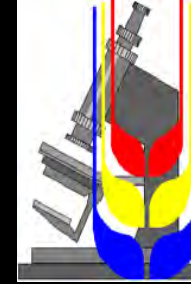




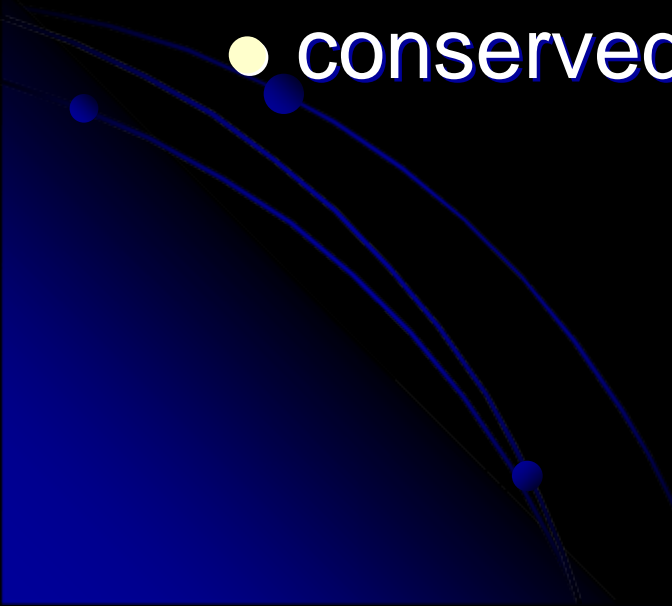
Genebank



SUCEAVA

Regional collecting expedition and ex situ conservation of *Trifolium pratense* L., *Festuca pratensis* Huds., *Dactylis glomerata* L. and *Medicago falcata* L.

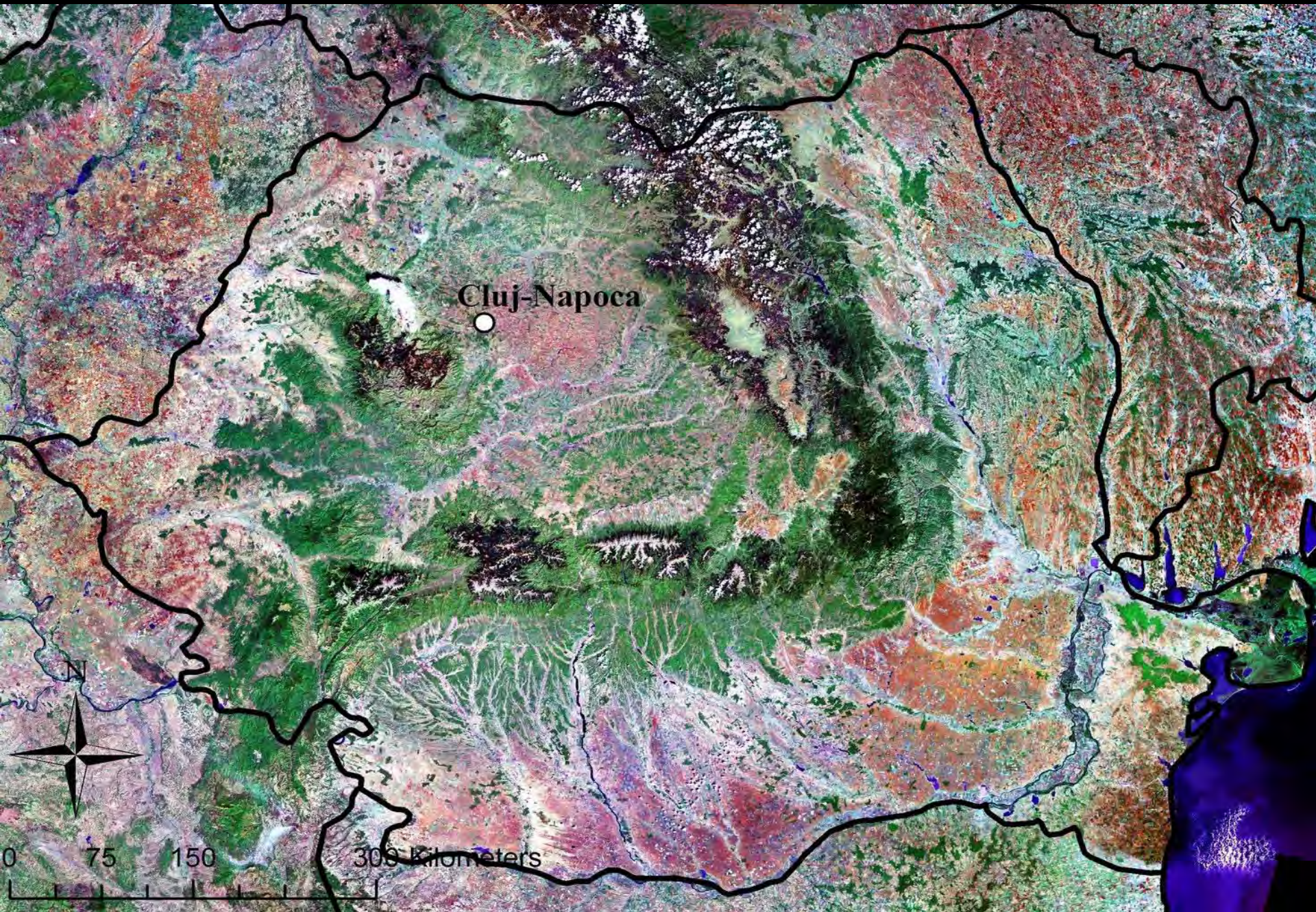
The main goals of the project is:

