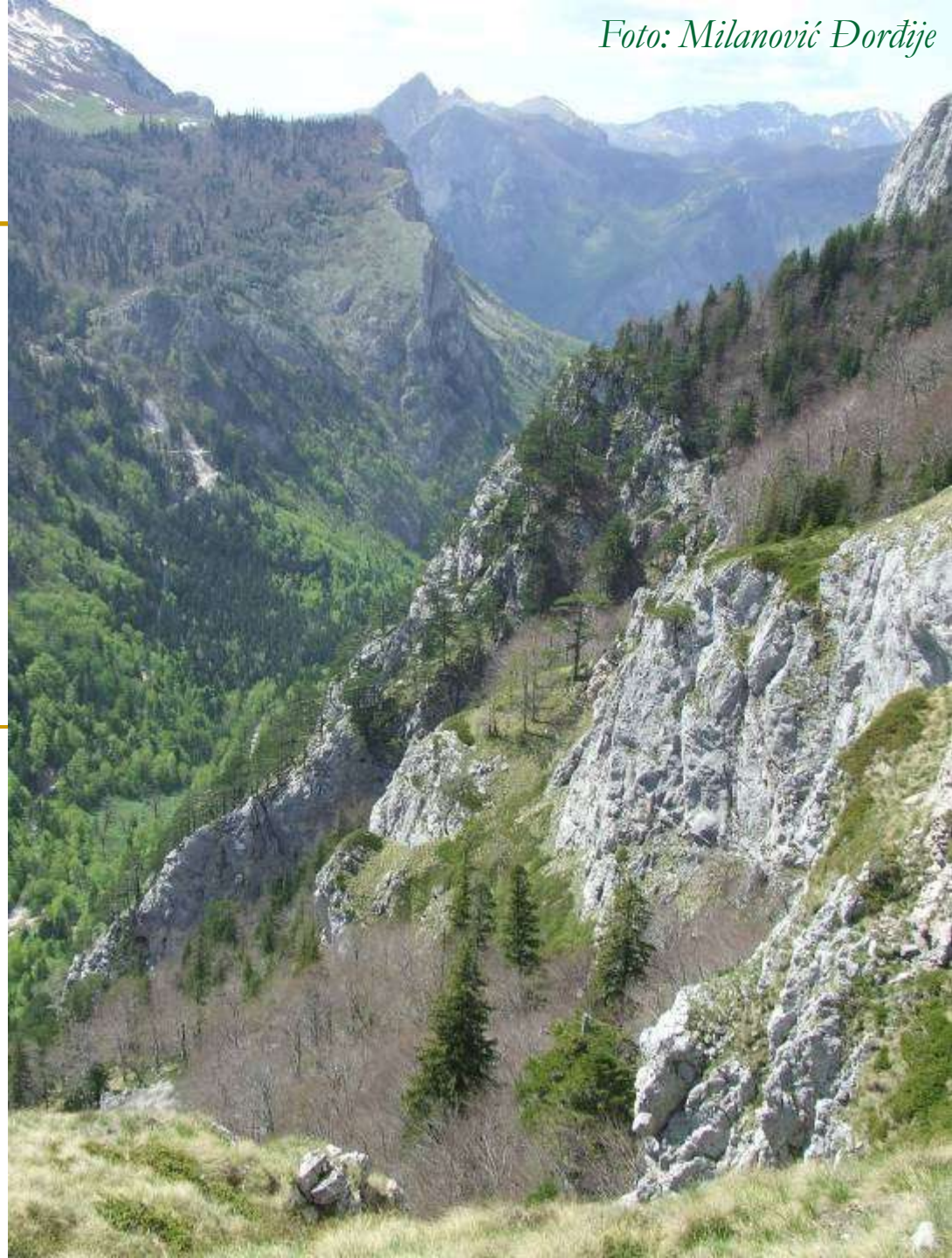


Speaker: Milanović Đorđije  
NGO “Arbor Magna”  
Forestry Faculty, University of Banjaluka

