

Newsletter of the Weed Society of Victoria Inc. volume 26 issue 2 2015

Weed Society of Victoria 2015 AGM Seminar Invasive Species from Woodlands to Waves in Western Port



Mike Cleeland, Phillip Island Landcare (Photos: Bec James)

The 18–19 March WSV seminar event began with a presentation session at Cowes, Phillip Island, and included the following topics: peri urban environments; biological control of Tradescentia fluminensis; weed advocacy; modelling serrated tussock; weeds at the early stage of invasion in Victoria; weed biological control and the Atlas of Living Australia; The Central Highlands Eden Project; and the weed scene in Gippsland.

Following a BBQ lunch provided by the Phillip Island Landcare Group, attendees were treated to a field trip to meet the locals and see some of their weed works: combating woody weeds and sea spurge, and restoration activities. That evening, the WSV Annual General Meeting was followed by dinner at a local restaurant where attendees enjoyed the good company well into the night.

Day two featured the unique French Island which is managed without the jurisdiction of a local council. Two thirds of the island is allocated as the French Island National Park. Of particular interest is the RAMSAR listed wetlands to the north of the island. Field trips included sites of feral cat, goat, deer and cape tulip management undertaken by members of the local French Island Landcare Group.

The WSV would like to thank all who attended, with special thanks to those who presented, hosted and organised this event.

More information on the Phillip Island and French Island Landcare groups: www.basscoastlandcare.org.au/ More information on the Mornington Peninsula and Western Port Biosphere Reserve: www.biosphere.org.au



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WSV Membership Rates 2014–15

Pay for 1, 3 or 5 yearsConcession*\$20Ordinary\$60Corporate\$140

* Students and Pensioners WSV is not registered to collect GST

Contents

NEED SOCIETY OF VICTORIA 2015 AGM SEMINAR	1
WSV Seminar Advocacy Survey	3
GRADUATE STUDENTS AWARD COMPETITION	3
EATURE	
Willow Work in the Victorian Alps	4
NVASIVE PLANTS PHD RESEARCH PROJECTS	
Thinopyrum junceiforme (sea wheatgrass): an exotic invasive	
weed species on southern Australian coastal sand dunes	6
ROM THE PRESIDENT	8
DATES FOR YOUR DIARY	8
CAWS REPORT	9
NSV NEWS	10
N THE MEDIA	11
NEW PUBLICATIONS	12

COVER PHOTO: Euphorbia paralias (courtesy Rob Richardson)

Joining the Weed Society of Victoria

- The benefits of membership to WSV include:
- Weedscene: 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.

- Contributions to Weedscene are welcomed. Please contact the editor for further information.
- Readers are free to circulate and reproduce Weedscene material with acknowledgment of the author and source.
- The views expressed in Weedscene are those of the contributors and are not necessarily shared by the WSV Executive Committee.

Want to receive Weedscene as a PDF? Contact the Secretary.

Society Sponsorship

Annual Sponsorship

- Logo displayed on 'Weedscene' four issues per year
- Logo and sponsor name on the Society's website

\$300

- One promotional article in 'Weedscene' per year (subject to ed. control)
- One free membership per year (optional)

Advertising rates

One sixth page	56 mm wide × 128 mm high	\$50
Quarter page	180 mm wide × 64 mm high	\$75
Half page	180 mm wide × 128 mm high	\$150
Whole page	180 mm wide × 257 mm high	\$300

 R.G. & F.J. Richardson, PO Box 42, Meredith Vic 3333 www.weedinfo.com.au

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WSV Seminar Advocacy Survey

As part of the WSV Committee's seminar presentation on advocacy, we ran a short survey across the seminar participants on WSV advocacy issues and their relative importance. We also invited seminar participants to identify issues that we are currently not addressing. Our participants offered one additional issue, 'long term funding for planning and action'. Participants only voted on those issues which they thought were significant. The issue not on our original list received unanimous support... oops – that's what you call the elephant in the room!

The results made for interesting reading for the committee and will assist us in advocacy, giving priority to those issues identified by our stakeholders as being the most important. The results made for an interesting read.

Mark Uren

wov Advocacy Issues – Seminar Participant Survey Results									
Rating*									
0	1	2	3	4	5	Score**			
0	0	0	0	0	30	150			
0	0	0	1	10	13	108			
0	0	0	0	4	17	101			
0	0	0	9	12	2	85			
0	0	3	13	9	0	81			
0	0	0	0	7	10	78			
0	1	6	8	6	3	76			
0	1	1	8	10	0	67			
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WSV Advocacy Issues – Seminar Participant Survey Results

** Score = Rating × No. of votes.

IWSS Graduate Student Award Competition

International Weed Science Congress, Prague, Czech Republic, 19–25 June 2016

The International Weed Science Society (IWSS) has decided to continue with its tradition to encourage the participation of graduate (MSc and PhD) students in the 7th International Weed Science Congress in Prague (www.iwsc2016.org).