- collect genetic material - seed
 - well documented
 - described and evaluated
 - conserved under long term conditions
- 

Partners in collecting

1. Suzana Kratovalieva/Institute of Agriculture-Skopje, Republic of Macedonia
2. Senija Alibegović-Grbić/ Faculty of Agriculture University of Sarajevo, Federation of BH, Bosnia&Herzegovina
3. Zorica Tomic/Institute for Animal Husbandry Beograd/Serbia
4. Janka Guteva/ Institute for Plant Genetic Resources-Sadovo, Bulgaria
5. Gjorje Gatarić/Faculty of Agriculture-Banja Luka, Republic of Srpska, Bosnia and Herzegovina
6. Snjezana Bolaric/Faculty of Agriculture-Zagreb/Croatia
7. Evan Rocco/Faculty of Agriculture-Tirana/Albania
8. Vladimir Meglič/ Institute of Agriculture – Ljubljana/Slovenia

Target zone – Cluj district



Why Cluj district?

- the fodder plant population has not already been adequately sampled and conserved by the Gene Bank Suceava
- the material can be regenerated and multiplied in this district (near the areas where was collected) to the Research Station for Agricultural Production of meadows Jucu - Cluj
- because this territory (Cluj district) covers 3 large geomorphological units:
 - the Western Carpathians (Apuseni Mountains)
 - the Somes Plateau
 - Transylvanian Plain
- the plant populations are genetically distinct (by soil, climate, altitude, longitudinal gradients, pollinator's range, physical barriers).
- collection sites are accessible so collectors can get to the site and move around to make collections
- corresponding to the three large relief units there are the same number of topoclimates which, by their values, belong to the temperate continental climate:
 - genetic material is adapted to particular climatic conditions and this eco geographic region satisfying these requirements (homoclimate strategy).
 - germplasm have **tolerance to abiotic stress** because in this area the species has been exposed to the stress factor for a considerable period.
 - in this region is a long documented history of coexistence of the host and the pest - in the case of **pest resistance**

Up to the present, throughout the Cluj district, there have been inventoried and analysed 200 associations from phytocoenological, ecological, bioeconomic and ecoprotective point of view.

They include 33 forest associations, 73 pratal ones, 52 ruderal ones and associations growing in corn fields, 42 aquatic and palustrine ones.

