Clarence
Weed Strategy
2016 - 2030

FINAL

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For Clarence City Council

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EXECUTIVE SUMMARY

This weed strategy has been prepared to guide weed management within the Clarence municipality for the next 15 years. The driving force behind this plan was the recommendation for an Invasive Species Strategy within the Clarence Bushland and Coastal Strategy.

Clarence City Council has made tremendous progress on tackling weed issues on Council managed land to date. This has been achieved through the combined efforts of volunteer community groups and Council staff with strategic planning over local Reserves and a coordinated and sustained level of on-ground works.

Whilst Clarence City Council manages only 3.2% of the land, 94% is private and 2.7% is Government managed land and with around a third of the municipality native bushland, the next challenge is to take a strategic approach by developing a shared responsibility to achieve weed management outcomes across the whole of the Council area.

As with all other regions of Tasmania, Clarence City Council is home to a wide range of introduced plants. Nearly 450 naturalised introduced plants have been recorded in the Clarence municipality. Some of these are well established and widespread with impacts ranging from minor to serious. Others are fairly recent introductions currently in small populations. A large majority of these weeds threaten environmental, economic and social values. 35[1] of the 105 declared weeds listed under the Tasmanian *Weed Management Act 1999* have a presence within Clarence City Council and 10 of these are also Weeds of National Significance (WONS)[2].

This plan has prioritised the 35 declared weeds into 4 priority groups:

1. **Immediately Eradicate** any infestation
2. **Eradicate or quarantine** within term of the action plan (15 years)
3. **Eradicate isolated infestations**, contain wider infestations to ensure no further spread within term of the action plan (15 years)
4. **Control and contain** where threatening important values, Considered response for all species

and includes an additional 37 species to be included on the Clarence Local List:

Monitor those species not declared but significant within Clarence City Council. Aim to minimise further spread and eradicate where deemed practical.

This plan identifies 8 key issues to weed management within the municipality and provides 6 strategic objectives which contain a set of actions to assist in meeting these objectives.

Key Issues

- **Issue 1** – Multiple Landowners
- **Issue 2** – Sustainable Weed Management
- **Issue 3** – Community Engagement and Partnerships
- **Issue 4** – Assessment of weeds under Planning Scheme
- **Issue 5** – Co-ordination of Council Weed Management Operations
- **Issue 6** – Best Practice Weed Management
- **Issue 7** – Declared weeds/WONS/emerging weeds

[1] as at March 2014

[2] based on known records as of March 2014

- Issue 8 – Climate Change

Strategic Objectives

- SO1 Prevent establishment of new high risk weed species

- SO2 Reduce impacts of widespread weeds

- SO3 Enhance community participation and stakeholder engagement

- SO4 Strengthening assessment of weeds under the planning scheme

- SO5 Best practise weed management

- SO6 Implementation of Weed Work Plans (WWP) in Council operations

- SO7 Monitoring and evaluation

Key **Priority Actions** of the Plan are:

1. Assess, evaluate and report on options to build shared responsibility for weed management on private land such as
    a. Land Management Incentives Program for private landowners (building on existing rate rebate scheme).
    b. Application of a Weed levy where significant weed issues exist.
2. Foster partnerships with relevant Government Agencies, NRM South and other NGOs to strategically develop and implement priority weed projects independent of land tenure, both within the municipality and across neighbouring municipal boundaries.
3. Refine weed prioritisation ratings including the addition of a Clarence Local List (CLL) for species not covered by legislation. Include this list in the interim Clarence Planning Scheme for assessment under the appropriate code.
4. Assess and evaluate options to improve weed management planning associated with the SD assessment process, particularly in compliance. Options include weed management bonds, and bringing the weed management process under full Council control at the developer's expense akin to Kingsborough Council.
5. For major Council managed weed projects assess and evaluate the advantages of implementing Weed Work Plans (WWP). Key aspects of the WWP plan would consider funding, revegetation, weed management tools (chemical selection and application methods), long term maintenance, photo monitoring and evaluation.
6. Council to consider appointment of a 0.4 FTE temporary Weed Planning Officer for a trial period of 12 months to deliver:
    a. Strategic co-ordinated approach for all Council weeds management operations to overcome the current lack of co-ordination.
    b. Report to Council in relation to assessment and evaluation of initiatives associated with priority actions listed in this Weed plan.
7. Prepare a Weeds Communications Strategy that:
    a. Will include a weeds website with use of modern media tools to spread knowledge and interest.
    b. Will aim to make the spread of information across the various stakeholders easier and simpler.
    c. Will encourage more efficient use of glyphosate within the broader community.

ACKNOWLEDGEMENTS

Preparation of this plan was by North Barker Ecosystem Services; Dave Sayers with Andrew North assisting with the internal review.

Clarence City Council funded the Plan. The informal committee managing the project consisted of Phil Watson and Justin Burgess, Clarence City Council.

Wendy Andrew (TACPLACI) provided the case study on the Clarence Plains Rivulet Salt Marsh and the cover photo.

Karen Stewart of DPIPWE assisted in providing weed lists such as the Regional High Priority List and WONS projects.

Clarence City Council provided their GIS data on weed locations which was combined with NBES weed data and the Natural Values Atlas data.

We thank those in the public that provided valuable feedback to the initial drafts when public feedback was sought.

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GLOSSARY

CBCS	*Clarence Bushland and Coastal Strategy* 2011-2016
CLL	Clarence Local List
CWS	Clarence Weed Strategy
DA	Development Application
DPIPWE	Department of Primary Industries, Parks, Water & Environment
LGA	Clarence Local Government Area
Municipality	refers to the area within the Clarence City Council
NVA	Natural Values Atlas
PWS	Parks & Wildlife Service
RAPS	Reserve Activity Plans
TACPLACI	Tranmere – Clarence Plains Land & Coastcare INC
TSPA	Tasmanian *Threatened Species Protection Act 1995*
WONS	Weeds of National Significance
WMA	Tasmanian *Weed Management Act 1999*
WMP	Weed Management Plan
WPO	Weed Planning Officer
WWP	Weed Work Plan

1 AIMS

To implement a Municipal Weed Strategy and Action Plan that involves all relevant community, industry and government stakeholders working together to reduce the economic, social and ecological impact of weeds within the Clarence Municipality.

This strategy derives from the *Clarence Bushland and Coastal Strategy 2011-2016* (CBCS) and is developed in accord with the commitments, objectives and principles articulated in the CBCS especially in relation to management topics "Land Steward Partners', "Community Education, Awareness and Participation" and "Invasive Species Management, Natural Regeneration and Rehabilitation"

The aim of the CWS integrates with the *Southern Tasmanian Weed Strategy 2011-2016* that contains the vision of:

A well-resourced and actively committed regional approach to protecting the environment, agricultural and forest industries and social assets from the impact of weeds, through strategic and integrated management involving members of the community, all levels of government and industry.

2 INTRODUCTION

Over the past decade, Clarence City Council has made progress on tackling weed issues on Council managed land. This has been achieved through the combined efforts of volunteer community groups and Council staff with strategic planning over local Reserves and a coordinated and sustained level of on-ground works.

The magnitude of environmental weed problems is enormous, though not always obvious to the untrained eye. Despite the achievements that have been made to date and the considerable resources that Council, State and Federal governments have devoted to weed management, it is not possible or practical to plan to eradicate all weeds from the municipality. Strategies that have previously been effective over local bushland reserves will not be effective when applied across the whole Municipality, even less effective considering the human resources Council are able to commit. This strategy and action plan aims to create a strategic approach which expands upon current Council activities and considers strategic and novel concepts across all land within the region to protect key assets. This involves planning for enhanced co-operation of all landowners to maximise on-ground resources to weed management in order to achieve high level, sustainable weed outcomes. It also seeks to ensure Council leads by example to encourage other stakeholders to get involved.

Plate 1 - Texas needle grass

3 BACKGROUND

Weed Management in Clarence City Council

To date, Clarence City Council has made large strides in weed management within Council owned or managed lands. To assist in the short and long term planning for protection of natural values within Clarence, the Clarence Bushland and Coastal Strategy was developed in 2011. As part of the recommendations of this strategy, the following strategic weed management tools have been completed:

- Roadside Weeds mapping
- Reserve Activity Plans (RAPS) for all Bushland and Coastal Reserves within which declared weeds are mapped and recommendations are made for weed control. RAPS and Land Management Plans that are completed or being rolled out include:
    - Blessington Coastal Reserve Activity Plan 2013-2018
    - Mortimer Bay Coastal Reserve Activity Plan 2012-2016
    - Pilchers Hill Bushland Reserve Activity Plan 2013-2018
    - Roscommon Reserve Activity Plan 2012 - 2017
    - Rosny-Montagu Bay Coastal Reserve Activity Plan 2011-2016
    - Seven Mile Beach Coastal Reserve Activity Plan 2011-2016
    - Tranmere Coastal Reserve Activity Plan 2011-2016
    - Waverley Flora Park Reserve Activity Plan 2013-2018
    - Rosny Hill Nature Recreation Area Management Strategy 2011-2021
    - Mt. Rumney -Mt. Canopus Vegetation Management Plan 2013-2018
    - Glebe Hill Bushland Reserve Activity Plan 2014 - 2018
    - Risdon Vale Creek and Grasstree Hill Rivulet Reserve Activity Plan 2013-2018
    - Victoria Esplanade and Kangaroo Bluff - Landscape Plan 2013-2018
    - Thoona Bushland Reserve Activity Plan 2013-2018
    - Wiena- North Warrane Bushland Reserves Activity Plans 2014-19
    - Glebe Hill Bushland Reserve Activity Plan 2013-18
    - Porters Hill Bushland Reserve Activity Plan 2014-19
    - Bellerive- Howrah Coastal Reserve Activity Plan 2015-20
    - Natone Hill-Geilston Bay Coastal Reserves Activity Plan 2015-20
    - Draft Otago Lagoon and Coastal Reserves Activity Plan 2016-21
    - Cremorne Foreshore Management Plan 2011-16
    - Draft Clarence Plains Environmental Management Plan 2015-2030

The Clarence Plains Catchment Management Plan (in preparation) also considers weed management priorities.

Some other areas such as rivulets and creeks have Weed Management Plans (WMP). Additional RAPs will be prepared for other reserves and natural areas as resources become available. Importantly, where a RAP or WMP is not yet prepared, Council natural resource management staff are aware of what weeds are present.

Council is well advanced in planning and enacting weed management of Council managed land. The next progression of this planning is to undertake strategic planning across the whole of the municipality, not just Council managed land. The Clarence Weed Strategy (CWS) is the response to this strategic planning.

Clarence City Council characteristics

The municipality of Clarence, situated in South East Tasmania contains a diverse array of built and natural environments covering approximately 41,300 hectares. The municipality extends from Richmond to Seven Mile Beach to Opossum Bay and through to Otago Bay. The municipality is bordered by Sorell Council to the east, Brighton and the Southern Midlands Councils to the north and west with Glenorchy, Hobart and Kingborough Councils separated by the Derwent River to the south and west (Figure 1). Clarence is bordered by approximately 191 km of coastline with another 50 km of boundary shared with the previously mentioned Councils. Clarence City offers a range of natural landscapes treasured by locals and visitors including beaches, walking trails, wetlands of international importance (Pitt Water – Orielton Lagoon) and the Meehan Range which forms a prominent geographical

feature that runs parallel to the River Derwent. Nearly one-third of the municipality contains native bushland (Table 1, Figure 2).

Table 1 - Vegetation Types within Clarence City Council[3]

Vegetation Type	Area (ha)	%
Agricultural, urban and exotic vegetation	21,300	53
Dry eucalypt forest and woodland	12,500	31
Native grassland	1,900	5
Non eucalypt forest and woodland	570	<1
Other natural environments	2,700	7
Saltmarsh and wetland	680	2
Scrub, heathland and coastal complexes	260	<1
Wet eucalypt forest and woodland	240	<1
Total	40,180	

Clarence City Council has a population of 53,558[4]. The topography is diverse with the highest point being Grasstree Hill at 544 m a.s.l. The geology of the region is generally made up of Permian mudstone and Jurassic dolerite with areas of Permian to Late Carboniferous sediments as well as basalt to the north. Low lying areas generally contain more fertile alluvial deposits. 94.1% of the municipality is made up of private land tenure with 3.2% owned by Council, 2.4% by the State and the final 0.3% by the Commonwealth[5].

Figure 1 - Clarence City Council boundary

[3] Based on TASVEG 3.0 (DPIPWE 2013)

[4] Australian Bureau of Statistics 2011

[5] Clarence Bushland and Coastal Strategy (2011)

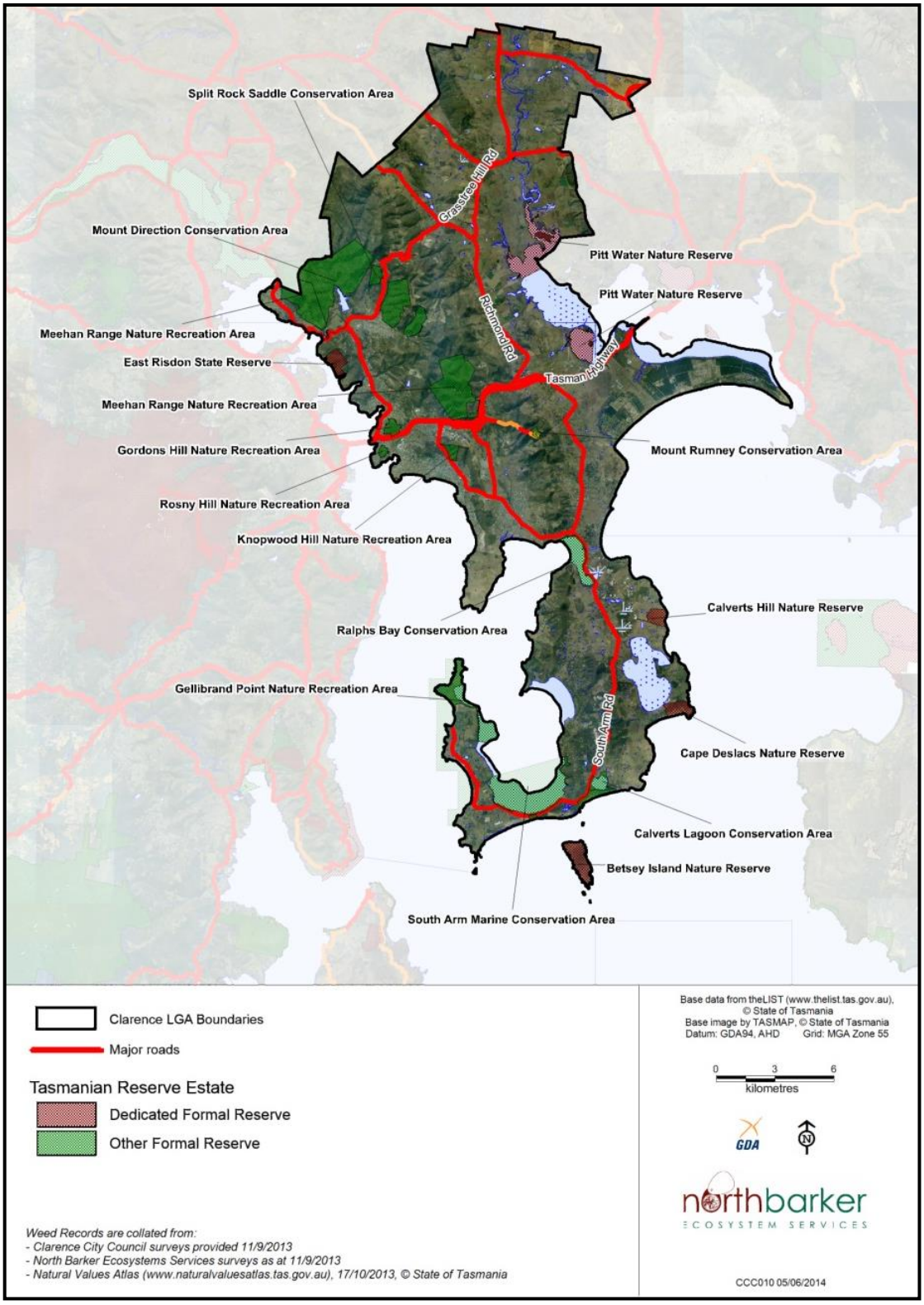

Figure 2 - Clarence Municipality and reserves

4 POLICY

Figure 3 provides a summary of the hierarchical process that underpins the development of weed strategies within Australia. For a detailed discussion on relevant policy and legislation please refer to Appendix 1 on page 45.

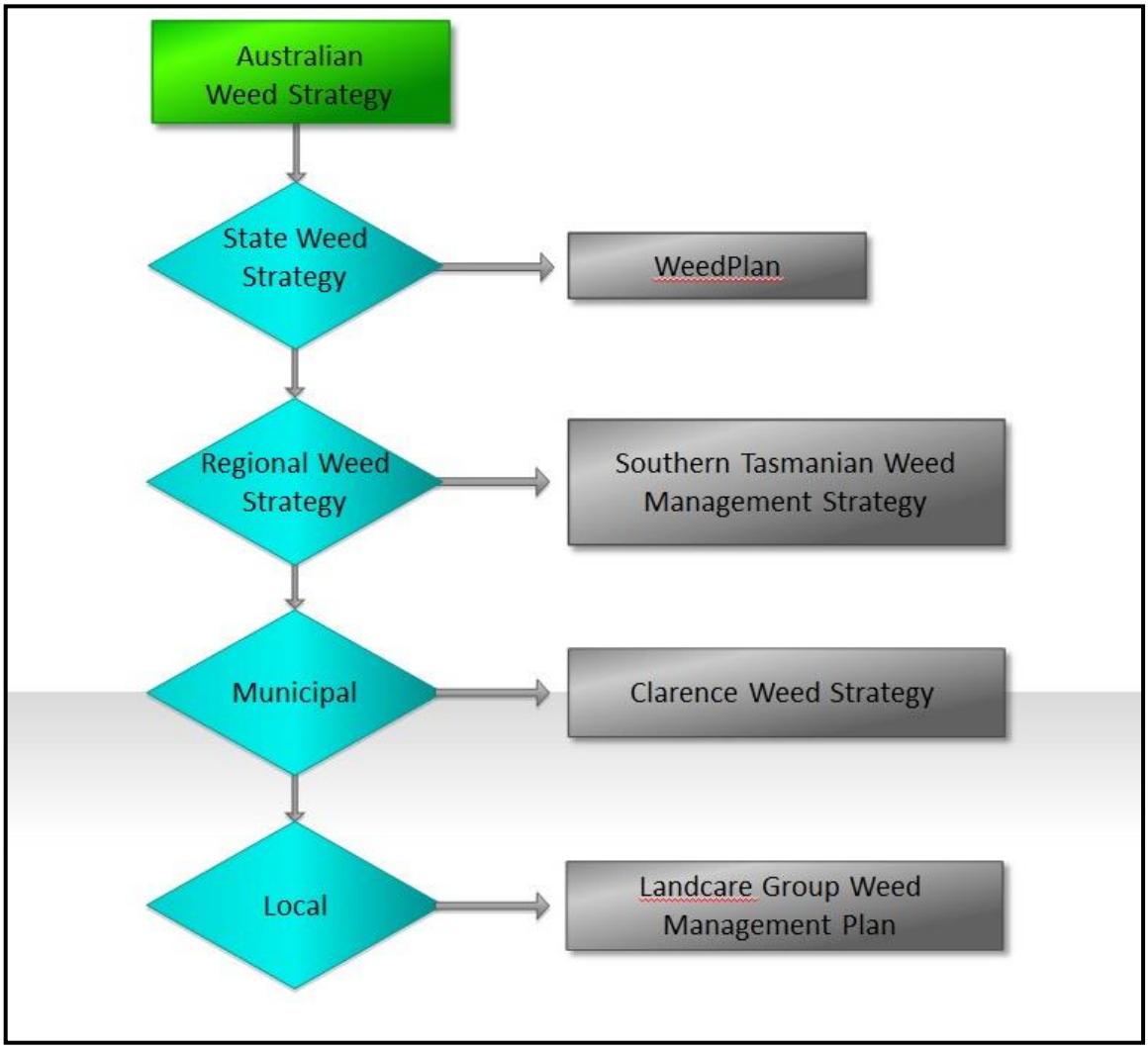

Figure 3 – Process that underpins development of Weed Strategies

5 WEEDS OF THE CLARENCE CITY COUNCIL

As with all other regions of Tasmania, Clarence is home to a wide range of introduced plants. Nearly 450 naturalised introduced plants have been recorded in the Clarence municipality (Appendix 8 on page 72)[6]. Some of these are well established and widespread. Others are fairly recent introductions in small populations of limited threat to environmental, economic and social values.

35 of the 115 declared weeds listed under the WMA have a presence within Clarence and 10 of these are WONS (Appendix 2 on page 54).

The significance of weeds in the Clarence City Council

Environmental weeds are a significant threat to both ecological integrity and economic costs to the Clarence Municipality.

The national weed strategy defines a weed as follows:

A weed is considered pragmatically as a plant that requires some form of action to reduce its harmful effects on the economy, the environment, human health and amenity

A number of these weeds are currently posing significant impacts on a variety of agricultural, environmental and social values. Serrated tussock, ragwort, canary broom, English broom, boneseed, numerous thistles, pampas grass, gorse, blackberry, Spanish heath and African boxthorn are some of the current weeds posing significant implications to Clarence. Along the coastal strips are pressures from weeds such as sea spurge and marram grass. There is always the threat of new weeds establishing in the region such as the recent control efforts of Texas needle grass near Glebe Hill Reserve.

Prioritising Weeds in the Clarence City Council

Prioritisation method

For the purposes of this strategy, declared weeds and WONS known to occur within Clarence have been allocated a priority rating from 1(highest) to 4 (lowest) - Table 2. Appendix 4 on page 58 lists all the declared weeds which are known to have a presence in the municipality sorted by their rating. The distribution of all declared weeds is shown in Appendix 9 on page 84 and the location of weeds based on priority rating is shown in Figure 4 to Figure 7.

There are a number of other environmental weeds that should be included in any weed prioritisation. Some of these locally important weeds may be given a priority 1 rating based on limited distribution and ease of eradication. A number of these weeds are included in the additional Clarence Local List (Appendix 3 on page 56) and discussed in the next section.

[6] Based on weeds data collated from Clarence City Council, North Barker database and Natural Values Atlas

Table 2 - Weed prioritisation and targets

Priority Rating	Category	Management Target
1	Declared Zone A with localised infestations **17 species**	Co-ordinated rapid response for new infestations in consultation with DPIPWE (Eradicate within 5 years)
2	Declared Zone A with wider infestations or species that may fit Priority 1 but only have narrow level of impacts within municipality. **4 species**	Eradicate or quarantine within term of the action plan (15 years)
3	Declared Zone B with localised infestations **5 species**	Eradicate isolated infestations, contain infestations to ensure no further spread within term of the action plan (15 years)
4	Declared Zone B with wider infestations **9 species**	Control and contain where threatening important values, aim to control dense infestations within term of the action plan (15 years) Considered response for all species Assess and evaluate incentives targeting eradication/control by landholders with properties >2ha
L	Clarence Local List (CLL) – locally important weeds not declared or rated above **37 species currently on the list**	Control and contain where practical through landowner partnerships with Council. Target eradication of small infestations during term of the action plan (15 years) Does not apply to plants with the garden setting

Weed mapping of the known locations of Priority 1 to 4 is provided for in Appendix 5 on page 65

Other locally important weeds

Numerous species not declared under the WMA present a serious threat to the Municipality. A number of these weeds are known to be invasive but are not currently on the other priority lists. These weeds should also be considered in any weed management strategy as per the draft Southern Tasmanian Weed Strategy 2011-2016. A list of all introduced species is provided for in Appendix 8 on page 72. An example of other locally important weeds within Clarence is shown in Appendix 3 on page 56. This list should be refined further and when completed included within the Clarence Interim Planning Scheme 2015 definition of weeds. There are currently 37 species on this list.

Strategy defined as follows:

1. Localised species of high threat that should be targeted for eradication.
2. Entrenched species requires a 'containment' style of management. In this scenario localised species may be targeted for eradication or control in order to protect identified assets from further infestations. Areas currently free of these weeds should also be kept free.
3. Planted exotics that should have a strategy for replacement.
4. Coastal weeds that should not be allowed to establish from beaches (and native coastal communities) that are currently free or only contain light infestations.

6 CCC WEEDS PLANNING FRAMEWORK- OVERVIEW

This section is an overview of the the key issues facing weed management within the municipality that this Weed Strategy will focus on. Each of the 8 Issues are discussed in detail in Appendix 13

Issue 1 – Multiple Landowners

Clarence City Council is made up of a mix of land tenures, mostly private (94.1%) with 3.2% owned by Council, 2.4% by the State and the final 0.3% by the Commonwealth[7].

In order to provide cost effective weed management, programs need to be integrated across all tenures, private and public, at a landscape scale to minimise reinfestation. There are several State and Federal Government departments and authorities who manage land within the municipality including Crown Land Services, Parks and Wildlife Service, Department of State Growth, Department of Housing, TasWater, Aurora and TasNetworks who share common objectives and responsibilities with Council.

Council relies on stakeholder relationships, good work practices and collaborative weed programs with these agencies or as a last resort may serve a notice by an authorised officer on the crown.

Implications to Strategy

- Foster co-operative projects with the community, government and private landowners to support the development of a shared responsibility towards weed management with the municipality
- Investigate further opportunities for external grants and projects that can be shared across land tenures (ie: NRM South).

Issue 2 – Sustainable Weed Management

A critical component of on ground weed management is ensuring that primary weed control is followed up with secondary and tertiary treatments. Indeed primary weed management if NOT followed up can in some situations result in a worse outcome. Many sites may have weed seed which remains dormant in the soil for many years waiting for the conditions to change. The cost for the follow up is typically an order of magnitude cheaper. The issue is less about cost and more about long term commitment to the cause. Planning should also consider:

- why the weed is being removed
- is the surrounding vegetation capable of replacing the weed being removed
- do the infestations provide valuable habitat for threatened/at risk species (ie: gorse for bandicoots, boxthorn for little penguins)
- include revegetation with suitable native species where appropriate.

Proper recording and centralised information storage of weed management projects is essential to help with program managers keep a track of any weed operations and to ensure that follow up is achieved.

[7] Clarence Bushland and Coastal Strategy (2011)

Implications to Strategy

- Further refine the Council weed dataset on Council land and support the integrity of Natural Values Atlas weed data by uploading private land weed data sets captured from development applications and other projects were feasible.
- Identify funding /human resourcing gaps in secondary weed management.
- Establish early in Weed Management Planning high profile locations for weed management on public lands
- Actively promote with other key public and private landholders strategic weed management partnerships.

Issue 3 – Community engagement and partnerships

On ground weed work is resource demanding. Successful weed management requires a long term commitment. Outcomes would be greatly enhanced by fostering community support and building upon relationships and networks with other government bodies.

Volunteer's participation

Clarence City Council has a large number of volunteer Landcare and Coastcare Groups that operate predominantly on Council land with some focus at times on other land tenure throughout the municipality. However it is important that this is implemented within a strategic framework centrally co-ordinated in Council. Currently the volunteer weed management activities carried out by volunteers such as Landcare Group's, Green Army, Volunteer Prisoners, Schools, Community Service Groups can be somewhat ad hoc with many activities not being implemented in accord with an existing Reserve Activity Plan.

