

Danube Water Balance



Upper Sava Pilot area



Points

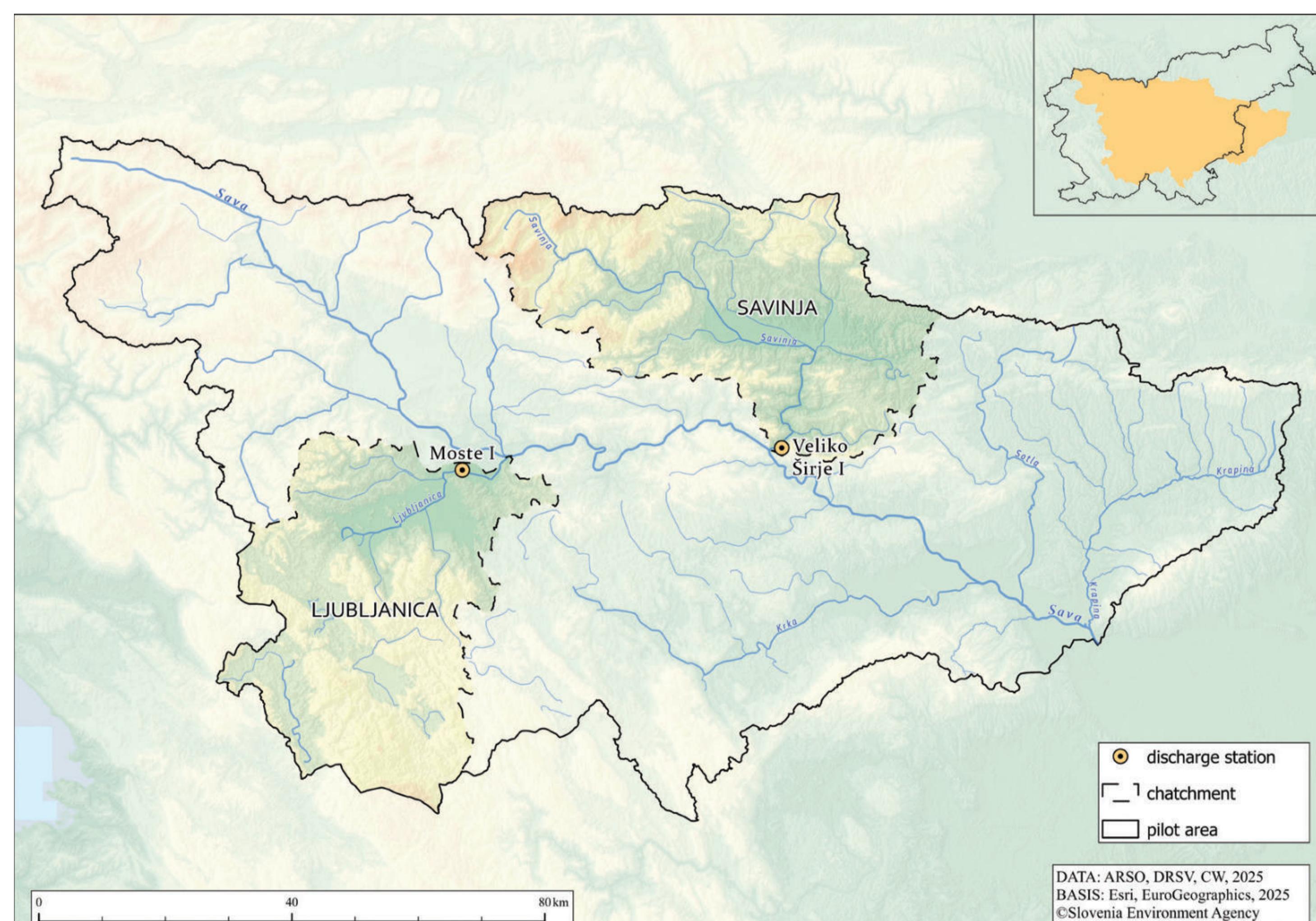
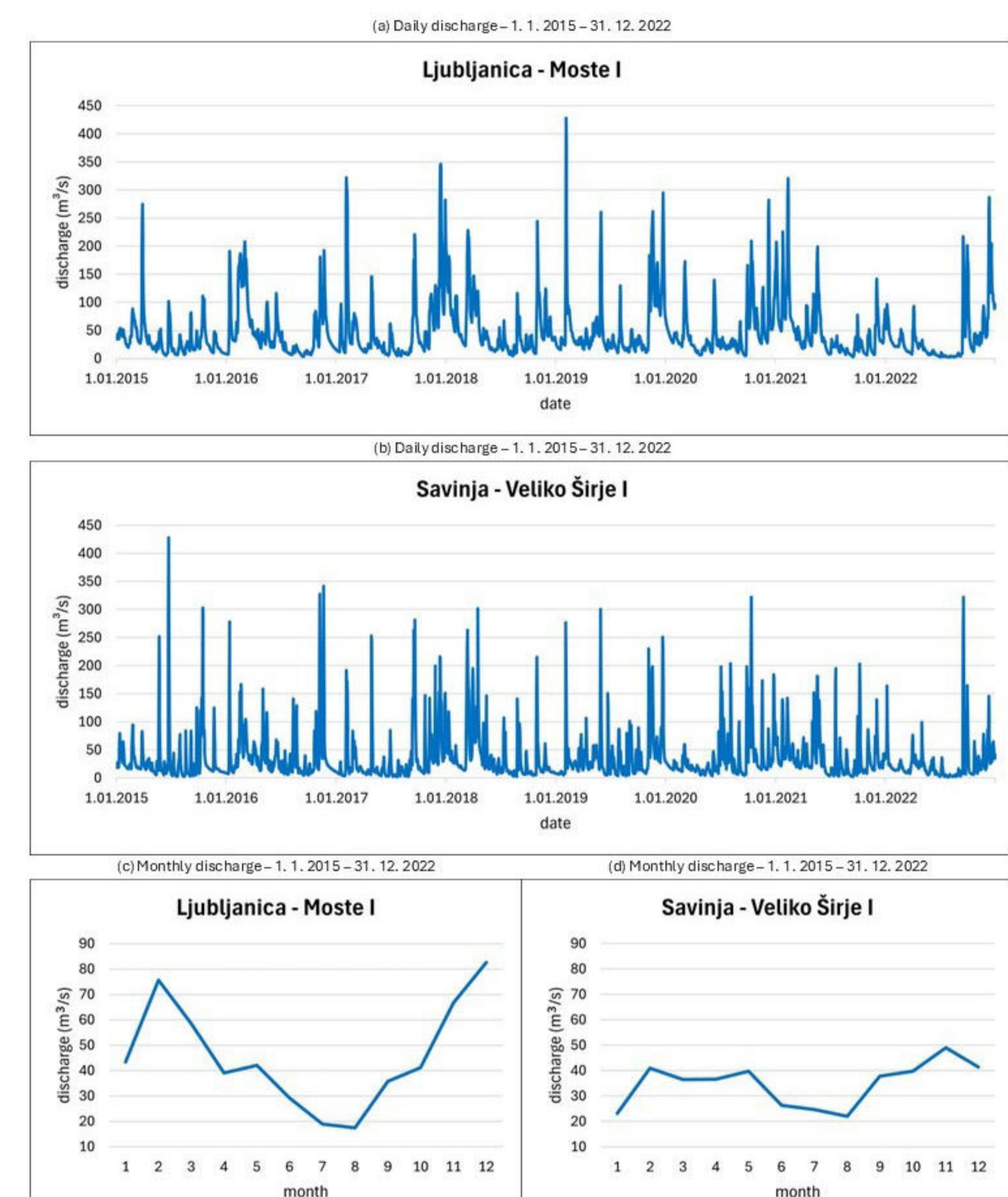
Pilot area: 12,328 km² - 1.5% of Danube River Basin,

