



Growing
ideas
through
networks

***Phytosociological characterization of
European Riparian vegetation***


Dejan Mandzukovski
Macedonia

 **cost**
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

 Funded by the Horizon 2020 Framework Programme
of the European Union

Our presentation is based on Mucina et al 2016
*Vegetation of Europe: hierarchical floristic classification
system of vascular plant, bryophyte, lichen, and algal
communities*
and works of Douša et al. 2016, Peterka et al. 2017 as well
as our unpublished data

Vegetation classification consistent with the
Braun-Blanquet approach is widely used in Europe for
applied vegetation science

 **cost**
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

2

RIPARIAN VEGETATION

Azonal vegetation: The development of plant communities is more severely influenced by edaphic factors than by climate (e.g. wetland, alluvial vegetation, mangroves, halophytic vegetation)

ALLUVIAL FORESTS AND SCRUB

***Alno glutinosae-Populetea albae* P. Fukarek et Fabijanić 1968**

This class encompasses azonal alluvial forests of Europe in fact riparian gallery forests of the Eurosiberian and Mediterranean regions

***Populetea albae* Br.-Bl. ex Tchou 1949 nom. conserv. propos.**

Mediterranean and submediterranean riparian gallery forests

Poplar forests are a significant element of the riparian stability, particularly of major rivers (Vojvodina). Because of the dimensions attained by individual trees, they are a significant element of the diversity within the species, and they are also a characteristic landscape element of the complex of alluvial-hygrophilous forest

Today represented only with fragments, and often replaced with plantations



WESTERN MEDITERRANEAN ALLIANCES :

1. *Populion albae* Br.-Bl. ex Tchou 1949

Riparian forests of the submediterranean regions of Southern France and the Iberian Peninsula

2. *Ligustro vulgaris-Alnion glutinosae* Poldini, Sburlino et Venanzoni in Biondi et al. 2015

Riparian forests of the submediterranean regions of the Northern and Central Apennine Peninsula

3. *Osmundo-Alnion glutinosae* (Br.-Bl. et al. 1956) Dierschke et Rivas-Mart. in Rivas-Mart. 1975

Alder and willow riparian forests of the Western Mediterranean

4. *Rhododendro pontici-Prunion lusitanicae* Pérez Latorre, Galán de Mera et Cabezudo in Pérez Latorre et al. 1999

Southern Iberian mediterranean riparian forests with relict laurisilva elements

EASTERN (SUB)MEDITERRANEAN ALLIANCES:

1. *Platanion orientalis* I. Kárpáti et V. Kárpáti 1961

Platanus riparian gallery forests of the Eastern Mediterranean (Balkan, South Italy, Eu-part of Turkey etc..)



2. *Lauro nobilis-Fraxinion angustifoliae* I. Kárpáti et V. Kárpáti 1961

Riparian gallery forests with relict laurisilva elements of the eastern submediterranean regions of the Apennine and Balkan Peninsulas



Ord. *Alno-Fraxinetalia excelsioris* Passarge 1968

In this order are floodplain riparian forests on nutrient-rich alluvial soils of temperate and boreal Europe



Several alliances :

Alnion incanae Pawłowski et al. 1928

Alder-ash and oak riparian floodplain forests on nutrient-rich alluvial soils in the nemoral zone of Europe

Hyperico androsaemi-Alnion glutinosae (Amigo et al. 1987) Biurrun et al. 2016

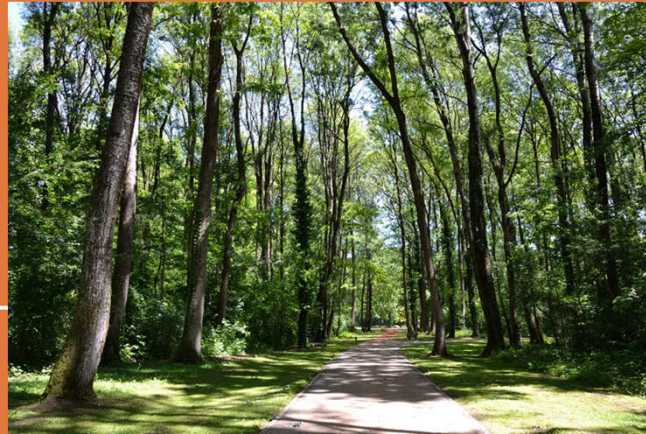
Alder, ash and burch floodplain forests along streams of the Cantabrian region of the Iberian Penins.

