

Interreg



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Comparison between study areas

January 2026

PILOT AREAS

VENICE LAGOON, VENETO REGION

Situated in the Veneto Region, in **Northeast Italy**, the pilot area represents a highly interconnected and environmentally complex system comprising three main dimensions: a 2,038 km² drainage basin, the 550 km² Venice Lagoon, and a 169 km coastline. This territory is defined by extreme **hydraulic fragility**, where natural tidal dynamics and land subsidence intersect with intense **anthropogenic pressures** from urbanization and tourism. Regarding specific risks, the region is exposed to intensifying hazards: the increased frequency of extreme weather events are expected to elevate the risk of **pluvial flooding**, particularly in the terrestrial drainage basin compared to the lagoon. High water events (“*Acqua alta*”) have surged in recent years, highlighted by the exceptional 189 cm tide recorded in 2019. Land subsidence further complicates this, with rates in certain lagoon areas being up to six times higher than in the historic center. Additionally, **coastal erosion** hot-spots in Caorle, Jesolo, and Cavallino-Treporti threaten the stability of natural defenses and vital socio-economic assets.



San Giorgio, Venice (IT) – Flooded island shore, November 2019.

KARLOVAC COUNTY

Karlovac County is situated within the **Small Kupa Basin** in central Croatia, serving as a vital transport corridor for highways and railways of national importance. The pilot area is shaped by a dynamic river network including the **Kupa, Korana, Mrežnica, and Dobra** rivers, all characterized by sudden and intense water level rises during heavy rainfall. These river systems have faced severe flood events approximately 10 times in the last decade, leading to significant socio-economic impacts. The **2023** flood alone resulted in widespread damages across multiple municipalities; moreover **2014** floods, caused the destruction of family houses and commercial buildings, isolating villages. Vulnerabilities are high because current protection systems remain incomplete, **exposing critical infrastructure** like gas and oil pipelines to potential disruption. Furthermore, intense runoff during these events frequently triggers secondary hazards such as landslides and rockfalls, while debris accumulation in riverbeds contributes to **long-term water quality deterioration**.



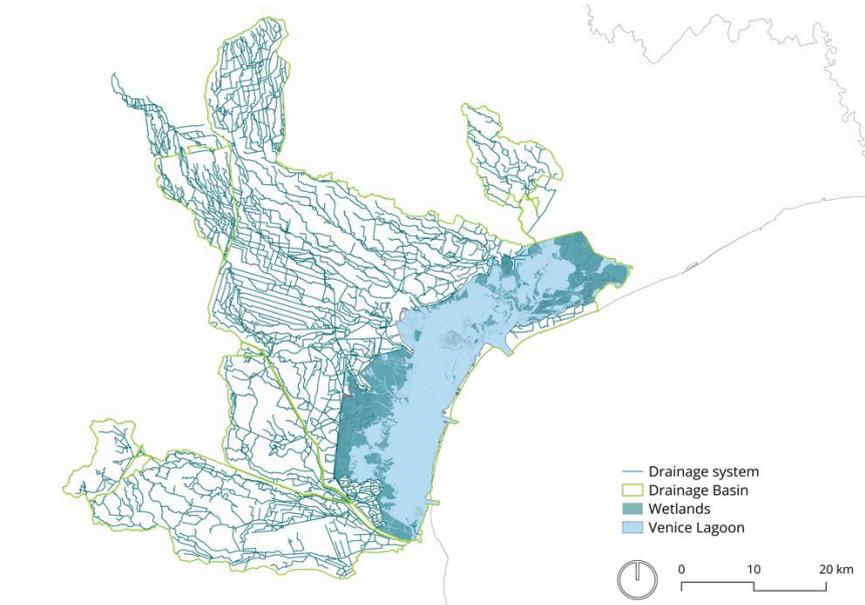
Karlovac county (HR) - Flooded park in the wider city area, October 2024.



