

RIPARIAN VEGETATION of the Iberian Peninsula. Composition and structure.



**Athens 2008: Restorations of
Fluvial ecosystems**

RIPARIAN VEGETATION

Definition

Zonation

River sp.s

Communities

- Definition - parameters characterize riparian vegetation
- Zonation - parameters conditioning riparian distribution
- Principal river species
- River communities I.P.

DEFINITION

Definition

Zonation

River sp.s

Communities

- **Communities-developpe due to the river presence**



- Higher water table
- Higher environmental humidity
- Lower maximum temperature
- Higher minimum temperature
- Soil dependency on fluvial regime

Rhododendrum ponticum
subsp. *baeticum*



S^a Aljibe, Cádiz





Culcita macrocarpa



**Guadalhorra river
Córdoba**



Phillyrea angustifolia



ZONATION

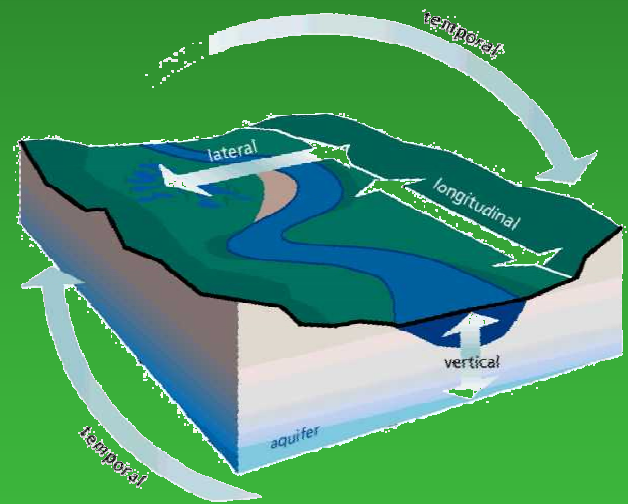
Definition

Zonation

River sp.s

Communities

- Longitudinal and lateral gradient
- River basin
- Water quality
- Fluvial regime, and...
- Macroclimate



