May 2021, Issue #22

Welcome to our special feature weed information resources issue

In this issue we're focussing on resources that are readily available to help you with your weed identification, management plans and activities for early invader weeds in your patch.

These are resources the Weeds at the Early Stage of Invasion (WESI) Project team use regularly when trying to identify a plant; looking for management techniques and advice; and sharing with and learning from others.



Figure 1: Osteospermum or African Daisy (*Dimorphotheca sp.*) Credit: Bianca Gold (DELWP)

Help with weed ID

The WESI Project Team often receives emails and texts asking for help with plant identification. If it is a weed, it is usually followed by a request for information of how to deal with it.

In this issue, by sharing a bit about the process we follow, we're letting you in on a little secret. We use many different information sources to provide you with the most accurate information we can.

We start by looking closely at images and descriptions that have been provided of the plant in question.

Sometimes we are able to identify it immediately and other times we need to investigate further as we may not be familiar with it ourselves.



Figure 2: Japanese Honeysuckle (*Lonicera japonica*) flower and foliage, near Officer, Victoria

Credit: Bianca Gold (DELWP)

TIP: By providing clear images that include the whole plant along with close-ups of its features, such as flowers, fruit, seeds and leaves, you're showing us the detail we might see if we were in the field with you at the time. See WESI presentation on photography tips in Webinar #4 at 33mins 10secs via: https://tinyurl.com/WeedsAfterFire

Once we have a clear view of what the plant looks like, how and where it grows, we use a variety of resources to suggest identification and provide more information about the type of plant it is.



Environment, Land, Water and Planning

We refer to books, online sources, social media and weedy people within our networks to gather information about the plant.



Figure 3: Stinking Hellebore (Helleborous foetidus) Credit: Mitch Williams (DELWP)

When we have established what the plant is, we can provide some links and more details about it. If it is a weed, we can share why it is a problem and what to do about it. In some cases, we can connect people with others who have dealt with the same weed, so that they can pass on their knowledge and experience.

Throughout this issue you'll find examples of tools and resources that can help you to have a go at identifying a plant yourself and where you might find some management advice specific to it. Be sure to follow up with an experienced plant person before starting any management treatment.

Digital resources – Online information

The world wide web can be a really great friend when it comes to accessing information about weeds, their identification and suggested management options.

The WESI team regularly uses a number of weedy websites and would like to share a few of our favourites (in no particular order) with you.

We recommend saving them to your favourites in whichever web browser you like to use, so that you can access them easily again. TIP: Try using the term "invasive" in your web search to avoid drug related material when searching for a 'weed' on the web.

Weeds Australia

<u>Weeds Australia</u> is a relatively new website, consolidating and building on information from older national websites, it is powered by the <u>Centre for</u> <u>Invasive Species Solutions (CISS)</u>. You can access it here: <u>https://weeds.org.au/</u>

It is "designed to connect you with knowledge to make informed decisions about managing invasive weeds within Australia."

Here you can find information and images on weeds, including Weeds of National Significance; view weed management profiles; use a weed identification tool; view other weedy resources and connect with the weed community. There are many additional publications linked in the "literature and links" tab within each weed profile.

Updates are made to this website as feedback is provided, so if you have any comments please select the feedback tab to the right of the screen to submit them.

All invasive weeds







🥑 in Regions



African Boxthorn, Boxthorn □[™]
 Lycium feroclasimum

African Daisy. Rough Senecio, Winged Groundsel Senecio pterophorus

African Feather Grass, Bedding Grass C Cenchrus macrourus



Boer Lovegrass, Weeping Grass





African Thistle, Augusta Thistle Berkheya, Berkherya Thistle, Hamelin Thistle Berkheya rigida

Figure 4: Screen snip of the list of invasive weeds on Weeds Australia website

Harmala 🗇

Credit: https://weeds.org.au/

Agriculture Victoria

Our colleagues at <u>Agriculture Victoria</u> have a webpage dedicated to <u>Biosecurity</u> that includes a section on

weeds. You can find it at: https://agriculture.vic.gov.au/biosecurity/weeds

The WESI team uses this webpage to gather the latest information on <u>State Prohibited Weeds</u> (SPW); <u>priority</u> <u>weeds</u>; and <u>invasive plant classifications</u>.

TIP: You can learn more about State Prohibited Weeds (SPW) by becoming a <u>Weed Spotter</u>.

