



Regional collecting expedition and ex situ conservation of *Trifolium pratense* L. and *Festuca pratensis* Huds.





**Natural Park Bucegi**



# Natural Park Bucegi

The Bucegi Massif holds one of the first places in terms of importance among the Romanian Carpathians due to its very rare but numerous and diverse plant species which have attracted many local and foreign scientists and nature lovers since many years ago.

The Bucegi Nature Park is located in the **Bucegi Massif**, situated in the **Central Carpathians** and it spreads over 3 counties: **Brasov, Prahova and Dambovita**. The surface of the park covers a bit over 32 000 ha and 60% of it is represented by forests and another 30% is covered by alpine meadows.

The varied landscape forms, the geological structure and the high altitudes have allowed the presence of lush and diverse plant species. There are over 3500 species of plants, which from many species are very rare or endangered and thus are protected by law.

There are woods (beech trees, spruce and fir trees and also larch trees) up to 1400 – 1500 meters altitude and further up toward the peaks you will find large meadows.

- There is an intermediate vegetation area between the lush forests and the rocky peaks and this means you should expect to find bush trees like different types of **rhododendron** and **juniper trees**, but also pigmy cranberry and blueberry trees. Clumps of beautiful mountain azalea flowers are to be found in some parts too.

Careful analysis of all taxons and cenotaxons flag of Massive Bucegi put here reveal a genetically center, therefore it was necessary to the establishment of natural reserves designed to protect certain ecosystems and landscapes specific to these mountains.

# Natural Park Bucegi - general data

- Total area: 32,663 ha – 100.0%
- Forests (Fagus, Picea, Abies) 21,304 ha – 65.2%
- Mountain pine (Pinus mugo) 804 ha – 2.5%
- Rockland 314 ha – 1.0%
- Pasturelands 8,747 ha – 26.8%
- Lakes 78 ha – 0.2%
- Other areas 1,416 ha – 4.3%

# General characterization of vegetation

An overview of the vegetation Massif Bucegi put out in the first place, the wealth of field cenotaxons flag in the region, many of them being own this mountain chain. Also, it should not be overlooked that all the vegetation in the area abounds in alpine glacial relict and endemic species or those who phytocenosis a separate note, which led the researchers to describe many cenotaxons new science.