The following lines briefly present from an ecologic and floral point of view the **main plant associations** that define the territory of Cluj district:

- ***Sedo hispanici – Poetum nemoralis***: It is encountered on shadowed limestone rocks, from the nemoral forest level
- ***Parietarium officinalis***: It is growing on shadowed or semi-shadowed screes at the base of limestone rocks in the district .
- ***Scorzonero roseae-Festucetum nigricantis***: These meadows are frequently encountered on the upper mountaineous and sub-alpine levels.
- ***Violo declinate – Nardetum***: This association is frequently found on the mountain and sub-alpine level where the soil is poorer than in the above-mentioned case.
- ***Seslerietum rigidae***: This association is frequently encountered in Cluj on shadowed or semi-shadowed rocks from the mountain level
- ***Epilobio – Juncetum effusi***: These hygrophileous plant formations identified by *Juncus effusus*, grow on riparian areas and valley (Poiana Horea), on alluvial soils with a poor mineral content.
- ***Festuco-Agrostetum capilaris***: These mesophillic meadows are extended throughout the entire park, up to upper limit of the beech forest .

- **Caricetum limosae**: This rare association which presents a special phytogeographic interest has been described for oligotrophic mountain bogs in the Cluj. Along with it, we can also find the Sphagno- Rhyncosporetum albae association.
- **Junco – Caricetum fuscae, Sphagnetum magellanici and Carici flavae – Eriophoretum latifolii** are found in eumesotrophic mountain bogs from Calineasa valley, Padis Plateau.
- **Calamagrosti – Digitalietum**: They are found on deforested lands at the beech level and in mixed forests of beech and spruce of Cluj district
- **Carpino fagetum**: These forests are sporadically spread and verge at the base of shadowed and semi-shadowed mountain sides at the lower mountain level.
- **Symphyto-Fagetum**: These pure beech woods are frequently encountered all over Apunseni Nature Park between 600 and 1,100 m (Boga, Galbenei and Garda valleys, Somesul Cald gorge).
- **Leucanthemo waldsteinii –Fagetum** (Ordancusa gorge, Alcaului and Garda valleys).
- **Hieracio rotundati – Piceetum**: These widely extended forests (Padis, Micau, Ordancusa) form the spruce zone.
- **Campanulo-Juniperetum**: These sub-alpine shrubs of small juniper are sporadically met on the entire northern crest of the park between Poienii and Dealul Paltinisului Peaks, being quartered in glades and clearings of the upper spruce zone (1,400-1,600m)

Cluj district geomorphological units

the Western Carpathians
-(Apuseni Mountains)