The page also shares information on <u>prescribed</u> <u>measures for the control of noxious weeds; illegal</u> <u>online trade of noxious weeds in Victoria; Victorian</u> <u>Government role in invasive plant and animal</u> <u>management; and weed warning after drought, fire and</u> <u>flood</u>.

The <u>priority weeds</u> contains profiles for more than 40 weed species, listed in alphabetical order of common name.

The plant profiles include a growth calendar, a helpful tool to understand the times of year when the plant is likely to be flowering, seeding, germinating, dormant (if applicable) and when the most suitable time to apply treatment is.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flowering	88	38	38								*	83
Seeding				٥							٦	
Germination	8	8	8	8	8	8						~~~~~
Dormancy												
Treatment								2	2	2	2	

Figure 5: Growth calendar for African Daisy (Senecio pterophorus)

Credit: <u>https://agriculture.vic.gov.au/biosecurity/weeds/priority-weeds/african-daisy</u>

VICFLORA (Flora of Victoria) by Royal Botanic Gardens Victoria

<u>VICFLORA</u> is a "comprehensive and current guide to the wild plants of Victoria. With plant profiles, identification tools and richly illustrated..." as a free resource provided by the <u>Royal Botanic Gardens</u> <u>Victoria.</u> It is aimed at land managers, scientists, students and "indeed anyone with an interest in Victorian plants."

You can access the VICFLORA website at: https://vicflora.rbg.vic.gov.au/

The species information (including for weeds) on VICFLORA is detailed, usually associated with good quality images of the plant and includes distribution

maps. It provides the most current plant name classifications too. If you're unsure what your plant is, there is a key to help narrow down the options.



Figure 6: Screen snip of VICFLORA homepage

Credit: https://vicflora.rbg.vic.gov.au/

If like us, you have trouble remembering the difference between terms like ovate and obtuse, a handy <u>glossary</u> <u>of terms</u> is provided.



Figure 7: Screen snip example of VICFLORA species information for South American Mexican Clover (*Richardia humistrata*)

Credit: https://vicflora.rbg.vic.gov.au/

If it has not been considered as naturalised, your plant species may not be listed on VICFLORA. Check out <u>HORTFLORA</u>, "a current guide to cultivated plants of south-eastern Australia" and with many environmental weeds starting out their lives in cultivation, it may have the information that you're after.

TIP: The species are listed in alphabetical order of scientific name but can be searched for by common name using the search bar.

Lucid Weeds of Australia Fact Sheet Index

WESI are regular visitors to the fact sheets of <u>Lucid Key</u> <u>Server Environmental weeds of Australia</u> website: <u>https://keyserver.lucidcentral.org/weeds/data/media/Ht</u> <u>ml/index.htm</u>. Originally developed with CRC Weed Management and updated by Queensland Herbarium, it is a wealth of weedy information and images.

There are over 1,000 species listed in the fact sheet index which includes all the usual important plant information, along with synonyms (other scientific names a plant is known by), particularly useful when you've missed the memo about a name change.

	Weeds of Australia 💭		
	Ranth Glossary Help		
4 PREVIOUS A B C D E F G H I J K L M N O P Q R S T U V W Y X Z	N(X7)		
	Click on images to enlarge		
Scientific Name	TALK STORE		
Gorgahoorgun frustonen (L.) W.T. Aroon			
Synonyms			
Radigua Fanciesa L. Ganghelega Fanciesa J. N. D. Ganghelega Fanciesa J. N. D.			
Family	Res and the last production of the		
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Common Names			
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Origin			
Native to southern and eastern Alma (Ja. South Alma, Jacotho, Sauchard, Namba, Josthern Argola, Botswana, Zamba, Diribabae, Malaan, Mozambique, Gercama, Kenya, Diribopa, Somalia and Dirihea) and the southern parts of the Astern Permuta (Jacobae Permuta Jacobae Permuta J	fatt Plate Subtri Name		
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Cultivation			
Name-level ottor boh (Complexing through have academing been grain in geden in the part, but is selden deliberably subvated there days. However, is unusual har are converted at an over anargements.			
Naturalised Distribution			
Wolky nationalised in Australia with a scattered distribution throughout the southern and eastern parts of the country, it is most common in south-eastern Metalem Australia and the coastal and sub-coastal regore eastern New South Wolks. Also present in many parts of South-Australia, in seatern and central Visiona, in Taxmana, in the reland parts of southern New South Wolks and in south-eastern Queenland.	n of (Asterna of Terry have there and schapes that such (Protection Receil)		
Also naturalized overseal in many other parts of the world (e.g. New Zealand, the Assnes, india and Waunturs),	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
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Habit	A CONTRACTOR OF THE OWNER		
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Distinguishing Features	stangalari kaoni Prote Sultan Bacal		
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tractives and leaves contain a posserous milly sag.	Children Carlos		
 Its leaves are nervow (5-125 on long and 5-15 mm wide) and opposibily arranged along the stams. 			
 Initiation (12-13 mm across) are after or ceam in police with five ways peaks and a sman-like structure at its centre. 			
residencess, while a functive on tong and 2.5.5 on well are slightly covert, reveal in sult britles, and gradually taper to a mort point at their type	There is a first thread the second		

