



Newsletter of the Weed Society of Victoria Inc.

volume 19 issue 4 2008

Weedscene

Update on the Noxious Weeds Review

by Ruth Myers, Department of Primary Industries

What is the Noxious Weeds Review?

The Noxious Weeds Review (NWR) was initiated in 2003 to review whether the weeds declared noxious weeds in Victoria under the *Catchment and Land Protection Act 1994* were in the appropriate categories and to determine if new species should be declared. The list of noxious weeds had not previously been reviewed for 30 years.

The review of the noxious weeds list uses the Victorian Weed Risk Assessment process to give a relative weediness score to each species based on:

- its invasiveness e.g. its establishment requirements, growth and competitive ability, reproductive characteristics and dispersal mechanisms;
- the ratio of its present to its potential distribution in Victoria (Figure 1); and
- its social, environmental and economic impacts e.g. impacts on cultural sites, biodiversity, human health and/or decreased agricultural production.

The economic impacts of changes in declaration category are also evaluated before category recommendations are made to the Minister for the Environment as the Minister responsible for administration of the Act.

The three phases of the NWR

The NWR is occurring in three phases. Phase 1 reviewed the existing list of 79 species that were declared as Regionally Prohibited and Regionally Controlled (see Table 1 for a description of the four noxious

weed categories). This phase of the NWR was completed in March this year when the resulting changes to the noxious weeds list were gazetted and published in a Landcare Note, which is available at <http://www.dpi.vic.gov.au> (Online Services/Information Notes Series/Weeds/General).

Phase 2 is reviewing eight species that were identified as priority species by the Catchment Management Authorities. This phase is approaching completion: the CMAs have recommended categories for each species, the economic evaluation is complete and the submission papers are being prepared for consideration by the Minister for the Environment.

Phase 3a is reviewing 65 species that were identified from: the National Environmental Alert species list, Nursery and Garden Industry Victoria weed list or the Weeds of National Significance list (that had not previously been listed). The CMAs have made recommendations for the declaration of each species, including the category in which they should be declared. A state-wide consistency check is being undertaken before the economic evaluation is performed. Recommendations will then be made to the Minister for the Environment. Phase 3b is reviewing 70 species that were identified through community consultation by the CMAs. The weed risk assessments for these species have been completed but the CMAs have not yet been asked to make their recommendations.

Who is involved?

The NWR is being carried out by the Department of Primary Industries. The ten Catchment Management Authorities across Victoria and the Victorian Catchment Management Council are responsible for making recommendations to the Minister for the Environment about any proposed changes to the noxious weeds list. The Minister for the Environment is responsible for administering the *Catchment and Land Protection Act (1994)* that noxious weeds are declared under.

What do the categories mean?

There are four categories of noxious weeds listed under the *Catchment and Land Protection Act (1994)*. The category determines the nature of the responsibilities that land owners have for them.

What changes resulted from Phase 1?

The 79 species assessed for Phase 1 of the NWR are listed in the Landcare Notes mentioned above. Averaged across the State, about two thirds of the weeds considered in Phase 1 changed category as a result of the review.

Re-classification of formerly Regionally Prohibited weeds

Some weeds were re-classified from Regionally Prohibited to Restricted weeds in particular CMAs. As indicated in Table 1, the classification of Regionally Prohibited requires that a weed must be able to be eradicated from the region. The weed risk assessment indicated that some weeds in the Regionally Prohibited category are now considered beyond eradication and need to be moved into a category where eradication is not a requirement.

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Copy deadline for next issue: Friday 16 January 2009

Joining the Weed Society of Victoria

The benefits of membership to WSV include:

- Weedscene: quarterly newsletter packed full of information
- eWeedscene: regular electronic bulletin on weed news and events
- Discounts to WSV seminars, workshops, conferences and other events
- Opportunities to network with others.

To apply for membership, download and print the membership application form from the WSV website, www.wsvic.org.au, complete the details and mail to the WSV Secretary.

Weedscene Newsletter of the Weed Society of Victoria Inc.

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Some of the formerly Regionally Prohibited weeds were identified as having minimal impacts and it was considered appropriate to place them in the Restricted category to minimise their spread through trade or transportation. For example, Wild Garlic (*Allium vineale*) was previously listed as Regionally Prohibited in the Corangamite CMA region. In that region, it is now widespread, has little impact and consequently is ranked very low for action. It was recognised that it should not be spread elsewhere through trading or movement of stock, fodder or machinery and so it was re-classified as a Restricted weed in the Corangamite CMA region. Other uneradicable weeds however, are not as widespread and are capable of spreading further within the given regions and should be stopped from doing so. Therefore, re-classification as Regionally Controlled weeds was appropriate. For example, in the Corangamite CMA region, Serrated Tussock (*Nasella trichotoma*) was listed in the Regionally Prohibited category. As it now covers an area of approximately 30,000 ha, it is not able to be eradicated from the region. Therefore the appropriate category is Regionally Controlled, because this will require land managers to take all reasonable steps to prevent the growth and spread of the weed, but they will no longer be obligated to eradicate this weed from their land.

