

An experience in wetland management and conservation in Italy
(Veneto region- Venetian plan):

Wooded Buffer Strips in rural areas

A LIFE-Environment
project (1999-2002)
financed by the
European Commission



Project Objectives:



The project aimed to demonstrate that Woody Buffer Strips (WBS) offered an efficient method for reducing nutrients-leaching from agricultural fields, and also could provide an interesting economic opportunity for farmers, by enabling the production of wooden biomass for energetic use and giving economic support through financial subsidies (Structural Funds).

The project site:



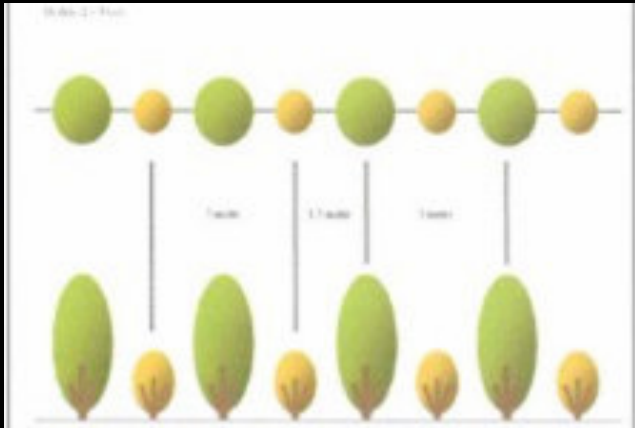
Flat agricultural environment included in the Venetian Lagoon drainage basin, characterized by shallow groundwater channels

Key actions:



- 20 km of WBS. Several compositions of trees were planted and located in areas with different hydrologic and microclimatic characteristics;
- 2 monitoring stations were set up in order to evaluate water quality and the WBS efficacy in reducing nutrient leaching;
- 1 demonstration heating plant was established to explain how wooden biomass can be used as energy source.

1. Planning



20 km of WBS:

2. Planting

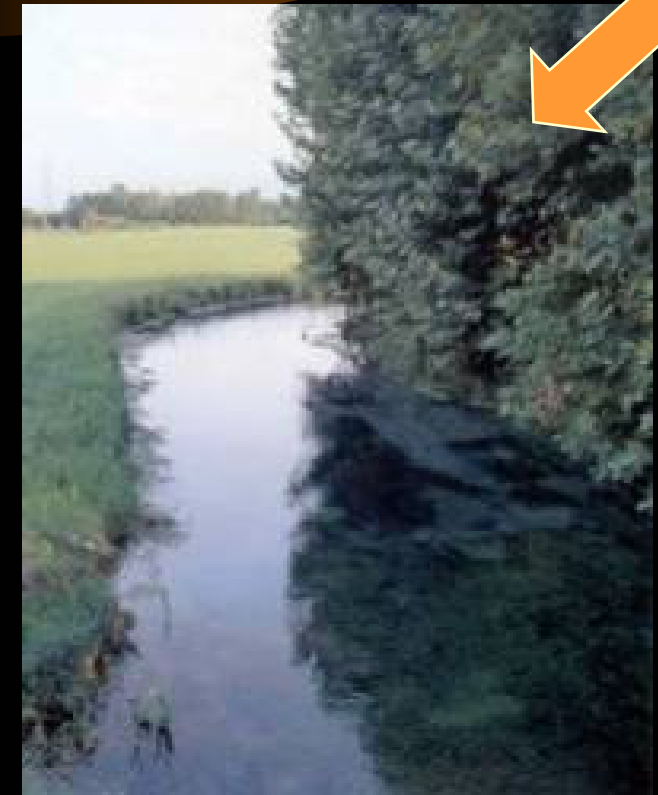


3. Young buffer strip



Main results:

- Water quality and nitrogen retention:
 - Young WBS are able to reduce up to 50% the amount of total fluid nitrogen that percolates through them by the sub superficial layer (no appreciable difference was observed between 5 and 15 meters wide WBS, confirming the key role of the first 5 meters of the hedge);
 - The most evident effects were a decrease in the releasing of nitric nitrogen and an increase in the releasing of organic nitrogen. In presence of recently planted trees, the reduction of nitrogen in waters passing through WBS is due mainly to the transformation of nitric nitrogen in a gaseous form by nitrate reducing bacteria.



Riparian buffer strips

Main results:

- Economical suitability of WBS (even without public incentive) if wooden biomass is used only for energy purposes;
- Prime example of good practice in agriculture;
- Environmental benefits (biodiversity, landscape,...).



Mature buffer strip



Wood production