Figure 8: Screen snip of fact sheet profile layout for Narrowleaved Cotton-bush (*Gomphocarpus fruticosus*)

Credit:

https://keyserver.lucidcentral.org/weeds/data/media/Html/gomphoc arpus_fruticosus.htm

The detailed but easy to understand descriptions of the plant features e.g. leaves, flowers, fruit, along with clear images can be used to help understand the way the plant grows and how it acts in the environment.



Figure 9: Screen snip example of plant images on fact sheet profile for Narrow-leaf Cotton-bush (*Gomphocarpus fruticosus*)

Credit: Original image by Sheldon Navie. https://keyserver.lucidcentral.org/weeds/data/media/Html/gomphoc arpus_fruticosus.htm Other really valuable information provided, where known, includes environmental impact, suggested management and descriptions of similar species.

Weed Futures

The Weed Futures website is a "decision-support tool that provides users with the ability to interrogate individual profiles for over 700 non-native naturalised and invasive plant species within Australia."

Maps that predict the current and future weed distribution in Australia are matched to each weed profile. Each species is scored using five critical attributes and assigned a threat level low (yellow), medium (orange) and high (red).

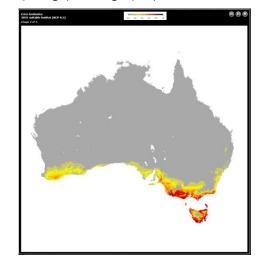


Figure 10: Example of 2035 suitable habitat modelling map for Spanish Heath (*Erica lusitanica*)

Credit: https://weedfutures.net/species.php?id=1083

Search by classification, species or region to create species lists and learn about what may be a potential threat to your area. Region searches can be done for Local Government Area (LGA) and various other categories. The LGA search is particularly useful to create lists or view weeds that may not be in this area at present but could have suitable habitat for future establishment.

You can have a play with Weed Futures online at: https://weedfutures.net/

Other frequently used websites include:

Atlas of Living Australia: https://www.ala.org.au/

WeedWise NSW: https://weeds.dpi.nsw.gov.au/

iNaturalist: https://www.inaturalist.org/

Grasses of Australia: AusGrass2: http://ausgrass2.myspecies.info/



Between them the WESI team members have an extensive collection of written resources that we refer to for weed information.

There's something satisfying and enjoyable about flicking through the pages of a book. It also gives you a chance to step away from the screen for a bit, which we all probably need to do more often.

Not only that, but some books have really useful and unique ways of sharing information about plants. Here's a few suggested haves for your collection.



Figure 11: Part of book collection Credit: Kate Blood (DELWP)

Weeds of the south-east: an identification guide for Australia (F.J. Richardson, R.G. Richardson, R.C.H. Shepherd)

"Weeds of the south-east: an identification guide for Australia" is now in third edition after being first published in 2006. With over 3,000 weedy photographs and almost 500 pages of weeds of environmental, agricultural and disturbed areas, it is one of our first to go to when looking for weed information.

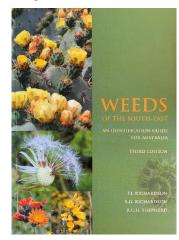


Figure 12: Cover image Weeds of the south-east Credit: Bianca Gold (DELWP)

It can be tricky to know where to start when identifying an unknown plant. We all have different levels of understanding about plants and their biology, and that can get confusing when looking them up.

In "Weeds of the south-east" there is an "identification using flower colour and shape" section that is particularly useful in instances where the flower of your unknown plant is visible or has been observed.

The tables provided in this section help to narrow down the field of choices and can give you a starting point, if not identify species.

Selecting the table with the colour that best matches your unknown plant flower and looking at the shape of that flower, leads you to lists of plants and their page numbers. If you were able to see the plant growing and can determine its lifeform e.g. tree/shrub, climber/scrambler, aquatic/wetland then the possible suspects can be reduced further. Some of these you may be familiar with and be able to eliminate immediately. Others you'll need to get a visual on to determine if there's any similarities to your unknown plant.