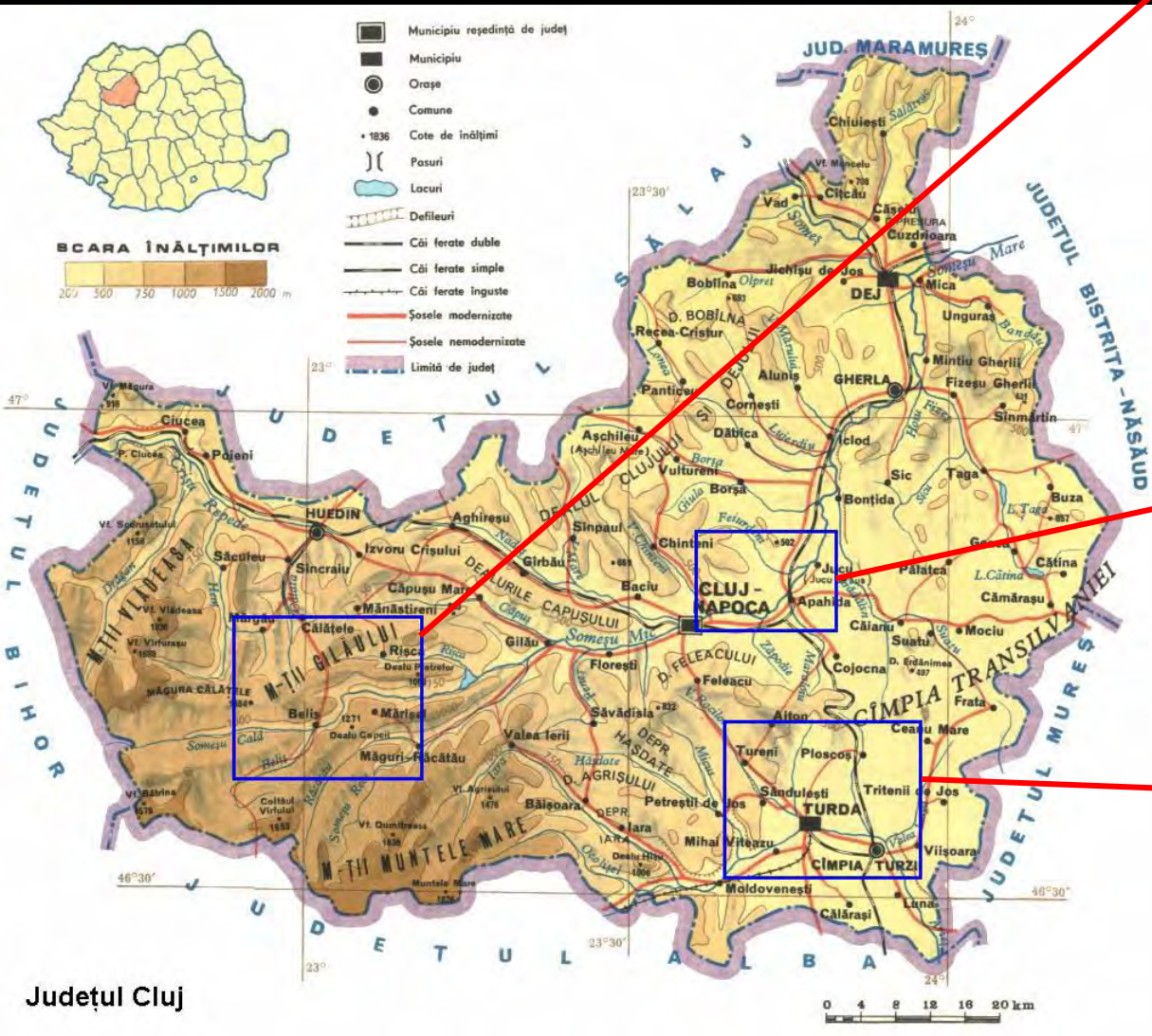
Dealul Botii
Belis
Poiana Horea
Balcesti

the Somes Plateau

Natural Reserve Fanetele Clujului
Forest Faget

Transylvanian Plain

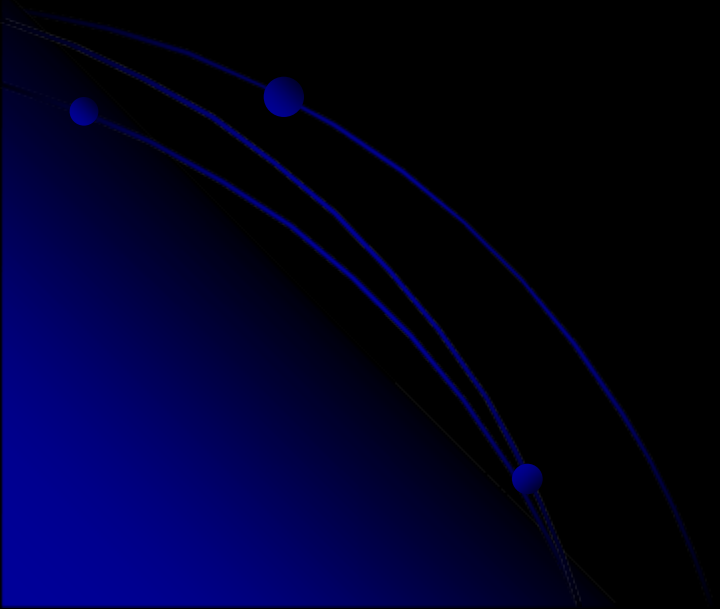
Natural Reserve Cheile Turenilor
Natural Reserve Cheile Turzii



Județul Cluj

0 4 8 12 16 20 km

Target areas





Natural Reserve Cheile Turzii



Natural Reserve Fanetele Clujului



Forest Faget (Cluj Napoca)



