COAL RIVER VALLEY WEED MANAGEMENT PLAN - 2022

Coal River Products Association

Document Information

This plan was developed by Eco Works Pty Ltd (primary author, Oliver Strutt) on behalf of the Coal River Products Association (CRPA). Funding for the project was provided by the CRPA and the Tasmanian Government through the Tasmanian Weeds Action Fund (WAF) small grants round administered by NRM North. The WAF is a $5 million Tasmanian Government initiative, funded for five years from 2018-19. The funds provided by the state government will be invested with farmers and other community organisations to tackle weeds that are impacting valuable agricultural and environmental assets.

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1 – Introduction

The Coal River Products Association (CRPA) is a not for profit, farming organisation with over 70 members from the Coal River Valley and surrounding areas, most of whom are landowners. As the peak body for farmers within the Coal River Valley, the CRPA has an interest in limiting the threats to agricultural production within the area. Weeds are recognised as a key threat, costing farmers in reduced production and management expenditure.

In early 2021 the CRPA received grant funding from the Weed Action Fund to undertake a project to survey weeds within the valley and develop this plan. The objectives of the project were;

- outline the current situation with regards to weed populations and their distribution in the district. An understanding of the situation will allow for;
- The development of strategic weed management priorities to protect valuable agricultural resources from weeds.
- Outline broadscale and property specific management practices that can be employed to reduce weed populations and their impact on land assets.
- Education of land owners on the current distribution of weeds on their property and the impact that these weeds can have on their own properties, their neighbour's property and the district as a whole
- By the end of this project, be ready to apply for a larger grant to implement the proposed management, on individual properties and the larger catchment.

2 – Background

2.1 – The region

The Coal River Valley is an important agricultural area and includes some of the most well-established farming land in the state. The area has a relatively low rainfall but agricultural productivity has been increased through various irrigation schemes. Key enterprises within the valley include livestock production, both meat and wool, mixed cropping, stone fruit, and vineyards, with the area particularly well suited to cool-climate wine production. There are also various areas of reserved and non-reserved native vegetation of conservation significance.

In addition to the farming land that comprises most of the valley by land area, there are also a very high number of non-farming properties, residential land and non-commercial or hobby-type farms. The proportion of land in these categories has been on a steady increase in recent years largely due to the subdivision of properties and various other new developments.

2.2 – Project area

The CRPA has informal boundaries and includes members with properties not directly within the catchment of the Coal River. For the purposes of this project the survey area was loosely defined as the part of the catchment between Cambridge in the South and Colebrook to the North. This area includes the townships of Richmond and Campania. The majority of the project area falls within the Clarence City and Southern Midlands local government areas, with small amounts falling within Brighton and Sorell also.

