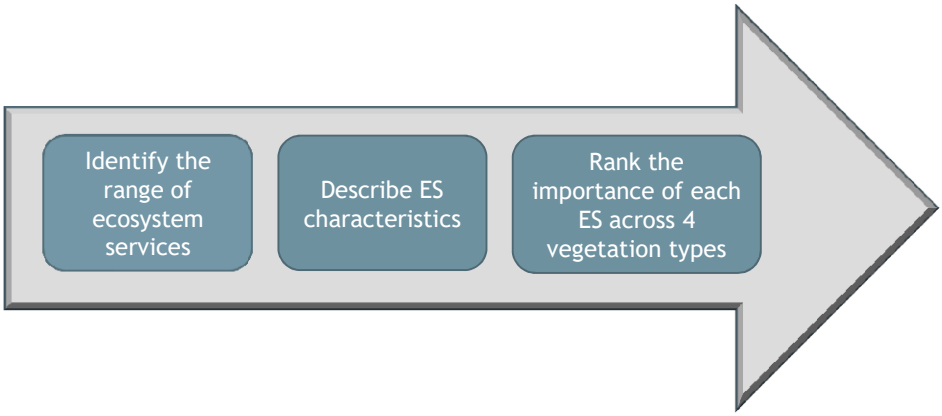
CONVERGES – *Knowledge conversion for enhancing management of European riparian ecosystems and services*
COST 16208

WG 1:Characterising degradation of riparian vegetation across the EU: status and pressures

Riis Tenna, Kelly-Quinn Mary, Aguiar Francisca, **Manolaki Paraskevi**, et al.

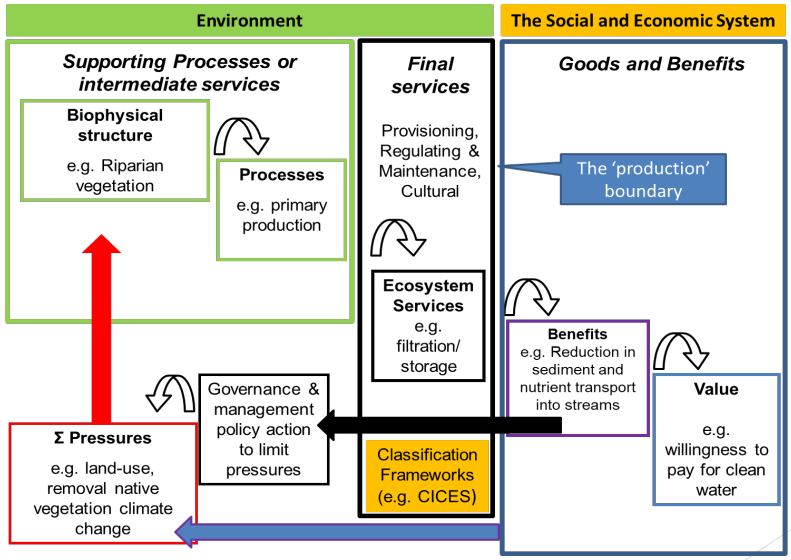
Global overview of ecosystem services in riparian vegetation



AIMS

- Overview of ecosystem services provided by riparian vegetation
- Identify key knowledge gaps
- Provide a decision making framework for management

The ecosystem service cascade model



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Ecosystem Services Classification

CICES framework

Section	Division	Group
Provisioning	Nutrition	Biomass
		Water
	Materials	Biomass, Fibre
		Water
	Energy	Biomass-based energy sources
		Mechanical energy
Regulation & Maintenance	Mediation of waste, toxics and other nuisances	Mediation by biota
		Mediation by ecosystems
	Mediation of flows	Mass flows
		Liquid flows
		Gaseous / air flows
	Maintenance of physical, chemical, biological conditions	Lifecycle maintenance, habitat and gene pool protection
		Pest and disease control
		Soil formation and composition
		Water conditions
		Atmospheric composition and climate regulation
Cultural	Physical and intellectual interactions with ecosystems and land-/seascapes [environmental settings]	Physical and experiential interactions
		Intellectual and representational interactions
	Spiritual, symbolic and other interactions with ecosystems and land-/seascapes [environmental settings]	Spiritual and/or emblematic
		Other cultural outputs

Section
This column lists the three main categories of ecosystem services

Division
This column divides section categories into main types of output or process.

Group
The group level splits division categories by biological, physical or cultural type or process.

Class
The group level splits division categories by biological, physical or cultural type or process.

Class type
Class types break the class categories into further individual entities and suggest ways of measuring the associated ecosystem service output.

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Collecting information about ES in riparian areas

What are the characteristics of the ecosystem service and what goods and benefits are derived from the service?

What are the underlying processes underpinning the ecosystem service?