Natural Reserve Cheile Turenilor



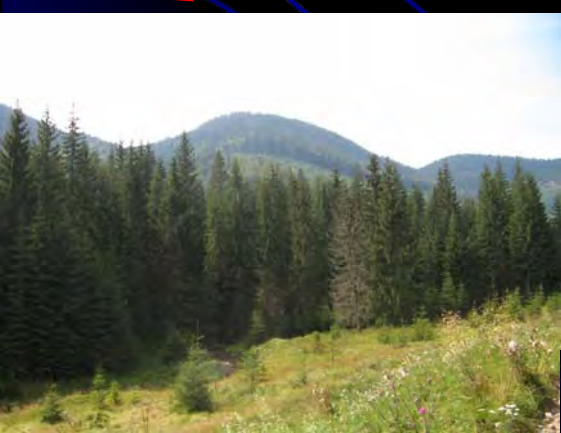
Belis



Dealul Botii



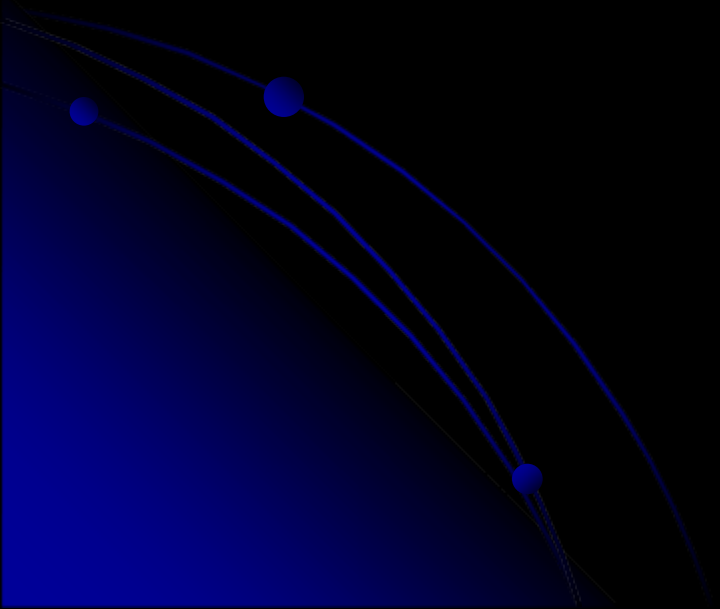
Balcesti



Poiana Horea



Target species





Dactylis glomerata



Medicago falcata



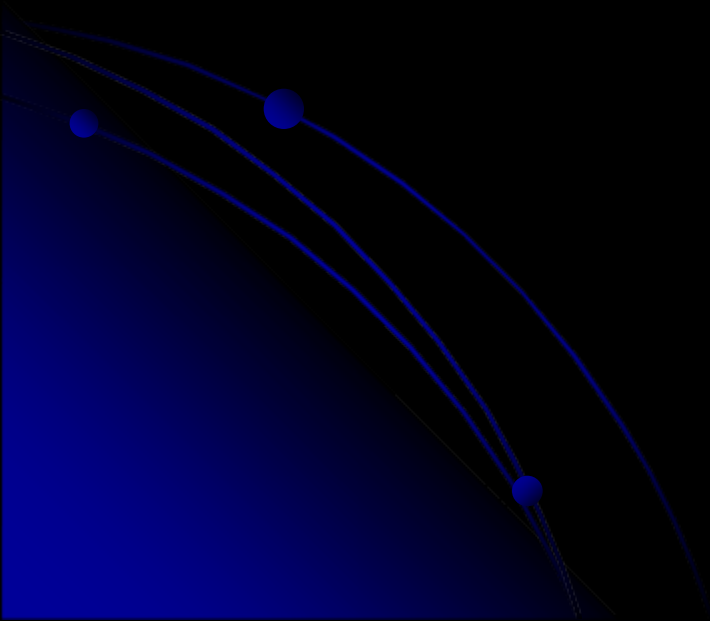
Festuca pratensis



Trifolium pratense

Why this species ?