# National Park SUTJESKA

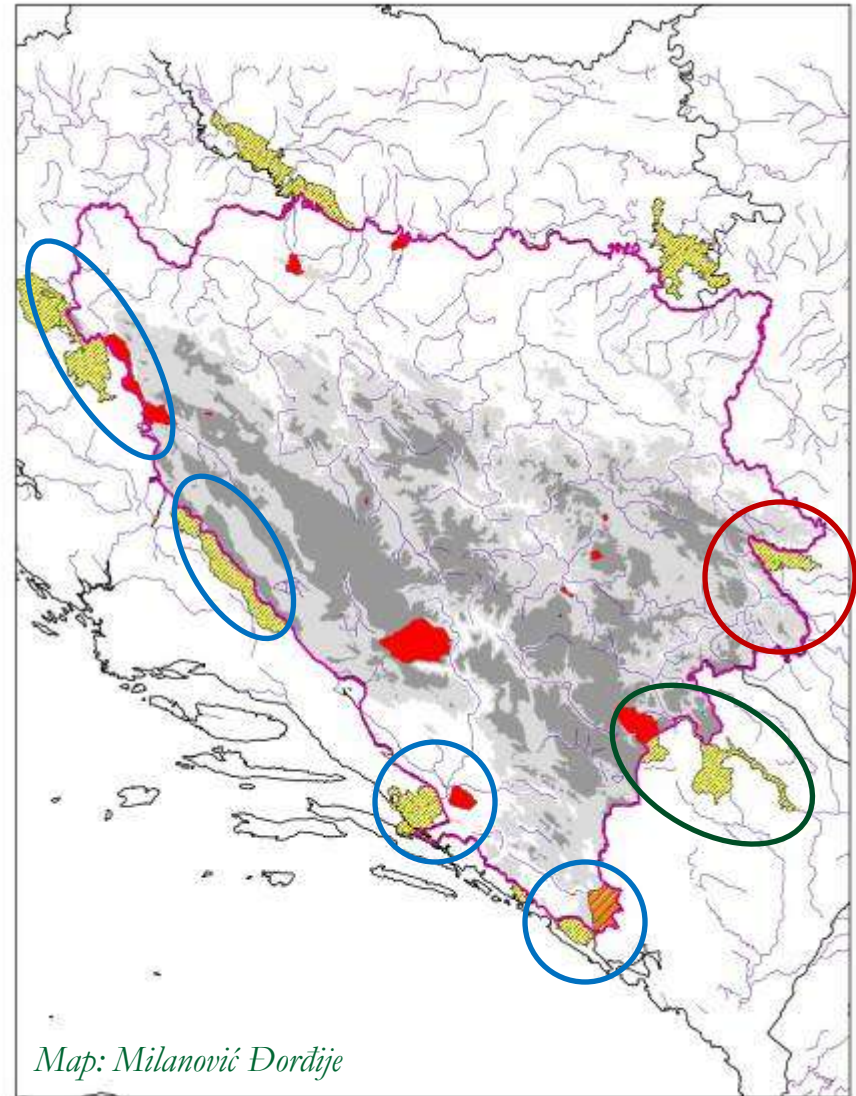
- The enlargement
- Requirements for ecological connectivity with Durmitor NP



# Protected areas in B&H

- general state and possibilities for transboundary cooperation -

- **Sutjeska NP** – 17 250 ha (Official gazette of SR B&H, No. 5/62).
- **Una NP** – 19 800 ha (Official gazette of Federation of B&H, No. 33/03).
- Potential **Orjen-Lastva NP** – 18 092 ha (in Spatial Plan of Republic of Srpska 2007-2015).
- Potential transboundary **Biosphere Reserve Drina** – 7 000 ha (in Spatial Plan of Republic of Srpska 2007-2015). In progress.
- **Hutovo blato Nature Park** – 7 390 ha. Cooperation with Delta of river Neretva Natura2000 area.
- **Livanjsko field and Dinara Mt.** In designation process in B&H.