Re-classification of Regionally Controlled weeds to Restricted

Some weeds were re-classified from Regionally Controlled to Restricted in particular CMAs. A large number of the listed noxious weeds have become widespread within some CMA regions. Where these weeds have little impact in those regions they are considered a low priority for control. It is recognised that although these weeds are widespread in some CMA regions, it is still important that the spread of them to other areas is minimised. This can be achieved through listing the weeds in the restricted category where it is illegal to trade, sell, transport weed seeds or parts of the weed capable of growing. For example, some CMAs recommended that Spear Thistle (*Cirsium vulgare*) be re-classified from a regionally controlled weed to a restricted weed because it is widely spread, has been identified as

having low impact on social, environmental and agricultural assets but it could be transported in fodder to other areas.

Re-classification of formerly Regionally Controlled weeds to Regionally Prohibited

In some regions, certain weeds had previously appeared to be beyond eradication and so they were classified as a Regionally Controlled. However, current knowledge of these weeds now indicates that they can be eradicated from the respective regions and it is therefore desirable to re-classify these high risk weeds as Regionally Prohibited. For example, in the western part of the Port Phillip CMA region, African feather grass (*Pennisetum macrourum*) was previously declared as a Regionally Controlled weed, however, the level of infestation is now considered small enough to permit its eradication from the region. Consequently the CMA recommended that this weed be included in the Regionally Prohibited category.

When will the NWR be completed?

Completion of all three phases of the NWR is planned by the end of June 2009. For further information on progress of the NWR contact Ruth Myers (03) 9658 4275.

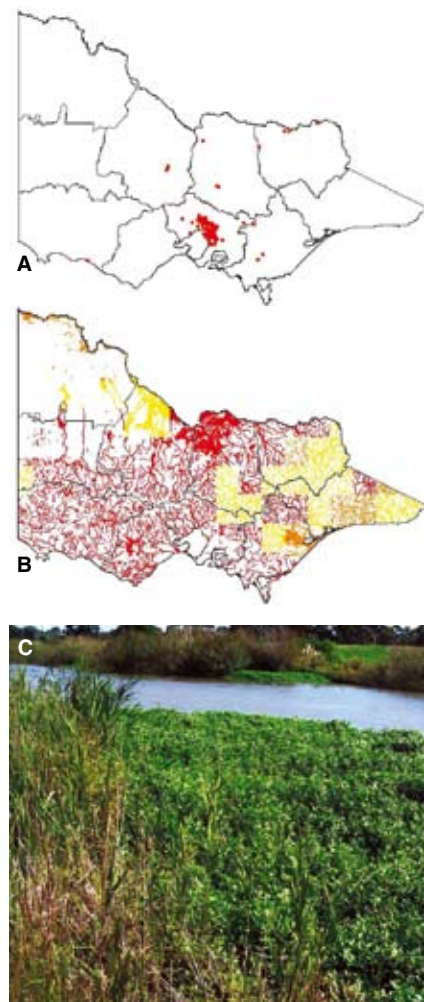


Figure 1. Examples of the maps produced for the NWR showing the present (A) and potential; (B) distribution of Alligator weed (*Alternanthera philoxeroides*); (C) Alligator weed invading a waterway.

Table 1. The four categories of noxious weed declared under the Catchment and Land Protection Act 1994.

State prohibited	These are weeds that either do not occur in Victoria, but pose a significant threat were they to enter, or are present in small numbers, pose a serious threat and can reasonably be expected to be eradicated ¹ from the State as a whole. The Victorian government is responsible for their eradication.
Regionally prohibited	These are weeds which are not widely distributed in a region, capable of spreading further and capable of being eradicated in that region. Land owners must take reasonable steps to eradicate regionally prohibited weeds in relation to their land.
Regionally controlled	These are weeds that are widespread in a region. Continuing control measures are required to prevent further spread. Land owners must take reasonable steps to prevent the growth and spread of regionally controlled weeds in relation to their land.
Restricted	This is the lowest level category, where weeds are a serious threat to primary production, Crown land, the environment or community health and have the potential, if sold or traded, to spread within or from Victoria. There are no specific obligations under the Act for landowners to control restricted weeds, but they must not be sold or traded in Victoria. Enforcement action for restricted weeds is generally limited to inspections of enterprises which may produce or sell declared weeds, such as nurseries, aquariums and the like.

¹ Eradication means that a species (including, for a plant, its propagules) has been removed or killed and no longer occurs at that site. In practice, this means that it can no longer be detected by recommended methods of survey for a defined period of time.



WSV News

Voyage of Discovery

“You’ve got to fight. You won’t get it unless you fight for it.” This was the message Roger Cook from Hume City Council delivered during the Merri Creek Voyage of Discovery organised by the Weed Society of Victoria (WSV) for Weedbuster Week 2008. Roger, and Katrina Roberg from the Merri Creek Management Committee (MCMC) were our hosts for the day and they filled the group in on the history of activism associated with protecting Merri Creek, which began with opposition to building the Eastern Freeway in the 1970s. Activism obviously didn’t stop the freeway going ahead but it did prevent it from being built through the Merri Creek and ensured that earthen, rather than concrete, levy banks were installed along the creek. This community support resulted in the formation of the Merri Creek Management Committee (MCMC) in 1989.

MCMC employs its own bush crews and oversees contractors to plant and maintain vegetation along the Merri Creek. It also runs weed workshops to train volunteers in weed identification and the best ways to hand weed. Some volunteers only come for workshops but others return with varying regularity to do weeding in the area.