This co-ordinated approach requires a dedicated staff member (Temporary Weed Planning Officer) to optimise Council's resources and remove duplication and non-strategic weeding activities. A case study of the outcomes of a community shared project is in Appendix 12 on page 97.

Building shared responsibility through private property owner participation

The best means to enhance private landholder participation is a complex issue. Under the Tasmanian Weed Management Act 1999, Council's authorised Weed Officers have the ability to direct private landholders to control or remove declared weeds on their properties. However a regulatory approach does not often result in long term increased participation by private landholders.

With 94% of municipal land in private landownership, applying a community service approach to weed management independent of tenure provides an opportunity to deliver strategic weed management across the whole of the municipality.

One option involves incentives and rewards to rate payers willing to participate. This may be in the form of rate reductions (expanding upon an existing Council conservation rate rebate scheme) for agreed weed projects on private property targeting Priority weeds or weeds on the Clarence Local List.

Implications to Strategy

- Landcare Volunteer coordinator delivers enhanced training and support for weed management activities across all Volunteer Groups.
- Seek available funding for potential or current weed control projects.
- Development of a communications strategy that includes fostering collaboration with other agencies and stakeholders (especially private landholders) to enhance human resources available for on-ground works. The focus of this would be to include better communication and aid individuals and Council in the exchange of information.
- Consider the value of providing a community service approach for weed management on private land.
- There are a range of options to build shared responsibility for weed management on private land which will require extensive assessment, evaluation and reporting.

Issue 4 – Assessment of weeds under Planning Scheme

The problems

Currently assessment of weeds as part of the development application (DA) process requires the development and implementation of a Weed Management Plan (WMP). However this process has intrinsic weaknesses associated with the standard of the plans presented by the developers and the compliance in relation to the implementation of the plan to achieve long term sustainable outcomes.

Recent examples of WMP's drafted on behalf of developers have frequently resulted in tedious iterations to ensure the Plan is capable of delivering acceptable outcomes. Consistently long term maintenance outcomes were not adequately addressed nor was monitoring. Importantly the compliance was poor or non-existent resulting in the implementation process being truncated to an initial highly visible short term primary weed treatment, then rapid tail off of maintenance finally becoming neglected after one or two years of the agreed 5 year maintenance regime.

Failure to implement hygiene aspects of long term weed plans, such as mandatory wash down requirements in serrated tussock infested areas (Droughty Point and Toronto's Single Hill SD) has major economic ramifications resulting from the cost to control new WONS infestations spread state-wide around pastoral properties and bushland areas. Compliance is the key tool to maintain adherence to best practise hygiene conditioned in DA Weed Management Plans

Improvements to compliance process

Further, whilst the developer has a high level of control over both the planning and implementation of these Weed Plans, the process continues to be subject to inherent developer failings in long term weed maintenance and compliance. Consideration should be given to options to eliminate the potential for developer insufficiencies.

Weed Bonds and Council facilitated process at developer's expense

Kingborough Council has addressed these issues under their Planning Scheme provisions using a Weed Management Bond (akin to a Landscape Bond) to ensure that the 5 year costed, maintenance program is fully delivered. Kingborough Council also has the provision to facilitate the weed planning, implementation and monitoring process at the developer's expense including the cost of compliance.

See Appendix 13 on page 98 for summary of weed management bonds in Kingborough Council.

Asset Fire Protection Zone weed management

Clarence contains significant areas of bushland of which fire is a natural part of the ecology. With more people attracted to a peri-urban lifestyle comes the increased pressure to clear bushland for fire management and protection zones of new dwellings and associated infrastructure. This type of clearing for asset protection provides conditions suitable for the introduction and spread of weeds such as serrated tussock, into areas previously free of any such infestations.

Implications to Strategy

- The Development Assessment process for Weed management under the current Planning Scheme provisions requires review and subsequent strengthening
- Consideration is required for the application of Weed Bonds and Council facilitated Weed management plans and implementation at the developers' expense.
- Full functioning compliance process at the developers expense is essential in order to guarantee the application of strict hygiene conditions where likelihood of off-site weed contamination is high (eg serrated tussock infested regions of Droughty Point, Acton and Seven Mile Beach)

Issue 5 – Co-ordination of Council weed management operations

Council Managed land

Council budgets dictate how strategic planning become operational outcomes. Council currently delivers at least 14 separate budgeted project areas which include both control and long term maintenance of declared and WONS weeds on Council land. There is no overarching co-ordination or prioritisations of these weed projects. The aim is to ultimately replace the weeds with indigenous vegetation and may take decades to attain desired level of effective control.

Table 3 - Projects with weed management components in the 2015-16 budget

Programs with Weed control and maintenance	Operators	Estimation $
Priority Weed Management	Contractor	42,000
Weed Control on Rural Roads Reserves	Contractor	5,000
Reserve Activity Plan Implementation	Contractor	10,000
Drainage swales	Contractor	10,000
General maintenance in bush and coasts	Council (Parks)	5,000
Fire Management Strategy -pre and post burns	Council (Fire)	20,000
Track and Tangara Trail weed maintenance	Contractor/Council	10,000
Lauderdale Tip maintenance	Contractor	3,000
Constructed wetland maintenance	Contractor	2,000
Landcare and Coastcare Grant (weed/rehabilitation	Contractor/Vols.	10,000
School Landcare (weed/revegetation)	Council/Volunteers	1,000
Risdon Vale Volunteer Prisoner weed/rehabilitation	Contractor/Vols	10,000
Clarendon Vale Rivulet maintenance	Council/Vols/Cont.	2,000
Mountain Bike Park maintenance	Contractor/Vols	2,000
TOTAL		**132,000**

To optimise Council weed management resources a co-ordinated and strategic approach is required with a dedicated Council Officer (Temporary Weed Planning Officer WPO) to triage and prioritise all Council on ground weed management operations.

Non Council Managed Land

Council is frequently requested to follow up with WONS and listed weed issues on non-Council managed lands often as a result of complaints from neighbouring properties that are being infested with weeds spreading across boundaries. Although there are eight City Rangers (managed by Coordinator of City Rangers) only four are certified to implement the WMA and direct weed control on private land. Additionally the Natural Asset Officer is also certified but in both cases due to high workloads they have very limited capacity to respond to complaints. A Temporary Weed Planning Officer (TWPO) would be able to triage and prioritise these complaints to ensure optimal use of the Rangers and Natural Asset Officer limited time.

Council additionally is frequently requested to provide weed identification and management information at the Counter as well as provide up to date awareness information in the form of pamphlets and booklets. This also would best be delegated to one Council Officer.

Assessment and compliance of DA Management Plans has become a substantial role, given the rapid expansion of green field subdivisions in the municipality. These processes especially in relation to compliance of Weed Hygiene procedures (wash down areas) in areas where serrated tussock Chilean and Texas needle grass proliferate requires a dedicated TWPO to ensure the potential of seed spread offsite does not cause infestations that can potentially cost landowners $millions to control.

Implications to Strategy

- Council to consider the appointment of a 0.4 FTE Temporary Weed Planning Officer subject to review after 12 months.

Issue 6 – Best Practice Weed Management

Weed management works comes with the inherent risk of exposing the local landscape (and on a cumulative level landscapes further afield) to contamination from excessive use of chemicals contained within herbicides.

Glyphosate is the world's most freely available and bestselling chemical herbicide and most used in large scale and domestic weed control. A number of countries are now looking to minimise use or have already banned glyphosate (France and Netherlands) within the domestic setting and/or for crop production. These moves should be followed closely along with heightening the awareness to Council staff, contractors and volunteers regarding its potential toxicity and importance of safe application procedures.

It is recognised that herbicides are a vital component in the weed manager's ability to effectively apply integrated control options. However it is also recognised that without effective weed work planning prior to implementation of weed control/eradication projects, there is potential for the excessive/incorrect application of herbicides within weed management.

Weed Work Plans

A Weed Work Plan (WWP) should be developed for major weed eradication/control projects managed by Council staff.

The aim of this early planning is to help maximise the chance for success, ensure correct methods are applied to weed management works and to give further thought to the variety of methods to removal available and to ensure chemical application is limited to the recommendation applications (and selection of correct herbicide).

ChemCert Training and Volunteer use of Chemicals

All Council staff should have ChemCert Accreditation (AQF2 or equivalent) prior to undertaking weed work and where necessary this training should be kept up-to-date. Weed Planning Officer role should be undertaken by someone with ChemCert Supervisors Accreditation (AQF3&4) or equivalent)[8].

In relation to volunteer groups and to limit the potential for below best practise chemical safe handling and application, it is recommended that volunteers are limited to 'cut and paint' application of lower toxicity S5 herbicides. Volunteers should be excluded from spraying and selected volunteers in each volunteer Group be trained to apply S5 Herbicides under ChemCert (AQF2) framework

Implications to Strategy

- Review current on-ground weed practices, recommended best practices and ensure adequate skills and knowledge is shared across all those implementing weed control/eradication programs.
- Ensure all Council weed control workers undertake appropriate ChemCert training and that training is kept up-to-date.
- Design a Weed Work Plan (WWP) template and develop a set of criteria for deciding which major weed management projects require WWP.
- Selected volunteers to be trained for cut and paste application of S5 chemicals under ChemCert AQF2 framework

Issue 7 – Declared weeds/WONS/emerging weeds

Limitations of CCC Weed Inspectors certified under the WMA

Council has four active City Rangers and a Natural Assets Officer certified as weed inspectors under the WMA. Due to work load demands, City Rangers only act on smaller domestic blocks, and are unavailable for all large peri-urban and rural properties. The Council's Natural Asset Officer's role is also limited to dealing with only a small selection of WMA issues on larger properties much to the frustration of rate payers. Currently Council is only partially meeting its weed inspectoral role obligations under the WMA. Council's main focus under the WMA has been to control declared weeds on Council managed land.

Competing with these obligations is the threat posed by numerous other weeds, some native to Australia, that are not listed under the State or Federal legislation. Often these lists are also slower to evolve in comparison to knowledge gained at the Council level; therefore any weed strategy should also adequately prioritise weeds posing a threat outside of legislation.

There are also strategic on ground targets that have been identified for WONS such as bridal creeper (*Asparagus asparagoides*), boneseed (*Chrysanthemoides*

[8] http://www.chemcert.org.au/

monilifera ssp. monilifera), Chilean needle grass (*Nassella neesiana*) and seeding willows (*Salix cinerea*).

Council faces the difficult task of managing their statutory obligations while also trying to manage emerging weeds which may not be identified in statutory planning (and hence minimising future costs when these emerging weeds become more widespread). Prioritising all known weeds will assist in identifying potential gaps, assist with future funding and aide in the understanding of where to focus time and energy going forward.

Implications to Strategy

- Undertake a review of weed prioritisation of statutory weeds and the Clarence Local List to produce agreed ratings (including CLL) and ensure yearly review based on new knowledge or changes to distribution.
- Ensure resources are dedicated to prioritised weeds.
- Planning Scheme should include declared weeds and the Clarence Local List ideally under the definition of weeds.
- Provision of Staff resources to carry out Weed Inspectoral obligations under the WMA

Issue 8 – Climate Change

The true impact from climate change within the municipality is uncertain and the effects on weeds are even more so. As the climate warms, plants that were not ideally suited to a cool temperate climate may find the transition to a warmer temperate climate to their liking. There are a whole suite of garden plants that currently show no sign of invasiveness but with a warming climate this may change. Research also suggests that weeds may migrate south of Victoria.[9] A drier climate may also see some current weeds reduce in invasiveness.

The State of the Environment reporting is a valuable tool by which to monitor the challenges faced by climate change.

Implications to Strategy

- Council's capacity to keep up to date with new science and understanding of the impact of climate change on weed species.
- Council's capacity to remain vigilant and appropriately responsive to potential expansion of sleeper weed populations and other DPIPWE Weed Alerts
- Council's capacity to monitor changes in weed distribution and weed priority in a changing climate and respond to threats as they become apparent.

[9] Southern Tasmania Weed Mgt Strategy

7 STRATEGY & ACTION PLAN

Seven strategic objectives are identified to address the 8 issues highlighted in chapter 6. Each objective has a set of goals identified to steer future weed management within the municipality towards reducing the level of impacts weeds pose on strategic issues.

Strategic actions in the Fifteen Year Action Plan are not meant to cover every possible action to weed management within the municipality. Actions listed are those deemed important in beginning to make progress in future weed management within Clarence City Council based on the issues highlighted.

Strategic Objectives (SO)

SO 1: Prevent establishment of new high risk weed species

Core to any Weed Management Strategy is preventing the spread of new high risk weeds which would continue to compound the current weed problem. A co-ordinated strategic approach to weed planning and management involving collaborations of key stakeholders and landowners is essential to achieving best use of available budgets and human resources.

Goals:

a) Co-ordination of all the 14 weed management programs associated with on ground Weed control and long term maintenance operations including assisted natural regeneration and revegetation operations on Council land using Council staff, Volunteers, Contractors and schools.

b) Develop a weed alert network that assists the public in providing weed information which will aide in verifying new weeds and allow more eyes on the ground.

c) Review high risk weed species (sleeper weeds) that may establish in the municipality and ensure this list is regularly updated (at least re-assessed yearly).

d) Have a quick response procedure for removal when new high risk weeds are identified.

e) Council staff are well trained to identify new high risk weeds or have the necessary framework in place to aide identification.

f) Promote activities by community and State Government to minimise nursery and community market sales of WONS and Declared weeds in the Clarence City Council.

g) Identify high risk pathways.

h) Effective hygiene procedures are in place as part of the approval process for developments and are also employed in Council operations.

- meets goal 1 of the Australian Weed Strategy
- meets Key Area 1 and 3 of Southern Tasmanian Weed Strategy
- incorporates Component 6 of the Tasmanian Weed Plan

SO 2: Reduce impacts of widespread weeds

Weeds are always going to be present however reducing the impact of the widespread weeds on key ecological, cultural or economic areas is vital for any successful weed strategy. Where and how to manage widespread weeds is important, and identifying ecological and economic assets that require protection from widespread weeds is important to ensure time is not wasted in achieving little. Key to this objective is ensuring effective and efficient application of Council resources and budgets (currently allocated and into the future) towards on ground weed management on Council Land. With 14 programs and approximately $132,000 in 2015-16 allocated directly to on ground weed control and associated long term maintenance projects, it is essential that an overarching strategic approach is co-ordinated by a dedicated staff member. A temporary 0.2 FTE Temporary Weed Planning Officer for 12 months is recommended to fulfil this role subject to a review at the end of 12 months. Additionally another 0.2 FTE allocated to the Temporary Weed Planning Officer role would research and report to Council on a set of key weed management initiatives proposed in this CWS.

The relationships with various stakeholders is also just as important in managing widespread weeds to ensure strong communication and networking to combat these challenges therefore the Temporary Weed Planning Officer would also assist with maintaining and building these relationships.

Goals:

a) Council to consider the appointment of a 0.4 FTE Temporary Weed Planning Officer for a trial period of 12 months to co-ordinate all Council weed management on ground operations, assess and comply all DA weed plans as well as research and report on key weed initiatives articulated in the Action Plan including weed prioritisation.

b) Provide a prioritisation based on declared weeds and incorporates a secondary list for other locally important weeds (Appendix 3 on page 56). Appendix 3 should be further refined to ensure adequacy within the municipality.

c) Council to consider allocating staff resources to implement a co-ordinated approach to widespread weed management on Council managed lands including roadsides. Assess and evaluate a partnership process to share responsibility for identification of weeds in sensitive places on various tenures that are a priority to remove as they act as a continuous seed source to surrounding areas of previous/current weed management (eg roadside weeds Dept of State Growth and land near Glebe Hill). Aim to protect key areas from widespread weeds. Ensure revegetation is considered as part of weed removal projects as well as photo point monitoring.

d) Assess, evaluate and report to Council in relation to a system to encourage private landholder participation in on-property weed control. This will increase on-ground human resources and participation on private land. – Report to Council after 12 months with a view to implementation within 2 years. (ie: one concept may be to adopt a principle of 'Land Stewardship' building on the existing Council rate remission for covenants (in place since 2002)).

e) Strengthen the Development Assessment process for Weed management under the current Planning Scheme provisions.

f) Assess, evaluate and report to Council in relation to the inclusion of Weed Bonds in the DA process as well as the advantages of a Council facilitated DA weed management planning and implementation process at the developers' expense.

g) Continue to build and maintain relationships with other natural resource managers within the region.

h) Increase public awareness of weeds (links into Communications Strategy in SO3).

i) Link in with other NRM weed management activities.

j) Identify all possible sources of funding and ensure all avenues are continually accessed. As budgetary constraints are a major barrier to success, all sources of funding should be monitored and applied for where suitable.

k) Continue to monitor implementation and success of weed control and revegetation projects identified in Reserve Activity Plans.

l) Continue to maintain and improve the weed GIS dataset on Council Reserves in accord with Reserve Activity Plans and upload all additional non-Council land weed data acquired from DA's for large subdivisions to the Natural Values Atlas (NVA). Maintaining an in house GIS system, while ideal, is potentially expensive and the use of the NVA is encouraged as a weeds GIS database for non-Council lands.

m) Promote the importance of secondary and tertiary weed management including revegetation, natural regeneration and monitoring activities into weed management projects especially where public or developer funding has been involved.

n) Prepare maps for all priority weeds on Council managed lands through the RAP process and review roadsides mapping. Have them accessible on the Council weed website. (This map could also show areas which are under current management).

o) Council weed maintenance staff are Chemcert trained and volunteers are adequately trained for techniques approved in the field such as cut and paste. Provide weed id assistance to volunteers.

p) Access to best practice management hygiene practices for staff/contractors and within planning approvals process.

q) Develop a process to co-ordinate the 4 weed inspector's roles to meet Council's obligations under the WMA.

r) Under the 5 year RAP review process ensure weed management strategies within those plans correlate with the weed lists and priorities within the CWS.

- meets goal 2 of the Australian Weed Strategy
- meets Key Area 2, 4 & 6of Southern Tasmanian Weed Strategy
- incorporates Component 5 & 6 of the Tasmanian Weed Plan

SO 3: Enhance community participation and stakeholder engagement

Effective strategic weed management across all tenures in Clarence City Council is dependent on increasing the level of community participation and stakeholder engagement, it is imperative that new ideas are incorporated to include increased community participation and stakeholder engagement.

Goals:

a) Assess, evaluate and report to Council in relation to Council providing a community service approach for weed management on private land

building on existing rate rebate scheme for land subject to Conservation Covenants.

b) In the event of endorsed Council support to progress with a community service approach to multi-tenure weed management review and report to Council on a range of incentive options to encourage community participation in weed management on private land. As an example concept, this could include rate rebates to ratepayers for weed management. Properties eligible for rate reduction should have weeds on the priority list including the CLL. Removal of widespread weeds is feasible if small properties are encouraged to regularly manage their properties. A simple property weed management plan could form part of the rate reduction offer.

c) Prepare a Weed Communications Strategy that can be implemented with minimal increase in staff resources. This should identify implementation of modern communications tools like, Facebook to aid the sharing of weed knowledge and education. (These social media tools can be updated during work time and do not have to be reviewed outside of business hours).

   Develop a separate web-page as part of the Council web site that is kept up-to-date and holds all the relevant weed information central to Clarence City Council. This should be linked to other agencies and act as a central page linking to the other tools such as Facebook/Instagram with an ongoing regularly updated blog. A forum could form part of this website also to act as a central communication tool to aide ease of communication. This is often a good learning tool also for others who may simply read the forums and not contribute, aiding dispersal of key information.

   The aim for the Communications Strategy is to provide a tool-box guide to ensuring effective dissemination of information throughout Council and to begin fostering renewed interest throughout the community.

d) Enhance Councils capacity to manage weeds by ensuring ongoing relationships with relevant stakeholders is fostered.

- meets goal 3 of the Australian Weed Strategy
- meets Key Area 4 and 5 of Southern Tasmanian Weed Strategy
- meets Component 5 of the Tasmanian Weed Plan

SO 4: Strengthening assessment of weeds under the planning scheme

Continued development within priority natural areas (as identified under the Clarence Interim Planning Scheme 2015) poses inherent conflict in protecting the integrity of biodiversity values versus protection of built infrastructure. Fire protection zones, clearing for roads, energy and water and other anthropogenic disturbances act as ideal pathways for weeds to spread quickly across the landscape. Balancing development with environmental outcomes is difficult and requires appropriate controls in the planning scheme to ensure adequate consideration of weed issues for future development applications.

There are two issues to consider under the Natural Assets Code of the Clarence Interim Planning Scheme 2015 and the Clarence Local Provision Schedule of the new Tasmanian Planning Scheme:

1. Inclusion of priority weeds including the Clarence Local List (CLL) into the Natural Assets Code and adequate consideration of these weeds in the assessment process and future conditions of approval across the municipality.

2. Tighter assessment process for development applications to minimise continued spread of weeds. Development without strict conditions for weed management and hygiene practices often results in the proliferation of weeds throughout areas once generally free of these weeds. This may either be in areas near priority natural areas (as shown within the Planning Scheme overlays) or somewhere where transport of seed such as via transport corridors aides this spread into natural areas. Future conditions for development approvals should as a minimum include detailed conditions of weed management that should be implemented at the start of any project and also include best practice hygiene methods. Increased compliance checks of conditions of approvals should also be incorporated to increase the onus on proponents to limit the spread of these weeds from their activities.

Goals:

a) Seek agreement to incorporate the following amendments to the Clarence Interim Planning Scheme 2015 and the new Tasmanian Planning Scheme.

1. It is proposed that the Clarence Interim Planning Scheme 2015 is amended to change the current wording of Construction management clause 9.8 (b) to the following: "(b) the presence or spread of weeds".
    a. The rationale being that as currently worded it could be argued that Council can only impose a condition that relates to hygiene rather than control or treatment.
2. It is further recommended that the term "weeds" is defined to include Priority Weeds for the Municipality, as identified in the Clarence Weed Strategy, including the Clarence Local List.
3. Council's standard weed management condition ENG M7 (which it is understood is generally only applied to subdivision) should be amended as follows:
    a. Weed management plans and sign off should rest with the Environment and Sustainability Group within Council's Asset Management Department.
    b. To apply to all development occurring in areas of weed infestation, not just subdivision.
    c. Occupancy certificates (or similar) should ideally not be provided until the Primary Treatment as set out in the weed management plan has been implemented and funding has been allocated to carry out secondary and tertiary treatments including revegetation to the satisfaction of Council over a 5 year period. It is understood that the building surveyor in collaboration with Council will maintain this responsibility for approval of initial primary treatment and ensuring appropriate level of funding has been allocated for 5 year maintenance program to be facilitated by Council at the developer's expense.
    d. Conditions to place the onus on proponents to undertake further weed management should poor implementation of weed management or hygiene practices impacts upon key natural areas should be investigated.

b) Consider the advantages and practicalities of adding a Weed Bond for development applications. This concept would allow Council to take on the weed management coordination role of development projects so that long term effectiveness of weed management is incorporated. The current system results in primary weed management treatment which means that while weeds may reduce temporarily, they are likely to return in the long run (possibly in greater numbers).

c) Ensure weed management conditions agreed to in the endorsed DA Weed Management Plan are fulfilled by adequate reporting and auditing at the developer's expense and the imposition of weed bond as per b.

- meets Key Area 1, 2 and 3 of Southern Tasmanian Weed Strategy
- incorporates elements of Component 7 of the Tasmanian Weed Plan

SO 5: Best practise weed management.

Staff used in on-ground weed management should be trained in best practise weed management techniques. The overuse of chemicals can lead to serious impacts on the environment where the benefit to weed removal are far outweighed by the costs to the environment. While not all people who will undertake weed management (such as private landholders) will have the necessary training (ie: ChemCert), all Council staff should be well trained. Council may also provide some useful guides or information to aid the public in best practise weed management.

Further hygiene practices should also be considered such as Council wash down facilities. Such as the serrated tussock facility, it is useful to review Council truck movements between depots or frequently visited areas by on ground workers and establish the usefulness of additional wash down bays.

Goals:

a) Ensure staff and volunteers involved in on-ground weed management have undertaken adequate training (appropriate ChemCert or equivalent)

b) Keep up-to-date with weed management research and incorporate new techniques were relevant.

c) Provide links to information on best practice methods (ideally as part of website) to assist other weed managers.

d) Review and report to Council on the effectiveness, functionality and adequacy of wash down facilities across the municipality.

e) Provide a policy and system to alert the public to Council pesticide programs. This should include allowing the public to have the ability to alert Council if they are sensitive to many of the common pesticides used.[10]

- meets Key Area 4 of Southern Tasmanian Weed Strategy
- incorporates Component 6 of the Tasmanian Weed Plan

SO 6: Implementation of Weed Work Plans (WWP) in Council operations

To ensure major weed removal projects are planned properly and use the best methods available, a Weed Work Plan (WWP) should be prepared at the project planning stage for major weed projects. An easy to use set of criteria will be developed in order to clarify which weed projects will be subject to a weed work plan. The added benefits of proper planning for major weed projects are numerous including use of methods for best chance of success, limiting chemical use to that which is recommended and selection of correct chemical, consideration of alternatives to chemicals and potential for other removal techniques, costing projects and evaluating performance with photo points before and after.

[10] example used at Shoalhaven City Council - http://www.shoalhaven.nsw.gov.au/Environment/Weed-management/Pesticide-use-program?portalid=3

Incorporating assisted natural regeneration processes and revegetation into weed planning is also recommended.

Goals:

a) Establish a easy to use set of criteria to define whether a major weed project requires a WWP

b) Design an easy to use WWP template.

c) Develop protocols to sign off on all WWP.

d) Review Council operations and amend current methods where appropriate.

e) Reducing the overall use of all chemicals as weeds come under control as a result of well-implemented planning.

SO 7: Monitoring and evaluation

The effectiveness of the management plan is dependent on the ability to monitor, review and update. There is an inherent risk with all strategic planning that relevance and impetus fades with time. Monitoring and evaluation must be incorporated to ensure some form of review and adjustment where necessary. New ideas may originate, current ideas may prove unrealistic. These are normal barriers to success and the ability to include these challenges is vital.

