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Canale Emiliano-Romagnolo (CER) basin

The site is located in coastal areas of Emilia-Romagna, where land has deteriorated due to groundwater extraction.

The area features a mix of agriculture, natural wetlands, and artificial water bodies, promoting interactions between shallow aquifers and surface water.

The study focuses on privately owned agricultural land, using modeling software for detailed monitoring.

Soil Classification

In the Mezzano area, the soils have *surface horizons* that are generally organic (peat) or mixed organic/mineral; deeper layers contain the silts of the ancient lagoon bottom.
The soils are generally *saline*, but conductivity values vary seasonally, being lower at the surface at the end of summer due to leaching by irrigation waters that are not very saline.

Characteristics of the Groundwater

In the *irrigation canals of the Mezzano,* the salinity of the water varies according to the season, being much lower between spring and summer when water from the Po River is introduced.
This influence is also felt in the nearby water table: *salinity* measured in the piezometer is lower at the end of the irrigation season (October).



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South Istria Carst Aquifer

Loborika, wider area of the City of Pula, Southern Istria.

The area is located near several new wells which are of interest for future water supply, and near many old wells that are of interest for agricultural irrigation.

Soil Classification

The area is part of the *Adriatic carbonate platform* built predominantly of Cretaceous carbonate rocks. Although only slightly tectonized, the rocks have undergone an intensive karstification before being overlaid by Quaternary deposits.
These include a *widespread*, thicker or thinner cover of red soil (terra rossa) that mitigates the typical karst morphology. The highly permeable carbonate aquifer and the impermeable Quaternary cover have a strong impact on groundwater recharge.

Characteristics of the Groundwater

South Istria area is one of only *two groundwater bodies* in Croatia for which the chemical status of the water has been assessed as poor and is at risk of not achieving good quantitative status if negative hydrological conditions persist.
Many of the wells in the area have *high concentration of nitrates*, and are already lost for the water supply, but are used for irrigation.
However, there is a r*isk of saltwater penetrating into the entire aquifer*, so MAR would be a method of preventing saltwater intrusion.