MCMC is just one of a complex of land managers and owners responsible for the upkeep of the Merri Creek and its surrounding vegetation. Land owners and

users include Melbourne Water, Parks Victoria, Port Phillip and Westernport Catchment Management

Authorities, Vic Roads, power supply companies, local councils (in some parts opposing banks are in different municipalities) private industry and, of course, residents.

Representatives from some of these organisations attended the Voyage of Discovery, and as we walked along the creek they spoke about the complexities involved in maintaining the creek, with a focus on weed management. Weeds discussed included desert ash, gorse, boxthorn, blackberry, willows, Canary Island date palms, hawthorn and pines. Leigh Mitchell told us that these will be the focus of woody weed removal by Melbourne Water beginning soon along the creek from Bell St to Murray Rd and near Carr St. Reinvasion of these species is a problem, however, with desert ash seeds from the surrounding suburbs arriving in the drains and birds spreading the dates from the palms. James Booth said the City of Darebin spends about \$6000 per year deseeding palms with a cherry picker to prevent this problem.

Herbaceous weeds mentioned included wild teasel, couch, salsify and fumitory; this latter species identified as a large problem as it smothers native vegetation. Aquatic species such as alligator weed were discussed with Lalith Gunasekera from the Department of Primary Industries (DPI). Katrina also highlighted the increasing problem of water parsnip, *Berula* species

from Apiaceae; the same family that brought us Queen Anne’s lace and fennel, but also carrots, parsley and coriander.

Discussions moved on from just weeds to a systems approach to land management. Fiona Ede from DPI launched the Riparian Weed Management Guide. Roger was questioned about the habitat value of planting shrubs and trees without ground layer vegetation, as this is the current method used along the creek. His response was that it is possible to plant and maintain kilometres of woody vegetation for the same cost as a few hundred metres of ground layer vegetation. The short term goal is to provide social value and aesthetics while reducing weed seed sources and seed banks, with a long term aim to increase the habitat value by adding ground layer vegetation.

Weeds were not the only problems associated with revegetating the creek. Over time a knowledge bank has begun to grow about the suitability of the indigenous species planted, including the relative water use of black and silver wattles, the aesthetics of kangaroo apple and dead wattles and debate about the indigenous status of *Rhagodia*. Several speakers highlighted the need not just to quantify the amount of work that is done along the creek, but to assess the methods used and the benefits gained by enhancing and maintaining the vegetation. WSV can be instrumental in communicating on ground knowledge and highlighting research gaps. As Roger said, “We’ve got to claim public land and keep it.” We also need to make sure that the effort we put in to keeping it is worth it. **Jackie Steel**



Leigh Mitchell explains planned weed management along the Merri Creek



The voyagers on the Merri Creek Discovery Walk



Invitation to be part of a new WSV Editorial Committee

This past year has seen Weedscape embrace a new-look layout and expanded format. There has also been the introduction of eWeedscape. As part of maintaining and achieving ongoing improvements to these two critical tools WSV is seeking volunteers to join the editorial team. There are a range of opportunities to be involved, such as:

- contributing ideas for and planning content,
- liaison with contributors,
- proof-reading articles,
- seeking sponsorship and/or advertising,
- interviewing and writing articles,
- collating the articles and sending them to the designer/typesetter.

eWeedscape is the electronic bulletin sent to members and non-members

approximately every six weeks. Involvement in eWeedscape means:

- helping to collect information, news and events,
- editing information into the appropriate format,

It takes approximately two hours to prepare every six weeks and could be rotated.

Previous skills would be useful but are by no means essential. The current editorial team has mostly learnt on-the-job. Being an editorial contributor to Weedscape is not difficult nor overly time consuming (especially with the expanded editorial team). There would be the opportunity to rotate the lead editorial responsibility, and/or to take responsibility for tasks that are of most interest to you. The reward is seeing the delivery of the final product! For more information contact Lisa Minchin on 0437 233 193 or editor@wsvic.org.au.

WSV Annual General Meeting

The annual general meeting of the Weed Society of Victoria will be held from 4.00 – 5.00 pm on Thursday 16 April at the Department of Primary Industries, 40 Ballarto Road, Frankston, Victoria 3199.

Advance Notice: 4th Victorian Weeds Conference, 7–8 October 2009

The Weed Society of Victoria will be holding the Fourth Victorian Weeds Conference from 7–8 October 2009 at the Mercure Hotel in Geelong. The program is in its early stages of preparation. You are invited to consider presenting a paper or poster. Presentations will be approximately 20 minutes including question time. For further details and to find the form to register an abstract or poster presentation see the WSV website.

Weedy Words

Healthy soil grows weeds and flowers.
Anon.

