

Tree management after drought

Extensive Industries Development

Introduction

Strategically located farm trees and native vegetation can:

- improve agricultural production;
- protect stock, soils, water and wildlife;
- improve the capital value of rural properties.

Droughts have the effect of favouring some trees and shrubs while adversely affecting others. Landholders can observe which trees have performed best in their areas, and incorporate good tree management practices into their property management plan and drought-managing strategy.

Recovery of mature paddock trees

In many areas mature paddock trees will have suffered in the drought due to increased pest attack and moisture stress. To promote recovery of these trees:

- avoid cultivation close to the root zone;
- avoid fertiliser application close to the root zone;
- observe trees for subsequent pest damage, and control where necessary and feasible.

Mature trees can be adversely affected by repeated pest damage, particularly where one-third or more of the leaf area is reduced. Injection of insecticide may be warranted when pest attack is severe. Easing the conditions that lead to tree stress (high nutrient levels, damage to roots, soil compaction, and over-clearing) is the most effective way of improving tree vigour and health.

Recovery of trees and shrubs lopped for fodder

Where trees and shrubs have been lopped for fodder, it is most important to allow their full recovery before subsequent lopping.

NOTE

The regulations under the Native Vegetation Act 2003 allow lopping as a routine agricultural management activity (RAMA) provided it is only to the minimum extent necessary. The 'minimum extent necessary' covers the minimum lopped from each tree as well as the minimum number of trees lopped.

Landholders are advised to contact their local Catchment Management Authority for detailed advice.

'**Lopping**' is the removal of foliage from a tree or shrub, where such lopping does not compromise the trunk or primary branches.

The critical limitation is that the continued health of the native tree/shrub is not affected. The continual lopping of any tree/shrub will affect its natural resilience and growth habit and this will affect its ecosystem and biodiversity function. To ensure the retention of biodiversity values, shade and shelter, and seed sources for regeneration, it is suggested that no more than about 60% of tree/shrub foliage be removed and that some tree/shrubs remain unlopped.

The **best method of lopping native vegetation** is to cut straight through branches to minimise the potential for insect or bacterial attack. There are also advantages in pruning and shaping the tree/shrub, rather than heavily lopping it. This will assist the recovery of the tree/shrub and help retain the environmental, economic and aesthetic values. Higher branches should be lopped so that regrowth is out of the reach of stock. In addition, enough foliage should be left so that the tree/shrub still provides shade and shelter. Lopped trees/shrubs will need good management and a number of favourable seasons to regenerate.

Trees and shrubs should not be used in successive droughts if they have not recovered from previous lopping. The recovery rate of trees/shrubs that have previously been lopped can be used as an



indicator of the sustainability of the lopping method. Long-term use should not result in any modification to the structure or composition of the associated vegetation community. Consider how the trees/shrubs are to be rehabilitated and how long that is likely to take.

For scrub areas, reduce or eliminate grazing to allow scrub to grow back.

Continued lopping can reduce the lifespan of a tree. When planning for future farm tree plantings, aim to replace or increase the number of fodder trees.

Management of existing native vegetation areas

Establishing native tree seedlings by natural regeneration

Many native plants respond to drought by flowering and setting seed. A break in the drought will often favour establishment of trees and shrubs by natural regeneration. This provides a very low-cost method of increasing and maintaining native vegetation areas. For best results:

- Exclude grazing from native vegetation areas, especially while young plants are getting established.
- Fence out areas around clumps or individual trees. Seed from large trees will fall on ground up to 50 m from the base of the trunk, falling mostly in the direction opposite the prevailing winds. Orientate the fenced area to coincide with this pattern.
- Develop natural regeneration areas where they provide the best shade and shelter advantages.
- Control feral and pest animals, such as rabbits,

which typically graze on young seedlings.

