



5. Hrvatski botanički simpozij
5th Croatian Botanical Symposium
Primošten, Hrvatska, 22. - 25.9.2016.

EXCURSION TO THE NATIONAL PARK KRKA

The 25th of September

Departure 8 a.m. / Return 5 p.m.



Morning Skradinski buk

Afternoon Miljevački Bogatići / Oziđana pećina / Ogrlice

Guides Vedran Šegota, Nina Vuković & Antun Alegro

Hiking shoes, rainwears and warm clothes are recommended

Lunch at **12 a.m.** at Restaurant Visovac in Skradin

(in case of emergency call [+385915867707](tel:+385915867707) or [+385959004752](tel:+385959004752))

KRKA NATIONAL PARK

Krka National Park in Northern Dalmatia, with an area of 109 km² embraces almost the whole course of the Krka River, and lower course of the Čikola tributary. After initial legal protection of several course segments, the whole area was finally proclaimed a national park in 1985. The key phenomena of the Krka River are the travertine waterfalls and other karst formations, which are forming the backbone of landscape and biological diversity. Beside great geomorphological and hydrological values, this area exhibits exceptional floristical richness and was accordingly identified as important plant area (IPA) in Croatia. Regarding phytogeographical position, the area belongs to the sub-Mediterranean zone, mainly characterised by deciduous forests dominated by downy oak (all. *Ostryo-Carpinion orientalis*), during the centuries largely degraded by human impact into low forest, shrubberies, dry grasslands and rocky pastures.



On the contrary, abandonment of traditional pasturage and wood cutting caused by strong depopulation in the last decades has inverted this process, in the direction of progressive vegetation succession. Once well-developed dry rocky grasslands maintained by constant grazing are nowadays severely overgrown by underbrush (mainly Christ's thorn *Paliurus spina-christi*, but also red-berried juniper *Juniperus oxycedrus*, oriental hornbeam *Carpinus orientalis*, downy oak *Quercus pubescens*, and other).

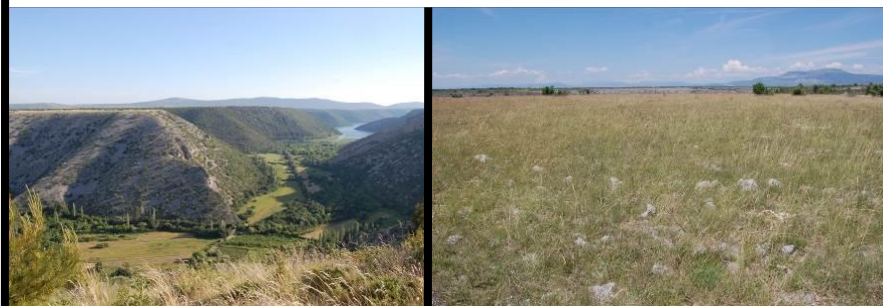
The flora of this area has been studied from as early as the 19th century by Roberto Visiani, however, the first comprehensive research was done in the period between 1989 and 1991. Continuous floristic field studies in last 10 years revealed a species list of 1180 taxa, representing more than 20 % of the total Croatian flora. This great floristic richness is the result of the Parks phytogeographical position, diversity of habitats and long-lasting anthropogenic influence on the flora and vegetation of the area.

The excursion will be divided in two parts. Firstly, we will visit the waterfalls of Skradinski buk, one of the landscape 'hot spots' of the Park. The key phenomena here are the travertine barriers, made of limestone filled with remains of algae and aquatic mosses covered in stone. These formations are created through a dynamic process of the combined action of physical and chemical factors and living organisms. The most important organisms in this context are aquatic mosses and algae, which take part in the calcium-carbonate precipitation, thus gradually being covered with travertine, and becoming 'one' with the barrier.

Floristically, the area is specific and very diverse, due to the ecological context where the climatic vegetation, mostly comprised of typical sub-Mediterranean elements from *Ostryo-Carpinion orientalis*, mixes with hygrophilous, helophytic and macrophyte vegetation associated with the river watercourse.



Second part of the excursion will take part more northwards, near the village Miljevački Bogatići, where the grassland vegetation of *Koelerio-Festucetum illyricae* pastures was once well developed, but is nowadays severely overgrown by numerous shrubs.



