

**Knowledge document of the impact of priority wetland weeds**

**Part 1 – Selection of the priority wetland weeds**

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May 2017

Acknowledgements

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Photo credit

Parrots Feather *Myriophyllum aquaticum.* Daniel Clements (Agriculture Victoria, DEDJTR)

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1. Introduction

There are a large number of weeds present in Victorian wetlands, which vary in their distribution, abundance and significance. Some weeds have a formal classification (e.g. National Alert weeds, Weeds of National significance, Victorian Noxious weeds etc), have been the subject of active management and research effort, and have guidance available regarding their management. Others have received far less attention, including regarding their impacts on the environment and how they can be effectively managed. It is often difficult for wetland managers to determine which wetland weeds should be the focus on their attention, in this context of limited knowledge as well as limited resources.

During a 2014 workshop of Victorian wetland managers, the investigation of the effectiveness of invasive species management in wetlands was identified as a priority issue. DELWP Water and Catchments subsequently funded work to prioritise wetland weeds, and collate information regarding their management, to support wetland managers.

This report presents the first part of a two part process to describe the impacts on wetlands of priority wetland weeds, including information about knowledge gaps. This report details the process for determining the priority wetland weeds and has been undertaken by Agriculture Victoria for DELWP Water and Catchments Group. Section 1 provides background to the project, its scope, and goals and objectives.

Part 2 of the project is provided in a second report:

Weiss, J. and Dugdale, T. (2017). Knowledge document of the impact of priority wetland weeds: Part 2 – Impacts of the priority weeds on wetlands. Report prepared for Department of Environment, Land, Water and Planning (DELWP) Water and Catchments Group by Agriculture Victoria.

These two steps (and associated reports) are the first Phase of a proposed three Phase project to develop a Wetland Weed Management Tool. This information will be used to inform two further phases of the project, which are described in Section 4.3 of (Weiss and Dugdale 2017).

## 1.1 Effectiveness of invasive species management in wetlands

### 1.1.1 Background

The project described in the previous section is a component of a large project entitled “Effectiveness of invasive species management in wetlands”.

The Victorian Waterway Management Strategy (VWMS) sets out policy direction on the management of invasive species in waterways in Chapter 16. Policy 16.3 states that the Victorian Government will support research that informs invasive species management in waterways. Action 12.5 of the VWMS relates to preparing guidance for landholders on sustainable use of wetlands. Regional waterway strategies include a range of activities to manage the threat to wetlands from invasive species.

Under the Victorian Waterway Management Program, there is considerable investment in management activities to manage the threats from invasive species to wetland condition and values. These activities include control or eradication of invasive species, or surveillance to detect the introduction of new species that have the potential to be invasive. Although there is a considerable amount of information on invasive species, much of this information is not specific to wetlands or presented in a form that is readily accessible to wetland planners or managers.

Wetland planners and managers require guidance to assist them in setting appropriate objectives for invasive species surveillance, control or eradication. These objectives need to be based on knowledge of the expected outcomes from a range of management activities to control invasive species. Wetland planners and managers also require consolidated and easily accessible information on effective and suitable techniques to manage invasive species in wetlands.

There are a large number of invasive species that currently impact on the condition and values of wetlands in Victoria. Benchmark descriptions for wetland ecological vegetation classes (EVCs) identify approximately 150 weeds that pose a high threat to wetland vegetation across Victoria (DEPI 2013). Some invasive species are widespread, impacting wetlands across Victoria, while others are more localised and are related to particular wetland landscapes, wetland types or land use settings.

### 1.1.2 Scope

The scope of this project relates to wetlands in inland and coastal situations (areas with standing or very slow flowing water), including coastal saltmarshes. Marine wetlands and those in the main body of estuaries are excluded. The focus of the project is the management of invasive species in naturally occurring wetlands, though the findings may also be of relevance to wetlands of human origin.

Given the large numbers of invasive species impacting on wetlands in Victoria, the project will need to focus on a select number of high priority wetland invasive species. The project focus should be on providing guidance on the effectiveness of managing these high priority invasive species in Victorian wetlands with the aims of improving wetland condition and protecting wetland values that are directly threatened by invasive species, for example native wetland fauna through predation or displacement.

Prioritisation of invasive species to select those for which guidance will be developed should focus on:

* the prevalence of various invasive species
* the level of risk to wetland condition and values from individual or particular groups of invasive species
* the likely effectiveness of control and
* the current state of knowledge and the feasibility of undertaking research to fill knowledge gaps within the budget and timeframe of the project.

The following factors may influence the level of risk of invasive species to wetland condition and values:

* pathways for the introduction or reintroduction of invasive species to wetlands
* landscape setting
* wetland type
* land use setting
* the condition of the wetland
* impact pathways and severity of impact on wetland components, processes and values and
* the likely influence of climate change on wetland attributes and the range of invasive species.

Factors related to the effectiveness of surveillance, control and eradication measures are likely to include the above factors and in addition:

* feasibility of eradication or control for different invasive species
* thresholds for effective control over the short and longer term
* suitable control techniques including any undesirable impacts of such techniques in wetlands
* effective surveillance strategies to guard against reintroduction or the introduction of new invasive species and
* monitoring requirements to support effective control.

### 1.1.3 Goals and objectives

The goal of this project is to improve the effectiveness of the management of high priority invasive species in Victoria’s wetlands. It will do this by prioritising weeds present in Victorian wetlands and synthesizing existing information and management guidance for use by wetland planners and managers to enable them to set objectives and undertake effective actions for invasive species management with predictable outcomes. The objectives of the project are to:

* identify invasive species that pose a threat to Victoria’s wetlands
* identify high priority invasive species for the development of guidance
* identify existing knowledge and knowledge gaps on the management of high priority invasive species.

## 1.2 Impact of priority wetland weeds

The project has three phases, two of which have not yet been commissioned:

### Phase 1 – Develop a knowledge document of the impact of priority wetland weeds

The first step of Phase 1, (Part 1 report), includes the following steps:

* Arrange and conduct a voting and vetting system to determine the 30 wetland weed species
* Present the outcome to stakeholders to ensure they are satisfied with the outcome and that the species in the list makes intuitive sense.

The second step of Phase 1 (Part 2 report):

* Select the wetland values that the impact of the weeds will be considered against
* Conduct information reviews to provide further information
* Identify knowledge gaps and other issues identified in the above steps
* Produce a report which
  + documents the method used and outcomes of above
  + provides a knowledge document describing the impacts of each species on wetland values, including information about knowledge gaps.

### Phase 2 – Create control guides for the priority species

This stage of the project has not yet been commissioned.

### Phase 3 – Create Wetland Weed Management Tool

This stage of the project has not yet been commissioned.

2 Approach to prioritise weeds for the study

Within the scope of this project, it was necessary to develop an approach to reduce the large number of weeds under consideration. The approach is outlined below.

A workshop was held on January 8, 2016 to reduce the initial wetland weed list of 174 spp to between 50-70 species for a stakeholder survey. Present: Tony Dugdale, John Weiss, Doug Frood and Pam Clunie.

## 2.1 Methodology

### 2.1.1 Origin of list and cross-referencing

An initial list of 174 species of weeds occurring in wetlands, riparian zones and their buffer regions was compiled from several sources, including the EVC benchmarks for the DELWP Index of Wetland Condition, DSE’s Advisory list of environmental weeds of aquatic habitats of Victoria (Adair et al. 2008), and a previous survey of aquatic water managers of actively managed wetland weeds. Some additional species were included, based on field observations by the workshop participants (*Tamarix aphylla*, *Tamarix ramosissima*, *Isolepis hystrix, Limonium hyblaeum, Limonium companyonis*). An additional three species were added during the meeting (*Arundo donax, Rosa canina, and Hypericum tetrapterum*).

### Preliminary review of list

The weed list was then databased and cross-referenced with Victorian Noxious weeds categories, the Advisory list of environmental weeds of aquatic habitats of Victoria (Adair *et al*. 2008), Victorian Alert weeds, National Alert weeds, Weeds of National significance and Environmental Weeds of Victoria (Carr *et al.* 1992) (Appendix 1). We removed all names at the generic level where the possibilities were covered by the listings at the species level (e.g. *Xanthium* spp.).

We categorised context and habitat of all species (Table 1, Appendix 1). Of the 174 species, eight species were identified as native to Victoria (but are weedy in particular circumstances; Appendix 1). While *Utricularia gibba* and *Marsilea mutica* may be opportunistic at some locations, both are currently regarded by DELWP as native species. *U. gibba* is considered vulnerable in Victoria and *M. mutica* is considered inadequately known in Victoria on the DELWP Victorian Advisory List of rare or threatened plants.

It was agreed that the number of EVCs a species has the potential to invade may not be a good indicator for filtering. This is because a species could occur in a number of EVCs but have relatively minor impact in them, compared to another species that only occurs in one EVC, but has a major impact in that community.

### 2.1.2 Process for “weeding” out list (refer to flow diagram – Figure 1)

#### Step 1 – Remove State Prohibited Weeds

As responsibility for controlling, managing and eradicating State Prohibited Weeds (SPWs) in Victoria rests with DEDJTR, and there are existing management plans for these species, State Prohibited weeds were removed from the list. The other categories of noxious weeds, Regionally Prohibited and Regionally Controlled, are CMA specific, so they were not used as a filtering process.

#### Step 2 – Remove native species of engineered waterways

Some of the native species are only weedy in artificial wetlands (dams), or in engineered waterways which are out of the scope of this project. All native species in context category of “N1: Native wetland species, potentially problematic in irrigation systems” were removed from the list. While *Azolla* spp., *Typha* spp. (other than the introduced *T. latifolia*), and *Phragmites australis* are native, these were retained on the list as they can be problematic for the management of some wetlands, largely due to the impacts of altered ecological processes.