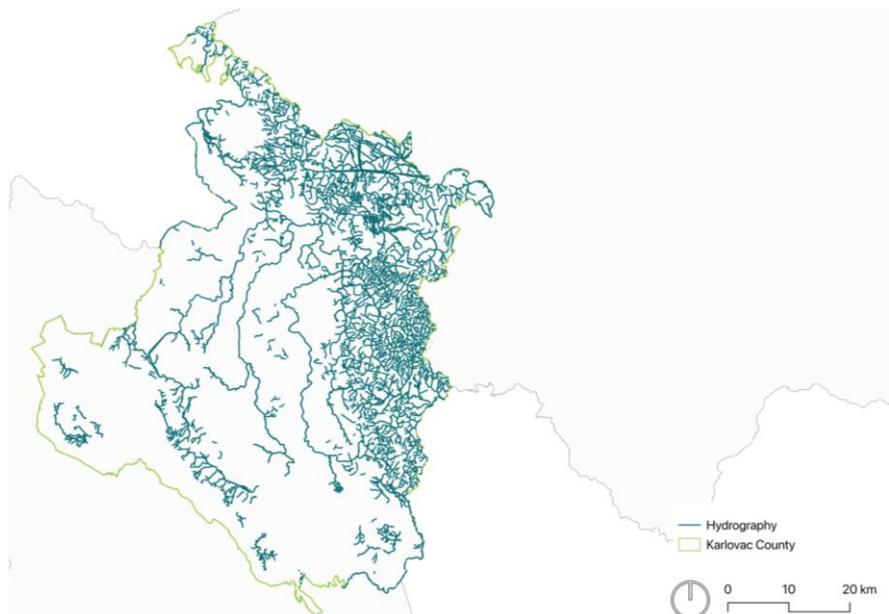
PILOT AREAS AND HYDROGEOLOGICAL CONTEXT



Map of the **Veneto Pilot site**: drainage basin featuring drainage system, wetlands, and Venice Lagoon. The map illustrates the study area’s location within a transitional environment. Most of the channels identified on the hydrographic map are classified as drainage channels rather than natural watercourses.

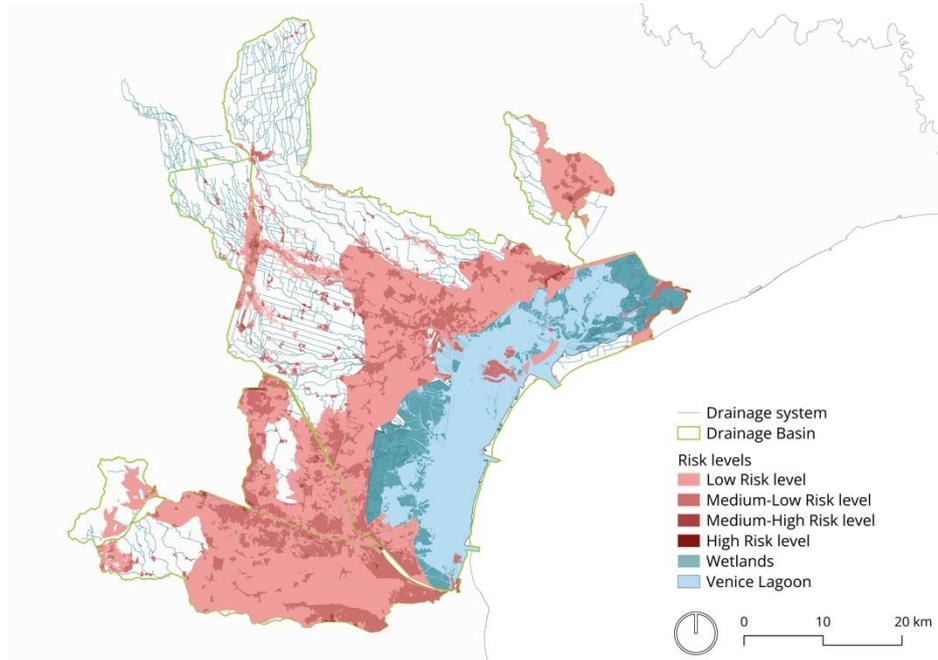


Map of the **Karlovac County Pilot site**: drainage basin featuring drainage system. In this case, the setting is considerably more natural, as indicated by the course of the waterways, which are mainly located at higher elevations than those of the Veneto pilot area.

