



European Commission LIFE Environment program co-financed project

"Adaptation of Water Framework Directive and Habitats Directive harmonization and integrated actions for freshwater quality improvement in Salaca river sub catchment"

(LIFE IS SALACA)

Grant agreement 101114155 — LIFE22-ENV-LV-LIFE IS SALACA

Deliverable D2.3. Annotation in English

"Report (FRV, algorithms for quality assessment, spatial analysis) for riparian forests"



Activity T.2.2 Preparatory work for riparian forest management

Author: SILAVA (Endijs Bāders, Valters Samariks, Mārcis Saklaurs)

09.04.2025.

Summary

The deliverable outlines a comprehensive methodology designed for the assessment and analysis of riparian forests, with a focus on quality assessment algorithms and spatial analysis techniques. The framework integrates ecological, structural, and functional indicators to evaluate riparian forest restoration's potential and current state. This includes the quantification of biodiversity, stand structure, and ecosystem service provision, allowing for the identification of priority areas for intervention.

Algorithms for quality assessment were developed to analyse forest structural complexity, species composition, and ecological integrity. These algorithms utilize both field-collected data and remote sensing inputs (e.g., LiDAR) to assess parameters such as canopy height variation, basal area, deadwood volume, and understory diversity. Such indicators provide a robust basis for evaluating the ecological quality and successional stage of riparian forests under varying management regimes.

A spatial analysis was conducted to identify restoration hotspots and evaluate landscape-level connectivity. This involved integrating geospatial data, ecosystem service models, and land cover classification to map green infrastructure potential and ecosystem service supply across riparian zones. The methodology supports spatial prioritization for conservation planning, emphasising areas delivering high ecological value and societal benefit. This integrated approach ensures that restoration and management strategies are evidence-based, spatially explicit, and aligned with both ecological objectives and stakeholder interests.