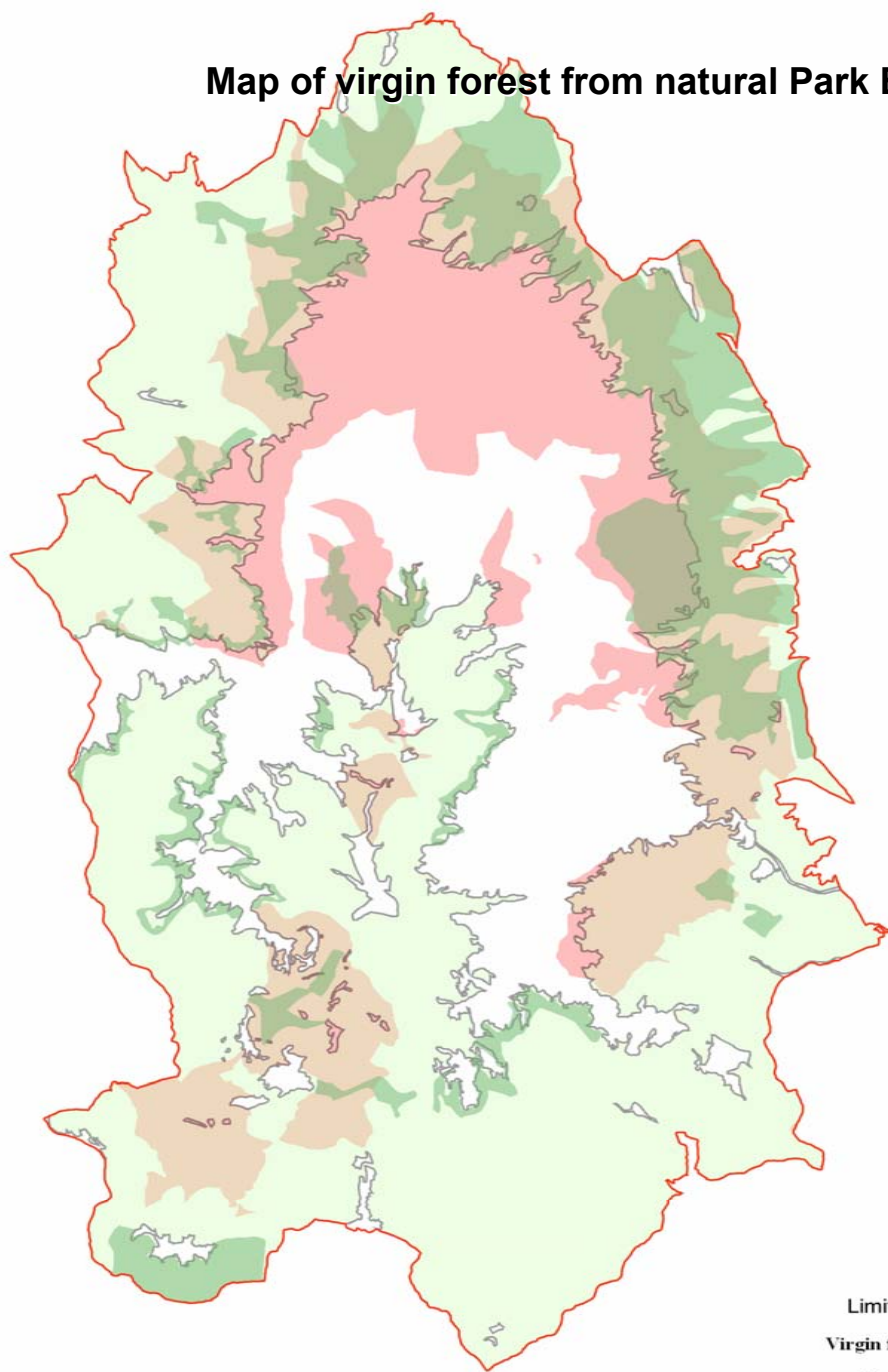
Have been reported so far a number of 80 plant community with 25 plant sub-associations and many facies (the smallest subdivision of the plant association characterized by the dominance of a species).

Many cenotaxons or flag was described for the first time in these mountains have a fairly restricted area, some are confined to the Massive Bucegi.

## Vegetation of forest

- ***Poo alpinae-Alysetum repentis*** Beldie 1967,
- ***Seslerio-Festucetum versicoloris*** Beldie 1967.
- ***Saponario-Salicetum purpureae*** (Br.-Bl. 1930) Tschou 1946
- ***Telekio speciosae-Alnetum incanae*** Coldea (1986) 1990
- ***Symphyto cordati-Fagetum*** Vida 1959
- ***Leucanthemo waldsteinii-Fagetum*** (Soó 1964 ) Täuber 1987
- ***Hieracio rotundati-Fagetum*** (Vida 1963) Täuber 1987
- ***Pulmonario rubrae-Fagetum*** (Soó 1964) Täuber 1987
- ***Acereto-Ulmetum*** Beldie 1951
- ***Soldanello majori-Plceetum*** Coldea et Wagner 1998

# Map of virgin forest from natural Park Bucegi



## Legend

- Limit PNB ———
- Virgin forest —■—
- Forest —■—
- Special conservation zone —■—

# General characterization of vegetation (ctd)

## Vegetation of mountain bushes and subalpine

- **Rhododendro myrtifolii-Vaccinietum** Borza (1955) 1959 em. Boşcaiu 1971
- **Saxifrago cuneifoliae-Laricetum** (Beldie 1967) Coldea 1991
- **Calamagrostio villosae-Pinetum mugi** Sanda et Popescu 2002
- **Campanulo abietinae-Juniperetum** Simon 1966
- **Campanulo abietinae-Vaccinietum** (Buia et al. 1962) Boşcaiu 1971