Tis an unweeded garden that grows to seed;
Things rank and gross in nature possess it
merely. *Hamlet's first soliloquy in
Hamlet by William Shakespeare*

Sweet flowers are slow and weeds
make haste.
William Shakespeare

A weed is a plant that has mastered
every survival skill except for learning
how to grow in rows.
Doug Larson

Crabgrass can grow on bowling balls
in airless rooms, and there is no known
way to kill it that does not involve
nuclear weapons.
Dave Barry

I always think of my sins when I weed.
They grow apace in the same way and
are harder still to get rid of.
*Helena Rutherford Ely, A Woman's
Hardy Garden, 1903*

But make no mistake: the weeds will
win; nature bats last.
Robert M. Pyle

They know, they just know where to
grow, how to dupe you, and how to
camouflage themselves among the
perfectly respectable plants, they just
know, and therefore, I've concluded
weeds must have brains.
Dianne Benson, Dirt, 1994

Roses are red,
Violets are blue;
But they don't get around
Like the dandelions do.
Slim Acres

One is tempted to say that the most
human plants, after all, are the weeds.
John Burroughs, Pepacton, 1881

Free Weeds
U Pick 'Em
Anon.

Plant and your spouse plants with you;
weed and you weed alone.
Anon.

Many gardeners will agree that hand-
weeding is not the terrible drudgery
that it is often made out to be. Some
people find in it a kind of soothing
monotony. It leaves their minds
free to develop the plot for their
next novel or to perfect the brilliant
repartee with which they should have
encountered a relative's latest example
of unreasonableness.
*Christopher Lloyd, The Well-Tempered
Garden, 1973*

When weeding, the best way to make
sure you are removing a weed and not
a valuable plant is to pull on it. If it
comes out of the ground easily, it is a
valuable plant.
Anon.

A man of words and not of deeds is
like a garden full of weeds.
Anon.

Weed 'em and reap.
Anon.

A man's children and his garden both
reflect the amount of weeding done
during the growing season.
Anon.



CAWS News



We're at an important crossroads with weed management in Australia, the end of an era for the Weeds CRC and the soon-to-be beginnings of a new national weeds research centre.

On behalf of CAWS I'd like to wish the Weeds CRC a fond farewell and a large thankyou for its comprehensive contribution to weed management, at local, regional, state, national and international scales. Launched as the Cooperative Research Centre for Weed Management Systems in 1995, and becoming the CRC Australian Weed Management in its second round from 2001, it has made a massive contribution to weeds research, education and awareness.

The Weeds CRC has had a wide geographic coverage, with contributing staff from every Australian State and Territory and New Zealand, in government agencies, universities and industries. Issues covered have included herbicide resistance, biological control, weeds of natural ecosystems, pastures, crops and aquatic habitats, risk assessment, economics, impacts, policy, eradication, dispersal and invasive garden plants. Publications have numbered in the hundreds with factsheets, guides, manuals, books, journal papers and conference presentations. The Weeds CRC has been very effective in raising national awareness, with frequent articles in the print and electronic media. Its independence has enabled it to lobby governments for policy change, one of the most effective being the end of the permitted genera entry into Australia (in collaboration with WWF).

One of the greatest benefits from the Weeds CRC has been the networks and wider sense of community it has fostered amongst staff and students

across Australia and overseas. It has broken down traditional rivalries between various research institutions around the country and will leave a legacy of ongoing collaboration across jurisdictional boundaries. The Weeds CRC was of particular benefit as a training ground for our weed scientists of the future. For students and young weed scientists alike, it was vital to not only have had the scientific mentoring, but also the opportunity to feel welcome and a part of a national, cooperative network.

There are far too many people to thank individually, but our particular gratitude goes to the Directors/CEOs; Steve Powles, Rick Roush and Rachel McFadyen, and to the Program Leaders over the years; Richard Groves, Deidre Lemerle, David Kemp, John Fisher, Bruce Auld, Jim Pratley, Chris Preston, Dane Panetta, Paul Pheloung, Tony Grice, Steve Walker and Peter Martin (apologies if I have missed any!). To these people and all other individuals who contributed, CAWS and its members offer many thanks.

Note that the Weeds CRC's website will remain active for several years as an ongoing source of information: www.weedscrc.org.au

CAWS takes a keen interest in the development of the new national weed research centre, with Australian Government funding of \$15 million over four years. An interim board has been established, led by John Kerin, to develop a collaborative structure inclusive of State/Territory governments and research and development

corporations (e.g. GRDC). Research priorities and a physical base for the centre are yet to be determined. CAWS would want the new centre to have a wide geographic coverage, including links across the Tasman, and to address both environmental and primary industries weed issues equitably.

Finally, congratulations to two students who have both been awarded CAWS travel awards for 2008. Sam Trengove is undertaking a Masters degree through The University of Adelaide on the potential for site-specific weed management in Australian agriculture, including comparing various sensor devices for weed detection. He will be presenting a paper at the Weed Science Society of America conference in February 2009 and visiting weed/engineering scientists in three US states, Canada, Denmark, Germany, France and Spain. Eleanor Dormontt is undertaking a PhD through The University of Adelaide on the evolution of the invasiveness of *Senecio madagascariensis*. She will be attending the international symposium "Fifty years of invasion ecology – the legacy of Charles Elton" at Stellenbosch, South Africa in November 2008. Her poster will be titled "A powerful emerging approach to assess the genetic consequences of invasions: the use of molecular markers to compare native and invasive populations".

The next round of applications for the CAWS Student Travel Award (\$3000) and Early Career Weed Scientist Travel Award (\$2000) will be due by the end of May 2009. No applications were received for the latter award in 2008.

Dr John Virtue, CAWS President

Victorian Alert Weed: Hedge cactus (*Cereus hildmannianus*)

This is the fourth instalment in an ongoing series, highlighting some of the Victorian Alert Weeds, brought to you by the Department of Primary Industries Weed Alert program.

