

REPORT UNDER THE NATIVE VEGETATION ACT 2003 IN RELATION TO USE OF MORE APPROPRIATE LOCAL DATA UNDER SECTION 2.4.3 OF THE ENVIRONMENTAL OUTCOMES ASSESSMENT METHODOLOGY FOR PVP REFERENCE NUMBER 14587

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PVP reference number: 14587

1. SUMMARY

This Accredited Expert report relates to the assessment of the clearing proposed by PVP number 14587.

Under s. 29(2) of the *Native Vegetation Act 2003* a PVP cannot be approved unless the clearing concerned will improve or maintain environmental outcomes.

Clause 26 of the *Native Vegetation Regulation 2005* prescribes the circumstances in which approval of a PVP that proposes broadscale clearing can be granted. In most cases an assessment and determination of whether the clearing will improve or maintain environmental outcomes is conducted in accordance with the environmental outcomes assessment methodology (EOAM).

In some circumstances the data in the approved databases do not accurately reflect local environmental conditions. In these circumstances the assessment can use More Appropriate Local Data (Section 2.4.3 of the EOAM).

In this assessment More Appropriate Local Data has been used to include *Kunzea ericoides* as an invasive native shrub for the Murrumbidgee catchment.

Figure 1: A conceptual outline of the assessment process for PVP 14587

	Land Capability	INS	Water Quality	Threatened Species (TS)	BioMetric
Assessment using EOAM and default data		FAIL			
Assessment using EOAM and More Appropriate Local Data		PASS			

This reports details the accredited expert's opinions formed in relation to section 2.4.3 of the EOAM when assessing PVP reference number 14587.

Local data that more accurately reflects local conditions is available in relation to the Invasive Native Shrub database in Chapter 7 of the EOAM.

The accredited expert therefore certifies that data is available that more accurately reflects local environmental conditions (compared to the data in the approved database).

2. INTRODUCTION

2.1 Legislative background

Property vegetation plan (PVP), reference number 14587 proposes broadscale clearing within the definition of the *Native Vegetation Act 2003*.

Under s. 29(2) of the *Native Vegetation Act 2003*, the Minister is not to approve a PVP that proposes broadscale clearing unless the clearing concerned will improve or maintain environmental outcomes.

Clause 26 of the *Native Vegetation Regulation 2005* prescribes the circumstances in which approval of a PVP that proposes broadscale clearing can be granted. Normally such a PVP can only be granted where there has been an assessment and determination in accordance with the environmental outcomes assessment methodology (EOAM) that the proposed clearing will improve or maintain environmental outcomes. However, a PVP can also be granted where an accredited expert has assessed and certified in accordance with clause 27 of the *Native Vegetation Regulation 2005* that the accredited expert is of the opinion that the proposed clearing will improve or maintain environmental outcomes.

The EOAM assesses proposed broadscale clearing using data in approved databases. Section 2.4.3 of the EOAM allows for the utilisation of more appropriate data (instead of data in the approved databases) in certain circumstances in the assessment of proposed broadscale clearing if an accredited expert certifies that the data more accurately reflects local environmental conditions.

This reports details the accredited expert's opinions formed in relation to section 2.4.3 of the EOAM when assessing PVP reference number 14587.

Initial assessment of broadscale clearing proposed by PVP 14587

When the broadscale clearing proposed by this PVP was initially assessed in accordance with the EOAM using the data in the approved databases, it did not result in a determination that clearing improved or maintained environmental outcomes.

Subsequent assessment of broadscale clearing proposed by PVP X using more appropriate local data

After the initial assessment, the broadscale clearing was subsequently assessed in accordance with the EOAM, using more appropriate local data under section 2.4.3 of the EOAM. If a PVP is approved on the basis of the use of more appropriate local data in the assessment, then clause 29 of the *Native Vegetation Regulation 2005* must be complied with.

The next section of this document provides information on the use of more appropriate local data under section 2.4.3 of the EOAM in assessing broadscale clearing proposed by this PVP in accordance with clause 29 of the *Native Vegetation Regulation 2005*.

3. USE OF MORE APPROPRIATE LOCAL DATA

3.1 Legal provision for the use of more appropriate local data

The legal provision for using more appropriate local data is EOAM section 2.4.3 using more appropriate local data. It states:

“Where an assessment of proposed broadscale clearing using the approved databases indicates that the proposal does not improve or maintain environmental outcomes, it may be possible to utilise more appropriate local data.

If an accredited expert certifies that data is available that more accurately reflects local environmental conditions (compared to the data in the approved databases) in relation to:

- *vegetation benchmarks;*
- *over cleared landscapes*
- *over cleared vegetation types;*
- *coastal thinning genera; and*
- *threatened species profile data.*

The Catchment Management Authority Board or General Manager (exercising power delegated by the Minister) may authorise the replacement of the approved data with data that the accredited expert advises is more appropriate”.

After the data is varied the proposal may be reassessed in accordance with clause 26(1)(a) of the *Native Vegetation Regulation 2005*.