#### Step 3 – Remove terrestrial species

The scope of this project defines the area of concern as “wetlands in inland and coastal situations (areas with standing or very slow flowing water) but excludes marine wetlands and those in the main body of estuaries but not coastal saltmarshes. Specifically, marine pests are excluded”. This definition removes plants that occur in the areas/buffers that surround wetlands. These buffer regions are encompassed by habitat classification of “TR: Primarily terrestrial species, to some extent tolerant of waterlogging and potentially problematic on floodplains, or sometimes marginal to wetlands and managed within wetland reserves.” These species were removed from the list.

#### Step 4 – Keep species under existing weed management programs

As the project has strong end-user/stakeholder involvement, weed species that had already been identified as under active management by aquatic managers (previous survey) were prioritised to be kept on the list.

#### Step 5 – Remove species with minor impact

Many of the species still on the list were identified as having little or negligible impact on wetland values. It is understood that all weeds have a localised strong impact as competitors for light, water, nutrients etc., but at a larger scale specific weeds which occur at lower frequencies have minor impacts on wetland values. We did not take into account whether the weed had limited distribution but only on its potential impact on wetland values.

When making this decision, we used our knowledge of the species, as well as comparing to the DSE Advisory list and to Carr’s et *al.* (1992) risk categories. Thirteen species were removed as they were determined to have only small scale/minor impacts. An additional two species initially listed by DSE but currently considered to be native (*Utricularia gibba* and *Marsilea mutica*) were also omitted at this stage.

#### Step 6 – Remove species with very short lifecycle

Some of the species still on the list were identified as species that had rapid growth and reached maturity in a short time period (i.e. weeks to a couple of months). This short life span would make management of these species problematic as they most likely would have reproduced and set seed before control action could be implemented or be effective.

#### Step 7 – Remove ubiquitous species

Some of the species still remaining were identified as being very common and widespread both in and adjacent to wetlands. All species remaining on the list were classified as to whether they are ubiquitous, very common, widespread, beyond general intervention (or at habitat saturation), or otherwise. In terms of management, these particular weed species either cannot be realistically selectively controlled with the available resources, or if controlled in wetland areas, would quickly re-invade from adjacent areas, negating the usefulness of the control as well as increasing control costs (labour, herbicide etc.). Again, when making this decision, we used our knowledge of the species, as well as comparing to the DSE Advisory list and to Carr’s *et al.* (1992) risk categories.

#### Final step

All species (those of the 70 remaining species or those dropped off) were reviewed by the participants to ensure we were satisfied with the list and had not missed anything obvious. If in any of the steps, we were unsure of the category of the species and whether it should be dropped or not, the species were kept on the list. The final list of 70 species is shown in Table 2.

**Table 1. Context and habitat definition used to classify wetland weeds.**

| Context | |
| --- | --- |
| N1: Native wetland species, potentially problematic in irrigation systems. |
| N2: Native wetland species, excessive growth sometimes problematic in wetland systems, primarily as indicator of altered process. |
| IA: Opportunistic introduced annual (to biennial) grasses and forbs of drier phases of wetlands (or highly ephemeral/shallow wetland communities). |
| IE: Very small introduced ephemeral species, generally relatively minor weeds, sometimes competitive to other small plants in very shallow ephemeral wetland habitats. |
| IO: Introduced obligate wetland species. |
| IS: Introduced species of seasonal wetland habitats. |
| IT: Primarily terrestrial (at least short-lived) introduced perennial species, extending into at least margins of seasonal wetlands, generally very difficult to manage. |
| Habitat | |
| AF: Surface floating aquatic. | |
| AQ: At least substantially submerged aquatic, mostly attached. | |
| AM: Amphibious / semi-aquatic species. | |
| MH: Herbaceous species (forbs and grasses) expressing during drawdown phase (including ‘mud herbs’). | |
| SM: Obligate (usually coastal) saltmarsh species. Note that species placed in other categories can also be relatively salt-tolerant. | |
| BM: Bogs and moss beds | |
| FR: Fringing or marginal species, tolerant of seasonal / intermittent shallow inundation or marginal wetland habitats. | |
| TR: Primarily terrestrial species, to some extent tolerant of waterlogging and potentially problematic on floodplains, or sometimes marginal to wetlands and managed within wetland reserves. | |
| RI: Riparian verges of streams | |

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| --- |
| 4. Apply species under existing management filter  **3 species removed**  **3 species removed**  **46 species removed**  **15 species removed**  **6 species removed**  **31 species removed**  **Initial start list – 174 species**  1. Apply state prohibited noxious weed filter  2. Apply context - N1 native – engineered water filter  3. Apply terrestrial weed filter  5. Apply minor impact filter  6. Apply rapid growth and reproduction filter  7. Apply ubiquitous weed filter  **70 species left** |

Figure 1. Flow chart of filtering process to reduce original list of 174 wetland weed species for stakeholder prioritisation survey.

**Table 2. List of 70 priority species used for stakeholder weed prioritisation survey.**

| Scientific name | Common name |
| --- | --- |
| *Agrostis stolonifera* | Creeping Bent |
| *Alisma lanceolatum* | Water Plantain |
| *Alopecurus geniculatus* | Marsh Fox-tail |
| *Alopecurus* spp. | Fox Tail |
| *Aponogeton distachyos* | Cape Pondlily |
| *Arundo donax* | Giant reed |
| *Azolla* spp. | Azolla |
| *Cabomba caroliniana* var. *caroliniana* | Cabomba |
| *Cortaderia* spp. | Pampas Grass Text |
| *Cyperus eragrostis* | Drain Flat-sedge |
| *Egeria densa* | Egeria |
| *Elodea canadensis* | Canadian pondweed |
| *Festuca arundinacea* | Tall Fescue |
| *Fraxinus angustifolia* var. *angustifolia* | Desert ash |
| *Gymnocoronis spilanthoides* | Senegal tea |
| *Hydrocleys nymphoides* | Water Poppy |
| *Hypericum tetrapterum* | St Peter's Wort |
| *Iris pseudacorus* | Yellow Flag Iris |
| *Jacobaea vulgaris* | Ragwort |
| *Juncus acutus* subsp. *acutus* | Spiny Rush |
| *Juncus articulatus* subsp. *articulatus* | Jointed Rush |
| *Juncus bulbosus* | Bulbous Rush |
| *Juncus effusus* subsp. *effusus* | Soft Rush |
| *Juncus microcephalus* | Tiny-headed Rush |
| *Leersia oryzoides* | Rice Cut-grass |
| *Lilaea scilloides* | Lilaea |
| *Limonium companyonis* | Sea Lavender |
| *Lonicera japonica* | Japanese Honeysuckle |
| *Lophopyrum ponticum* | Tall Wheat-grass |
| *Limonium hyblaeum* | Sea Lavender |
| *Ludwigia palustris* | Marsh Ludwigia |
| *Lycium ferocissimum* | African Box-thorn |
| *Lythrum junceum* | Mediterranean Loosestrife |
| *Mentha pulegium* | Pennyroyal |
| *Mimulus moschatus* | Musk Monkey-flower |
| *Myriophyllum aquaticum* | Parrot's Feather |
| *Nassella hyalina* | Cane Needle-grass |
| *Nasturtium officinale* | Watercress |
| *Nymphaea mexicana* | Waterlily |
| *Nymphaea* spp. | Waterlily |
| *Panicum coloratum* | Coolah Grass |
| *Paspalum distichum* | Water Couch |
| *Phalaris aquatica* | Toowoomba Canary-grass |
| *Phalaris arundinacea* | Reed Canary-grass |
| *Phragmites australis* | Common reed |
| *Phyla canescens* | Fog-fruit |
| *Polypogon viridis* | Water Bent |
| *Pontederia cordata* | Pickerel Weed |
| *Potentilla anserina* | Silverweed |
| *Psoralea pinnata* | Blue Psoralea |
| *Puccinellia fasciculata* | Borrer's Saltmarsh-grass |
| *Ranunculus repens* | Creeping Buttercup |
| *Rorippa palustris* | Marsh Yellow-cress |
| *Rubus anglocandicans* | Common Blackberry |
| *Rubus fruticosus* spp. agg. | Blackberry |
| *Sagittaria* spp. | Sagittaria |
| *Salix cinerea* | Grey Sallow |
| *Salix* spp. | Willow |
| *Sparganium erectum* | Branching Bur-reed |
| *Spartina* spp. | Cord Grass |
| *Tamarisk aphylla* | Athel pine |
| *Tamarisk ramosissima* | Salt Cedar |
| *Trifolium fragiferum var. fragiferum* | Strawberry Clover |
| *Typha latifolia* | Lesser Reed-mace |
| *Typha* spp. | Cumbungi |
| *Verbena bonariensis* s.l. | Purple-top Verbena |
| *Verbena supina* | Trailing Verbena |
| *Xanthium spinosum* | Bathurst Burr |
| *Xanthium strumarium* spp. agg. | Noogoora Burr species aggregate |

3 Survey of wetland managers

## 3.1 Aim

Developing management guides for 174 weed species is not feasible and of little use. Therefore, the aim of the survey was to further shortlist the number of high priority wetland weed species to approximately 30.

A survey was chosen as the best method for eliciting information given time and resource limitations. A more formal, rigorous, weed prioritisation process for wetland weeds would take substantialy more time and resources. The survey approach also allows wetland weed managers to have a say in the weeds that would be prioritized, and thus have weed management guides developed.

The impacts on wetland values of those 30 species will then be documented. This will form the knowledge basis to prioritise the wetland weed species for the management guides (in a subsequent project).

## 3.2 Methods

We formulated a survey consisting of seven questions: four asked to tick all species (of the shortlisted 70) that were relevant, and three entailed voting 10 points to particular species.