Why is this species a Victoria Alert Weed?

Hedge cactus is a highly invasive and fast growing plant, which left untreated, can form dense, hedge-like stands. Sharp, long spines along the length of stems provide ample protection from browsing animals and weed controllers who risk serious injury in coming too close. Prolific seed stored within succulent fruits help spread the plants great distances. New plants can sprout from damaged crowns and even broken stems can re-root to form new infestations. Hedge cactus prefers to invade habitats that are already on the decline in Australia, such as open woodlands and grasslands and may permit further fragmentation.

Type of weed

A potential garden escape and tall growing cactus.

What does it look like?

Stout trunks grow from 0.3-0.9 m high and more than 0.3 m wide before branching into stems 6-10m long, cylindrical and segmented and dull blue-green in colour. Stems have ribs and grooves 40-60 mm deep and usually 10-25 mm apart running along their length with sharp spines (modified leaves) on the top of the ribs. Flowers are large (75-100 mm in diameter), showy and mostly white with the outermost petals pinkish, with yellow pollinating parts in the centre of the flower. Flowers are nocturnal (only opening at night) and form on a 150 mm long flower tube. Fruit are smooth and red, turning more amber when ripe and contain small, black, seeds.

Why is it a problem?

Occasionally traded by the nursery industry as a drought tolerant, fast growing plant with edible fruits, hedge cactus could be an easy choice for the unaware gardener. This drought tolerance, rapid growth and easily spread seeds also give it the potential to be a highly invasive weed.

Long spines down the ribs of the stems make access to the stump difficult, limiting successful control attempts. Forming dense hedges with sharp spines, *Cereus hildmannianus* can block human and animal access to farmland, similar to other costly cactus like prickly pear (*Opuntia stricta*).

Its popularity as a late 18th and early 19th century garden plant, used around old homesteads in northern Queensland has seen the spread to nearby grasslands and woodlands. Plants can readily re-shoot from damaged fleshy stems and the illegal dumping of garden waste is likely to see it spread further. Early identification and eradication may prevent hedge cactus from establishing in Victoria.

If you suspect you have found hedge cactus, please report it to your local Weed Alert Contact Officer on 136 186. For a hedge cactus fact sheet, or more information on Victorian Alert Weeds, log on to the Weeds section of the DPI website www.dpi.vic.gov.au/weeds and click the Weed Spotters link.

Richard Plant, Department of Primary Industries

Weed profile



Cereus hildmannianus (Photo: Stuart Robertson, DPI)



Flower (Photo: Stuart Robertson, DPI)



Montrose form (left); spines and stem (right)
(Photos: Stuart Robertson, DPI)

Garden travellers

Sustainable Gardening Australia – Invasive Plants, Education and Inspiration

“The roots of education are bitter, but the fruits are sweet.” Although Aristotle didn’t have invasive plants on his mind when he penned this quote, no single sentence encapsulates the problems associated with weeds and education better than this one, especially with respect to garden escapees. One organisation working towards making a positive difference to the war on weeds is Sustainable Gardening Australia, who know only too well what Aristotle was on about! Founded in 2003, Sustainable Gardening Australia (SGA) is a not-for-profit, non government organisation which works to protect and enhance the Australian Environment by promoting the benefits of sustainable horticulture.

By identifying and working with their key target groups namely, home gardeners, local governments, industry professionals and garden retailers, SGA believe that they can indeed make a difference to the way people garden and, ultimately, to the health of our local and global environments. A significant portion of SGA’s education and certification programs deal with invasive plants, from the identification and avoidance stage, through to the removal of locally established invasive plants from retail outlets and landscapers’ palates.

We’ve all seen the statistic – over 65% of Australia’s environmental weeds and invasive plants have their roots in the horticultural industry! What a startling figure! Retail and wholesale nurseries rightly cop a fair bit of grief from the myriad of people and organisations working at weed control and removal throughout Australia! With this in mind, SGA has undertaken a number of ambitious and successful education programs dealing with invasive plants. These programs target retail nurseries, landscape professionals and local councils. The results have flowed through to home gardeners throughout Victoria and beyond.

Over the past 5 years, SGA has produced *Sustainable Gardening* booklets for 12 different local governments throughout Victoria, with a combined distribution of 250,000 copies throughout these municipalities and shires. Specifically designed to target home gardeners, these booklets not only highlight appropriate and environmentally responsible gardening practices, but also identifies invasive and potentially invasive garden plants for that locality. These booklets also suggest suitable non-invasive alternatives for the home gardener, as well as highlighting the environmental impacts of garden escapees.

With the support of Parks Victoria, SGA provides an ongoing environmental certification program for retail garden centres. This program has a significant focus on preventing the sale of invasive and potentially invasive plants. In order to gain SGA certification, garden centres are required to abide by the regulations of state based noxious weed lists as well as to avoid stocking plants that appear on state weed alert lists, CMA weed lists and local government environmental weed lists. While the nurseries are not required to remove these plants by law



It's true – we make a difference!

Choosing a safe alternative will help protect the native plants and wildlife in our local area. Please ask our trained staff for advice.



Mother Nature's Acne.