## Vegetation of alpine and subalpine pasturelands

- **Primulo-Caricetum curvulae Br.-Bl.** 1926 em. Oberd. 1957
- **Potentillo chrysocraspedae-Festucetum airoidis** Boşcaiu 1971 [Syn. As. **Festucetum supinae** Domin 1933]
- **Oreochloo-Juncetum trifidi** Szafer et al. 1927
- **Cetrario-Loiseleurietum procumbentis Br.-Bl.** et al. 1939
- **Poëtum mediae** Csürös et al. 1956
- **Scorzonero roseae-Festucetum nigrescentis** (Puşcaru et al. 1956) Coldea 1987
- **Violo declinatae-Nardetum** Simon 1966
- **Oxytropido carpaticae-Elynetum** (Puşcaru et al. 1956) Coldea 1991
- **Sileno acaulis-Minuartietum sedoidis** Puşcaru et al. 1956
- **Seslerio-Festucetum versicoloris** Beldie 1967
- **Diantho tenuifolii-Festucetum amethystinae** (Domin 1933) Coldea 1984
- **Festucetum saxatilis** Domin 1933
- **Seslerio bielzii-Caricetum sempervirentis** Puşcaru et al. 1956
- **Seslerio haynaldiana-Caricetum sempervirentis** Puşcaru et al. 1956
- **Asperulo capitatae-Seslerietum rigidae** (Zólyomi 1939) Coldea 1991

# General characterization of vegetation (ctd)

## Vegetation of high weeds mountain

- Phleo alpini-Deschampsietum caespitosae (Krajina 1933) Coldea 1983
- Cardo kernerii-Festucetum carpaticeae (Puşcaru et al. 1956) Coldea (1986) 1990
- Cirsio waldsteinii-Heracleetum transsivanici Pawl. et Walas 1949

## Vegetation of rocky land

- Asplenio-Cystopteridetum Oberd.

## Vegetation of detritus and boulders

- Papavero-Tymion-pulcherrimae, Teucrion montani, Androsacion alpinae
- Calamintho (baumgarteni)-Galietum anisophylli

## Vegetation of stones and sandy slime

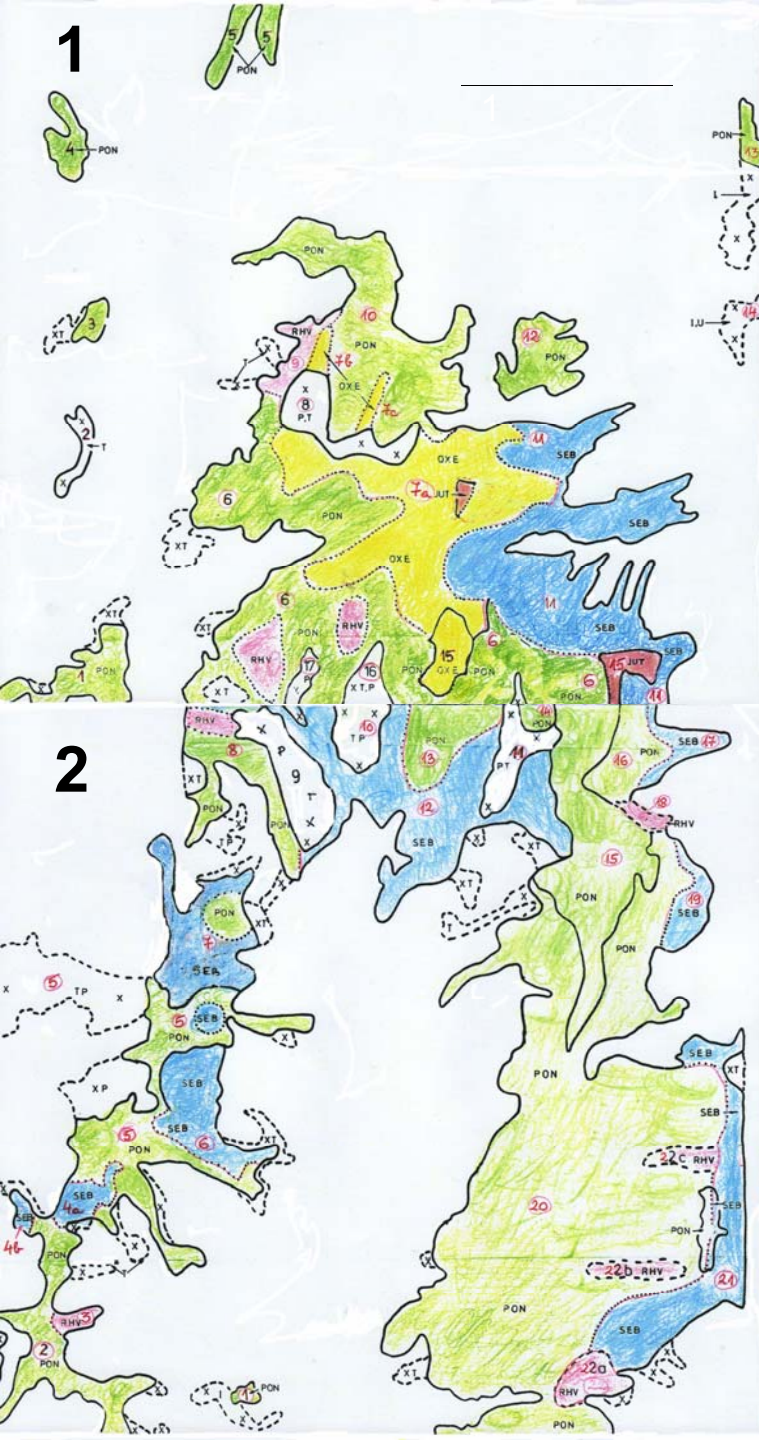
- Calamagrostietum pseudophragmites
- Carex laporina, Equisetum variegatum, Ranunculus montanum, Salix purpurea, Myricaria germanica.