#### Questions:

1. Which are the introduced weeds you are PRESENTLY ACTIVELY controlling (within last 2 years) in natural wetlands? (tick/cross as many as are relevant)
2. What are the weeds that you FEEL CONFIDENT in controlling (have the relevant knowledge or techniques)? (tick/cross as many as are relevant)
3. What are the weeds that you feel LEAST confident in managing (either in knowledge or techniques)? (tick/cross as many as are relevant)
4. What are the weeds that you would like to control but don’t have sufficient resources/time? (tick/cross as many as are relevant)
5. What weeds do you want more information on the BIOLOGY?   
   Voting – have 10 votes (Can vote multiple times for single weed or spread votes)
6. What weeds do you want more information on CONTROL OPTIONS?   
   Voting – have 10 votes (Can vote multiple times for single weed or spread votes)
7. What weeds do you not have at present in your area but think they will be your future priority weeds? Voting – have 10 votes (Can vote multiple times for single weed or spread votes)

## 3.3 Survey respondents

A total of 155 individuals across Water Authorities, CMAs, Parks Victoria and Local Councils were emailed directly with the survey. Some of the email addresses were no longer valid and some of those contacted forwarded the survey to others in their organisation. In total, 14 emails were invalid, in which nine were on extended leave and five no longer worked for the organization.

Survey respondents were as follows:

* 1 local council
* 2 from Melbourne Water
* 2 from Goulburn-Murray Water
* 3 from Goulburn Broken CMA
* 2 from East Gippsland CMA
* 1 each from North East, West Gippsland, Port Phillip and Westernport, Corangamite, Wimmera, and North Central CMAs
* 1 contractor from West Gippsland.

Return rate was 17 from 127 (13%). This is an underestimate of the total respondents involved as sometimes only one person returned the survey from an organisation whilst indicating that they consulted across their organisation. The return rate from an organisation perspective was 22% (12 organisations replied from three Water Authorities, 10 CMAs, Parks Victoria, and 40 local councils

## 3.4 Results

The highly ranked wetland weed species for each question are shown in Appendix 2.

Of particular interest to the project were the survey questions that aimed to discover the gaps in the knowledge of wetland managers regarding how to control particular species and what they had least confidence in managing (Question 3), or where more information was needed (Questions 5 and 6). In addition, which wetland weeds they were aware of that could be future problems (Question 7).

To determine if questions were correlated, we undertook regression analysis to compare results of the species ranking from each of the questions to each other, and to final rankings (total and of only questions 3567) – Figure 2.

The only questions in which the resultant rankings were strongly correlated were Q1 with Q2, and Q5 with Q6. Q7 was the least correlated to any of the other questions. Q1 correlates with Q2 because Q1 lists the weeds that they are currently managing and Q2 lists the weeds that they are confident managing, we expect a high level of confidence for the weeds that are actively managed; Q5 correlates with Q6 because Q5 are the species for which they would like more information on the biology and Q6 is the species they would like more information on control methods, it is if they don’t know much about a weed then they won’t know much about biology or control; Q7 related to species that could be future priority weeds.

## 3.5 Summary

Questions 3, 5, 6 and 7 are the key selection factors in terms of addressing stakeholder needs for information on biology, impacts and control methods of present and future weeds. The highest ranked weeds according to these questions are shown in **Table 3**. Species down to and including *Phalaris aquatica* (ranked 28th equal) will be used to develop the impact on wetland values knowledge document.

We also ranked the species using only Question 5 and 6, and using Questions 3, 5, and 6. Regardless of the method, the species in the top 15 did not change (although their order did; **Table 4**). Differences did occur between position 15 and 28: three species were no longer in the top 28 when Questions 3, 5, and 6 were used; and eight species were moved out when Question 5 and 6 were used. These differences are minor, and so we are happy to use the original ranking (based on Question 3, 5, 6 and 7).

This list of 28 species was circulated to the same email list used in the initial survey. Participants were asked to provide feedback on the species list within two weeks. Two responses suggested that other species should be added.

The first was *Glyceria maxima*. Melbourne Water indicated that they had undertaken waterway improvement works costing $20,000 to $50,000 per annum over a 15-year period in areas east of Cardinia Creek. *G. maxima* is a weed of small waterways, wet and boggy are and wetlands. It has the potential to invade and transform shallow waterbodies by accumulating biomass and sediments, filling the free water areas while overwhelming the native plants growing at the location (David Carew, Melbourne Water, personal communication). *Glyceria maxima* was not on the initial list of 174 weed species and was not added in subsequent steps. Based on the feedback above this species will be added to the shortlist for determining impacts.

The second was a list of nine weeds (*Paspalum distichum, Holcus lanatus, Aster subulatus, Plantain major, Polypogon spp., Rumex crispus, Rumex conglomeratus, Cotula coronopifolia* and *Atriplex prostrata*), provided by Johnny Knowles (Wyndham City Council). Mr Knowles indicated “A large portion of my time in this industry (15 years) has been involved with maintaining wetlands and waterways all over Melbourne and extending to further rural sections of Victoria, and the species I have listed above are very common place”. All of these species were on the list of 174 species. *Polypogon* *viridis* was on the list of 70 species included in the survey (**Table 2**) and was removed because not enough people voted for it. *Paspalum distichum* is ranked number 10 on the final shortlist (**Table 3**). The remaining species were removed at the first workshop stage, because they were ubiquitous (Step 7 – Page 4). We therefore do not recommend making any changes associated with these species.

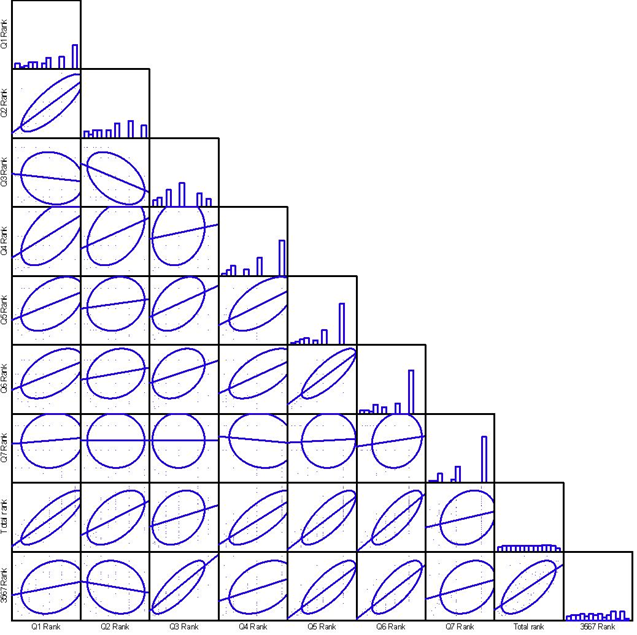


Figure 2. Scatter plot matrix comparing the relationship between each of the species ranks from 7 questions and the two final ranks.

Straight lines indicate linear regression, ovals gausian distribution with ± one standard deviation.

**Table 3. The list of species ranked according to importance across Questions 3, 5, 6 and 7** (total list not shown).

| Scientific name | Common name | 3,5,6,7 rank |
| --- | --- | --- |
| *Sagittaria spp.* | Sagittaria | 1 |
| *Cabomba caroliniana* var. *caroliniana* | Cabomba | 2 |
| *Myriophyllum aquaticum* | Parrot's Feather | 2 |
| *Cyperus eragrostis* | Drain Flat-sedge | 4 |
| *Spartina* spp. | Cord Grass | 5 |
| *Juncus acutus* subsp. *acutus* | Spiny Rush | 6 |
| *Egeria densa* | Egeria | 7 |
| *Azolla* spp. | Azolla | 8 |
| *Limonium hyblaeum* | Sea Lavender | 9 |
| *Gymnocoronis spilanthoides* | Senegal tea | 10 |
| *Paspalum distichum* | Water Couch | 10 |
| *Phalaris arundinacea* | Reed Canary-grass | 12 |
| *Phyla canescens* | Fog-fruit | 13 |
| *Salix* spp. | Willow | 14 |
| *Elodea canadensis* | Canadian Pondweed | 15 |
| *Iris pseudacorus* | Yellow Flag Iris | 16 |
| *Phragmites australis* | Common reed | 17 |
| *Aponogeton distachyos* | Cape Pondlily | 18 |
| *Lilaea scilloides* | Lilaea | 19 |
| *Xanthium strumarium* spp. agg. | Noogoora Burr species aggregate | 19 |
| *Typha* spp. | Cumbungi | 21 |
| *Hydrocleys nymphoides* | Water Poppy | 22 |
| *Salix cinerea* | Grey Sallow | 22 |
| *Nassella hyalina* | Cane Needle-grass | 24 |
| *Ludwigia palustris* | Marsh Ludwigia | 25 |
| *Mentha pulegium* | Pennyroyal | 26 |
| *Nasturtium officinale* | Watercress | 27 |
| *Juncus effusus* subsp. *effusus* | Soft Rush | 28 |
| *Juncus microcephalus* | Tiny-headed Rush | 28 |
| *Phalaris aquatica* | Toowoomba Canary-grass | 28 |
| *Lonicera japonica* | Japanese Honeysuckle | 31 |
| *Arundo donax* | Giant reed | 32 |
| *Festuca arundinacea* | Tall Fescue | 32 |
| *Fraxinus angustifolia* var. *angustifolia* | Desert ash | 32 |
| *Juncus articulatus* subsp. *articulatus* | Jointed Rush | 32 |
| *Cortaderia* spp. | Pampas Grass | 36 |
| *Lophopyrum ponticum* | Tall Wheat-grass | 37 |
| *Lythrum junceum* | Mediterranean Loosestrife | 37 |
| *Mimulus moschatus* | Musk Monkey-flower | 37 |
| *Puccinellia fasciculata* | Borrer's Saltmarsh-grass | 37 |
| *Sparganium erectum* | Branching Bur-reed | 37 |

