

**BIODIVERSITY AND HABITATS OF THE PROTECTED AREA  
ROSCI0174 STUDINITA FOREST**

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**ABSTRACT**

*In order to carry out the work, some basic notions regarding biodiversity were presented. In order to carry out the study, an inventory of the species from the 6 categories found in the analysed site was carried out: plants, insects, amphibians, reptiles, birds and mammals. In addition, the 2 habitats found in the protected area were also presented, one of which is of particular importance.*

*Regarding the species of plants and animals encountered, a number of individuals were also noted that present various types of importance at the national and international level, a fact determined by the legislation in force, within the protected area a series of activities of maintenance of the forest massif for conservation purposes.*

**INTRODUCTION**

To date, taxonomists have inventoried around 1,700 million species, which include plants, animals and microorganisms (bacteria, viruses). However, there is a belief that the number of species is much higher. The most recent estimates range from 8 to 15 million, with some researchers reaching as high as 100 million species. (Cristea 2006)

Of these living things, the best known are mammals, birds and higher plants, and the least known are viruses, bacteria, algae, etc. (Grant 1963)

Biodiversity is the very foundation of human existence. Thus, ecological diversity represents the total variability of life on Earth and actually refers to the variability of plants, animals, microorganisms and the ecosystems in which they occur. (Cristea 2006)

Unfortunately, this wealth is dwindling day by day due to pollution of land, water and air. (Botnariuc 1992)

Biodiversity can be viewed from three points of view: ecosystem diversity, species diversity and gene diversity. (Hoyt 1992)

Ecosystems are made up of interdependent communities of species (complex mixture of species and varieties or races) and their physical environment. (Botnariuc 1974)

Species diversity corresponds to the number of species that exist in a given area. The greater the number of species, the greater their diversity. (Botnariuc 1992)

Due to the particularities and diversity of the relief, the fauna and flora of the Protected Natural Area ROSCI0174 Studinita Forest have a special value. The number of reported species is very high, compared to the area of the territory.

### **MATERIAL AND METHODS**

The protected natural area ROSCI0174 Studinita Forest is located in the forest-steppe of the Romanian Plain. From an administrative point of view, the forest is located in the central-southern part of Olt County, on the territory of Studina commune (in the west of Studinita village, in the immediate vicinity of the national road DN54, which connects Caracal municipality with Corabia city).

The surface of the site is 65.83 ha and is public property managed by the Olt Forestry Directorate.

From a geological point of view, the territory of the site is located on quaternary formations represented by loess and loessoid deposits. On the Lower Pleistocene fluvial-lacustrine structure, which defines the Piedmont genesis of the area, in the more recent times of the Quaternary-middle Peistocene-Holocene, a 5-15 m thick blanket of loessoid deposits was laid.

Geomorphologically, the site is located in the southern part of Câmpia Romanatilor, in the east of the Leu-Rotunda field and falls within the forest-steppe area. The land is in the form of a field with an altitude of 90-105 meters, unfragmented.

From a hydrological point of view, the site does not have water courses, but it is part of the hydrographic basin of Olt.

Phreatic waters are stored in quaternary deposits. The aquifer layers are made of gravel and sand, the thickness of which varies between 3 and 30 meters. The piezometric level is placed at variable depths of 5 m - 10 m. The aquifer horizons are fed over their entire surface from precipitation.

The climate is one of forest-steppe, dry due to the non-uniformity of precipitation in the growing season and high temperatures. The average annual temperature is 11.5°C, and the average annual precipitation is approx. 525 mm. The winds are characterized by the predominance of western components. (Ciocârlan 2009)

The climatic conditions, the shape of the relief and the parental material, the water and hydrological regime determined the formation of the genetic types of soils characteristic of the area under study.

The soils mostly belong to the group of mollisols with cambic chernozems and clay-iluvial chernozems.

Cambial chernozems occupy small areas around the perimeter of the site. They have a high content of humus, of the same quality as chernozems, carbonates washed to more than 70-80 cm and a good supply of nutrients. Compared to the chernozems, found further south, the natural humidity conditions are more favorable.