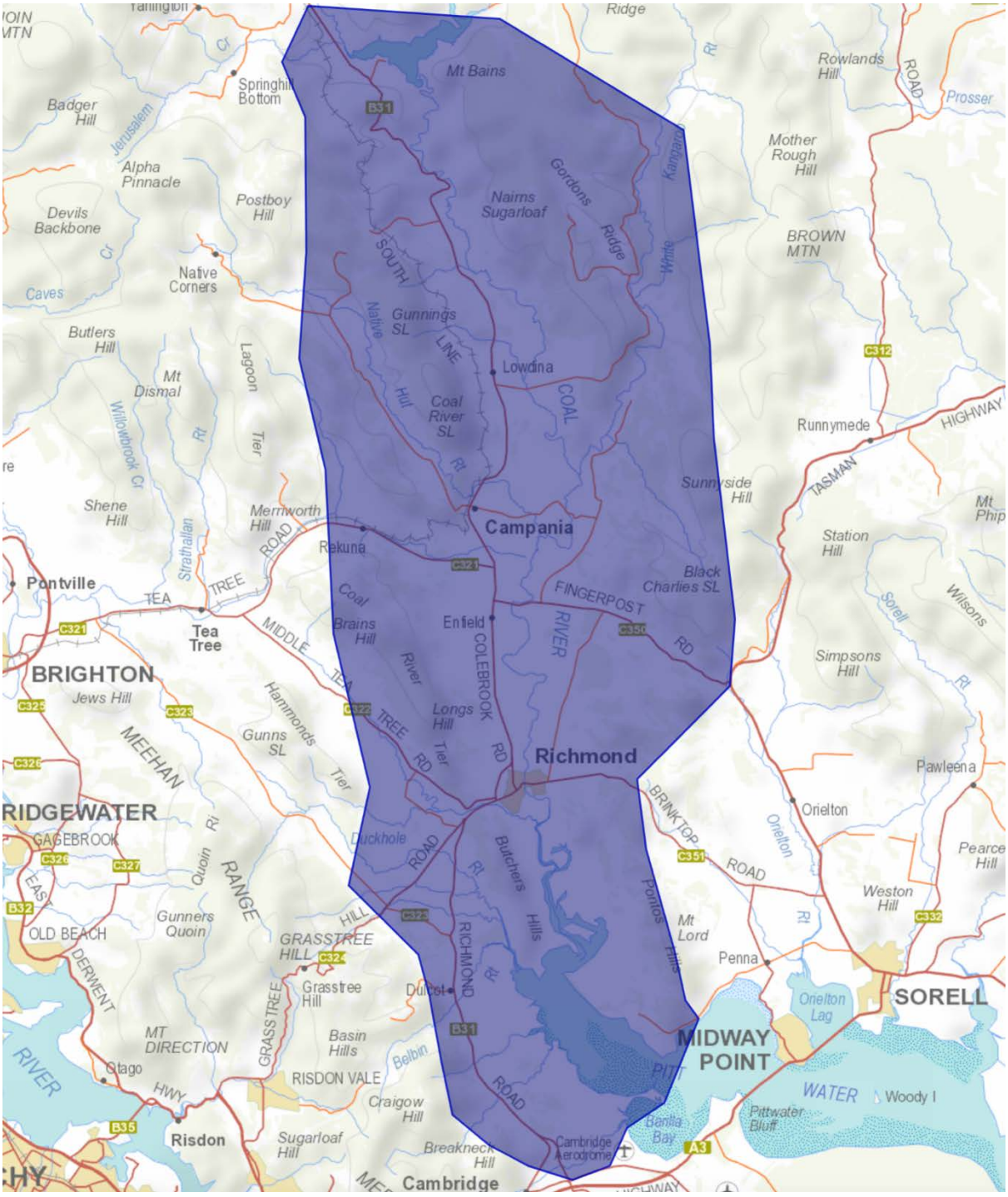

Figure 1 – Approximate boundaries of project area

2.3 – Key stakeholders

All landowners, businesses and land management agencies within the project area are stakeholders, with a shared interest and responsibility in reducing the impact of weeds. Of the landowners with agricultural properties, many but not all are members of the CRPA. Landowners of agricultural properties are directly impacted upon by weeds and will benefit most from effective strategic management of weeds.

Non-agricultural landowners are also involved due to amenity and conservation value as well as potential impacts on neighbouring properties. The CRPA executive believes strongly that the initiation of interactions with non-members represents an excellent opportunity for engagement with the broader Coal River Valley community and to provide valuable education on the weed species present in the Coal River Valley catchment and impact that these have on productive agricultural land and natural resources.

In addition to the private landowners there are a number of other key stakeholders due to their responsibility for managing land and or capacity to influence weed management within the valley. These include, but are not limited to:

- Clarence City Council – responsible for management of weeds on Council Land including roadsides, implementation of weed management act, and capacity to engage the community
- Southern Midlands Council – responsible for management of weeds on Council Land including roadsides, implementation of weed management act, and capacity to engage the community
- Sorell Council – responsible for management of weeds on Council Land including roadsides, implementation of weed management act, and capacity to engage the community
- Brighton Council – responsible for management of weeds on Council Land including roadsides, implementation of weed management act, and capacity to engage the community
- Department of State Growth – responsible for management of weeds on various state roads
- TasRail – responsible for managing weeds within the rail corridor
- Biosecurity Tasmania - responsible for the protection of industries, environmental and public well-being, health, amenity and safety from the negative impacts of pests, diseases and weeds". Biosecurity Tasmania works in partnership with community and industry to manage invasive species, including declared weeds
- NRM South are a regional Natural Resource Management body who partner with government, landowners, research organisations and community groups to help manage Tasmania's natural resources. Biosecurity and weed management is a core area of investment and a program activity for NRM South.

2.4 – Weed management in the Coal River Valley

Weed management has been carried out within the valley for as long as it has been agricultural land. Landowners, especially those earning an income from the land, typically engage in weed

management as an integral part of property maintenance or a necessary component of production. Across the many landowners within the valley there is infinite variation in the approach, resources, and outcomes of weed management actions.

Since 1990 the CRPA has managed a range of weed projects that engage multiple landowners, but not in the last 5 years. These have been from the various Landcare type grants, and include Serrated tussock, African boxthorn, Horehound and willow removal by mechanical, spraying or biological means (eg horehound plume moth for the latter).

Despite the various councils and other stakeholders having various coordinated weed control programs and landowners undertaking various independent activities, there has not previously been a large-scale strategic approach to weed management.

2.5 – Legislation and strategies

The Weed Management Act 1999 (WMA) is the principal legislation concerned with the management of weeds in Tasmania. This legislation states that landholders must take all reasonable measures to prevent their land being infested with a declared weed and prevent a declared weed on their land from spreading. All landholders must also meet the management requirements as outlined in Statutory Weed Management Plans to comply with the WMA.

Each Tasmanian municipality is classified into one of two management zones (Zone A or B) for the purposes of implementing Statutory Weed Management Plans. Zone A includes municipalities for which prevention or eradication are the principal management objectives. These municipalities are either free of the declared weed or have small, isolated infestations. Zone B includes municipalities for which containment is the principal management objective. These municipalities contain large, widespread infestations that are not deemed eradicable. A municipality with larger infestations may also be classified as Zone A if a strategic management plan exists and the resources required to implement it have been or are likely to be secured.

The Clarence Weed Strategy 2015 – 2030 outlines a number of key objectives that are relevant to this project, including:

- Prevent establishment of new high risk weed species
- Reduce impacts of widespread weeds
- Enhance community participation and stakeholder engagement
- Best practise weed management
- Monitoring and evaluation

The Southern Midlands Weed Management Strategy 2020 – 2025 aims to ensure a coordinated cross land tenure, and cost-effective approach to weed management that involves all the community in partnership with Council.

2.6 – Principles of weed management

The Australian Weeds Strategy 2017 - 2027 identifies seven principles that should underpin weed management in Australia and guide planning, investment and actions.

1) Effective weed management is a responsibility shared between landholders, community, industry and government.

2) Evidence-based decision-making should underpin the approach to weeds.

3) Risk-based prevention and early intervention is generally the most cost-effective approach for managing weeds.

4) Prioritisation of weed management must be informed by a risk-based approach, considering feasibility, likelihood of success, impact and national significance.

5) Coordination amongst landholders, community, industry and government is necessary to manage weeds at a landscape scale.

6) Sustaining capability and capacity across landholders, community, industry and government is fundamental to effective weed management.

7) Individuals, organisations and industry groups that create risks that may result in a weed entering, emerging, establishing or spreading in Australia have a role in minimising the impacts and contributing to the costs of management.

The national strategy encompasses principles, goals and priorities across the four stages of weed management: prevention, eradication, containment and asset protection.

Management of weeds that are already widespread in the landscape should focus on containment and asset-based protection. It is important to work from areas of low infestation and to address individual outliers before moving to more dense infestations. Topography should also be considered, for example working from upslope to downslope to reflect the movement of water in the landscape. There is often a temptation to control large or prominent infestations first, but this approach can be very resource intensive and is rarely successful. Weed management requires a continuous, long-term commitment. It is important to factor in monitoring and follow-up as part of budget allocations to successfully eradicate or contain weed infestations.