Goals:

a) Ensure yearly review of achievements and re-focus on achieving those targets not met.

b) Every 5 years undertake a review of this strategy: update the strategies and actions were appropriate.

c) At five yearly intervals incorporate comprehensive data in State of the Environment reporting processes summarising paid and volunteer work

- meets Key Area 7 of Southern Tasmanian Weed Strategy
- incorporates Component 8 of the Tasmanian Weed Plan

Fifteen Year Action Plan

The Action Plan is on the following pages

FIFTEEN YEAR ACTION PLAN

GOAL	ACTION CODE	ACTION	RESPONSIBILITY	TIMING	PERFORMANCE MEASURE	COST	PRIORITY
	SO 1: Prevent establishment of new high risk weed species						
SO 1c	1.1	Monitor and refine list of high risk weed species relevant to the Clarence municipality	Lead: CCC with DPIPWE/ NRM South	Within Year 1	Clarence weed list of high risk weed species	Temporary WPO role	H
SO 1d SO 1c	1.2	Develop a process to verify and document new sightings which includes a rapid response strategy for new infestations	Lead: CCC Other: DIER/PWS/ DPIPWE	Within Year 2 and then ongoing	Documented process	CCC, Temporary WPO	M
SO 1b	1.3	Implement communication tools to assist with the public in reporting potential sightings	CCC WPO / DPIPWE / NRM South	Part of Communications Strategy – Action 3.1	Development of a Communications Strategy	See Action 3.1	H
SO 1e	1.4	Ensure relevant staff have access to training opportunities regarding weed identification and emerging knowledge Undertake an ID/weed management workshop every 3 years for staff and interested people in the community Regular refresher training for weed inspectors (DPIPWE provides training for no cost)	CCC	Yearly	Staff undertaking training List of high risk weeds is distributed to relevant staff/groups (yearly distribution even if no change)	$2500 workshop cost every 3 years	M
SO 1g, h	1.5	Have in place a weed hygiene strategy that includes council operations, key industry groups and developments - Identify high risk pathways or industry groups with high potential to introduce high risk weed species. - Maintain relationship with key groups identified in this assessment	CCC, DPIPWE, NRM South	Years 2 to 3	Document outlining high risk pathways. Regular liaison with relevant groups	CCC Temporary WPO	M

GOAL	ACTION CODE	ACTION	RESPONSIBILITY	TIMING	PERFORMANCE MEASURE	COST	PRIORITY
Various	1.6	Keep abreast of impacts from climate change regards the spread of weeds and potential for weeds establishment due to a changing climate	CCC	Year 2 then ongoing	Document reviewing climate change advice to be biennially updated	Climate Change Officer, Temporary WPO	M
SO 1c	1.7	Review list of sleeper weeds within municipality	CCC	Year 2 then biennialllly	List of sleeper weeds	CCC, Temporary WPO	M

Goal	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
	SO 2: Reduce impacts of widespread weeds						
SO 2a	2.1	<u>Council to consider the appointment for 12 month trial period a 0.4 FTE Temporary Weed Planning Officer to</u> 1. Coordinate weed management operations: 2. Assess, evaluate and report to Council on Projects discuss in this CWS:	CCC	Within 3 months	Appointment of Temporary Weed Planning Officer as part of Annual Plan budget process	$35,000 (0.4 FTE)	H
SO 2a, b	2.2	Refine weed prioritisation and CLL (Clarence Local List) to ensure prioritisation is relevant to the municipality	CCC – Natural Resource Officer	Year 1	Weed Prioritisation and CLL	CCC Temporary WPO	M
SO 2i SO 2c j	2.3	Assist Natural Areas Officer with implementation of the weed management aspects of Reserve Activity Plans and relevant on ground works Five yearly remapping of weeds as part of RAP review process to monitor change	CCC	Yearly	Strategic Weed management for RAP's implemented	Natural Assets Officer and NRM Planning Officer	H M
SO 2c SO 2n	2.4	Liaison with Bushcare / Coastcare Groups on specific tasks on reserves Review training requirements (ie: cut and paste) as well as weed id assistance. Provide training where required	CCC – Volunteer Co-ordinator Temporary WPO	Yearly	Continued success of landcare groups 1 person minimum in each group has chemcert	Volunteer Co-ordinator, Temporary WPO Chemcert training cost where required	H H
SO 2g	2.5	Access additional volunteers through the Landcare Extra Hands project where additional resources are required Also use Greencorps, Green Reserve, Pakana Services (NRM South) and Conservation	Tas Landcare CCC	Ongoing	Use of other groups where practical		H H

Goal	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
		Volunteer teams on suitable projects					
SO 2g	2.6	Link in with regional and statewide groups/ projects eg SPLATS - sea spurge local action team	CCC with associated groups (ie: SCAT, NRM South, Tas Landcare, Greening Australia)	Ongoing	Participation in Group committees / communication links		H
SO 2g	2.7	Temporary Weed Planning Officer to attend meeting of municipal Temporary Weed Planning Officers coordinated by DPIPWE which are held twice a year. From this build upon surrounding Council relationships in weed management	DPIPWE with local Councils	Year 1	Input into Regional Weeds Committee		H
SO 2l	2.8	Identify key sites for priority weed containment and develop actions to begin control Identify key locations of widespread priority weeds that are not on Council land that are acting as an ongoing seed source affecting identified key assets (ie: serious infestations on private land adjacent to Council Reserve – control will reduce ongoing costs to management on Council land). Target widespread weeds where protecting key assets	CCC, Temporary WPO	Within 3 years	Mapping of priority weeds and associated key sites for weed management.		H M
SO 2j	2.9	Maintain current weed budget for Council owned lands	CCC	Yearly	Level of weed budget		H
SO 2j	2.10	Apply for funding for any additional weed management resources that are required to control identified widespread weeds that are impacting key assets	CCC NRM Staff	As available	Applications for funding		M

Goal	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
SO 2a	2.11	Target eradication (control if not feasible) of widespread priority weeds along waterways, roads, tracks, quarries and tips to minimise ability for spread. Requires collaboration with many other key stakeholders such as State Growth	CCC, DPIPWE, DSG, all identified stakeholders	Over 15 years	Plan showing target areas and 2 yearly review of achievements		M
SO 2h	2.12	Implementation of Communications Strategy in action 3.1	CCC	As funding permits	Communications Strategy		H
SO 2l	2.13	Maintain council weed dataset for Council reserves and upload new significant DA weed maps to Natural Values Atlas	CCC (GIS Unit and Weeds Officer)	Within year	Weeds databases are up to date	Use of GIS staff	H
SO 2n SO 2c	2.14	Review current Council roadside weed assessment & Mapping Council Roads with serious infestations of priority weeds should be the focus. This will help to minimise the continued spread to other areas. Ensure follow up treatments to reduce ongoing control for those species this could be achieved on. Liaise with Department of State Growth (DSG) in regards to roadside weed spraying within 1m of road edge Note: DSG is developing a draft State Roadside Weed Strategy.	CCC and DSG	Ramped up in first 2 years then ongoing	Roads with priority weed infestations are treated.		M M
SO 2g SO 2i	2.15	DSG & PWS Land Ramp up weed management in publically visible locations to demonstrate to community the importance of the issue	CCC, DPIPWE, Dept State Growth	By end Year 2	Cross agency collaboration and additional on ground works		H
SO 2d	2.16	Continue to encourage landholders with declared weeds on their property to action removal under the powers given under the WMA. Amend existing template for use within	CCC	Immediately	Use of template for weed notification		H

Goal	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
		Clarence municipality. (template provided in Appendix 10 on page 95)					
SO 2b k	2.17	Target or continue removal of Priority 1 species and for major weed projects prepare a weed work plan to ensure best practise The Weed work plan should be a short note on the project, methods and timeframe for control that should also include Photopoint monitoring	CCC	Yearly	Reducing extent of high risk weeds within Council Eradication or greatly reduced extent of Priority 1 species after 5 Years Adequate planning prior to undertaking weed proejcts		H
SO 2q	2.18	City Rangers Develop an agreed process of how public reports into weed issues are managed to ensure effective response is given. The level of priority of the weeds should be included in the standard procedures for response to ensure attention is given based on the species priorities. Clearly define roles of Natural Asset Officer and Ranger coordinator in responding to obligations under the WMA	Temporary WPO with City Ranger Coordinator	Immediately	Better ability to handle public reports		H
SO 2k SO 2r	2.19	RAP Undertake review of current RAP's and ensure those strategies are aligned with the weed lists and priorities set out within the CWS. Work with the Natural Areas Officer to ensure RAP weed programs are efficient and best practice	NRM Planning Officer	Year 1-2	Review of RAP's undertaken		M
SO 2g	2.20	Surrounding Councils CCC to continue to build relationships with surrounding Councils and look for joint projects that may be feasible and link	CCC	Year 1-3	Working with other Councils		M

Goal	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
		projects where success is more likely with combined efforts. Link to SO 2e. Review any current management plans with these Councils and seek new opportunities.					
SO 2e SO 2f	2.21	**Assess, evaluate and report on application of Weed Bonds as part of DA process as well as the advantages of a Council facilitated Weed Management planning, implementation and compliance process at developers expense**	Temporary WPO	Year 1	Report to Council	Temporary WPO	H

Goal	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
	SO 3: Enhance community participation and stakeholder engagement						
SO 3c	3.1	Develop a Weed Communications Strategy and implement. - Objective is to target increased participation by private landholders in weed management - This should include usage of modern communication tools such as Facebook, - look in feasibility of hotline for public calls - include a dedicated and revamped Council weed website page - consider better signage of weeds within municipality for Priority 1 species as a minimum where they occur along highly visited areas such as roadsides. - The aim of this strategy is to provide a clear way forward to ensure excellent dissemination of information, promote involvement in weed management within the municipality and to provide various easy to access tools for the public and other key stakeholders. With a high portion of weeds on private land, increasing participation in weed mgt by private landholders is vitally important.	CCC lead with assistance from consultancy	Years 1 to 2 Implement over Years 2 to 5	Communications Strategy and implementation of actions	$5,000 to 10,000	H
SO 3a SO 3b	3.2	**Assess, evaluate and report to Council on the viability of a Community Service approach to weed management on private land** Subsequently assess, evaluate and report on a range of incentives to improve weed management on private land. As an example, incentives may be a weed rate levy or the principle of 'Land Stewardship' (within Clarence Plains Catchment	Temporary WPO	Report to Council after 12 months	report by end of Year 1. Undertake review of measures at time of the 5 Year Strategy review	Temporary WPO	H

Goal	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
		Management Plan) which builds on the existing Council rate remission for covenants (in place since 2002).					
SO 3d	3.3	Identify key stakeholders Support/ foster cross-agency relationships (ie: DPIPWE, NRM South, DSG, TasWater, Aurora, Tas Networks) and ensure ongoing contact Involve agencies in cross tenure projects wherever possible	All relevant agencies	Year 1 and ongoing	Documented and cross agency projects	CCC	H
SO 3c	3.4	Publicise progress on weed management projects in Council newsletters (link with Communications Strategy)	CCC	Yearly	Incorporated into Council newsletters	CCC	M
SO 3d	3.5	Continue to support and promote community groups Continue to identify funding sources for community groups and land managers (ie: WONS projects, NRM South, TAS Landcare, Federal Grants)	CCC Landcare, Volunteer coordinator	ongoing	Community Groups receive adequate support	Landcare Vol co-ordinator role	H H

	SO 4: Strengthening assessment of weeds under the planning scheme						
SO a	4.1	Investigate and seek the inclusion of Priority weeds including the Clarence Local List from Action 2.1 into definition of weeds in Clarence Interim Planning Scheme 2015	CCC	Years 1-3		Temporary WPO	H
SO 4a SO 4b	4.2	Seek amendments to Planning scheme as per SO 4b goals which include Weed Bonds as part of the DA weed management process. Seek to have priority weeds given adequate conditions of approvals under the planning scheme	CCC	Years 1-3		Temporary WPO, Part of planning process	H H
SO 4a	4.3	Review and alter amended provisions if necessary	CCC	Years 5 and 10			H
SO 4a,b,c	4.4	As part of the proposed site assessment for all development applications, a site weed plan should be mandatory along with a suite of management actions for 5 year of maintenance involving secondary and tertiary treatment as well as revegetation, monitoring and compliance at the developers expense	CCC	Year 1	Requirement is part of standard development applications.		H

Goal	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
	SO 5: Best practise weed management						
SO 5d	5.1	All key land managers to follow the Tasmanian Washdown Guidelines for Weed and Disease Control for machinery[11], vehicle and equipment hygiene Contractors to adhere to the above (ideally also a condition of approval)	CCC in conjunction with other lead agencies	Ongoing			H H
SO 5d	5.2	Liaise with DPIPWE to seek a revised methodology to implement an improvement to current hygiene practices. This should be regionally delivered to improve current practices. As an example is the continued spread from site to site of serrated tussock due to poor hygiene methods. Contractors could be 'certified' for good hygiene practices and a certified register maintained. (DPIPWE may be best to consider this initiative)	All relevant agencies with DPIPWE lead	Ongoing	Improved hygiene practises		M M
SO 5a	5.3	Council on-ground weed management staff are ChemCert trained where appropriate. Link in with any regional workshops where they are available Work with the Landcare Volunteer Coordinator to provide adequate training for volunteers. (review current training levels and what Chemcert levels are required for volunteers)	CCC Landcare Volunteer Co-ordinator	continuous		Cost of course X participants	H
SO 5 bc	5.4	Develop or source a clear and concise checklist for best practise weed management incl. adequate use of herbicide and hygiene measures. Ensure all	CCC	Year 1 to 2	Checklist available		H

[11] DPIPWE (2004)

Goal	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
		relevant staff have access to this checklist and understand it. Update checklist with new best practice information when available. Statutory weed mgt plans should guide the checklist.					
SO 5c	5.5	Assist relevant weed managers being aware of the DPIPWE weeds website and associated documents for recommended species control including advice in threatened species recovery plans	CCC	Ongoing	Use of key weed resources for weed projects		H
SO 5b	5.6	Maintain regular contact with staff and relevant land managers to discuss weed treatment methods to encourage regular staff discussions and feedback	CCC	Ongoing			H
SO 5b	5.7	Keep abreast of the current best practice recommendations regarding herbicide application for weed management and adjust processes accordingly	CCC, DPIPWE, NRM South	Ongoing			H
SO 5b	5.8	Provide links on website to best weed management practices so all weed managers in the municipality have access to information in one area	CCC, DPIPWE, NRM South	Within first year	Link to information on website		H
SO 5d	5.9	Investigate adequacy or efficiency of wash down facilities	CCC	Within 5 years	Report on a washdown facilities presented to Council		L/M
SO 5e	5.10	Investigate the practicalities of implementing a web based pesticides notification system which automates a need to notify sensitive people/places. (Contact Shoalhaven City Council into how the system works)	CCC	Within 5 years	Review of the worth of having the web based notification system.		L/M

Goal	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
	SO 6: Implementation of Weed Work Plans (WWP) in Council Operations						
SO 6a	6.1	Develop a set of criteria to clarify which major weed projects will be subject to a WWP Prepare a template for a Weed Works Plan (WWP) to be used for all Council operations	Temporary WPO CCC	Within 12 months	Set of Criteria to decide which weed projects will be subject to WWP Preparation of template		H
SO 6b	6.2	Develop a process to enable WWP to be checked and signed off by appropriate NRM Staff	Temporary WPO CCC	As WWP begin to roll out	WWP are signed off		H
SO 6e	6.3	Consider alternative methods to herbicide use where practicable. Consider cut and paste rather than broad scale application to operations where this is feasible and supported by a WWP.	CCC	As WWP are prepared			H
SO 6 de	6.4	Keep abreast of the current scientific views on the use of herbicides and amend work programs where necessary based on the science over the term of the Action Plan.	CCC	Over the 15 Years			M

Goals	Action Code	Action	Responsibility	Timing	Performance Measure	Cost	Priority
	SO 7: Monitoring and evaluation						
SO 7a	7.1	Ensure adequate resources for data collection, monitoring and evaluation	CCC		Informative data used in reviews		H
SO 7a	7.2	Ensure review is adequate and free from bias and that data collected is useful to assist with review		Year 5 and 10			H
Various	7.3	Funding applications should ensure follow up work is included rather than one off treatments		As appropriate	Follow up work included in all funding applications		H
SO 7a	7.4	Complete a review of the actions and update where necessary		At 5 and 10 years	Updated actions		H
SO 7ab	7.5	If Staff resources are adequate undertake Yearly progress check and amend next year's goals where necessary		Yearly	Short report identifying achievements and areas requiring re-focus		H
SO 7c	7.6	At five yearly intervals incorporate comprehensive data in State of the Environment reporting processes summarising paid and volunteer work					H

8 MEASURING PROGRESS

Progress on the Fifteen year Action Plan will be reviewed regularly against performance indicators that will help measure the effectiveness in achieving the strategic objectives. It is anticipated that key actions will be reported by the relevant natural resource officer as part of the Council reporting process. After 5 years a report will be provided to Council to summarise implementation and achievement of actions and key performance indicators against outcomes and strategic objectives. Where major issues are highlighted, a full review of the CWS should be undertaken.

Progress on actions within the action plan should form a large part of the performance indicators. It is acknowledged that the practicalities of achieving everything within the CWS given the constraints such as budgets and human resources are difficult. The majority of actions have a timing to be achieved and performance indicator to provide assistance in evaluating performance against the strategy.

Plate 2 - pampas grass at Mt Rumney (2012)

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APPENDIX 1 – POLICY AND LEGISLATION OVERVIEW

Tasmanian *Weed Management Act 1999*

This is the core piece of weed management legislation within Tasmania. The Act defines a list of 'declared' weeds that:

- Present a threat to Tasmania but are not yet naturalised
- Present a threat but are currently of limited distribution
- Are widely distributed requiring management due to their threat to the native environment and/or agriculture

There are 115 weeds that have been declared for Tasmania. 36 of these weeds have a presence within the Clarence municipality and are detailed in Appendix 2 on page 54.

The *Weed Management Act 1999* (WMA) also provides a Statutory Weed Management Plan (WMP) for each of these declared weeds. The WMP places each weed into either Zone A or Zone B within each municipality. The management objectives for each zone are:

- Zone A – Eradication
- Zone B – Containment (preventing spread to other areas free of that weed)

Under the WMA, landholders are under a legal requirement to control weeds on their land. Weed Inspectors are given powers to enforce the requirements of the Act; they can be employees under state or local government or relevant bodies including community groups. Clarence City Council has seven staff trained under the WMA as weed inspectors, including six city rangers plus the Natural Assets Officer. These inspectors must undergo training relating to their responsibilities under the WMA and have the responsibility of enforcing this Act. Failure to abide with the Act can result in on-the-spot fines or a requirement notice issued by an Inspector, requiring a landholder to undertake specific weed management actions.

Weeds of National Significance

The *Australian Weed Strategy* identifies a list of 33 Weeds of National Significance (WONS). National and State Strategies have been developed for some of the WONS that are present within Clarence. Individual landowners and managers are ultimately responsible for managing WONS. State governments are responsible for overall legislation and administration. Federal government funding for weed control is largely informed by the WONS strategic goals.

10 of the WONS have a recorded presence within the Municipality of Clarence (Appendix 4 on page 58). These are bridal creeper, boneseed, English and canary brooms, African boxthorn, Chilean needle grass, serrated tussock grass, blackberry, willows and gorse.

The more recent WONS Projects undertaken within the municipality include Southern Tasmania Council Authority (STCA) boneseed project, serrated tussock grass project (managed by DPIPWE) and boneseed week.

All of the original 20 WONS are now declared under the WMA and all jurisdictions have agreed to declare all WONS species even is that weed is unlikely to occur in that jurisdiction. The intent of this action is to prevent the sale and trade of any WONS species.

Implications to Strategy

- Consider national targets for WONS into local weed control programs
- Grant applications to the Commonwealth must include clear reference to WONS strategic goals

National Environmental Alert List

Plant species that are in the early stages of establishment with the potential to become a significant threat to biodiversity are shown on the National Environmental Alert List[12]. 10 of these species are declared under the Tasmanian *Weed Management Act 1999*. To date there are 28 non-native weeds on this list of which 11 have some known potential distribution within Tasmania (Appendix 5 – Priority 1 to 4 known locations

[12] accessed via http://www.environment.gov.au/biodiversity/invasive/weeds/weeds/lists/alert.html