EXAMPLE: Photos of an unknown plant with orange trumpet shaped flowers were sent to the WESI team in August 2020. Bianca used the "Weeds of the South-East," identification using flower colour and shape section to identify the plant as Cape Honeysuckle (Tecoma capensis).

The "Weeds of the south-east" provides information on the plant family, species and distribution; and includes descriptions of key features and similar species too.



Figure 13: Flower of Cape Honeysuckle (*Tecoma capensis*) Credit: Oliver Sim (DELWP)



Richardson, F. J., Richardson, R. G. and Shepherd, R. C. H. (2016) Weeds of the south-east: An identification guide for Australia (3rd ed). R.G. and F.J. Richardson, Meredith. ISBN 9780980388541 (paperback).

Bush Invaders of South-East Australia (Adam Muyt)

Another that we are quick to reach for is "Bush Invaders of South-East Australia: A guide to the identification and control of environmental weeds found in South-East Australia."

It was first published in 2001 but much of the information is still very relevant today, twenty years on.

Containing environmental weeds of Victoria, Tasmania, ACT and much of South Australia and New South Wales, it's a handy resource, that includes descriptions of 150 environmental weed species, subspecies, varieties and hybrids.

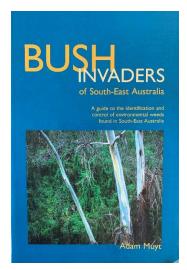


Figure 14: Cover image Bush Invaders of South-East Australia Credit: Bianca Gold (DELWP)

To assist with using "Bush Invaders" as an identification guide, it has been divided into sections by lifeform. For example, you'll find Spanish Heath (*Epacris lusitanica*) under shrubs section and Blue Periwinkle (*Vinca major*) with climbers and creepers.

This is useful similarly to "Weeds of the south-east" by helping to reduce the list of potential candidates of your unknown plant and is a great element of this book.

Another excellent feature is the information of "similar invasive species" and "confusing indigenous species" that is given where applicable to each of the plant species. The <u>African Boxthorn (*Lycium ferocissimum*)</u> description for example, suggests <u>Nitrebush (*Nitraria billardierei*)</u>, a native shrub found in the north-west of Victoria, may be a confusing indigenous species. It mentions <u>Chinese Boxthorn (*Lycium barbarum*)</u> and

Kaffir Boxthorn (Lycium afrum) as similar invasive species.

Muyt, A. (2001) Bush invaders of south-east Australia. R. G. and F. J. Richardson, Meredith, Vic. ISBN 0 9587439 7 5.

Environmental weeds: a field guide for SE Australia (K. Blood)

Some of our readers may be lucky enough to have a copy of "Environmental Weeds: A field guide for SE Australia" written by our very own WESI team member Kate Blood.

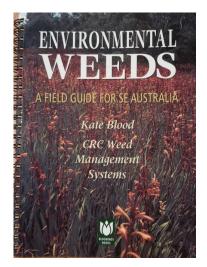


Figure 15: Cover image Environmental weeds

Credit: Bianca Gold (DELWP)

This little gem contains over 175 environmental weeds relative to south eastern Australia at the time of publication in 2001.

A bound book designed for taking out in the field, it contains detailed descriptions of each of the weeds, including look-alikes, weedy distribution and how it spreads. Also categorised by lifeform, making searching for your unknown plant that bit easier.

Kate has included nifty little logos next to the title of relevant plants showing their status as an environmental invader. These include "Garden Thug" for those invasive garden plants that escape into natural or farming areas; "Weeds of National Significance" (WoNS) that are being managed nationally to restrict spread and/or eradicate them from parts of Australia; and "Toxic" which is a hazard warning to easily identify plants that are toxic or have other health impacts for humans and/or animals. It is important to note that some of these statuses may no longer be current at this time.

In addition, this guide provides details of where the plant is likely to invade. Bluebell Creeper (*Billardiera heterophylla*) as an example, is said to invade

"Heathland and heathy woodland, lowland grassland and grassy woodland, dry sclerophyll forest and woodland, riparian areas and gardens. Tolerates drought, frost to -5°c, sun or part shade."

Blood, K. (2001) Environmental weeds: A field guide for SE Australia. Bloomings Books, Melbourne. ISBN 0 9579086 0 1.