3 – Project methodology

Eco Works was engaged by the CRPA to undertake the survey, mapping and reporting for this project. Survey work was undertaken between December 2020 and January 2022. All roadsides (both local government and Department of State Growth) were surveyed, recording weeds both on the roadside itself as well as any weed infestations on the adjacent private land that could be seen from the roadsides. In addition to this an attempt was made to survey weeds on the larger agricultural properties.

A list of the farming properties greater than fifty hectares in size within the project area was developed and through the CRPA executives' knowledge of property ownership contact details were

provided for most of these properties. As many of these landholders as possible were contacted and the properties were visited to survey weeds. Talking to and visiting private properties also provided the opportunity to garner local knowledge of weed distributions, receive information on what were the priority weed issues for individual farmers and to raise awareness about weed issues for the valley as a whole.

3.1 – Limitations

Properties less than fifty hectares that could not be fully observed from public roadsides were not surveyed. Some properties greater than fifty hectares were also not mapped where no contact details for landowners were available or where it was not possible to make arrangements with landowners to enter the properties.

All infestations of weeds that are declared under the Weed Management Act 1999 were recorded. Some weeds not declared under the act such as briar rose (*Rosa rubiginosa*) and spear thistle (*Cirsium vulgare*) are prevalent within the area but are not covered by this project.

African boxthorn (*Lycium ferocissimum*) is particularly prevalent within the area and although major and highly visible infestations were mapped, it is likely that there are many more occurrences within the area, particularly on the smaller properties, within shelterbelts, around paddock trees and within patches of remnant bush.

4 – Weeds of Coal River Valley

4.1 – Weed distributions

Fifteen declared weed species were found and mapped during the survey work. The infestations are presented on the following maps.

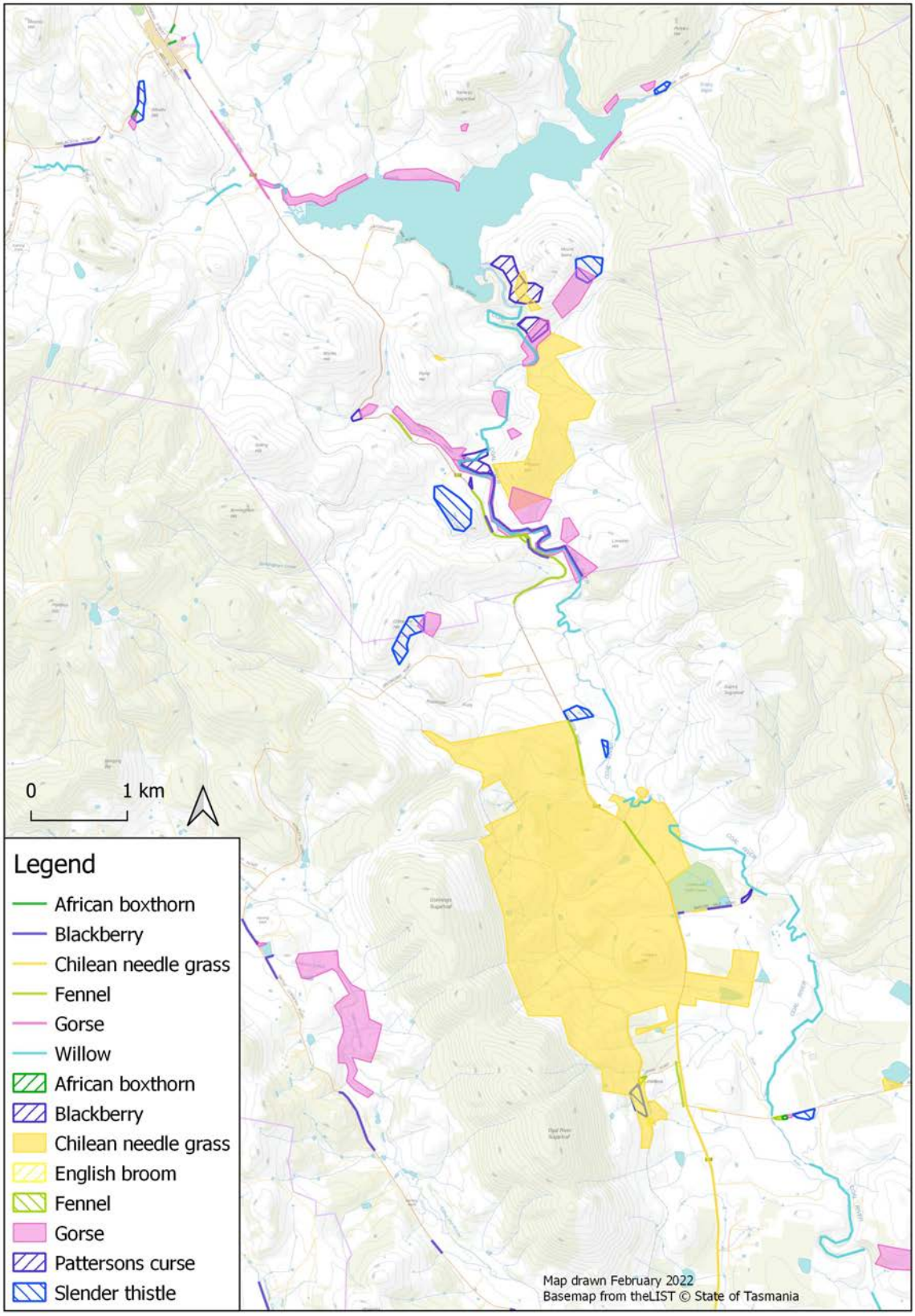

Figure 2 - Weeds of the Coal River Valley 2022 (Northern region)