## Vegetation of izvoarelor si paraielor subalpine si alpine

- Cratoneuretum filicino-commutati (Kuhn) Oberd.

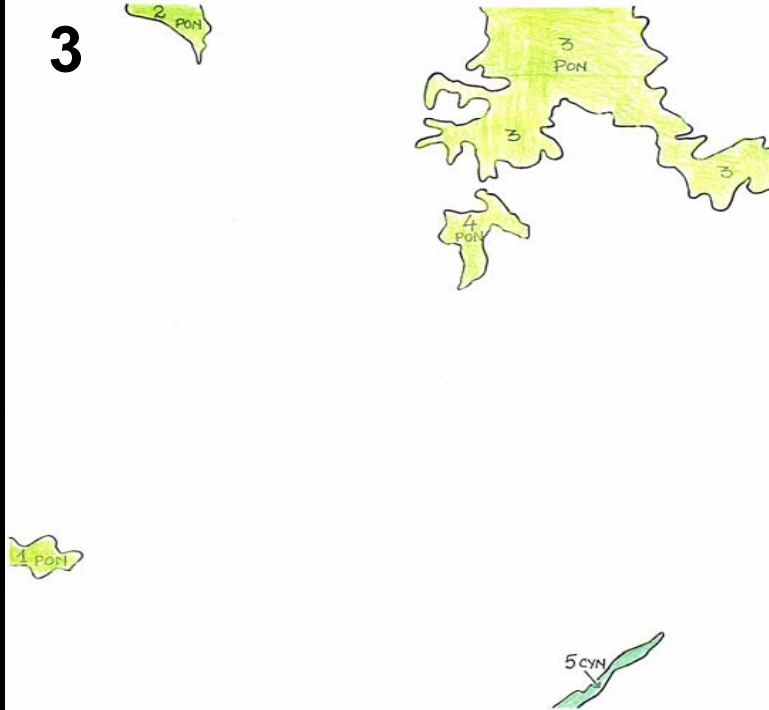
## Vegetation of swamp oligotrofe si eutrofe

- Caricetum canescenti-nigrae (fuscae) Vlieger.
- Carici-Blysmetum compressi Egger.