**Table 4. Change in rankings when using Questions 3, 5,6 and 7 with either 5 and 6 or 3, 5 and 6.**

Ranking numbers marked “\*” indicate a species which falls below the top 28 when different questions are used for the ranking. “Initial invasive species management survey rank” refers to the rank of wetland weed species that are underactive management based on a survey of invasive species management undertaken by ARI in the scoping stages of this project.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Scientific name | Common name | 3567 rank | 56 rank | 356 rank | Initial invasive species management survey rank |
| *Sagittaria* spp. | Sagittaria | 1 | 1 | 1 | 11 |
| *Cabomba caroliniana* | Cabomba | 2 | 8 | 7 | 19 |
| *Myriophyllum aquaticum* | Parrot's Feather | 2 | 4 | 3 | 5 |
| *Cyperus eragrostis* | Drain Flat-sedge | 4 | 4 | 4 | 14 |
| *Spartina* spp. | Cord Grass | 5 | 2 | 1 | 16 |
| *Juncus acutus* subsp. *acutus* | Spiny Rush | 6 | 7 | 5 | 3 |
| *Egeria densa* | Egeria | 7 | 11 | 12 | 19 |
| *Azolla* spp. | Azolla | 8 | 15 | 10 | 22 |
| *Limonium hyblaeum* | Sea Lavender | 9 | 3 | 6 |  |
| *Gymnocoronis spilanthoides* | Senegal Tea | 10 | 18 | 14 | 28 |
| *Paspalum distichum* | Water Couch | 10 | 10 | 7 | 10 |
| *Phalaris arundinacea* | Reed Canary-grass | 12 | 11 | 9 |  |
| *Phyla canescens* | Fog-fruit | 13 | 16 | 10 |  |
| *Salix* spp. | Willow | 14 | 16 | 17 | 1 |
| *Elodea canadensis* | Canadian pondweed | 15 | \*37 | 18 | 29 |
| *Iris pseudacorus* | Yellow Flag Iris | 16 | 21 | 15 | 22 |
| *Phragmites australis* | Common reed | 17 | 6 | 13 | 8 |
| *Aponogeton distachyos* | Cape Pondlily | 18 | \*31 | 18 | 29 |
| *Lilaea scilloides* | Lilaea | 19 | \*29 | 20 |  |
| *Xanthium strumarium* spp. agg. | Noogoora Burr | 19 | 21 | 28 |  |
| *Typha* spp. | Cumbungi | 21 | 19 | 16 | 5 |
| *Hydrocleys nymphoides* | Water Poppy | 22 | \*39\* | 25 |  |
| *Salix cinerea* | Grey Sallow | 22 | 11 | 25 |  |
| *Nassella hyalina* | Cane Needle-grass | 24 | 27 | \*33 |  |
| *Ludwigia palustris* | Marsh Ludwigia | 25 | \*37 | \*43 |  |
| *Mentha pulegium* | Pennyroyal | 26 | 30 | 21 |  |
| *Nasturtium officinale* | Watercress | 27 | \*39 | \*35 |  |
| *Juncus effusus* subsp. *effusus* | Soft Rush | 28 | \*31 | 22 |  |
| *Juncus microcephalus* | Tiny-headed Rush | 28 | \*31 | 22 |  |
| *Phalaris aquatica* | Toowoomba Canary | 28 | \*31 | 22 |  |
| *Lonicera japonica* | Jap. Honeysuckle | 31 | 11 | 25 |  |
| *Arundo donax* | Giant reed | 32 | 21 | 28 |  |
| *Festuca arundinacea* | Tall Fescue | 32 | 21 | 28 |  |
| *Fraxinus angustifolia* var. *angustifolia* | Desert ash | 32 | 21 | 28 | 8 |
| *Juncus articulatus* subsp. *articulatus* | Jointed Rush | 32 | 21 | 28 |  |
| *Cortaderia* spp. | Pampas Grass | 36 | 8 | 34 |  |
| *Lophopyrum ponticum* | Tall Wheat-grass | 37 | 39 | 35 |  |
| *Lythrum junceum* | Med. Loosestrife | 37 | 39 | 35 |  |
| *Mimulus moschatus* | Musk Monkey-flower | 37 | 39 | 35 |  |
| *Puccinellia fasciculata* | Borrer's Saltmarsh | 37 | 39 | 35 |  |
| *Sparganium erectum* | Branching Bur-reed | 37 | 39 | 35 |  |

4 Part 2

The impacts of these priority wetland weeds on wetland values, including information about knowledge gaps, is provided in a second report:

Weiss, J. and Dugdale, T. (2017). Knowledge document of the impact of priority wetland weeds. Part 2 – Selection of the priority wetland weeds. Report prepared for Department of Environment, Land, Water and Planning (DELWP) Water and Catchments Group by Agriculture Victoria.

5 References

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Weiss, J. and Dugdale, T. (2017). Knowledge document of the impact of priority wetland weeds. Part 2 – Selection of the priority wetland weeds. Report prepared for Department of Environment, Land, Water and Planning (DELWP) Water and Catchments Group by Agriculture Victoria.

