

Pilot areas

At Odder Stream (clayey soil) and Kildesig Røjkum Creek (sandy soil) we have established two study sites. The establishment of a third study site at Sillerup Creek is still in progress.



Sillerup Creek at Christiansfeld is an ideal location for establishing an intelligent bufferzones

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Study site at Spjald, Denmark

Danish Partners

- Aarhus University, Department of Bioscience
- Aarhus University, Department of Agroecology
- Aarhus University, Department of Engineering
- Copenhagen University, IFRO
- SDU, Department of Biology
- SEGES P/S
- Sønderjysk Landboforening
- Vestjysk Landboforening
- Orbicon A/S

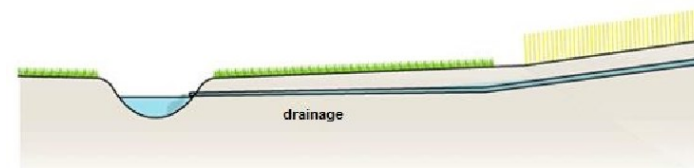
See more at www.buffertech.dk/en



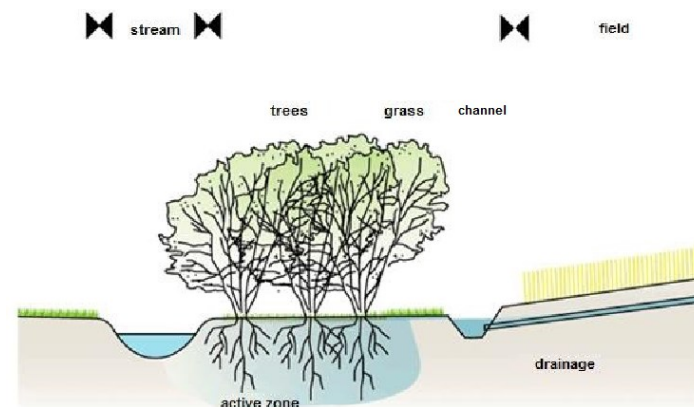
Why intelligent bufferzones

Our aim is to develop effective targeted measures located in landscapes in smart ways benefiting nature, environment and agricultural production.

Current situation



Situation with intelligent bufferzones



Intelligent bufferzones are located:

- Next to small streams and ditches.
- Where there is a risk of tile drainage loss of nitrate and phosphorus.
- So the length is adjusted to the total tile drained area.
- Where there is a significant difference in height between field and stream waters.
- In a manner that does not conflict with nature interests.

We know that intelligent bufferzones:

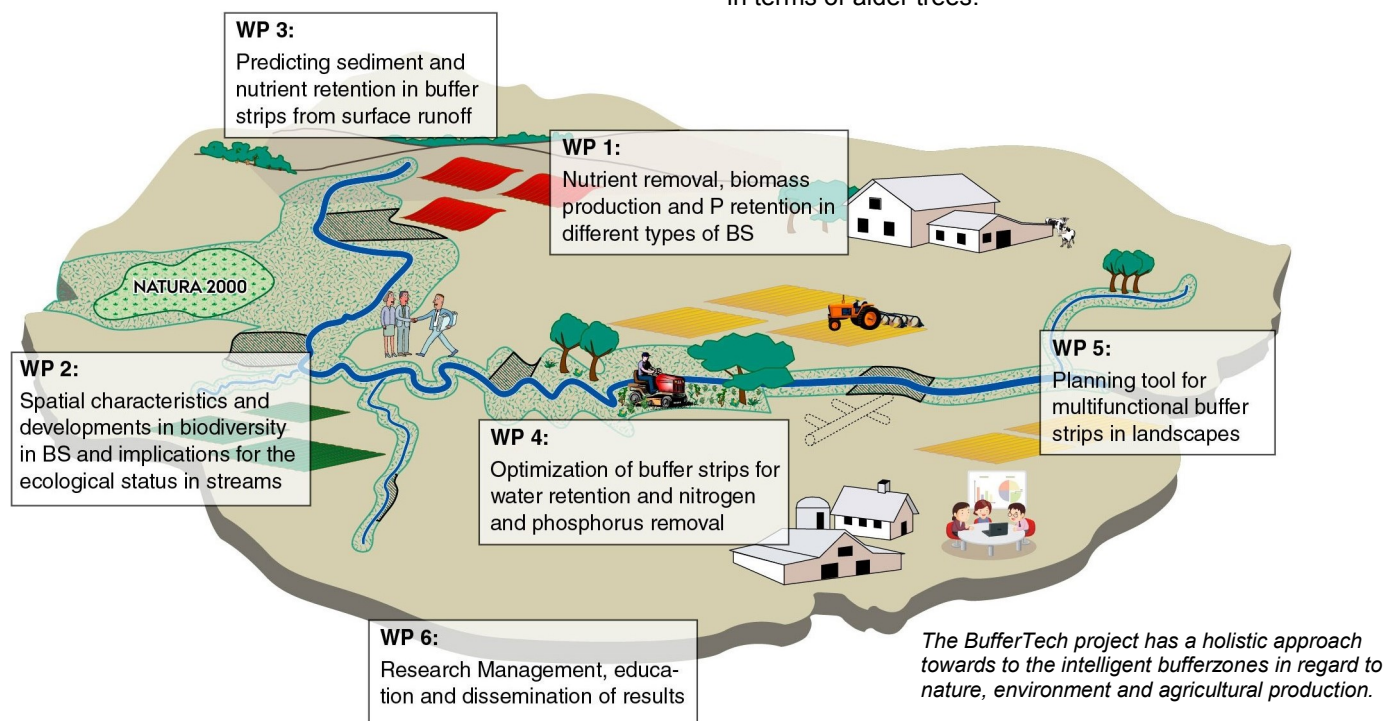
- Can mitigate nitrate and phosphorus from tile drainage water.
- Show significant effect on nutrient removal from tile drainage water in the first results from study site.
- Retains soil and phosphorus from surface flow on fields with soil erosion.
- Might mitigate pesticide loss from the field to streams
- Can provide material for biomass production, for example in terms of alder trees.

More work needs to be done

In order to get the intelligent bufferzones recognised/ approved as a targeted measure in Danish regulation, it is necessary to obtain full knowledge of the mitigation effect.

At present, intelligent bufferzones are tested and studied at two locations in Denmark. However, more pilot areas and more monitoring is necessary in order to obtain the full knowledge in regard to:

- 1) Soil types
- 2) Drainage types— and areas
- 3) Season variations
- 4) Control in relation to cultivation security on neighbouring field



Intelligent bufferzone at Fillerup, Denmark, which is showing promising results based on nine months of monitoring (see table below).

Nitrate reduction	24%	1400 kg N per ha
Phosphorus retention	45%	23 kg P per ha