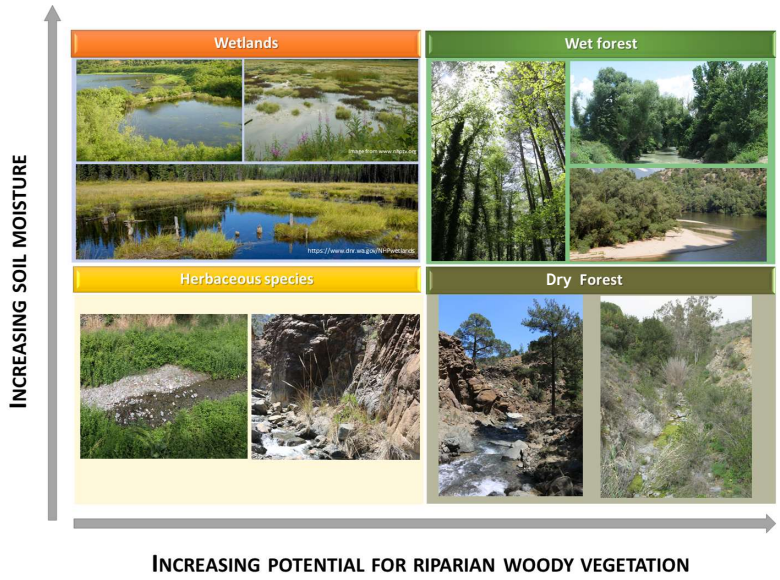
What is the potential importance of the service?

What is the potential importance of the service? Ranking process

		Spatial Scale			
		Global	**Regional**	**Local**	**Unknown**
Scale of Benefits	**Abundant or common**	High	High	Medium	Unknown
	Less than common	High	Medium	Low	Unknown
	Uncommon	Medium	Low	Low	Unknown
	Unknown	Unknown	Unknown	Unknown	Unknown

ES importance per 4 VP type	Code color
High	
Medium	
Low	

Approach: Extreme Riparian Vegetation Types



Results: Provisioning and Regulating ES

Ecosystem service	Herbaceous	Forest	Wet forest	Wetlands	ES Importance High to Low
Providing habitats	High	High	High	High	
Filtering/storage of particles	High	Medium	High	High	
Fixation storage	Medium	High	High	High	
Erosion control	Medium	High	High	High	
Providing habitats for native pest control agents	High	High	High	Unknown	
Flow regulation - The capacity of vegetation to retain water and release it slowly	Medium	Medium	High	High	
Removal of nutrient in runoff	Medium	High	Medium	High	
Landslide	Low	High	High	Low	
Pollination	High	High	Low	Low	
Evaporative cooling by urban riparian trees	Low	High	High	Low	
Standing crop of woody biomass	Low	Medium	Medium	Low	
Seeds, spores and harvestable genes	Unknown	High	Unknown	Unknown	
The capacity of riparian vegetation to reduce frequency, spread or magnitude of fires	Unknown	Unknown	Unknown	High	
Standing crop of non-woody biomass	Low	Low	Low	Medium	
Harvestable volume of wild berries or other	Low	Low	Low	Low	
Seed and propagule dispersal	Unknown	Unknown	Unknown	Unknown	

Results: Cultural ES

Direct ES

in-situ and outdoor interactions with living systems that depend on presence in the environmental setting

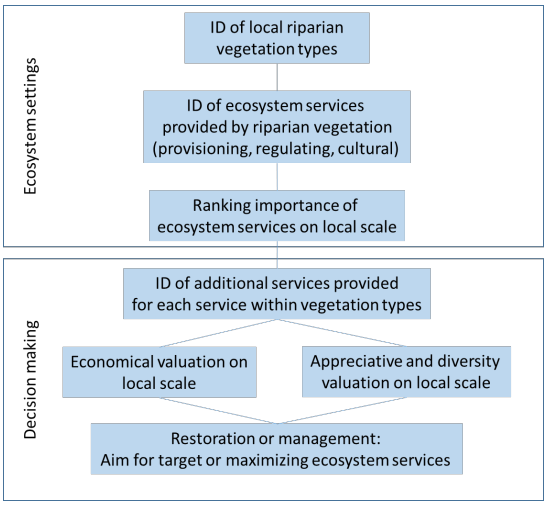
- Ecological quality to support recreational use
- Sites of specific scientific interest
- Sites used for conservation activities
- Sites of cultural importance
- Area of natural beauty

Indirect ES

Remote, often indoor interactions with living systems that do not require presence in the environmental setting

- Totemic species or settings of religious interest
- Species, habitats or landscapes that can be used as symbols
- Artistic productions
- Natural areas designated as wilderness
- Species and ecosystem settings

Methodological framework to guide management



Further work

- How can we convert our knowledge into a decision-making and management framework?
- How can this global approach perform in a local scale?
- How can we incorporate RV status and pressures?
- Do we have a list of pressures? (WG1, Task 1.3: Assess RV pressures)

The work is still in progress…