3.2 Description of clearing

The clearing proposed on this property involves broadscale clearing *Kunzea ericoides* that is growing invasively across approximately 164 ha of a privately owned property. The landholder does not wish to clear the entire extent of the *K. ericoides* but wants to clear areas that are beginning to encroach into his grazing country.

3.3 Assessment with default data did not improve or maintain environmental outcomes

The assessment of this broadscale clearing in accordance with the EOAM using data in the approved databases (default data) did not result in a determination that the clearing improved or maintained environmental outcomes.

Kunzea ericoides is not currently listed as an Invasive Native Shrub species for the Murrumbidgee catchment, and as such, the assessment using the Invasive Native Shrub Tool did not improve or maintain environmental outcomes.

3.4 Description of the use of more appropriate local data

Local data that more accurately reflects local environmental conditions compared with data in the approved databases (default data) is available in relation to the invasive nature of *K. ericoides*. In particular, *K. ericoides* is listed as a INS species for the Southern Rivers catchment which the property is located not more than 20km from; and peer reviewed scientific journal articles have demonstrated its invasive nature within the Murrumbidgee catchment area.

3.5 Reason for the use of more appropriate local data

The more appropriate local data more accurately reflects local environmental conditions in relation to the invasive nature of *K. ericoides* in the Murrumbidgee catchment, in regions close to the borders of Southern Rivers CMA.

Prior to this use of more appropriate local data, the determination was the proposed clearing did not improve or maintain environmental outcomes. This result was because *K. ericoides* is not listed as an INS species for the Murrumbidgee Catchment.

3.6 Certification by the accredited expert

As the accredited expert I certify that data is available that more accurately reflects local environmental conditions (compared to the data in the approved database, in this case the Invasive Native Shrub Species Database in Chapter 7 of the EOAM).

3.7 Assessment of proposed clearing using more appropriate local data

The use of more appropriate local data resulted in a determination that the proposed clearing now improves or maintains environmental outcomes when using the INS Tool.

The reason the proposed clearing now improves or maintains environmental outcomes is because *K. ericoides* can now be recognised as an INS species, and can be recognised to be acting invasively on this property in the Murrumbidgee catchment. As such, the proposed clearing can now be assessed using the INS tool.

Literature Review

K. ericoides is listed as an INS species for the Southern Rivers CMA area in the Invasive Native Shrub species database in Chapter 7 of the EOAM (DECCW 2010). The Southern Rivers catchment area boundary is located no more than 20km from the location of the site of PVP14587. Due to the close proximity of the property to the Southern Rivers CMA boundary, and the current listing of *K. ericoides* in that catchment area; it can be assumed that the same species could also be acting invasively in the Murrumbidgee catchment.

Several peer reviewed scientific journals have also demonstrated *K. ericoides* to be acting invasively within the Murrumbidgee Catchment. One journal article showed that *K. ericoides* was colonising pastoral land in the Tidbinbilla Valley, at two major sites. Tidbinbilla is located within the Australian Capital Territory (ACT) and is located approximately 30km from the site of PVP 14587 (Kirschbaum and Williams 1991). The study sites for this article are located in previously cleared woodland consisting of over-storey species *Eucalyptus melliodora* and *E. blakelyi* (Kirschbaum & Williams 1991). This vegetation type is mirrored at the site of PVP 14587 where the vegetation type is Yellow Box – Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands.

Field data collected at the site for PVP 14587 also demonstrates linkages with other studies. *K. ericoides* is known to be invasive in many areas, but has greatly increased its population and size and distribution with many vegetation types. (Singer and Burgman 1999). Singer and Burgman 1999 also demonstrate that *K. ericoides* is spreading via the formation of discrete clumps and gap-phase regeneration thereby recruiting continuously in time, but patchily in space (Singer & Burgman 1999). *K. ericoides* is considered somewhat rare in unmodified vegetation with an average projected foliage cover of <5% among a mix of understorey species (Kennett et al. 2011). It is thought that the increase in *K. ericoides* in ecological communities may be caused by disturbances to that system including eucalypt dieback, fire suppression, grazing, logging, and the overall decline in the abundance and distribution of most shrubs and over-storey trees (Singer & Burgman 1999).

Field Data Analysis

Field data was collected at the site of PVP 14587 on the 27th September 2011. Visual assessment of the *K. ericoides* on the property shows the spreading of the shrub via the formation of clumps, extending the extent of *K. ericoides* across productive grazing pastures.

The photos below in Figure 2 illustrate the invasive nature of *K. ericoides* as it encroaches into productive grazing pastures via the formation of clumps, then forming thick uniform stands of the shrub species.



Figure 2: Photos of *K. ericoides* at site of PVP 14587 illustrating encroachment via the formation of clumps

Six biometric field plots were placed randomly within the INS extent of PVP 14587. Biometric plot data is summarised below in Table 1. The data demonstrates that the average percentage cover of shrubs across the INS extent area is 38.6%. The data also shows that the average percentage cover of grasses is 24.6% and the average percentage of native ground cover –Other (meaning forbs, orchids, lilies etc) is 2%.