# Grassland Mapping Units in Natural Park Bucegi

3



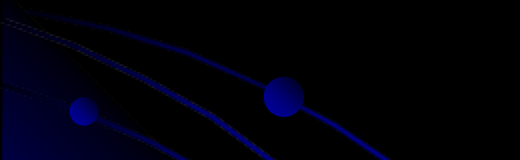
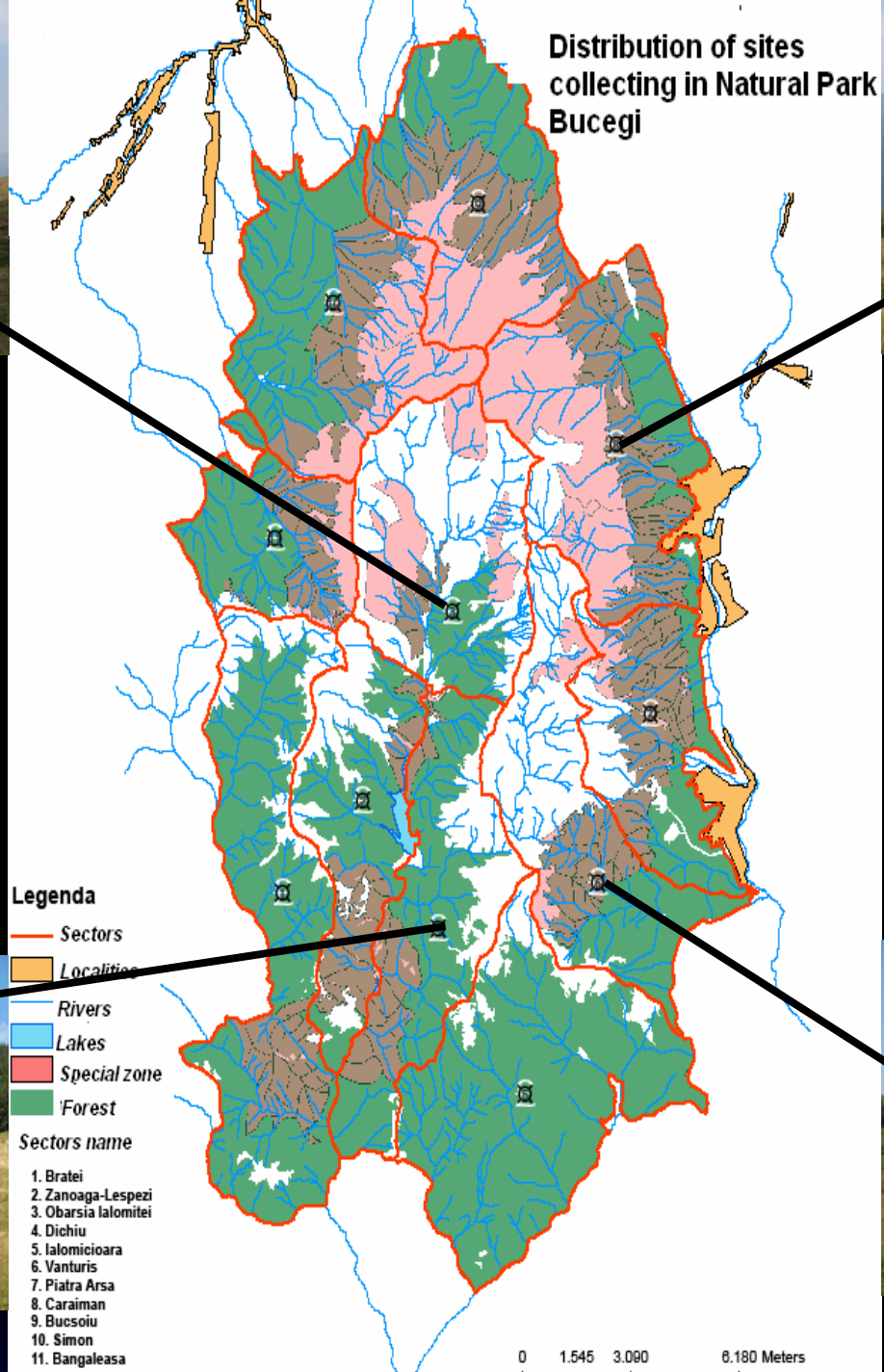
- OXE - Alpine primary pastures on alkaline soils – *Oxytropido-Elymion*
- SEB – Subalpine primary pastures on alkaline soils – *Seslerion bielzii*
- PON – Acide oligotrophic subalpine pastures – *Potentillo ternatae-Nardion*
- JUT - Alpine primary pastures on acide soils – *Juncion trifidi*
- RHY - primary shrubbery on acide soils – Rhododendron, Vaccinium
- CYN - Mesophytic hillocky-mountaine pastures on drained soils - Cynosurion