Pilot partners: Slovenia ARSO (Slovenian Environment Agency) and Croatia Vode (Croatian Waters),

29 hydrological monitoring stations,

The Upper Sava pilot area covers 12,328 km², which represents approximately 1.5% of the entire Danube River Basin. It covers areas in both Slovenia and Croatia and is jointly managed by ARSO (Slovenian Environment Agency) and HR Vode (Croatian Waters). The map highlights 29 monitoring stations were used for model calibration and validation.

Ljubljanica at Moste I (basin area: 1778 km²) and Savinja at Veliko Širje I (basin area: 1847 km²)

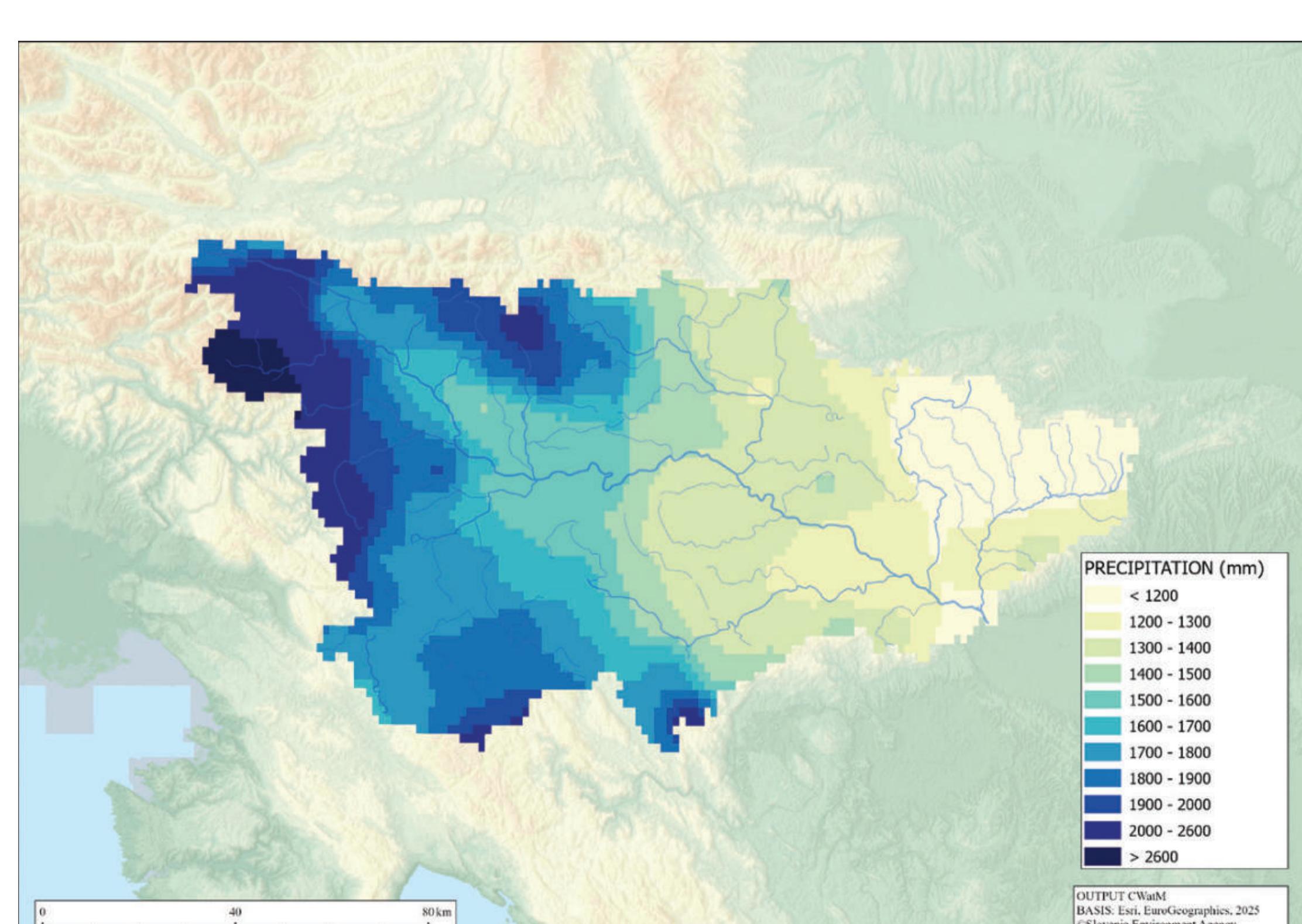
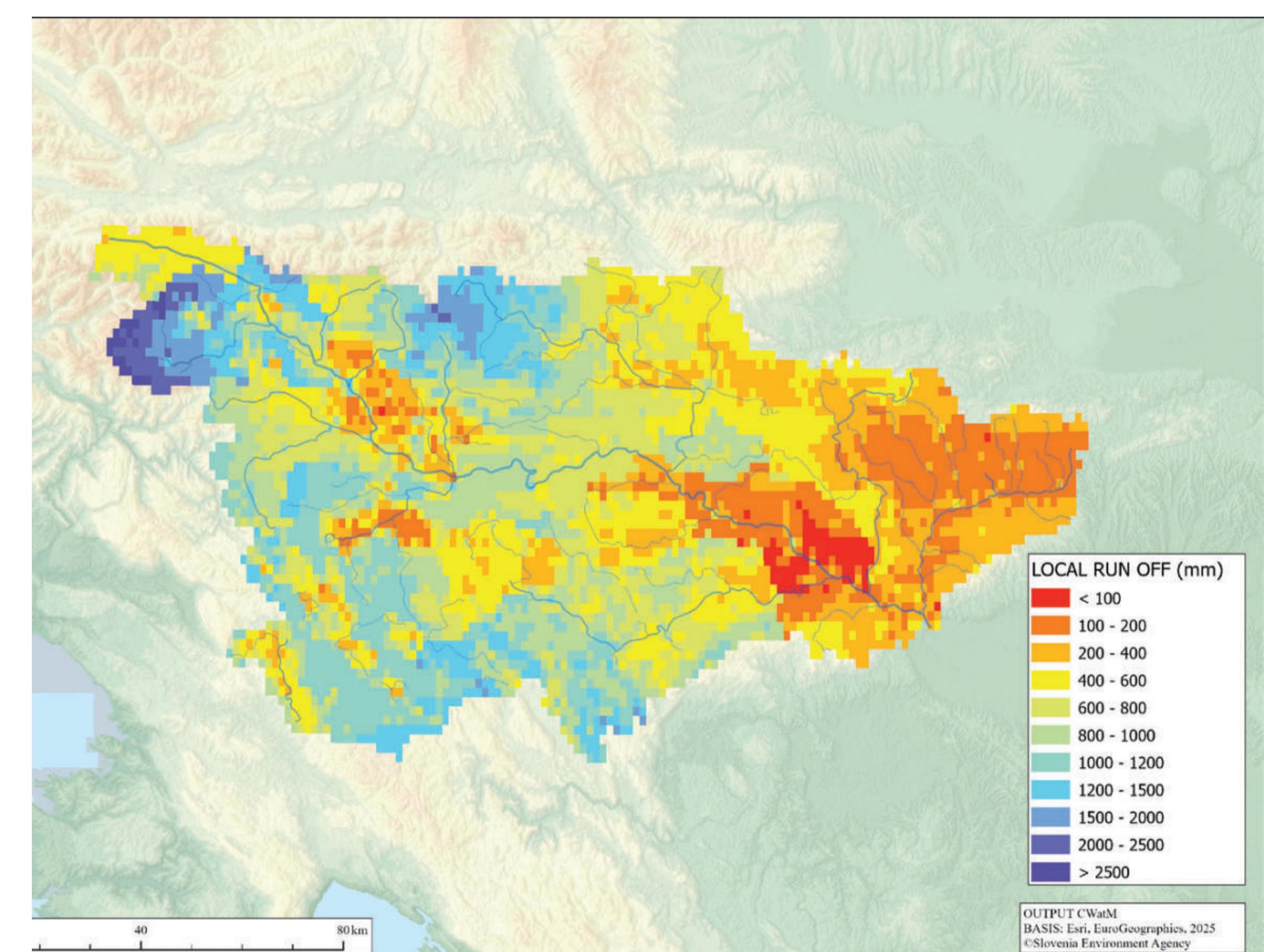


