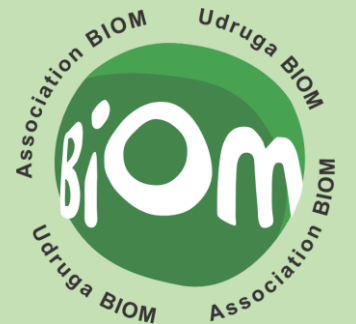
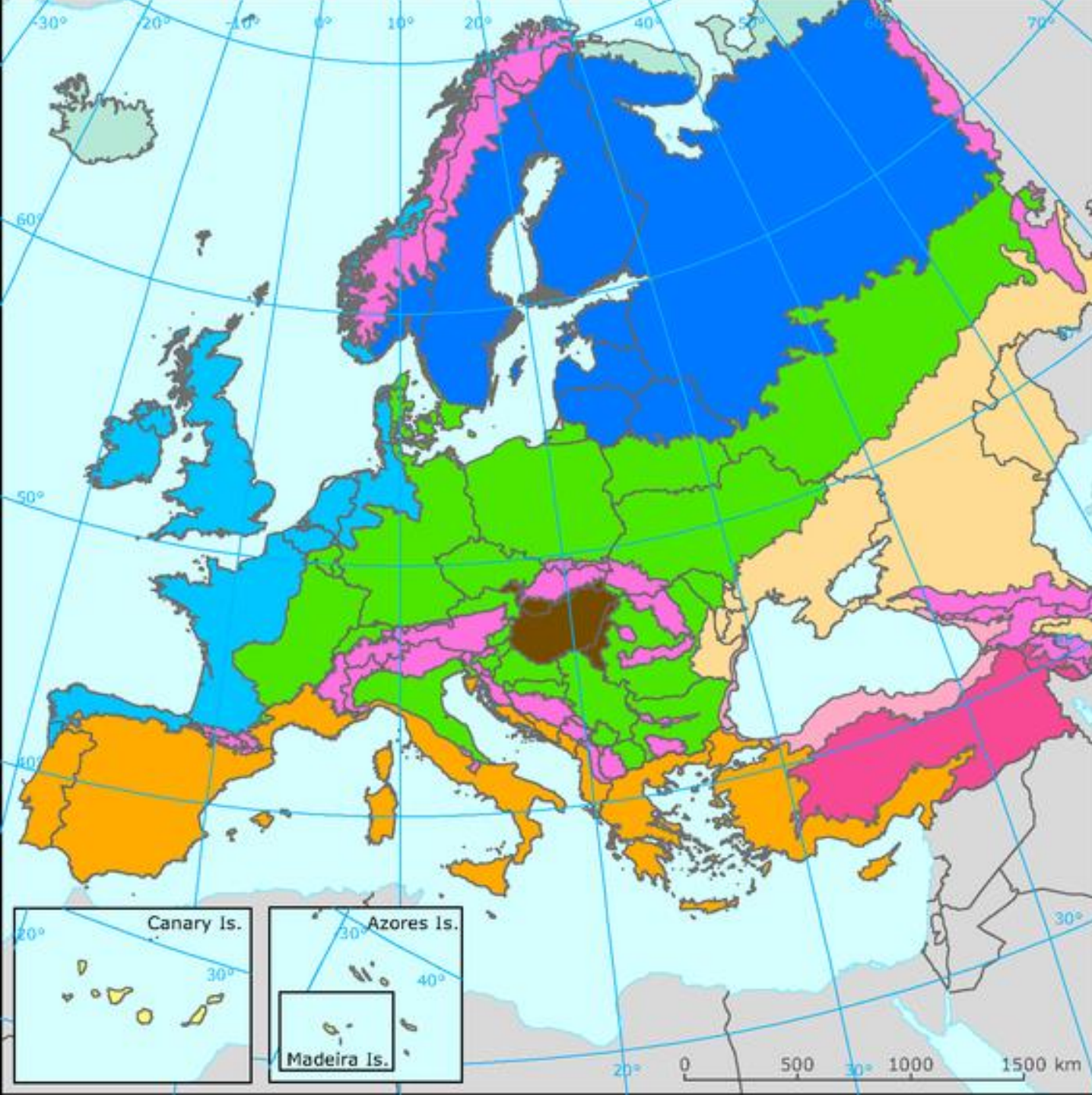


