

VEGETATION AND FAUNA OF THE JIU DEFILE NATIONAL PARK

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ABSTRACT: The Jiu Defile National Park is a protected area of 11.127 hectares, located in the Western Carpathian Mountains and classified according to the classification of the International Union for Conservation of Nature in the 2nd category PNDJ National Park. The park includes the "wildest crosspaths of the Romanian Carpathians" and aims to protect and conserve species for the national biogeographical area, with a special value in terms of fauna. There are two stages of vegetation in the park area. In the 46 study areas, 701 plant species were established, out of which 553 cormorant species and 148 tallow species, the last consisting of 86 species of bryophytes, 49 species of fungi and 13 species of lichens. The invertebrate fauna is numerous, with a total of 213 species, of which 8 species of insects, 2 crustacean species and 2 species of molluscs protected at european and national level, have been identified so far. Due to the variety of terrestrial and aquatic ecosystems that provide optimal living conditions, the fauna of the national park is rich and varied, establishing a total of 441 species of animals, including 45 mammals, 135 birds, 23 reptiles, 14 amphibians and 11 fish.

KEY WORDS: defile, Jiu, vegetation, fauna

1. GENERAL INFORMATION ABOUT THE JIU DEFILE

National Park Jiu Defile was established at the end of 2005, through the Government Decision no. 1581 / 08.12.2005, regarding the establishment of the protected natural area regime for new areas. National Park National Park is a protected area of national interest, being classified according to the classification of the International Union for Conservation of Nature in the 2nd category, National Park. PNDJ. It aims at the protection and preservation of representative samples for the national biogeographical space, including natural elements of special value, under the physico-geographic, floristic, faunistic, hydrological, geological, paleontological, speleological, pedological aspect and offers the possibility of visiting for scientific purposes, educational, recreation and tourism.

National Park Jiu has an area of 11,127 hectares and is located in the western Carpathians on the eastern slope of the Valkan Mountains and on the western slope of the Parang Mountains. From the administrative point of view Gorj county belongs to more than 10,000 hectares, the rest belonging to Hunedoara County (fig.1).



Fig. 1. Location of the National Park Jiu Defile in Romania

2. ZONING OF THE NATIONAL PARK JIU DEFILE

National Park Jiu Defile is located in the western part of the southern Carpathians, delimited in the western part of the Vâlcan Mountains, and in the eastern part of the Parâng Mountains, it includes the "wildest crosspaths of the Romanian Carpathians" and the adjacent perimeter, the county of Gorj and the south of Hunedoara county. It is located between 45°N and 23°W and between altitudes of 295 m (in the Jiu Valley at the southern extremity) and 1621 m (in the Vulcan pass at the western extremity), covering a level difference of 1326 m (fig. 2 .)



Fig. 2. Satellite view of the Jiu Defile of the National Park

According to OUG 57/2007, the following areas are established in the Jiu Defile National Park (fig. 3):

- the full protection area (9838 ha) - it contains the most valuable assets of the natural heritage within the protected natural areas
- sustainable conservation area (1033.5 ha) - it is not included in areas with strict protection or sustainable development of human activities and makes the transition between the areas with full protection and the developmental areas
- sustainable development area (134.5 ha) - areas where investment and development activities are allowed for tourism, but respecting the principle of sustainable development of natural resources and the prevention

of any significant negative effects on biodiversity.



Fig. 3. Internal Zoning of the Jiu Defile Jiu National Park

3. VEGETATION OF THE NATIONAL PARK JIU DEFILE

There are two vegetation stages in the park area:

- first stage = mountain vegetation: mixed forests of beech, spruce, fir, fir or pure beech on small surfaces; Secondary mountain meadows, mixed beech, spruce and fir forests; Mountain beech forests.
- second step = vegetation of hills, plateaus and plains, concentrating: beech forests, hills and plateaus; An alternation of beech forests with oak forests and mixed forests of beech and oak, blended with other deciduous species on hills and plateaus; Hornbeam forests on hills and plateaus

701 plant species were recorded in the Jiu Defile National Park in 46 study areas, out of which 553 cormorant species and 148 tallophite species, the last consisting of 86 species of bryophytes, 49 species of fungi and 13 species of lichens

Among cormorants, 35 species are listed on the National and International Red Lists, including 8 endemic vegetal taxa (*Atamantha turbith* ssp.hungarica, *Centaurea coziensis*, *Dianthus henteri*, *Dianthus spiculifolius*, *Dianthus tenuifolius*, *Hepatica transsilvanica*, *Linum uninerve*, *Thymus comosus*) (fig. 4)