Noxious weeds of Australia (W.T Parsons, E.G Cuthbertson)

"Noxious weeds of Australia" by W.T Parsons and E.G Cuthbertson is a reference book that contains over 200 weed species. It may be a little tricky to get your hands on these days but if you find a copy it is worth hanging on to!

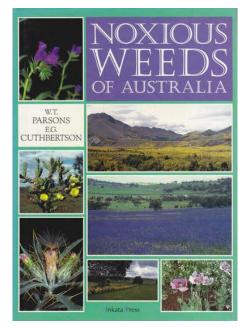


Figure 16: Cover Noxious Weeds of Australia reference book.

Credit: Bianca Gold (DELWP)

For interesting reading, the nomenclature section for each species explains the reason behind the plant's name (including scientific and common names) and this may help you with identification and to remember the name of that particular species.

As an example, for African Lovegrass *Eragrostis curvula* the "Noxious weeds of Australia" describes: "*Eragrostis* is a combination of the Greek *eros*, meaning 'love' and *Agrostis*, a grass, hence 'lovegrass,' referring to the elegant structure of the flowering spikelets; *curvula* is from the Latin *curvus* (Greek *kyrtos*), meaning 'bowed' or 'arched' and refers to the arching of the leaves which gives the plant a weeping appearance. 'African Lovegrass' is a reference of its country of origin."

This reference book contains a section under each species describing control options. Whilst some of these methods may still be appropriate, it is important to check the recommended control techniques in your State, particularly when it comes to chemical applications. Chemical retailers can provide information on chemical products registered for your situation. They can also provide Material Safety Data Sheet (MSDS) which outlines the health and safety about the product. Alternatively check the <u>Australian Pesticides and</u> <u>Veterinary Medicines Authority (APVMA).</u>

Parsons, W. T. and Cuthbertson, E. G. (2001) Noxious weeds of Australia (2nd Edition). CSIRO Publishing, Collingwood, Vic. ISBN 0 643 06514 8.

TIP: Copies of the books described here can be purchased online and/or ordered from most bookstores. Sometimes you can get lucky at second-hand book shops.

Other great library additions

It's worth having a selection of weedy books mixed with those that are native species focused. Some plants that are native to Australia can be considered weeds in their non-local state, alternatively, some weeds can look very similar to native species. By having resources for both you can more easily compare the differences and make accurate ID.

Think about adding books that are specific to your local area and some that are outside of it.

Other books that you may like to consider adding to your collection:

- "Native Trees and Shrubs of South-Eastern Australia" by Leon Costermans.
- "Waterplants in Australia: A field guide (4th edition)" by Sainty, G. R. and Jacobs, S. W. L.
- "Name those grasses: Identifying Grasses, Sedges and Rushes" Ian Clarke

Early invader weeds tools

Early invader manual

The "Early Invader Manual: Managing early invader environmental weeds in Victoria" was developed by the Weeds at the Early Stage of Invasion (WESI) project team and published in 2019. It is available online as a PDF and accessible Word version.

The aim of the manual is to describe the components of the WESI decision making framework (DMF) that step you through the process of dealing with early invader weeds.

It is filled with different 'tools' and hints to help you through the decisions involved with weed management. You may start at the beginning and work your way through step by step. Alternatively, you may enter at different stages of your weed management journey and join at the relevant step.

The manual is laid out with flow charts that clearly show the direction to take, colour photographs, tables, templates and easy to understand descriptions. It also contains a useful list of information sources in Appendix D, some of which have been mentioned in this newsletter.

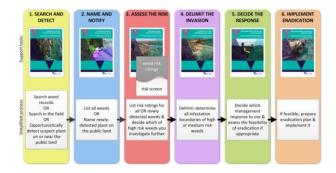


Figure 17: Decision making framework diagram

Credit: <u>https://www.environment.vic.gov.au/invasive-plants-and-animals/early-invaders</u>

You can access the online copies of the manual at: <u>https://www.environment.vic.gov.au/invasive-plants-and-animals/early-invaders</u>

Blood, K., James, R., Panetta, F. D., Sheehan, M., Adair, R., and Gold, B. (2019) Early invader manual: managing early invader environmental weeds in Victoria. Department of Environment, Land, Water and Planning, Victoria. ISBN 978-1-76077-317-5 (Print); ISBN 978-1-76077-318-2 (pdf/online/MS word).

