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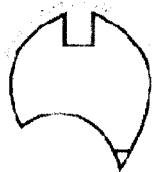
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Demonstrating implementation of invasive native scrub property vegetation plans

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Abstract

Invasive native scrub (INS) has caused major changes to landscapes in the Western Catchment of NSW. To allow for the management of INS under the *Native Vegetation Act 2003* a simplified assessment process was developed for INS Property Vegetation Plans (PVPs). The Western Catchment Management Authority (CMA) has established five sites to demonstrate the implementation of INS PVPs. The INS management at these sites uses a combination of the clearing types available under an INS PVP. The management must comply with the conditions of the PVP to ensure environmental outcomes are improved or maintained. The requirements of the PVP are outlined in this paper. Using the demonstration sites to provide information to landholders, contractors and staff leads to more effective management of INS and compliance with PVPs. An effective INS PVP will result in a mosaic of native vegetation types in the landscape creating a diversity of habitats. The control of INS has benefits for production and the environment with improved native groundcover and soil stability.

Introduction

Native vegetation in Western NSW has significantly changed since European settlement. The cause of this change is attributed to a complex combination of seasonal and management factors. Some of the major causes include inappropriate grazing management, lack of fire and feral animals.

Some native tree and shrub species have created dense thickets that do not self thin (DNR Science and Information Board, 2005). These species are known as invasive native scrub. The prolific regeneration has altered the vegetation structure over vast areas of the landscape.

Invasive native species, collectively referred to as invasive native scrub (INS) are defined as:

1. A plant species that invades vegetation communities where it has not been known to occur previously OR a species that regenerates densely following natural or artificial disturbance, and
2. The invasion and/ or dense regeneration of the species results in change of structure and/ or composition of a vegetation community, and
3. The species is within its natural geographic range or distribution.

The INS PVP assessment under the *Native Vegetation Act 2003* was designed to allow clearing of invasive native scrub for the purpose of re-establishing native groundcover. The Western CMA has established five INS Demonstration Sites to show the practical implementation of an INS PVP and routine agricultural management activities (RAMAs).

The Cobar sites demonstrate chaining and short term cropping methods of clearing to manage common Cobar Peneplain INS species, including Bimble Box, Turpentine and Budda. The Walgett and Bourke sites have managed Budda, Cypress Pine and Bimble Box using chaining and stick raking. All of the allowable clearing methods will be used across the collective sites, either in the initial clearing or in the control of regrowth. While the initial method of clearing across the sites was similar, the way the works were carried out varied considerably.

The demonstration sites are used by landholders, WCMA staff and policy makers to learn and share ideas. The sites demonstrate the best management practice of invasive scrub in accordance with an INS PVP. The demonstration sites are the focus of landholder field days and will be used to develop further extension material.

Landholders are given an opportunity to inspect the demonstration sites to better understand the implications of the conditions of the PVP in the paddock. It can also assist landholders to manage invasive native scrub with similar methods on their own properties. The sites also provide ongoing monitoring and learning outcomes over a 20-year period.

PVP requirements

To assess clearing for an INS PVP the species to be managed must be listed as an invasive native species and be acting invasive. The clearing must also be for the purpose of re-establishing native vegetation or allowing the natural regeneration of native species.

The INS assessment determines the clearing types that will be available within the PVP and the requirements that must be met when undertaking the INS management. The clearing types are classified by level of impact on non-INS vegetation and disturbance to soil and groundcover rather than prescribing particular methods. Some clearing types with greater disturbance cannot be used on sensitive areas such as threatened ecological communities, riparian areas and areas of high erosion risk.

To ensure clearing improves or maintains environmental outcomes the INS PVP specifies:

- The maximum proportion of INS extent on the property that can be managed for each clearing type and;
- Clearing is to the minimum extent necessary; and
- Maximum diameter at breast height that can be cleared for INS and non INS; and
- The number of smaller stems to be retained or percentage of INS to be retained; and
- Retention of 20% of the area to be cleared (calculated on maximum of 500 ha area); and
- Limits for the impact on non-INS species for each clearing type; and
- Limits for the level of disturbance on soil and groundcover for each clearing type; and
- Limits on the non-native plants that may be introduced; and

- At the end of the PVP native groundcover cannot be cleared unless another PVP or development consent is obtained.

