

Condamine Alliance: Improving water quality by planting permanent pastures on marginal cultivation land

DON TURNER AND GEORGE LAMBERT
Condamine Alliance, Toowoomba, Queensland, Australia

Condamine Alliance is an incorporated regional body with lead responsibility for enabling the community to achieve sustainable natural resource management in the Condamine River catchment in south Queensland — the top end of the Murray-Darling Basin. Our company aims to improve the environmental attributes of the catchment (water and air quality, soil health, biodiversity etc.) as well as improving the economic sustainability of the rural industries present.

Soil movement from old cultivation paddocks is one of the major sources of nutrient contamination in our watercourses. We aim to improve water quality by reducing water runoff, soil erosion, deep drainage and salinity by converting marginal cropping land to permanent pastures and imposing good management on all pastures.

Water runoff from cultivation paddocks is caught by contour banks, which lead safely to constructed waterways, but these are often poorly

maintained on old paddocks. After heavy rainfall events, water containing sediments runs off flood plains and eventually into a watercourse.

In a few areas, the water table is so high that it causes above-ground wet areas (perched water tables) after water from deep drainage seeps down hill and is caught by one of several types of blockage structures (road or rock ledges etc.). In one demonstration area, a drain higher up the slope has lowered the water table so that the paddock could be pastured. Since this water was suitable for irrigation, a spreader bank transported the water further down the slope and spread it on to grass pastures.

Salinity is also a problem in some parts of the catchment. At Brymaroo, the soil surface salinity concentrations are so high that even salt-tolerant species cannot establish. Mulch over the soil surface may reduce evaporation but good rainfall is needed to leach salts from the soil surface to aid plant establishment.

While sowing permanent pasture will reduce runoff and deep drainage from old cultivations, weeds are a problem.