*Una National Park*

*Drina Reserve of Biosphere*



*Orjen-Lastva National Park*



*Hutovo blato Nature Park*

*Dinara Mt*



*Foto: Milanović Đorđije*

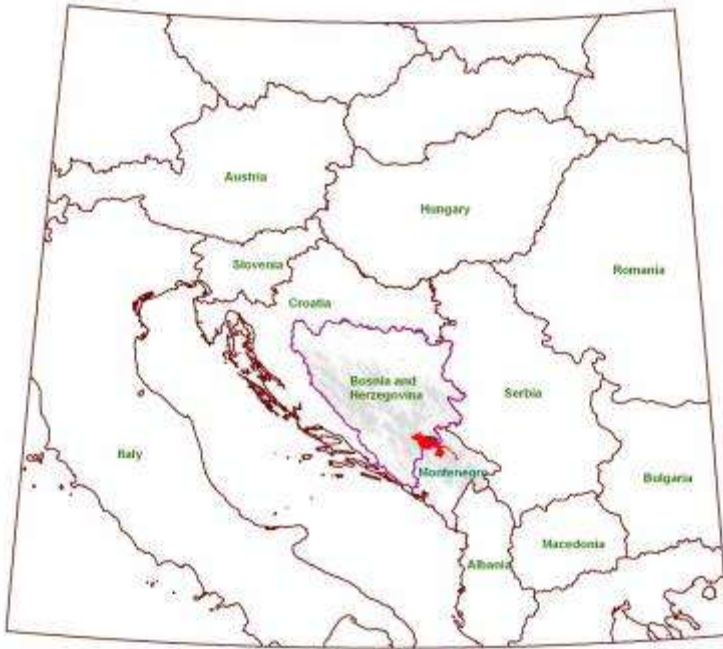
# NP Sutjeska

## - position and geo-political context of the border zone -

- The Sutjeska NP is constituted in 1962 (Official gazette of SR B&H, No. 5/62) in order to “protect numerous monuments from 2nd world war, protect the natural beauty and heritage of this area and provide the rest and the recreation of people”. It has surface of 17 250 ha in SE part of Bosnia and Herzegovina. It lies on the territory of three municipalities: Foča, Gacko and Kalinovik in altitude range 325-2386 m (Maglić – the highest peak of B&H).



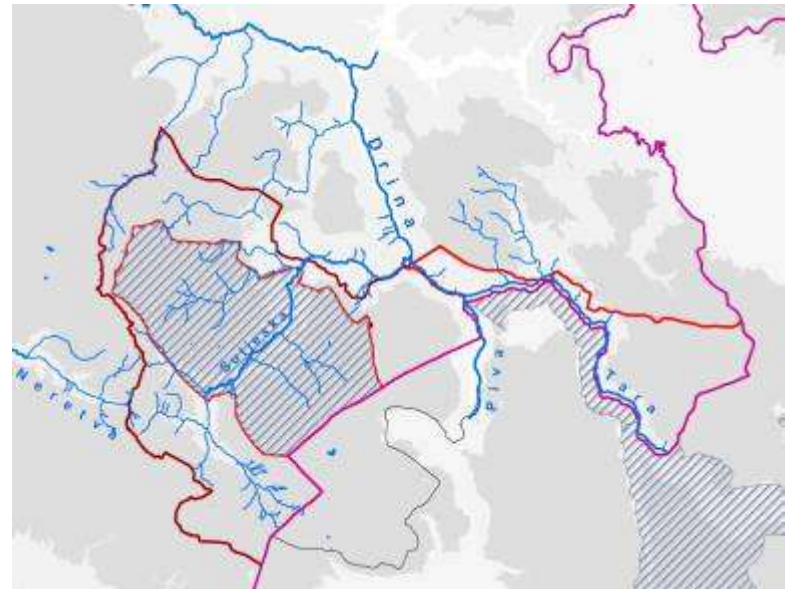
*Maps: Milanović Đordije*



# NP Sutjeska

## - physical characteristics -

- NP Sutjeska lies in SE Dinaric Mountains in altitude range 325-2386 m. The highest peak is Maglić (2386 m).
- Substratum: limestone (most of mountains), dolomite (Vučevo), silicate rocks (andesite, keratophyres) (Zelengora, Lebršnik, Maglić), volcanic glass (Maglić), sandstone (river valleys) etc.
- Soil types: calcomelanosol, calsocambisol, rendzina, distric cambisol, luvisol etc.
- Hydrology of this area is respectable.
- Protection of forests in the valleys of major rivers is very important. As a result of inadequate preservation of forest ecosystems in river valleys, during last year we have enormous inundation in the region. Therefore, the protection of forest complexes in Piva, Tara and Drina river values is crucial.