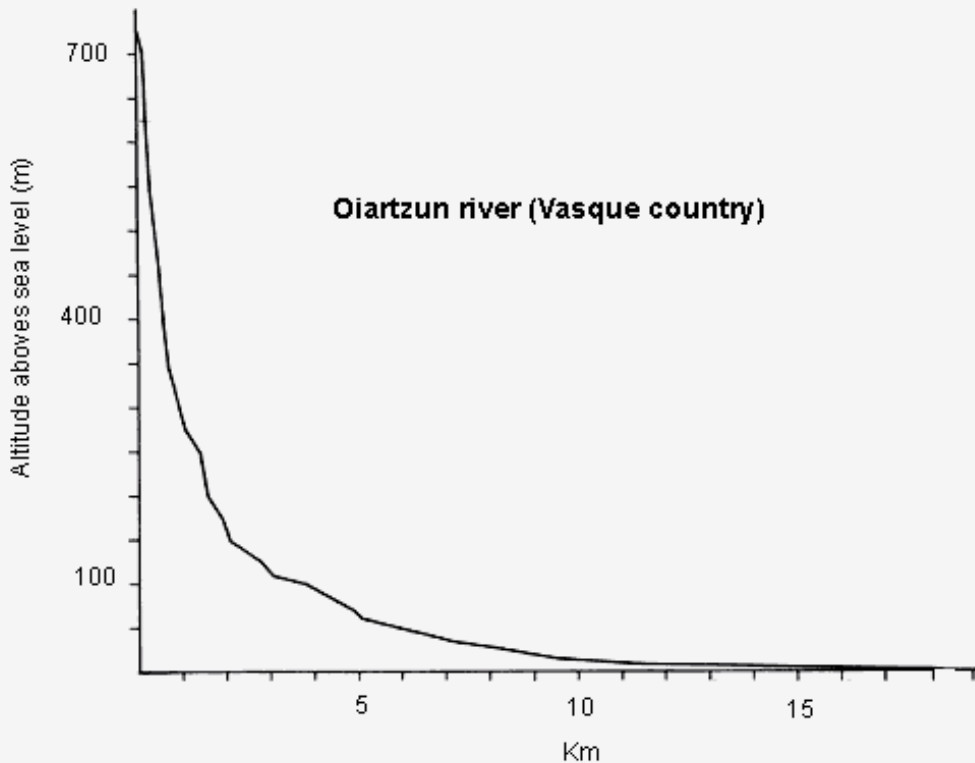
ZONATION-longitudinal position

Definition

Zonation

River sp.s

Communities



ZONATION-lateral position

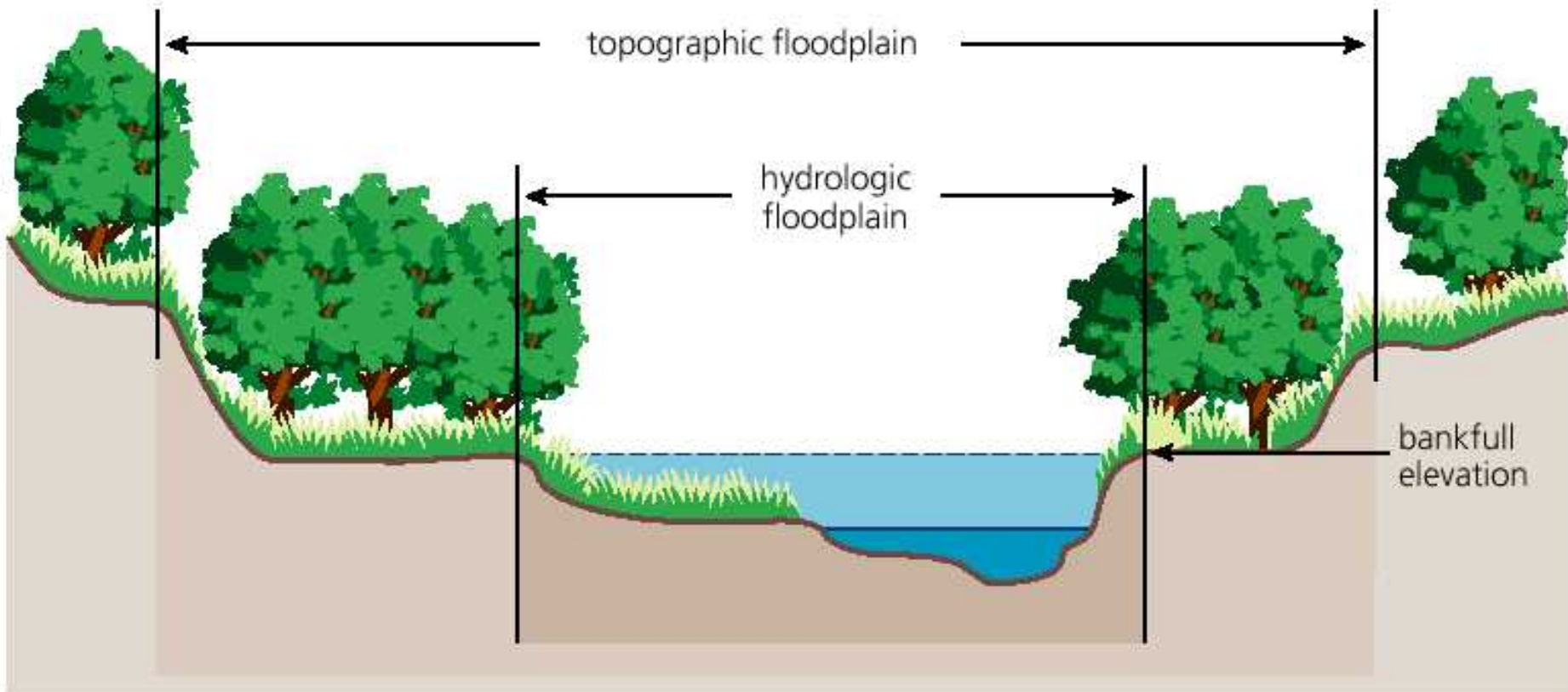
Definition

Zonation

River sp.s

Communities

- River line + river plain





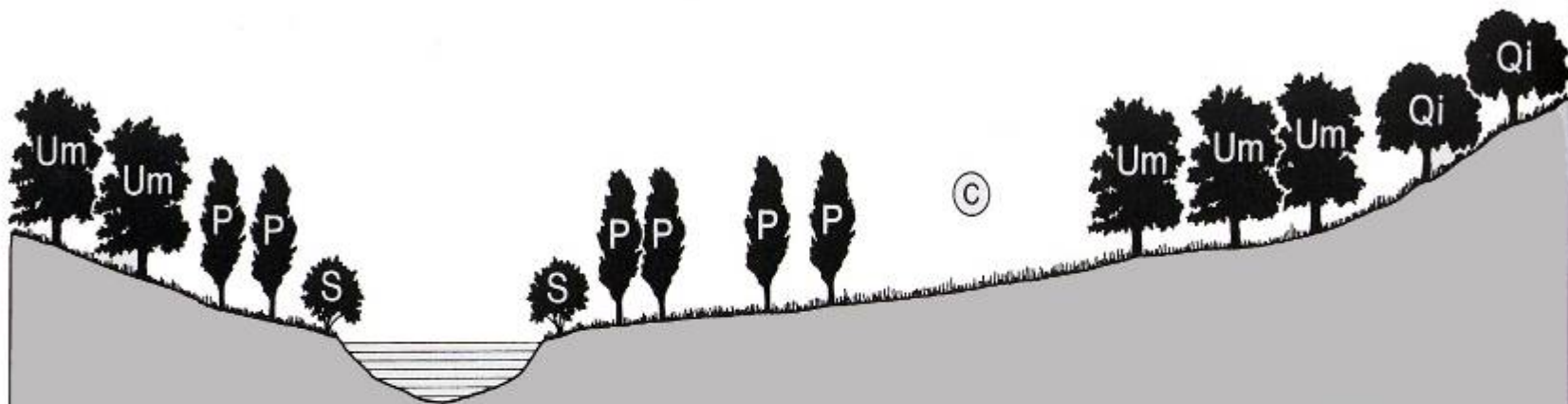
ZONATION-lateral position

