

Nature-based Solutions on existing infrastructures for resilient Water Management in the Mediterranean

Arborea, Italy CS3

One of the 5 Case Studies in the NATMed PRIMA Project



uniss
UNIVERSITÀ DEGLI STUDI DI SASSARI



UNICA

UNIVERSITÀ
DEGLI STUDI
DI CAGLIARI



Welcome to Arborea

A fertile district in Sardinia facing a silent crisis, nitrate groundwater contamination due to intensive farming.



The Problem

Nitrate levels often exceed 50 mg/L: the legal limit under EU water protection laws.



NATMed Solution: FWC-NbS 3 – Forested Infiltration Area (FIA)

A managed aquifer recharge technique using parallel drainage trenches planted with trees like eucalyptus, white, and black poplars.



Depollution in Action

- The forest helps more water soak into the ground;
- Creates an “active layer” in the soil;
- Tree roots turn harmful nitrates into nitrogen gas.



Passive Treatment System

- Made of eucalyptus woodchips mixed with inert material;
- Removes over 80% of nitrates before they reach the aquifer.



New Research on Phosphates

In 2024, researchers from the Universities of Sassari and Cagliari tested new materials to enhance the Passive Treatment System (PTS), enabling it to capture both nitrates and phosphate.



2025: Kaolin tested

In the field for phosphate capture.



Ecosystem Benefits

The FIA supports biodiversity, captures carbon, and cools the landscape.



This project is part of the PRIMA Programme supported by the European Union.



www.natmed-project.eu