A limited number of awards will cover registration fees, accommodation and part of travel expenses. The Graduate Students Award Committee will select the awardees according to the following criteria:

- 1. The candidate must be enrolled as a MSc or PhD student, pursuing a degree related to weed science as of 1 January 2016.
- A 5-page manuscript including tables, figures and photos (PDF file, 12 pt font, 1.5 line spacing, and 3-cm margin all around), with Abstract, Introduction, Materials and Methods, Results and Discussion. Deadline for submission is 1 January 2016.
- 3. Submissions will be appraised based on the following

merits: quality of research, novelty, and contribution to the discipline of weed science.

- 4. Submissions should include a letter of commitment from the major Professor or institution to provide additional travel support should the student receive the award from IWSS.
- 5. All material should be sent via e-mail, no later than 1 January 2016 to the three members of the Graduate Students Award Committee: pbhowmik@umass.edu, paolo.barberi@sssup.it and rubin@mail.huji.ac.il. Please ask for confirmation that your manuscript has arrived safely to all committee members.

The IWSS is grateful to the EWRS and the WSSA for their financial support to partially cover these important awards. The student submitting the most outstanding paper as determined by the Graduate Students Award Committee will receive the 'IWSS Larry Burrill Graduate Student Travel Award', which covers all expenses to attend the Congress.

Willow Work in the Victorian Alps

Gavin Snowdon, GLT Weed Management, www.gltweeds.com.au

Grey Sallow Willow (Salix cinerea) WEED OF NATIONAL SIGNIFICANCE

A major weed of streams and wetlands in temperate areas, *Salix cinerea* is considered one of the most invasive willows in Australia.

Distinguishing Features: Erect form, presence of longitudinal ridges under the bark (may need to peel bark to see ridges), elliptic to ovate leaves; branches difficult to break off at base.







Alternative Name: Wild Pussy Willow Family: Salicaceae

Origin: Native to Eurasia and North Africa. Flowers and Seedhead: Plants are male or female or both. Flower spikes (catkins) emerge before the leaves in spring. Male catkins ovate, female catkins cylindrical. Sheds lots of seed 4 weeks after flowering. **Description:** Multi-stemmed to about 10–12 m high. Wide, rounded crown (much wider than high in mature trees). Bark smooth at first, becoming fissured with age. Leaves ovate, broadest in the middle, tip short and pointed, emerging after the catkins.

Dispersal: Seed and rarely by rooting of detached twigs and branches.

Information taken from: http://www. weeds.org.au/ (Photos: Rob Richardson)



Late last year, GLT Weed Management was contracted by the Department of Environment, Land, Water and Planning (DEWLP) to control grey sallow willow (*Salix cinerea*) along the Diamantina Creek, which runs its head waters from the end of the Razorback Spur and Mount Hotham Road, winding its way several kilometres to its junction with the Kiewa River West Branch.

There was a huge infestation of grey sallow willow across the Bogong High Plains following Victoria's large wild fires in 2003 and 2006. Grey sallow willow threatens the alpine heath, sphagnum moss bogs and general creek health across the area. Water quality in the alpine region is also affected by willow infestations. Some areas contain as many as several hundred willows per 10 square metres.

A large adult population of grey sallow willow occurs in the lower creek dairy country of the Ovens and Kiewa valleys. Many thousands of seeds are dispersed in spring. These seeds are only a millimetre or so long, with an accompanying tuft of silvery hairs which allows the seeds to be drawn upwards many thousands of feet by the daily thermals, only to settle once night falls across the high plains. Seed can disperse up to 100 kilometres. Seed viability is relatively short lived, only a few weeks. However, if conditions are right and the opportunity arises for germination, they will quickly establish themselves and flourish.

Our brief was to walk along the Diamantina Creek, cutting and painting any willow found along the banks and wet areas adjoining the creek. This included hiking up any side gullies that had visible water running out of them, making our way as far upstream as we could in a three week period.

The environment in this area is very steep and very remote. As we headed up the creek, some sections became completely clogged by fallen mountain ash timber. Some log jams were the size of a house and, combined with slippery rock and unsure footing, negotiating these obstacles was dangerous but common place.