Definition

Zonation

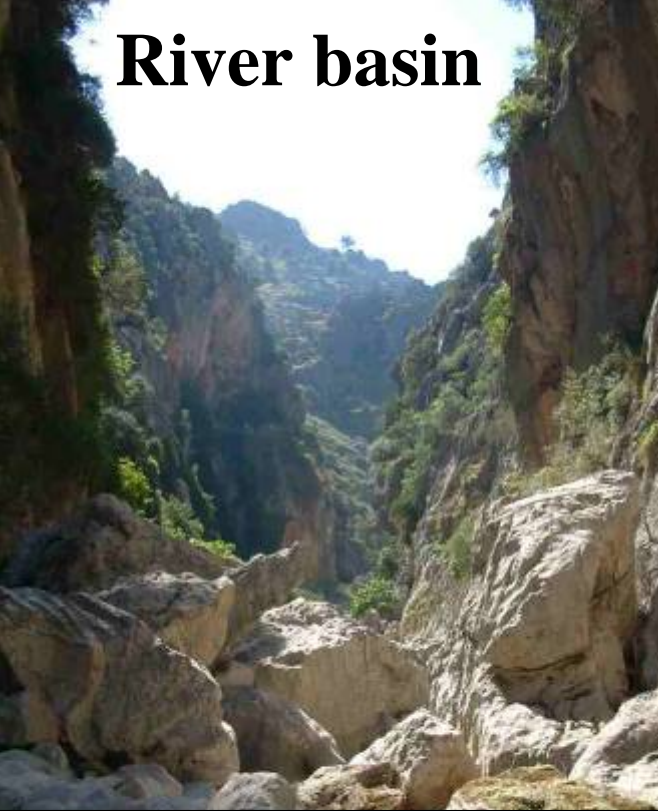
River sp.s

Communities



- S** Sauces arbustivos
- P** *Populus alba*, *P. nigra*
- Um** *Ulmus minor*
- Qi** *Quercus ilex*
- ©** Cultivos o praderas intercaladas

River basin



Water quality



Fluvial regime



Macroclimate

VEGETATION = f(environmental parameters)