# Appendix 1. List of original species and sorting classifiers

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SCI\_NAME | COMM\_NAME | CONTEXT | N1 = irrigation exclude | HABITAT | Terrestrial | CONTROL | Native | Doug Frood List | Tony Dugdale List | Minor weeds (Y, U, N) | Ubiquitous (Y, N, Y\*) | Rapid (Y, N) | DSE aquatic weed list | DSE aquatic weed numeric | CALP status | Vic Alert Weed | National Alert Weed | WONS | No. wetland EVCs mentioned | Habitat | VIC\_LF | NVIS\_GF | Ranking from questionnaire (%) | Carr's list |
| *Acetosella vulgaris* | Sheep Sorrel | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 5 |  | medium herb | forb |  | o |
| *Agrostis capillaris* | Brown-top Bent | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 15 |  | medium to small tufted graminoid | tussock grass |  | v |
| *Agrostis stolonifera* | Creeping Bent | IS | 0 | FR | 0 | n | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 8 |  | medium to small tufted graminoid | tussock grass |  | v |
| *Alisma lanceolatum* | Water Plantain | IO | 0 | AQ/AM | 0 |  | 0 | 1 |  | n | n | n | medium risk | 2 |  |  |  |  | 7 | marsh | medium herb | forb |  | p |
| *Alopecurus geniculatus* | Marsh Fox-tail | IS | 0 | AM | 0 | n | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 2 |  | medium to small tufted graminoid | tussock grass |  | s |
| *Alopecurus* spp. | Fox Tail | IS/IA | 0 | AM | 0 | n | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 8 |  |  |  |  | o |
| *Alternanthera philoxeroides* | Alligator weed | IO | 0 | AQ | 0 |  | 0 |  | 1 |  |  |  | very high risk | 3 | SPW | 1 |  | 1 |  | marsh |  |  | 11 | o |
| *Anthoxanthum odoratum* | Sweet Vernal-grass | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 12 |  | medium to small tufted graminoid | tussock grass |  | o |
| *Apium graveolens* | Celery | IS/IA | 0 | FR/TR | 0 |  | 0 | 1 |  | y |  |  |  |  |  |  |  |  | 1 |  | large herb | forb |  | o |
| *Aponogeton distachyos* | Cape Pondlily | IO | 0 | AQ/AM | 0 |  | 0 | 1 | 1 | n | n | n | high risk | 4 |  |  |  |  | 4 | aquatic | medium herb | forb | 0 | o |
| *Arundo donax* | Giant Reed | IO/IS | 0 | AM | 0 |  |  |  |  | n | n | n |  |  |  |  |  |  | ? |  |  |  |  | p |
| *Asparagus asparagoides* | Bridal creeper | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R in all regions |  |  | 1 | 1 |  | scrambler or climber | vine |  | o |
| SCI\_NAME | COMM\_NAME | CONTEXT | N1 = irrigation exclude | HABITAT | Terrestrial | CONTROL | Native | Doug Frood List | Tony Dugdale List | Minor weeds (Y, U, N) | Ubiquitous (Y, N, Y\*) | Rapid (Y, N) | DSE aquatic weed list | DSE aquatic weed numeric | CALP status | Vic Alert Weed | National Alert Weed | WONS | No. wetland EVCs mentioned | Habitat | VIC\_LF | NVIS\_GF | Ranking from questionnaire (%) | Carr's list |
| *Asphodelus fistulosus* | Onion weed | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R and RC in diff. regions |  |  |  | 1 |  | large herb | forb |  | o |
| *Aster subulatus* | Aster-weed | IS/IA | 0 | FR/AM | 0 | n | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 5 |  | large herb | forb |  | s |
| *Atriplex prostrata* | Hastate Orache | IA | 0 | FR/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 8 |  | medium herb | forb |  | s |
| *Azolla* spp. | Azolla | N2 | 0 | AF | 0 |  | 1 |  | 1 | n | y\* | y |  |  |  |  |  |  |  | aquatic |  |  | 17 | o |
| *Brassica fruticulosa* | Twiggy Turnip | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 3 |  | medium herb | forb |  | p |
| *Bromus rubens* | Red Brome | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 8 |  | medium to tiny non-tufted graminoid | other grass |  | o |
| *Cabomba caroliniana* var. *caroliniana* | Cabomba | IO | 0 | AQ | 0 |  | 0 | 1 | 1 | n | n | n | very high risk | 5 | R |  |  | 1 | 2 | aquatic | medium herb | forb | 22 | v |
| *Callitriche brutia subsp. brutia* | Thread Water-starwort | IO | 0 | AQ | 0 | n | 0 | 1 |  | n | n | y | lower risk (aka *hamulata*) | 1 |  |  |  |  | 1 |  | small or prostrate herb | forb |  | p |
| *Callitriche stagnalis* | Common Water-starwort | IO | 0 | AQ/MH | 0 | n | 0 | 1 |  | n | y | y | lower risk | 1 |  |  |  |  | 9 |  | small or prostrate herb | forb |  | s |
| *Carduus* spp. | Slender Thistle | IA | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | *C. nutans* is SPW, *C.tenuiflorus* is R and RC in different regions |  |  |  | 1 |  |  |  |  | o |
| *Carpobrotus aequilaterus* | Angled Pigface | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | small or prostrate herb | forb |  | o |
| *Carrichtera annua* | Ward's Weed | IA | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 4 |  | medium herb | forb |  | o |
| SCI\_NAME | COMM\_NAME | CONTEXT | N1 = irrigation exclude | HABITAT | Terrestrial | CONTROL | Native | Doug Frood List | Tony Dugdale List | Minor weeds (Y, U, N) | Ubiquitous (Y, N, Y\*) | Rapid (Y, N) | DSE aquatic weed list | DSE aquatic weed numeric | CALP status | Vic Alert Weed | National Alert Weed | WONS | No. wetland EVCs mentioned | Habitat | VIC\_LF | NVIS\_GF | Ranking from questionnaire (%) | Carr's list |
| *Cenchrus clandestinus* | Kikuyu | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 4 |  | large non-tufted graminoid | other grass |  | o |
| *Chondrilla juncea* | Skeleton Weed | IA | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R, RC, RP in diff. regions |  |  |  | 1 |  | large herb | forb |  | o |
| *Chrysanthemoides monilifera* | Boneseed | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | RC, RP in diff. regions |  |  | 1 | 1 |  | medium shrub | shrub |  | v |
| *Cirsium vulgare* | Spear Thistle | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | n | y | n |  |  | R, C in diff. regions |  |  |  | 35 |  | large herb | forb |  | s |
| *Conyza* spp. | Fleabane | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 2 |  | large herb | forb |  | s |
| *Conyza sumatrensis* var. *sumatrensis* | Tall Fleabane | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 1 |  | large herb | forb |  | s |
| *Cortaderia* spp. | Pampas Grass | IT | 0 | FR/TR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 2 |  |  |  |  | v |
| *Cotula bipinnata* | Ferny Cotula | IA | 0 | MH | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 4 |  | medium herb | forb |  | s |
| *Cotula coronopifolia* | Water Buttons | IO | 0 | AQ/AM | 0 | n | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 16 | marsh | medium herb | forb |  | s |
| *Crassula natans* var. *minus* | Water Crassula | IO | 0 | AQ/MH | 0 | n | 0 |  |  | n | n | y | high risk | 4 |  |  |  |  |  | marsh |  |  |  | o |
| *Crataegus monogyna* | Hawthorn | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R and C in diff. regions |  |  |  | 1 |  | understorey tree or large shrub | tree |  | o |
| *Cuscuta campestris* | Field Dodder | IA/IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | Cuscuta spp are R, C and P in diffons |  |  |  | 3 |  | scrambler or climber | vine |  | s |
| *Cynara cardunculus* subsp. *flavescens* | Artichoke Thistle | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R, C and P in diff. regions |  |  |  | 2 |  | large herb | forb |  | s |
| SCI\_NAME | COMM\_NAME | CONTEXT | N1 = irrigation exclude | HABITAT | Terrestrial | CONTROL | Native | Doug Frood List | Tony Dugdale List | Minor weeds (Y, U, N) | Ubiquitous (Y, N, Y\*) | Rapid (Y, N) | DSE aquatic weed list | DSE aquatic weed numeric | CALP status | Vic Alert Weed | National Alert Weed | WONS | No. wetland EVCs mentioned | Habitat | VIC\_LF | NVIS\_GF | Ranking from questionnaire (%) | Carr's list |
| *Cynodon dactylon* var. *dactylon* | Couch | IS/IT | 0 | AM/FR | 0 | n | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 6 |  | medium to tiny non-tufted graminoid | other grass |  | s |
| *Cyperus eragrostis* | Drain Flat-sedge | IS | 0 | AM/FR | 0 | n | 0 | 1 |  | n | y\* | n |  |  |  |  |  |  | 6 | marsh | medium to small tufted graminoid | tussock grass | 17 | s |
| *Dactylis glomerata* | Cocksfoot | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | medium to tiny non-tufted graminoid | other grass |  | s |
| *Delairea odorata* | Cape Ivy | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 3 |  | scrambler or climber | vine |  | v |
| *Dittrichia graveolens* | Stinkwort | IA | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R and C in diff. regions |  |  |  | 1 |  | large herb | forb |  | o |
| *Echium plantagineum* | Paterson's Curse | IA/IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R and C in diff. regions |  |  |  | 1 |  | large herb | forb |  | s |
| *Egeria densa* | Egeria | IO | 0 | AQ | 0 |  | 0 |  | 1 | n | n | n | very high risk | 5 |  |  |  |  |  | aquatic |  |  | 17 | v |
| *Ehrharta erecta* var. *erecta* | Panic Veldt-grass | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 2 |  | medium to small tufted graminoid | tussock grass |  | v |
| *Eichhornia crassipes* | Water Hyacinth | IO | 0 | AF | 0 |  | 0 |  | 1 |  |  |  | very high risk | 5 | SPW | 1 |  | 1 |  | aquatic |  |  | 17 | v |
| *Eleocharis parvula* | Hairgrass | IO | 0 | AQ/AM | 0 | n | 0 |  |  | n | n | y |  |  |  |  |  |  |  |  |  |  |  | o |
| *Elodea canadensis* | Canadian Pond-weed | IO | 0 | AQ | 0 |  | 0 |  | 1 | n | n | n | very high risk | 5 |  |  |  |  |  | aquatic |  |  | 0 | v |
| *Festuca arundinacea* | Tall Fescue | IS | 0 | FR | 0 | n | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 7 |  | large tufted graminoid | tussock grass |  | s |
| SCI\_NAME | COMM\_NAME | CONTEXT | N1 = irrigation exclude | HABITAT | Terrestrial | CONTROL | Native | Doug Frood List | Tony Dugdale List | Minor weeds (Y, U, N) | Ubiquitous (Y, N, Y\*) | Rapid (Y, N) | DSE aquatic weed list | DSE aquatic weed numeric | CALP status | Vic Alert Weed | National Alert Weed | WONS | No. wetland EVCs mentioned | Habitat | VIC\_LF | NVIS\_GF | Ranking from questionnaire (%) | Carr's list |
| *Festuca rubra* s.l. | Red Fescue | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | medium to small tufted graminoid | tussock grass |  | o |