Help clear up the bush... ask us for a safe alternative.



your local environmental experts



Sample of Sustainable Gardening Australia's invasive plant information posters, displayed in garden centres throughout Victoria. (Photos: copyright SGA)



(except noxious weeds), SGA believes a proactive approach to invasive plant management is the key and feels quite strongly that these nurseries are helping to prevent the spread of “weeds of the future” throughout the community.

And it seems to be working! Throughout Victoria, SGA currently has 55 retail garden centres involved with their certification program, with 25 of these certified garden centres. These Victorian certified garden centres have facilitated the removal of 200+ plant species from permanent sale, an astounding result when the potential distribution of these plants to home gardeners is considered. To reinforce the importance of this work, SGA has developed weed education posters that are made available to garden centres so they can inform customers as to why a particular species of plant is not available on the shelves. Using messages such as “Give them an inch, they’ll take a mile” and “Invasive Plants – Mother Natures Acne”, SGA have been able to speak directly to home gardeners and ask them to reconsider their plant choices.

SGA have also worked with 12 individual councils throughout the North Central CMA region, to develop invasive plant lists for these councils. An on-line database was developed as well as printed posters identifying the “Top Ten Bushland Bullies” of the area. Plant features, dispersal notes and weed removal techniques were also included.

The SGA website (www.sgaonline.org.au) currently receives in excess of 20 000 hits per month. It includes a ‘Click before You Pick’ section designed to inform the broader community about invasive and potentially invasive garden plants.

Through these activities and throughout our many other programs, SGA believes they are indeed contributing positively to our environment. After all, one generation plants the seed, while the next gets the shade.

Helen Tuton
Sustainable Gardening Australia

Perspectives

Some provocative thoughts on environmental weeds

‘Properly speaking, of course, there is no such thing as a return to Nature, because there is no such thing as a departure from it. The phrase reminds one of the slightly intoxicated gentleman who gets up in his own dining room and declares firmly that he must be getting home.’

G.K. Chesterton

There are lots of well-worn definitions of the term ‘weed’, and I do not propose to re-state them here. It is sufficient to say that the idea of a weed as an undesirable plant interfering with some aspect of human activity is probably as old as civilisation. But so-called ‘environmental’ weeds are a different matter. I want to suggest that they are a relatively recent invention and that their status is often heavily dependent upon a particular, modern interpretation of terms like *natural* and *indigenous*.

In our everyday conversation we often use the word *natural* as the opposite of *artificial*. *Nature* then becomes all of those things that occur ‘of their own accord’. *Nature* is that which has not been interfered with. But every part of nature interferes with every other part in a great causal chain, so this clearly is not what we mean. On closer examination, *nature* very often means all of that which has not been altered by human activity so as to become a sort of artifice. Thus, for many environmentalists a ‘natural’ environment is one free of human modification (well, European modification at any rate!). ‘Modification’ here includes the introduction of all alien plants. The *natural* is the opposite of the *cultural*. Indeed, this sort of meaning can be traced back to early Greece – to the distinction between *phusis* and *techné*. But, as C.S. Lewis has pointed out, ‘if ants had a language, they would, no doubt, call their anthill an artifact and describe the brick wall in its neighbourhood as a *natural* object.’

We begin to see that *nature* (and *natural*) is, in fact, a wholly human creation. In the

same way, we have created concepts like *ecosystem* and *wilderness area*. These are not mathematical truths or ‘objects’ with an unambiguous empirical reality. Rather, they are something akin to Universals, whose existence relies on our tacit agreement. It’s the same with *indigenous* – simply a classificatory decision concerning plant and animal species present before the arrival of Captain Cook. Should the Tamarind tree be regarded as a native? It arrived well before the First Fleet. The dingo is classed as a native so, presumably, in three or four thousand years cane toads and blackberries will all be ‘native’!

The English writer Peter Coates (*Nature: Western Attitudes Since Ancient Times*, Polity Press, UK, 1998) gives us a very good example of the sort of problem we are up against:

‘The suburban lawn may seem an unlikely choice but it illustrates nicely the clumsiness of the received categories of nature and culture. We might conclude that, while grass seed and blades of grass are part of nature, they enter the realm of artifice through their collective identity as a lawn. Yet the seeds themselves are completely domesticated, bred for shade tolerance, for instance. Does the lawn become more natural, however, if dandelions, daisies and moss – the spontaneous products of ‘nature’ – establish themselves?’

Coates goes on to point out that many of the so-called ‘natural environments’ in the UK are very largely the product of human activity over thousands of years. Indeed, it is difficult to conceive of any reasonably accessible part of Europe as being in a wholly natural state if we wish to define *nature* in the way I have suggested above. George Orwell once referred to ‘the ancient bone-heap of Europe where every grain of soil has passed through innumerable human bodies.’

Only in the 'New World' could the effects of European civilisation upon a certain perception of nature (nature as *wilderness*) be clearly observed in the course of a few generations. The changes were both obvious and rapid. By contrast, in Europe, the landscape had been changing under human influence for thousands of years so that some benchmark or starting point of 'pristine nature' was not available. This, I think, explains why we in Australia are more conscious of environmental change consequent upon European settlement. And, almost universally, we regard those changes as a deterioration from some earlier, pristine condition of nature where everything was in some sort of harmonious balance. This idea of balance, of course, is a fiction. There is no 'balance of nature' and the notion has long since been abandoned by modern ecologists.