Definition

Zonation

River sp.s

Communities

I. River basin

- Lithology
- Geomorphology dynamics
- Edaphology
- Topography

II. Fluvial regime

- Potential water erosion
- Water table variation
- Summer drought
- Over-flows

III. Water quality

- pH, T, fine solids
- Salts & nutrients
- Suspension particles / drags

IV. Macroclimate

- T, seasonality, humidity

PRINCIPAL RIVER SPECIES

Definition

Zonation

River sp.s

Communities

TREES

HELOPHYTE &

SHRUBS

AQUATIC

LIANOIDS

ALLOCHTHONOUS



TREES

Definition

Zonation

River sp.s

Communities

Salicaceae

Ulmaceae

Betulaceae

Oleaceae



Salicaceae

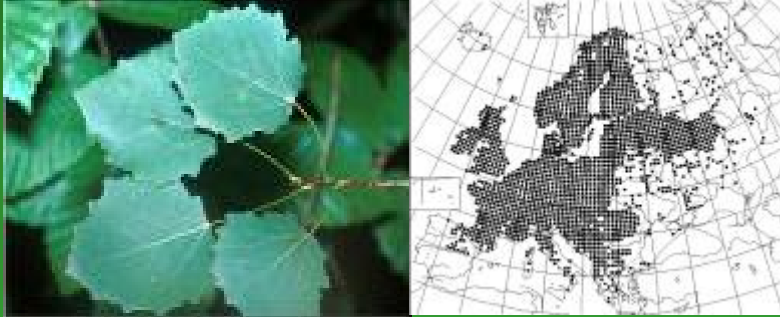
Definition

Zonation

River sp.s

Communities

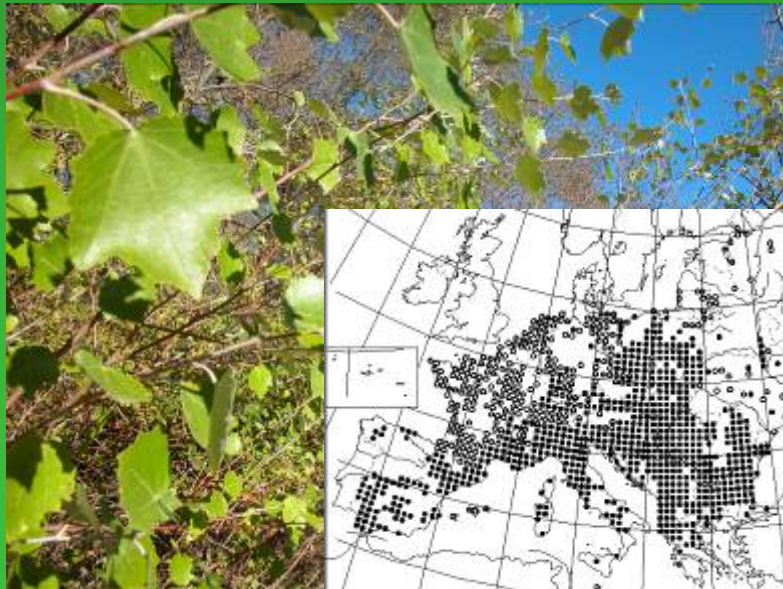
Populus tremula



Populus nigra



Populus alba



Salicaceae: Salix

↻ Trees

↻ Shrubs

Definition

Zonation

River sp.s

Communities

Salix atrocinerea

Salix caprea

Salix triandra

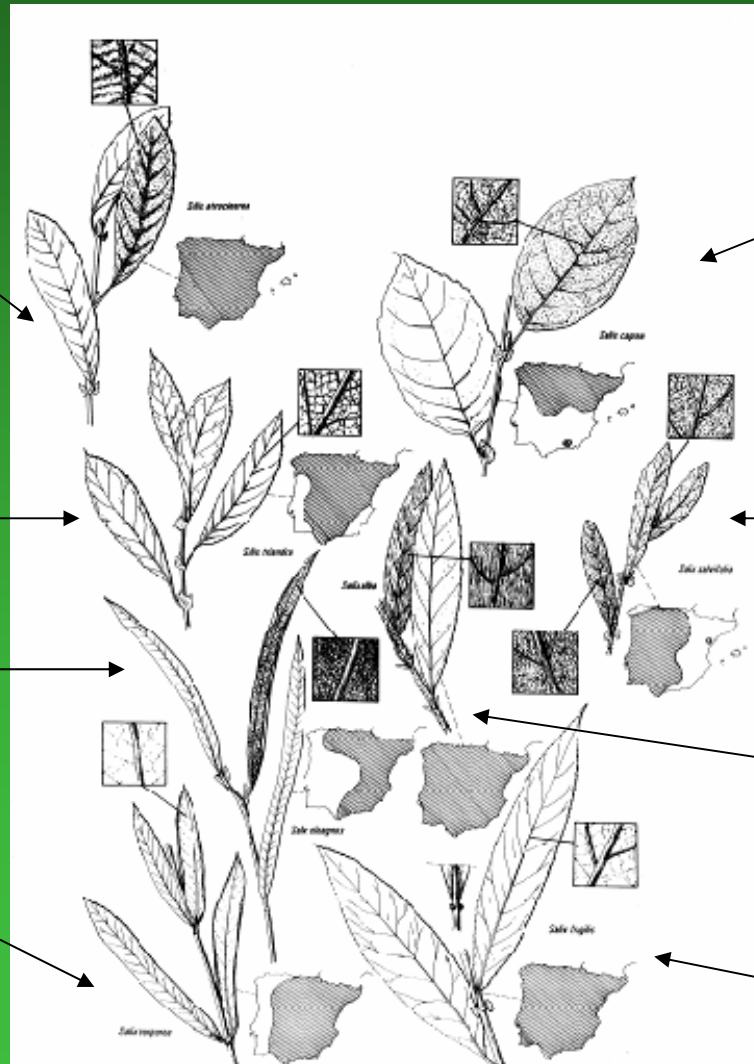
Salix salvifolia

Salix elaeagnos

Salix alba

Salix purpurea

Salix fragilis





Ulmaceae

Definition

Zonation

River sp.s

Communities



Celtis australis

Ulmus minor



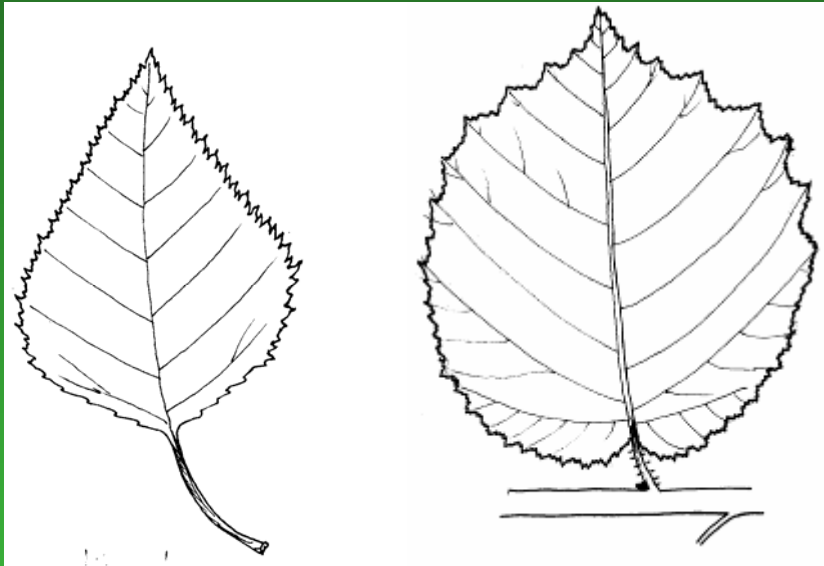
Betulaceae

Definition

Zonation

River sp.s

Communities



Betula sp.