Points

Heterogenic pilot area: karstic Watershed Ljubljanica (station Moste I) and surface fluvial Watershed Savinja (station Veliko Širje I),

Similar size of catchments but different hydrological conditions between karst and non-karst environments.

The graph and the map show two stations where discharge is measured. One station is located on the Ljubljanica River (Moste I), and the other on the Savinja River (Veliko Širje I). The Ljubljanica catchment is karstic, while the Savinja catchment is non-karstic. Since the two catchments are similar in size, they can be compared in terms of hydrological conditions in karstic and non-karstic areas. The amount of precipitation in the Savinja catchment is on average about 300 mm lower than in the Ljubljanica catchment. However, due to its non-karstic area, the Savinja has more pronounced discharge peaks, as most of the rainfall quickly runs off over the surface. In contrast, in the Ljubljanica catchment, precipitation infiltrates into the subsurface and flows underground to springs in the shallow karst area.



Points

CWatM model run for average annual precipitation (1991–2020),

Highest precipitation in the northwest (>2600 mm/year),

Precipitation decreases gradually toward the east,

Lowest precipitation in the east (<1200 mm/year).

The CWatM model was run using for average annual precipitation data in the period 1991–2020. The highest precipitation values occur in the northwestern part of the pilot area, where annual precipitation exceeds 2600 mm. Moving eastward, the average precipitation gradually decreases, with the lowest values recorded in the eastern part of the area, where annual precipitation is less than 1200 mm.

Points

Average annual local runoff 1991–2020,

The highest runoff values in the northwestern part (>2600 mm),

Precipitation contributes to local runoff,

The average annual local runoff decreases towards the east,

The lowest values (< 100 mm) in the southeastern part of the pilot area.

The average annual local runoff in the period 1991–2020, as calculated by the CWatM model, is highest (>2600 mm), in the northwestern part of the pilot area, corresponding to areas with the greatest precipitation, where a large portion of precipitation contributes to local runoff. Moving eastward, the average annual runoff gradually decreases, with the lowest values—below 100 mm—recorded in the southeastern part of the area.