In fact, in measuring change to an environment or ecosystem, we are in much the same position as the early Greek philosophers. In a world of constant evolutionary change, how can we form notions of any objects such that we can recognise them over time? Plato's answer was, of course, his famous theory of Forms or Ideas – unchanging and perfect. It is by reference to these Forms that the human intellect 'knows' objects in this world. In a somewhat analogous way, many ecological commentators conceive of the 'Form' or 'Idea' of nature. We could designate it as 'Nature' or 'Wilderness'. This Nature is nature 'left to itself' or, more precisely, nature devoid of *historic* human interference (in pre-history, humans are

often assumed to have lived in 'harmony' with nature). Of course, the analogy to Plato's theory is only partially applicable because in Nature, certain types of change are not only allowable, but quite necessary in the ecological view – evolutionary change, for instance.

Indeed, we can take this matter of 'natural versus cultural' to its logical conclusion. If we are zealous in protecting our 'pristine environments' by preventing incursions of introduced weed species or indeed, any non-indigenous plants (including non-local native plants) then are we not in some sense interfering with natural evolutionary processes? Change is essential in evolution and by preventing it we could be imposing a wholly 'artificial' scenario. In fact humans and nature construct one another. This point has been brought home with some force by the Australian nature writer, Tim Low. Using examples of recent adaptations by Australian native plants and animals to human-altered environments, he shows that 'nature' is a dynamic, ever-changing entity and that it is simplistic in the extreme to suppose that nature and human culture are separated by some great divide (Low, T. (2003). *The New Nature*. Penguin Books, Camberwell, Victoria).

Again, if we want to suppose that the human species, like any other species, is *totally* the product of a natural, evolutionary process, in what sense can the actions of modern humanity be seen as 'destructive' or 'unnatural'? If we are totally the products of nature, everything we do is 'natural' and the nature/culture

dichotomy disappears. Of course, we can argue that recent human activity has greatly hastened the process of extinction of species. But to say that we somehow 'interfere' with natural evolutionary processes suggests that we are in some way 'outside' nature! Rather obviously, transcendentalists will have no problem with this. Contrariwise, if we were able to completely prevent further extinctions most of us would, and in so doing, would be acting against 'evolutionary forces'. In short, our actions would be 'unnatural'.

It is something of an irony that at a time when we can boast of having 'conquered' so much of 'Nature' in the Baconian sense, many now feel completely isolated from that which they purport to understand so well. In becoming fully 'part of nature' as intelligent apes in the evolutionary schema, they now perceive the whole human enterprise as being no more than a destructive perturbation on the indifferent face of a blind nature. For such people, we are no more than a brief irruption – like a mouse plague – on a tiny planet in a tiny corner of an immense universe. Perhaps we have not conquered nature; she has conquered us.

Brian Coman

(Brian Coman is a retired research biologist who spent many years studying vertebrate pest biology for the Vermin and Noxious Weeds Destruction Board in Victoria. In retirement he returned to university and has recently been awarded a PhD in the Humanities. His thesis examined the nexus between environmentalism, philosophy, and religion.)

The social construction of weeds

Vissoh *et al.* (2007) have recently published an article entitled 'The social construction of weeds: different reactions to an emergent problem by farmers, officials and researchers.' This article is based on research done in the Republic of Benin and the authors discuss among other things the emergence of weeds and farmers' reactions, farmers' perceptions of weeds, technology development by farmers, weeds as a component of the rural poverty cycle, gender division of labor and the response of formal agricultural research to weed problems. The authors conclude that weeds

have become a significant player in the vicious cycle of poverty. They stress that efficient weed control methods should be a key concern for agricultural research that seeks to reduce poverty in West Africa. Because women perform the bulk of the weeding activities, they should be involved in the development of weed management strategies. The study revealed how little impact the perceptions of weeds and weeding practices by small scale farmers influence the research and policy agenda of agricultural scientists and government. They conclude that the key lesson from the

study is that different conceptualisations of weeds determined different practices of weed management and that a conceptual convergence is necessary for designing more efficient pathways of science in the future.

Gualbert Gbehounou

IWSS Newsletter, February 2008

Reference: Vissoh, P.V., Mongbo, R., Gbehounou, G., Hounkonnou, D., Ahanchédé, A., Röling, N.G., and Kuyper, T.W. (2007). The social construction of weeds: different reactions to an emergent problem by farmers, officials and researchers. *International Journal of Agricultural Sustainability* 5(2&3): 161-175.

On the ground

Friends of Eastern Otways help protect the Great Otway National Park



Anglesea Heathlands 2008 – worth protecting!

Since the 1983 bushfires that swept through the Anglesea District, Coast Tea-tree *Leptospermum laevigatum* and hybrid Coast/Sallow Wattle *Acacia longifolia* sp. have invaded areas of heathland within the Great Otway National Park, forming impenetrable barriers of vegetation.

In November 2004, in an attempt to control this invasion, the Department of Sustainability and Environment (DSE) with Parks Victoria, carried out an experimental project in an 2 hectare area of coastal heathland alongside the Great Ocean Road, Anglesea. The mature trees were knocked down by machinery, allowed to dry out, and then set fire to in a controlled burn.

