapa natans*	*Dictamnus albus* *Sideritis raeseri* *Centaurea cyanus*
Fir of Hotova National Park			
Abies borisii-regis *Quercus petraea* *Quercus cerris* *Fraxinus ornus* *Carpinus betulus* *Acer platanoides*	*Corylus colurna* *Orchis* sp. *div.* *Fritillaria graeca*	*Ramonda serbica*	*Ilex aquifolium* *Viscum album*
Qafe Shtame National Park			
Fagus sylvatica *Pinus nigra* *Erica herbacea*	*Colchicum autumnale* *Halascya sendtneri*	*Corylus colurna* *Fraxinus excelsior*	*Forsythia europaea* *Ilex aquifolium*
Zall Gjocaj National Park			
Fagus sylvatica *Pinus leucodermis* *Pinus peuce* *Pinus nigra*	*Genista hassertiana* *Colchicum autumnale* *Narthecium scardicum*	*Pinus peuce*	*Narthecium scardicum*
Fir of Drenova National Park			
Abies borisii-regis *Quercus frainetto* *Quercus cerris* *Daphne oleoides*	*Cotoneaster nebrodensis* *Pinguicula hirtiflora*	*Lilium calchedonicum*	*Ilex aquifolium* *Morina persica*
Zhej-Zagori Nation.Park			
Abies borisii-regis *Ostrya carpinifolia* *Quercus frainetto*	*Crataegus heldreichii* *Colchicum autumnale*	*Tilia platyphyllos*	*Astragalus parnassi*

3. Results and discussion

3.1 Phyto-Sociological classification of national parks' vegetation

The variety of associations was observed to be as follows:

RUPPIETEA MARITIMAE J. Tx. 1960

Ruppietalia maritimae J. Tx. 1960

Ruppion maritimae Br.-Bl. 1931

Ruppietum cirrhosae com. Ruci et. al, 1995 Divjaka / Karavasta

Ruppietum maritima Iversen 1934 Divjake / Karavasta

THERO-SALICORNIETEA (Pignatti 1953) Tx. in Tx et Oberd. 1958

Thero-Salicornietalia Pignatti 1953 em.Tx. 1954 ex Tx. et Oberd. 1958 corr.Tx.1974

Salicornion patulae Gehu et Gehu-Franck 1984

Arthrocnemetum glauci com. Mullaj 1989 Divjaka/ Karavasta

Parapholidi-Spergularietum com. Pignatti 1994

Salicornietum europea Warming 1906 Divjaka / Karavasta

Salsoletum sodae Slavnic 1939 Divjaka / Karavasta

JUNCETEA MARITIMI Tx. et Oberd. 1958

Juncetalia maritimi Br.-Bl.1931

Juncion maritimi Br.-Bl.1931

Juncetum maritimi (Bilik 1956) Krausch 1965 Divjaka/ Karavasta

Juncetum acuti Mol. Et Tallon 1953 Divjaka/ Karavasta

Plantaginion crassifoliae Br.-Bl. (1931) 1952

Holoschoenetum romani Br.Bl. 1951 Divjaka/ Karavasta

Schoeno nigricantis-Plantaginetum crassifoliae Br.-Bl. (1931)1952 Divjaka/ Karavasta

SALICORNIETEA FRUTICOSAE Br.-Bl. et Tx. de Bolos y Vayreda 1950

Sarcocornietalia fruticosae (Br.-Bl. 1931) Tx. et Obeerd.1958

Sarcocornion fruticosae Br.-Bl.1931

Salicornietum fruticosae Mullaj 1989 Divjaka/ Karavasta

CAKILETEA MARITIMAE Tx. et Preising in Tx. ex Br.-Bl. et Tx. 1952

Euphorbietalia peplis Tx. 1950

Euphorbion peplis R. Tx. 1950

Cakilo-Xanthietum italici Pign.1953 Divjaka / Karavasta

AMMOPHILETEA B.-Bl. et Tx. ex Westhoff, Dijk et Passchier 1946

Ammophiletalia australis Br.-Bl. (1931) 1933 em. J.M. et J. Gehu 1988

Agropyro-Hockenyion Tx. in Br.-Bl. et Tx. 1952

Agropyretum mediterraneum Br.-Bl.1933 Divjaka

Ammophilion arenariae (Tx.1945) J.-M. et J.Gehu 1987

Ammophiletum Br.-Bl. 1933 Divjaka

Sporoboletum Arens 1924 Divjaka

POTAMETEA Klika in Klika et Novak 1941

Nupharo-Potametalia Schaminee, Lanjouw et Schipper 1990

Nymphaeion Oberd.1957

Myriophyllo-Nupharetum Koch ex Hueck 1931 Prespa

Nymphaeetum albae-lutaea Karpati I. 1961 Lura, Prespa e vogel (Small Prespa)

