# Nutrient Filter Pond Project

## *TRAPPING EXCESS NUTRIENTS IN RUNOFF FROM DRAINED LAND.*

The aim of this project is to demonstrate the benefits of using a nutrient filter pond as a way of reducing water borne nutrients entering the environment. The nutrient filter pond utilises wood chips and reeds to promote both aerobic and anaerobic processes leading to a reduction of nutrients in the water.

*The project aims to significantly reduce nutrient loading in farm runoff water.*

**The Nutrient Filter Pond Project has sparked much interest from the local community, including the Alpine School (pictured above).**

## *How the Nutrient Filter Pond Works*

Processes such as de-nitrification (nitrate being converted to gaseous forms and released into the air), nutrient incorporation into soil organic matter or plant material, settling of P into the sediment layer, and aerobic-anaerobic reactions at the soil/water interface can all lead to nutrient removal.

There is also some die-off of faecal microbes when water is held in the wetland for sufficient time.

Nutrient filter ponds can become an attraction for aquatic wildlife such as native birds, frogs and insects. This biodiversity is an added bonus of installing a Nutrient Filter Pond.

**Why would farmers install a Nutrient Filter Pond?**

Excess nutrients in runoff water causes eutrophicaton (possible algal blooms, decreased $O_2$ and subsequent fish kills) in waterways downstream.

Under the Environmental Protection Act 190, S38 (discharges) and S39 (Pollution of waters) property owners are required to treat all runoff.

This is becoming increasingly important on farms that have installed drainage systems.

**Conservation Volunteers Australia helped plant the first of the reeds.**

**Plant Species Planted at the Nutrient Filter Pond**

*Lomandra longifolia*

***'Biodiversity is an added bonus to your farm, a byproduct of the installation of a Nutrient Filter Pond'***

*Carex appressa*

*Phragmites Australis*

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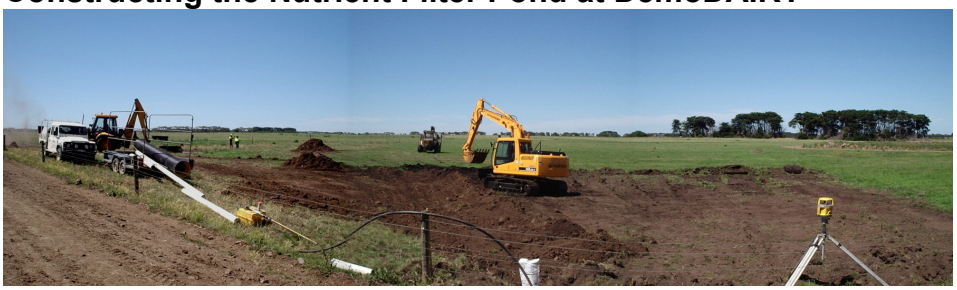
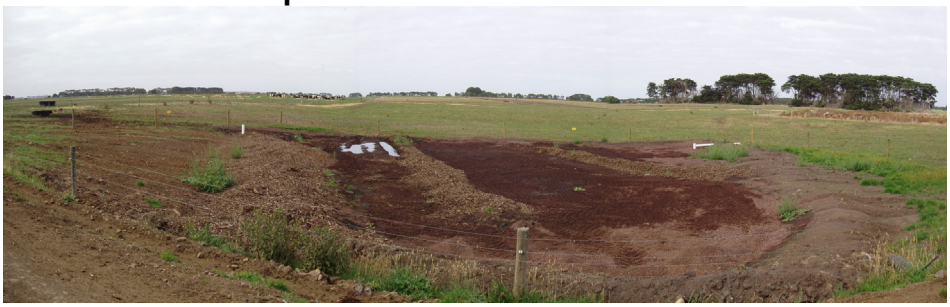
**August 2010**

## Constructing the Nutrient Filter Pond at DemoDAIRY

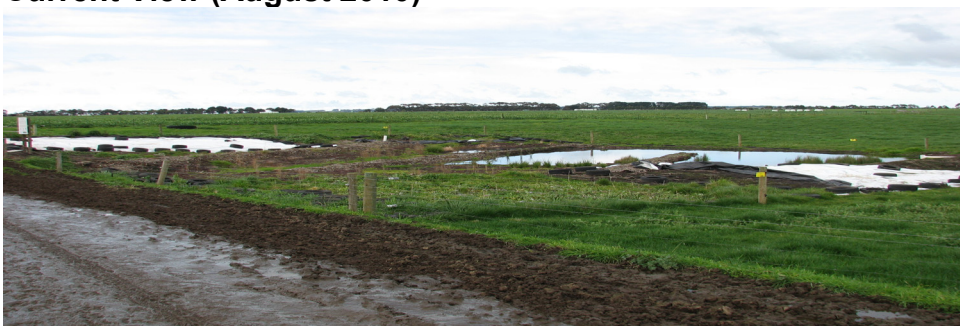


A 200m² parcel of land was chosen for the Nutrient Filter Pond Project site. Drain Tech completed the on ground works, which included the installation of PVC pipe work and 40m³ of wood chips.

## Construction Completed



## Current View (August 2010)



Some reeds were donated and planted by Drain Tech and others were purchased with funds from the Corangamite Shire and the Glenelg Hopkins Catchment Authority. Plants were planted in late summer/early autumn 2010 with the help of an enthusiastic Conservation Volunteers Australia volunteer team. The white silage plastic is a temporary weed control method while we wait for the opportunity to plant more plants.

DemoDAIRY

**would like to thank the following Project Partners**

DRAIN TECH
LAND DRAINAGE SYSTEMS

Glenelg Hopkins Catchment
MANAGEMENT AUTHORITY

Conservation Volunteers Australia

**For further information contact DemoDAIRY on (03) 55 922 199 or email info@demodairy.org.au**

## Monitoring Nutrient Levels in the Nutrient Filter Pond.

Water samples are collected during rain events and sent to Deakin University for analysis.

**An Alpine student collecting a water sample at inflow point.**

**Alpine School students collecting water samples at out flow point.**

The reduction in nutrient levels between inflow and outflow will give a clear indication of the efficiency of the Nutrient Filter Pond at reducing nutrients.

## Up and coming events at DemoDAIRY where you can learn about the Nutrient Filter Pond

A farm information day is held on the first Wednesday of each month in 2010.

August 4th 2010
September 1st 2010
October 8th 2010
November 3rd 2010
December 1st 2010