# Burning in habitat management and wildfires in Croatia

Ivan Budinski, Association BIOM





**Biogeographic regions  
in Europe, 2011**

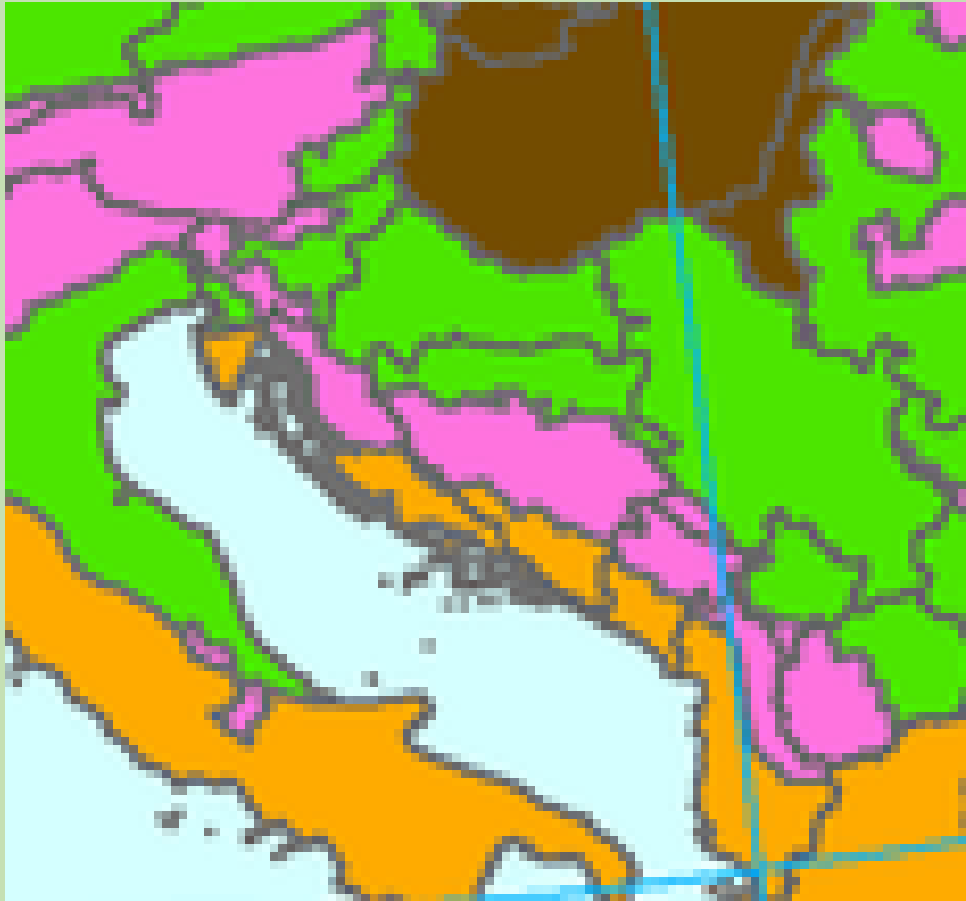
- Alpine
- Anatolian
- Arctic
- Atlantic
- Black Sea
- Boreal
- Continental
- Macaronesia
- Mediterranean
- Pannonian
- Steppic
- Outside data coverage