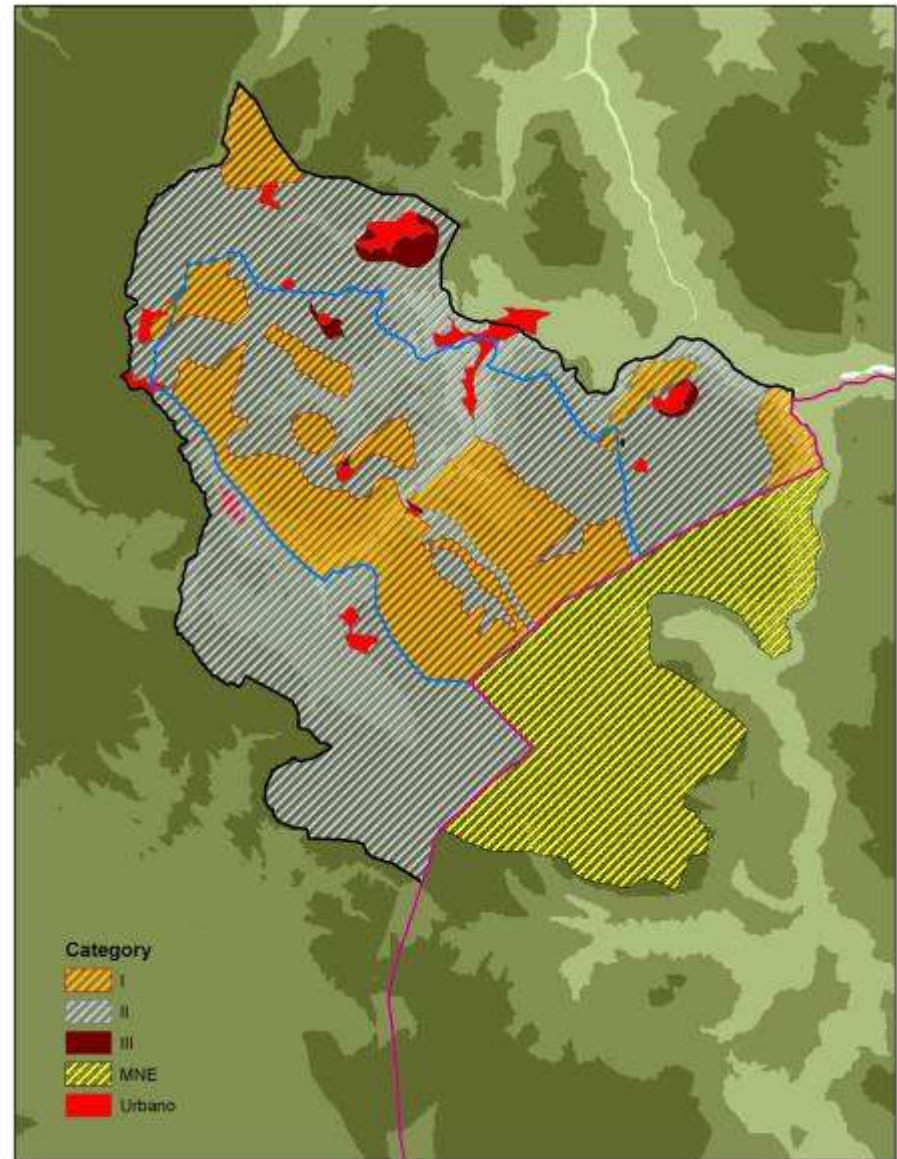
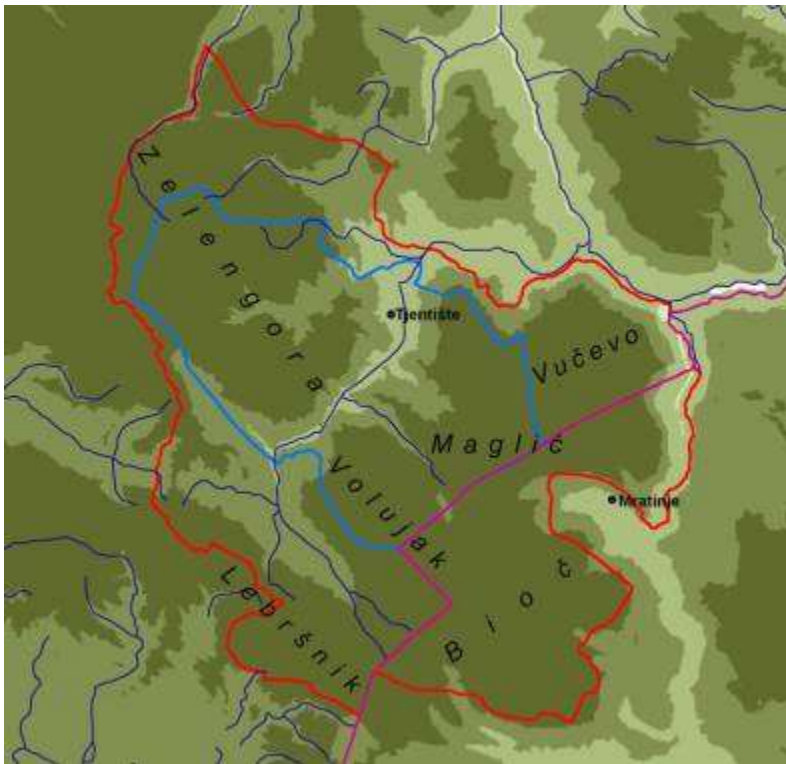