**OBARSIA IALOMITEI AREA**



**CARAIMAN AREA**



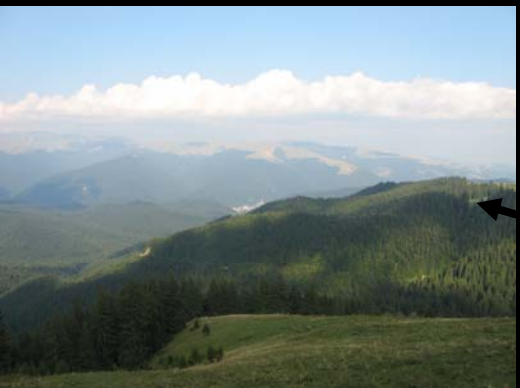
**DICHIU AREA**



**BLANA – VANTURIS AREA**



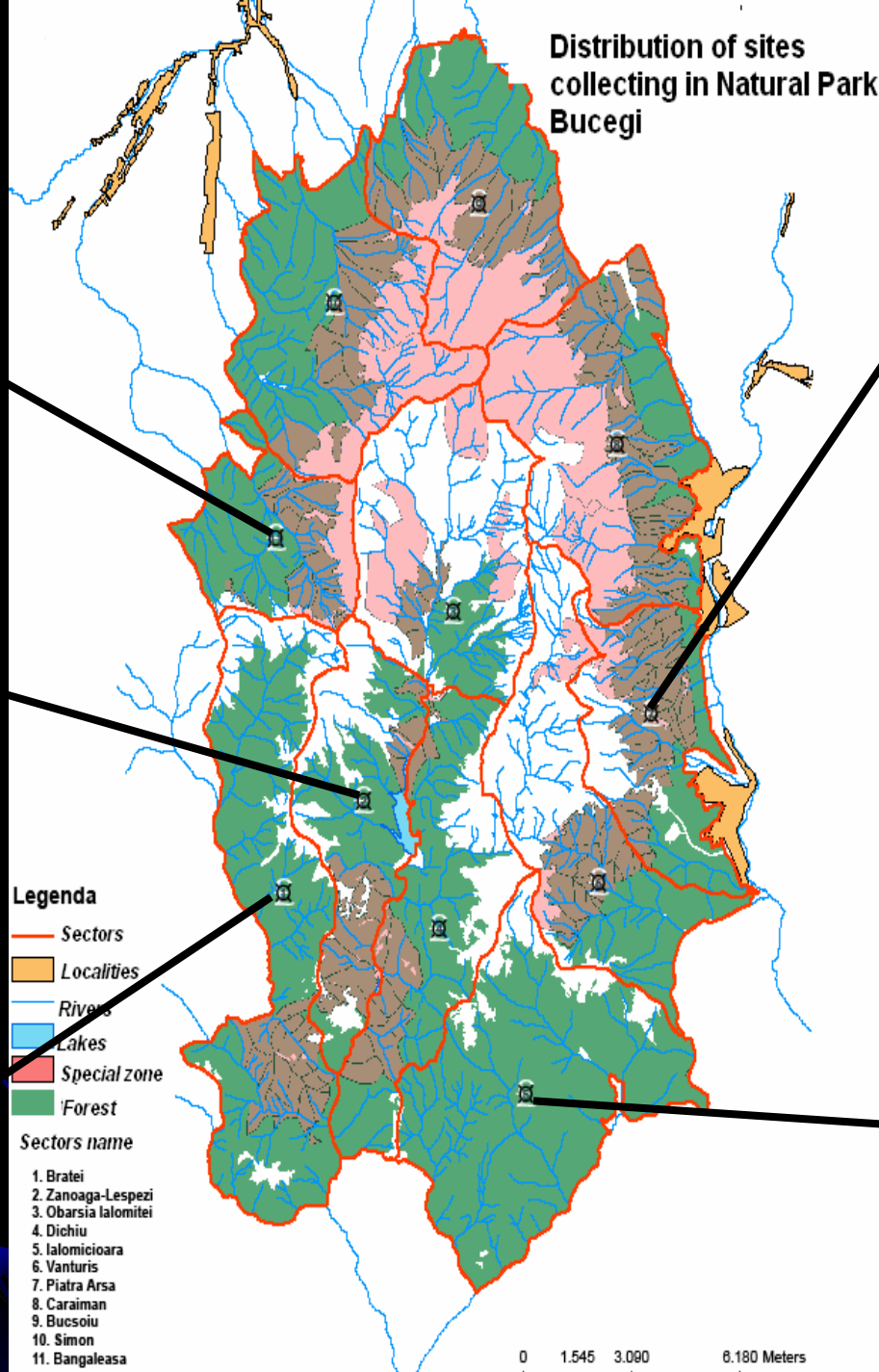
**BANGALEASA AREA**



**LAKE BOLBOCI AREA**



**BRATEI AREA**



**PIATRA ARSA AREA**



**IALOMICIOARA AREA**



C  
o  
l  
l  
e  
c  
t  
i  
n  
g  
  
t  
e  
a  
m



## Material collected per species and area



- **BLANA – VANTURIS**  
Trifolium pratense: 3 samples  
Festuca pratensis : 1 sample
- **OBÂRȘIA IALOMIȚEI**  
Trifolium pratense: 5 samples  
Festuca pratensis: 2 samples
- **IALOMICIOARA**  
Trifolium pratense: 3 samples  
Festuca pratensis : 2 samples
- **DICHIU**  
Trifolium pratense: 3 samples  
Festuca pratensis : 3 samples
- **PIATRA ARSĂ**  
Trifolium pratense: 3 samples  
Festuca pratensis: 2 samples
- **CARAIMAN**  
Trifolium pratense: 4 samples  
Festuca pratensis : 2 samples
- **LACUL BOLBOCI**  
Trifolium pratense: 3 samples  
Festuca pratensis: 1 sample
- **BRĂTEI**  
Trifolium pratense: 2 samples  
Festuca pratensis : 1 sample
- **BĂNGĂLEASA**  
Trifolium pratense: 2 samples  
Festuca pratensis: 1 sample



# Trifolium pratense - number of accessions

ACCNUMB	Locality	Habitat	Latitude	Longitude	Altitude
SVGB 16898	Blana - Vanturis	meadow	45° 11' 21"	025° 28' 30"	1327
SVGB 16899	Blana - Vanturis	meadow	45° 21' 13"	025° 27' 41"	1403
SVGB 16900	Blana - Vanturis	meadow	45° 20' 18"	025° 35' 48"	1295
SVGB 16901	Obarsia Ialomitei	pasture	45° 12' 21"	025° 41' 20"	458
