

MANAGING FARMS TO PROTECT WATERWAYS

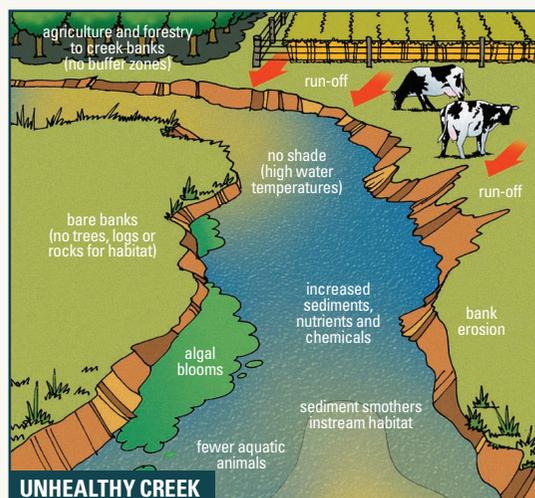
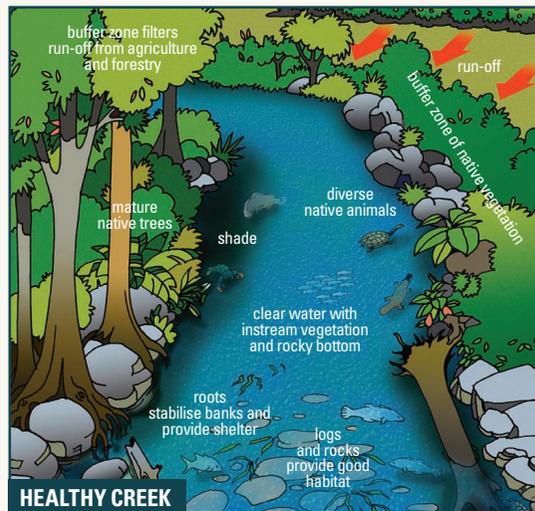
Managing macadamia farms to protect waterways is an integral part of good land management. It helps protect:

- the **health** of our waterways
- our local **drinking water supply**
- land and vegetation adjacent to waterways.

WHAT CAN LANDHOLDERS DO?

Land managers can protect drinking water quality by:

- reducing **soil erosion**
- controlling **runoff**
- providing cover crops, **groundcovers** or mulch to maintain the orchard floor
- regenerating rainforest to provide a **buffer** for agricultural activities
- incorporating **Integrated Pest Management**.



REGIONAL DRINKING WATER CATCHMENTS

A catchment is an area of land that feeds rainwater into a creek, river or other water body such as a dam. If that water is used for drinking, the catchment is known as a drinking water catchment.

Rous County Council has three main functions: bulk water supply; weed biosecurity; and flood mitigation. It is the regional water supply authority supplying drinking water in bulk to the local government areas of Lismore (excluding Nimbin), Ballina (excluding Wardell), Byron (excluding Mullumbimby), and Richmond Valley (excluding Casino).

This water is sourced from three key drinking water catchments including the catchments of Rocky Creek Dam, Emigrant Creek Dam and the Wilsons River Source as well as a number of groundwater sources.

Rous County Council manages these drinking water catchments to ensure the quality of drinking water for over 100,000 local people.

PROTECTING OUR WATERWAYS IS A SHARED RESPONSIBILITY

Protecting our drinking water catchment is a responsibility Rous County Council shares with industry, businesses, landholders, communities and individuals.

Every control measure counts and contributes to the quality of drinking water supplies in the long term.



MANAGE MACADAMIA FARMS

to look after our drinking water catchments



“Eventually the water that runs off a drinking water catchment area will be consumed by people. The activities of local landholders directly influence our community’s drinking water supply.”

FURTHER INFORMATION

For information about managing your farm to protect water quality including fencing, protecting or restoring vegetation and financial assistance opportunities available contact Rous County Council, your Local Land Services or Landcare.

CONTACT US

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HEALTHY CATCHMENTS = QUALITY WATER

- ❶ Do you manage property in a drinking water catchment?
- Ⓐ If so, you have a duty of care to protect water quality.
- ❷ Do you want to manage your macadamia farm to protect drinking water?
- Ⓐ If so, financial assistance opportunities may be available.