Fraxino-Quercion roboris Passarge 1968

Elm-ash and oak riparian floodplain forests on nutrient-rich brown soils in the nemoral zone of Europe

Alno-Quercion roboris Horvat 1950

Alder-oak riparian floodplain forests on nutrient-rich alluvial soils of the temperate regions of the Balkan Peninsula (very economic forest on Balakn region)



1



7

Salicetea purpureae Moor 1958

This class encompasses willow and tamarisk scrub and low open forests of riparian habitats in the temperate to arctic zones of Europe

These are communities developed on various types of alluvial deposits, mainly on limestone a substrate dominated by gravel and large sand, along the coasts of slow low and brisk flows, shores of fast and cold mountain streams; and smaller rivers whose water level and during the summer months are relatively high, or during the summer months the water level drops significantly and the substrate can be substantially dry, loose and with a lot of air

The herb layer consists of a group of floodplain species typical of both open habitats and the herb layer of woody vegetation and usually it does not contain forest specialist

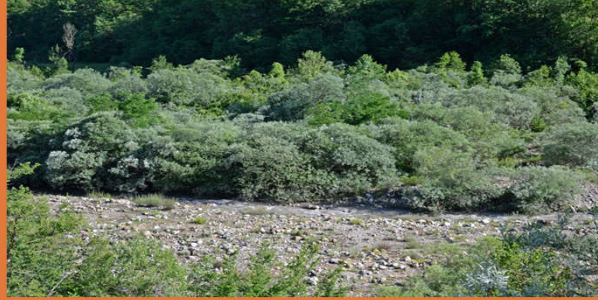


8

CENTRAL AND EASTERN EUROPEAN GROUP OF ALLIANCES:

Salicion eleagno-daphnoidis (Moor 1958) Grass 1993

Willow scrub on the gravelly stream banks in the submontane to subalpine belts of the Alps, the Pyrenees and the Carpathians



Salicion albae Soó 1951

Willow and poplar low open forests of lowland to submontane river alluvia in the nemoral zone of Europe and at high altitudes of the Mediterranean

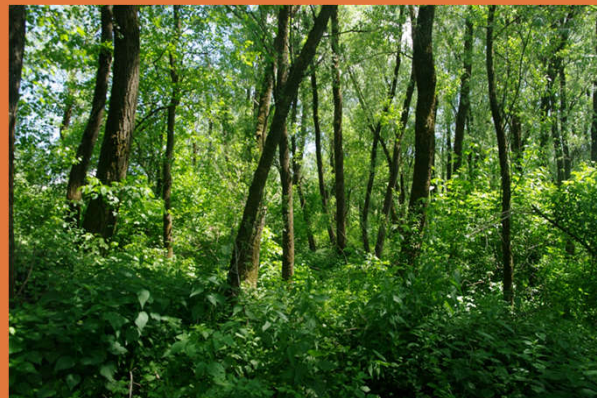
Salicion triandrae T. Müller et Görs 1958

Willow scrub on loamy-sandy sedimentary river banks in the lowland to submontane belts of the nemoral zone of Europe

CENTRAL AND ESTERN EUROPEAN GROUP OF ALLIANCES:

Salicion albae Soó 1951

Willow and poplar low open forests of lowland to submontane river alluvia in the nemoral zone of Europe and at high altitudes of the Mediterranean



CENTRAL AND EASTERN EUROPEAN GROUP OF ALLIANCES:



Salicion triandrae T. Müller et Görs 1958

Willow scrub on loamy-sandy sedimentary river banks in the lowland to submontane belts of the nemoral zone of Europe

CENTRAL AND EASTERN EUROPEAN GROUP OF ALLIANCES:

Rubo caesii-Amorphion fruticosae Shevchyk et V. Solomakha in Shevchyk et al. 1996

Riparian scrub on temporarily flooded gleyic soils of Central Ukraine

Artemisio dniproicae-Salicion acutifoliae Shevchyk et V. Solomakha in Shevchyk et al. 1996

Willow scrub on riverine dunes of Central Ukraine

SUBMEDITERRANEAN GROUP OF ALLIANCES:

Salicion salviifoliae Rivas-Mart. et al. 1984

Western Iberian thermo- to supramediterranean riparian alluvial willow scrub on the alluvia of mineral-poor rivers

SWAMP FORESTS AND SCRUB

This class comprises alder swamp forests and willow scrub. Dominant species include *Alnus glutinosa* and *Salix cinerea*. The herb layer is formed of wetland plants such as tall sedges and grasses, while typical forest species are absent.