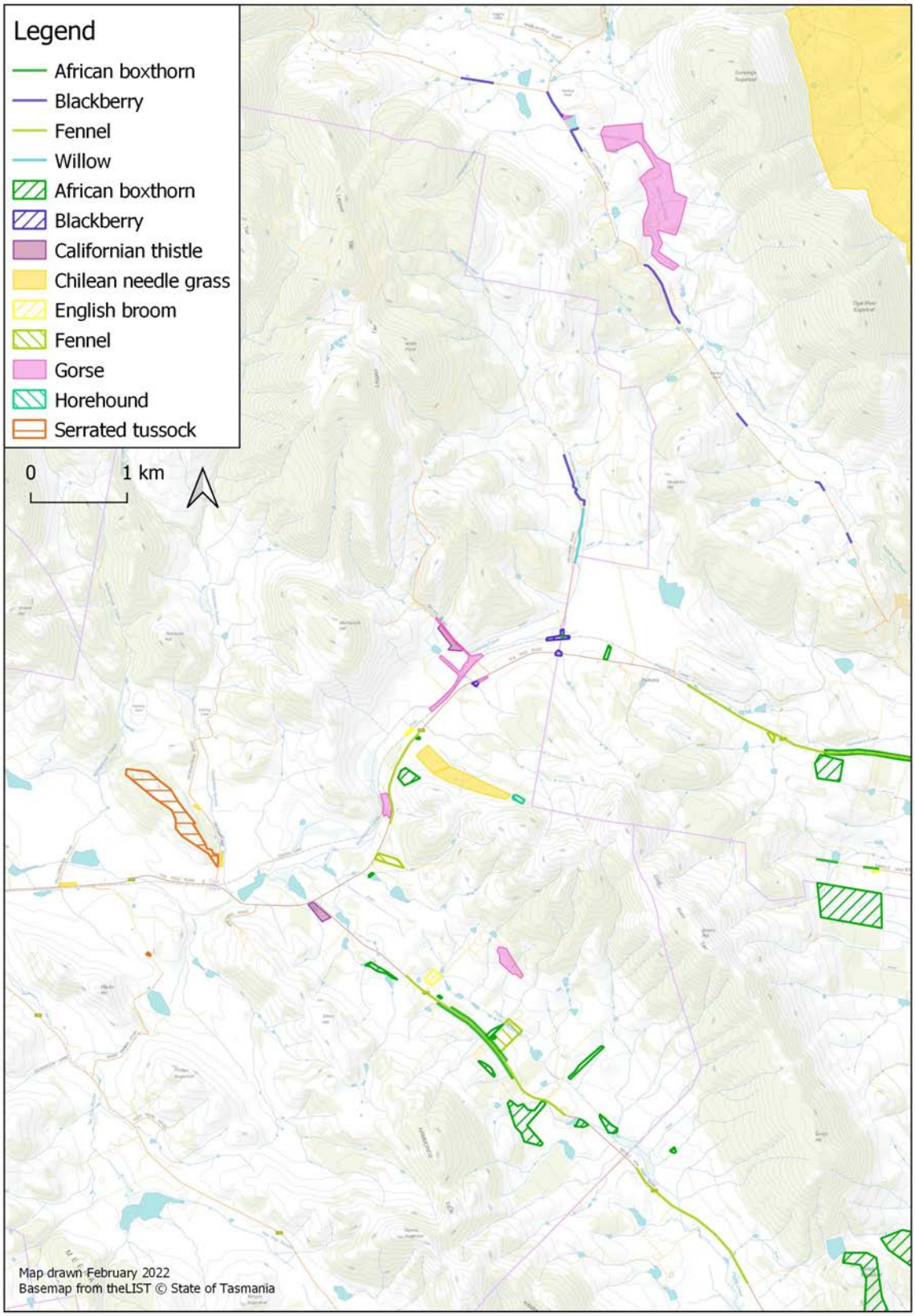

Figure 3 - Weeds of the Coal River Valley 2022 (Western region)