- Monitor native vegetation areas for weed growth. Exotic pasture and weeds can out-compete native plants, especially at the seedling stage. Reduce the weed seed bank in the soil – this can be achieved by spot spraying with a knockdown herbicide.
- Be patient. Some trees will require months or even years to set seed after flowering.

Following the establishment of native trees and shrubs, continue to restrict or eliminate grazing until they are above browsing height and stems are sufficiently thick to withstand rubbing by livestock. Fencing off areas of regenerating bushland on your farm will allow trees and shrubs to grow to their full potential, which will benefit livestock, soils and wildlife.

Maintenance of young trees and existing plantings

Where young trees and existing plantings have suffered during the drought:

- replace losses while the surrounding trees are still small – establishing seedlings amongst semi-mature trees is difficult due to competition for moisture and nutrients;
- ensure good weed control;
- monitor pest damage and control as required.

Planning for new plantings

- Identify which trees and shrubs, and which layouts of trees and shrubs, have done best in the drought – for example, the trees that have maintained a full canopy and resisted pest attack, the blocks or belts of trees that have given good wind protection, and the trees that



Fencing off areas of regenerating bushland allows trees and shrubs to grow to their full potential.

have provided the best fodder reserve.

- Aim to include these findings in your farm tree plan.
- Keep a record of the trees and shrubs which survived best in the drought. Collect seed from trees and shrubs which have shown superior vigour under drought conditions. Of particular value for windbreak plantings are tall trees with low foliage, and small to medium dense shrubs.
- Consider how new plantings can link with existing plantings or bushland areas to provide wildlife corridors.
- When redesigning or maintaining farm infrastructure (farm access tracks, fences etc.), include opportunities for planting farm trees.
- For grazing enterprises, increase perennial fodder sources such as saltbush, fodder trees and tree lucerne.
- Prepare for future droughts by maintaining and increasing windbreaks orientated against the worst prevailing winds.

Assisting recovery of native wildlife

To foster the recovery of native wildlife on the farm:

- retain and manage native vegetation areas, particularly near watering points;
- retain dead or dying trees as habitat;
- control pests and feral animals such as foxes and cats.

Further information

NSW Department of Primary Industries publications

- Drought recovery
www.dpi.nsw.gov.au/reader/drought
- Plan for Trees – A guide to farm revegetation on the coast and tablelands – available for purchase by mail, telephone, or online at
www.dpi.nsw.gov.au
- Short courses through CB Alexander College (Tocal)
www.dpi.nsw.gov.au/reader/tocal-short-courses/short-courses.htm

Nature conservation on farms

- The publication: *Nature Conservation on Farms*:
www.dpi.nsw.gov.au/reader/tocal-publications/nature-conservation-book was produced by NSW Agriculture (now NSW DPI), Farming for the Future, and the Australian Nature Conservation Agency. This practical guide is available for purchase from CB Alexander College, Tocal.

Department of Environment and Conservation

The Department of Environment and Conservation provides free brochures on native animals and plants at:

www.nationalparks.nsw.gov.au/npws.nsf/Content/Native+animal+fact+sheets+by+title

Further assistance

- Agronomists and Livestock Officers from NSW Department of Primary Industries
- NSW Department of Natural Resources
www.dnr.nsw.gov.au
- Your local Catchment Management Authority
www.cma.nsw.gov.au
- Greening Australia
www.greeningaustralia.org.au

Acknowledgment

This Primefact is based on information contained in an earlier NSW Agriculture (now NSW DPI) publication, the *Drought Recovery Guide*.

© State of New South Wales

through NSW Department of Primary Industries 2007

ISSN 1832-6668

Replaces Agnote DPI-366

Check for updates of this Primefact at:

www.dpi.nsw.gov.au/primefacts

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (January 2007). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.

Always read the label

Users of agricultural (or veterinary) chemical products must always read the label and any Permit before using the product, and strictly comply with the directions on the label and the conditions of any Permit. Users are not absolved from compliance with the directions on the label or the conditions of the Permit by reason of any statement made or not made in this publication.

Job number 7197