Landholders implementing an INS PVP

An INS PVP is a negotiated agreement and as such the landholder has considerable input into the content of the PVP. The landholder and CMA discuss the methods and areas for managing INS on the property. The INS PVP provides flexibility in management options to meet the individual economic and physical constraints such as availability of machinery and the type of INS scrub. The landholder must choose the clearing method that ensures the correct outcome.

The PVP allows for the following clearing types:

- a) Burning
- b) Clearing of individual plants with no disturbance to groundcover (e.g. chemical spot treatment or ringbarking)
- c) Clearing of individual plants with minimal disturbance to groundcover (e.g. grubbing)
- d) Clearing of plants at paddock scale with nil to minimal disturbance to soil and groundcover (e.g. chaining slashing and roping)
- e) Clearing of plants at paddock scale with temporary disturbance to soil and groundcover (e.g. blade ploughing)
- f) Clearing of plants with longer term disturbance to soil and groundcover

The clearing types that have the most severe disturbance to groundcover are limited in the area that can be undertaken at any one time. Once ground cover has been restored on the cleared site, further clearing can be undertaken. The restoration and maintenance of native groundcover has an economic benefit to the landholder but usually only a small portion of areas allowed to be managed are actually managed due to economic and other resource constraints.

Most landholders involved in the demonstration sites elected to leave the cleared timber on the ground following the initial clearing. Leaving the timber on the ground has many ecological benefits in the revegetation of native groundcover, including acting as mulch and

protecting grasses from grazing. The RAMAs permit landholders to clear access tracks and firebreaks through the site for ease of management while maintaining the ecological benefits of retaining the majority of fallen timber.

The INS demonstration sites have been used to build capacity of landholders and clearing contractors to undertake the most appropriate INS management. The sites demonstrate that the *Native Vegetation Act 2003* can be practically applied to real life situations in a cost effective manner. Landholder education and skill building in the correct implementation of the PVP reduces the need for compliance.

The ongoing monitoring of the sites will allow all stakeholders to learn from issues that arise. The most prominent issue to date has been INS regrowth. The PVP process includes discussion and preparation for post clearing management including total grazing pressure control, grazing management regimes and follow up management of the INS.

Environmental outcomes of an INS PVP

The management in accordance with an INS PVP creates a mosaic of vegetation types including open and dense areas of native vegetation across the landscape (Hassall and Associates *et al.* 2006). The mosaic of habitats is required to support threatened species and other native flora and fauna. A study of species richness by Ayers *et al.* (2001) showed individual species favoured different densities of INS. The INS research program found bird diversity to be highest in landscapes with a range of vegetation types (INS Research Program Advisory Group 2010).

Soils of INS areas have soil surface crusting, less cover, increased acidity and lower biomass of soil microbes (INS Research Program Advisory Group, 2010). Effective management of INS increases groundcover and soil stability.

References

Ayers, D., Melville, G., Bean, J., Beckers, D., Ellis, M., Mazzer, T. and Freudenberger, D. (2001) *Woody Weeds, Biodiversity and Landscape Function in Western NSW. West 2000*, Dubbo.

DNR Science and Information Board, (2004) Clearing and thinning of native vegetation known as invasive native scrub under the Native Vegetation Act 2003. *Discussion Paper, NSW Department of Natural Resources*.

Hassall & Associates, Briggs, S. and Norman, P., (2006) Documenting the Science Behind the Invasive Native Scrub Tool. *A report prepared for the Central West Catchment Management Authority, Dubbo*.

INS Research Program Advisory Group, (2010) Managing invasive native scrub to rehabilitate native pastures and open woodlands. *A Best Management Practice Guide for the Central West and Western Catchments, State of NSW*.

Droulers, P. and Kneipp, K. (2010). Demonstrating implementation of invasive native scrub property vegetation plans. In: *Proceedings of the 16th Biennial Conference of the Australian Rangeland Society, Bourke* (Eds D.J. Eldridge and C. Waters) (Australian Rangeland Society: Perth).