Potamion pectinati (Koch 1926) Gors 1977

Polygonetum amphibii Eggler 1933

Myriophyllo-Potametum Soo 1962, Prespa

PHRAGMITI-MAGNOCARICETEA Klika in Klika et Novak 1941

Bolboschoenetalia maritimi Heiny in Holub et al. 1967

Bolboschoenion maritimi Dahl et Hadac 1941

Bolboschoenetum maritimi Divjaka

Phragmitetalia Koch 1926

Phragmition australis Koch 1926 Divjaka

Scirpo-Phragmitetum Koch 1926

Typhetum angustifoliae Soo 1927

Typhetum latifoliae Soo 1927

EPILOBIETEA ANGUSTIFOLII Tx. et Priesing in Tx. ex von Rochow 1951

Atropetalia Vlieger 1937

Epilobion angustifolii Soo 1933 em. R.Tx. 1950 Lura, Valbona

MOLINIO-ARRHENATHERETEA Tx. 1937 em. Tx.1970

Arrhenatheretalia Tx.1931

Cynosurion cristati Tx.1947

Cynosurus cristatus-Trifolium pratense com. Buzo 1990

Lolio-Cynosuretum Br.-Bl. et De Leew1936 nom.inv. Dajti

Arrhenatherion Br.-Bl. 1925

Trisetum flavescentis Tomor com Buzo 1990

FESTUCO-BROMETEA Br.-Bl. et Tx. in Br.-Bl. 1949

Scorzonero-Chrysopogonetalia Horvat, Glavac & Ellenberg 1974

Chrysopogoni-Satureion

Salvia officinalis-Satureja montana com. Buzo 1990 Dajti

QUERCETEA ILICIS Br.-Bl. ex A.de Bolos y Vayreda 1950

Pistacio lentisci-Rhamnatelia alaterni Rivas-Mart. 1875

Ericion arborea Rivas-Mart. (1975) 1987

Arbutus unedo-Erica arborea com. Dajti

Pinus halepensis-Erica manipuliflora com. Divjaka

Oleo-Ceratonion (siliquae) Br.-Bl. ex Guinochet et Drouineau 1944 em. Rivas-Mart.1975

Pistacio-Pinetum halepensis De Marco et al. 1984 Divjaka

Quercetalia ilicis Br.-Bl. ex Molinier 1934 em. Rivas-Mart.1975

Quercion ilicis Br.-Bl. ex Molinier 1934 em. Rivas-Mart.1975

Orno-Quercetum ilicis Horvatic 1958 Dajti, Llogara

Orno-Quercetum cocciferae Horvatic 1958 Llogara

DAPHNO-FESTUCETEA Quezel 1964

Daphno-Festucetalia Quezel 1964

Eryngio-Bromion Quezel 1964

Festucetum adamovicii com Buzo 1990

Astragalo-Seslerion Quezel 1964

Astragalo-Brachypodietum com Buzo

RHAMNO-PRUNETEA Rivas Goday et Borja Carbonell 1961

Paliuretalia Horvatic 1963.

Paliurion adriaticum Horvatic 1963

Rhuetum coriariae Dajti

QUERCO-FAGETEA Br.-Bl. et Vlieger in Vlieger 1937

*Fagetalia sylvatica*e Pawlowski in Pawlowski, Sokolowski et Wallisch 1928

Aceri-Fagion

Aceri (pseudoplatani)-Fagetum Bartsch 1940 Dajti
Cephalanthero-Fagion Tx. 1955
Seslerio -Fagetum Moor 1952 Dajti
Fagion illyricum Horvat 1938
Erico herbacea-Fagetum Markgraf 1932
Pinus nigra-Fagus sylvatica com. Hoda 1989 Lura
Galio rotundifolii-Abietion
Abieti-Fagetum Fukarek 1958 Lura, Thethi
Fagion hellenicum
Abies borisii-regis-Ostryetum carpinifoliae com.
Abies borisii-regis-Pinus nigra com.
Populetalia albae Br.-Bl. 1931
Fraxinion angustifoliae Pedrotti 11970
Alno-Fraxinetum oxycarpae Tchou 1946 Divjaka
Junco (acuti)-Fraxinetum oxycarpae Karpati 1962 Divjaka
Populion albae Br.-Bl. 1931
Populetum albae Karpati 1962 Divjaka
Quercetalia pubescentis-petraea Br.-Bl. 1931
Carpinion orientalis Grebenshchikov et al. (1990)1991
Carpinetum orientalis com. Dajti
Carpinus orientalis-Quercus cerris Oberdorfer 1945 Dajti
Quercion pubescentis-(petraea)Br.-Bl. 1932
Quercetum frainetto-cerris Horvat 1959 Dajti
Pinus nigra-Buxetum sempervirens Hoda 1989 Llogara
Pinus nigra-Quercetum coccifera Hoda 1989 Llogara
Ostryo-Carpinion
Ostryo-Carpinetum orientalis Markgraf 1932 Dajti
SALICETEA PURPUREAE Moor 1958
Salicetalia purpurea Moor 1958
Salicion eleagni Aichinger 1933 Llogara
Salicetum triandrae balcanicum H-ic
ALNETEA GLUTINOSAE Br. et Tx. ex Westhoff, Dijk et Passchier 1946
Alnetalia glutinosae Tx. 1937