Six WESI Guides

For those that require more detail about the steps of the decision making framework (DMF), please refer to the six WESI guides, second edition 2018, found here: https://www.environment.vic.gov.au/invasive-plantsand-animals/early-invaders

Specialist management guides, manuals and fact sheets

In addition to the informative resources we have outlined so far, for some species or groups, there are specific management and identification guides, manuals and fact sheets. They are mostly available online and some can be found in hard copy too.

Here's just a few of the ones we find ourselves referring to and often share with others.

Opuntioid cacti best practice management and identification (M.R. Sheehan and S. Potter)

The <u>Managing Opuntioid Cacti in Australia: Best</u> <u>practice manual for *Austrocylindropuntia*. *Cylindropuntia* <u>and *Opuntia* species</u> is a fantastic guide to identification and management for these species.</u>

The manual "has been designed to allow easy access to information and provide the necessary tools and knowledge to successfully manage opuntioid cacti."

It is divided into chapters that can be referred to individually or in order, from understanding and identifying species through to planning and implementing management.

The first chapter, "Biology and threat" provides the reader with excellent images and diagrams explaining the different identifying features of Opuntioid cacti and the characteristics that make them such a concern in the Australian environment.

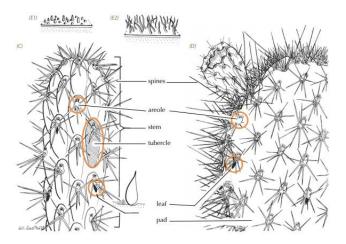


Figure 18: "Drawing used courtesy of the Board of the South Australian Botanic Gardens and State Herbarium, artist G.R.M. Dashorst (adapted from Chinnock, 2015). Not to scale."

Credit:

https://www.agric.wa.gov.au/sites/gateway/files/Opuntioid%20cacti %20best%20practice%20control%20manual.pdf

A quick guide identification table helps to compare species and offers short, sharp, easy to read descriptions of the characteristics of each.

FUN FACT: All cacti are succulents, but not all succulents are cacti.

The inclusion of chapters that step through the process and things to consider when dealing with cactus makes for a really informative and useful document.



Figure 19: Extracted from "Managing Opuntioid Cacti in Australia" manual

Credit:

https://www.agric.wa.gov.au/sites/gateway/files/Opuntioid%20cacti %20best%20practice%20control%20manual.pdf

You can access the manual and other Opuntioid cacti related resources here:

https://www.agric.wa.gov.au/invasive-species/opuntioidcacti-best-practice-control-manual

Buffel Grass

The <u>Department of Primary Industries and Regions</u> <u>South Australia (PIRSA)</u> have produced a number of excellent fact sheets, reports, case studies; a strategic plan and <u>decision tool for the management</u> of <u>Buffel</u> <u>Grass (Cenchrus ciliaris)</u>.

The <u>PIRSA Buffel Grass Identification Fact Sheet</u> is an excellent identification resource. It contains a variety of clear colour photos that show the distinct features of Buffel Grass. A collage of Buffel Grass growth phases and a section of look-alike natives helps to avoid misidentification and accidental treatment.

TIP: Buffel Grass is an early invader weed in Victoria. It was first collected in 2014 near Ouyen and has since been managed along roadsides in Northern Victoria.



Figure 20: Buffel Grass images from PIRSA Buffel Grass Identification Fact Sheet

Credit:

https://pir.sa.gov.au/ data/assets/pdf file/0004/275908/PIRSA fa ctsheet Buffel Grass Identification FA2_CJ.pdf

Other PIRSA fact sheets include <u>Buffel Grass Control</u>, <u>Buffel Grass Hygiene</u>, and <u>Buffel Grass Declared Plant</u> (South Australia). It is important to note that the information on these sheets is directed for South Australia, so please check regulations and requirements for your state.

These factsheets and other publications can be found at:

https://www.pir.sa.gov.au/biosecurity/weeds_and_pest_ animals/weeds_in_sa/weed_id/plant_id_notes/buffel_gr ass?shorturl_buffel-grass

What are the growth phases?





Hayed-off / Dormant

Figure 21: What are the growth phases? PIRSA Buffel Grass Identification Fact Sheet

Credit:

https://pir.sa.gov.au/__data/assets/pdf_file/0004/275908/PIRSA_fa ctsheet_Buffel_Grass_Identification_FA2_CJ.pdf

Weeds of National Significance Management Manuals

There are a selection of <u>Weeds of National Significance</u> (WoNS) Management Manuals available online. You may be lucky enough to have a hard copy floating around your office or be able to pick one up at the next weeds conference you attend.