# Sutjeska NP

- Enlargement in Spatial plan -

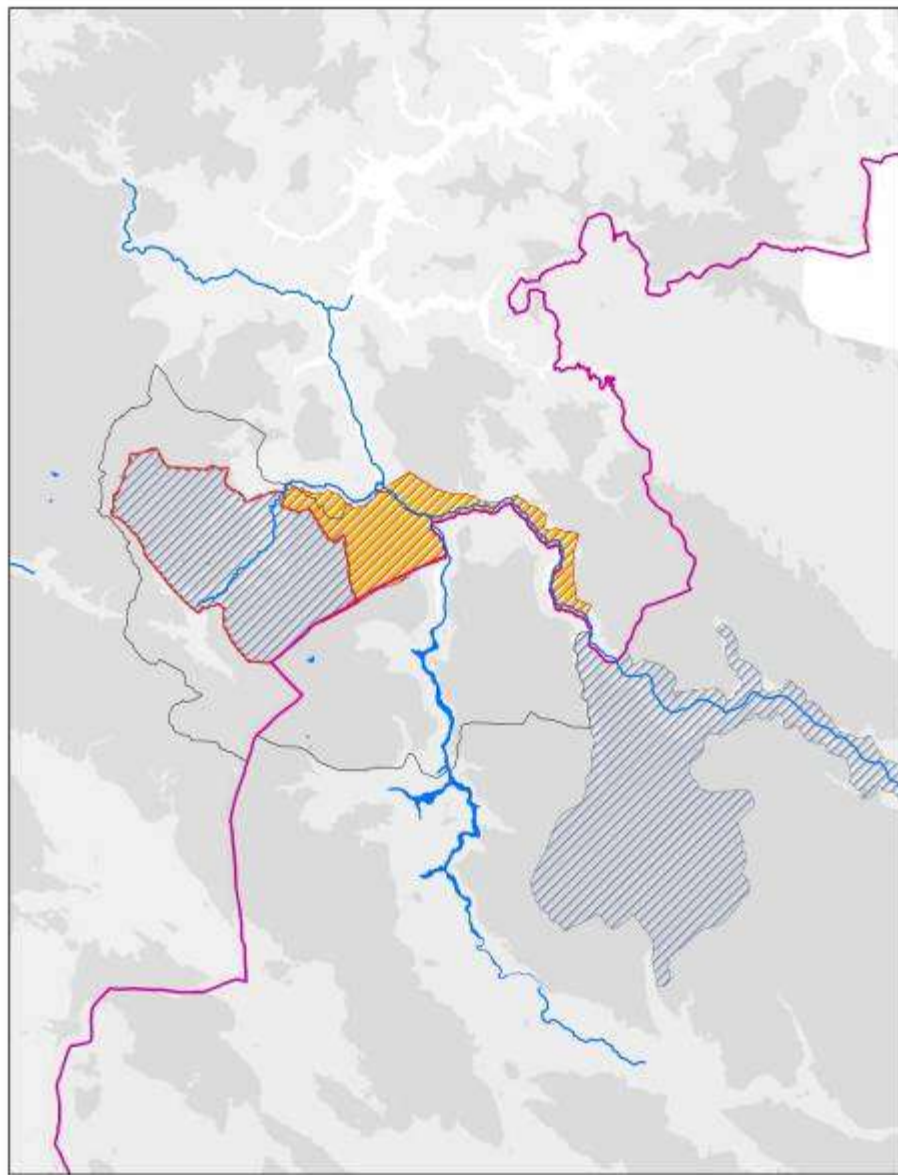
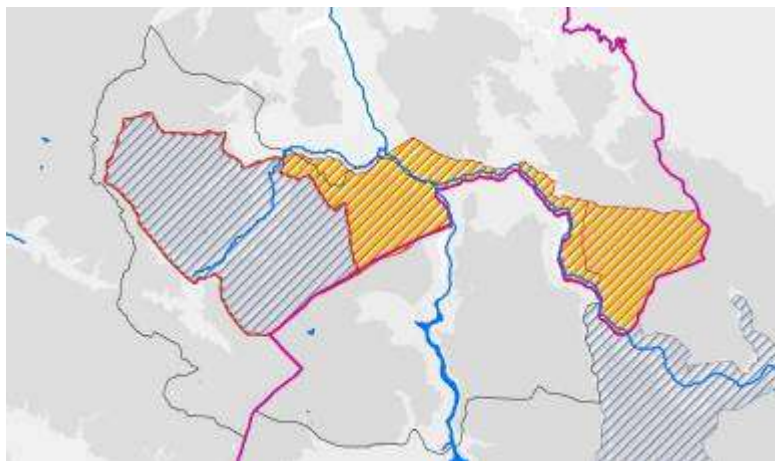
- In Spatial plan of Enlargement of Sutjeska NP from 1986. (red stroke), enlargement on theritory of Montenegro is proposed.



# Sutjeska NP

- proposed enlargement in  
Feasibility study and Spatial  
plan of RS -

- Feasibility study for enlargement of Sutjeska NP on Vučevo highland and Tara river canyon in 2007., Forestry faculty BL. Proposed surface is 8 431 ha.
- Spatial plan of RS 2003-2012. proposed enlargement of NP Sutjeska on Tara river canyon and Ljubišnja Mt.

