

# PRINCIPLES OF TREE MANAGEMENT IN THE GRAZING LANDS OF QUEENSLAND, AUSTRALIA

J.C. Scanlan and E.J. Turner

Department of Natural Resources, Locked Bag 40, Coorparoo DC, Queensland 4511, Australia

## ABSTRACT

The key factors that influenced the appropriateness of clearing were identified for Queensland. The first stage was to identify endangered and vulnerable vegetation types, with final agreement being that clearing would not be undertaken in these regional ecosystem types. For other regional ecosystems, the degree of clearing that was appropriate was determined from the original and current extent of that ecosystem type, the sustainability of any development and any off-site effects of clearing. The maximum slope suitable for clearing, the width of riparian buffers and other corridors were also determined. These local guidelines for tree clearing became a central part of the process for assessing applications for tree clearing permits.

## KEYWORDS

Riparian buffers, wildlife corridors, local guidelines, biodiversity, sustainability

## INTRODUCTION

Queensland tree clearing policy seeks to balance environmental objectives in vegetation conservation (arising in part from national and international obligations) with the need to enhance land productivity. The policy recognises that to meet the State's economic development policy objective the clearing of trees is often required. Where tree clearing is to be undertaken, it must be demonstrated that this will not unreasonably threaten biodiversity or ecological processes and systems, that it enhances long-term productivity, and that the clearing is economically sustainable.

Permits to clear are required before any clearing can be done on the 74% of the State's leasehold land that is controlled by the Lands legislation (Scanlan and Turner, 1997). Many factors have to be considered before permits are granted. Local guidelines developed through a process involving rural industry, the conservation movement and government are one of the most important of those factors. The principles underlying local guidelines are outlined below.

## PRINCIPLES

Local guidelines have been developed for all areas of Queensland with 38 Local Guideline Working Groups considering the contents of local guidelines. In particular the following information must be provided in local guidelines.

**Vegetation types.** Within the State, there are approximately 950 distinctive vegetation types known as regional ecosystem types. The current regional extent of existing vegetation types and the extent of previous clearing are important factors in determining the appropriate maximum level of clearing that should be allowed on individual leases.

There are four categories of regional ecosystem types and extent:

- **Endangered and Vulnerable:** Some regional ecosystems are now endangered or vulnerable and should not be cleared, eg. the vine thickets. These vegetation types have limited or very limited distribution and are at serious risk from development or other threatening processes. These categories include vegetation types with less than 10% of the original distribution remaining intact and uncleared on a regional basis. Vegetation types that

are, and always were, very limited in distribution (irrespective of the degree of clearing) are included here. No clearing is appropriate in these areas.

- **Of concern:** Regional ecosystem types that have been extensively cleared or disturbed but which are not at risk could be cleared provided clearing does not result in the vegetation type becoming vulnerable. Vegetation types that have between 10 and 30% of the original extent (on a regional basis) remaining intact fit into this category. Clearing on individual leases should retain at least 50% of the original extent of each vegetation types in this category with a general target that 20% of the original extent of each vegetation type should be retained on all leases. This will not be possible on those leases that have already been extensively cleared. Clearing must not result in the vegetation type becoming vulnerable.
- **Not of concern:** Regional ecosystem types that are extensively distributed and/or are widespread, could be cleared provided that clearing did not result in that vegetation type becoming 'of concern'. For vegetation types that are 'Not of concern', clearing should be limited to 70% of the original extent of each vegetation type on the lease.

As well as the consideration of the conservation of biodiversity aspects, the sustainability of pasture production following any clearing must be taken into consideration. Factors such as maintenance of soil fertility, prevention of soil erosion and avoidance of salinity must be considered in any assessment of appropriate level of clearing.

**Slope limitations.** Where clearing would pose a significant risk of soil erosion, broadscale tree clearing is not appropriate. The risk of erosion increases with the length of slope and steepness. Soils with sodic or dispersible clay subsoils are of particular concern. In these cases, any soil disturbance which exposes subsoils to moving water will cause severe erosion which is very difficult to control by pasture and grazing management alone. Structural works such as diversion banks may be required but in some cases even these will not prevent further erosion. On such soils, it is essential to ensure that erosion is not initiated and this limits the amount of clearing that is possible.

**Watercourse buffers.** The riparian zone is important for a variety of reasons including streambank stability; the maintenance of wildlife throughout the landscape; the connection of large blocks of vegetation; the protection of in-stream wildlife; nutrient absorption from overland flow and maintenance of water quality; as well as for a variety of productive and recreational uses. The protection of riparian zones is recognised as an essential actions to guarantee the distribution and abundance of wildlife throughout the landscape. Riparian corridors for wildlife habitat purposes requires substantially larger buffers than are required for bank stability and erosion control.

In general, watercourse buffers should be 200 metres for rivers, 100 metres for creeks and 50 metres for gullies, as defined on topographic maps. Considerations of the dimensions of the channel, the maximum volume and rate of flow of water, the vegetation type and the soil

type may lead to higher or lower buffers being required. Clearing of small watercourses may be appropriate to increase grass cover and thereby minimise erosion.

**Configuration.** Strips of vegetation should also be retained within extensive cleared areas. These strips should connect larger patches of native vegetation and, where possible, be located adjacent to fencelines and roads. Strips should be wide enough to remain viable in the long term.

The minimum strip widths required will depend on the purpose of retaining the strips. Strips primarily used for shade and shelter are narrower than those with the additional aim of providing a corridor or habitat for wildlife. In general, minimum strip widths for wildlife corridors connecting larger retention areas should be 200 metres. Consideration of the vegetation type, the general degree of clearing in an area, the degree of fragmentation of remnant areas and the impact of grazing on the regeneration of vegetation within the strips may lead to higher or lower buffers being appropriate.

## **DISCUSSION**

The principles outlined above have formed the basis of developing local guidelines using the process outlined by Scanlan and Turner (1997). With the diversity present within the State (as demonstrated by the 950 regional ecosystem types), considerable variation exists between regions within the State. The specific local considerations developed within the framework of the principles above have enabled a workable system for considering applications for permits to clear woody vegetation that will achieve the competing goals of allowing development while protecting conservation values.

## **REFERENCES**

**Scanlan, J. C. and E. J. Turner.** 1997. Production v Conservation: A Policy Dilemma in the Tree Clearing Debate in Queensland, Australia. (This congress).