- are involved in breeding programs in Romania
<http://istis.ro/blogs/ro/pages/catalog.aspx>
- economic value of this forages from vegetation of permanent pastures
- gaps in gene bank collection (check Biogen)
- are in list of priority species of the SEEDNet WG for Fodder Crops





MINISTERUL AGRICULTURII
ȘI DEZVOLTĂRII RURALE
BANCA DE RESURSE GENETICE
VEGETALE SUCEAVA
Nr. 363/2007

ROMÂNIA
JUDEȚUL CLEJ
CONSILIUL JUDEȚEAN
Nr. 11448/12.08.2009

CĂTRE

BANCA DE RESURSE GENETICE VEGETALE SUCEAVA
B-DUL I MAI, NR. 17, SUCEAVA 720224
JUD. SUCEAVA

Ca urmare a solicitării depuse de instituția dumneavoastră, înregistrată la Consiliul Județean Cluj, cu nr. 11448/30.07.2009, vă comunicăm următoarele:

- în rezervațiile naturale Cheile Turzii și Cheile Turenilor au fost semnalate descrise în studiile de specialitate speciile enumerate de dumneavoastră. Colectarea de sămânță de la aceste specii este permisă cu condiția ca această activitate să nu influențeze negativ populațiile de plante menționate, colectarea fiind în funcție de abundența și densitatea speciilor și să nu fie mai mare decât mărimea populației.
- vă rugăm să ne comunicați data la care a fost programată colectarea.

PREȘEDINTE

ALIN TISE

Alin Tise

p. Arhitect Șef: Georgeta Floc
Întocmit: consilier Kit Szabolc
Nr. exemplare: 2

Compartimentul Mediu

B-dul 21 Decembrie 1989, nr. 18, camera 51, C.F. 400094, municipiul Chișinău, județul Botoșani



Regia Națională a Pădurilor - ROMSILVA
Administrația Parcului Natural Apuseni R.A.
Centrul Administrativ și de Vizitare al Parcului Natural Apuseni
Localitatea Sudrigiu, nr. 136, com. Rieni, cod 417419
Tel/fax: 0259/329339; 0372/702242
e-mail: office@parcapuseni.ro; www.parcapuseni.ro



Nr. 83/RA / 4.08.2009

Către,

Banca de Resurse Genetice Vegetale Suceava

Referitor la solicitarea d-voastră pentru desfășurarea activităților de cercetare științifică pe tema „Regional collecting expedition and ex situ conservation of *Trifolium pratense* L., *Festuca pratensis* Huds., *Dactylis glomerata* L. and *Medicago falcata* L.”, în zonele Belș, Bălcești, Dealu Botii și Lacul Fântânele din Parcul Natural Apuseni, vă comunicăm

AVIZUL FAVORABIL

al Administrației Parcului Natural Apuseni, cu următoarele mențiuni:

- Se vor respecta cu strictețe normele de protecție a mediului
- Resturile menajere sau de altă natură rezultate în urma acțiunii vor fi evacuate în mod obligatoriu de către participanți
- Se va întocmi un raport asupra activităților realizate după încheierea acțiunilor din teren, care va fi înaintat APNA în termen de 15 zile calendaristice de la încheiere; trimiterea rapoartelor condiționează emiterea de viitoare avize
- Acțiunile vor fi monitorizate de către serviciul de pază al APNA

Cu considerație,



Întocmit,
Anca-Diana Ardeleanu
Specialist IT

Anca-Diana Ardeleanu

Collection permits



The collecting team



Field documentation



- o identifying target species
- o Identifying areas to collect
- o determined how much seed to collect
- o check the maturity before gathering seeds
- o assessing the target species population(s)
- o recording field data

Processing data and samples

- o care of seeds collections after harvest
- o preparing material for transportation



Seed collecting technique

- Clipping the stem with scissors just below the spikelet



Festuca pratensis Huds.

Dactylis glomerata L.

- Plucking of whole inflorescence

- Plucking of whole fruits



Medicago falcata L.



Trifolium pratense L.