TIP: 32 Weeds of National Significance (WoNS) are listed under the National Weeds Strategy. The weeds were selected based on their invasiveness, potential for spread, and environmental, social and economic impacts.

These best practice manuals were mostly published more than a decade ago but include valuable information on biology and threat; planning; control methods; monitoring and case studies for each of the focus species or groups.

Available management plans are linked to each species on the Weeds Australia website here: https://weeds.org.au/weeds-profiles/.

Asparagus weeds (Asparagus spp.), Boneseed (Chrysanthemoides monilifera subsp. monilifera), Chilean Needle Grass (Nassella neesiana), Gorse (Ulex europaeus), Alligator Weed (Alternanthera philoxeroides) and Serrated Tussock (Nassella trichotoma), just to name a few.

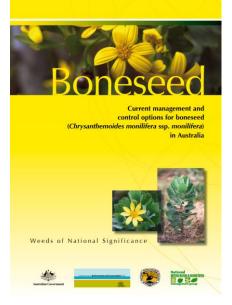


Figure 22: Boneseed WoNS management manual cover

Credit: https://profiles.ala.org.au/opus/weeds-

australia/profile/Chrysanthemoides%20monilifera%20subsp.%20m onilifera

Risk ratings and weed status'

Advisory list

The "Advisory list of environmental weeds in Victoria" was updated by the Arthur Rylah Institute (ARI) and M. White, D. Cheal, G.W. Carr, R. Adair, K. Blood and D. Meagher in 2018.

It includes an advisory list report that "describes an objective 'expert system' for ranking environmental weed species with respect to management urgency and presents the application of this method as an annotated list."

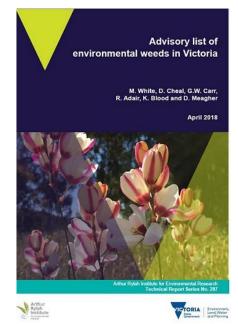


Figure 23: Cover image of the Advisory list of environmental weeds in Victoria

Credit: <u>https://www.environment.vic.gov.au/invasive-plants-and-animals/weed-risk-ratings</u>

Containing a list of over 1,700 plants, it is available with the complete set of annotations and attribute scores, as a searchable and sortable spreadsheet.

The advisory list is one of the first places WESI refers to when discovering a new weed to help identify relative risks posed and the relative urgency of managing it for Victoria's natural ecosystems.

You can view the online copy of the advisory list report and Excel file here:

https://www.environment.vic.gov.au/invasive-plantsand-animals/weed-risk-ratings

White, M., Cheal, D., Carr, G. W., Adair, R., Blood, K. and Meagher, D. (2018) Advisory list of environmental weeds in Victoria. Arthur Rylah Institute for Environmental Research Technical Report Series No. 287. Department of Environment, Land, Water and Planning, Heidelberg, Victoria. ISBN 978-1-76077-001-3 (pdf/online).

Invasive plant classifications (Agriculture Victoria)

There are a number of different ways to classify invasive plants. We've talked about the "Advisory list of environmental weeds in Victoria" above, and other classifications include State Prohibited Weeds, Regionally Prohibited Weeds, Regionally Controlled Weeds, restricted weeds and noxious aquatic weeds.

State Prohibited Weeds (SPW) are those that pose a significant threat and either do not yet occur in Victoria or are present but expected to be eradicated. A list of SPWs is available here:

https://agriculture.vic.gov.au/biosecurity/weeds/stateprohibited-weeds. If you spot one of these weeds please notify the Customer Service Centre on **136 186** immediately.

Classifications are explained here:

https://agriculture.vic.gov.au/biosecurity/weeds/invasive -plant-classifications.

Social Media

Social media is increasingly becoming a useful platform to share weedy information and to seek advice about your tricky weed problems and ID.

Most people have a profile set up on one or multiple social media platforms. Many of whom are experts in the environmental field and are happy to share their knowledge across Facebook, Instagram, Twitter and the like. There's so many to choose from! Here's a few that we follow:

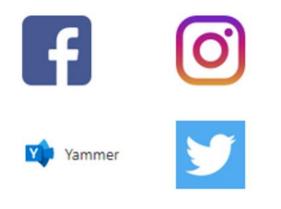


Figure 24: Social media icon collage.