Clay-iluvial chernozems occupy the largest surfaces in the perimeter of the site. It is characterized by a lower clay content (2.5/3.5%), and the upper level of carbonates located at depths of 120 - 140 cm. They have a clearer textural differentiation on the profile, due to the migration of clay from the A horizon and its accumulation in the B horizon. These changes, also correlated with the lower base saturation values, do not essentially change the fertility.

Zoological and botanical books and atlases were consulted for the systematic identification and grouping of plant and animal species.

In order to carry out the study, a series of 10 field visits were carried out, totaling approximately 80 hours of field research.

In order to explore the protected area, locate and identify plant and animal species, GPS and Google Earth were used. Species found in the field had not suffered any injury or other action that would disrupt the physical integrity of the organism at the time of determination.

Regarding the studied material, it should be stated that part of the determinations were made directly in the field, and the other part was made by studying the images taken in the researched area.

## RESULTS AND DISCUSSIONS

Two types of habitats were identified in the site:

40C0\* Ponto - Sarmatian deciduous thickets - mapped habitat area in the field: 10.03 ha (Figure 1).

They are dry climate-loving shrubs characteristic of forest-steppe areas. In our country, they are present especially in Dobrogea, but also in Subcarpathia de Curbură, southern Moldova, Bărăgan, and less often in southern Muntenia and Oltenia. There are several variants, depending on the building species.

They are deciduous shrubs of the steppe zone with shrubs in the Pontic and Sarmatian regions and the adjacent territories in the area of steppe forests of oaks and Tatarian maples and subeuxinic steppe forests, which are part of habitat 9110 - Euro-Siberian steppe forests with *Quercus spp.*

Characteristic associations identified: *Prunetum tenellae* Soó1951.

91AA Ponto-Sarmatian Forest vegetation with downy oak - habitat area mapped in the field: 46.23 ha (Figure 2).

Extrazonal forests dominated by downy oak, with sub-Mediterranean flora, occupying warmer enclaves within the subcontinental ranges of *Quercion frainetto* and *Carpinion illyricum*.

Characteristic associations identified: *Paeonio peregrinae* –*Quercetum pubescentis* - Sârbu 1978, Sanda et Popescu 1999; *Galio dasypodi-Quercetum pubescentis*, Doniță 1970.

In Studinița Forest, the woody vegetation is dominated by downy oak - *Quercus pubescens*, which forms a clean stand, unique in Olt County and probably in Romania. Most of the trees are over 100 years old, distributed at a distance from each other, leaving wide spaces - clearings, covered by grassy vegetation.

Downy oak is a thermophilic species, which migrated during the boreal period from the Balkan centers of postglacial spread, currently the species occupies limited areas.

From the point of view of species biodiversity, the following categories were identified: plants, insects, amphibians, reptiles, birds and mammals.

Numerous species of plants from different orders and families were identified, among which we mention the species that had a high frequency: *Quercus pubescens*, *Acer campestre*, *Aegilops crassa*, *Aegopodium podagraria*, *Agropyron elongatum*, *Alliaria petiolata*, *Allium scorodoprasum*, *Arabis hirsuta*, *Artemisia austriaca*, *Artemisia campestris*, *Astragalus cicer*, *Astragalus varius*, *Ballota nigra*, *Berberis vulgaris*, *Berula erecta*, *Bothriochloa ischaemum*, *Brassica rapa*, *Campanula bononiensis*, *Cicuta virosa*, *Cirsium vulgare*, *Consolida regalis*, *Convallaria majalis*, *Cornus mas*, *Cornus sanguinea*, *Echium vulgare*, *Eryngium campestre*, *Euphorbia amygdaloides*, *Euphorbia peplis*, *Evonimus europaea*,

*Festuca pseudovina*, *Fraxinus ornus*, *Galium odoratum*, *Galium verum*, *Geranium pusillum*, *Geum urbanum*, *Hieracium bauhinii*, *Hordeum hystrix*, *Hypericum perforatum*, *Lathyrus sylvestris*, *Lepidium campestre*, *Ligustrum vulgare*, *Limodorum abortivum*, *Lychnis coronaria*, *Matricaria perforata*, *Medicago lupulina*, *Mentha arvensis*, *Ononis arvensis*, *Plantago lanceolata*, *Poa angustifolia*, *Poa nemoralis*, *Polygala vulgaris*, *Ulmus laevis*, *Urtica dioica*, *Verbascum banaticum*, *Verbascum phoeniceum*, *Veronica chamaedrys*, *Veronica hederifolia*.