Acer campestre L.
Acer monspessulanum L.
Adiantum capillus-veneris L.
Aethionema saxatile (L.) R. Br.
Agrostis stolonifera L.
Ailanthus altissima (Mill.) Swingle
Alisma plantago-aquatica L.
Alnus glutinosa (L.) Gaertn.
Anagallis arvensis L.
Arabis turrata L.
Arctium lappa L.
Arum italicum Mill.
Arundo donax L.
Asparagus acutifolius L.
Asplenium ceterach L.
Asplenium trichomanes L.
Aurinia sinuata (L.) Griseb.
Avena barbata Pott ex Link
Berula erecta (Huds.) Coville
Bituminaria bituminosa (L.) Stirton
Brachypodium sylvaticum (Huds.) P.Beauv.
Calamintha nepetoides Jord.
Campanula pyramidalis L.
Celtis australis L.
Centaurium pulchellum (Sw.) Druce
Cephalaria leucantha (L.) Roem. et Schult.
Ceratophyllum demersum L.
Cladium mariscus (L.) Pohl
Clematis vitalba L.
Colutea arborescens L.
Convolvulus arvensis L.
Conyza bonariensis (L.) Cronquist
Conyza canadensis (L.) Cronquist
Coronilla emerus L. ssp. *emeroides* Boiss. et Spruner
Cotinus coggygria Scop.
Crucianella latifolia L.
Cyclamen hederifolium Aiton
Cyperus longus L.
Dactylis glomerata L.
Ephedra fragilis Desf.
Euonymus europaeus L.
Eupatorium cannabinum L.
Ficus carica L.
Fraxinus angustifolia Vahl
Fraxinus ornus L.
Galium aparine L.
Galium mollugo L.
Hordeum murinum L. ssp. *leporinum* (Link) Arcang.
Humulus lupulus L.
Hydrocotyle vulgaris L.
Hypericum perforatum L. ssp. *veronense* (Schränk) H. Lindb.
Inula verbascifolia (Willd.) Hausskn.
Iris pseudacorus L.
Juniperus oxycedrus L.

Juniperus phoenicea L.
Laurus nobilis L.
Ludwigia palustris (L.) Elliott
Lycopus europaeus L.
Lysimachia vulgaris L.
Lythrum salicaria L.
Malva sylvestris L.
Medicago lupulina L.
Melica ciliata L.
Mentha aquatica L.
Micromeria juliana (L.) Benth. ex Rchb.
Milium effusum L.
Morus nigra L.
Muscari comosum (L.) Mill.
Mycelis muralis (L.) Dumort.
Myriophyllum spicatum L.
Najas marina L.
Nuphar lutea Sibth. et Sm.
Nymphaea alba L.
Ostrya carpinifolia Scop.
Osyris alba L.
Oxalis corniculata L.
Pallenis spinosa (L.) Cass.
Parietaria judaica L.
Petrohragia saxifraga (L.) Link
Petalaria arundinacea L.
Phragmites australis (Cav.) Trin. ex Steud.
Pinus halepensis Mill.
Pistacia lentiscus L.
Pistacia terebinthus L.
Plantago lanceolata L.
Platanus x acerifolia (Aiton) Willd.
Potamogeton nodosus Poir.
Potamogeton perfoliatus L.
Potentilla reptans L.
Prunella vulgaris L.
Prunus mahaleb L.
Quercus ilex L.
Quercus pubescens Willd.
Ranunculus trichophyllum Chaix in Vill.
Reseda alba L.
Rhagadiolus stellatus (L.) Gaertn.
Rosa canina L.
Rubia peregrina L.
Ruscus aculeatus L.
Salix alba L.
Salix purpurea L.
Samolus valerandi L.
Satureja subspicata Vis.
Scirpus lacustris L.
Silene latifolia Poir. ssp. *alba* (Mill.) Greuter et Bourdet
Silene vulgaris (Moench) Garcke
Smilax aspera L.
Solanum dulcamara L.

Sonchus oleraceus L.
 Sparganium erectum L.
 Stachys thirkei K.Koch
 Tamus communis L.
 Tilia platyphyllos Scop.
 Trifolium repens L.
 Ulmus minor Mill.
 Verbascum sinuatum L.
 Veronica anagallis-aquatica L.
 Veronica beccabunga L.
 Viburnum tinus L.
 Vulpia ciliata Dumort.