Alnion glutinosae Malcuit 1929

Alno-Quercion roboris Horvat, Glavac, Ellenberg 1874

Quercetum roboris com Divjake

Ulmo-Fraxion oxycarpae

Ulmo-Fraxinetum Markgraff 1932 Divjaka

ERICO-PINETEA Horvat 1959

Erico-Pinetalia Horvat 1959

Orno-Ericion Horvat 1959

Erico-Pinetum nigrae Hoda 1989,Lura

Orno-Pinion Em (1972) 1978

Forsythio-Pinetum nigrae Hoda 1989 Lura

Pinion leucodermis Horvat 1946

Fageto - Pinetum leucodermis M. Jank 1958

Festucopsis-Pinetum leucodermis Vangjeli 1984, Lura

Genista-Pinetum leucodermis Vangjeli 1984 Lura

Pinetum leucodermis typicum M.Jank Lura, Tomori

Pinetum leucodermis-Geranium macrorrhizum Vangjeli 1984 Tomori

Pinetum leucodermis-Picea abies Vangjeli 1984 Valbona

Pinetum nigrae-leucodermis Fukarek *Lure, Llogora*

Pinetum peuce-leucodermis Vangjeli 1984 Lura

Senecioni-Pinetum leucodermis Fuk. Lura, Tomori

Seslerio-Pinetum leucodermis M.Jank. et R. Bog. Lura, Tomori

Thalictro-Pinetum leucodermis M.Jank Dajti

VACCINIO -PICEETEA Br.-Bl. in Br.-Bl., Sissingh et Vlie ger 1939

Piceetalia excelsae Pawlowski in Pawlowski, Sokolowski et Wallisch 1928

Piceion excelsae Pawlowski in Pawlowski et al.1928

Junipero-Piceetum abies com.

ASPLENIETEA TRICHOMANIS (Br.-Bl. in Meier et Br.-Br. 1934) Oberd. 1977

Potentilletalia speciosae Quezel 1964

Ramondion nathaliae Horvat ex Simon 1958

Ramondietum serbicae com. *1989* Dajti

Moltkietum petraea Blecic 1958 Dajti

JUNCETEA TRIFIDI Hadac 1946

Trifolietalia parnassi Quezel 1964

Trifolion parnassi Quezel 1964

Alopecuretum gerardii Buzo 1985

3.2 Plant associations

There are more than 70 plant associations in our national parks, which belong to 20 classes and 23 series, consequently forming a broad spectrum of habitats, from the coastal sandpits, the sand dunes, the lagoons and saline soils, to the alluvial and coniferous Mediterranean forests, Mediterranean shrub, deciduous oak forests, the conifers, beech forests, alpine and sub-alpine pastures, etc. We could mention those having a limited area, the Balkan or simply Albanian ones (about 10), such as the Albanian forests of Macedonian fir (*Pineto-Abietetum borisii-regis, Abies borisii-regis - Ostrya carpinifolia*); the Albanian forests dominated by the Austrian (black) pine trees (*Forsythio-Pinetum nigrae*); the Albanian forests with Heldreich pine trees *(Festucopsis-Pinetum leucodermis, Genista-Pinetum leucodermis*); the Albanian forests with Macedonian pine trees (*Pinetum peucis leucodermis*), the Ramonda associations (*Ramondietum serbicae*), etc.

Most of these associations are endangered as shown in Fig. 1.