Table 1: Biometric plot data collected during field work on 27-09-2011 within INS extent zone of PVP 14587

	Plot No.	1	2	3	4	5	6	Average
Number of native plant species		11	14	16	8	10	17	12
Native over-storey cover (%)		0	28	9	0	0	16.5	8.9%
Native mid-storey cover (%)		0	10	0	4	0	0	2.3%
Native ground cover (%) – Grasses		28	50	16	0	22	32	24.6%
Native ground cover (%) – Shrubs		40	6	46	28	68	44	38.6%
Native ground cover (%) – Other		0	0	2	2	8	0	2%
Exotic plant cover (%)		30	10	0	68	0	0	18%

This data differs largely from the benchmark vegetation data for vegetation of this type. The vegetation type at the INS extent site is Yellow Box – Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands. Benchmark data for this vegetation type is presented within a range of minimum and maximum values. Table 2 presents the benchmark data for Yellow Box – Blakely's Red Gum grassy woodland vegetation type, along with the field data collected within the INS extent site at PVP 14587.

Table 2: Comparison of benchmark data and field data for the vegetation type Yellow Box – Blakely’s Red Gum grassy woodland on the tablelands, South Eastern Highlands.

Vegetation Type: Yellow Box – Blakely’s Red Gum grassy woodland on the tablelands, South Eastern Highlands	Benchmark Data		Field Data
	Min.	Max.	
Number of native plant species	20		12
Native over-storey cover (%)	15	30	8.9%
Native mid-storey cover (%)	0	15	2.3%
Native ground cover (%) – Grasses	5	70	24.6%
Native ground cover (%) – Shrubs	0	10	38.6%
Native ground cover (%) – Other	5	30	2%
Exotic plant cover (%)	N/A	N/A	18%

As the data in Table 2 shows, the field data collected at the site of PVP 14587 for Native Ground Cover (%) – Shrubs shows a percentage cover of shrubs within the INS extent to be over three times higher than the benchmark value for the same vegetation type. A list of native species occurring within the INS extent show that *K. ericoides* is the only shrub species present, thereby accounting for the total cover of 38.6%. The data in Table 2 also demonstrates that the field data showed a much lower percentage cover of Native Ground Cover (%) – Other compared with the benchmark data.

Discussion of Results

When assessing whether a species is acting invasively, the Invasive Native Scrub Assessment chapter of the Environmental Outcomes and Assessment Methodology (DECCW 2010) states that a native species is acting invasively if:

- a) the species is invading plant communities where it has not yet been known to occur previously; OR the species is regenerating densely following a natural or artificial disturbance
- b) The invasion and/or dense regeneration of the species is resulting in a change of structure and/or composition of a vegetation community;
- c) The species is within its geographical range.

The following paragraphs address each of these three criteria.

- (a) *K. ericoides* is not listed as a dominant mid-storey species for the vegetation type Yellow Box – Blakely’s Red Gum grassy woodland on the tablelands, South Eastern Highlands in the NSW Definitions of Vegetation Types for the Murrumbidgee CMA area. However it has been known to occur in the Urila valley where PVP 14587 is located for many decades. It is likely the *K. ericoides* is regenerating densely on the site of PVP 14587 following a decline in grazing pressure on the property. A reduction in grazing pressure has occurred on the property of PVP 14587 following many years of drought conditions with below average rainfall and pasture growth.
- (b) The invasion of *K. ericoides* into the Yellow Box – Blakely’s Red Gum grassy woodland on the tablelands, South Eastern Highlands is resulting in a change in both the structure and composition of this vegetation type. The comparison of the benchmark data and field data presented in Table 2 show that *K. ericoides* is creating a more dominant cover of shrubs in the mid-storey, up to three times higher than the maximum benchmark value, thereby changing the structure of the vegetation type. The vegetation type Yellow Box – Blakely’s Red Gum grassy woodland on the tablelands, South Eastern Highlands is generally an open woodland with a sparse shrub layer and dense grassy groundcover (Benson 2008). Data in Table 2 is also showing that the composition of the native grassy groundcover is also affected by the

invasive nature of the *K. ericoides*, as the percentage cover of native groundcover species other than grasses is reduced to below benchmark value at only 2% cover.

- (c) NSW Flora Online shows that *K. ericoides* native geographical range extends from the Southern Tablelands and South West Slopes of NSW (National Herbarium of NSW 2011). PVP 14587 is located at Urila in NSW in the Southern Tablelands region, *K. ericoides* is therefore occurring within its geographical range on this property.

As this section has shown using more appropriate local data more accurately reflects local environmental conditions in relation to the invasive nature of *K. ericoides* in the Murrumbidgee catchment, in regions close to the borders of Southern Rivers CMA. The proposed clearing of *K. ericoides* can now be recognised as an INS species and as such, the proposed clearing when assessed using the INS tool was shown to improve or maintain environmental values.

4. REFERENCES

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