Allium sphaerocephalon L.
 Anthyllis vulneraria L. ssp. praepropera (A.Kern.)
 Bornm.
 Argyrolobium zanonii (Turra) P. W. Ball
 Asparagus acutifolius L.
 Astragalus monspessulanus L. ssp. illyricus
 (Bernhardt) Chater
 Astragalus muelleri Steud. et Hochst.
 Avena barbata Pott ex Link
 Bellis sylvestris Cirillo
 Brachypodium distachyon (L.) P.Beauv.
 Bromus erectus Huds.
 Bupleurum veronense Turra
 Campanula sibirica L. ssp. divergentiformis (Jáv.)
 Domin
 Carex caryophyllea Latourr
 Carlina corymbosa L.
 Centaurea solstitialis L.
 Centaurea spinosociliata Seenus
 Cephalaria leucantha (L.) Roem. et Schult.
 Chrysopogon gryllus (L.) Trin.
 Cleistogenes serotina (L.) Keng
 Convolvulus cantabrica L.
 Coronilla scorpioides (L.) Koch
 Dactylis glomerata L.
 Dasypyrum villosum (L.) P.Candargy
 Dianthus sylvestris Wulfen in Jacq. ssp. tergestinus
 (Rchb.) Hayek
 Dichanthium ischaemum (L.) Roberty
 Edraianthus tenuifolius (Waldst. et Kit.) A.DC.
 Eryngium amethystinum L.
 Euphorbia spinosa L.
 Festuca rupicola Heuff.
 Festuca valesiaca Schleich. ex Gaudin
 Fumana ericifolia Wallr.
 Fumana procumbens (Dunal) Gren. et Godr.
 Galium lucidum Al
 Genista sylvestris Scop. ssp. dalmatica (Bartl.) H.
 Lindb.
 Globularia cordifolia L. ssp. bellidifolia (Ten.) Wettst.
 Helianthemum nummularium (L.) Mill. ssp. glabrum
 (Koch) Wilczek

Helianthemum nummularium (L.) Mill. ssp.
 obscurum (Čelak.) Holub
 Helianthemum oelandicum (L.) DC. ssp.
 italicum (L.) Font Quer et Rothm.
 Helichrysum italicum (Roth) G.Don
 Hieracium hoppeanum Schult.
 Hieracium praealtum Vill. ex Gochnat ssp.
 bauhinii (Besser) Petunn.
 Hippocrepis comosa L.
 Hypericum perforatum L. ssp. veronense
 (Schrank) H. Lindb.
 Juniperus oxycedrus L.
 Koeleria splendens C.Presl
 Lactuca viminea (L.) J. et C.Presl
 Linum tenuifolium L.
 Lomelosia brachiata (Sm.) Greuter et
 Burdet
 Marrubium incanum Desr.
 Medicago prostrata Jacq.
 Melica ciliata L.
 Nigella damascena L.
 Onosma echioides (L.) L. ssp. dalmatica
 (Scheele) Peruzziet N. G. Passal.
 Ostrya carpinifolia Scop.
 Paliurus spina-christi Mill.
 Petrorhagia saxifraga (L.) Link
 Pistacia terebinthus L.
 Plantago holosteum Scop.
 Plantago lanceolata L.
 Potentilla recta L.
 Quercus pubescens Willd.
 Rubus ulmifolius Schott
 Sanguisorba minor Scop. ssp. muricata
 Briq.
 Scilla autumnalis L.
 Sedum acre L.
 Sedum ochroleucum Chaix
 Sedum sexangulare L.
 Sesleria autumnalis (Scop.) F.W.Schultz
 Sideritis romana L.
 Silene otites (L.) Wibel
 Stachys thirkei K.Koch
 Sternbergia colchiciflora Waldst. et Kit.
 Teucrium chamaedrys L.
 Teucrium montanum L.
 Teucrium polium L.
 Thesium divaricatum Jan. ex Mert. et Koch
 Trifolium angustifolium L.
 Trifolium scabrum L.
 Trifolium stellatum L.
 Valeriana tuberosa L.
 Veronica austriaca L. ssp. jacquinii
 (Baumg.) Eb.Fisch.



SOME SPECIES OF PECULIAR INTEREST



Sternbergia colchiciflora
Waldst. et Kit.,
rare autumn flowering species



Orchis purpurea Huds.,
vulnerable species of Croatian
flora



Ophrys apifera Huds.,
hypocromatic form



Ophrys dinarica
Kranjčev et P.Delforge,
Croatian edemit



Edraianthus tenuifolius (Waldst. et Kit.) A.DC.
endemic species of rocky pastures



Ephedra major Host, rare in Croatian flora



Euphorbia characias L. ssp. *wulfenii* (Hoppe ex Koch) A. M. Sm.



Asphodeline lutea (L.) Rchb.



Haplophyllum patavinum
(L.) G. Don,
species of rocky pastures and
screes



Beckmannia eruciformis (L.) Host
Critically endangered species,
grows only in NP Krka



Iris adriatica Trinajstić ex Mitic,
Croatian endemit