Log jam obstacle

We carried all our gear including chainsaws, tools, fuel, safety equipment such as EPIRB, hand-held Garmin GPS units, Roundup Biactive, tents, cooking and sleeping gear, and food for four days. Our start-point was the Diamantina Creek horse yards.

GLT staff were all given fishing wading boots that were fitted with tungsten studs to help prevent any slip or fall injuries on the wet slippery rocks and steep terrain. Each group of two carried a Garmin GPS unit to mark the location of each and every tree that was treated. This data was later

transferred to DEWLP staff to plot and map progress, along with geo-located iPhone photos.

We did have phone service in some areas so we were able to make contact with both DEWLP staff and GLT office staff to gain weather conditions. This was handy as we were asked by Parks Victoria staff to hike back out at one point, due to January's thunderstorm and lightning front approaching.

The willows were post-fire growth according to DEWLP staff, although some were over 20 inches in diameter. Trees

> were felled and larger stumps had a hole bored with the 12 inch chainsaw and were filled with Roundup Biactive. Stumps and cut branches were painted on the cut end to prevent them from taking root.

> This coming season, we are booked in December for willow work in the alpine area. Several years ago, there was a lightning strike on the side of the Razorback Spur walking track, which was dealt with by helicopter repel crews who then cut a helipad next to Diamantina Creek. So instead of hiking up the creek for five hours, we will be getting there by DEWLP helicopter from Ovens, a 45 minute ride.

It is hard work, but helping to preserve the health of Australia's alpine environment is rewarding and very satisfying work.



Trekking past treated willow

Invasive Plants PhD Research Projects

This is the third in our series on invasive plants research projects being undertaken by PhD candidates in Victoria.

Thinopyrum junceiforme (sea wheatgrass): an exotic invasive weed species on southern Australian coastal sand dunes

PhD candidate, Lynda M. Hanlon, is supervised by Associate Professor David M. Kennedy (Faculty of Science, University of Melbourne) and Emeritus Professor Lynette K. Abbott (Faculty of Science, University of Western Australia).

Coastal sand dunes are found in a wide range of locations around the world, and pioneer vegetation typically plays a crucial role in trapping sand which accumulates around it to build an incipient dune. In the initial stages of dune development, there are few plant species capable of surviving the inundation of seawater, and the desiccating winds and exposure associated with this ephemeral environment. One such species is *Thinopyrum junceiforme* (sea wheatgrass), a salt-tolerant wild relative of wheat.

Sea wheatgrass is an exotic, invasive coastal dune grass, which was first recorded in Australia in 1933. The plant's origins are in Europe, where it is a primary coloniser of embryo and incipient dunes. It is now widespread on Victorian beaches, displacing native species and habitat, and anecdotally



Meadow of sea wheatgrass on a foredune at Gunnamatta, Victoria (Photo: Lynda M. Hanlon)



In my study, I hypothesised that arbuscular mycorrhizal (AM) fungi have a role to play in the rapid spread of the plant, as it has formed dunes where otherwise they would not have formed. AM fungi are obligate symbionts which form mutualistic associations with approximately 90% of terrestrial vascular plants. A host plant's ability to uptake water and nutrients is substantially increased when colonised by AM fungi, thereby aiding in establishment of plants in disturbed ecosystems such as incipient sand dunes. Furthermore, my research proposes that the root volume and microbial biomass associated with sea wheatgrass confer greater salt tolerance to it than to native grasses such as hairy spinifex, in particular.

(left) Lynda M. Hanlon

changing dune forms. In Australia, sea wheatgrass also grows on the incipient dunes, albeit lower on the swash than native grass species such as *Spinifex sericeus* (hairy spinifex). However, the environmental limits and niche of sea wheatgrass have not yet been described.

In Australia, the sand-binding ability of sea wheatgrass creates steep-fronted incipient dunes that are more resilient to erosive process than dunes vegetated by native flora. Anecdotal evidence suggests that these steep-fronted dunes are impacting on the rookery of *Eudyptula minor* (Fairy/ Little Penguin) at Phillip Island's Summerlands Beach, as the dunes are too high for the birds to climb and access their burrows. Additionally, nesting sites of the endangered *Thinornis rubicollis* (Hooded Plover) at Phillip Island, Geelong and the Barwon Coast are impacted by the weed encroaching upon their preferred bare nesting sites. As the physical impacts of invading plant species upon coastal sand dune morphology are seldom considered, this PhD research will produce new findings on coastal mycological and geomorphological interactions. These findings will enable coastal and environmental managers to make informed decisions about whether, or how, to manage the plant, and where any strategies should fall within their other weed management priorities. Additionally, this work will have implications for gene technology (GM) in the development of a hybrid wheat crop that is able to tolerate the world's increasingly-saline agricultural soils.