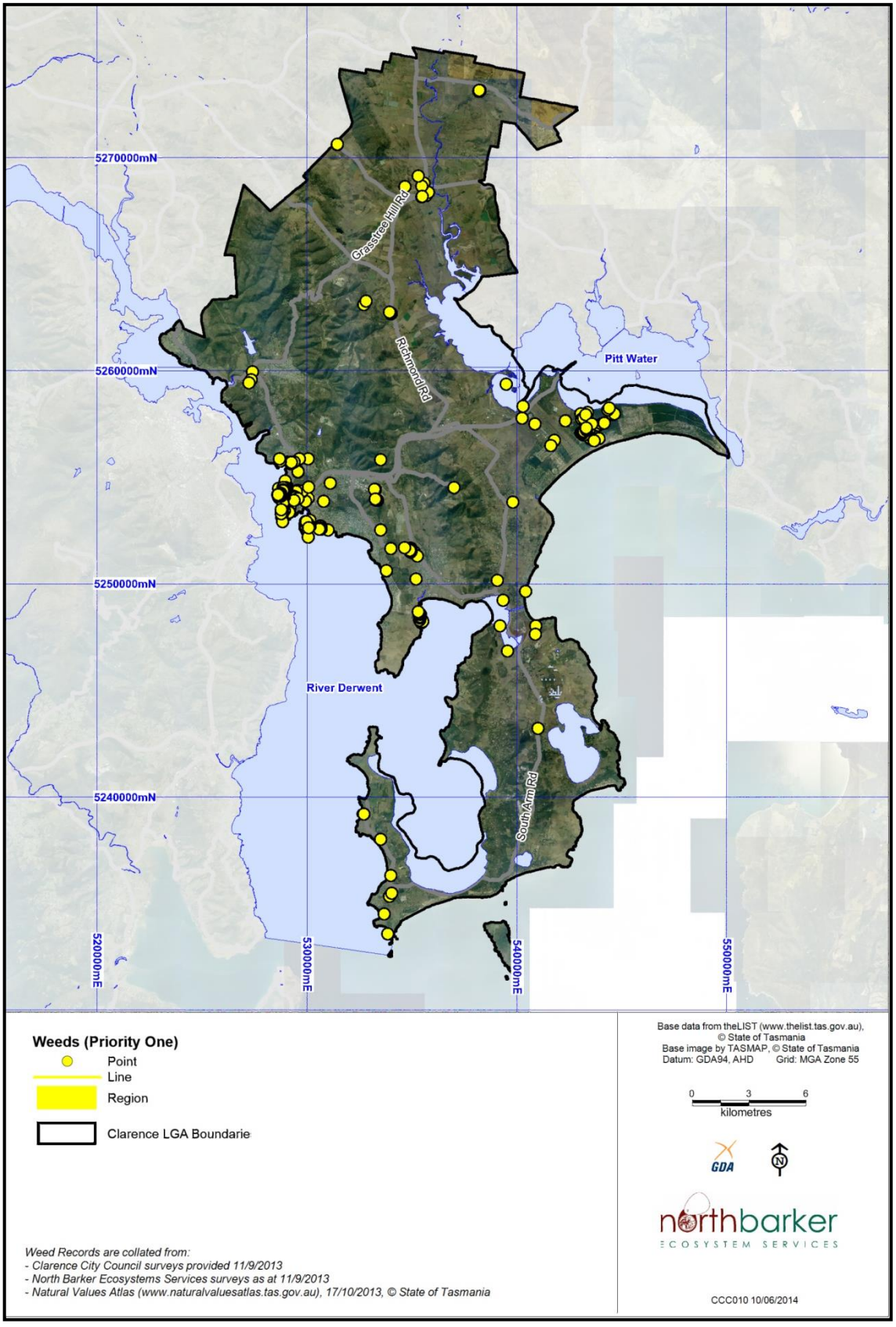

Figure 4 - Extent of Priority One weeds

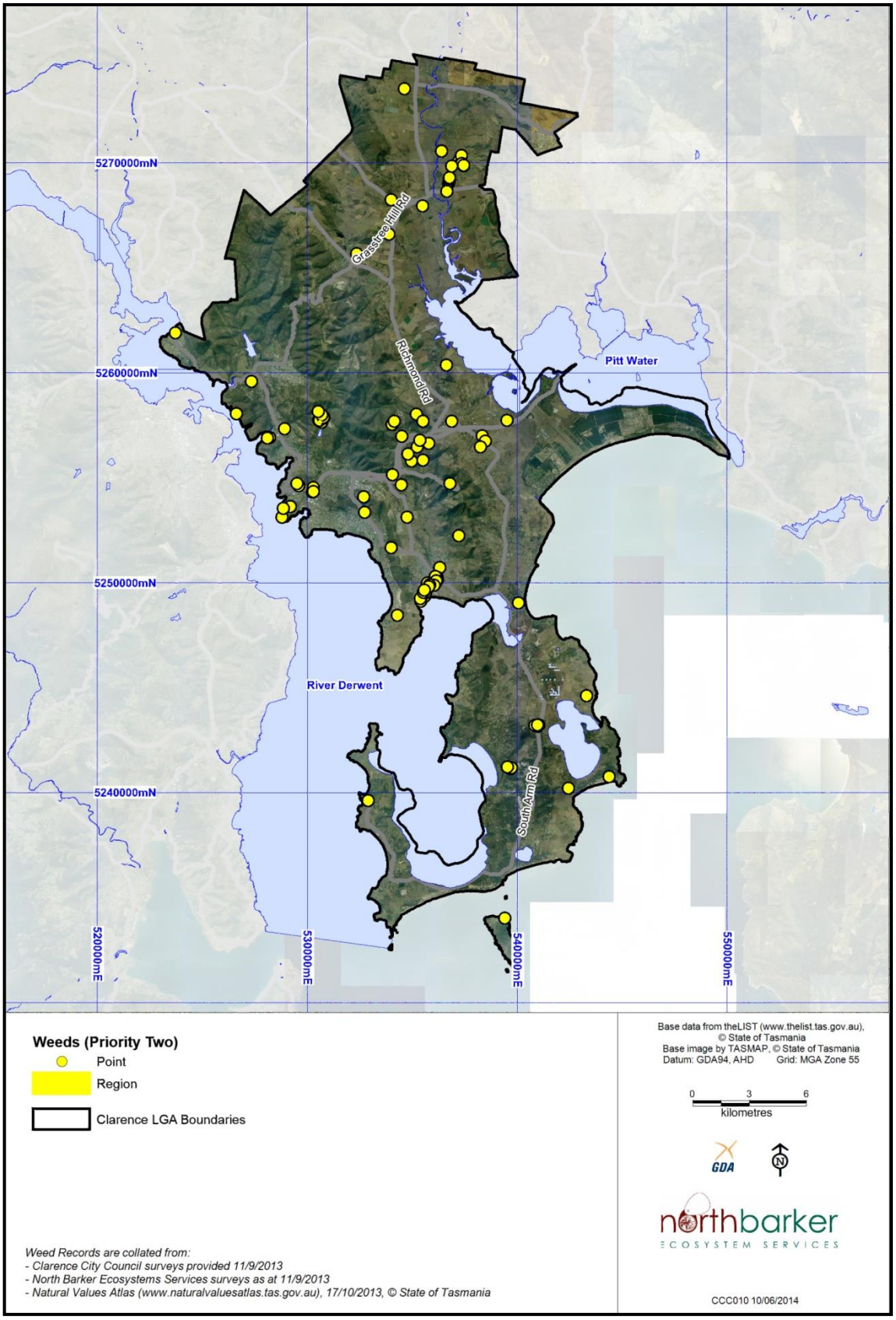

Figure 5 - Extent of Priority Two weeds

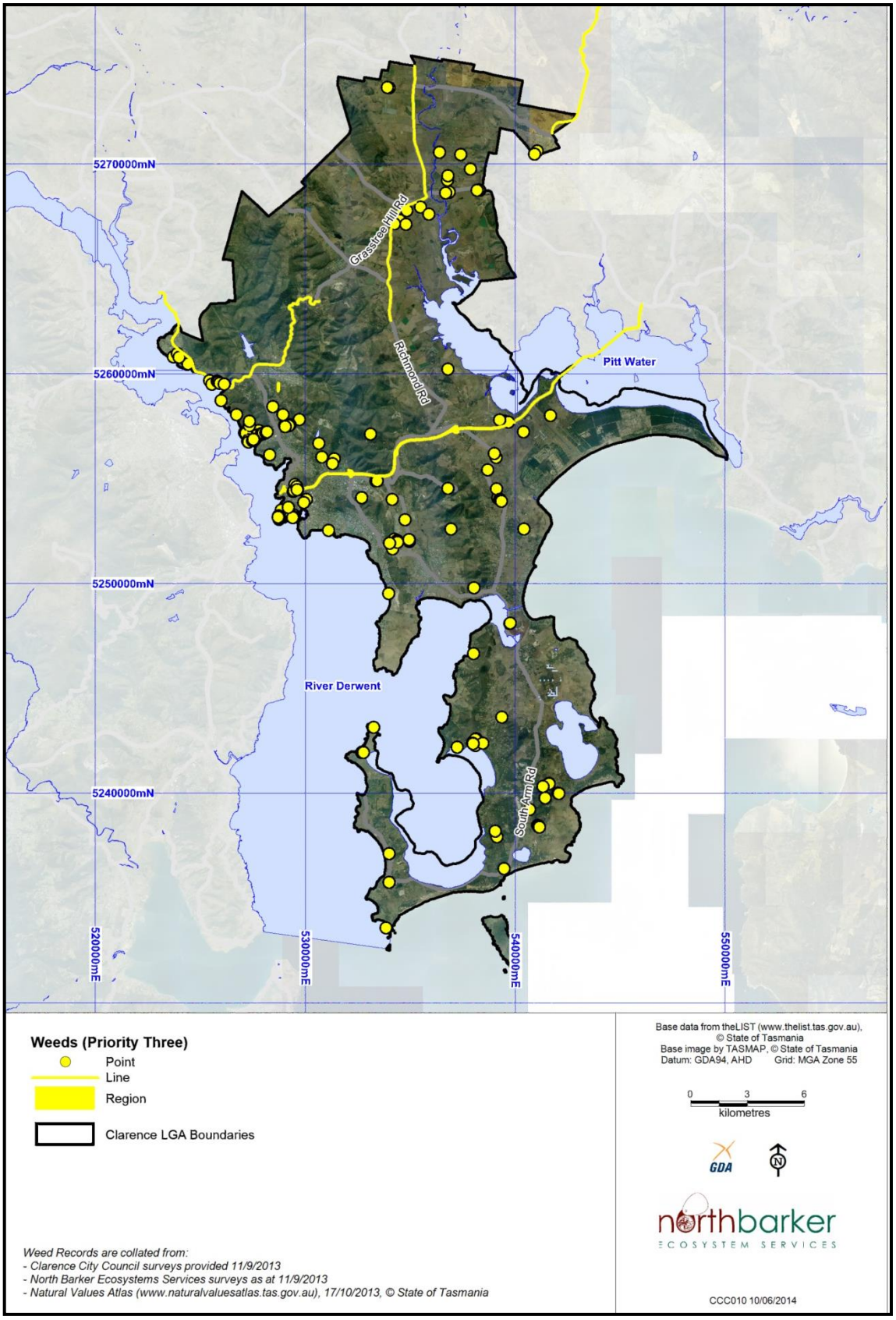

Figure 6 - Extent of Priority Three weeds

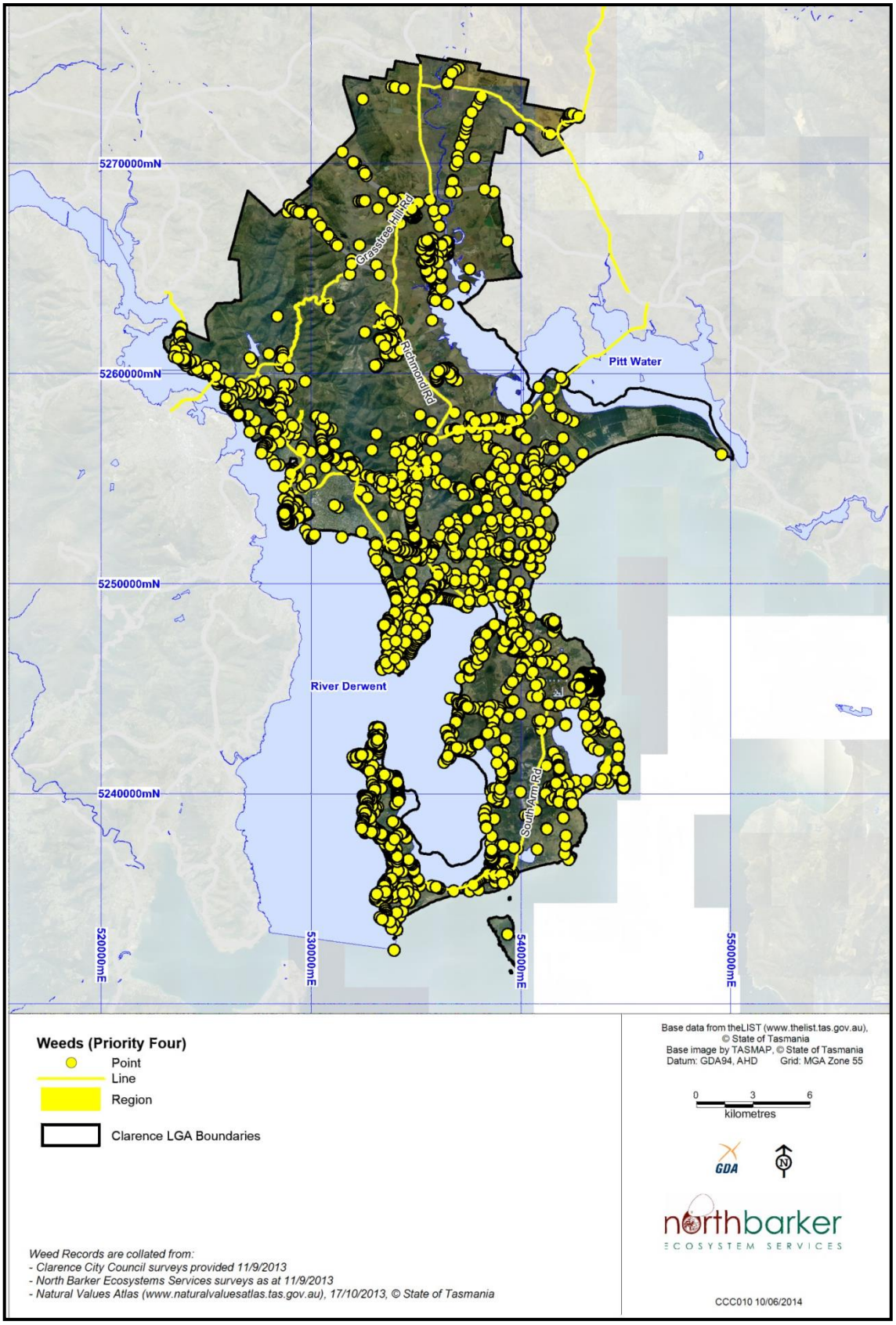

Figure 7 - Extent of Priority Four weeds

Appendix 6- National Environmental Alert Liston page 65).

Southern Tasmania Weed Management Strategy

The Southern Tasmanian Weed Strategy (STWS) is based on principles adopted from the *Australian Weeds Strategy* 2007 developed by the Australian Weeds Committee. These are:

1 Weed management is an essential and integral part of the sustainable management of natural resources for the benefit of the economy, the environment, human and amenity.

2 Combating weed problems is a shared responsibility that requires all parties to have a clear understanding of their roles.

3 Good science underpins the effective development, monitoring and review of weed management strategies.

4 Prioritisation of and investment in weed management must be informed by a risk management approach.

5 Prevention and early intervention are the most cost-effective techniques for managing weeds.

6 Weed management requires coordination among all levels of government in partnership with industry, land and water managers and the community regardless of tenure.

7 Building capacity across government, industry, land and water managers, and the community is fundamental to effective weed management.

Tasmania's weed management strategy *WeedPlan* is also based around these principles.

Successful implementation of this strategy is underpinned by the following additional principles:

A Adequate resources are required to coordinate implementation of the strategy;

B Key stakeholders engaged and agreed longer-term action plan developed;

C Appropriate approvals sought from land managers and agencies;

D Appropriate hygiene practices developed and implemented;

E Infestation(s) surveyed and recorded using National Core Attributes for weed mapping and data fed into the DPIPWE Natural Values Atlas annually;

F Agreed best practice integrated weed management principles used to control weeds;

G Outlier plants treated first, then infestation contracted towards core area; and

H Annual monitoring and follow-up program committed to for at least seven years.

The CWS will incorporate these principles into the strategy and action plan.

Implications to Strategy

- Strategy should adopt principles within Southern Tasmania Weed Mgt Strategy

Regional High Priority Weeds

Weed priorities for the Southern Region as a whole and for each of the twelve municipalities have been identified to assist with planning and on-ground works.

There are over 30 high priority weeds. Baseline weed mapping is available on the DPIPWE Natural Values Atlas (www.naturalvaluesatlas.tas.gov.au). Regional eradication targets include chilean needle grass, bridal creeper, seeding willows, cutleaf nightshade, heather, African feathergrass, African lovegrass, espartillo and orange hawkweed plus the strengthening and contracting of containment lines for boneseed and serrated tussock. The following link is to a booklet of these weeds of southern Tasmania.

http://stca.tas.gov.au/weeds/wp-content/uploads/2010/01/Weeds-of-S-Tas-booklet-smaller.pdf

The current list of 30 weeds is now out-dated and some weeds listed as a regional priority are not necessarily a priority within Clarence (Appendix 7 on page 71).

Implications to Strategy

- High Priority Weeds for the southern region should form part of the focus of weed control programs however not all species on this list are prominent weeds within the municipality. Refine list of weeds and incorporate into weed priorities.

Clarence Planning Scheme

The Clarence Planning Scheme 2007 regulates the development approvals process. The current planning scheme does not provide any explicit prescriptions for the management of particular weed species. Conditions of approval are often included which aim to include weed management planning during and post development in order to minimise impacts to natural values.

The Clarence Interim Planning Scheme (2015) has departed from the Southern Regional Planning Scheme model by replacing the standard Biodiversity Code (E10) with the Natural Assets Code (E27) based around a Biodiversity Protection Area Map developed from the Natural Assets Information Manual[13]. The purpose of the two codes is similar; to protect threatened vegetation communities, threatened species habitat and other significant vegetation communities. There are fewer exemptions with the Natural Assets Code and a higher level of protection. It also aims to protect rather than just minimise loss of threatened native vegetation and threatened species. It does not exempt the Council from regulation where other legislation is involved such as the *Threatened Species Protection Act 1995*.

The Natural Assets Code replaces the Vegetation Management Overlay (VMO) of the Clarence Planning Scheme 2007. The new code is much more explicit in identifying vegetation types and habitats that require protection.

Implications to Strategy

- Prepare a list of local environmental weeds for inclusion in the Clarence Interim Planning Scheme 2015 at Table E8.2

[13] Hydro Tasmania 2009

Council documents of relevance

Clarence City Council has had a number of relevant documents developed to aid the management of biodiversity values within the municipality. Some of these documents may not detail information on weeds; however they are a valuable resource in relation to natural values found within Clarence.

Clarence Bushland and Coastal Strategy

This document outlines objectives and strategies to protect natural assets through regulation, planning and Council natural area management as well as improve knowledge of our natural assets and their management. One of the actions from this report was for a Weed Strategy and Action Plan to be implemented.

Clarence City Council Natural Assets Information Manual (NAIM)

This document outlines the natural values within Clarence and identifies significant areas of vegetation and threatened species. The NAIM is a tool for assisting Council in its decision making, especially the potential for impact of planning decisions on natural values.

Reserve Activity Plans (RAP) and Catchment Management Plans (CMP)

As discussed earlier, Council has and is preparing RAP's for Council Reserves. These documents include implementation plans which include weed control management activities within the Reserves.

APPENDIX 2 - PRIORITY WEEDS IN CLARENCE MUNICIPALITY BASED ON DECLARED WEED STATUS

Weed - Botanical Name	Common Name	WMA Zone	WONS	Rating
Allium vineale	crow garlic	Zone A		1
Amsinckia species	fiddleneck	Zone B		1
Anthemis cotula	stinking mayweed	Zone A		1
Asparagus asparagoides	bridal Creeper	Zone A	YES	1
Asphodelus fistulosus	onion weed	Zone A		1
Carduus nutans	nodding thistle	Zone A		1
Carduus pycnocephalus *Carduus tenuiflorus*	slender thistles	Zone B		3
Carthamus lanatus	saffron thistle	Zone A		1
Chrysanthemoides monilifera ssp. *monilifera*	boneseed	Zone B	YES	4
Cirsium arvense	Californian thistle	Zone B		4
Cortaderia species	pampas grasses	Zone A		2
Cytisus scoparius	English broom	Zone B	YES	3
Echium plantagineum	patersons curse	Zone B		3
Echium vulgare	viper's Bugloss	Zone A		2
Eragrostis curvula	African lovegrass	Zone A		1
Erica lusitanica	Spanish heath	Zone B		4
Foeniculum vulgare	fennel	Zone B		4
Genista monspessulana	montpellier/canary Broom	Zone B	YES	4
Hypericum perforatum	St John's wort	Zone A		1
Lepidium draba	whiteweed / hoary cress	Zone A		2
Lycium ferocissimum	African boxthorn	Zone B	YES	4
Marrubium vulgare	horehound	Zone B		4
Myriophyllum aquaticum	parrot's feather	Zone A		1
Nassella leucotricha	Texas needle grass	Zone A		1
Nassella neesiana	Chilean needle grass	Zone A	YES	1
Nassella trichotoma	serrated tussock	Zone B	YES	4
Rubus fruticosus agg.	blackberry	Zone B	YES	4
Salix species (excluding *S. babylonica,*	willows	Zone A	YES	2

Weed - Botanical Name	Common Name	WMA Zone	WONS	Rating
S. x calodendron and *S. x reichardtii)*				
Senecio jacobaea	ragwort	Zone A		1
Solanum marginatum	white-edged nightshade	Zone A		1
Solanum triflorum	cut-leaf nightshade	Zone A		1
Ulex europaeus	gorse	Zone B	YES	3
Urospermum dalechampii	Mediterranean Daisy	Zone A		1
Xanthium species	Bathurst Burrs	Zone A		1

APPENDIX 3 -CLARENCE LOCAL LIST (CLL) – OTHER IMPORTANT WEEDS

Note: Weed Status does not apply to plants located in domestic garden setting that have no potential to escape into nearby bush

Botanical Name	Common Name	Strategy
Acacia baileyana	Cootamundra wattle	1,3
Acacia retinodes	wirilda	1,3
Acacia pycnantha	golden wattle	1,3
Agapanthus praecox subsp. orientalis	African lily	3
Ammophila arenaria subsp. arenaria	marram grass	4
Billardiera heterophylla	bluebell creeper	1
Centranthus ruber	red valerian	1,3
Chamaecytisus palmensis	tree lucerne	1,3
Conium maculatum	hemlock	2
Conyza bonariensis	flaxleaf fleabane	1
Cotoneaster species	Cotoneaster	2,3
Crataegus monogyna	hawthorn	2,3
Crocosmia Xcrocosmiiflora	montbretia	2,3
Delairea odorata	cape ivy	2,3
Dipsacus fullonum	wild teasel	1
Ehrharta erecta var. erecta	panic veldtgrass	1
Ehrharta longifolia	annual veldtgrass	1
Euphorbia paralias	sea spurge	4
Fuchsia magellanica	fuchsia	1,3
Gazania linearis	gazania	1,3
Ilex aquifolium	holly	1,3
Leucanthemum vulgare	ox-eye daisy	1
Lonicera japonica	Japanese honeysuckle	1,3
Paraserianthes lophantha	Cape Leeuwin wattle	1,3
Passiflora cinnabarina/tarminiana	banana passionfruit	2,3
Pinus radiata	radiata pine	2,3
Pittosporum undulatum	australian daphne, sweet pittosporum or victorian laurel	2,3
Psoralea pinnata	blue butterflybush	1,3
Reseda luteola	weld / wild mignonette	2,3

Botanical Name	Common Name	Strategy
Rosa rubiginosa	sweet briar	2,3
Senecio angulatus	creeping groundsel	1,3
Tradescantia fluminensis	wandering creeper	1
Typha latifolia	cumbungi	2,3
Verbascum thapsus subsp. thapsus	great mullein	2,3
Verbascum virgatum	twiggy mullein	2,3
Vinca major	blue periwinkle	2,3
Zantedeschia aethiopica	arum lily	2,3

APPENDIX 4 – DECLARED WEEDS & WEEDS OF NATIONAL SIGNIFICANCE (PRIORITISED)

Species	WMA Zone	Distribution in Council and notes	WONS	Rating
Declared weeds with a presence in Clarence City Council				
PRIORITY ONE WEEDS				
Allium vineale crow garlic	Zone A	Isolated – 3 records near Howrah and Tranmere. Weed of pasture and main impacts are to milk and meat products.		1
Amsinckia species fiddlenecks	Zone B	Localised – 4 records near South Arm, 1and one record at Rosny Park Shopping Centre and north of Richmond		1
Anthemis cotula stinking mayweed	Zone A	1 record from 1993 east of Risdon Cove historic site Taints milk, butter and meat products.		1
Asparagus asparagoides bridal Creeper	Zone A	Not widespread but numerous records (226) where the species is present	YES	1
Asphodelus fistulosus onion weed	Zone A	14 records scattered throughout Clarence Mainly a weed of roadsides and waste places		1
Carduus nutans nodding thistle	Zone A	2 old records, one at Mt Rumney and the other near the Hobart airport. Main impact is to pasture production.		1
Carthamus lanatus saffron thistle	Zone A	1 historic record at Warrane Main impact is to pasture production.		1
Cortaderia species pampas grasses	Zone A	25 scattered records with most known occurrences subjected to treatment		1
Eragrostis curvula African lovegrass	Zone A	Isolated around the Hobart airport		1
Hypericum perforatum St John's wort	Zone A	5 isolated records		1
Myriophyllum aquaticum parrot's feather	Zone A	2 historic records but not believed to be currently present		1
Nassella leucotricha Texas needle grass	Zone A	Only known record in Tasmania is near Pass Rd and Rokeby Rd junctions. Ongoing eradication is current		1
Nassella neesiana Chilean needle grass	Zone A	Localised infestation near Rose Bay to Bellerive, with known records at Knopwood Hill.	YES	1
Senecio jacobaea ragwort	Zone A	Previously recorded at Rosny in 2004 but no current populations known. Toxic to cattle and to a lesser extent sheep.		1

Species	WMA Zone	Distribution in Council and notes	WONS	Rating
Solanum marginatum white-edged nightshade	Zone A	1 historic and 1 recent record from the Rosny Park area		1
Solanum triflorum cut-leaf nightshade	Zone A	Localised around Seven mile beach and under current eradication measures		1
Urospermum dalechampii Mediterranean Daisy	Zone A	Scattered around Montagu Bay and Rosny Park with 4 other records from 3 scattered locations		1
PRIORITY TWO WEEDS				
Echium vulgare viper's Bugloss	Zone A	Core infestation localised around Cambridge. One record near Cremorne (Calverts Hill) and another historic record near Risdon Goal. Predominately a species that competes with pasture		2
Lepidium draba whiteweed/ hoary cress	Zone A	33 records scattered across Municipality. Main impact is to cropping yields and pasture production.		2
Salix species (excluding *S. babylonica, S.* x *calodendron* and *S.* x *reichardtii)* willows	Zone A	48 records scattered generally throughout waterways	YES	2
Xanthium species Bathurst Burrs	Zone A	3 records from the 1970's with poor accuracy. Main impact is fleece contaiminant in sheep wool		2
PRIORITY THREE WEEDS				
Carduus pycnocephalus Carduus tenuiflorus slender thistles	Zone B	19 records of both species scattered across the municipality. Likely to be more prevalent than recorded. Main impact is to pasture production or areas adjacent to grass seed crops.		3
Cytisus scoparius English Broom	Zone B	scattered infestations	YES	3
Echium plantagineum Patersons Curse	Zone B	Localised at 5 known locations Predominately a species that competes with pasture		3
Ulex europaeus gorse	Zone B	Numerous infestations scattered throughout the Municipality	YES	3
PRIORITY FOUR WEEDS				
Chrysanthemoides monilifera ssp. monilifera boneseed	Zone B	Widespread infestations	YES	4
Cirsium arvense Californian thistle	Zone B	13 scattered records, likely to more prevalent than shown on records. Main impact is to pasture production and grazing.		4

Species	WMA Zone	Distribution in Council and notes	WONS	Rating
Erica lusitanica Spanish heath	Zone B	Widespread		4
Foeniculum vulgare fennel	Zone B	widespread		4
Genista monspessulana montpellier/canary Broom	Zone B	widespread	YES	4
Lycium ferocissimum African boxthorn	Zone B	widespread	YES	4
Marrubium vulgare horehound	Zone B	28 records scattered across Municipality. Mainly a problem for sheep farming.		4
Nassella trichotoma serrated tussock	Zone B	widespread	YES	4
Rubus fruticosus agg. blackberry	Zone B	widespread	YES	4

Declared weeds not currently known within Clarence City Council			
Weed	**WMA Zone**	**Distribution in Council and notes**	**WONS**
Acacia nilotica ssp. indica prickly Acacia	Zone A	Not known to occur in Tasmania	YES
Alternanthera philoxeroides alligator Weed	Zone A	Only known from gardens within Tasmania	YES
Amaranthus albus tumbleweed	Zone A	No known records in Clarence	
Amelichloa caudata espartillo	Zone A	No known records in Clarence	
Annona glabra pond Apple	Zone A	Not known to occur in Tasmania	YES
Asparagus scandens asparagus fern	Zone A	No known records in Clarence	YES
Bassia scoparia kochia	Zone A	Not known to be naturalised in Tasmania	
Berberis darwinii Darwin's Barberry	Zone A	No known records in Clarence	
Berkheya rigida African Thistle	Zone A	No known records	
Bifora testiculata bifora	Zone A	Not known to be naturalised in Tasmania	
Calluna vulgaris heather	Zone A	No known records in Clarence	
Cabomba caroliniana cambomba	Zone A	Not known to be naturalised in Tasmania	YES
Carex albula, C. buchananii, C. flagellifera and *C. testaceae* New Zealand Sedges	Zone A	No known records in Clarence	
Cenchrus longispinus innocent weed *Cenchrus incertus* spiny burrgrass	Zone A	Not known to be naturalised in Tasmania	
Centaurea calcitrapa star Thistle	Zone A	Not known to be naturalised in Tasmania	
Centaurea eriophora mallee cockspur	Zone A	Not known to be naturalised in Tasmania	
Ceratophyllum demersum hornwort	Zone A	Not known to be naturalised in Tasmania	
Chondrilla juncea skeleton weed	Zone A	Not known to be naturalised in Tasmania	
Coprosma robusta karamu	Zone A	No known records in Clarence	
Crupina vulgaris common crupina	Zone A	Not known in Tasmania	

Declared weeds not currently known within Clarence City Council			
Weed	**WMA Zone**	**Distribution in Council and notes**	**WONS**
Cryptostegia grandiflora rubber vine	Zone A	Not known to occur in Tasmania	YES
Cuscuta species	Zone A	No known records in Clarence	
Cynara cardunculus artichoke Thistle	Zone A	Not known to be naturalised in Tasmania	
Cyperus esculentus yellow nut grass	Zone A	Not known to be naturalised in Tasmania	
Cyperus rotundus purple nut-grass	Zone A	Not known to be naturalised in Tasmania	
Cytisus multiflorus white spanish broom	Zone A	Not known to be naturalised in Tasmania	
Datura species	Zone A	No known records in Clarence	
Dittrichia viscosa false Yellowhead	Zone A	Not known to be naturalised in Tasmania	
Egeria densa egeria/ Dense water weed	Zone A	No known records in Clarence	
Eichhornia crassipes water hyacinth	Zone A	Not known to be naturalised in Tasmania	
Eleocharis parodi parodi	Zone A	Not known to be naturalised in Tasmania	
Elodea canadensis Canadian Pondweed	Zone A	Occurs in the Coal River	
Equisetum species horsetail	Zone A	No known records in Clarence. Occurs on the Tasman and at Cygnet	
Fallopia japonica Japanese knotweed	Zone A	No known records in Clarence	
Festuca gautieri bear-skin fescue	Zone A	Not naturalised in Australia	
Galium spurium false cleavers	Zone A	Not known to be naturalised in Tasmania	
Galium tricornutum three-horned bedstraw	Zone A	Not known to be naturalised in Tasmania	
Gymnocoronis spilanthoides Senegal tea plant	Zone A	Not known to be naturalised in Tasmania	
Heliotropium europaeum common heliotrope	Zone A	Not known to be naturalised in Tasmania	
Heracleum mantegazzianum giant hogweed	Zone A	Not known to be naturalised in Tasmania	
Hieracium species hawkweed	Zone A	No known records in Clarence	
Hydrilla verticillata hydrilla	Zone A	Not known to be naturalised in Tasmania	
Hymenachne amplexicaulis	Zone A	Not known to be naturalised in Tasmania	YES

Declared weeds not currently known within Clarence City Council			
Weed	**WMA Zone**	**Distribution in Council and notes**	**WONS**
hymenachne			
Hypericum tetrapterum square stemmed St John's wort	Zone A	No known records in Clarence	
Lagarosiphon major oxygen weed	Zone A	Not known to be naturalised in Tasmania	
Lantana camara lantana	Zone A	Not known to be naturalised in Tasmania	YES
**Leycesteria formosa* Elisha's tears	Zone B	No known records in Clarence	
Miconia species miconia	Zone A	Not known to occur in Tasmania	YES
Moraea species cape Tulips	Zone A	No known records in Clarence	
Nassella tenuissima Mexican feather grass *Nassella hyaline* cane needle grass *Nassella charruana* lobed needle grass	Zone A	No known records in Clarence *Nassella tenuissima* recently recorded in Kingborough Council	
Oenanthe pimpinelloides Meadow Parsley	Zone A	No known records in Clarence – 1st record in Tasmania late 2013 in the north	
Onopordum species cotton/Stemless thistles	Zone A	No known records in Clarence	
Orobanche species broomrape	Zone A	Not known to be naturalised in Tasmania	
Parkinsonia aculeata parkinsonia	Zone A	Not known to occur in Tasmania	YES
Parthenium hysterophorus parthenium weed	Zone A	Not known to occur in Tasmania	YES
Pennisetum macrourum African feather grass	Zone A	Only known from Huon Valley and New Norfolk	
Pennisetum villosum feathertop	Zone A		
Prosopis species mesquite	Zone A	Not known to be naturalised in Tasmania	YES
Rorippa sylvestris creeping yellowcress	Zone A	No known records in Clarence	
Sagittaria montevidensis arrowhead	Zone A	Not known to be naturalised in Tasmania	
Sagittaria platyphylla sagittaria	Zone A	Not known to be naturalised in Tasmania	YES
Salpichroa origanifolia pampas Lily of the Valley	Zone A	No known records in Clarence	

Declared weeds not currently known within Clarence City Council			
Weed	**WMA Zone**	**Distribution in Council and notes**	**WONS**
Salvinia molesta salvinia	Zone A	Not known to be naturalised in Tasmania	YES
Senecio glastifolius holly-leaved Senecio	Zone A	Not known to be naturalised in Tasmania	
Solanum elaeagnifolium silver leaf nightshade	Zone A	Not naturalised but is occasionally recorded within the south east	YES
Solanum sodomaeum apple of Sodom	Zone A	Not known to be naturalised in Tasmania	
Striga species witchweed	Zone A	Not naturalised in Australia	
Tamarix aphylla athel Pine	Zone A	Not known to be naturalised in Tasmania	YES
Trapa species floating Water Chestnut	Zone A	Not naturalised in Australia	
Tribulus terrestris caltrop	Zone A	Not known to be naturalised in Tasmania	
Zizania species wild rice	Zone A	Not naturalised in Australia	

* *Leycesteria formosa* is listed as Zone B within Clarence however there are no known records and Zone A would be a better reflection based on known records.

