
# OSCAR - project description

## OSCAR in a nutshell

Oscar is synthesizing and complementing the knowledge on the local and catchment-wide effects of woody riparian buffers on biodiversity and ecosystem services

Woody riparian buffers along rivers:

- enhance biodiversity, e.g. by providing wood and leaves as habitat and food
- provide multiple ecosystem services, many more besides nutrient retention, e.g. mitigating water temperature and climate change effects
- the local effects of individual woody buffers potentially add up in downstream direction and they may serve as migration corridors connecting near-natural sites in a catchment-wide green infrastructure network

Knowledge gaps on overall benefits and catchment-wide effects limit the strategic and targeted implementation, and hence, the OSCAR project intended to:

- synthesize and complement the knowledge on the overall benefits of woody buffers in knowledge rules, especially considering how effects depend on the spatial arrangement at the catchment scale,
- applying these knowledge rules in case-study catchments to investigate the potential future effect of different riparian management practices (increasing or decreasing the extent of woody buffers), finally identifying woody buffer configurations with an optimum high overall effect,
- knowledge brokering by providing tools and management / policy recommendations for the strategic and targeted implementation of woody buffers at the national and EU level based on the scenarios.

## OSCAR- the three pillars in more detail

The project was built on three main pillars and framed by stakeholder participation (Figure 1).

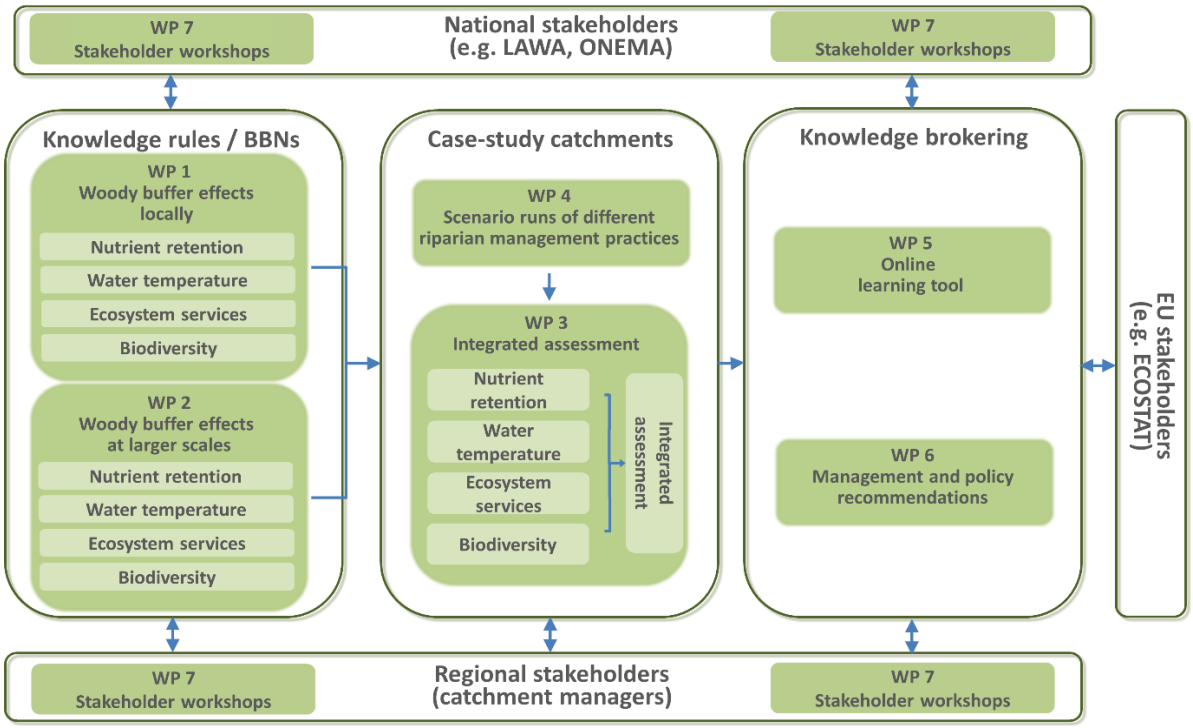


*Figure 1: The three main pillars of the OSCAR project in the project flow-chart.*

Pillar 1: Synthesize and complement knowledge (WP1-2)

- Literature review on the four main effects of woody buffers on nutrient / fine sediment retention, water temperature, ecosystem services in general, and biodiversity
- Complementary studies on local as well as large scale downstream effects on the four responses, especially on water temperature and a wider range of diversity aspects (functional trait diversity and river-type-specific diversity = ecological status, in addition to richness)
- Develop conceptual models to be converted to Bayesian Belief Networks (BBN) to model woody buffer effects for river segments and develop a modelling approach for upscaling local effects to the river network and catchment scale

Pillar 2: Model and compare the four main effects in case-study catchments (WP3-4)

- Apply the knowledge rules and BBNs in four case study catchments (France and Germany) for the present conditions (baseline scenario)
- Model three different riparian management scenarios (ambitious, best-practice, pessimistic)
- Optimize the overall effect by identifying spatial configurations of woody riparian buffers with a high overall effect

Pillar 3: Knowledge brokering / putting it into practice (WP5-6)

- Summarize the knowledge rules derived in WP1 and WP2
- Develop an online learning tool to assess woody riparian buffer effects
- Derive river management and policy recommendations

Stakeholder participation at three levels (WP7)

- Regional level (case-study catchment river managers)
- National level (river basin management, agricultural administration, NGOs)
- EU level (guidance documents targeting EU policies, e.g. WFD, CAP, Natur2000, EU Biodiversity Strategy)

## Partners and funders


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