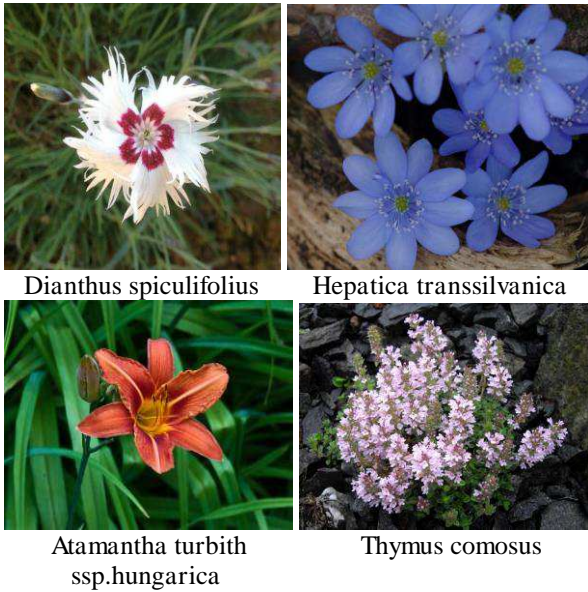


Fig. 4. Species of cormorants - endemic vegetal taxa

Rare species are: *Dactylorhiza maculata*, *Epipactis atrorubens*, *Galium lucidum*, *Juniperus Sabina*, *Saxifraga marginata*, *Symphandra wanneri* (fig. 5).



Fig. 5. Rare species of plants

In the deep and sinuous Jiu valley, steep forested slopes, covered with compact, virgin and quasi-wild forests, spread over 4,020 ha and 43% of the total area of park forests, consisting of pure and mixed beech forests (*Fagus sylvatica*) And oak (*Quercus petraea*,

Q. polycarpa, *Q. dalechampii*), which gives the spectacular gorge
 • on the rock the silversmith (*Pinus sylvestris*) (fig.6)



Fig. 6. Species covering slopes and cliffs

In the rest of the stands vegetates:

- woody species: tree (*Abies alba*), spruce (*Picea excelsa*), *Ulmus montana*, *Tilia cordata*, *Tilia tomentosa*, *Carpinus betulus*, *Acer pseudoplatanus*, *Betula verrucosa*, *Salix caprea*, *Fraxinus excelsior*, *Populus tremula*, *Populus nigra*, *Cerasus avium*, *Pyrus pyraister*, *Mojdrean* (*Fraxinus ornus*), *Sorbus* (*Sorbus aria*), turkish cherry (*Padus mahaleb*) (fig. 7)
- shrub species: *Cornus sanguinea*, *Sambucus nigra*, *Sambucus racemosa*, *Euonymus europaea*, *Euonymus verrucosa*, *Syringa vulgaris*, *Corylus avellana*, the rose (*Rosa sp.*), the hawthorn (*Crataegus sp.*) (fig. 8)



Abies alba *Tilia tomentosa*



Betula verrucosa

Populus nigra

Fig. 7. Arboric wood species



Cornus sanguinea

Syringa vulgaris



Rosa sp.

Corylus avellana

Fig. 8. Arbustive species

On the bank of the Jiu, the black alnus (*Alnus glutinosa*), the white shay (*Salix alba*), the honeysuckle (*Corylus avellana*).

At higher altitudes, the green alnus (*Alnus viridis*), *Juniperus communis*, *juneapanus* (*Pinus montana*) and voluminous species: *Hedera helix*, *Clematis vitalba*, *Clematis alpina*.

The mountain glade is covered with grassland vegetation.

Virgin forests are reforestation forests with natural structures unaffected by significant anthropogenic interventions, derived exclusively from sexually regenerated, resinous and hardwoods, with an average age of over 99 years, and those of birch, poplar and willow over 29 years.

Quasi-Virgine forests have broadly the same features as virgin ones, but in which anthropogenic interventions resulted in a reduction of less than 0.7 of their consistency without substantial changes of the vertical and horizontal structure (fig. 9).

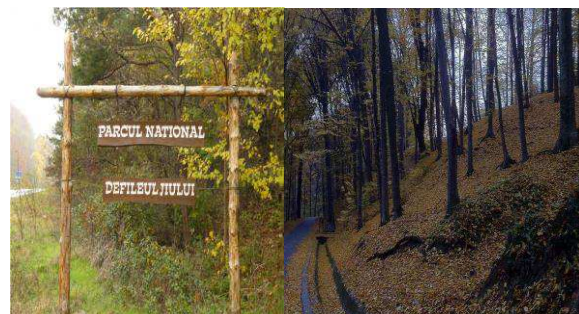


Fig. 9 Virgin and Quasi-Virgile Forests within the National Park Jiu Defile

4. Fauna of the National Park Jiu Defile

Is numerous, with a total of 213 species, out of which 8 species of insects, 2 crustacean species and 2 species of molluscs protected at European and national level, 3 of the 8 insect species being also priority species: the hermit (*Osmoderma eremita*) and the Alpine tailor (*Rosalia alpina*), such as the scorpion (*Euscorpium carpaticus*), a carpal endemic (fig. 10).