APPENDIX 5 – PRIORITY 1 TO 4 KNOWN LOCATIONS

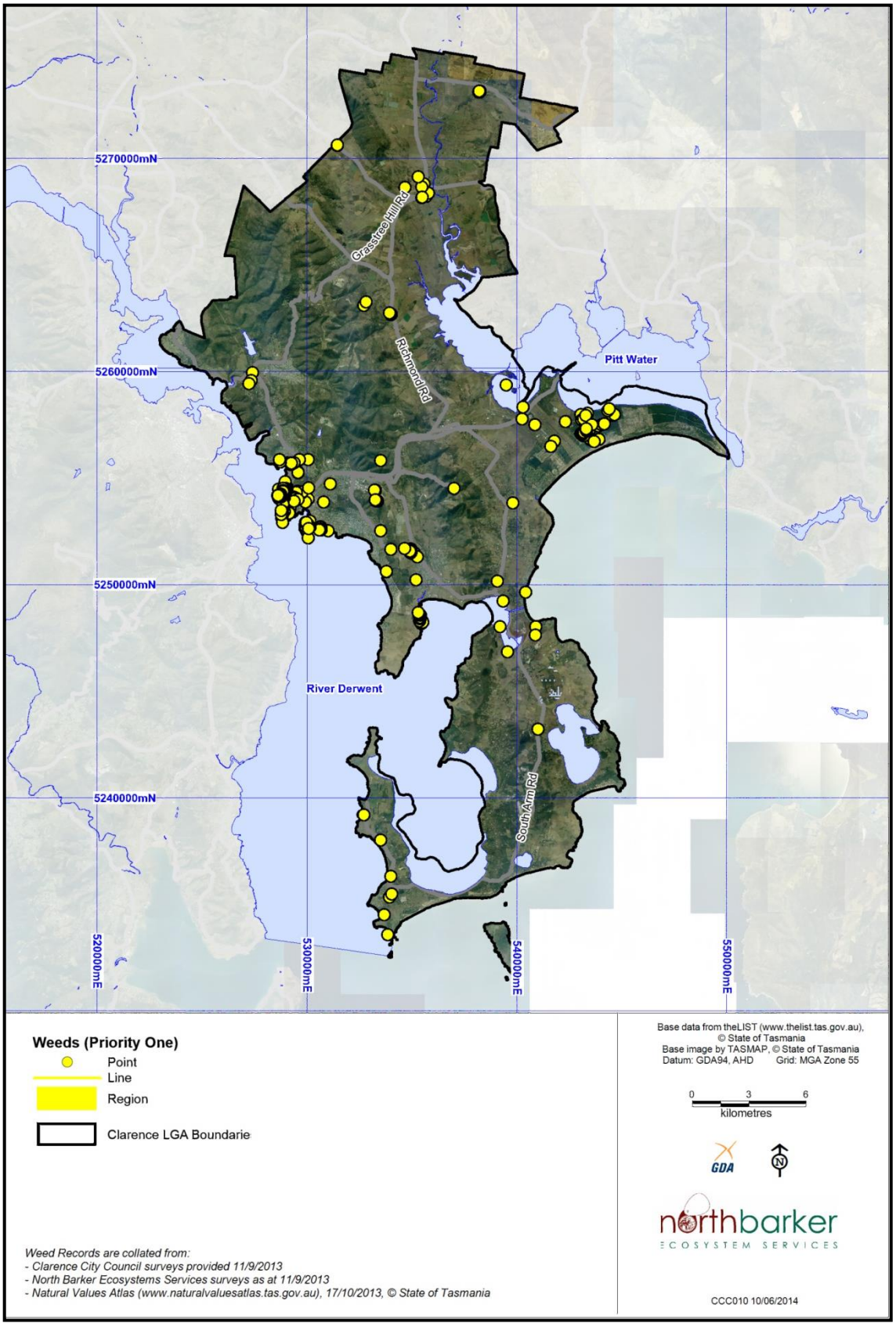

Figure 4 - Extent of Priority One weeds

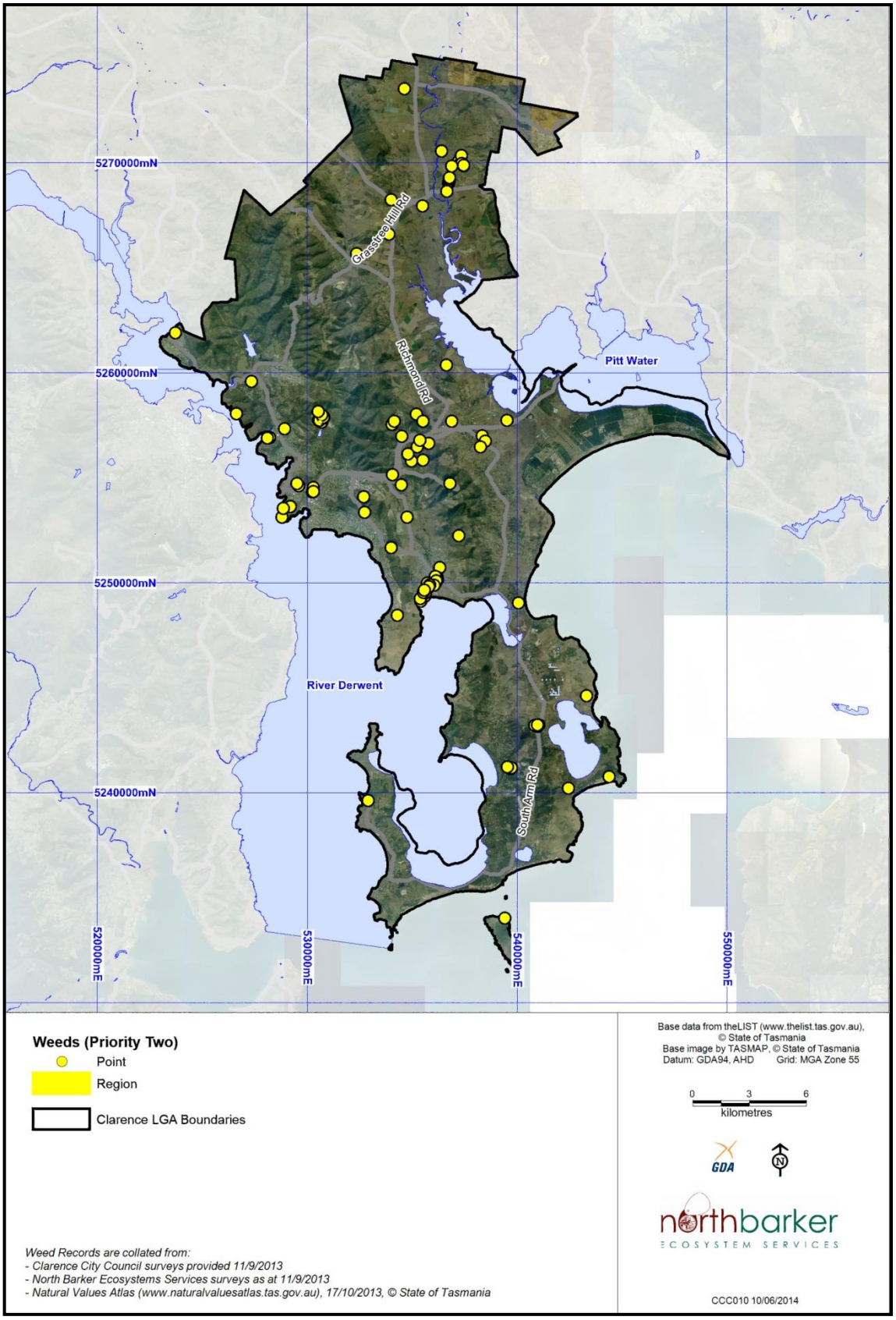

Figure 5 - Extent of Priority Two weeds

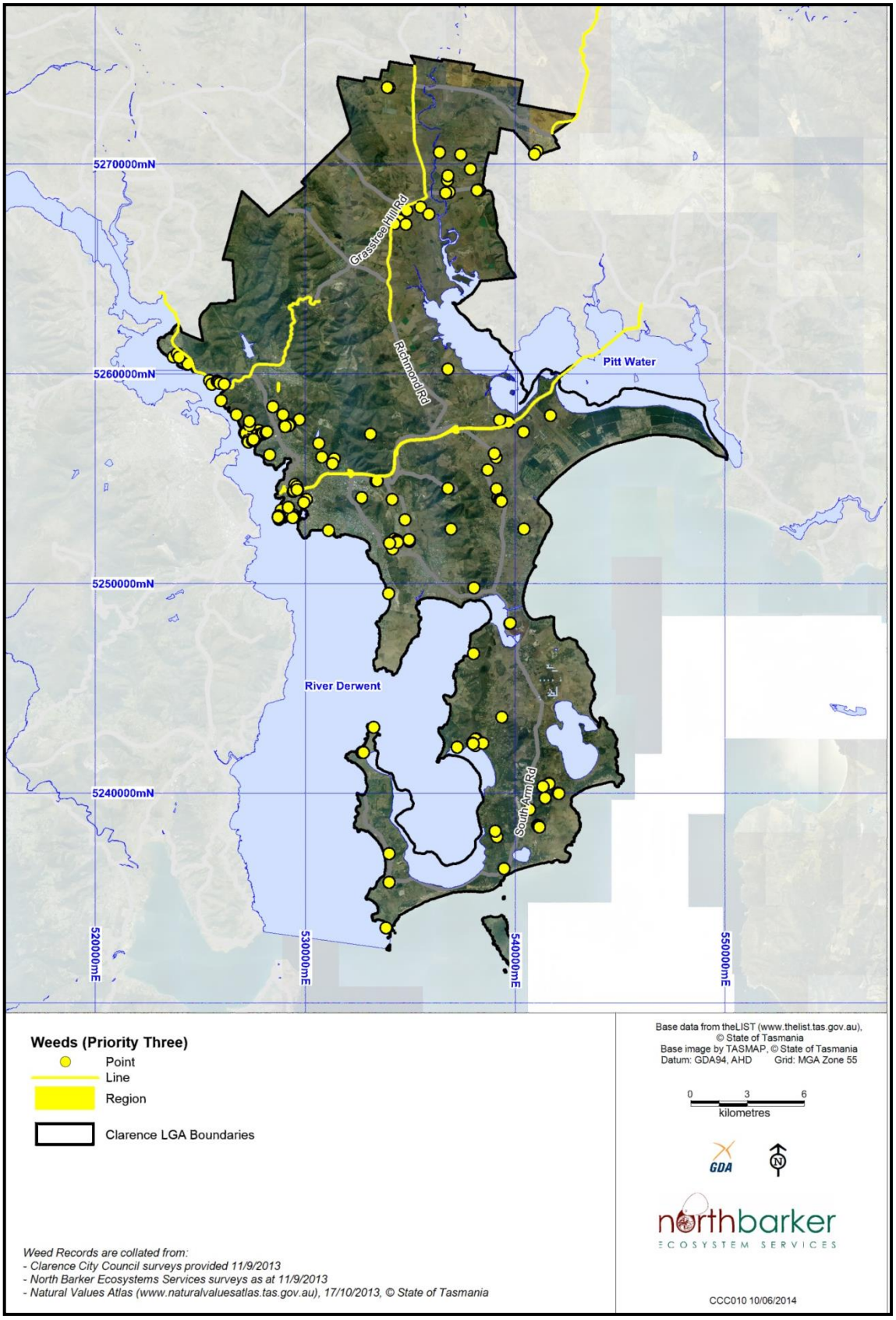

Figure 6 - Extent of Priority Three weeds

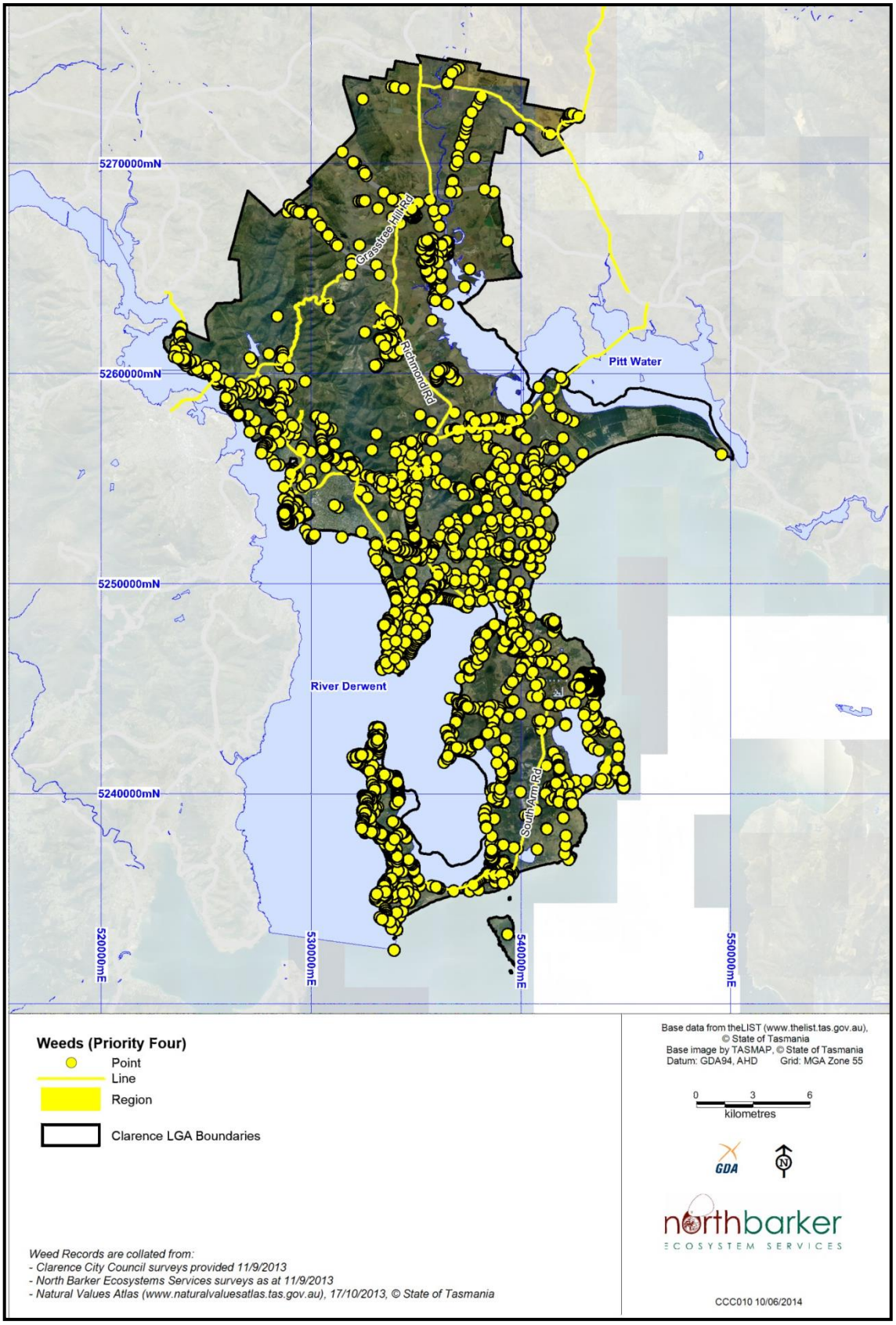

Figure 7 - Extent of Priority Four weeds

APPENDIX 6- NATIONAL ENVIRONMENTAL ALERT LIST

Species	Common Name	Information
Asystasia gangetica	Chinese/Philippine Violet	Restricted to NSW at this time
Barleria prionitis	Barleria, Porcupine Flower	Prefers wet dry tropics of northern Australia
Bassia scoparia	**Kochia, Tumbleweed**	**As naturalised parts of temperate Asia and infestations has been recorded near carrot crops near Deloraine and Devonport.** **Declared Weed**
Culluna vulgaris	**Heather**	**Known near Kingston and Bruny Island with past observations near Lake Augusta in Central highlands and near Meander in the north. Naturalised in New Zealand** **Declared Weed**
Chromolaena odorata	Siam Weed	Currently confined to northern Qld
Cynoglossum creticum	Blue Hound's tongue	Only known from near Eden, NSW
Cyperus teneristolon	Sedge, Cyperus	Only known from Katoomba, NSW along a creek line
Cytisus multiflorus	**White Spanish Broom**	**Only definitive records are from 3 sites in central Victoria. May be well adapted to Tasmania's climate** **Declared Weed**
Dittrichia viscosa	**False Yellowhead**	**Recorded on the south coast of WA** **Declared Weed**
Equisetum spp.	**Horestails**	**Naturalised in NSW, one of the worlds worst weeds. Lnown from some small locations in northern Tasmania** **Declared Weed**
Gymnocorpus spilanthoides	Senegal Tea Plant	Weed of tropical and subtropical areas
Hieracium aurantiacum	**Orange Hawkweed**	**Known from NSW to Victoria as well as Central Highlands, and Fern Tree near Hobart which is the largest infestation. Has also been noted at Snug.** **Declared Weed**
Koelreuteria elegans subsp. formosana	Chinese Rain Tree	Naturalised in subtropical Qld near Brisbane and Noosa to NSW
Lachenalia reflexa	Lachenalia	Known from southern WA
Lagarosiphon major	**Oxygen weed**	**All previous records are believed to have been eradicated; however Tasmania is within its potential distribution range.** **Declared Weed**
Nassella charruana	**Uruguay needle grass**	**Known from a few small infestations on the northern outskirts of Melbourne. Potential distribution includes north-eastern Tasmania.**

Species	Common Name	Information
		Declared Weed
Nassella hyalina	**Cane needle grass**	**Major infestations occur near Melbourne and central Victoria. Potential Distribution is not yet known but is closely related to serrated tussock and chilean needle grass, care should be taken in Tasmania** **Declared Weed**
Pelargonium alchemilloides	Pelargonium	Very localised in south-western Australia
Pereskia aculeata	Leaf Cactus	Known from scattered sites in coastal south-eastern QLD and NSW. Potential is in sub tropical riparian vegetation
Piptochaetium montevidense	Uruguayuan rice grass	Naturalised at CherryLake, southern Victoria. Tasmania not thought to be within potential distribution range
Praxelis clematidea	Praxelis	Known from central and northern QLD
Retama raetam	White weeping broom	Naturalised in SA.
Senecio glastifolius	**Holly leaves Senecio, pink ragwort**	**Known from WA and central NSW. Is a serious weed of New Zealand.** **Declared Weed**
Senegalia catechu	Cutch tree	A weed of the Northern Territory. Prefers tropical and subtropical climates.
Thunbergia laurifolia	Laurel clock vine	A weed of tropical and subtropical regions in QLD
Tipuana tipu	Pride of Bolivia, tipuana	Invasive in north eastern NSW and QLD. Widely planted tree around Australia.
Trianoptiles solitaria	Subterranean cape sedge	Only known from one site in a suburb of Melbourne
Vachellia karroo	**Karoo Thorn**	**Not known from Tasmania but has considerable potential to become a troublesome weed across a large portion of southern Australia.**

APPENDIX 7 - REGIONAL HIGH PRIORITY WEEDS

BOTANICAL NAME	COMMON NAMES
Asparagus asparagoides	bridal creeper
Asparagus scandens	asparagus fern, climbing asparagus
Hieracium species	hawkweed, orange hawkweed, mouse-ear hawkweed
Salix cinerea	grey willow, wild pussy willow (seeding willows)
Equisetum species	horsetails
Nassella trichotoma	serrated tussock
Rorippa sylvestris	creeping yellowcress
Calluna vulgaris	heather, Ling, scots heather
Amaranthus albus	tumble weed, White pigface
Cortaderia species	pampas grasses
Amelichloa caudata	espartillo
Fallopia japonica	Japanese knotweed
Hypericum perforatum	St John's wort
Hypericum tetrapterum	square stemmed St John's wort
Onopordum species	onopordum thistles
Carduus nutans	nodding thistle
Carthamus lanatus	saffron thistle
Coprosma robusta	karamu
Echium plantagineum	paterson's curse
Echium vulgare	viper's bugloss
Eragrostis curvula	African lovegrass
Pennisetum macrourum	African feathergrass
Pennisetum villosum	feathertop
Solanum triflorum	cut leaf nightshade
Senecio jacobaea	ragwort
Leycesteria Formosa	Himalayan honeysuckle, Elisha's tears
Urospermum dalechampii	Mediterranean daisy
Lycium ferocissimum	African boxthorn
Erica lusitanica	Spanish heath
Amsinckia species	yellow burr weed, Amsinckia

Note this list was created for the 2008 Southern weed mapping project and therefore some weeds are not necessarily a priority within the Clarence Municipality

APPENDIX 8 – FULL RECORD OF WEEDS KNOWN FROM THE MUNICIPALITY

Botanical Name	Common Names
Acacia baileyana	cootamundra wattle
Acacia decurrens	green wattle
Acacia howittii	sticky wattle
Acacia paradoxa	thorn wattle
Acacia provincialis	swamp wirilda or perennial wattle
Acacia pycnantha	golden wattle
Acacia retinodes	hills wirilda
Acacia spp.	Wattle
Acanthus mollis	bears breeches
Acetosella vulgaris	sheep sorrel
Achillea millefolium	yarrow
Aeonium arboreum	tree aeonium
Aeonium sp.	aeonium
Agapanthus praecox subsp. orientalis	African lily
Agrostemma githago	corn cockle
Agrostis capillaris	bentgrass
Agrostis stolonifera	creeping bent
Aira caryophyllea	silvery hairgrass
Aira elegantissima	delicate hairgrass
Aira sp.	
Alisma plantago-aquatica	water plantain
Allium vineale	wild garlic
Alopecurus myosuroides	slender foxtail
Alopecurus pratensis subsp. pratensis	meadow foxtail
Amanita muscaria	Fly agaric
Amaranthus deflexus	spreading pigweed
Ammophila arenaria subsp. arenaria	marram grass
Amsinckia calycina	hairy fiddleneck
Anchusa arvensis	bugloss
Anthemis cotula	stinking chamomile
Anthoxanthum odoratum	sweet vernalgrass
Aphanes arvensis	parsley piert
Arabidopsis thaliana	thale cress
Arctotheca calendula	capeweed
Arctotis stoechadifolia	african daisy

Botanical Name	Common Names
Arenaria serpyllifolia	thymeleaf sandwort
Arenaria sp.	sandwort
Arrhenatherum elatius var. bulbosum	bulbous oatgrass
Asparagus asparagoides	bridal creeper
Asparagus officinalis	asparagus
Asparagus scandens	asparagus fern
Asphodelus fistulosus	onion weed
Atriplex prostrata	creeping orache
Atriplex semibaccata	berry saltbush
Austroderia richardii	toe-toe pampas grass
Avena barbata	bearded oat
Avena fatua	wild oat
Avena ludoviciana	sterile oat
Avena sativa	cereal oat
Avena sp.	oats
Barbarea intermedia	wintercress
Barbarea verna	early wintercress
Batrachium trichophyllum	water fennel
Bellis perennis	english daisy
Berberis darwinii	Darwins barberry
Beta vulgaris subsp. maritima	sea beet
Billardiera heterophylla	bluebell creeper
Brassica rapa	turnip
Brassica tournefortii	mediterranean turnip
Brassica Xjuncea	indian mustard
Brassica Xnapus	rape
Briza maxima	greater quaking-grass
Briza minor	lesser quaking-grass
Briza sp.	
Bromus alopecuros	curly brome
Bromus arenarius	japanese brome
Bromus brevis	short brome
Bromus catharticus	ripgut, brome grass or prairie g
Bromus cebadilla	chilean brome
Bromus diandrus	great brome
Bromus hordeaceus	soft brome
Bromus madritensis var. ciliatus	madrid brome
Bromus sp.	brome

Botanical Name	Common Names
Bromus sterilis	barren brome
Buglossoides arvensis	sheepweed
Cakile edentula	american searocket
Cakile maritima subsp. maritima	searocket
Calendula arvensis	field marigold
Callitriche stagnalis	mud waterstarwort
Capsella bursa-pastoris	shepherds purse
Cardamine hirsuta	hairy bittercress
Cardaria draba	white weed
Carduus nutans	nodding thistle
Carduus pycnocephalus	slender thistle
Carduus sp.	
Carduus tenuiflorus	winged thistle
Carex flacca	blue sedge
Carpobrotus aequilaterus	angled pigface
Carpobrotus edulis	yellow pigface
Carthamus lanatus	saffron thistle
Carthamus tinctorius	safflower
Catapodium rigidum	ferngrass
Cenchrus clandestinus	kikuyu grass
Centaurea melitensis	malta thistle
Centaurium erythraea	common centaury
Centaurium tenuiflorum	slender centaury
Centranthus ruber	red valerian
Cerastium balearicum	scarious mouse-ear
Cerastium glomeratum	sticky mouse-ear
Cerastium sp.	
Cerastium vulgare	mouse-ear chickweed or common mouse-ear
Chamaecytisus palmensis	tree lucerne
Chasmanthe floribunda	african cornflag
Chenopodium album	fat hen
Chenopodium glaucum	pale goosefoot
Chenopodium murale	nettleleaf goosefoot
Chrysanthemoides monilifera subsp. monilifera	boneseed
Cirsium arvense var. arvense	californian thistle
Cirsium sp.	
Cirsium vulgare	spear thistle
Conium maculatum	hemlock

Botanical Name	Common Names
Convolvulus arvensis	field bindweed
Conyza bonariensis	flaxleaf fleabane
Conyza sp.	
Conyza sumatrensis	tall fleabane
Cortaderia selloana	pampas grass
Cortaderia sp.	pampas grass
Cotoneaster franchetii	grey cotoneaster
Cotoneaster glaucophyllus var. serotinus	largeleaf cotoneaster
Cotoneaster pannosus	velvet cotoneaster
Cotoneaster sp.	Cotoneaster sp.
Cotula coronopifolia	water buttons
Crassula sp.	
Crataegus monogyna	hawthorn
Crepis capillaris	smooth hawksbeard
Crocosmia Xcrocosmiiflora	montbretia
Cupressus macrocarpa	monterey cypress
Cupressus sp.	
Cyclospermum leptophyllum	fineleaf celery
Cydonia oblonga	quince
Cynodon dactylon var. dactylon	couch grass
Cynosurus cristatus	crested dogstail
Cynosurus echinatus	rough dogstail
Cynosurus sp.	
Cyperus eragrostis	drain flatsedge
Cytisus scoparius	english broom
Dactylis glomerata	cocksfoot
Delairea odorata	cape ivy
Digitaria sanguinalis	summergrass
Dimorphotheca fruticosa	african daisy
Diplotaxis muralis	wall rocket
Dipogon lignosus	dolichos pea
Dipsacus fullonum	wild teasel
Dittrichia graveolens	stinkweed
Draba nemorosa	forest whitlowgrass
Dysphania pumilio	clammy goosefoot
Echeveria sp.	hen and chicks
Echinochloa crus-galli	common barnyardgrass
Echinochloa esculenta	japanese barnyardgrass

Botanical Name	Common Names
Echinochloa frumentacea	siberian barnyardgrass
Echinopogon ovatus	hedgehog grass
Echium candicans	pride of madeira
Echium fastuosum	pride of madeira or tower of jewels
Echium plantagineum	patersons curse
Echium vulgare	vipers bugloss
Ehrharta calycina	perennial veldtgrass
Ehrharta erecta var. erecta	panic veldtgrass
Ehrharta longiflora	annual veldtgrass
Elymus multiflorus	short-awned wheatgrass
Elytrigia repens	english couch
Emex australis	spiny emex
Epilobium obscurum	shade willowherb
Eragrostis brownii	common lovegrass
Eragrostis cilianensis	stinkgrass
Eragrostis curvula	african lovegrass
Eragrostis tenuifolia	elastic grass
Erica arborea	tree heath
Erica lusitanica	spanish heath
Erodium botrys	long heronsbill
Erodium cicutarium	common heronsbill
Erodium moschatum	musky heronsbill
Erodium sp.	
Eucalyptus leucoxylon	
Eucalyptus tetraptera	
Euphorbia exigua	dwarf spurge
Euphorbia helioscopia	sun spurge
Euphorbia lathyris	caper spurge
Euphorbia paralias	sea spurge
Euphorbia peplus	petty spurge
Euphorbia sp.	
Fallopia convolvulus	black bindweed
Festuca arundinacea	tall fescue
Foeniculum vulgare	fennel
Fraxinus angustifolia subsp. angustifolia	narrow-leafed ash
Freesia hybrid	freesia
Fuchsia magellanica	fuchsia
Fumaria bastardii	bastards fumitory

Botanical Name	Common Names
Fumaria muralis subsp. Muralis	wall fumitory
Fumaria officinalis subsp. officinalis	common fumitory
Fumaria sp.	
Fushcia magellanica	fuschia
Galium aparine	cleavers
Galium murale	small bedstraw
Gastridium ventricosum	nitgrass
Gazania linearis	treasure flower
Gazania rigens	Gazania
Genista monspessulana	canary broom
Genista stenopetala	madeira broom
Geranium dissectum	cutleaf cranesbill
Geranium molle	soft cranesbill
Geranium sp.	garden geranium
Gladiolus sp.	
Gladiolus tristis	evening gladiolus
Glyceria fluitans	floating sweetgrass
Glyceria maxima	reed sweetgrass
Gomphocarpus fruticosus subsp. fruticosus	narrrow leaf cotton bush
Grevillea rosmarinifolia	grevillea
Grevillea spp.	Grevillea
Hainardia cylindrica	thintail barbgrass
Hedera helix	ivy
Hedypnois rhagadioloides	cretanweed
Helminthotheca echioides	bristly oxtongue
Hirschfeldia incana	hoary mustard
Holcus lanatus	yorkshire fog
Hordeum distichon	two-row barley
Hordeum hystrix	velvet sea barleygrass
Hordeum leporinum	long-anther barleygrass
Hordeum marinum	barley
Hordeum murinum	barley
Hordeum sp.	
Hornungia procumbens	oval purse
Hypericum perforatum subsp. veronense	perforated st johns-wort
Hypochaeris glabra	smooth catsear
Hypochaeris radicata	rough catsear
Hypochaeris sp.	