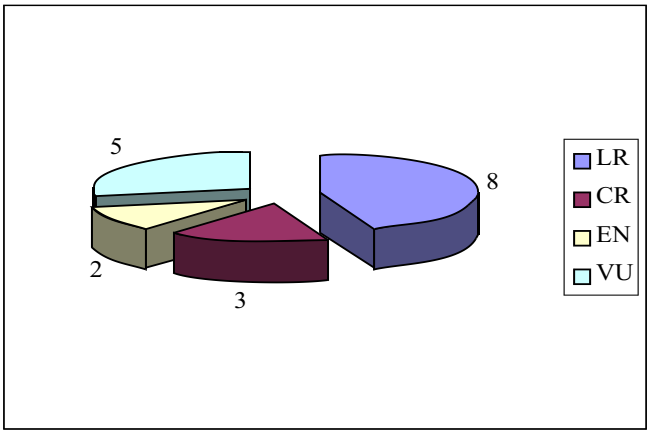


Fig. 1. Threatened associations in the Albanian national parks

3.3 Flora

The flora of National parks is generally very rich, representing almost 2/3 of the total Albanian flora, which is evident in Tab. 1.

We find that all species of floristic elements depending on the geographical position of the national parks. There are nearly 70 species in these parks that make up 14% of the Balkan species in the Albanian flora. Ten endemic and 40 sub-endemic taxa are included there:

Endemic species: They make up 1/3 of the total number of the Albanian endemic plants. They are: *Festucopsis serpentini, Wulfenia baldaccii, Hypericum haplophylloides, Aster albanicus* subsp. *paparistoi, Orchis albanica, Orchis* x *paparisti, Forsythia europaea, Petasites doerfleri, Viola dukadjinica, Genista hassertiana, Astragalus autranii*. Some of them are limited to only one national park, like: *Wulfenia baldaccii* (Thethi), *Astragalus autrani* (Tomorri), *Hypericum haplophylloides* (Llogora), *Aster albanicus* subsp. *paparistoi* (Divjaka); others are widely spread, and some of them are not even threatened, like: *Forsythia europaea, Festucopsis serpentini.*

Almost endemic species. They make up nearly 30% of the total number of the almost-endemic flora of Albania. Some of them are limited to only some areas like: *Aquilegia dinarica* (Thethi), *Teucrium arduini* (Thethi), *Lilium calchedonicum* (Llogara) etc.

Inside these parks we find also numerous threatened and rare species. The level of threatening is given in Tab. 2, by considering not only the species of table 1, but also the total number of species in these parks.

It is obvious that there are 36% of the total endangered species in the national parks, which according to different categories make up1/4 up to 1/2 of the total number at country level. There are many species of certain values amongst them, like medicinal, aromatic, honey-producing, decorative plants, etc., which should be identified and treated in order to be preserved and protected in accordance with the natural equilibrium. Some of them were widespread in the past, whereas now we find them (*Atropa belladona* (Dajti), *Tilia platyphyllos* (Zheji) only in some places. Others, like mountain tea - *Sideritis raeseri* (Llogora, Prespa, Tomorri), xherrokulli - *Colchicum autumnale* (Dajti, Tomori, Lura), yellow gentian - *Gentiana lutea* (Lura, Tomorri) etc., are spread all over the country, but recently, due to undiscriminate use, they are at risk.

Many of the above associations or plants of the National Parks are really endangered mainly by cuttings, fires, overgrazing, uncontrolled

development of tourism, uncontrolled wastes, etc. Such is the case with Norway spruce (*Picea abies*) and Macedonian pine (*Pinus peuce*) in the National Parks of Valbona and Lura, the uncontrolled constructions for tourist purposes in the National Park of Dajti.

Tab. 2. Level of threatening for total number of species in Albania and in Albanian national parks

No. of Species	CR	VU	EN	LR	DD
In Albania	16	29	58	194	32
In the National Parks	5	15	20	70	8

4. Conclusions

Although in a small area, the national parks, which stretch in the phyto-climatic zones of the country, include a large variety of species and plant associations (2/3 of the country flora and more than 70 associations).

Regarding their values for genetic resources we'll single out the taxa that are rare, threatened or endemic; there are about 10 endemic taxa, 40 almost endemic, nearly 120 threatened, 3 plant associations critically threatened, 5 vulnerable, etc.

It is important to identify those taxa which are not clearly rare, threatened, endemic, for Albania, but for smaller areas, including the national parks. Such is the case of *Pinus leucodermis* at Dajti, Petteria ramentacea at Llogora etc. In such instances, the concept of the Red List may be extended to the creation of local Red Lists, including certain national parks.

Since the national parks stretch in all the phyto-climatic zones of Albania, they serve not only to preserve but also to introduce taxa of valuable genetic resources, especially those seriously threatened. On the other hand, since the existing network of the protected areas does not include all the habitats and taxa of the above values, we think that their area, particularly of the national parks, should be enlarged as envisaged in the biodiversity strategy.

In addition to their identification, it is important to timely monitor the situation of plants, habitats and associations, their changes, the factors that bring about these changes, which may be followed by other steps as their management and monitoring.

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