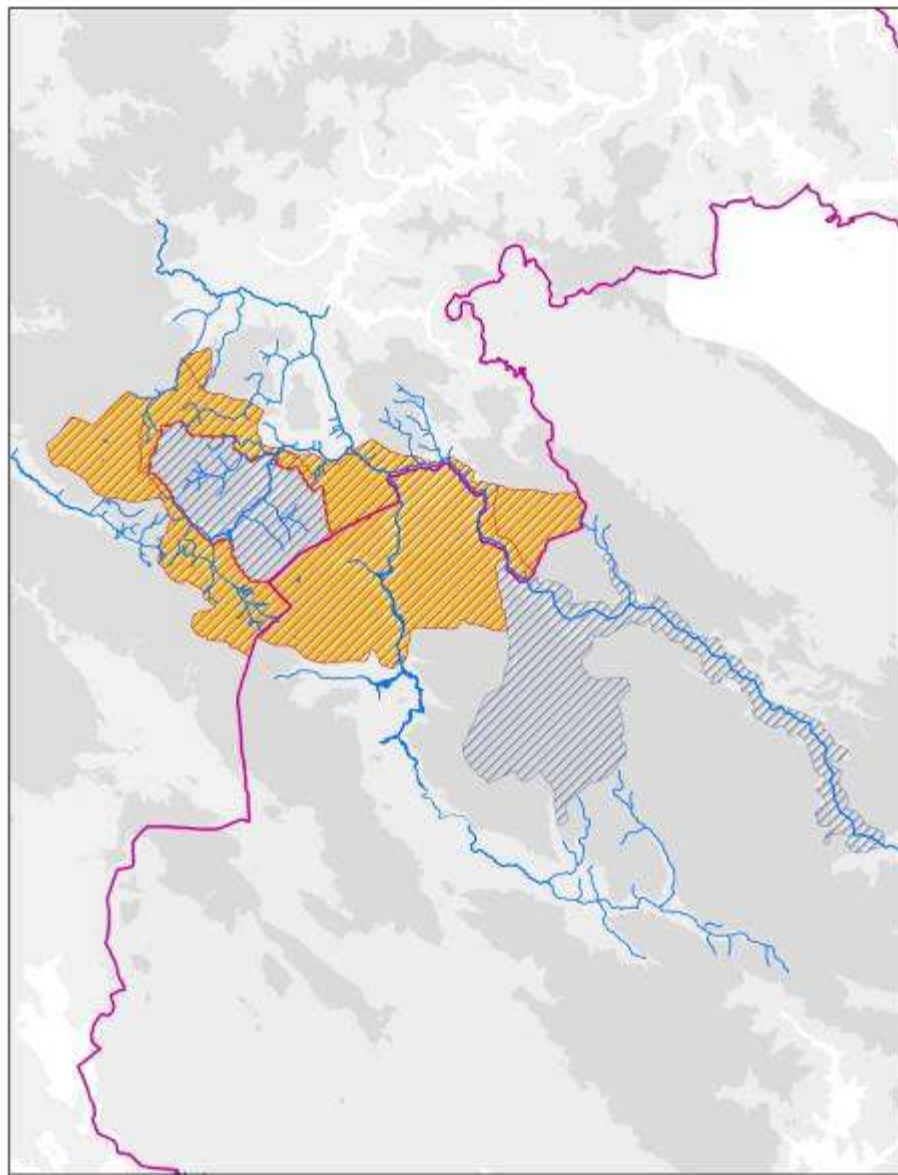
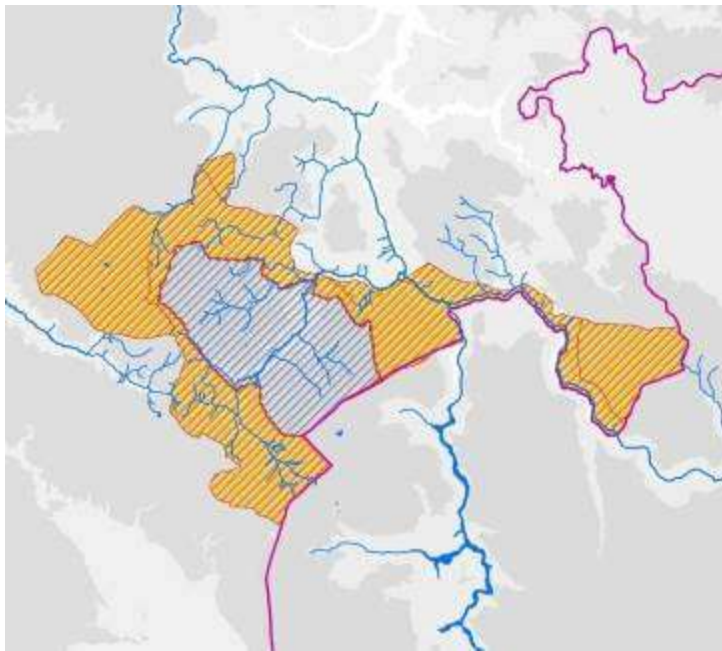




# Sutjeska NP

- proposed enlargement in new Spatial plan (is process)-

- Urban Institute and Ministry for spatial planning, civil engineering and ecology are producing new Spatial plan for NP Sutjeska and Kozara with proposed enlargement.