Botanical Name	Common Names
Ilex aquifolium	holly
Ipomoea indica	blue morning glory
Iris foetidissima	stinking iris
Iris sp.	
Isolepis hystrix	awned clubsedge
Isolepis prolifera	proliferous clubsedge
Juncus acuminatus	prickly rush
Juncus articulatus	jointed rush
Juncus capitatus	capitate rush
Lactuca serriola f. serriola	prickly lettuce
Lagurus ovatus	harestail grass
Lathyrus latifolius	everlasting pea, perennial pea or sweet pea
Lathyrus nissolia	grass vetchling
Leontodon saxatilis	hairy hawkbit
Lepidium africanum	common peppercress
Lepidium didymum	lesser swinecress
Lepidium draba	hoary cress or white weed
Lepidium latifolium	perennial peppercress
Leptospermum laevigatum	coast teatree
Leucanthemum vulgare	oxeye daisy
Linum trigynum	french flax
Linum usitatissimum	linseed flax
Lobularia maritima	sweet alice
Lolium multiflorum	italian ryegrass
Lolium perenne	perennial ryegrass
Lolium rigidum	wimmera ryegrass
Lolium temulentum f. arvense	bearded ryegrass
Lonicera japonica	Japanese honeysuckl
Lonicera periclymenum	common honeysuckle
Lotus corniculatus	bird's-foot trefoil
Lupinus arboreus	tree lupin
Luzula campestris	field woodrush
Luzula multiflora	flowery woodrush
Lycium ferocissimum	african boxthorn
Lysimachia arvensis	common pimpernel, scarlet pimper
Malus pumila	apple
Malva arborea	tree mallow
Malva dendromorpha	tree mallow

Botanical Name	Common Names
Malva nicaeensis	mallow-of-nice
Malva parviflora	smallflower mallow
Malva pseudolavatera	cretan mallow
Malva sylvestris	tall mallow
Marrubium vulgare	horehound
Medicago arabica	spotted medick
Medicago lupulina	black medick
Medicago polymorpha	burr medick
Medicago sativa	lucerne
Medicago sp.	
Melaleuca nesophila	showy honey myrtle
Melilotus albus	white melilot
Melilotus indicus	sweet melilot
Melilotus officinalis	ribbed melilot
Melilotus sp.	
Mentha pulegium	pennyroyal
Mentha Xpiperita	peppermint
Moenchia erecta	erect chickweed
Myosotis sylvatica	garden forgetmenot
Myriophyllum aquaticum	parrotfeather
Nassella leucotricha	Texas needle grass
Nassella neesiana	chilean needle grass
Nassella trichotoma	serrated tussock
Nasturtium officinale	two-row watercress
Onopordum acanthium	cotton thistle or scotch thistle
Opuntia sp.	prickly pear or cholla
Osteospermum fruticosum	trailing daisy
Oxalis articulata	bent woodsorrel
Oxalis corniculata subsp. corniculata	yellow woodsorrel
Oxalis incarnata	pale woodsorrel
Oxalis pes-caprae	soursob
Panicum capillare	common witchgrass
Panicum gilvum	sweet panic
Panicum hillmanii	witch panic
Papaver hybridum	rough poppy
Papaver somniferum subsp. setigerum	small opium poppy
Papaver somniferum subsp. somniferum	opium poppy
Parapholis incurva	coast barbgrass

Botanical Name	Common Names
Parapholis strigosa	slender barbgrass
Paraserianthes lophantha subsp. lophantha	cape wattle
Parentucellia latifolia	broadleaf glandweed
Parentucellia viscosa	yellow glandweed
Paspalum dilatatum	paspalum
Passiflora cinnabarina	red passionflower
Passiflora tarminiana	banana passionfruit
Persicaria prostrata	creeping waterpepper
Petasites fragrans	winter heliotrope
Petrorhagia nanteuilii	proliferous pink
Petroselinum crispum	parsley
Phalaris aquatica	toowoomba canarygrass
Phalaris canariensis	canarygrass
Phalaris minor	lesser canarygrass
Phalaris sp.	
Pinus pinaster	maritime pine
Pinus radiata	radiata pine
Pinus sp.	
Piptatherum miliaceum	rice millet
Pittosporum undulatum	australian daphne, sweet pittosporum or victorian laurel
Plantago australis	southern plantain
Plantago coronopus subsp. coronopus	slender buckshorn plantain
Plantago lanceolata	ribwort plantain
Poa bulbosa	bulbous meadowgrass
Poa compressa	flatstalk meadowgrass
Poa infirma	early meadowgrass
Poa pratensis	kentucky bluegrass
Polycarpon tetraphyllum	fourleaf allseed
Polygala myrtifolia	myrtle-leaf milkwor
Polygonum arenastrum	small wireweed
Polygonum aviculare	creeping wireweed
Polypogon lutosus	
Polypogon monspeliensis	annual beardgrass
Populus alba	white poplar
Populus sp.	poplar
Potentilla anserina	silverweed
Prunella vulgaris	selfheal
Prunus sp.	

Botanical Name	Common Names
Prunus spinosa	blackthorn
Pseudofumaria alba subsp. alba	white fumitory
Psoralea pinnata	blue butterflybush
Pyracantha sp.	Himalayan firethorn
Ranunculus parviflorus	smallflower buttercup
Ranunculus repens	creeping buttercup
Raphanus raphanistrum	wild radish
Raphanus sp.	
Rapistrum rugosum	giant mustard
Reseda lutea	cutleaf mignonette
Reseda luteola	weld
Romulea rosea var. australis	lilac oniongrass
Rosa canina	dog rose
Rosa rubiginosa	sweet briar
Rosa sp.	
Rubus anglocandicans	blackberry
Rubus fruticosus	blackberry
Rubus sp. Tasmania	blackberry
Rumex conglomeratus	clustered dock
Rumex crispus	curled dock
Rumex obtusifolius	broadleaf dock
Rumex pulcher subsp. pulcher	fiddle dock
Sagina apetala	annual pearlwort
Salix babylonica	weeping willow
Salix matsudana	sallow willow
Salix sp.	willow
Salix Xfragilis nothovar. fragilis	crack willow
Sanguisorba minor	salad burnet
Scabiosa atropurpurea	garden pincushion
Scilla peruviana	cuban lily
Scleranthus annuus	annual knawel
Senecio angulatus	scrambling groundse
Senecio elegans	purple groundsel
Senecio jacobaea	ragwort
Senecio vulgaris	common groundsel
Setaria viridis	green pigeongrass
Sherardia arvensis	field madder
Silene gallica	french catchfly

Botanical Name	Common Names
Silene gallica var. gallica	
Silene gallica var. quinquevulnera	
Silene nocturna	mediterranean catchfly
Silene vulgaris	bladder campion
Silybum marianum	variegated thistle
Sisymbrium orientale	indian hedge-mustard
Sisyrinchium iridifolium	blue pigroot
Solanum marginatum	white-edged nightshade
Solanum nigrum	blackberry nightshade
Solanum nodiflorum	glossy nightshade
Solanum triflorum	cutleaf nightshade
Sonchus asper	rough sowthistle or prickly sowt
Sonchus oleraceus	common sowthistle
Spartium junceum	spanish broom
Spergula arvensis	corn spurrey
Spergularia marina	lesser seaspurrey
Spergularia rubra	greater sandspurrey
Spergularia sp.	
Spergularia tasmanica	coastal seaspurrey
Sporobolus africanus	ratstail grass
Stellaria media	garden chickweed
Stellaria pallida	lesser chickweed
Stellaria sp.	chickweed
Swainsonia spp.	Swainsonia
Tamarix aphylla	athel pine
Taraxacum officinale	common dandelion
Thinopyrum elongatum	tall wheatgrass
Tradescantia fluminensis	wandering jew
Tradescantia sp.	
Tragopogon porrifolius subsp. porrifolius	salsify
Trifolium arvense	haresfoot clover
Trifolium dubium	suckling clover
Trifolium fragiferum	strawberry clover
Trifolium glomeratum	cluster clover
Trifolium ornithopodioides	birdsfoot clover
Trifolium pratense	red clover
Trifolium repens	white clover
Trifolium resupinatum	reversed clover

Botanical Name	Common Names
Trifolium sp.	clover species
Trifolium striatum	knotted clover
Trifolium subterraneum	subterranean clover
Trifolium tomentosum	woolly clover
Typha latifolia	great reedmace
Typha sp	bull rush
Ulex europaeus	gorse
Ulmus Xhollandica	elm, hybrid elm or dutch elm
Urospermum dalechampii	mediterranean daisy
Urtica urens	stinging nettle
Vellereophyton dealbatum	white cudweed
Verbascum thapsus subsp. thapsus	great mullein
Verbascum virgatum	twiggy mullein
Verbena officinalis	common vervain
Veronica persica	persian speedwell
Veronica serpyllifolia	thyme speedwell
Vicia hirsuta	hairy vetch
Vicia sativa	spring vetch, vetch, common vetch or tare
Vicia sativa subsp. nigra	narrowleaf vetch
Vicia sativa subsp. sativa	common vetch
Vicia sp.	
Vicia tetrasperma	smooth vetch
Vicia villosa subsp. eriocarpa	fodder vetch
Vinca major	blue periwinkle
Vulpia bromoides	squirreltail fescue
Vulpia myuros	rat's tail fescue or fox tail fe
Vulpia sp.	
Xanthium spinosum	bathurst burr
Zantedeschia aethiopica	arum lily

APPENDIX 9 – DECLARED WEED MAPPING WITHIN MUNICIPALITY

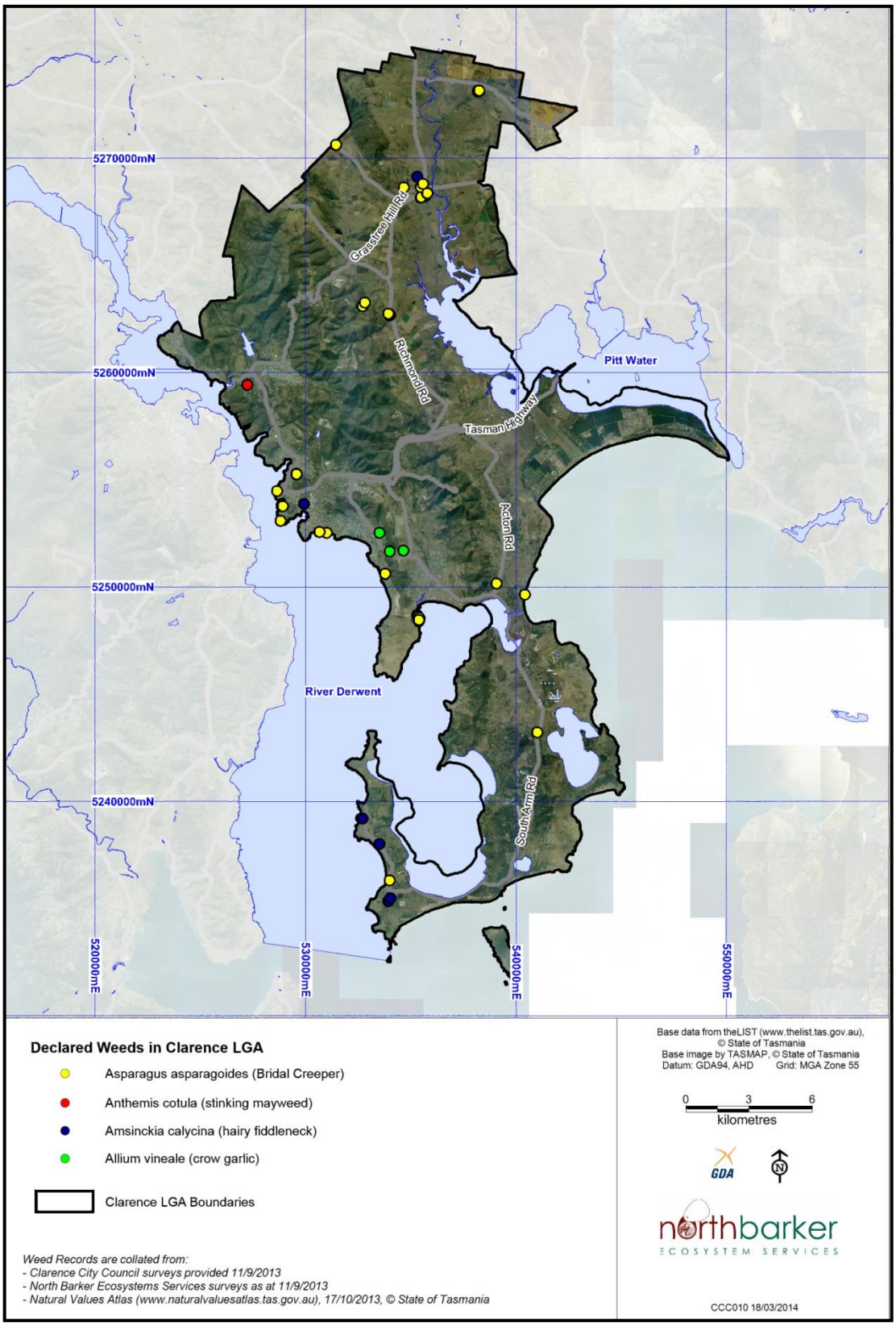

Figure 8 - Declared weeds within Clarence LGA (Map 1 of 11)

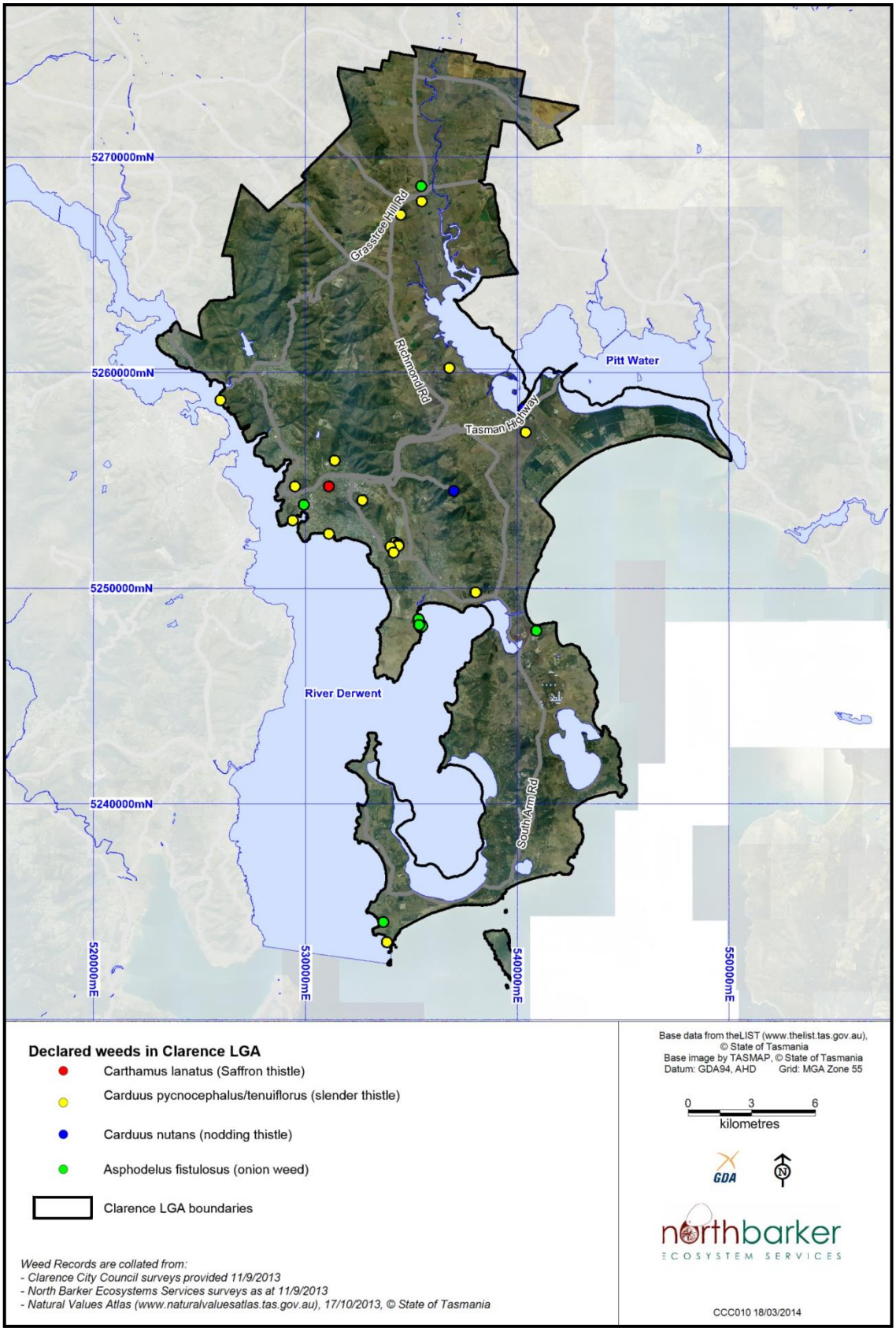

Figure 9 - Declared weeds within Clarence LGA (Map 2 of 11)

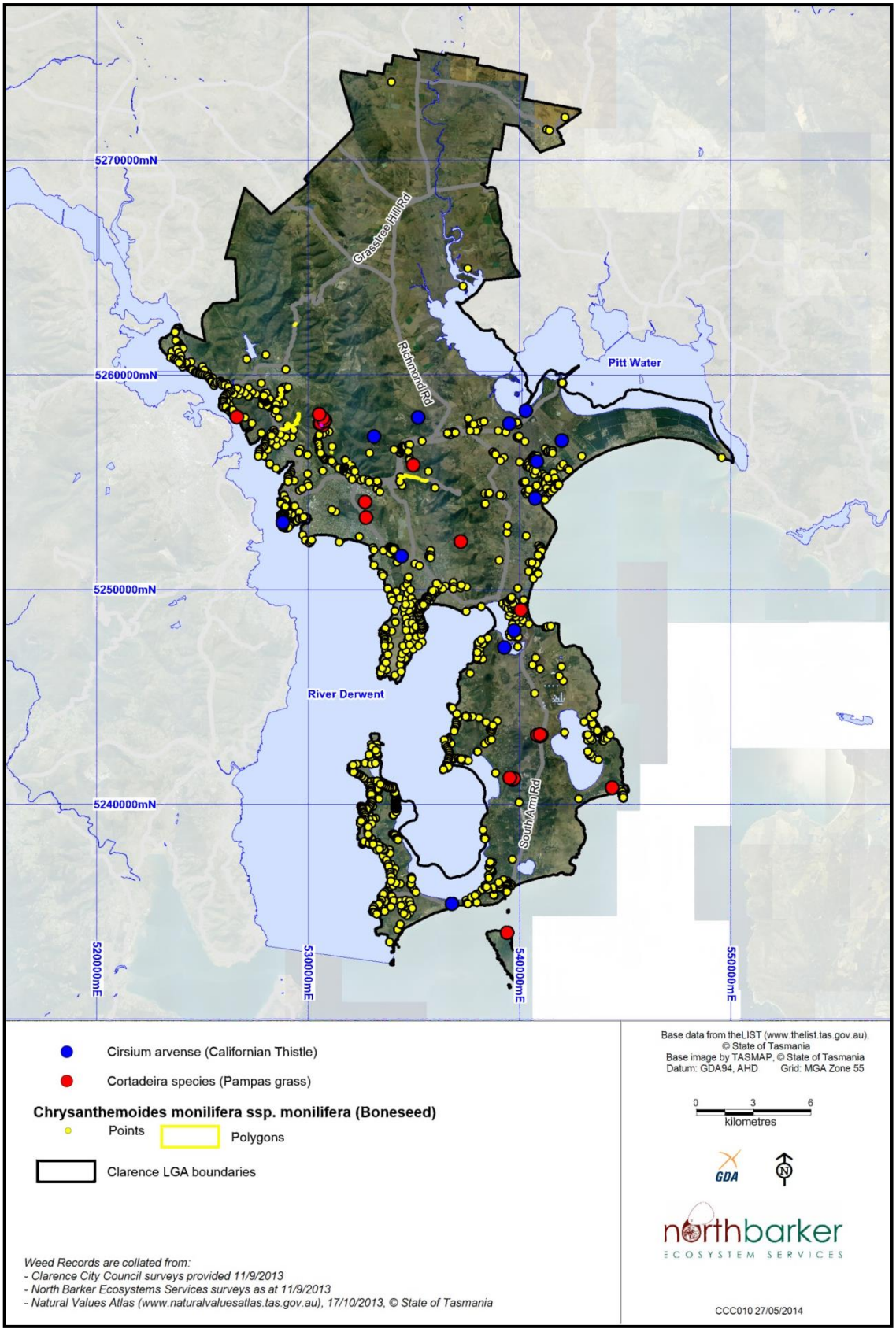

Figure 10 - Declared weeds within Clarence LGA (Map 3 of 11)

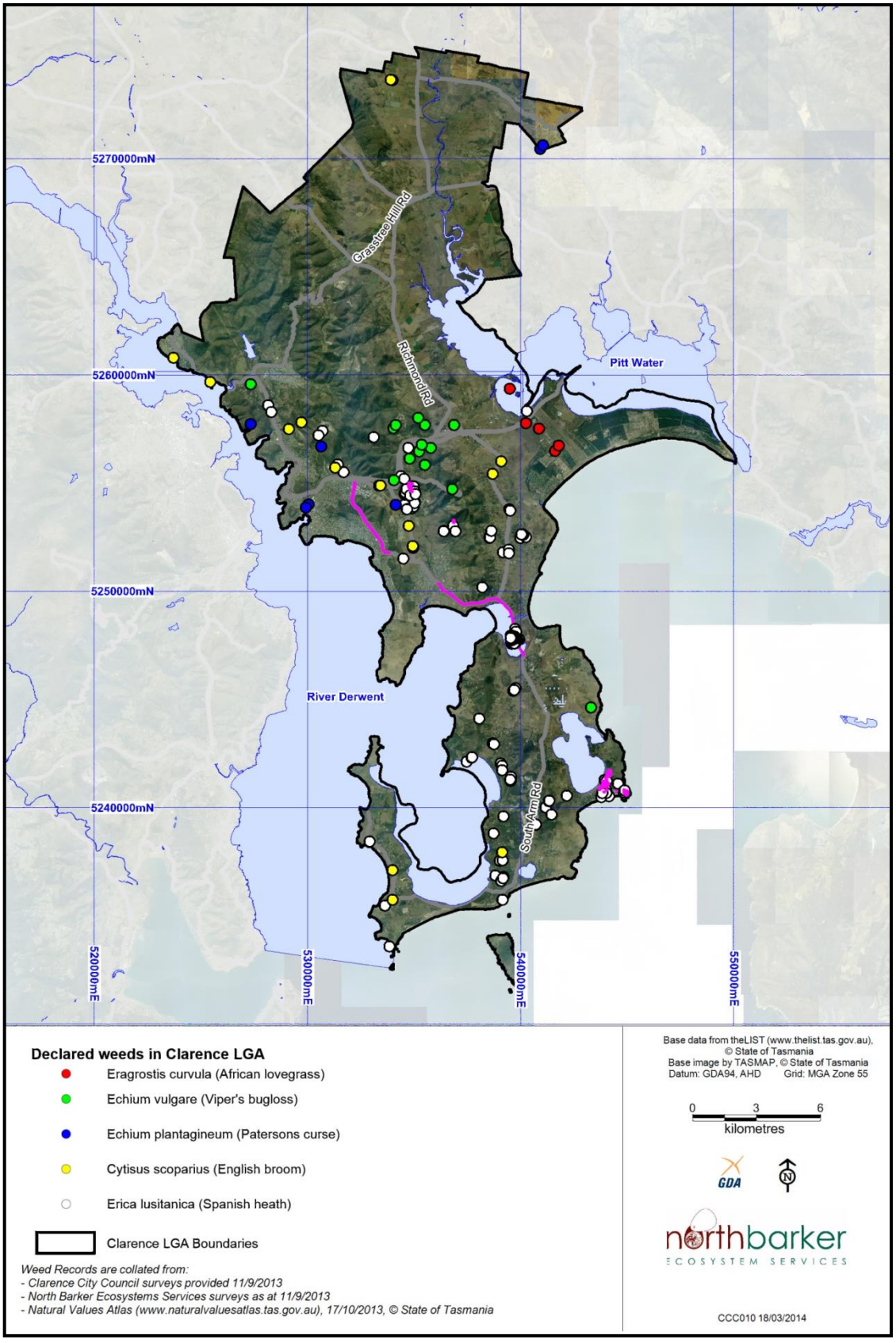

Figure 11 - Declared weeds within Clarence LGA (Map 4 of 11)