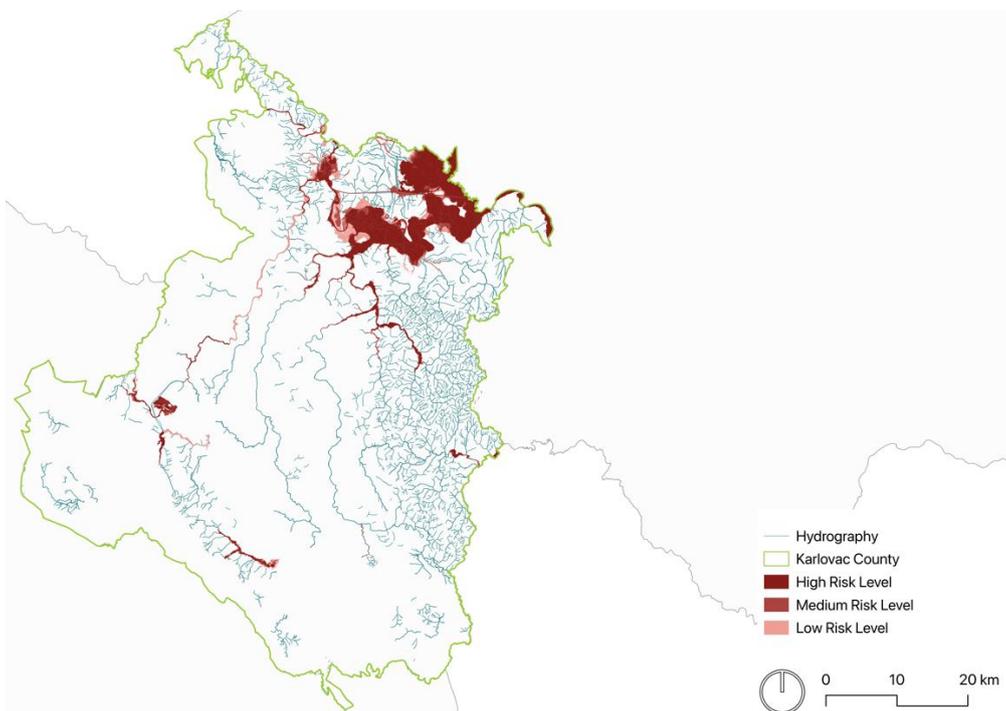


RISK MAP

The **Veneto Pilot site** risk map highlights areas vulnerable to environmental hazards, using different risk levels to represent varying degrees of threat. Hazards are mainly concentrated in areas adjacent to the Venice Lagoon and its drainage basin wetlands, where environmental sensitivity is highest.

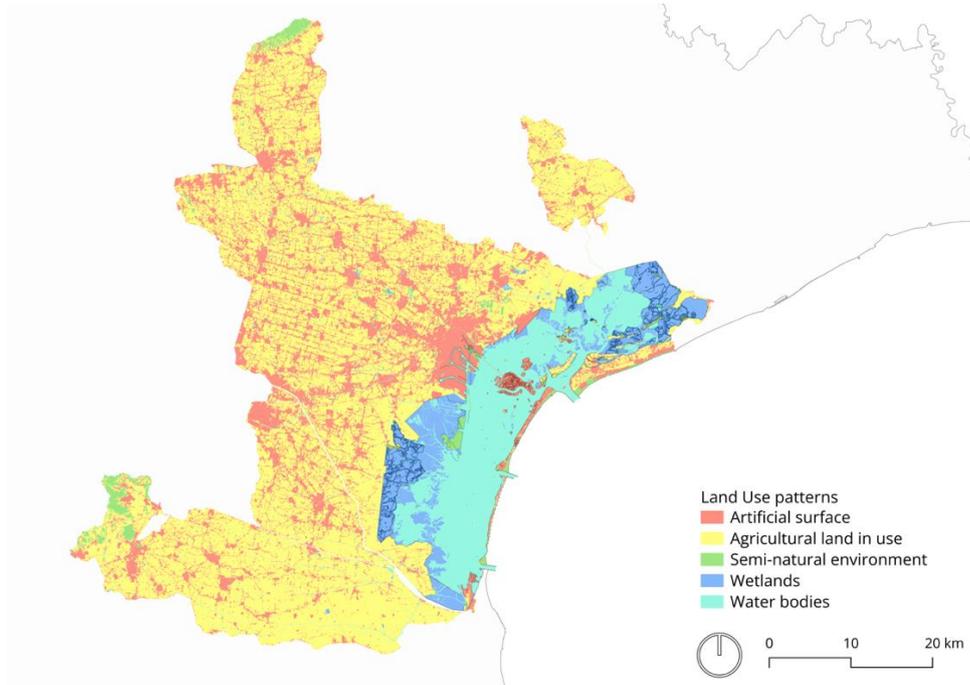


Karlovac County risk map shows areas vulnerable to environmental hazards, with different risk levels indicating varying degrees of threat, including intense runoff that can trigger landslides and rockfalls, as well as debris accumulation in riverbeds that degrades water quality over time.



LAND USE PATTERNS

The **Veneto Pilot site** land use map classifies patterns into artificial areas and natural ones. In this pilot, agricultural and anthropized land predominates, particularly in the mainland area adjacent to the Venice Lagoon.



Karlovac County land use map classifies patterns into artificial areas and natural ones. In this pilot project area, wooded and semi-natural land covers predominate, with an increase in anthropized areas near river courses.