# Sutjeska NP

## - functional ecological connectivity -

- The area geobotanically belongs to Durmitorian sector of Illyrian (Dinaric) province.
- The combination of specific orographic, geographic and microclimatic factors provide the environment conditions for survival of numerous relict, endemic and rare species and vegetation types.
- Moving away from the cold influence from the north during the last ice age, the resilient species have found refuge in the hidden and inaccessible places, where they nowadays live (relicts).
- Some of those species are diversified through many years so that we can treat it as separate species (endemics, stenoendemics).
- These species often live together in specific endemic associations, which gives special importance to this area.



*Amphoricarpus autariatus*

# Sutjeska NP

## - functional ecological connectivity -

- These species are very sensitive on every changes of ecological factors, so we have to provide the invariable conditions in wider area, that species could be freely exchanged genetic material, creating new, more resilient individuals that will be better able to spread.
- This future transboundary protected area is a geomorphological unity, very sensitive on any change, need to be protected fully, because the differences in the management of certain parts could lead to the complete extinction of some important habitats.
- An example, rare species *Adenophora lilifolia*.



*Rhododendron hirsutum* – disjunction on Maglić. It is on the border of their survival here



*Piva valley and Drina bank* – quondam habitat of *Adenophora lilifolia* species



*Doronicum grandiflorum* – survive on the most cold habitats in high mountains

# Sutjeska NP

- functional ecological  
connectivity -

- Necessary management measures: *Picea omorika* forests



# Sutjeska NP

## - habitat types according to EUNIS classification -

- C1.12 Rooted submerged vegetation of oligotrophic waterbodies
- C1.13 Rooted floating vegetation of oligotrophic waterbodies
- C1.14 Charophyte submerged carpets in oligotrophic waterbodies
- C1.42 Rooted submerged vegetation of dystrophic waterbodies
- C1.43 Rooted floating vegetation of dystrophic waterbodies
- C1.44 Charophyte submerged carpets in dystrophic waterbodies
- C1.47 Lagg
- C1.61 Lime-deficient oligotrophic temporary waters
- C1.62 Mesotrophic temporary waters
- C1.63 Eutrophic temporary waters
- C1.65 Lime-rich oligo-mesotrophic temporary waters
- C1.69 Rooted floating vegetation of temporary waterbodies
- C1.7 Permanent lake ice
- C2.11 Soft water springs
- C2.12 Hard water springs
- C2.16 Crenal streams (spring brooks)
- C2.19 Lime-rich oligotrophic vegetation of spring brooks
- C2.21 Epirhithral and metarhithral streams
- C2.22 Hyporhithral streams

# Sutjeska NP

## - habitat types according to EUNIS classification -

- C2.24 Waterfalls
- C2.26 Lime-rich oligotrophic vegetation of fast-flowing streams
- C2.5 Temporary running waters
  
- D2.22 [*Carex nigra*], [*Carex canescens*], [*Carex echinata*] fens
- D2.2C Soft water spring mires
- D2.39 [*Menyanthes trifoliata*] and [*Potentilla palustris*] rafts
- D2.3I Balcanic quaking bogs
- D4.2 Basic mountain flushes and streamsides, with a rich arctic-montane flora
  
- E1.715 Illyrian mat-grass swards
- E2.2 Low and medium altitude hay meadows
- E2.3 Mountain hay meadows
- E4.112 Alpic acid cudweed snow-patch communities
- E4.121 Alpic small herb calcicolous snow-patch communities
- E4.319 Dinaride mat-grass swards
- E4.331 Thermo-Alpigenous [*Festuca paniculata*] swards
- E4.417 Dinaro-Moesian oligophile closed calcicolous grasslands