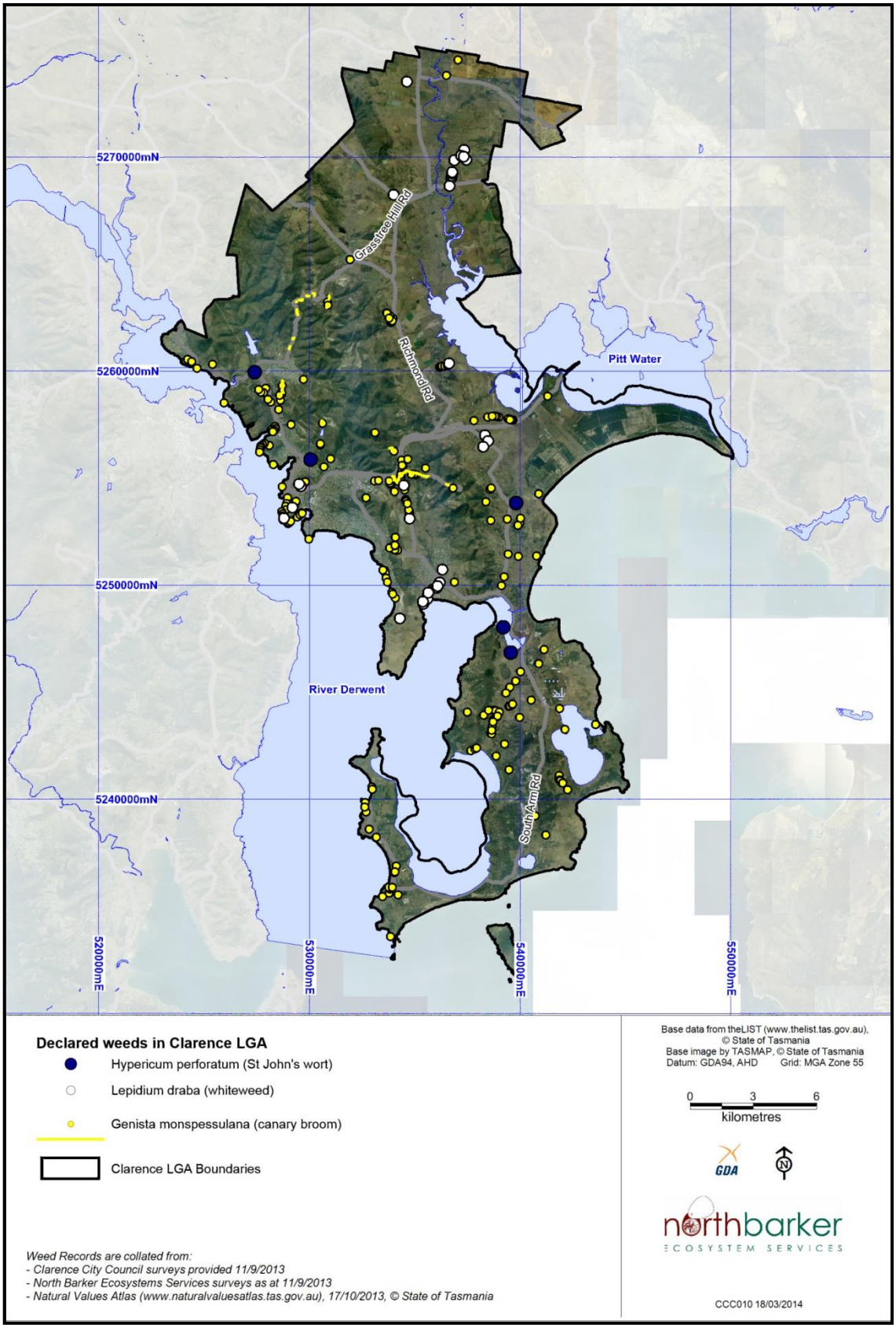

Figure 12 - Declared weeds within Clarence LGA (Map 5 of 11)

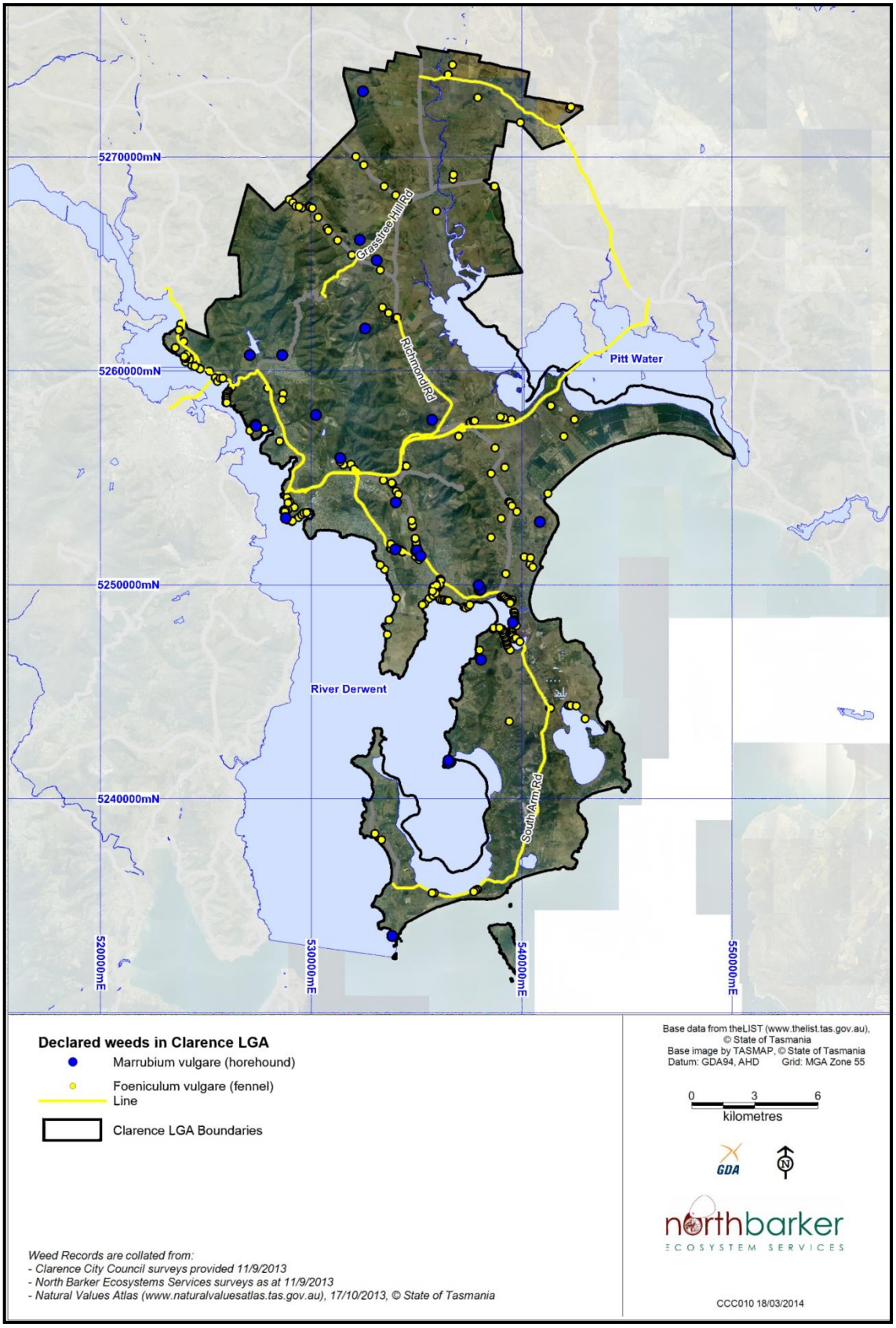

Figure 13 - Declared weeds within Clarence LGA (Map 6 of 11)

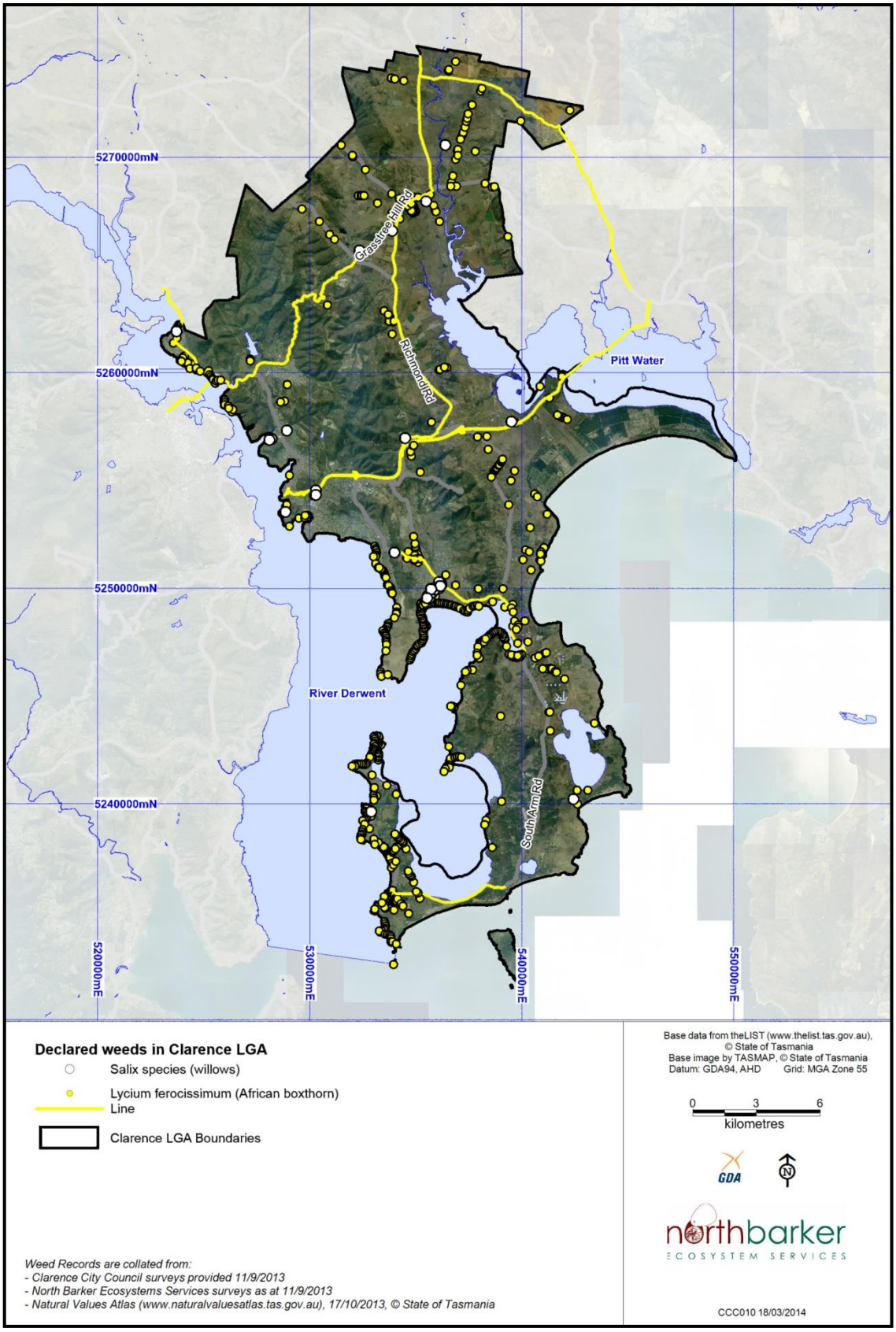

Figure 14 - Declared weeds within Clarence LGA (Map 7 of 11)

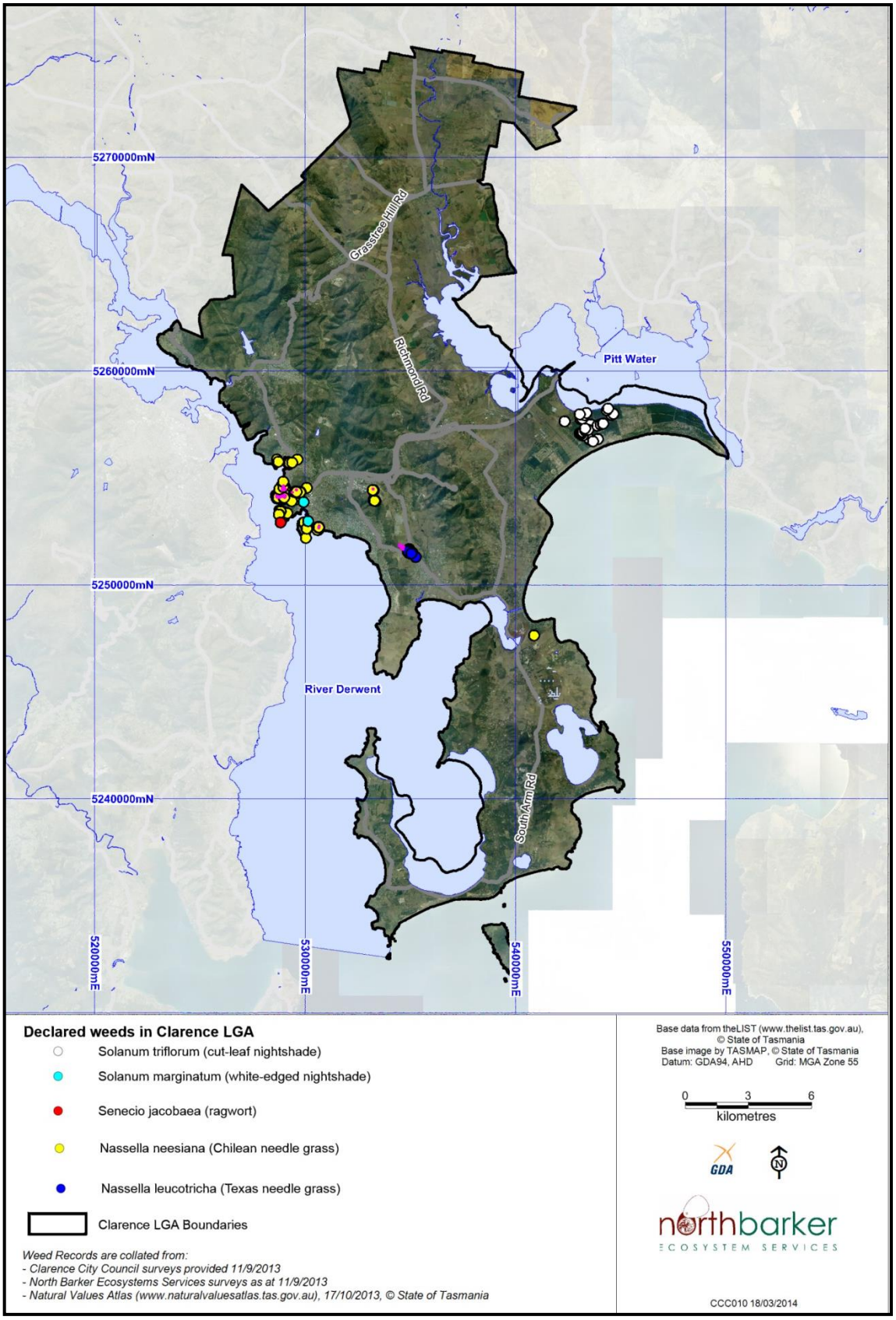

Figure 15 - Declared weeds within Clarence LGA (Map 8 of 11)

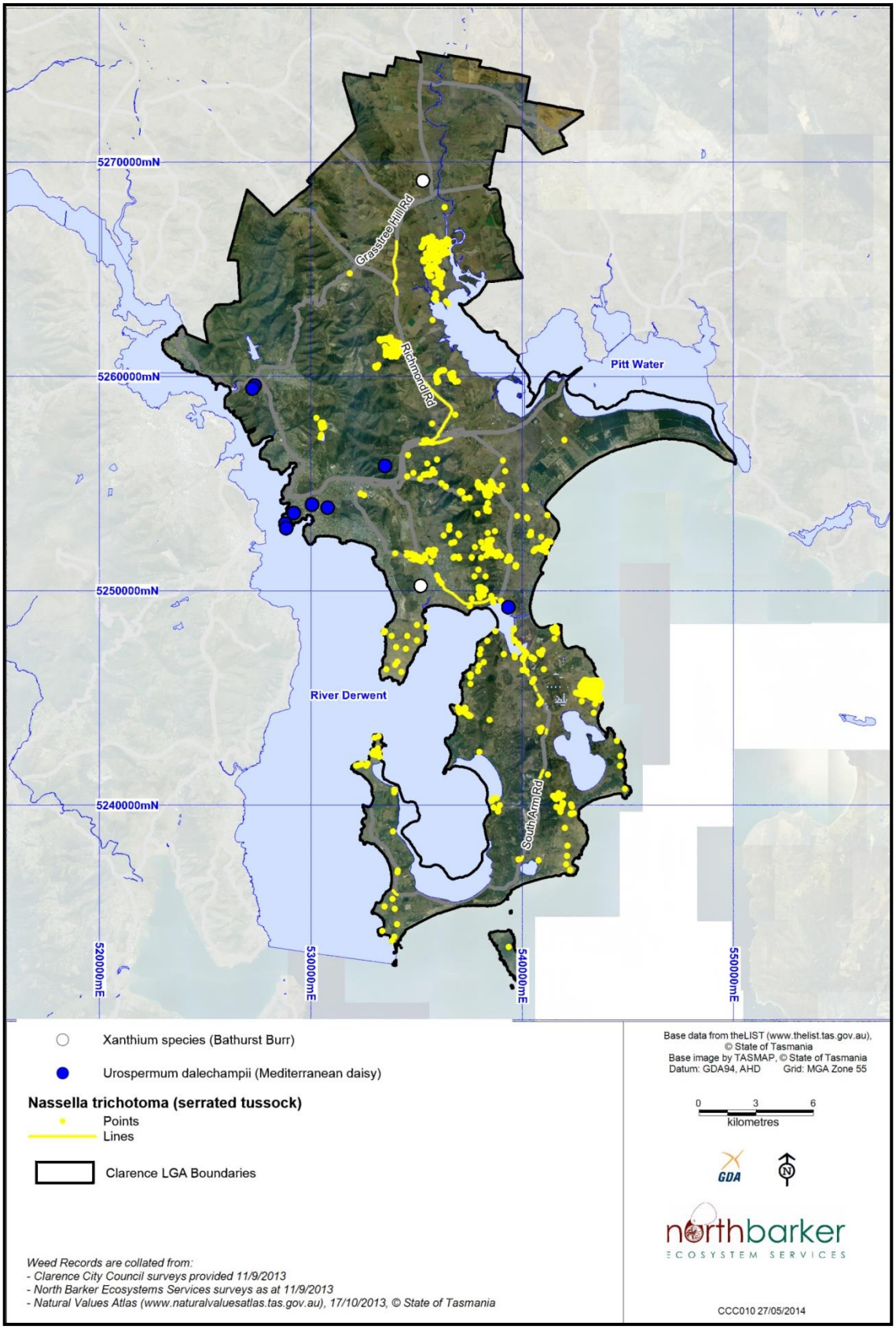

Figure 16 - Declared weeds within Clarence LGA (Map 9 of 11)

The Bathurst Burr records are likely to be old reports

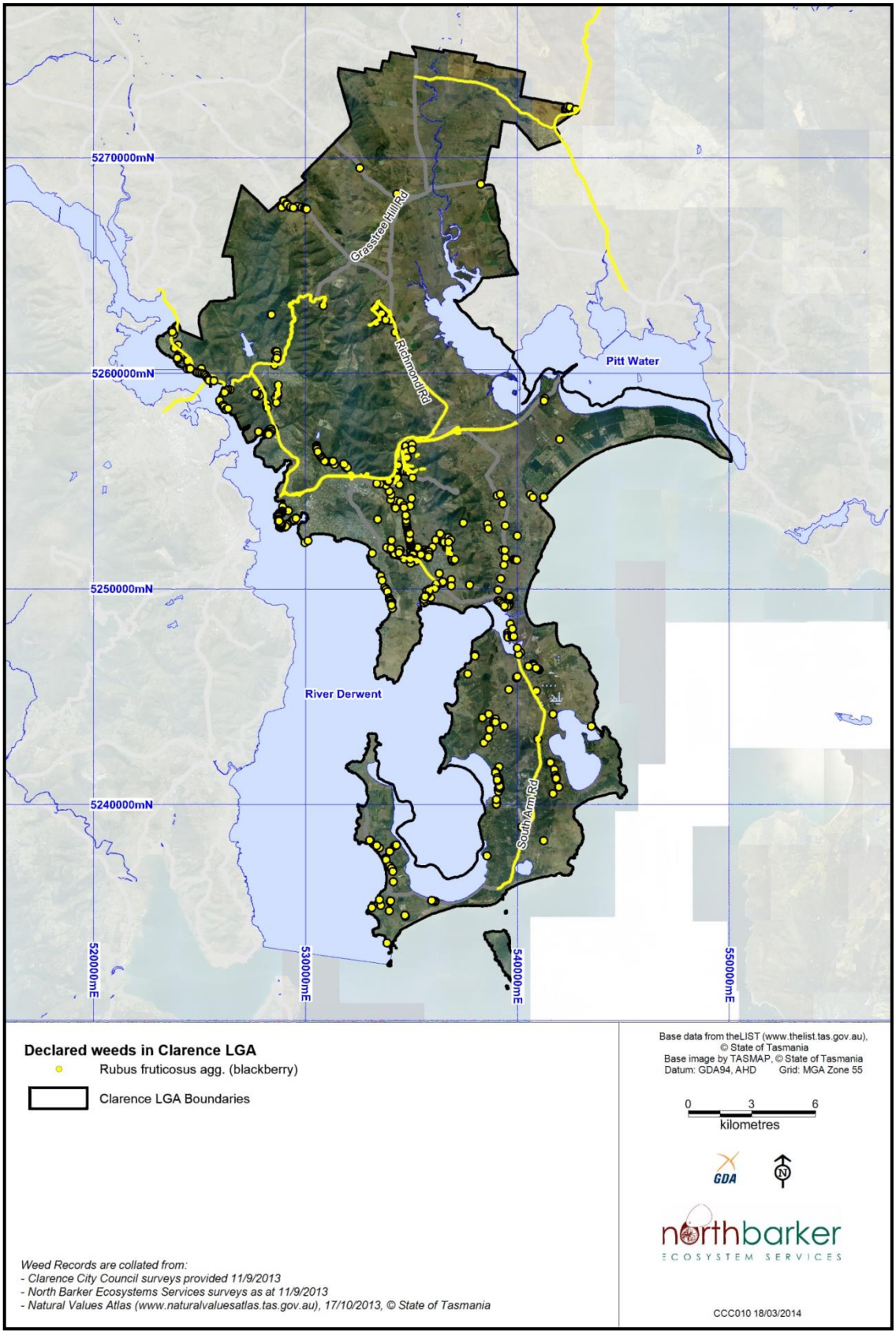

Figure 17- Declared weeds within Clarence LGA (Map 10 of 11)

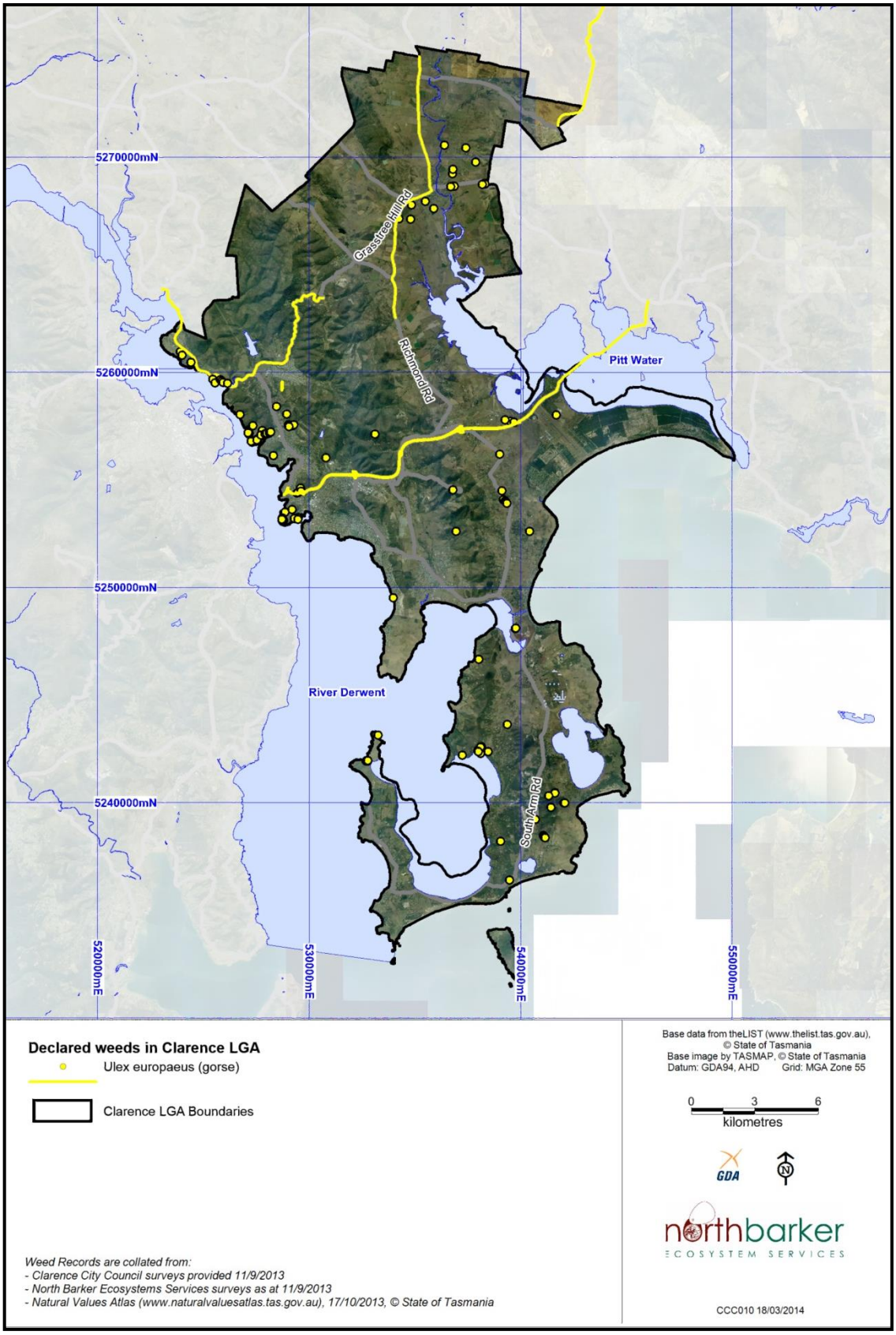

Figure 18 - Declared weeds within Clarence LGA (Map 11 of 11)

APPENDIX 10 - WEED NOTIFICATION TEMPLATE

GLAMORGAN SPRING BAY COUNCIL

GLAMORGAN SPRING BAY COUNCIL

WEED NOTIFICATION

WN NUMBER:

Date:...../...../.....

Owner name	
Street Address	PID

Dear Property Owner,

Glamorgan Spring Bay Council staff have noted the following declared weeds under the *Tasmanian Weed Management Act 1999 (the Act)* on your property:

Weed name	Details
	Our Reference:

Please find enclosed a pamphlet relating to the weeds observed on your property. You may also find useful weed information on the following websites – **www.dpipwe.tas.gov.au** and **www.weeds.gov.au**. Should you require further advice please contact the Natural Resource Management Department at Glamorgan Spring Bay Council on the number below.

