

Plantation Forests and Water

IFA Forestry Policy Statement 5.2

The Institute of Foresters of Australia (IFA) advocates that plantations manage water requirements to prevent negative impacts on the quality and quantity of stream flow or groundwater.

The Issue

Plantation establishment in water catchments can have varying effects on stream water. The National Water Initiative indicates that large-scale afforestation may use significant volumes of surface and ground water, and may therefore require a water access entitlement. However, well-planned plantations can help control erosion, reduce salinity and improve water quality.

Background

Reforestation with plantations provides substantial environmental, social and economic benefits. However, trees use more water than annual crops and absorb more rainfall than pastures, resulting in reductions in stream flows and ground water in many situations.

Soil type and vegetative cover both affect the quality of water in streams. The amount of water lost through evapo-transpiration from a forest is greater than that from grassland. However, the generally high rate of water absorption into the soil under the forest means that changes in stream water flows seasonally and following storm events are more gradual and of a lesser degree than those from a non-forest cover.

Plantation water use must be assessed against seasonal rainfall and the intensity of water abstraction by users other than plantations, as well as against the background of groundwater conditions prior to European settlement.

Policy

The IFA supports and encourages:

- Further research into plantation impact on water quality and quantity
- Science-based methods to find appropriate treatments for plantations within the National Water Initiative
- Plantation managers working with governments and catchment management authorities to ensure that plantation development minimises adverse impacts on water, including avoiding groundwater recharge areas
- Appropriate measures and Codes of Practice that protect water during plantation development
- Use of effluent irrigated plantations to avoid the discharge of nutrient-rich urban and agricultural effluent into streams.

The IFA considers that:

- Sustainably managed plantations are vital to Australia's land use
- Plantation planning and management can result in minimal impact on stream flow
- If located appropriately, plantations can have positive hydrological impacts on dryland salinity
- When plantations are established on agricultural land, stream flow reductions will tend to peak within ten to twenty years of establishment before stabilising.