Invertebrates of community interest are: *Cerambyx cerdo*, *Lucanus cervus* and *Hirudo medicinalis* an aquatic invertebrates.

Lepidoptera are represented by *Papilio machaon*, *Vanessa atalanta*, *Erebia melas*, *Vanessa cardui*, *Apatura iris*, *Inachis* and *Callimorpha quadripunctaria* a priority species of community interest

Species belonging to the class of gastropods (snails) are considered bioindicators of the environment where there is no pollution: *Lacinaria plicata*, *Helicigona banatica*, *Helix pomatina banatica*, *Faustina faustinum*, *Limax cineroniger*.



Rosalia alpina Euscorpius carpathicus

Fig. 10. Priority insect species

Due to the variety of terrestrial and aquatic ecosystems that ensure optimal living conditions, the fauna of the national park is rich and varied.

A total of 441 species of animals were found: 45 mammals, 135 birds, 23 reptiles, 14 amphibians and 11 fish.

Amphibians - they are distinguished by important species at national and European level: Triturus cristatus, Bombina bombina, Bombina variegata, Hyla arborea (brood) Rama dalmatina (forest frog), Bufo viridis (green turtle) (fig. 11).



Fig. 11. Bufo viridis and Bombina bombina

Reptiles - represented by a total of 12 species, including 7 protected species: Vipera ammodytes ammodytes (horned viper), Balkan endemic, Zooteca praticola, near the northern boundary of the general area and Vypera berus, as well as and species of community interest: Lacerta agilis, Lacerta muralis, Elaphe longissima, Vipera berus and Vipera ammodytes, Endemic species (fig. 12).



Fig. 12. Vipera ammodytes and Lacerta agilis

Fish - there are 11 species identified, of which 3 species are protected by national and european legislation.

Birds - The Jiu Defile is one of the main color of migratory birds of the community interest: Ciconia ciconia (white stork), Falco peregrinus, Aquila pomarina, Falco verspertinus, Tetrao urogallus (Mountain hump) or common: Upupa epops, Bubo bubo, Corvus corax, Anas platyrhynchos (large duck); on the two sides of the Jiu, Cinclus cinclus is often observed, and in the mild exemplary winters of the species Phalacrocorax pygmeus (small cormorant) (fig. 13).



Fig. 12. Ciconia ciconia and Anas platyrhynchos

Mammals - include 45 species, of which 15 species belong to Chiroptera order (bats); of the 30 mammalian species (excluding the chiroptera), 19 species are protected in the PNDJ, of which two species, the wolf (Canis lupus) and the bear (Ursus arctos) are also priority species at European level, Lynx lynx (ras) (Cervus elaphus), Capreolus capreolus (roe deer), and Rupicapra rupicapra (black goat) (fig. 13)



Fig. 13. Species of priority mammals at European level, *Canis lupus* and Carpathian deer

- approval of the regulation for its organization and functioning
- Emergency Ordinance no. 57/2007 on the regime of natural protected areas, conservation of natural habitats, wild flora and fauna
- Law no. 46/2008 on the Forest Code
- www.defileuljiului.ro
- <https://www.agerpres.ro/mediu/2015/09/14>
- www.defileuljiului.ro/valori/valorile-parcului/biodiversitate

CONCLUSION

National Park Jiu Defile was established at the end of 2005, by Government Decision no. 1581 / 08.12.2005 and has an area of 11,127 hectares.

It is located in the west of the southern Carpathians, on the eastern slope of the Vâlcan Mountains and on the western slope of the Parâng Mountains.

According to OUG 57/2007, the following areas are defined in the Jiu Defile National Park: the full protection area (9838 ha), the sustainable conservation area (1033.5 ha) and the sustainable development area (134.5 ha).

There are two vegetation stages in the park area. In the Jiu Defile of the National Park, in 46 study areas, 701 plant species were established, out of which 553 cormorant species and 148 tallophyte species, the last consisting of 86 species of bryophytes, 49 species of fungi and 13 species of lichens

Invertebral fauna is numerous, with a total of 213 species, of which 8 species of insects, 2 crustacean species and 2 species of molluscs protected at european and national level, 3 of the 8 insect species being also priority species
A total of 441 species of animals were found: 45 mammals, 135 birds, 23 reptiles, 14 amphibians and 11 fish.

REFERENCES

- Order of the Ministry of Environment and Sustainable Development no. 514/2008 on the establishment of the Scientific Council of the National Park Jiu Defile and the