Please be advised that you have a legal obligation under the *Tasmanian Weed Management Act 1999* to control declared weeds on your property. Declared weeds pose a significant threat to Tasmania's environment and the agricultural sector. Consequently, legally enforceable actions outlining their control have been identified and published in the form of a statutory weed management plan. Our authorised officers under *the Act* will be monitoring the situation from time to time and if you undertake appropriate voluntary control works, no further action will be taken. However, if the weed infestations noted above are not brought under control in the near future, we may issue a Requirement Notice under the *Tasmanian Weed Management Act 1999*. Failure to comply with a Requirement Notice can result in a fine. Ongoing breaches of *the Act* may attract more significant penalties.

GLAMORGAN SPRING BAY COUNCIL (03) 6256 4777 WWW.GSBC.TAS.GOV.AU

APPENDIX 11 – SOME ASPECTS IN POSITION DESCRIPTION FOR TEMPORARY WEED PLANNING OFFICER TEMPORARY WEED PLANNING OFFICER

Title: **Weed Strategy Officer (0.4 FTE)**

Reports to: **Manager of Environment and Sustainability**

Review: **Position to be reviewed after 12 months**

Requirements: **Degree in Environmental Science or similar with a minimum 5 years' experience in weed management or the environmental field. Plant id would be highly advantageous.**

Duties:

Included but not limited to the following

- Primary objective is to assess and evaluate key initiatives within the Clarence Weed Strategy 2016-2030
- Build key relationships as identified in the CWS
- Strategically co-ordination all Council weed management operations and compliance activities
- Projectmanage the preparation and implementation of a Weeds Communication Strategy. This will involve tendering to have a Communications Strategy prepared and then to work on implementing the recommendations of this strategy.
- Undertake a review of incentive that can be implemented to increase weed management on privately owned land. Prepare a report to Council after 12 months making recommendations on incentives to be implemented.
- Have excellent communication skills in dealing with landholders, staff and other key stakeholders.
- Assess and evaluate the advantages of Weed Work Plan (WWP)
- Further refine Weed Ratings within CWS and the Clarence Local List
- Where available apply for grants for weed mgt project or link in with NRM South
- Keep abreast of current science in relation to herbicide use such as glyphosate and assist in ensuring Council operations are best practice. Work towards encouraging better use within the community and where science supports it a phasing out of broad scale use within the community.

APPENDIX 12- THE CLARENCE PLAINS RIVULET SALTMARSH (CASE STUDY)

The Clarence Plains Rivulet plays an important part in the development of the Clarence Plains area. It terminates in a small but important saltmarsh, draining into Ralph's Bay and thence to the Derwent River.

Here we can find evidence of the presence of the traditional owners, with middens and a small quarry. Later, with European settlement, a series of small early farms were established that by the time of the 1967 bushfires had been consolidated into several large farming properties.

Then, under successive owners, the land either side of the Saltmarsh deteriorated badly, with dumped cars, trail bikes, extensive weed growth, and roaming horses. In the late 1990s Tranmere-Clarence Plains Land & Coastcare Inc. [TACPLACI] became aware of its natural values, and unsuccessfully offered assistance to the owner.

By early 2001, in partnership with a new owner of the western side, the horses were removed, and following aboriginal heritage and vegetation surveys, we obtained a succession of grants to enable not only an overall site clean up, but fencing, bouldering, weed management and extensive planting to take place. Signage, brochures and information kits have been produced. Local schools participate in planting and education days there.

Over the years we have undertaken constant weed management, bouldering of the boundary, with Clarence City Council, to prevent wood-hooking vehicles, trail bikes and dumped cars. Many hundreds of plants have been established, and the trail bikes that still arrive seem to have now confined themselves to a narrow path, which we also need for access.

The Saltmarsh area is currently zoned recreation and is to be managed to optimise conservation of biodiversity values under the North East Droughty Development Plan. This management has been shared between TACPLACI and the owner Dr. Robert Howie.

The Saltmarsh plants have reproduced themselves and the native plants in the area near the bridge have been enhanced. Here a short track leads above the Saltmarsh. Large quantities of boneseed and boxthorn have been removed from the area. Native wallaby and spear grasses dominate around the sheoaks and prickly boxes. Patches of the rare New Holland daisy (*Vittadinia muelleri and gracilis*) are found nearby.

The eastern side of the rivulet has few Saltmarsh plants. Unauthorised activities, including dumping of fill, tyres and the presence of horses, continue. These seriously threaten both the rivulet and the emerging Saltmarsh community. Rubble removal, improved fencing, and the exclusion of horses will be necessary to protect even the remaining Saltmarsh. Heavily infested with boxthorn, boneseed, broom and briar, it has taken the use of mechanical equipment and regular manual follow-up to reduce the weed burden

Saltmarsh habitats are under increasing threat from urban development and human activities. Saltmarshes play an important part in filtering our waterways and provide a unique environment that supports freshwater and marine plants and animals.

A recent vegetation survey has shown that the area of our saltmarsh is increasing, the weeds have decreased and the threatened species are thriving. There is always ongoing work here.

We will continue to promote awareness of its values (aesthetic, natural and historic) and to manage the saltmarsh, in conjunction with the landowner, as a conservation area.

W. Andrew [TACPLACI 2013]

APPENDIX 13- KINGBOROUGH COUNCIL WEED MANAGEMENT PLANNING PROVISIONS – A SUMMARY

Weed management bond

A weed management plan with a costed 5 year maintenance program is required as a condition on the permit,

A weed management bond is required to ensure the 5 year maintenance program is completed with an independent compliance process, This ensures that work has been carried out in accord with the Weed Management Plan.

Generally the Plan's implementation is the developer's responsibility, particularly for primary treatment.

When the titles are released, the costs for any remaining outstanding weed management actions must then be bonded to Council. All primary treatment is to be completed prior to commencement of on-site works and then 4 years of follow up.

The bond includes the actual treatment as well as the costs of monitoring and reporting on the treatment ensuring a built-in compliance.

The bond is costed on the basis of market rates and includes administration and CPI. The bond should be sufficient to cover the costs of Council taking over the process and contracting the works and reporting to a contractor/consultant.

Council reserves the right to take over the responsibility for implementing the works

Weed Management Plans implemented by Council

Tn the event that Council takes over the implementation process, the bond is replaced by a payment to Council of all costs associated with Council engaging a contractor.

Permit condition wording

Due to the presence of environmental weeds, prior to the commencement of on-site works, a Weed Management Plan developed by a suitably qualified consultant and to the satisfaction Council's Manager – Development Services must be submitted. This Plan needs to include:

- *timeframes and methods of primary and follow up treatment for all declared and environmental weeds on site;*
- *weed hygiene measures required to ensure the risk of the spread of weeds from the site during clearing and construction is minimised;*
- *a fully costed implementation, monitoring and reporting plan for a minimum of five years (including actions and timeframes).*

Primary treatment of all weeds is required in accordance with this Plan and to the satisfaction of the Manager - Development Services prior to the sealing of the Final Plan of Survey.

Additionally, a weed management bond equivalent to the costs of implementing, monitoring, compliancing and reporting on the weed management plan is to be bonded to Council prior to the commencement of on-site works. This Bond will be refunded upon completion of implementation of the plan to the satisfaction of Council's Manager – Development Services.

Reporting on the progress with respect to the Weed Management Plan outcomes for the site is to be to Council no less than twice a year for a minimum of 5 years.

APPENDIX 14 - CCC WEEDS PLANNING FRAMEWORK

This section outlines the key issues facing weed management within the municipality that this Weed Strategy will focus on.

Issue 1 – Multiple Landowners

Clarence City Council is made up of a mix of land tenures, mostly private (94.1%) with 3.2% owned by Council, 2.4% by the State and the final 0.3% by the Commonwealth[14]. Urban density is greatest in the central western part of the catchment in close proximity to the Tasman Highway (main transport corridor). Extensive areas of bushland interface with private landholdings throughout every township of the Clarence City Council.

Weed issues are generated in the urban and rural areas and spread along creek systems, along roads and through other vectors such as birds (boneseed, gorse and blackberry) and wind (thistles, grasses such as serrated tussock) into less intensely developed lands (private properties, Council and Crown reserves) fringing the urban areas and into Reserves. New weed populations then establish wherever suitable conditions exist. Some of the invasive weed species are able to invade undisturbed bush and are a significant threat to biological values. Public Open Spaces and footpath verges as part of subdivision developments can also become points of weed infestations if not well managed.

In order to provide cost effective weed management, programs need to be integrated across all tenures, private and public, at a landscape scale to minimise reinfestation. There are several State and Federal Government departments and authorities who manage land within the municipality including Crown Land Services, Parks and Wildlife Service, Department of State Growth, Department of Housing, TasWater, Aurora and TasNetworks who share common objectives and responsibilities with Council.

Council relies on stakeholder relationships, good work practices and collaborative weed programs with these agencies or as a last resort may serve a notice by an authorised officer on the crown.

Implications to Strategy

- Foster co-operative projects with the community, government and private landowners to support the development of a shared responsibility towards weed management with the municipality
- Investigate further opportunities for external grants and projects that can be shared across land tenures (ie: NRM South).

Issue 2 – Sustainable Weed Management

A critical component of on ground weed management is ensuring that primary weed control is followed up with secondary and tertiary treatments. Indeed primary weed management if NOT followed up can in some situations result in a worse outcome. In some cases there has been significant regeneration of particular weed

[14] Clarence Bushland and Coastal Strategy (2011)

species which have taken root after being left onsite post the primary treatment. This is because the inevitable disturbance to a site affected by the primary weed management can trigger new weed colonisation setting of further spread. Many sites may have weed seed which remains dormant in the soil for many years waiting for the conditions to change. New plants can show more vigour than those they replaced producing greater quantities of seed. There are examples of stable weed infestations in undisturbed bushland that have barely spread over extended periods. So once a decision has been made to tackle a weed infestation it is essential that plans are in place to do the follow up treatment and plan for potential revegetation. The cost for the follow up is typically an order of magnitude cheaper. The issue is less about cost and more about long term commitment to the cause. Planning should also consider:

- why the weed is being removed
- is the surrounding vegetation capable of replacing the weed being removed
- do the infestations provide valuable habitat for threatened/at risk species (ie: gorse for bandicoots, boxthorn for little penguins)
- include revegetation with suitable native species where appropriate.

Proper recording and centralised information storage of weed management projects is essential to help with program managers keep a track of any weed operations and to ensure that follow up is achieved.

Short term time frames for project funding are not tailored to sustained weed management. These efforts will benefit if not forgotten and are properly supported with ongoing attention after the primary weeders have packed up and gone home. The Federal Government's decision to transition away from Community and Landowner funding through Landcare to a Green Army model increases this risk. Provision of a limited weed budget should prioritise follow up work above starting new projects.

To encourage all stakeholders to take weed management seriously it is essential that key agencies lead by example. The small proportion of weed infestation on public land includes some of the more visible examples of weeds. Likewise these sites provide opportunities to demonstrate how well co-ordinated weed management can be successful. There is no better way of encouraging a landowner to become involved than by demonstrating how the issue is taken seriously by Council and Government bodies. That means roadsides and public parks should be targeted as absolute priorities. The Department of State Growth should be supported and encouraged to tackle State roads throughout Clarence, PWS should be encouraged to manage Crown reserves and Council should make a point of high profile activities in Council reserves and roadsides. It is acknowledged that these agencies also face constraints such as the financial budget.

Implications to Strategy

- Further refine the council weed dataset on Council land and support the integrity of Natural Values Atlas weed data by uploading private land weed data sets captured from development applications and other projects were feasible.
- Identify funding /human resourcing gaps in secondary weed management.
- Establish early in Weed Management Planning high profile locations for weed management on public lands
- Actively promote with other key public and private landholders strategic weed management partnerships.

Issue 3 – Community engagement and partnerships

On ground weed work is resource demanding. Successful weed management requires a long term commitment. Outcomes would be greatly enhanced by fostering community support and building upon relationships and networks with other government bodies.

Volunteer's participation

Clarence City Council has a large number of volunteer Landcare and Coastcare Groups that operate predominantly on Council land with some focus at times on other land tenure throughout the municipality. As with most Council areas, these groups range in skills levels and numbers and the normal dynamics of each group's longevity is based on the skills and ages of those involved. The following groups are currently active throughout the region:

- Bellerive Bluff Land & Coast Care Group
- Bellerive/Howrah Coastcare
- Geilston Bay Coastcare
- Glebe Hill Landcare
- Lauderdale Coastcare
- Mortimer Bay Coastcare
- Mt Rumney – Mt Canopus Landcare Group
- Natone Hill Landcare
- Opossum Bay Landcare
- Pipe Clay Coastcare
- Rose Bay Coastcare
- Rosny/Montagu Bay Landcare
- Seven Mile Beach Coastcare
- South Arm Coastcare
- Thoona Bushland Reserve Landcare
- Tranmere/Clarence Plains Land & Coast Care
- Waverley Flora Park Landcare
- Wildcare Deslacs

With a strong involvement from Council's Landcare Volunteer coordinator, Landcare groups can continue to effectively communicate with Council and remain adequately resourced to provide a significant contribution to on ground weed control.

However it is important that this is implemented within a strategic framework centrally co-ordinated in Council. Currently the volunteer weed management activities carried out by volunteers such as Landcare Group's, Green Army, Volunteer Prisoners, Schools, Community Service Groups can be somewhat ad hoc with many activities not being implemented in accord with an existing Reserve Activity Plan.

This co-ordinated approach requires a dedicated staff member (Temporary Weed Planning Officer) to optimise Council's resources and remove duplication and non-strategic weeding activities. A Temporary Weed Planning Officer would also be able to co-ordinate external funding opportunities between Council, volunteer groups and NRM agencies.

Building shared responsibility through private property owner participation

The best means to enhance private landholder participation is a complex issue. Under the Tasmanian Weed Management Act 1999, Council's authorised Weed Officers have the ability to direct private landholders to control or remove declared weeds on their properties. However a regulatory approach does not often result in long term increased participation by private landholders.

With 94% of municipal land in private landownership, applying a community service approach to weed management independent of tenure provides an opportunity to deliver strategic weed management across the whole of the municipality. This has proved very successful in other Councils such as Melton City Council. Consideration of this community service approach will require assessment and evaluation of a range of options which will seek to demonstrate Council's commitment to increasing landowner participation and building shared responsibility.

One option involves incentives and rewards to rate payers willing to participate. This may be in the form of rate reductions (expanding upon an existing Council conservation rate rebate scheme) for agreed weed projects on private property targeting Priority weeds or weeds on the Clarence Local List.

This community service approach could also be enhanced by Council expanding upon current collaborative programs with private landowners. A case study of the outcomes of a community shared project is in Appendix 12 on page 97.

Implications to Strategy

- Landcare Volunteer coordinator delivers enhanced training and support for weed management activities across all Volunteer Groups.
- Actively seek available funding for potential or current weed control projects.
- Development of a communications strategy that includes fostering collaboration with other agencies and stakeholders (especially private landholders) to enhance human resources available for on-ground works. The focus of this would be to include better communication and aide individuals and Council in the exchange of information.
- The concept of Council providing a community service approach for weed management on private land.
- A range of incentives to enhance active participation and build shared responsibility for weed management on private land require assessment.

Issue 4 – Assessment of weeds under Planning Scheme

The problems

Currently assessment of weeds as part of the development application (DA) process requires the development and implementation of a Weed Management Plan (WMP). However this process has intrinsic weaknesses associated with the standard of the plans presented by the developers and the compliance in relation to the implementation of the plan to achieve long term sustainable outcomes.

Recent examples of WMP's drafted on behalf of developers have frequently resulted in tedious iterations to ensure the Plan is capable of delivering acceptable outcomes. Consistently long term maintenance outcomes were not adequately addressed nor was monitoring. Importantly the compliance was poor or non-existent resulting in the implementation process being truncated to an initial highly visible short term primary weed treatment, then rapid tail off of maintenance finally becoming neglected after one or two years of the agreed 5 year maintenance regime.

Failure to implement hygiene aspects of long term weed plans, such as mandatory wash down requirements in serrated tussock infested areas (Droughty Point and Toronto's Single Hill SD) has major economic ramification resulting from the cost to control new WONS infestations spread state-wide around pastoral properties and bushland areas. Compliance is the key tool to maintain adherence to best practise hygiene conditioned in DA Weed Management Plans

Improvements to compliance process

Compliance is demanding and is not currently resourced. As compliance is an essential component of the DA process which is failing at present consideration should be given to a more workable weed compliance process based on being facilitated by Council at the developers cost.

Further, whilst the developer has a high level of control over both the planning and implementation of these Weed Plans, the process continues to be subject to inherent developer failings in long term weed maintenance and compliance. Consideration should be given to options to eliminate the potential for developer insufficiencies.

Weed Bonds and Council facilitated process at developer's expense

Kingborough Council has addressed these issues under their Planning Scheme provisions using a Weed Management Bond (akin to a Landscape Bond) to ensure that the 5 year costed, maintenance program is fully delivered. Kingborough Council also has the provision to facilitate the weed planning, implementation and monitoring process at the developer's expense including the cost of compliance. See Appendix 13 on page 98 for summary of weed management bonds in Kingborough Council.

Asset Protection Zone weed management

Clarence contains significant areas of bushland of which fire is a natural part of the ecology. With more people attracted to a peri-urban lifestyle comes the increased pressure to clear bushland for fire management and protection zones of new dwellings and associated infrastructure. This type of clearing for asset protection provides conditions suitable for the introduction and spread of weeds into areas previously free of any such infestations.

Serrated tussock is an example of a species which has taken advantage of this type of management.

Implications to Strategy

- The Development Assessment process for Weed management under the current Planning Scheme provisions requires review and subsequent strengthening
- Consideration is required for the application of Weed Bonds and Council facilitated Weed management plans and implementation at the developers' expense.
- Full functioning compliance process at the developers expense is essential in order to guarantee the application of strict hygiene conditions where likelihood of off-site weed contamination is high (eg serrated tussock infested regions of Droughty Point, Acton and Seven Mile Beach)

Issue 5 – Co-ordination of Council weed management operations

Council Managed land

Council budgets dictate how strategic planning become operational outcomes. Council currently delivers at least 14 separate budgeted project areas which include both control and long term maintenance of declared and WONS weeds on Council land. There is no overarching co-ordination or prioritisations of these weed projects. These projects not only include primary weed control but also a substantial portion of the weed management in each project is dedicated to long term maintenance following on from primary weed control. This involves secondary and tertiary treatments, enhancing natural regeneration, revegetation and rehabilitation of the

weed infested areas. The aim is to ultimately replace the weeds with indigenous vegetation and may take decades to attain desired level of effective control.

Table 4 - Projects with weed management components in the 2015-16 budget[15]

Programs with Weed control and maintenance	Operators	Estimation
Priority Weed Management -	Contractor	42,000
Weed Control on Rural Roads Reserves	Contractor	5,000
Reserve Activity Plan Implementation	Contractor	10,000
Drainage swales	Contractor	10,000
General maintenance in bush and coasts	Council (Parks)	5,000
Fire Management Strategy -pre and post burns	Council (Fire)	20,000
Track and Tangara Trail weed maintenance	Contractor/Council	10,000
Lauderdale Tip maintenance	Contractor	3,000
Constructed wetland maintenance	Contractor	2,000
Landcare and Coastcare Grant (weed/rehabilitation	Contractor/Vols.	10,000
School Landcare (weed/revegetation)	Council/Volunteers	1,000
Risdon Vale Volunteer Prisoner weed/rehabilitation	Contractor/Vols	10,000
Clarendonvale Rivulet maintenance	Council/Vols/Cont.	2,000
Mountain Bike Park maintenance	Contractor/Vols	2,000
TOTAL		**132,000**

Currently many of these weed management projects operate non-strategically and independently of each other. They are project managed by various Council NRM staff, Parks staff, Fire and Bush Regeneration staff, contractors and various volunteers groups. There is a distinct lack of co-ordination between all these independently managed projects.

To optimise Council weed management resources a co-ordinated and strategic approach is required with a dedicated Council Officer (Temporary Weed Planning Officer WPO) to triage and prioritise all Council on ground weed management operations.

Non Council Managed Land

Council is frequently requested to follow up with WONS and listed weed issues on non-Council managed lands often as a result of complaints from neighbouring properties that are being infested with weeds spreading across boundaries. There are seven City Rangers (via Coordinator of City Rangers) as well as the Natural Asset Officer that are certified to implement the WMA and direct weed control on private land. This process also requires triaging and prioritising by a Temporary Weed Planning Officer (WPO).

Council additionally is frequently requested to provide weed identification and management information at the Counter as well as provide up to date awareness information in the form of pamphlets and booklets. This also would best be delegated to one Council Officer.

Assessment and compliance of DA Management Plans has become a substantial role, given the rapid expansion of green field subdivisions in the municipality. This process requires coordination by a dedicated WPO. In particular enforcement of strict weed hygiene conditions has become crucial to ensuring that weeds such as serrated tussock are not spread far and wide over southern Tasmanian

[15] budget figures provided by Justin Burgess

Implications to Strategy

- Appointment of a 0.4 FTE Temporary Weed Planning Officer subject to review after 12 months.

Issue 6 – Best Practice Weed Management

Weed management works comes with the inherent risk of exposing the local landscape (and on a cumulative level landscapes further afield) to contamination from excessive use of chemicals contained within herbicides.

Glyphosate is the world's most freely available and bestselling chemical herbicide and most used in large scale and domestic weed control. A number of countries are now looking to minimise use or have already banned glyphosate (France and Netherlands) within the domestic setting and/or for crop production. These moves should be followed closely along with heightening the awareness to Council staff, contractors and volunteers regarding its potential toxicity and importance of safe application procedures.

Excessive use of this and a wide array of other chemicals used in the weed control arsenal are now known to have detrimental impacts on the environment and biodiversity such as:

- Impacts on non-target species such as insects on the weeds being sprayed;
- From eating treated crops or prey that have fed on treated plants;
- From spray that has been blown by wind into non target habitats or backyards;
- Chemical movement by rain into groundwater, streams, rivers and coastal waters;
- Spray that falls onto the soil, moves through the plant to their roots, or incorporated into the soil when a plant dies.

The ability for chemicals to persist in the environment is a complex one. In sandy soils, chemicals may wash through the soil and move through the environment quickly, while in clay soils chemicals such as glyphosate may stay bound for over a year.

It is recognised that herbicides are a vital component in the weed manager's ability to effectively apply integrated control options. However it is also recognised that without effective weed work planning prior to implementation of weed control/eradication projects, there is potential for the excessive/incorrect application of herbicides within weed management.

Weed Work Plans

A Weed Work Plan (WWP) should be developed for major weed eradication/control projects managed by Council staff. An easily applied set of criteria should be developed as part of Temporary Weed Planning Officer role to clarify when a WWP is required.

WWP should include the following (but not limited to).

- Location and species targeted (map of site)
- Recommended treatment and method that will be deployed (consider all options available and select methods that will have the greatest benefit to success)
- Timeline for project
- Funding required (short term funding potentially may deliver no or even worse results in the long term)
- Include secondary/tertiary treatment methods

- Include revegetation with native species where practical to ensure vegetation is replaced.
- Hygiene measures to be adopted
- Qualifications of people undertaking project
- Include a photo point of initial operations
- An evaluation section to monitor progress including additional photos from the initial photo point

The aim of this early planning is to help maximise the chance for success, ensure correct methods are applied to weed management works and to give further thought to the variety of methods to removal available and to ensure chemical application is limited to the recommendation applications (and selection of correct herbicide).

ChemCert Training and Volunteer use of Chemicals

All Council staff should have ChemCert Accreditation (AQF2 or equivalent) prior to undertaking weed work and where necessary this training should be kept up-to-date. Weed Planning Officer role should be undertaken by someone with ChemCert Supervisors Accreditation (AQF3&4) or equivalent)[16].

In relation to volunteer groups and to limit the potential for below best practise chemical safe handling and application, it is recommended that volunteers are limited to 'cut and paint' application of lower toxicity S5 herbicides. Volunteers should be excluded from spraying and selected volunteers in each volunteer Group be trained to apply S5 Herbicides under ChemCert (AQF2) framework

Implications to Strategy

- Review current on-ground weed practices, recommended best practices and ensure adequate skills and knowledge is shared across all those implementing weed control/eradication programs.
- Ensure all Council weed control workers undertake appropriate ChemCert training and that training is kept up-to-date.
- Design a Weed Work Plan (WWP) template and develop a set of criteria for deciding which major weed management projects require WWP.
- Selected volunteers to be trained for cut and paste application of S5 chemicals under ChemCert AQF2 framework

Issue 7 – Declared weeds/WONS/emerging weeds

Limitations of CCC Weed Inspectors certified under the WMA

Council has seven active City Rangers and a Natural Assets Officer certified as weed inspectors under the WMA who have the power to require landowners to control declared weeds on their land (subject to the relevant statutory weed management plan). Due to work load demands, City Rangers only act on smaller domestic blocks, and are unavailable for all large peri-urban and rural properties. The Council's Natural Asset Officer's role is also limited to dealing with only a small selection of WMA issues on larger properties much to the frustration of rate payers. Currently Council is only partially meeting its weed inspectoral role obligations under the WMA. Council's main focus under the WMA has been to control declared weeds on Council managed land.

[16] http://www.chemcert.org.au/

Competing with these obligations is the threat posed by numerous other weeds, some native to Australia, that are not listed under the State or Federal legislation. Often these lists are also slower to evolve in comparison to knowledge gained at the Council level; therefore any weed strategy should also adequately prioritise weeds posing a threat outside of legislation.

There are also strategic on ground targets that have been identified for WONS such as bridal creeper (*Asparagus asparagoides*), boneseed (*Chrysanthemoides monilifera ssp. monilifera*), Chilean needle grass (*Nassella neesiana*) and seeding willows (*Salix cinerea*).

Council faces the difficult task of managing their statutory obligations while also trying to manage emerging weeds which may not be identified in statutory planning (and hence minimising future costs when these emerging weeds become more widespread). Prioritising all known weeds will assist in identifying potential gaps, assist with future funding and aide in the understanding of where to focus time and energy going forward.

Implications to Strategy

- Undertake a review of weed prioritisation of statutory weeds and the Clarence Local List to produce agreed ratings (including CLL) and ensure yearly review based on new knowledge or changes to distribution.
- Ensure resources are dedicated to prioritised weeds.
- Planning Scheme should include declared weeds and the Clarence Local List ideally under the definition of weeds.
- Provision of Staff resources to carry out Weed Inspectoral obligations under the WMA

Issue 8 – Climate Change

The true impact from climate change within the municipality is uncertain and the effects on weeds are even more so. As the climate warms, plants that were not ideally suited to a cool temperate climate may find the transition to a warmer temperate climate to their liking. There are a whole suite of garden plants that currently show no sign of invasiveness but with a warming climate this may change. Research also suggests that weeds may migrate south of Victoria.[17] A drier climate may also see some current weeds reduce in invasiveness.

Climate modelling indicates that no uniform change is predicted to occur across the Southern Region of Tasmania. Some locations may be drier, others wetter. Coastal regions are predicted to experience significant changes due to rising sea levels.[18] Changes to high tide levels and king tides will also be felt. Added to this is the potential for an increase in bushfire frequency. Constant vigilance is required for potential explosion of sleeper weed populations and reacting to DPIPWE Weed Alerts

Under the *State Policies and Projects Act 1993*, State of the Environment reporting is undertaken to monitor environmental conditions, trends and changes over a 5 yearly period[19]. This reporting aims to provide credible, evidence-based, state-wide environmental information for use by scientists, students and resource managers. The

[17] Southern Tasmania Weed Mgt Strategy

[18] Clarence City Council (2009)

[19] available at http://www.planning.tas.gov.au/library_and_information/state_of_the_environment_reports

State of the Environment reporting is a valuable tool by which to monitor the challenges faced by climate change.