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.

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 eutrophication (possible algal blooms, decreased O₂ 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.
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.

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

DemoDAIRY

would like to thank the following Project Partners

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