SVBG 16902	Obarsia Ialomitei	pasture	45° 10' 17"	025° 40' 30"	495
SVGB 16903	Obarsia Ialomitei	meadow	45° 14' 28"	025° 29' 52"	1124
SVGB 16904	Obarsia Ialomitei	meadow	45° 19' 21"	025° 28' 26"	1206
SVGB 16905	Obarsia Ialomitei	meadow	45° 22' 41"	025° 30' 40"	1085
SVGB 16906	Ialomicioara	pasture	45° 19' 13"	025° 36' 53"	761
SVGB 16907	Ialomicioara	pasture	45° 13' 11"	025° 37' 08"	765
SVGB 16908	Ialomicioara	pasture	45° 08' 49"	025° 41' 53"	430
SVGB 16909	Dichiu	pasture	45° 29' 28"	025° 30' 46"	1182
SVGB 16910	Dichiu	meadow	45° 31' 59"	025° 29' 56"	779
SVGB 16911	Dichiu	meadow	45° 31' 33"	025° 29' 31"	821
SVGB 16912	Caraiman	meadow	45° 21' 19"	025° 30' 41"	1473
SVGB 16913	Caraiman	meadow	45° 21' 24"	025° 31' 05"	1414
SVGB 16914	Caraiman	meadow	45° 21' 30"	025° 30' 38"	1357
SVGB 16915	Caraiman	meadow	45° 22' 15"	025° 31' 44"	1273
SVGB 16916	Piatra Arsa	pasture	45° 22' 35"	025° 28' 41"	1420
SVGB 16917	Piatra Arsa	pasture	45° 22' 39"	025° 28' 47"	1389
SVGB 16918	Piatra Arsa	meadow	45° 23' 36"	025° 27' 58"	1306
SVGB 16919	Lacul Bolboci	pasture	45° 20' 51"	025° 24' 58"	1340
SVGB 16920	Lacul Bolboci	pasture	45° 20' 42"	025° 24' 36"	1255
SVGB 16921	Lacul Bolboci	meadow	45° 19' 58"	025° 23' 56"	1171
SVGB 16922	Bratei	pasture	45° 26' 45"	025° 16' 39"	989
SVGB 16923	Bratei	pasture	45° 26' 39"	025° 15' 47"	1056
SVGB 16924	Bangaleasa	meadow	45° 26' 47"	025° 16' 43"	1274
SVGB 16925	Bangaleasa	pasture	45° 25' 08"	025° 16' 36"	926