More information on Thinopyrum junceiforme:

Hanlon, L.M. and Mesgaran, M.B. (2014). The biology of Australian weeds. 63. *Thinopyrum junceiforme* (Á.Löve & D. Löve) Á.Löve. *Plant Protection Quarterly* 29(4): 120-126.



Steep-fronted incipient dune on Phillip Island with root masses of sea wheatgrass trailing down. One hairy spinifex stolon (arrowed) is to the left. The 30 cm peg gives an indication of scale (Photo: Lynda M. Hanlon)

From the President



March was a busy month, with the conclusion of Blackberry spraying season, but more importantly it was the month of the Society hosting of our Seminar 'Woodlands to Waves'! The event provided some 'challenges' with logistics, but overall was a great success with visits to French Island and sites on Phillip Island as the major attractions. The field trips were a highlight with local landholders and project staff showcasing some stories of success on sea spurge, gorse and feral cat control. According to attendees the highlights were not just confined to weed and pest animal related aspects, with the ferry journey in metre high swells and the French Island 'Tourist Bus' and corrugated dirt roads providing additional enjoyment! Our thanks are extended to French Island and Phillip Island Landcare Groups, Parks Victoria on French Island for showing us around. It is with sadness, but appreciation, that we bid farewell to Michael Hansford after 10 years service on the WSV Committee (including including multiple presidential terms). Michael has been a mainstay of the Society over that time and we wish him well into the future. Jackie Steel has taken a step back from her duties on the committee also, however will remain as a co-opted member. Both Michael and Jackie have been valuable members of the Society, and it should be noted that taking on the responsibilities of executive positions on the Committee and attending voluntary meetings after hours (particularly during winter!) is no easy task.

The Society is pleased to welcome Keith Primrose from the Mt Beauty Parks Vic office who is the only new in-coming member for the committee. Keith made his first appearance via teleconference at our most recent meeting, and performed admirably, with some great suggestions and innovative ideas to progress the causes of the Society. A key topic of discussion at that meeting was regarding the approaching 50th anniversary of the Weed Society of Victoria, yes 50 years! We will be doing something fairly significant (watch this space!) and we invite members to submit ideas promptly to assist in the organisation of the event. We also broached the potential for a 'grasslands workshop' for later in the year. Both of these events following on from the 'Woodlands to Waves' seminar in March ensure the Society is well and truly alive and kicking, and keen to bring new members into the fold, facilitate networking and information exchange... and have some fun along the way !

Matt Stephenson

Dates for your Diary

June 2015

17th European Weed Research Society Symposium 'Weed Management in Changing Environments' Montpellier, France, 23–26 June 2015 www.ewrs2015.org/

July 2015

Grassland Society of Southern Australia Conference

'The future is in mining farming!' Naracoorte, South Australia, 21–23 July 2015. www.grasslands.org.au

August 2015

New Zealand Plant Protection Society 2015 Annual Conference Christchurch, 11–13 August 2015, preceded by Managing Wilding Conifers Symposium, 10 August 2015 www.nzpps.org/conference.php

6th World Conference on Ecological Restoration

Manchester, England, 23–27 August 2015 www.ser2015.org/

XVIII International Plant Protection Congress (IPPC) 2015

'Mission possible: food for all through appropriate plant protection' Free University Berlin, 24–27 August 2015 www.ippc2015.de

September 2015

13th Queensland Weed Symposium Longreach, Qld, 14–17 September 2015 http://event.icebergevents.com.au/ qws-2015/

7th International Meeting on Pesticide Resistance

Rothamsted Research, Harpenden, Herts, UK, 14–16 September 2015 www.rothamsted.ac.uk/Resistance2015

EMAPi 2015: 13th International Conference

Ecology and Management of Alien Plant Invasions Hawai'i Island, USA, 20–24 September 2015 www.emapi2015.hawaii-conference. com/

CAWS Report

A special general meeting was held immediately before the 26 March 2015 committee meeting to ratify some minor amendments to the CAWS Constitution, including the new position of past-president. This was necessary to overcome procedural problems which ruled earlier changes invalid.

The International Weed Science Society has invited a bid from CAWS for Australia to host the 2020 International Weed Science Congress. The IWSS has also invited applications from postgraduate students for their Graduate Students Award which covers registration fees, accommodation and part of travel expenses for the 2016 International Weed Science Congress in Prague, Czech Republic. See page 3 for further information.