A number of 57 species of insects were encountered in the field, among which we mention: *Acheta domestica*, *Anthocharis cardamines*, *Aporia crataegi*, *Calliptamus barbarus*, *Calliptamus italicus*, *Chorthippus (Chorthippus) parallelus*, *Chorthippus (Glyptobothrus) biguttulus hedickei*, *Coccinella septempunctata*, *Colias croceus*, *Gonepteryx rhamni*, *Gomphocerippus rufus*, *Gryllotalpa gryllotalpa*, *Gryllus campestris*, *Inachis io*, *Iphiclydes podalirius*, *Leptophyes albovittata*, *Lycaena phlaeas*, *Metriopectera (Roeseliana) roeselii*, *Neozephyrus quercus*, *Oecanthus pellucens*, *Oedipoda caerulea*, *Pahytodes erraticus*, *Papilio machaon*, *Pezotettix giornae*, *Phaneroptera falcata*, *Phaneroptera nana*, *Platycleis albopunctata grisea*, *Poecilimon fuscii*, *Pontia edusa*, *Pyrgus malvae*, *Pyrrhocoris apterus*, *Rhacocleis germanica*, *Sphingonotus caeruleus*, *Spialia orbifer*, *Tettigonia caudata*, *Tettigonia viridissima*, *Vanessa atalanta*, *Vespa crabro*.

During the research, both amphibian species (*Pelobates fuscus*, *Bufo viridis*, *Hyla arborea*) and reptile species (*Lacerta viridis*, *Lacerta agilis*, *Ablepharus kitaibelii*, *Podarcis taurica*, *Natrix natrix*) were noted.

Regarding bird species, 118 species were identified, namely: *Ciconia nigra*, *Ciconia ciconia*, *Pernis apivorus*, *Milvus migrans*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus pygargus*, *Accipiter brevipes*, *Buteo rufinus*, *Aquila pomarina*, *Hieraetus pennatus*, *Falco tinnunculus*, *Falco vespertinus*, *Falco columbarius*, *Falco subbuteo*, *Falco cherrug*, *Falco peregrinus*, *Perdix perdix*, *Phasianus colchicus*, *Scolopax rusticola*, *Columba palumbus*, *Streptopelia decaocto*, *Streptopelia turtur*, *Otus scops*, *Athene noctua*, *Caprimulgus europaeus*, *Merops apiaster*, *Coracias garrulus*, *Upupa epops*, *Jynx torquilla*, *Picus canus*, *Dendrocopos syriacus*, *Dendrocopos medius*, *Dendrocopos minor*, *Lullula arborea*, *Alauda arvensis*, *Anthus campestris*, *Motacilla flava*, *Motacilla cinerea*, *Motacilla alba*, *Prunella modularis*, *Erithacus rubecula*, *Phoenicurus ochruros*, *Phoenicurus phoenicurus*, *Turdus merula*, *Turdus pilaris*, *Turdus philomelos*, *Turdus iliacus*, *Turdus viscivorus*, *Sylvia nisoria*, *Phylloscopus sibilatrix*, *Phylloscopus collybita*, *Phylloscopus trochilus*, *Regulus regulus*, *Regulus ignicapilla*, *Muscicapa striata*, *Ficedula parva*, *Ficedula albicollis*, *Aegithalos caedatus*, *Sitta europaea*, *Oriolus oriolus*, *Lanius collurio*, *Lanius minor*, *Garrulus glandarius*, *Pica pica*, *Corvus monedula*, *Corvus frugilegus*, *Corvus corone cornix*, *Corvus corax*, *Sturnus vulgaris*, *Carduelis chloris*, *Carduelis carduelis*, *Carduelis spinus*, *Carduelis cannabina*, *Emberiza hortulana*, *Miliaria calandra*, *Accipiter gentilis*, *Accipiter nisus*, *Buteo buteo*, *Buteo lagopus*, *Dendrocopos major*, *Galerida cristata*, *Riparia riparia*, *Hirundo rustica*, *Luscinia luscinia*, *Luscinia megarhynchos*, *Sylvia atricapilla*, *Ficedula hypoleuca*, *Parus palustris*, *Parus ater*, *Parus caeruleus*, *Parus major*, *Certhia familiaris*, *Lanius excubitor*, *Passer domesticus*, *Passer montanus*, *Fringilla coelebs*, *Fringilla montifringilla*, *Pyrrhula pyrrhula*, *Emberiza citrinella*.