| *Foeniculum vulgare* | Fennel | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R and C in diff. regions |  |  |  | 1 |  | medium herb | forb |  | s |
| *Fraxinus angustifolia* var*. angustifolia* | Desert Ash | IT | 0 | FR | 0 |  | 0 |  | 1 | n | n | n |  |  |  |  |  |  |  | margin |  |  | 39 | p |
| *Galium aparine* | Cleavers | IA | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 2 |  | scrambler or climber | vine |  | v |
| *Gazania linearis* | Gazania | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | medium herb | forb |  | o |
| *Genista linifolia* | Flax-leaf Broom | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R, P and C in diff. regions |  |  |  | 2 |  | medium shrub | shrub |  | o |
| *Gymnocoronis spilanthoides* | Senegal Tea | IS | 0 | FR | 0 |  | 0 |  | 1 | n | n | n | very high risk | 5 |  |  | 1 |  |  | marsh |  |  | 6 | o |
| *Hedera helix* | English Ivy | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | scrambler or climber | vine |  | v |
| *Helminthotheca echioides* | Ox-tongue | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 10 |  | large herb | forb |  | o |
| *Holcus lanatus* | Yorkshire Fog | IS/IT | 0 | FR | 0 | n | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 37 |  | large non-tufted graminoid | other grass |  | v |
| *Hordeum glaucum* | Northern Barley-grass | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | y |  |  |  |  |  |  |  |  | 1 |  | medium to small tufted graminoid | tussock grass |  | o |
| *Hordeum* spp. | Barley Grass | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | y |  |  |  |  |  |  |  |  | 19 |  |  |  |  | o |
| *Hydrocleys nymphoides* | Water Poppy | IO | 0 | AQ | 0 |  | 0 |  |  | n | n | n | high risk | 4 |  |  |  |  |  | aquatic |  |  |  | p |
| SCI\_NAME | COMM\_NAME | CONTEXT | N1 = irrigation exclude | HABITAT | Terrestrial | CONTROL | Native | Doug Frood List | Tony Dugdale List | Minor weeds (Y, U, N) | Ubiquitous (Y, N, Y\*) | Rapid (Y, N) | DSE aquatic weed list | DSE aquatic weed numeric | CALP status | Vic Alert Weed | National Alert Weed | WONS | No. wetland EVCs mentioned | Habitat | VIC\_LF | NVIS\_GF | Ranking from questionnaire (%) | Carr's list |
| *Hypericum perforatum* subsp. *veronense* | St John's Wort | IT | 0 | FR/TR | 0 |  | 0 | 1 |  | y |  |  |  |  | R and C in diff. regions |  |  |  | 1 |  | large herb | forb |  | v |
| *Hypericum tetrapterum* | St Peter's Wort | IS | 0 | AM | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  |  |  | large herb | forb |  |  |
| *Iris pseudacorus* | Yellow Flag Iris | IO/IS | 0 | AM | 0 |  | 0 | 1 |  | n | n | n | lower risk | 1 |  |  |  |  | 1 | marsh | medium to small tufted graminoid | tussock grass | 11 | s |
| *Isolepis hystrix* |  | IE | 0 | EW | 0 |  |  |  |  | n | n | y |  |  |  |  |  |  | ? |  |  |  |  | o |
| *Isolepis levynsiana* | Tiny Flat-sedge | IE | 0 | EW | 0 |  | 0 | 1 |  | n | y | y |  |  |  |  |  |  | 1 |  | tiny tufted graminoid | tussock grass |  | p |
| *Jacobaea vulgaris* | Ragwort | IT | 0 | FR/TR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 1 |  | large herb | forb |  | o |
| *Juncus acutus* subsp. *acutus* | Spiny Rush | IS | 0 | AM/FR | 0 |  | 0 | 1 | 1 | n | n | n |  |  | Juncus acutus R and C in diff. regions |  |  |  | 8 | aquatic | large tufted graminoid | tussock grass | 50 | v |
| *Juncus articulatus subsp. articulatus* | Jointed Rush | IO/IS | 0 | AM | 0 | n | 0 | 1 |  | n | y\* | n |  |  |  |  |  |  | 28 |  | medium to small tufted graminoid | tussock grass |  | s |
| *Juncus bulbosus* | Bulbous Rush | IO/IS | 0 | AM | 0 | n | 0 | 1 |  | n | y\* | n |  |  |  |  |  |  | 12 |  | medium to small tufted graminoid | tussock grass |  | s |
| *Juncus capitatus* | Capitate Rush | IE | 0 | EW | 0 |  | 0 | 1 |  | y |  |  |  |  |  |  |  |  | 1 |  | medium to tiny non-tufted graminoid | other grass |  | p |
| *Juncus effusus* subsp. *effusus* | Soft Rush | IS | 0 | BM | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 6 |  | large tufted graminoid | tussock grass |  | v |
| *Juncus microcephalus* | Tiny-headed Rush | IS | 0 | AM | 0 | n |  |  |  | n | n | n |  |  |  |  |  |  | ? |  |  |  |  | s |
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| *Lactuca serriola* | Prickly Lettuce | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  | |  | | --- | |  | | 1 |  | large herb | forb |  | o |
| *Leersia oryzoides* | Rice Cut-grass | IO | 0 | RI/AM | 0 |  | 0 | 1 |  | n | n | n | high risk | 4 |  |  |  |  | 1 | marsh | medium to tiny non-tufted graminoid | other grass |  | v |
| *Lemna minor* | European Duckweed | IO | 0 | AF | 0 | n | 0 |  |  | y |  |  | lower risk | 1 |  |  |  |  |  | aquatic |  |  |  | o |
| *Leontodon taraxacoides* subsp. *taraxacoides* | Hairy Hawkbit | IS/IT | 0 | FR/TR | 0 | n | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 23 |  | medium herb | forb |  | s |
| *Lilaea scilloides* | Lilaea | IS | 0 | AM | 0 |  | 0 | 1 |  | n | n | n | very high risk | 5 |  |  |  |  | 13 | marsh | medium herb | forb |  | p |
| *Limonium companyonis* | Sea Lavender | IS | 0 | SM | 0 |  | 0 |  |  | n | n | n |  |  |  |  |  |  |  |  |  |  |  | p |
| *Limonium hyblaeum* | Sea Lavender | IS | 0 | SM | 0 |  | 0 |  |  | n | n | n |  |  |  |  |  |  |  |  |  |  |  | o |
| *Limonium* spp. | Sea Lavender | IT | 0 | FR/TR | 0 |  | 0 | 1 |  | y |  |  |  |  |  |  |  |  | 1 |  |  |  |  | o |
| *Lolium perenne* | Perennial Rye-grass | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 4 |  | medium to small tufted graminoid | tussock grass |  | s |
| *Lonicera japonica* | Japanese Honey-suckle | IS/IT | 0 | FR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 6 |  | scrambler or climber | vine |  | v |
| *Lophopyrum ponticum* | Tall Wheat-grass | IS | 0 | FR/TR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 11 |  | medium to small tufted graminoid | tussock grass |  | s |
| *Lotus corniculatus* | Bird's-foot Trefoil | IA | 0 | FR/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 2 |  | medium herb | forb |  | v |
| SCI\_NAME | COMM\_NAME | CONTEXT | N1 = irrigation exclude | HABITAT | Terrestrial | CONTROL | Native | Doug Frood List | Tony Dugdale List | Minor weeds (Y, U, N) | Ubiquitous (Y, N, Y\*) | Rapid (Y, N) | DSE aquatic weed list | DSE aquatic weed numeric | CALP status | Vic Alert Weed | National Alert Weed | WONS | No. wetland EVCs mentioned | Habitat | VIC\_LF | NVIS\_GF | Ranking from questionnaire (%) | Carr's list |
| *Lotus subbiflorus* | Hairy Bird's-foot Trefoil | IA | 0 | FR/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 2 |  | medium herb | forb |  | s |
| *Lotus uliginosus* | Greater Bird's-foot Trefoil | IA | 0 | FR/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 2 |  | medium herb | forb |  | v |
| *Ludwigia palustris* | Marsh Ludwigia | IO | 0 | AQ | 0 |  | 0 |  |  | n | n | n |  |  |  |  |  |  |  | marsh |  |  |  | p |
| *Lycium ferocissimum* | African Box-thorn | IT | 0 | FR | 0 |  | 0 | 1 |  | n | n | n |  |  | C in all regions |  |  | 1 | 2 |  | medium shrub | shrub |  | s |
| *Lythrum junceum* | Mediterranean Loosestrife | IS | 0 | FR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 1 |  | medium herb | forb |  | s |
| *Marsilea mutica* | Smooth Nardoo | N2 | 0 | AQ | 0 |  | 0 |  |  | y |  |  | lower risk | 1 |  |  |  |  |  | marsh |  |  |  | o |
| *Marrubium vulgare* | Hore-hound | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R and C in diff. regions |  |  |  | 1 |  | small shrub | shrub |  | s |
| *Medicago minima* | Little Medic | IA | 0 | MH | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 3 |  | small or prostrate herb | Forb |  | s |
| *Melilotus indicus* | Sweet Melilot | IA | 0 | FR/MH | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 1 |  | large herb | forb |  | s |
| *Mentha pulegium* | Penny-royal | IS | 0 | AM/FR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 3 |  | medium herb | forb |  | s |
| *Mesembryanthemum crystallinum* | Common Ice-plant | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 1 |  | small or prostrate herb | Forb |  | v |
| *Mesembryanthemum nodiflorum* | Small Ice-plant | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 3 |  | small or prostrate herb | Forb |  | o |
| *Mimulus moschatus* | Musk Monkey-flower | IS | 0 | AM/FR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 3 |  | medium herb | forb |  | p |
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| *Myriophyllum aquaticum* | Parrot's Feather | IO | 0 | AQ | 0 | n | 0 | 1 | 1 | n | n | n | very high risk | 5 |  |  |  |  | 5 | marsh | medium herb | forb | 56 | v |
| *Myriophyllum* spp. | Water Milfoil -native spp. | N1 | 1 | AQ | 0 |  | 1 |  | 1 |  | n | n |  |  |  |  |  |  |  | aquatic |  |  | 17 | v |
| *Nassella hyalina* | Cane Needle-grass | IS/IT | 0 | FR/TR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 1 |  | medium to small tufted graminoid | tussock grass |  | s |
| *Nassella neesiana* | Chilean Needle-grass | IT | 0 | FR/TR | 0 |  | 0 | 1 |  | y |  |  |  |  | R in all regions |  |  | 1 | 7 |  | medium to small tufted graminoid | tussock grass |  | v |
| *Nassella trichotoma* | Serrated Tussock | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | P and C in diff. regions |  |  | 1 | 1 |  | medium to small tufted graminoid | tussock grass |  | v |
| *Nasturtium officinale* | Water-cress | IO | 0 | AQ | 0 |  | 0 | 1 |  | u | n | n |  |  |  |  |  |  | 2 | margin | medium herb | forb |  | o |
| *Nymphaea mexicana* | Waterlily | IO | 0 | AQ | 0 |  | 0 | 1 | 1 | n | n | n | mod high risk | 3 |  |  |  |  |  | aquatic |  |  | 33 | s |
| *Nymphaea* spp. | Waterlily | IO | 0 | AQ | 0 |  | 0 | 1 | 1 | u | n | n | *n. alba* (lower risk) | 1 |  |  |  |  | 6 | aquatic |  |  | 11 | s |
| *Olea europaea* | Olive | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 2 |  | understorey tree or large shrub | tree |  | s |
| *Opuntia* spp. | Prickly pear | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | 4 sp have R, P and C classifications |  |  |  | 1 |  |  |  |  | s |