While the burn was effective in removing the mature environmental weeds, it resulted in thousands upon thousands of seedlings of Boneseed, Cape Wattle, hybrid Coast Wattle and sometime later, Coast Tea-tree appearing throughout the burnt area – the stored seed bank triggered by the fire. There was a huge weed problem.

In 2005, the Friends of Eastern Otways accepted the challenge of removing the environmental weeds, and closely monitoring the post-burn regrowth throughout the area. Since that time a number of conservation, community and student groups have assisted us with the

project. The help from Conservation Volunteers Australia, funded through the Corangamite Catchment Management Authority, has been invaluable.

Over the years, the drudgery of the backbreaking task of removing the environmental weeds by pulling up, or cutting the stems and treating with herbicide, has gradually faded into insignificance as we have been able to see the results of our efforts. Despite the lack of rain, biodiversity has increased dramatically. While some plants, such as Silver Banksia, Horny Cone-bush and Prickly Tea-tree resprouted very quickly from underground tubers, many tiny seedlings emerged and were difficult to identify. All our plant knowledge and observational skills were being called upon to identify the different species from the



Friends removing environmental weeds from the heathlands

Silky Guinea Flower



Salmon Sun Orchid

Chocolate Lily



shape and texture of the leaves that were appearing.

By spring 2007, as we went about our weeding activities, there were many beautiful flowers to admire, such as Silky Guineaflower, Common Heath, Twiggy Daisy-bush, Common Wedge-pea, Chocolate Lilies, Blue Stars, Short Purple-flags and Native Violets. However nothing could hold our excitement as keen eyes started finding terrestrial orchids scattered throughout the area where so many hours of weeding activity had taken place. Salmon Sun Orchids, Twisted Sun Orchids, Spotted Sun Orchids, Pink Sun Orchids, Rabbit Ears, Mantis Orchids, Thick-lip Spider Orchids and the beautiful pink Tiny Caladenia were all growing in this restored environment.

We don't need recognition for our efforts, although this has certainly been forthcoming from Parks Victoria staff and other people who have visited the area. Our recognition has been in the regrowth of our beautiful indigenous vegetation. As could be expected, stronger indigenous species, such as Prickly Tea-tree, are spreading, and could perhaps crowd out some of our 'treasures'. But it appears that there is room for all indigenous species to grow side by side in these coastal heathlands.

Margaret MacDonald
Friends of Eastern Otways



Research

New mode of action to control broadleaf weeds in cereal crops

Bayer CropScience plans to launch a new herbicide in the Australian market place in 2008 now that it has been granted registration. Precept, based on the combination of the new active ingredient pyrasulfotole, MCPA LVE safener technology, will be available in good time for the cropping season in 2008.

Precept brings a new mode of action (MoA) into the Australian cereal herbicide market segment, and is the next creation from Bayer CropScience's successful research and development pipeline. Precept will bring a HPPD inhibitor into the Australian cereal market for the first time. Targeting the broad spectrum of broadleaf weeds Precept can be used as part of an effective resistance management program to control sulfonylurea resistant weeds. This new product will also help farmers to optimise cereal production and to improve productivity.

The mode of action (branded as photo-X®) works by interrupting three crucial processes in the growth of weeds, gradually destroying vital life components within the plants. Firstly, the weed's ability to generate an adequate supply of energy is stopped by preventing the production of an essential component of the photosynthetic apparatus. Secondly, the weed's ability to produce vitamin E is restricted, which protects biological membranes against oxidative stresses and the photosynthetic apparatus against photo-inactivation. As a result so-called free radicals destroy the weed from the inside. Thirdly carotenoid production is prevented and the weed loses the shield that protects chlorophyll molecules from dangerous ultra violet rays and excess light. As there is nothing to stop sunlight from penetrating deep into the leaves, the chlorophyll is destroyed. The effect is highly visible: leaves of treated weeds lose colour, and the weed dies.

News

APVMA regulations on spray drift

The final draft of the *Australian Pesticides and Veterinary Medicines Authority Operating Principles in Relation to Spray Drift Risk* and the companion document the *Preliminary Regulatory Impact Statement* were released for public comment, which closed on 21 March 2008. The first document sets out how the APVMA assesses risk from spray drift of any agricultural chemical products, including biological agents, which may be applied by air, ground hydraulic boom sprayers, airblast equipment, and handheld or backpack equipment and the general methods it uses to control that risk. For further information see www.apvma.gov.au/new/public_consultation.shtml or contact david.loschke@apvma.gov.au.

Digital DNA to aid identifications

An international project to 'bar code' hundreds of thousands of species over the next five years will help people to identify any plant, animal, fungus or bug within three minutes. The International Bar Code for Life Project hopes that hand-held gadgets to be used for identifications will be commonplace. The New South Wales Minister for Primary Industries, Ian Macdonald announced a \$1.2 million contribution to the 25-nation project, which is expected to cost \$150 million. Dr Paul Hebert, the director of the Canadian Centre for DNA Barcoding said the first goal was a library holding DNA barcodes of 500,000 species. Scientists needing to identify an organism would take a DNA swab and compare it with the library's records. People using a hand-held device would simply brush a strip of paper over a sample from the species. The paper would then be inserted into the device, which would scan the DNA and check it with the library.

Richard Macey, *The Age*
19 February 2008

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