Facebook:

Early Invader Weeds Victoria is the official WESI Facebook Group, managed by the WESI team <u>Kate</u> <u>Blood</u> and <u>Bianca Gold</u>. It is a great place to interact with the WESI team and share and learn about early invader weeds:

https://www.facebook.com/groups/earlyinvaderweeds.vi



Figure 25: Early Invader Weeds Victoria Facebook Group

Credit: https://www.facebook.com/groups/earlyinvaderweeds.vic

Weed Society Facebook pages and groups are an excellent source of weedy knowledge. In Victoria it is the <u>Weed Society of Victoria</u>: https://www.facebook.com/groups/1569119023329941

Tarrangower Cactus Control Group (TCCG) is a

Landcare and volunteer group based in Central Victoria. Their main focus is Wheel Cactus (*Opuntia robusta*) and they use the TCCG group to share information about Opuntia cacti and activities the group are involved with:

https://www.facebook.com/groups/1978563579043247

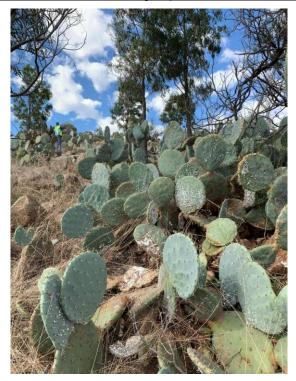


Figure 26: Wheel Cactus (*Opuntia robusta*) infected with Cochineal (biological control agent) in Central Victoria.

Credit: Bec James (Tarrangower Cactus Control Group).

Paul the Weeds Guy from NSW "is a Horticulturist and has been a Noxious Weeds Officer and now a Biosecurity Officer (Weeds) for 25 years." He shares weedy ID and management information, field activities, events and has a good sense of humour to help lighten the burden of dealing with weeds.

https://www.facebook.com/Paultheweedsguy



Figure 27: Facebook post Amazon Frogbit (*Limnobium laevigatum*).

Credit: https://www.facebook.com/Paultheweedsguy

EXAMPLE: Glenelg Eden's Mitch Williams noticed something out of place in the bush. He took photos of a plant with the distinct remains of greeny coloured flowers. He posted to iNaturalist, where comments lead to Stinking Hellebore (Helleborus foetidus). Mitch then looked into further information about the Hellebore and is now pressing an herbarium sample to be recorded for Victoria.

Instagram:

Weeds of Melbourne is "a visual glossary of Melbourne's weedy heritage" and contains an array of quality images and matched information of weeds found around the Melbourne area.

https://www.instagram.com/weedsofmelbourne/ Also see: https://weedsofmelbourne.org/



Figure 28: Weeds of Melbourne Instagram post screen snip Credit: <u>https://www.instagram.com/weedsofmelbourne/</u>

Victorian Gorse Taskforce (VGT) is all about reducing Gorse (*Ulex europaeus*) in Victoria. On their Instagram page you'll find the group's activities, grant opportunities, how to identify and manage Gorse, safety, and all things Gorse related: https://www.instagram.com/victorian_gorse_taskforce/

Twitter:

Centre for Invasive Species Solutions (CISS) is a national collaborative organisation, formed to tackle the ongoing threat from invasive species. They tweet videos, articles, photographs and information relating to all invasive species in Australia. https://twitter.com/CentreInvasives



Figure 29: Centre for Invasive Species Solutions Twitter profile Credit: <u>https://twitter.com/CentreInvasives</u>

iNaturalist is a social network of naturalists, citizen scientists, biologists and anyone with an environmental interest all around the globe. It's a platform to share observations, learn about biodiversity and connect with others. Their twitter account is https://twitter.com/inaturalist, also see https://www.inaturalist.org/



iNaturalist is a web- & app-based global community where anyone can share their observations of wild organisms. We don't provide ID help on Twitter, but if you post your photo to iNaturalist, our community can help



Figure 30: iNaturalist Twitter profile tweet Credit: https://twitter.com/inaturalist



Your friendly WESI Project Team, Kate (top) and Bianca (aka Goldie) (below)

The "Early invader weeds update" is the newsletter of the Weeds at the Early Stage of Invasion (WESI) Project. It is about managing early invader environmental weeds in Victoria.

If you do not wish to receive these updates, please reply 'unsubscribe' to our email and we will remove you from the list. We will not be sharing your details beyond our project.

If you wish to receive these updates via email please register online at: https://www.eventbrite.com.au/e/subscribe-free-toearly-invader-weeds-update-wesi-newsletter-tickets-111894349010

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Til next time!

Follow us on social media https://www.facebook.com/groups/earlyinv aderweeds.vic

Visit our webpage:

https://www.environment.vic.gov.au/invasiv e-plants-and-animals/early-invaders

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