Alnetea glutinosae Br.-Bl. et Tx. ex Westhoff et al. 1946

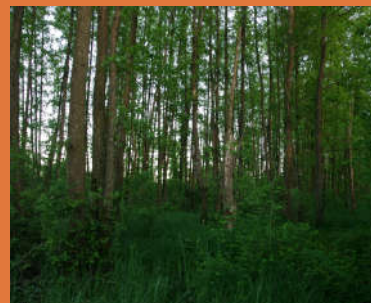
European mesotrophic regularly flooded alder carr and birch wooded mires

Alnetalia glutinosae Tx. 1937

European mesotrophic regularly flooded alder carr

Alnion glutinosae Malcuit 1929

European mesotrophic regularly flooded alder carr



SWAMP FORESTS AND SCRUB



Frangulo alni-Fraxinion oxycarpae Poldini, Sburlino et Venanzoni in Biondi et al. 2015

Amphiadriatic mesotrophic interdune and karstic ash carr

SWAMP FORESTS AND SCRUB

Franguletea Doing ex Westhoff in Westhoff et Den Held 196

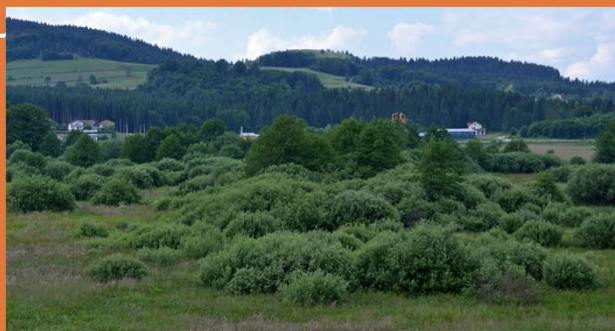
This class comprises willow carrs of Western Europe, Fennoscandia and the subatlantic regions of Central Europe

Salicetalia auritae Doing 1962

Order of willow carrs of Western Europe, Fennoscandia and the subatlantic regions of Central Europe

Salicion cinereae T. Müller et Görs ex Passarge 1961

Willow carrs of Western Europe and the subatlantic regions of Central Europe



INTRAZONAL MEDITERRANEAN SCRUB

***Nerio-Tamaricetea* Br.-Bl. et O. de Bolòs 1958**

Class of Circummediterranean and Macaronesian riparian scrub

***Tamaricetalia africanae* Br.-Bl. et O. de Bolòs 1958**

Order of Circummediterranean and Macaronesian riparian scrub

Two alliances:

WESTERN MEDITERRANEAN GROUP OF ALLIANCES

EASTERN MEDITERRANEAN GROUP OF ALLIANCES



17

WESTERN MEDITERRANEAN GROUP OF ALLIANCES



***Tamaricion africanae* Br.-Bl. et O. de Bolòs 1958**

Infra- to supramediterranean tamarisk riparian scrub in temporarily flooded freshwater habitats of the Western Mediterranean

***Tamaricion boveano-canariensis* Izco et al. 1984**

Infra- to supramediterranean tamarisk riparian scrub in temporarily flooded brackish habitats of the Western Mediterranean and Macaronesia

***Rubio ulmifolii-Nerion oleandri* O. de Bolòs 1958**

Thermo- to supramediterranean oleander riparian scrub of the Western Mediterranean

***Securinegion buxifoliae* Rivas Goday ex López Sáez et Velasco-Negueruela 1995**

Luso-Estremadurean (Iberian Peninsula) thermo-mesomediterranean riparian thorny tamujal



18

EASTERN MEDITERRANEAN GROUP OF ALLIANCES



Tamaricion dalmaticae Jasprica in Jasprica et al. 2016
Thermo-mesomediterranean tamarisk scrub of the Balkan Adriatic
seaboards

Rubio sancti-Nerion oleandri S. Brullo et al. 2004



19

THANK YOU
FOR YOUR ATTENTION



20