Following the research carried out in the field, 33 species of mammals were identified, namely: *Rhinolophus hipposideros*, *Eptesicus serotinus*, *Pipistrellus pipistrellus*, *Nyctalus leisleri*, *Nyctalus noctula*, *Plecotus auritus*, *Plecotus austriacus*,

*Vespertilio murinus*, *Myotis myotis*, *Myotis mystacinus*, *Lepus europaeus*, *Spermophilus citellus*, *Vulpes vulpes*, *Canis aureus*, *Mustela nivalis*, *Mustela putorius*, *Martes martes*, *Meles meles*, *Capreolus capreolus*, *Erinaceus roumanicus*, *Crocidura suaveolens*, *Crocidura leucodon*, *Sorex araneus*, *Sorex minutus*, *Talpa europaea*, *Microtus arvalis*, *Microtus subterraneus*, *Apodemus agrarius*, *Apodemus sylvaticus*, *Apodemus uralensis*, *Mus musculus*, *Mus spicilegus*, *Rattus norvegicus*.

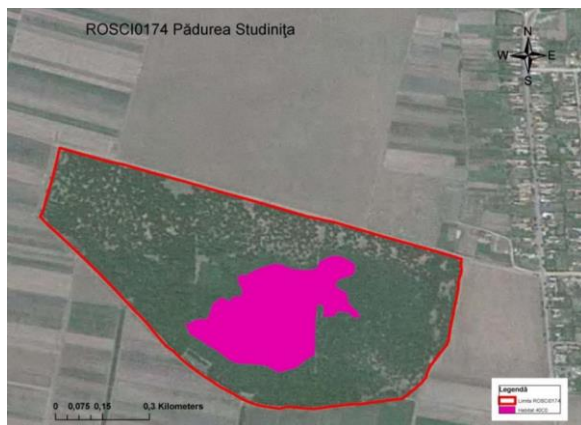


Figure 1. 40C0\* Ponto - Sarmatian deciduous thickets – map distribution

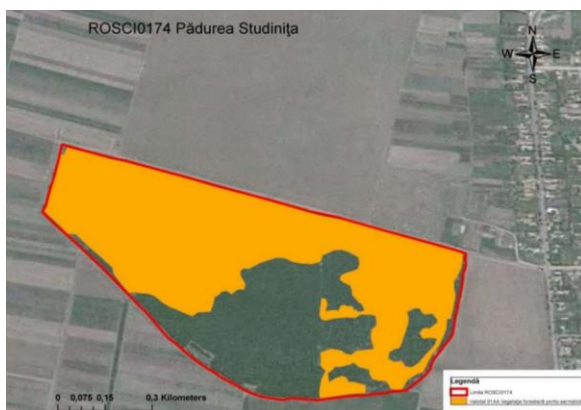


Figure 2. 91AA Ponto-Sarmatian Forest vegetation with downy oak – map distribution

## CONCLUSIONS

Following the inventory/mapping activity of the species from the site included in the project, a series of species of local and national importance were identified and evaluated, namely: plants: 185 plant species of which one species of importance national and/or community; insects: 57 species of insects of which one species of national and/or community importance; amphibians: 3 species identified of national and/or community importance; reptiles: 5 species of reptiles of national and/or community importance; birds: 118 identified species of which 78 are of national and/or community importance; mammals: 33 species of mammals of which 19 are of national and/or community importance.

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