Corylus avellana



Alnus glutinosa





Oleaceae

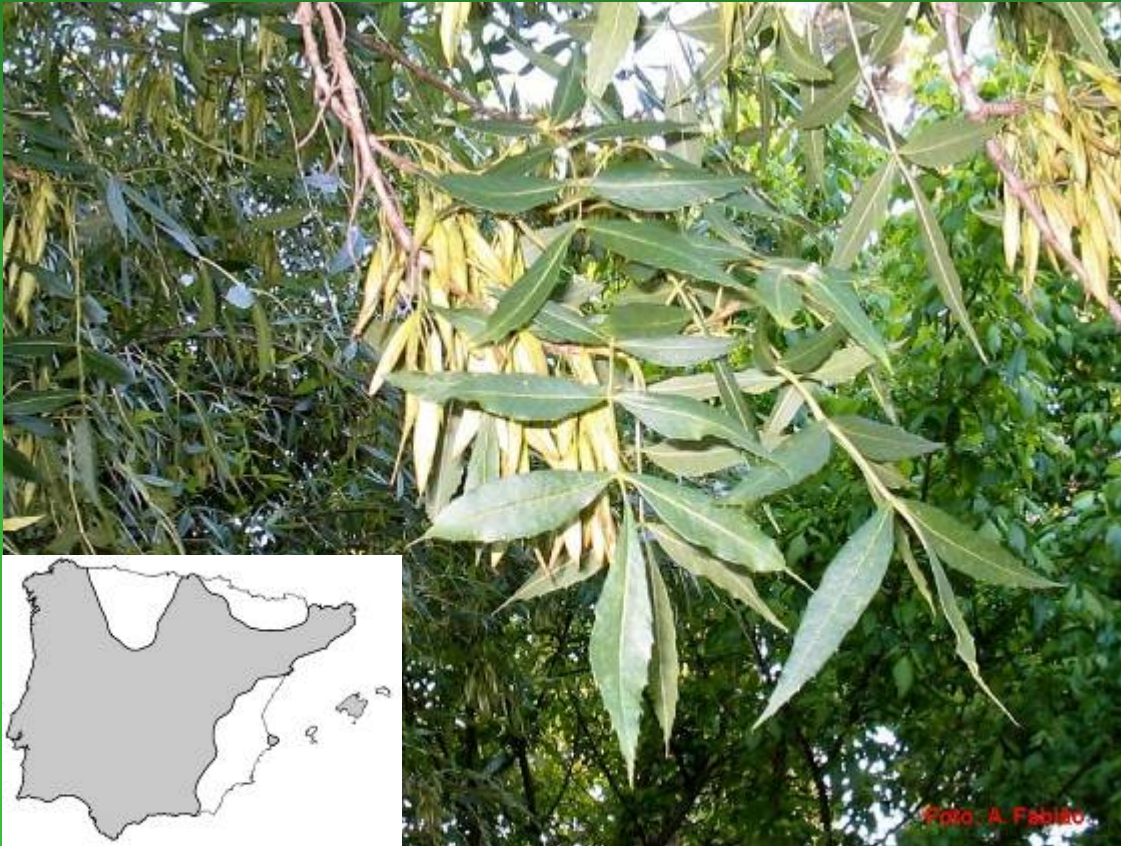
Definition

Zonation

River sp.s

Communities

Fraxinus angustifolia



Fraxinus excelsior



SHRUBS

Definition

Zonation

River sp.s

Communities

Salicaceae

Rosaceae

Apocynaceae

Euphorbiaceae

Verbenaceae

Tamaricaceae

Ericaceae

Elaeagnaceae





Rosaceae

Definition

Zonation

River sp.s

Communities



Rosa sp.



Rubus sp.





Apocynaceae

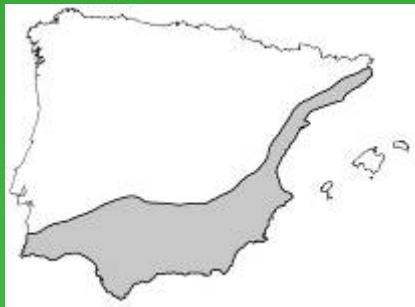
Definition

Zonation

River sp.s

Communities

Nerium oleander





Euphorbiaceae

Definition

Zonation

River sp.s

Communities

Flueggea tinctoria





Verbenaceae

Definition

Zonation

River sp.s

Communities



Vitex agnus-castus





Tamaricaceae

Definition

Zonation

River sp.s

Communities

Tamarix sp.





Ericaceae

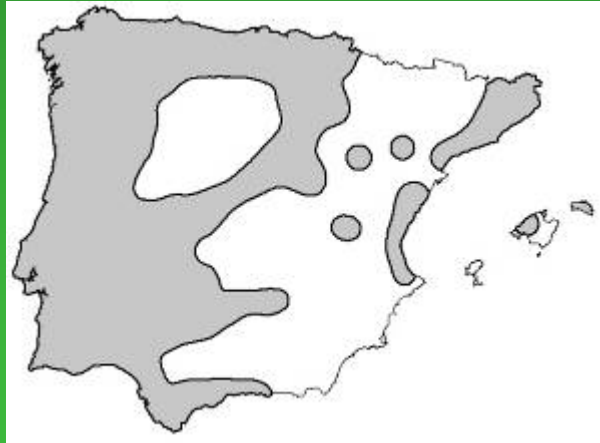
Definition

Zonation

River sp.s

Communities

Erica arborea





Elaeagnaceae

Definition

Zonation

River sp.s

Communities



Hippophae rhamnoides

LIANOIDS

Definition

Zonation

River sp.s

Communities



Liliaceae (*Smilax*, *Asparagus*)

Ranunculaceae (*Clematis*)

Rubiaceae (*Rubia*, *Galium*)

Dioscoreaceae (*Tamus*)

Vitaceae (*Vitis*)

Caprifoliaceae (*Lonicera*)

Araliaceae (*Hedera*)

Convolvulaceae (*Convolvulus*,
Calistegia)