- 4 zones in Croatia, 3 accepted by EU



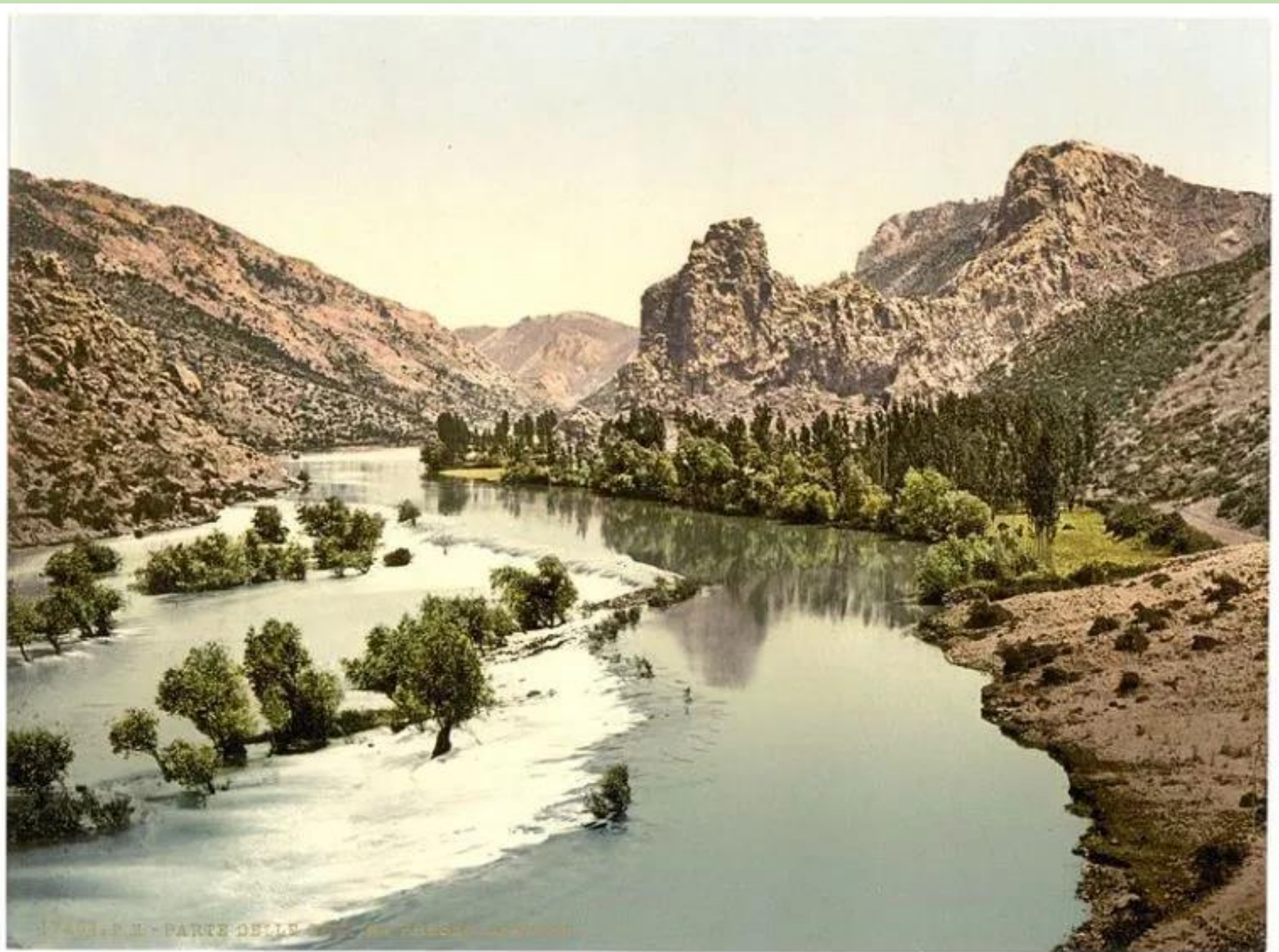
# Alpine and Mediterranean zone, karst

- Mowing is usually not possible!





One century ago





# Holly grail of nature conservation

- Without humans everything would be a forest
- We should all aim to the climazonal primeval forest
- Forest develops soil layer and soil is a wealth
- Erosion is disaster
- Wildfires are disaster
- Grazing cattle is disaster





# Long tradition of burning in grazing areas

Landscape  
features  
originated  
from burning



Image © 2016 CNES / Astrium

Google Earth



# Traditional burning was conducted during end of winter

- Fire goes uphill up to the snow line
- Fire is stopped by rocky terrain





Grazing only promotes inedible plants what is turned back by burning





Grazing only promotes inedible plants what is turned back by burning





# Grazing only promotes inedible plants what is turned back by burning

## 5210 Arborescent matorral with *Juniperus* spp.

Management of Natura 2000 habitats. Summary



*Juniper matorral in Central Italy. Photo: courtesy Foreste Casentinesi National Park*

The arborescent matorral with *Juniperus* spp. habitat is a scrub vegetation that is found in the countries bordering the Mediterranean Sea. *Juniperus* spp. are evergreen shrubs or small trees with few vital needs that, thanks to their

Management activities of matorrals vary, depending on their nature and location. In general we can distinguish two management models, primary matorrals needing natural evolution and secondary matorrals requiring active management. The first model is suitable for matorrals of projecting ledges, cornices or rocky slopes, almost inaccessible and not threatened by human activities, and coastal matorrals, where the main threat is linked to tourism. Here it is necessary to avoid actions that can trigger erosion such as construction of new roads or tracks, overgrazing and climbing.

The other model should be applied to secondary matorrals, strictly linked to human related activities, such as stock raising, requiring active management for their conservation. This is the case for small sites, where it is important to block colonisation by competing shrubs or tree species and favour the renovation of juniper plants by keeping the habitat open with moderate grazing and partial scrub clearance. The maintenance of the habitat will result in higher landscape and habitat diversity.





## *Emberiza hortulana* habitat on Učka Mt.

*If the area is prone to lightning and wildfires than climazonal vegetation is mosaic, not primeval forest.*





# Example of prescribed burning

- *Centurium maritimum* habitat
- Burning of garigue vegetation on a peninsula





# Bed example of burning

- Reed burning
- Reedbed habitat quality for the majority of species depends on thick layer of dead reeds that accumulates during years



03.11.2017 17:21



# NATURA2000 species and habitats

## Biogeographical paradox of Mediterranean forest

### Open habitats

*Alectoris graeca*  
*Anthus campestris*  
*Melanocorypha calandra*  
*Monticola solitarius*  
*Circaetus gallicus*  
*Athene noctua*  
*Burhinus oedicephalus*  
*Calandrella brachydactyla*  
*Oenanthe hispanica*

### Mosaic habitats

*Sylvia melanocephala*  
*Sylvia cantillans*  
*Sylvia hortensis*  
*Caprimulgus europaeus*  
*Bubo bubo*  
*Otus scops*  
*Lanius collurio*  
*Lanius senator*  
*Carduelis cannabina*  
*Emberiza cirlus*  
*Emberiza melanocephala*

### Closed forest

*Sylvia atricapilla*  
*Fringilla coelebs*  
*Turdus merula*  
*Garrulus glandarius*  
*Strix aluco*  
*Accipiter nisus*  
*Parus major*