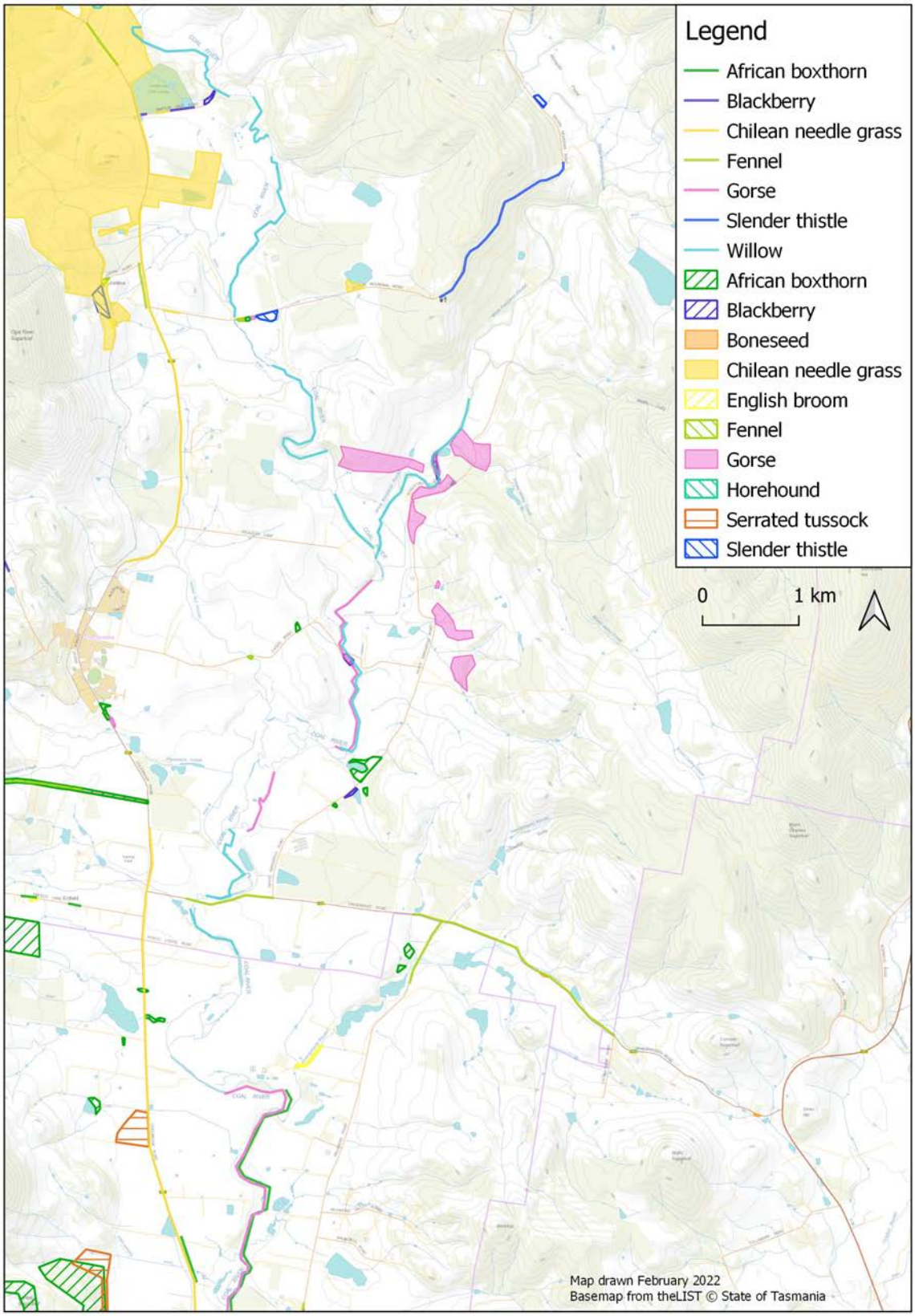

Figure 4 - Weeds of the Coal River Valley 2022 (Eastern region)

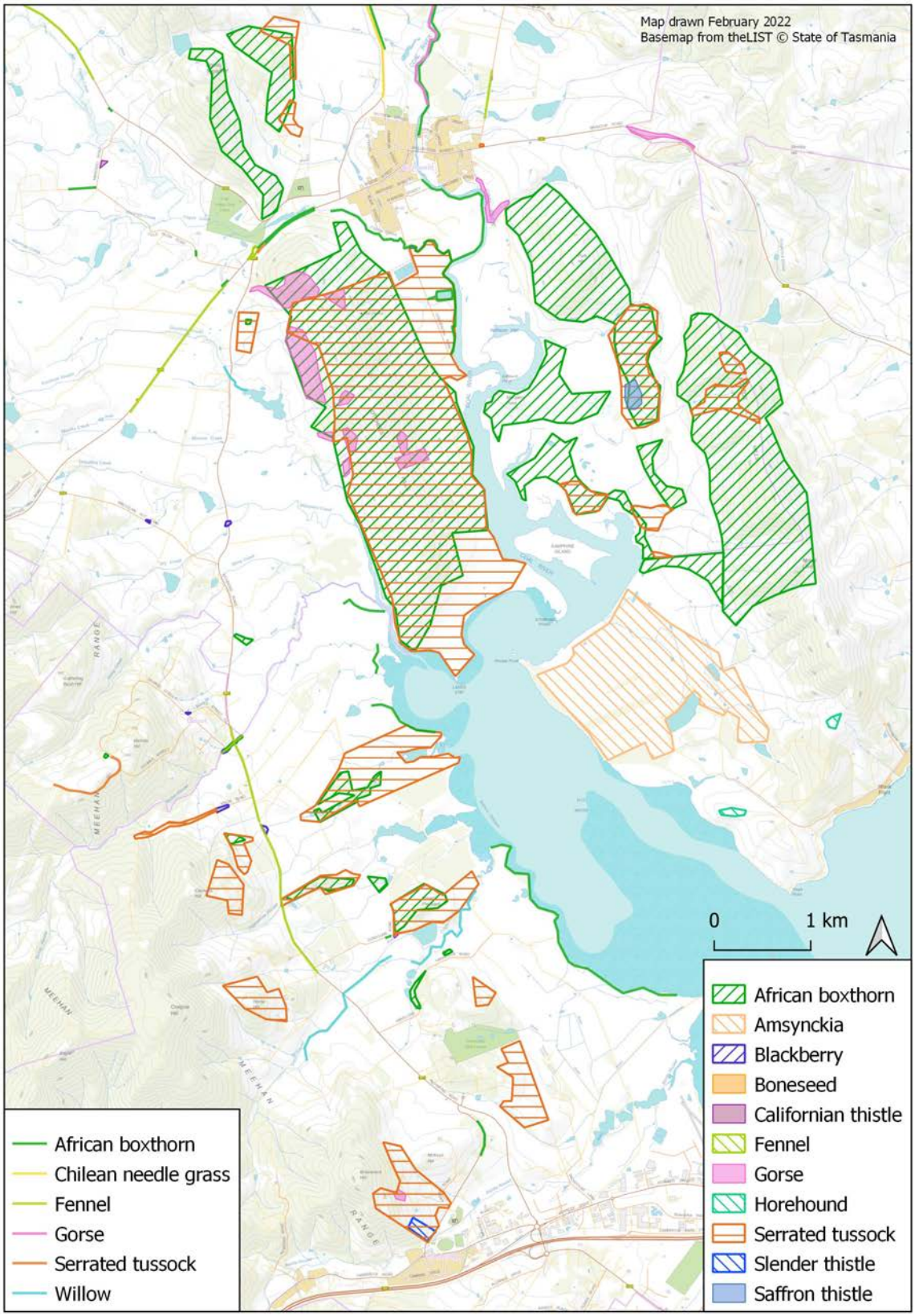

Figure 5 - Weeds of the Coal River Valley 2022 (Southern region)