INTER-ROW GROUNDCOVER REDUCES EROSION

THE IMPACT OF MACADAMIA FARMS ON WATER QUALITY

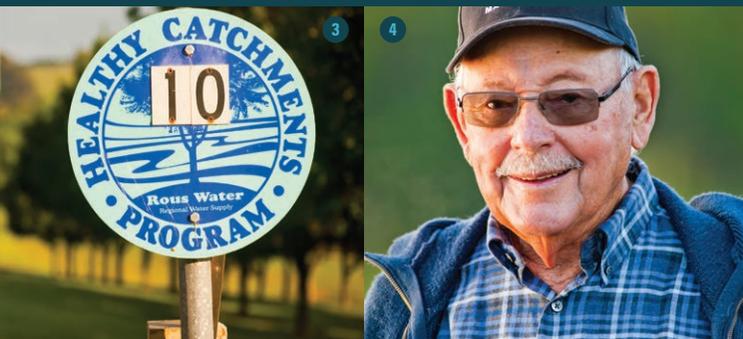
Macadamia farming accounts for a high proportion of land-use in our drinking water catchments. Poor land management on macadamia farms can lead to excessive runoff, soil erosion, high use of pesticides, reduced water quality and damage to in-stream ecosystems.

This affects **river health** and **drinking water quality** by introducing:

- **nutrients** from pesticides, herbicides and fertilisers which cause an increase in the risk of blue-green algal blooms (some of which can be toxic); and
- **sediment** from soil erosion and runoff from farms which harms aquatic life, clogs streams and burdens the drinking water process.



1. SWEET SMOTHERGRASS GROUNDCOVER PROTECTS THE SOIL 2. PARASITIC WASP EGGS
3. FARM GATE SIGN 4. PROTECTING OUR WATERWAYS IS A SHARED RESPONSIBILITY



HOW CAN LANDHOLDERS MANAGE FARMS TO PROTECT WATERWAYS?

Reduce Soil Erosion

A basic set of principles applies to reducing soil degradation and achieving erosion control on macadamia farms. Landholders should:

- provide maximum soil surface protection via pasture or mulch
- minimise the length of time soil is left bare
- control runoff water from flowing over bare ground.

Control Runoff

Applying a range of strategies to reduce nutrient contamination of runoff water is an integral part of good land management. Macadamia producers should:

- maintain good ground cover around dams, watercourses and streams
- avoid fertilising areas that carry runoff water, are without groundcovers, or near watercourses
- apply fertiliser in smaller, more frequent amounts and avoid fertiliser application prior to or during periods of heavy rainfall
- check earthworks such as inter-row drains, mounded tree rows or diversion banks for necessary repairs and maintenance
- revegetate or mulch bare areas created by harvesting, vehicular traffic, erosion or other reasons.

Cover Crops, Groundcovers, or Mulch

Carefully selected cover crops, ground covers or mulch used for both inter-row and under tree areas in the macadamia orchard not only help reduce erosion but can also provide the landholder with:

- organic matter
- weed suppression
- increased water infiltration
- reduced fertiliser loss
- nitrogen fixation as well as improved micro-environment for establishing trees.

Integrated Pest Management

Following Integrated Pest Management (IPM) on macadamia farms reduces nutrients from pesticides, herbicides and fertilisers from leaching into our drinking water catchment. Using IPM on the farm can significantly reduce:

- chemical spraying for borers and bugs
- poisoning and trapping for rats
- costs associated with pest management.

Macadamia producers can reduce pest animals on farms by attracting bats and birds to the farm by:

- providing nesting boxes for barn owls and micro-bats
- planting rainforest species on the farm to encourage birds, beneficial insects and carpet snakes.

Riparian Vegetation

Protecting and restoring waterway frontages with vegetation creates a buffer zone between agricultural activity and the waterways flowing through our catchments.

In addition to increasing drinking water quality, protecting and regenerating waterway frontages on macadamia farms helps to:

- improve property values
- attract and support wildlife
- slow surface runoff and reduce erosion
- limit rats and other pests through the encouragement of beneficial insects, owls and snakes
- filter and trap chemicals and pesticides.