| *Oxalis pes-caprae* | Soursob | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R in all regions |  |  |  | 1 |  | medium herb | forb |  | v |
| *Panicum coloratum* | Coolah Grass | IS/IT | 0 | FR/RI | 0 | n | 0 | 1 |  | u | n | n |  |  |  |  |  |  | 2 |  | large non-tufted graminoid | other grass |  | p |
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| *Parapholis incurva* | Coast Barb-grass | IA | 0 | FR/MH | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 5 |  | medium to small tufted graminoid | tussock grass |  | s |
| *Parapholis* spp. | Barb Grass | IA | 0 | FR/MH | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 5 |  |  |  |  | s |
| *Paspalum distichum* | Water Couch | IO/IS | 0 | AM/FR | 0 | n | 0 | 1 | 1 | n | y\* | n |  |  |  |  |  |  | 33 | marsh | medium to tiny non-tufted graminoid | other grass | 33 | v |
| *Paspalum* spp. | Paspalum | IS/IT | 0 | AM/FR | 0 | n | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 7 |  |  |  |  | v |
| *Phalaris aquatica* | Toowoomba Canary-grass | IS/IT | 0 | FR | 0 | n? | 0 | 1 |  | n | y\* | n |  |  |  |  |  |  | 30 |  | large tufted graminoid | tussock grass |  | v |
| *Phalaris arundinacea* | Reed Canary-grass | IS | 0 | AM/FR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 2 |  | large non-tufted graminoid | other grass |  | v |
| *Phragmites australis* | Common reed | N2 | 0 | AM/FR | 0 |  | 1 |  | 1 | n | Y\* | n |  |  |  |  |  |  |  | marsh |  |  | 33 | o |
| *Phyla canescens* | Fog-fruit | IS/IT | 0 | FR | 0 | n | 0 | 1 |  | n | y\* | n |  |  |  |  |  |  | 9 |  | medium herb | forb |  | o |
| *Pinus radiata* | Radiata Pine | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | understorey tree or large shrub | tree |  | v |
| *Pittosporum undulatum* | Sweet Pittos-porum | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | understorey tree or large shrub | tree |  | v |
| *Plantago coronopus* | Buck's-horn Plantain | IS/IT | 0 | FR/TR | 0 | n | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 17 |  | medium herb | forb |  | s |
| *Plantago lanceolata* | Ribwort | IT | 0 | FR/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 7 |  | large herb | forb |  | s |
| *Plantago major* | Greater Plantain | IT | 0 | FR/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 1 |  | medium herb | forb |  | p |
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| *Poa annua* | Annual Meadow-grass | IA | 0 | FR/MH | 0 |  | 0 | 1 |  | y |  |  |  |  |  |  |  |  | 1 |  | medium to small tufted graminoid | tussock grass |  | o |
| *Poa pratensis* | Kentucky Blue-grass | IT | 0 | FR/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 3 |  | medium to tiny non-tufted graminoid | other grass |  | s |
| *Polypogon monspeliensis* | Annual Beard-grass | IA | 0 | FR/MH | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 2 |  | medium to small tufted graminoid | tussock grass |  | s |
| *Polypogon viridis* | Water Bent | IS | 0 | AM/FR | 0 | n |  |  |  | u | n | n |  |  |  |  |  |  | ? |  |  |  |  | o |
| *Pontederia cordata* | Pickerel Weed | IO | 0 | AQ | 0 |  | 0 |  |  | u | n | n | lower risk | 1 |  |  |  |  |  | aquatic |  |  |  | p |
| *Potamogeton* spp. | Pond-weeds | N1 | 1 | AQ | 0 |  | 1 |  | 1 |  | n | n |  |  |  |  |  |  |  | aquatic |  |  | 11 | o |
| *Potentilla anserina* | Silver-weed | IS | 0 | FR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 4 |  | medium herb | forb |  | o |
| *Prunella vulgaris* | Self-heal | IT | 0 | FR/TR | 0 |  | 0 | 1 |  | y |  |  |  |  |  |  |  |  | 3 |  | medium herb | forb |  | o |
| *Psoralea pinnata* | Blue Psoralea | IT | 0 | FR | 0 |  | 0 | 1 |  | u | n | n |  |  |  |  |  |  | 2 |  | medium shrub | shrub |  | v |
| *Puccinellia fasciculata* | Borrer's Saltmarsh-grass | IS | 0 | FR | 0 | n | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 4 |  | medium to small tufted graminoid | tussock grass |  | s |
| *Pyracantha crenatoserrata* | Broad-leaf Firethorn | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | small shrub | shrub |  | v |
| *Ranunculus repens* | Creeping Buttercup | IS | 0 | AM/FR | 0 | n | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 4 | ? | medium herb | forb |  | s |
| *Rorippa palustris* | Marsh Yellow-cress | IS/IA | 0 | FR/MH | 0 | n | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 2 | ? | large herb | forb |  | s |
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| *Rosa canina* | Dog Rose | IT | 0 | TR | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  | ? |  |  |  |  | o |
| *Rosa rubiginosa* | Sweet Briar | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R and C in diff. regions |  |  |  | 3 |  | medium shrub | shrub |  | s |
| *Rubus anglo-candicans* | Common Blackberry | IS/IT | 0 | FR/TR | 0 |  | 0 | 1 | 1 | n | n | n |  |  |  |  |  |  | 11 | margin | scrambler or climber | vine | 56 | v |
| *Rubus fruticosus* spp. agg. | Blackberry | IS/IT | 0 | FR/TR | 0 |  | 0 | 1 | 1 | n | n | n |  |  | R and C in diff. regions |  |  | 1 | 4 | margin | scrambler or climber | vine | 61 | v |
| *Rumex conglomeratus* | Clustered Dock | IS | 0 | FR/TR | 0 | n | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 17 |  | large herb | forb |  | s |
| *Rumex crispus* | Curled Dock | IS | 0 | FR/TR | 0 | n | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 18 |  | large herb | forb |  | s |
| *Sagittaria* spp. | Sagittaria | IO | 0 | AQ | 0 |  | 0 | 1 | 1 | n | n | n | very high risk | 5 | P and C in diff. regions |  |  |  | 6 | marsh |  |  | 33 | v |
| *Salix cinerea* | Grey Sallow | IS | 0 | BM/FR | 0 |  | 0 | 1 |  | n | n | n |  |  | R? |  |  |  | 6 | ? | understorey tree or large shrub | tree |  | v |
| *Salix spp.* | Willow | IS/IT | 0 | FR/RI | 0 |  | 0 | 1 |  | n | n | n |  |  | R in all regions |  |  | 1 | 2 | margin |  |  | 83 | v |
| *Salvinia molesta* | Salvinia | IO | 0 | AF | 0 |  | 0 | 1 | 1 |  |  |  | very high risk | 5 | SPW | 1 |  | 1 | 3 | aquatic | small or prostrate herb | forb | 6 | o |
| *Schismus barbatus* | Arabian Grass | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | y |  |  |  |  |  |  |  |  | 2 |  | medium to small tufted graminoid | tussock grass |  | s |
| *Setaria* spp. *(naturalised)* | Pigeon Grass | IT | 0 | TR | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 1 |  |  |  |  | o |
| *Silybum marianum* | Varie-gated Thistle | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | large herb | forb |  | s |
| *Sisymbrium* spp. | Mustard | IA | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  |  |  |  | o |
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| *Solanum nigrum* s.s. | Black Night-shade | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | y |  |  |  |  |  |  |  |  | 4 |  | large herb | forb |  | s |
| *Solanum pseudocapsicum* | Madeira Winter-cherry | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | medium shrub | shrub |  | v |
| *Sonchus* spp. | Sow Thistle | IA | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  |  |  |  | s |
| *Sparganium erectum* | Branching Bur-reed | IO | 0 | AQ/AM | 0 |  | 0 |  |  | n | n | n | med-ium | 2 |  |  |  |  |  | marsh |  |  |  | o |
| *Spartina* spp. | Cord Grass | IO | 0 | AQ/SM | 0 |  | 0 | 1 |  | n | n | n | very high risk (*anglica*, x *towns-endii*) | 5 |  |  |  |  | 5 | marsh |  |  |  | v |
| *Suaeda baccifera* | Berry Seablite | IA | 0 | MH/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 5 |  | medium herb | forb |  | p |
| *Tamarisk aphylla* | Athel pine | IT | 0 | RI/TR | 0 |  | 0 |  |  | u | n | n |  |  | R in all regions |  |  |  |  |  |  |  |  | o |
| *Tamarisk ramosissima* | Salt Cedar | IS/IT | 0 | FR | 0 |  | 0 |  |  | n | n | n |  |  |  |  |  |  |  |  |  |  |  | o |
| *Tradescantia fluminensis* | Wander-ing Jew | IT | 0 | TR | 1 |  | 0 | 1 | 1 |  |  |  |  |  |  |  |  |  | 2 | margin | scrambler or climber | vine | 17 | v |
| *Trifolium fragiferum* var. *fragiferum* | Straw-berry Clover | IS/IT | 0 | FR/TR | 0 | n | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 7 |  | medium herb | forb |  | p |
| *Trifolium repens* var. *repens* | White Clover | IT | 0 | FR/TR | 0 |  | 0 | 1 |  | n | y | n |  |  |  |  |  |  | 15 |  | small or prostrate herb | forb |  | s |
| *Typha latifolia* | Lesser Reed-mace | IO | 0 | AQ/AM | 0 |  | 0 | 1 |  | n | n | n | very high risk | 5 |  |  |  |  | 6 | marsh | large herb | forb | 6 | v |
| *Typha* spp. | Cumbungi | N2 | 0 | AQ/AM | 0 |  | 1 |  | 1 | n | Y\* | n | very high risk | 5 |  |  |  |  |  | marsh |  |  | 44 | v |
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| *Ulex europaeus* | Gorse | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  | R, P and C in diff. regions |  |  | 1 | 1 |  | medium shrub | shrub |  | v |
| *Utricularia gibba* | Floating Bladder-wort | N2 | 0 | AF | 0 |  | 0 |  |  | y |  |  | med-ium risk | 2 |  |  |  |  |  | aquatic |  |  |  | o |
| *Vallisneria australis* | Ribbon-weed | N1 | 1 | AQ | 0 |  | 1 |  | 1 |  | n | n |  |  |  |  |  |  |  | aquatic |  |  | 11 | o |
| *Verbena bonariensis* s.l. | Purple-top Verbena | IA/IT | 0 | MH | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 1 |  | large herb | forb |  | o |
| *Verbena supina* | Trailing Verbena | IA | 0 | MH | 0 |  | 0 | 1 |  | n | n | n |  |  |  |  |  |  | 1 |  | medium herb | forb |  | o |
| *Vinca major* | Blue Periwinkle | IT | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 1 | margin | scrambler or climber | vine | 17 | v |
| *Vulpia bromoides* | Squirrel-tail Fescue | IA | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 4 |  | medium to small tufted graminoid | tussock grass |  | v |
| *Vulpia* spp. | Fescue | IA | 0 | TR | 1 |  | 0 | 1 |  |  |  |  |  |  |  |  |  |  | 2 |  |  |  |  | o |
| *Xanthium spinosum* | Bathurst Burr | IA | 0 | MH | 0 |  | 0 | 1 |  | n | n | n |  |  | R and C in diff. regions |  |  |  | 1 |  | large herb | forb |  | s |
| *Xanthium strumarium* spp. agg. | Noogoora Burr species aggregate | IA | 0 | MH | 0 |  | 0 | 1 |  | n | n | n |  |  | R, P and C in diff. regions |  |  |  | 2 |  | large herb | forb |  | o |