4.2 – Weed species, extent, threat and management considerations

Weed Species	Extent	Threat	Management considerations
African boxthorn (*Lycium ferocissimum*) Link here: African Boxthorn | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Very widespread over the majority of the area particularly south of Campania. Several large infestations notably on Butchers Hills in Richmond where it covers more than 100 hectares. Also many scattered locations, particularly associated with remnant bush, shelterbelts, laneways, paddock trees	Zone B within Clarence City, Brighton, Sorell and Southern Midlands Municipalities. Considered the most problematic weed by most landowners. Once established it is unpalatable to stock and a general nuisance due to the large spines. Spreads rapidly. Particularly problematic in degraded pastures where the grazing pressure has been removed and on lifestyle blocks where there is no grazing. Once established it renders areas unusable.	Can be challenging to effectively control and established populations often require a combination of mechanical and chemical control actions. Isolated or scattered plants can be effectively controlled by cut and painting, or spraying. Spraying can be ineffective depending on herbicides used. Mechanical removal although effective at removing the established plants generally does not eradicate an infestation due to resprouting. Established infestations are very resource intensive to control and are made more problematic when on steep or rocky terrain or within bushland. Due to the spread of seeds by birds, established infestations provide a continual source of reinfestation to surrounding land, even that which is being actively managed.
Amsynckia (*Amsynckia calycina*) Link here: Amsinckia Species (Yellow Burrweeds) | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Only found on one property within the area, where it is well-established over a large area.	Zone A in Sorell Municipality. Primarily a weed of poppy and grain crops but also unpalatable to stock. Not considered a major threat by the landowner of the property on which it occurs.	Considered very manageable by landowner. Implement integrated control program for eradication and prevent future occurrences.

Blackberry (Rubus fruticosus) Link here: Blackberry | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Widespread but mainly found along roadsides, fencelines and waterways.	Zone B within Clarence City, Brighton, Sorell and Southern Midlands Municipalities. Not considered a major threat to agriculture within the Coal River Valley due to dry conditions.	Can be effectively managed using chemical control.
Boneseed (*Chrysanthemoides monilifera* ssp. *Monilifera)* Link here: Boneseed | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	A few scattered populations only on roadsides.	Zone B within Clarence City Council. Not considered a major threat for agriculture. High potential threat to roadsides and native vegetation.	Can be effectively managed using chemical control. Only recorded infestations located on Department of State Growth roadsides, for which there are existing management programs in place.
Californian thistle (Cirsium arvense) Link here: https://nre.tas.gov.au/invasive-species/weeds/weeds-index/declared-weeds-index/californian-thistle	Scattered infestations, potentially more widespread than mapping suggests.	Zone B within Clarence City, Brighton, Sorell and Southern Midlands Municipalities. Not considered a major threat to agriculture within the Coal River Valley due to dry conditions.	Can be effectively managed using chemical control.
Chilean needle grass (*Nassella neesiana)* Link here: Chilean Needle Grass | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Major infestation extending from Campania to the Craigbourne Dam, covering several hundred hectares. Several properties have well-established infestations with some paddocks dominated by it, others only have scattered infestations. Also found along roadsides.	Zone A within Clarence City, Brighton, Sorell and Southern Midlands Municipalities. Considered a major threat to agriculture due to its high potential to invade grazing land, unpalatability and needle-like seeds.	Can be challenging to control due to low detectability and persistent soil seed bank. Broad scale infestations best controlled by pasture renovation or cropping. Isolated infestations can be controlled using selective herbicide. Considerable weed hygiene issue to prevent spread to other areas. Implement integrated control program for eradication and prevent future occurrences. High priority for control under the Weed Action Fund.

English broom (*Cytisus scoparius)* Link here: Broom | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Several isolated infestations some of which are quite extensive.	Zone B within Clarence City, Brighton and Southern Midlands Municipalities. Does not appear to spread rapidly in the valley, however the weed does have the potential to be much worse, such as in other parts of the Southern Midlands.	Can be effectively managed using chemical control.
Fennel (*Foeniculum vulgare*) Link here: Fennel | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Widespread throughout the area however primarily a weed of roadsides.	Zone B within Clarence City, Brighton and Southern Midlands Municipalities. Not considered a major threat to agriculture within the Coal River Valley	Can be effectively managed using chemical control.
Gorse *(Ulex europaeus)* Link here: Gorse | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Scattered across the area, with several well-established infestations, including along much of the Coal River and its tributaries.	Zone B within Clarence City, Brighton and Southern Midlands Municipalities. Does not appear to spread rapidly in the valley, however the weed does have the potential to be much worse, such as in other parts of the Southern Midlands.	Can be effectively managed using chemical or mechanical control. High priority for control under the Weed Action Fund.
Horehound (*Marrubium vulgare*) Link here: Horehound | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Several isolated infestations, typically associated with old sheep camps or degraded land. Potentially more widespread than mapping suggests.	Zone B within Clarence City, Brighton, Sorell and Southern Midlands Municipalities. Does not appear to spread rapidly and is not considered to be a major threat to agriculture in the valley.	Can be effectively managed using chemical control.
Patterson's curse (Echium plantagineum) Link here: https://nre.tas.gov.au/invasive-species/weeds/weeds-index/declared-weeds-	Only found on one property within the area, where it is well-established over a large area.	Zone B within Southern Midlands Municipality. Considered a major threat to agriculture due to its high potential to invade grazing land, unpalatability and toxicity.	Can be effectively managed using chemical control.