Asclepiadaceae (*Cynanchum
acutum*)

Aristolochiaceae (*A.baetica*)

LIANOIDS

Definition

Zonation

River sp.s

Communities

Araliaceae

Rubiaceae

Vitaceae

Caprifoliaceae



Hedera helix

Rubia perigrina

Vitis vinifera

*Lonicera
periclymenum*

LIANOIDS

Definition

Zonation

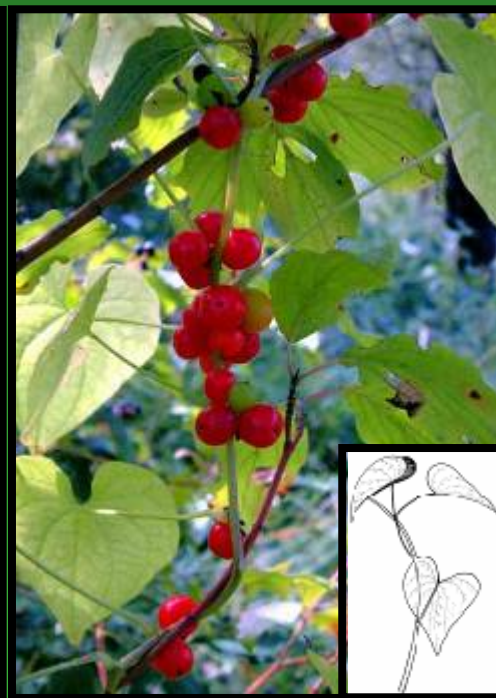
River sp.s

Communities

Ranunculaceae

Liliaceae

Dioscoriaceae



Clematis vitalba *Clematis cirrhosa* *Smilax aspera* *Tamus communis*



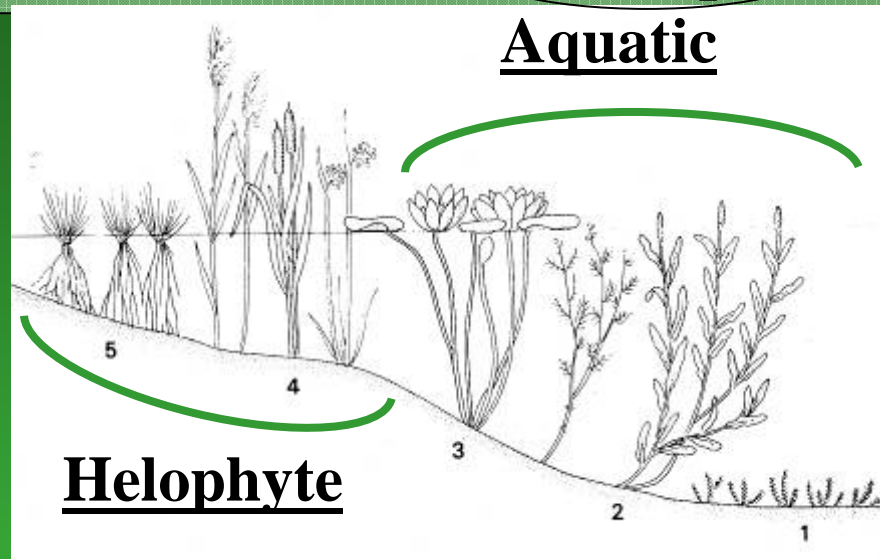
HELOPHYTE / AQUATIC

Definition

Zonation

River sp.s

Communities



Cyperaceae (5)

Gramineae

Typhaceae (4)

Juncaceae

Nymphaea (3)

Ranunculaceae

Potamogeton (2)

Chara (1, algae)