Appendix 2. Summary of responses to survey questions

**Q1.** Which are the introduced weeds you are PRESENTLY ACTIVELY controlling (within last 2 years) in natural wetlands?

|  |  |  |  |
| --- | --- | --- | --- |
| Scientific name | Common name | Count | Rank |
| *Rubus fruticosus* spp. agg. | Blackberry | 13 | 1 |
| *Salix* spp*.* | Willow | 13 | 1 |
| *Fraxinus angustifolia* var. *angustifolia* | Desert Ash | 11 | 3 |
| *Juncus acutus* subsp. *acutus* | Spiny Rush | 11 | 3 |
| *Salix cinerea* | Grey Sallow | 11 | 3 |
| *Lycium ferocissimum* | African Box-thorn | 10 | 6 |
| *Myriophyllum aquaticum* | Parrot's Feather | 10 | 6 |
| *Paspalum distichum* | Water Couch | 8 | 8 |
| *Rubus anglocandicans* | Common Blackberry | 8 | 8 |
| *Xanthium spinosum* | Bathurst Burr | 8 | 8 |
| *Lonicera japonica* | Japanese Honeysuckle | 7 | 11 |

**Q2.** What are the weeds that you FEEL CONFIDENT in controlling (have the relevant knowledge or techniques)?

|  |  |  |  |
| --- | --- | --- | --- |
| Scientific name | Common name | Count | Rank |
| *Salix* spp. | Willow | 13 | 1 |
| *Lycium ferocissimum* | African Box-thorn | 13 | 1 |
| *Rubus fruticosus* spp. agg*.* | Blackberry | 11 | 3 |
| *Fraxinus angustifolia* var. *angustifolia* | Desert Ash | 9 | 4 |
| *Salix cinerea* | Grey Sallow | 9 | 4 |
| *Rubus anglocandicans* | Common Blackberry | 9 | 4 |
| *Juncus acutus* subsp. *acutus* | Spiny Rush | 7 | 7 |
| *Xanthium spinosum* | Bathurst Burr | 7 | 7 |
| *Lonicera japonica* | Japanese Honeysuckle | 7 | 7 |
| *Cortaderia* spp. | Pampas Grass | 6 | 10 |
| *Phalaris aquatica* | Toowoomba Canary-grass | 6 | 10 |

**Q3.** What are the weeds that you feel LEAST confident in managing (either in knowledge or techniques)?

|  |  |  |  |
| --- | --- | --- | --- |
| Scientific name | Common name | Count | Rank |
| *Myriophyllum aquaticum* | Parrot's Feather | 8 | 1 |
| *Spartina* spp. | Cord Grass | 6 | 2 |
| *Elodea canadensis* | Canadian Pondweed | 5 | 3 |
| *Paspalum distichum* | Water Couch | 5 | 3 |
| *Phyla canescens* | Fog-fruit | 5 | 3 |
| *Sagittaria* spp. | Sagittaria | 5 | 3 |
| *Aponogeton distachyos* | Cape Pondlily | 4 | 7 |
| *Azolla* spp. | Azolla | 4 | 7 |
| *Cabomba caroliniana* var. *caroliniana* | Cabomba | 4 | 7 |
| *Cyperus eragrostis* | Drain Flat-sedge | 4 | 7 |
| *Hydrocleys nymphoides* | Water Poppy | 4 | 7 |
| *Iris pseudacorus* | Yellow Flag Iris | 4 | 7 |
| *Juncus acutus* subsp. *acutus* | Spiny Rush | 4 | 7 |
| *Phalaris arundinacea* | Reed Canary-grass | 4 | 7 |

**Q4.** What are the weeds that you would like to control but don’t have sufficient resources/time?

|  |  |  |  |
| --- | --- | --- | --- |
| Scientific name | Common name | Count | Rank |
| *Myriophyllum aquaticum* | Parrot's Feather | 8 | 1 |
| *Rubus fruticosus* spp. agg. | Blackberry | 7 | 2 |
| *Cyperus eragrostis* | Drain Flat-sedge | 5 | 3 |
| *Juncus acutus* subsp. *acutus* | Spiny Rush | 5 | 3 |
| *Lonicera japonica* | Japanese Honeysuckle | 5 | 3 |
| *Paspalum distichum* | Water Couch | 5 | 3 |
| *Ranunculus repens* | Creeping Buttercup | 5 | 3 |
| *Azolla* spp. | Azolla | 4 | 8 |
| *Nassella hyalina* | Cane Needle-grass | 4 | 8 |
| *Phalaris arundinacea* | Reed Canary-grass | 4 | 8 |
| *Phragmites australis* | Common reed | 4 | 8 |
| *Rubus anglocandicans* | Common Blackberry | 4 | 8 |
| *Salix cinerea* | Grey Sallow | 4 | 8 |
| *Salix* spp. | Willow | 4 | 8 |
| *Spartina* spp. | Cord Grass | 4 | 8 |
| *Typha* spp. | Cumbungi | 4 | 8 |

**Q5.** What weeds do you want more information on the BIOLOGY?

|  |  |  |  |
| --- | --- | --- | --- |
| Scientific name | Common name | Count | Rank |
| *Sagittaria* spp. | Sagittaria | 13 | 1 |
| *Spartina* spp. | Cord Grass | 13 | 1 |
| *Limonium hyblaeum* | Sea Lavender | 10 | 3 |
| *Myriophyllum aquaticum* | Parrot's Feather | 9 | 4 |
| *Cabomba caroliniana* var. *caroliniana* | Cabomba | 6 | 5 |
| *Phragmites australis* | Common reed | 5 | 6 |
| *Azolla* spp. | Azolla | 4 | 7 |
| *Cortaderia* spp. | Pampas Grass | 4 | 7 |
| *Cyperus eragrostis* | Drain Flat-sedge | 4 | 7 |
| *Juncus acutus* subsp. *acutus* | Spiny Rush | 4 | 7 |
| *Egeria densa* | Egeria | 3 | 11 |
| *Paspalum distichum* | Water Couch | 3 | 11 |
| *Phalaris arundinacea* | Reed Canary-grass | 3 | 11 |
| *Phyla canescens* | Fog-fruit | 3 | 11 |
| *Salix cinerea* | Grey Sallow | 3 | 11 |
| *Salix* spp. | Willow | 3 | 11 |

**Q6.** What weeds do you want more information on CONTROL OPTIONS?

|  |  |  |  |
| --- | --- | --- | --- |
| Scientific name | Common name | Count | Rank |
| *Sagittaria* spp. | Sagittaria | 13 | 1 |
| *Cyperus eragrostis* | Drain Flat-sedge | 11 | 2 |
| *Spartina* spp. | Cord Grass | 11 | 2 |
| *Limonium hyblaeum* | Sea Lavender | 9 | 4 |
| *Lonicera japonica* | Japanese Honeysuckle | 7 | 5 |
| *Myriophyllum aquaticum* | Parrot's Feather | 7 | 5 |
| *Juncus acutus* subsp. *acutus* | Spiny Rush | 5 | 7 |
| *Phragmites australis* | Common reed | 5 | 7 |
| *Cortaderia* spp. | Pampas Grass | 4 | 9 |
| *Paspalum distichum* | Water Couch | 4 | 9 |
| *Cabomba caroliniana* var. *caroliniana* | Cabomba | 3 | 11 |
| *Egeria densa* | Egeria | 3 | 11 |
| *Nassella hyalina* | Cane Needle-grass | 3 | 11 |
| *Nymphaea mexicana* | Waterlily | 3 | 11 |
| *Phalaris arundinacea* | Reed Canary-grass | 3 | 11 |
| *Salix cinerea* | Grey Sallow | 3 | 11 |

**Q7.** What weeds do you not have at present in your area but think they will be your future priority weeds?

|  |  |  |  |
| --- | --- | --- | --- |
| Scientific name | Common name | Count | Rank |
| *Tamarisk ramosissima* | Salt Cedar | 10 | 1 |
| *Egeria densa* | Egeria | 9 | 2 |
| *Cabomba caroliniana* var. *caroliniana* | Cabomba | 6 | 3 |
| *Gymnocoronis spilanthoides* | Senegal Tea | 5 | 4 |
| *Elodea canadensis* | Canadian pondweed | 4 | 5 |
| *Jacobaea vulgaris* | Ragwort | 3 | 6 |
| *Limonium companyonis* | Sea Lavender | 3 | 6 |
| *Ludwigia palustris* | Marsh Ludwigia | 3 | 6 |
| *Lycium ferocissimum* | African Box-thorn | 3 | 6 |
| *Salix* spp. | Willow | 3 | 6 |
| *Tamarisk aphylla* | Athel Pine | 3 | 6 |
| *Xanthium strumarium* spp. agg. | Noogoora Burr species aggregate | 3 | 6 |

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