index/patersons-curse-and-vipers-bugloss			
Saffron thistle (C*arthamus lanatus*) Link here: Saffron Thistle | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Saffron thistle was identified on two properties within the area, one of which only had a small infestation.	Zone A within Clarence City Municipality. Appears to have recently spread to these locations and has the potential to spread and become a significant threat.	Implement integrated control plan for eradication and prevent future occurrences.
Serrated tussock (*Nassella trichotoma)* Link here: Serrated Tussock | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Very widespread over the southern part of the area particularly south of Richmond. Several large infestations notably on Butchers Hills in Richmond where it covers more than 100 hectares. Also, many scattered locations.	Zone B within Clarence City Municipality. Zone A within Brighton, Sorell and Southern Midlands Municipalities. Considered a major threat to agriculture due to its high potential to invade grazing land and unpalatability.	Can be challenging to control due to low detectability and persistent soil seed bank. Broad scale infestations best controlled by pasture renovation or cropping. Isolated infestations can be controlled using selective herbicide. Considerable weed hygiene issue to prevent spread to other areas. Implement integrated control program for eradication and prevent future occurrences. High priority for control under the Weed Action Fund.
Slender thistle (*Carduus pycnocephalus* and *Carduus tenuiflorus)* Link here: Slender Thistle | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Scattered infestations, potentially more widespread than mapping suggests.	Zone B within Clarence City, Brighton, Sorell and Southern Midlands Municipalities. Not considered a major threat to agriculture within the Coal River Valley.	Can be effectively managed using chemical control.
Willow (*Salix* species) Link here: https://nre.tas.gov.au/invasive-species/weeds/weeds-	Well established infestations along the Coal River and other waterways.	Zone B within Clarence City, Brighton, Sorell and Southern Midlands Municipalities.	Several previous projects have focused on control of willow within the coal river and have used mechanical removal as well as drill and fill techniques.

index/declared-weeds-index/willows		Not considered a major threat to agriculture within the Coal River Valley. Potential implications for riparian condition and waterflow.	

5 – Management objectives

Implementation of this weed management plan will reduce the impacts of weeds on agricultural productivity within the Coal River Valley. Any available investment such as Weed Action Fund grants should be strategically targeted to result in the most lasting benefits.

5.1 – Strategic prioritisation

Following the guidance of the Australian Weeds Strategy 2017 – 2027, management actions should be prioritised based on the four stages of weed invasion; prevention, eradication, containment and asset protection.

Prevention

It is recognised that prevention and early intervention are the most cost-effective measures in managing weeds. There are numerous declared weeds that have the potential to become significant problems within the Valley, that have not currently established. Good weed hygiene at a property and regional level is essential to prevent future establishment of other weeds. Key principles of weed hygiene are outlined in Section 6.5. Awareness of potential weeds and monitoring should also be regularly undertaken.

Eradication

It is more cost-effective in the long-term to invest resources into the eradication of weeds before they become well established and widespread. Eradication is only feasible when sufficient and sustained resources are available. Monitoring and follow-up control are critical to ensure that these species are effectively eradicated.

Containment

Containment boundaries can be used for more widespread weeds, where there is an opportunity to contain their spread into un-infested areas. It is not feasible to eradicate these weeds from the entire area, but with targeted action and strategic hygiene measures it should be possible to contain their spread. For the weeds identified for containment, the Asset protection approach will also be employed for the core area of its occurrence.

Asset protection

For widespread and well-established weeds an asset protection approach is required to prioritise management actions. Both conservation values and agricultural production should be considered when determining asset protection priorities. For the CRPA agricultural productivity is of primary focus and weeds that threaten valuable productive land are a high priority for control.

5.2 – Priority weeds

The fifteen declared weeds identified within the area are considered below in terms of strategic management priorities at a regional level. There will be specific properties within the Valley where some weeds will be given a higher priority status than that assigned below.

A = High priority

B = Medium priority

C= Low priority

Weed Species	**Priority**	**Objective**	**Justification**
<u>1 - Eradication</u>			
Amsynckia	A - 1	Implement ongoing control actions with the aim of eradication.	Restricted to one property. Zone A weed in the municipality in which it occurs. Eradication feasible.
Patterson's curse	A - 1	Implement ongoing control actions with the aim of eradication.	Although a Zone B weed in the municipality, it is restricted to one property in the valley and the infestation is on the Coal River at the headwaters of the catchment with the potential to become much more widespread. Eradication feasible.
Saffron thistle	A - 1	Implement ongoing control actions with the aim of eradication.	Restricted to two properties. Zone A weed in the municipality in which it occurs. Eradication feasible.
Boneseed	B - 1	Implement ongoing control actions with the aim of eradication.	Although a Zone B weed in the municipality, it is restricted to State Growth managed roadsides. Eradication feasible.
English broom	C - 1	Implement ongoing control actions with the aim of eradication.	Although a Zone B weed in all municipalities, it has very limited distribution in the valley. Eradication feasible.
<u>2 – Containment (including asset protection within core area)</u>			
Chilean needle grass	A - 2	Control all outlier infestations. Reduce the extent of the core infestation by undertaking control actions around edges and along dispersal pathways. Support landowners to	Zone A in all municipalities. Identified as high priority by Weed Action Fund. Significant impact on agricultural production. Eradication not feasible.

		undertake control where agricultural productivity is impacted.	
Serrated tussock	A – 2 (B – 2 south of Richmond)	Establish containment line at Richmond, with the aim of eradication to the North of the containment line. Control all outlier infestations. Reduce the extent of the core infestation by undertaking control actions around edges and along dispersal pathways. Support landowners to undertake control where agricultural productivity is impacted.	Zone B in Clarence but Zone A in other municipalities. Identified as high priority by Weed Action Fund. Significant impact on agricultural production. Eradication not feasible.
Gorse	B - 2	Control all outlier infestations. Reduce the extent of the core infestation by undertaking control actions around edges and along dispersal pathways. Support landowners to undertake control where agricultural productivity is impacted.	Zone B in all municipalities. Identified as high priority by Weed Action Fund. Moderate impact on agricultural production. Eradication not feasible.
Horehound	C - 2	Control all outlier infestations and reduce the extent of the core. Support landowners to undertake control where agricultural productivity is impacted.	Zone B in all municipalities. Although limited distribution as mapped it is likely to be more widespread. Low impact on agricultural production. Eradication not feasible.
Californian thistle	C - 2	Control all outlier infestations and reduce the extent of the core. Support landowners to undertake control where agricultural productivity is impacted.	Zone B in all municipalities. Although limited distribution as mapped it is likely to be more widespread. Low impact on agricultural production. Eradication not feasible.
Slender thistle	C - 2	Control all outlier infestations and reduce the extent of the core. Support landowners to undertake control where agricultural productivity is impacted.	Zone B in all municipalities. Although limited distribution as mapped it is likely to be more widespread. Low impact on agricultural production. Eradication not feasible.
<u>3 – Asset protection</u>			
African boxthorn	B - 3	Support landowners to undertake control where	Zone B in all municipalities.

		agricultural productivity is impacted.	Identified as the most significant weed issue for most landowners. Significant impact on agricultural production. Eradication not feasible.
Fennel	C - 3	Support landowners to undertake control where agricultural productivity is impacted.	Zone B in all municipalities. Low impact on agricultural production. Eradication not feasible.
Willow	C - 3	Support landowners to undertake control where agricultural productivity is impacted.	Zone B in all municipalities. Low impact on agricultural production. Eradication not feasible.
Blackberry	C - 3	Support landowners to undertake control where agricultural productivity is impacted.	Zone B in all municipalities. Low impact on agricultural production. Eradication not feasible.