HELOPHYTE

Definition

Zonation

River sp.s

Communities

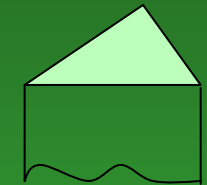
Iridaceae



Iris pseudoacorus

Cyperaceae

Carex elatius



Gramineae



Phragmites australis



Cyperus fuscus



HELOPHYTE

Definition

Zonation

River sp.s

Communities

Typhaceae



Typha domingensis



Juncaceae



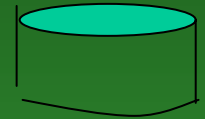
Juncus effusus



Scirpus lacustris



Scirpus holoschoenus



AQUATIC

Definition

Zonation

River sp.s

Communities



Polygonum amphibium



Potamogeton



AQUATIC

Definition

Zonation

River sp.s

Communities



Ranunculus



Ranunculus fluitans



AQUATIC

Definition

Zonation

River sp.s

Communities



Nymphaeaceae

Lemna trisulca



Zostera noltii



ALLOCHTHONOUS

Definition

Zonation

River sp.s

Communities

Elaeagnaceae



Elaeagnus angustifolia

C-SW Asia

Platanaceae



Platanus

Simaroubaceae



Ailanthus altissima

China

ALLOCHTHONOUS

Definition

Zonation

River sp.s

Communities

Liliaceae

Leguminosae

Gramineae



Arundo donax
C-S Asia



Hardy
Pampa
grass

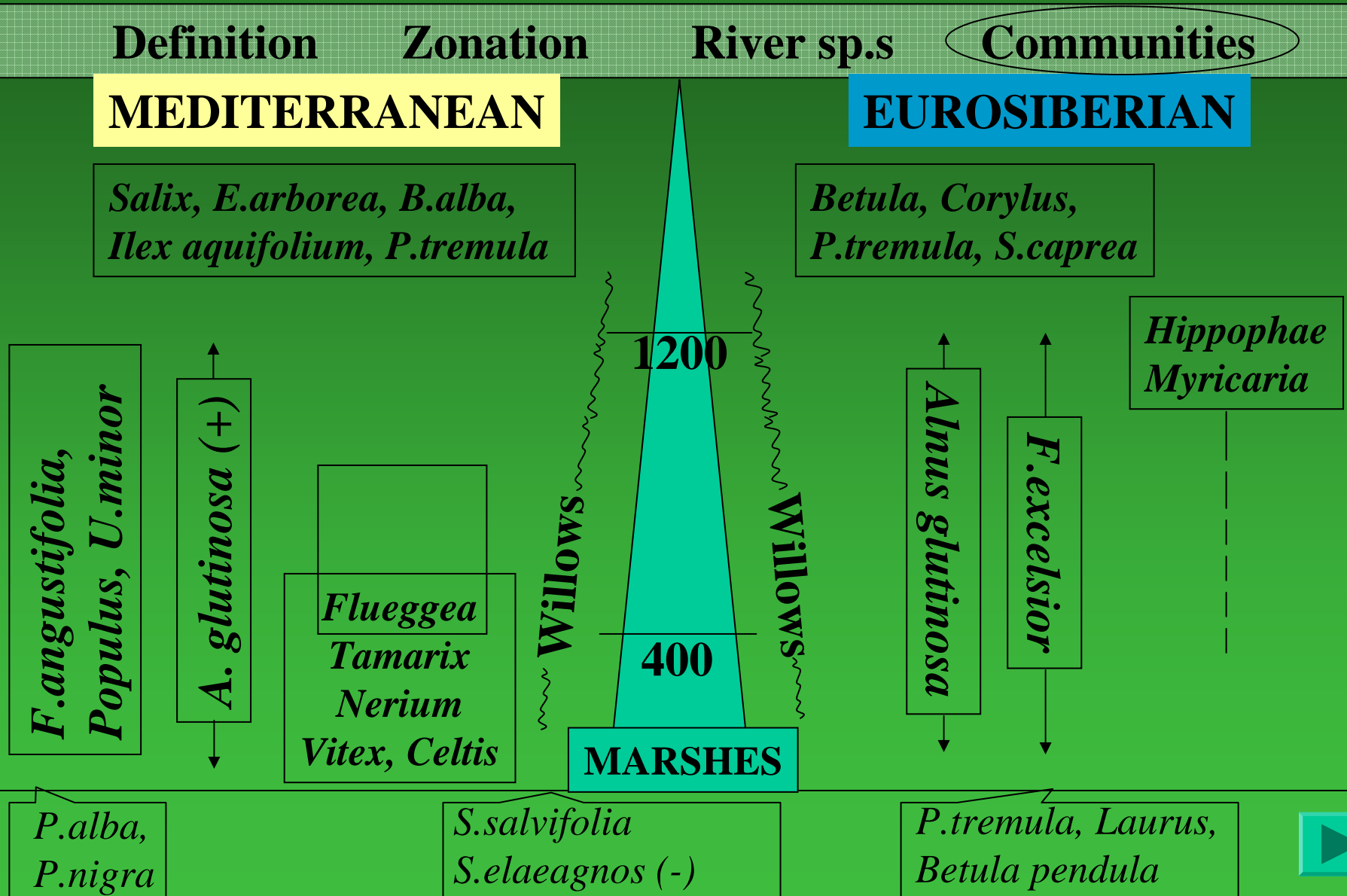
Eichornia crassipes
(Water hyacinth)
S America