Material collected

21 august Natural Reserve Cheile Turzii

- *Trifolium pretense* – 5 samples
- *Festuca pratensis* - 3 samples
- *Dactylis glomerata* – 2 samples
- *Medicago falcata* - 1 sample

22 august Natural Reserve Cheile Turzii

- *Trifolium pretense* – 6 samples
- *Festuca pratensis* - 2 samples
- *Dactylis glomerata* – 2 samples
- *Medicago falcata* - 1 sample

23 august Forest Faget (Cluj Napoca)

- *Trifolium pretense* – 5 samples
- *Festuca pratensis* - 1 sample

24 august Natural Reserve Cheile Turenilor

- *Trifolium pretense* – 5 samples
- *Festuca pratensis* - 3 samples
- *Dactylis glomerata* – 2 samples
- *Medicago falcata* - 1 sample

25 august Natural Reserve Fanetele Clujului

- Trifolium pretense* – 3 samples
- Festuca pratensis* - 2 samples
- Dactylis glomerata* – 4 samples
- Medicago falcata* - 1 sample

26 august Belis – Natural Park Apuseni

- Trifolium pretense* – 3 samples
- Festuca pratensis* - 2 samples
- Dactylis glomerata* – 1 sample
- Medicago falcata* - 1 sample

27 august Dealul Botii – Prislop – Natural Park Apuseni

- Trifolium pretense* – 4 samples
- Festuca pratensis* - 2 samples
- Dactylis glomerata* – 2 samples

28 august Poiana Horea - Natural Park Apuseni

- Trifolium pretense* – 2 samples
- Festuca pratensis* - 1 sample
- Dactylis glomerata* – 2 samples
- Medicago falcata* - 2 samples

29 august Balcesti – Natural Park Apuseni

- Trifolium pretense* – 4 samples
- Festuca pratensis* - 2 samples
- Dactylis glomerata* – 4 samples

Seed drying procedures

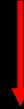


Drying at :

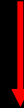
- **10-25°C temperature**
- **10-15% relative humidity**

Next steps

Seed cleaning



Seed viability testing (germination test)



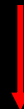
Seed packing and storage



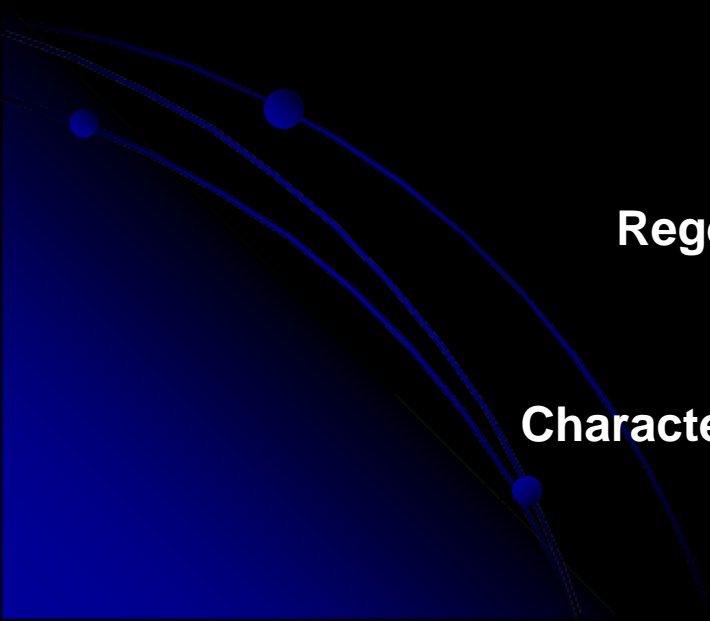
Seed monitoring



Regeneration/multiplication



Characterisation/preliminary evaluation



Priorities for the near future

- Multiplication and regeneration of the material collected.
- Characterization and evaluation activity at collected forages from previous and actual project.
- Identification of some wild forage species sources and characterization with a view to introduction their utilization in pre-breeding programs.
- Achievement of the primary characterization, in the collection site, especially for forage species which are threatened by extinction.

A scenic view of a river flowing through a dense forest. The water is a light, milky green color, and the surrounding trees are lush and green. Sunlight filters through the canopy, creating dappled light on the water and the forest floor. The overall atmosphere is peaceful and natural.

Thank you for your attention