# Festuca pratensis - number of accessions

ACCNUMB	Locality	Habitat	Latitude	Longitude	Altitude
SVGB 16926	Blana - Vanturis	meadow	45° 11' 21"	025° 28' 30"	1327
SVGB 16927	Obarsia lalomitei	pasture	45° 12' 21"	025° 41' 20"	458
SVGB 16928	Obarsia lalomitei	meadow	45° 22' 41"	025° 30' 40"	1085
SVGB 16929	lalomicioara	pasture	45° 19' 13"	025° 36' 53"	761
SVBG 16930	lalomicioara	pasture	45° 13' 11"	025° 37' 08"	765
SVGB 16931	Dichiu	pasture	45° 29' 28"	025° 30' 46"	1182
SVGB 16932	Dichiu	meadow	45° 31' 59"	025° 29' 56"	779
SVGB 16933	Dichiu	meadow	45° 31' 33"	025° 29' 31"	821
SVGB 16935	Caraiman	meadow	45° 21' 24"	025° 31' 05"	1414
SVGB 16935	Caraiman	meadow	45° 21' 30"	025° 30' 38"	1357
SVGB 16936	Piatra Arsa	pasture	45° 22' 35"	025° 28' 41"	1420
SVGB 16937	Piatra Arsa	pasture	45° 22' 39"	025° 28' 47"	1389
SVGB 16938	Lacul Bolboci	meadow	45° 19' 58"	025° 23' 56"	1171
SVGB 16939	Bratei	pasture	45° 26' 45"	025° 16' 39"	989
SVGB 16940	Bangaleasa	pasture	45° 25' 08"	025° 16' 36"	926

# Registered samples



Nr de acces / Nr de colectare: **SVGB-16926** DS6549

Taxonomie: Festuca pratensis

Nume de cultura: Paius de livada Meadow fescue

Familia botanica: Gramineae

Nume de acces: BLANA VANTURIS

Autor specie:

Autor subtaxa:

Data achizitiei / Data colectarii: 20080819

Tara de origine: Romania

Locul colectarii / judetul: Prahova, Blana Vanturis Prahova

Latitudine, longitudine, altitudine: 451121N 0252830E 1327

Institutul pastrator: Banca de Resurse Genetice Vegetale Suceava

Institutul colector: Banca de Resurse Genetice Vegetale Suceava

Institutul ameliorator:

Duplicatul de siguranta:

Institutul donator:

Numar de acces la donator:  Alte numere:

Statutul biologic: Salbatic

Sursa colectarii: Pasuni

Tipul de pastrare:

Date ancestrale:

Comentarii:



Poza nu este disponibila

# Seeds cleaning



# Seeds storage

Samples are storage at + 4°C



**Festuca pratensis**



**Trifolium pratense**

**Thank you for your attention**