Robinia pseudoacacia
SE USA

Saccharum ravennae



LONGITUDINAL - ZONATION



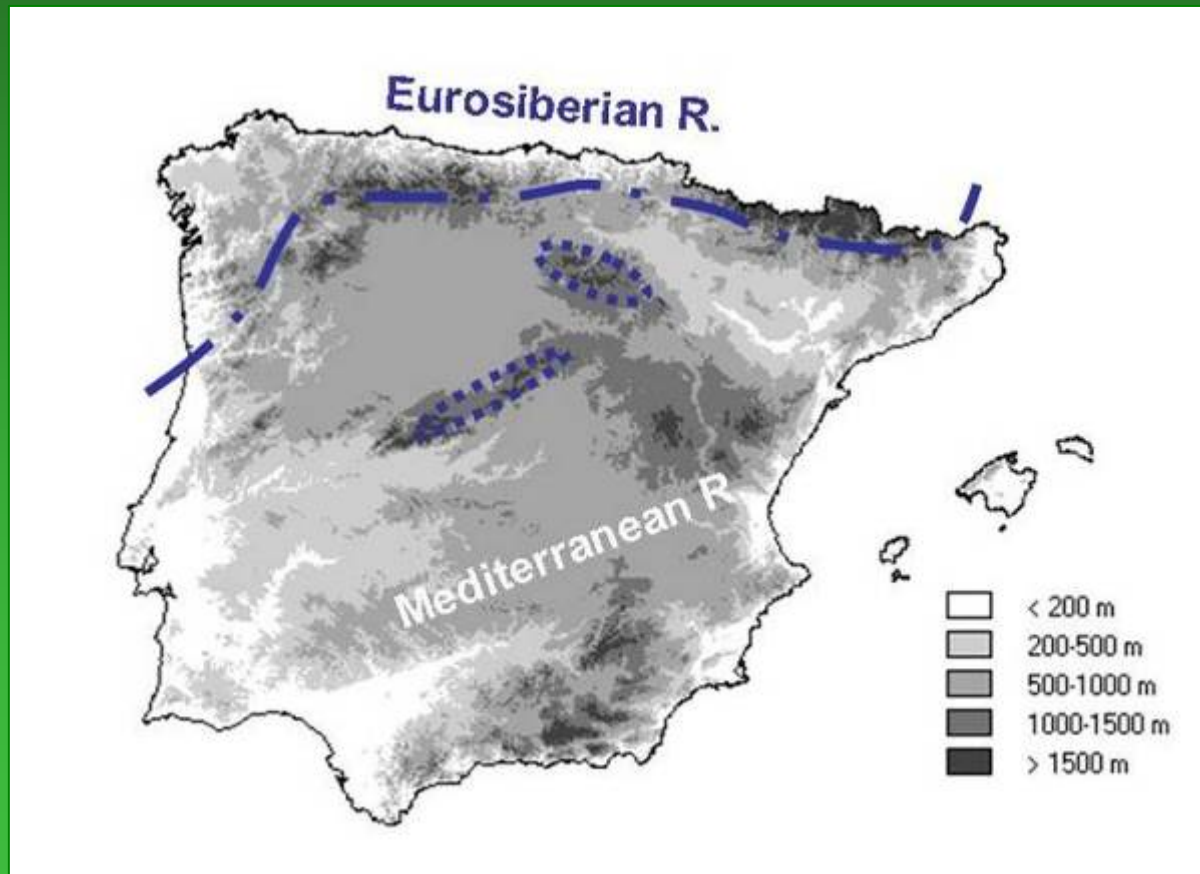
Eurosiberian / Mediterranean

Definition

Zonation

River sp.s

Communities



HIGH MOUNTAIN

Definition

Zonation

River sp.s

Communities



Navacerrada, Segovia



La Acebeda, Madrid



Castellón

La Alpujarra, Granada



Gredos, Ávila



Gredos, Ávila



MEDITERRANEAN: Euro Siberian introgression

Definition

Zonation

River sp.s

Communities

Río lobos, Soria



Río Duratón, Segovia



WILLOWS

Definition

Zonation

River sp.s

Communities



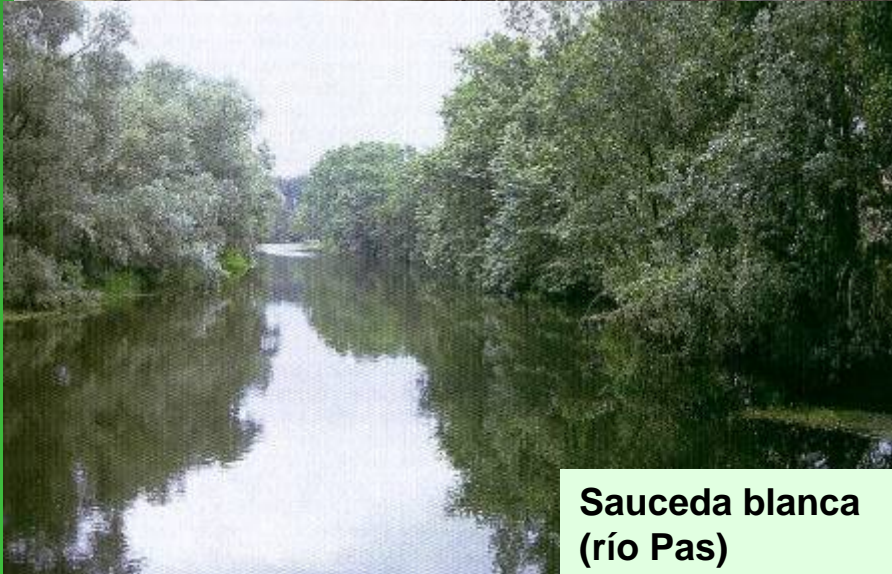
**Sauceda negra
(río Sorbe)**



**Sauceda calcófila
(río Esera)**



**Sauceda
salvifolia (río
Gargaligas)**



**Sauceda blanca
(río Pas)**

ALDERS

Definition

Zonation

River sp.s

Communities



Nalón River (Cantabria)

Gévora river



ASHES

Definition

Zonation

River sp.s

Communities



F. excelsior
(Bonhabal, Portugal)

F. angustifolia



(Río Frío, Segovia)

POPLARS

Definition

Zonation

River sp.s

Communities



P.nigra (Tajo river)



Gévalo



P.alba (Segura river)

ELMS

Definition

Zonation

River sp.s

Communities



U.minor, Madrid



OTHERS

Definition

Zonation

River sp.s

Communities

Nerium oleander



Tamarix sp.

Flueggea tinctoria



Hyppophae rhamnoides





*Phragmites
australis*

*Typha
dominguensis*

Arundo donax



THANKS FOR YOUR ATTENTION