6 – Actions

6.1 – Property Actions

As per the objectives outlined within the strategic prioritisation above, control actions should be undertaken at the following sites. Priority A (High) and Priority B (Moderate) actions are included in the table below. Priority C (Low) actions have not been specified at this stage. It is likely that other priority B3 sites exist within the area (primarily African boxthorn infestations that are impacting upon agricultural production) and these could be added to the table/job list as those sites are nominated by farmers or otherwise identified.

*Property details table removed

6.2 – Stakeholder engagement

The majority of the landowners listed in the table above have already been in communication with project personnel and are either already engaged in some level of weed management or are committed to a supported strategic approach. Landowners who are also members of the CRPA are very well engaged with the project and are likely to be on-board with proposed control actions.

The other land managers such as TasRail and the Department of State Growth as well as the local councils have also been engaged by the CRPA and are committed to managing the prioritised weeds on their land and assisting with community engagement where possible.

6.3 – Weed Action Fund

A primary objective of this project was to develop a strategic approach that could be used to leverage funding for management actions and ensure that any funding secured was used effectively. Based on the preliminary findings of this project (prior to the completion of this plan) the CRPA successfully applied to the Tasmanian Government's Weed Action Fund (WAF), for a large grant to assist with the implementation of this plan.

The WAF is a $5 million Tasmanian Government initiative, administered by NRM North, funded for five years from 2018-19. The funds provided by the state government will be invested with farmers and other community organisations to tackle weeds that are impacting valuable agricultural and environmental assets.

The large grant project titled "Management of Serrated Tussock, Chilean Needle Grass and Gorse in the Coal Valley and adjacent areas" will provide three years of funding to assist landowners in the shared responsibility of managing weeds within the valley. It is anticipated that this plan will form the basis of a work plan for the delivery of the large grant project.

6.4 – Property management plans

Where an investment is made to share the cost of weed control on private properties by the CRPA, including using funds from the WAF project, basic property management plans should be developed. These plans can be based on a template that can be populated with property specific information and will detail the required control actions over a three-year period.

6.5 – Control methods

Specific control actions on each property will vary depending on the land use, weed species and the level of infestation but they should be tailored to each situation based on the best available scientific, technical, economic, and environmental information, to ensure the control actions are successful and sustainable. Control actions will include spot-spraying, broad-acre spraying, and pasture renovation. Properties should be visited regularly to ensure project actions are undertaken, monitored, followed up on and successful.

For each weed species, best practice control methods, as well as information on herbicides, is provided on the Department of Natural Resources and Environment Tasmania – Invasive Species website. Direct links to the relevant weed pages are provided in the table in Section 4.2, above.

Many control actions can be undertaken by the landowners themselves and information, support and/or resources can be provided by the CRPA in order to assist landowners. Where contractors are engaged to perform control actions as part of the project on behalf of landowners, those contractors should hold the appropriate commercial operators' licenses.

6.6 – Weed hygiene

Weeds are typically spread by propagules which can be transported by wind, water, animals and people. Understanding the lifecycles of weed species is important in implementing effective management. This relates to timing of control, removal of plants and developing appropriate hygiene protocols.

Weed hygiene refers to identifying activities that may lead to the introduction of new weed species or locations to a site and eliminating these activities. Weed management is costly and eradication of a weed from a site, once established, is difficult. To save costs and avoid the reactive part of weed management, proactive measures should be taken to avoid the introduction of a new weed to a site or new location. This may include thorough washing down of machines and equipment that have been in contact with needle grass or in land that is populated by needle grass; checking machines for cleanliness before entering the property; eliminating non necessary soil disturbance; avoidance of bare ground; good pasture management; avoiding over-grazing; avoiding stock movement from

infested to non-infested parts of a property, unless prior quarantining in a ‘safe’ part of the property (e.g. stock yard); shearing of sheep prior to selling stock; trading of non-infested hay only.

All stakeholders play an important role in preventing the introduction and spread of weeds. Weed hygiene in this particular case may be considered on three different levels: On a property level; landscape level across the Coal River Valley; and Tasmania wide.

Property: Properties affected by weeds are required to manage them to prevent their further spread into non-infested areas within the property.

Landscape: The community of the Coal River Valley will have to work together, across tenures to prevent further spread of weeds into non infested areas within the valley.

State wide: Hygiene measures put into place will prevent spread of weeds from the Coal River Valley into non infested areas throughout Tasmania.

7 – Monitoring, evaluation and review

Monitoring and evaluation is an essential component of weed management activities. It is essential that records of actions are maintained. These records in conjunction with future monitoring can be used to evaluate the effectiveness of management actions.

The information obtained during the monitoring process can be used to evaluate the progress and outcomes of this plan as it is implemented, which may be useful in making important adjustments to future actions.

It is intended that this plan be a live document and can be updated as any new weed infestations are identified or existing ones are eradicated. Evaluation and review should focus on the objectives listed within the table in Section 5.2 above. In addition to this the property management plans will detail specific control actions on each property that can also be reviewed in terms of their effectiveness.

Primary objectives of this plan are to raise awareness of weed issues within the valley and the importance of a strategic, prioritised approach to management. By targeting control actions around feasible objectives effective long-term outcomes can be realised.