# Sutjeska NP

## - habitat types according to EUNIS classification -

- E4.418 Dinaro-Moesian mesophile closed calcicolous grasslands
- E4.427 Pirin naked-rush swards
- E4.51 Subalpine [*Trisetum flavescens*] hay meadows
- E4.52 [*Leontodon hispidus*] pastures
- E4.53 Dinaric sub-alpine tall grasslands
- E5.21 Xero-thermophile fringes
- E5.22 Mesophile fringes
- E5.31 Sub-Atlantic [*Pteridium aquilinum*] fields
- E5.42 Tall-herb communities of humid meadows
- E5.43 Shady woodland edge fringes
- E5.515 Dinaric tall herb communities
- E5.523 Alpic tall-grass communities on drier and warmer slopes
- E5.5721 Moesian Balkan thistle tall herb communities
- E5.58 Alpine [*Rumex*] communities
  
- F2.27 Alpic [*Arctostaphylos uva-ursi*] and [*Arctostaphylos alpinus*] heaths
- F2.2916 Dinaro-Hellenide [*Dryas*] mats
- F2.2A2 Balkano-Hellenic dwarf bilberry heaths
- F2.3216 Southeastern alpigenous willow brushes

# Sutjeska NP

- habitat types according to EUNIS classification -

- F3.16 [*Juniperus communis*] scrub
- F3.17 [*Corylus*] thickets
- F3.2421 Illyrio-Adriatic oriental hornbeam thickets
- F4.214 Submontane Alpine [*Vaccinium*] heaths
- F4.22A [*Genista sagittalis*] heaths
- F2.47 Pelago-Dinaride [*Pinus mugo*] scrub
- F9.123 Balkan riverine willow scrub
- 
- G1.1211 Alpine grey alder galleries
- G1.1215 Montenegrine grey alder galleries
- G1.6C1 Illyrian woodrush-beech forests
- G1.6C2 Illyrian neutrophile beech forests
- G1.6C32 Illyrian inland calciphile beech forests
- G1.6C4 Illyrian subalpine beech forests
- G1.7375 Illyrian white oak woods
- G1.743 Illyrian thermophile turkey oak-sessile oak woods
- G1.95 [*Populus tremula*] and [*Betula*] woods with [*Sambucus*]
- G1.A1A1 Illyrian sessile oak-hornbeam forests
- G1.A463 Illyrian ravine forests



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# Sutjeska NP

- habitat types according to EUNIS classification -

- G3.1112 Tall herb fir forests
  - G3.124 Dinaric calcareous block fir forests
  - G3.1G [Picea omorika] forests
  - G3.1E3 Montenegrine [Picea abies] forests
  - G3.1E5 Balkan Range [Picea abies] forests
  - G3.5213 Illyrian limestone [Pinus nigra] forests
  - G4.6 Mixed [Abies] - [Picea] - [Fagus] woodland
-

# Sutjeska NP

- *Picea omorika* forests -



*Picea omorika* forests: Radomišlja on Zelengora Mt

Foto: Milanović Đordije

# Sutjeska NP

-Vaccinio-Piceetalia -



*Subalpine Picea abies forest: Vučevo*



*Lonicera borbasiana*  
*Allium victorialis*



*Cicerbita pancicii and Huperzia sellago*



*Pinetum mugi: Maglič Mt*

# Sutjeska NP

## -Forests-



*Forest of beech, fir and spruce*



*Telekia speciosa and Lunaria rediviva*



*Laserpitium siler  
Platanthera chlorantha*



*Black pine forests*

# Sutjeska NP

## -Forests-



*Sessile oak forest*



*Montane beech forest*



*Euphorbia amygdaloides*  
*Symphytum tuberosum*



*Subalpine beech forests*

# Sutjeska NP

- Habitat diversity - rivers-



*Foto: Milanović Đordije*

# Sutjeska NP

- Habitat diversity - lakes-



*Batrachium circinatum*



*Sparganium erectum*



*Wet habitats around of Štirinsko lake*



*Crno jezero lake on Zelengora Mt*



*Orlovačko lake*

*Parnassia palustris*

# Sutjeska NP

-Diversity of ecosystems and remarkable natural phenomena-





# Sutjeska NP

-Diversity of ecosystems and remarkable natural phenomena -



*Mugo-Rhododretum hirsuti*



*Landscapes*



*Terciar vegetation*



*Waterfalls*

# Sutjeska NP

-Plant species biodiversity -



*Trifolium noricum*



*Eryngium alpinum*



*Daphne malyana*



*Valeriana brauni-blanqueti*

Foto: Milanović Đordije

# Sutjeska NP

-Plant species biodiversity -



*Gentiana asclepiadea*



*Gentiana lutea ssp. symphyandra*



*Gentiana acaulis*



*Narcissus radiiflorus*

Foto: Milanović Đordije

# Sutjeska NP

-Plant species biodiversity -



*Anemone baldensis*



*Edraianthus serpyllifolius*



*Lilium bosniacum*



*Plantago reniformis*

Foto: Milanović Đordije



*Edraianthus sutjeskae*

***THANK YOU***

*Foto: Milanović Đordije*