The CAWS Executive approved Student Travel Awards to Jason Ferguson (University of Queensland), Gayle Somerville (University of Western Australia) and Joshua Buru (Queensland University of Technology), and one Early Career Scientist Travel Award to Claire Wainwright.

Following discussion over the merits of splitting the \$3000 Student Travel Award among three applicants and whether \$1000 each would be sufficient to fund them for their various conferences, it was agreed to recommend to the students that they contact their state weed society about receiving



partial funding from CAWS and to ask if there could be further assistance with funding. To help facilitate this, it was thought that travel awards provided by state weed societies could be synchronised with CAWS travel awards and that links to state weed society travel awards be put on the CAWS website.

The Tasmanian Weed Society is facing an uncertain future due to its small size, and the restructuring of jobs means that three of their executive will soon be made redundant. Possibilities to deal with this were discussed, including merging with Victoria or merging with other groups within Tasmania, such as animal pest groups.

The next CAWS teleconference is scheduled for 18 June 2015. Andrew Cox and Ingrid Krockenberger are your CAWS delegates.

Ingrid Krockenberger

October 2015

18th NSW Weeds Conference 'Weeds – The Future, Innovation & Adaptation' Cooma, NSW, 12–15 October 2015 www.weedscooma.com.au/#

25th Asian-Pacific Weed Science Society Conference

Hyderabad, India, 13–16 October 2015 http://117.240.114.67/apwss/

February 2016

Species on the Move International Conference

(species redistribution in a changing climate – the organisers are inviting suggestions for themes) Hobart, Tasmania, 9–12 February 2016 www.speciesonthemove.com/index. html

June 2016

7th International Weed Science Congress

International Weed Science Society Prague, Czech Republic, 19–25 June 2016. www.iwsc2016.org/

11th International Symposium on Adjuvants for Agrochemicals (ISAA 2016)'Creating, Bridging and Sharing the Values of Adjuvant Technology' Monterey, USA, 20–24 June, 2016 http://events.isaa-online.org/page/269/ welcome-to-isaa-2016.html

September 2016

20th Australasian Weeds Conference Council of Australasian Weed Societies Perth, Western Australia, 11–15 September 2016 www.caws.org.au/conference.php

The Weed Society of Victoria Inc. is proud to acknowledge the generous sponsorship support of:





WSV News

Introducing the 2015–16 Committee

The WSV held its AGM on 18th March 2015, during the 'Invasive species from woodlands to waves in Western Port' Seminar. There has been only a slight change to the committee with Jackie Steel stepping back to be a co-opted member and Keith Primrose taking up the reins as a General Committee Member. Michael Hansford has resigned from the committee and his position as CAWS delegate. Ingrid Krockenberger has now taken on the responsibility as a CAWS delegate.

Office Bearers

President – Matt Stephenson Vice President – David McLaren Treasurer – Isabella Amouzandeh Secretary – Rebecca Grant Newsletter Editor – Ingrid Krockenberger

General Committee Members

Andrew Cox Rebecca James Keith Primrose Mark Uren Co-opted Members Kate Blood Jackie Steel Greg Wells

Keith Primrose General Committee Member

I work with Parks Victoria delivering invasive species projects in the Alps and have done since 2011. Prior to moving to Victoria I spent four years in Far North Queensland managing a luxury Eco-Lodge and three years in the Kimberly region of Western Australia as



a Ranger at a privately owned Wilderness Park. I joined the weed society to meet other people in the weed management field and share ideas. I joined the committee to make a contribution to the society and weed management field as a whole.

CAWS Delegates Andrew Cox Ingrid Krockenberger

Discount Subscription to Plant Protection Quarterly

Plant Protection Quarterly (PPQ) is a scientific journal for anyone with an interest in plant protection, including research, policy and extension staff, consultants and advisors, weed, disease and pest managers, environmental land managers, and pesticide and equipment retailers, working in agriculture, forestry and horticulture, and environmental protection and land management. code has been provided to our secretary. Anyone wishing to redeem this discount should contact our secretary via email before you submit your subscription via the new online subscription payment gateway. An annual online subscription gives access to all current and archived issues of PPQ.

More information at: www.polymeria.com.au

Plant Protection Quarterly has a strong affiliation with the WSV. In the past, the biennial WSV conference proceedings were published as a special issue of the journal. More recently, contributors to the WSV conference were invited to submit their conference presentations as articles for peer-review publication in PPQ.

With the launch of their new website, Polymeria Publishing is offering a 20% discount subscription for PPQ to all weed society members. A discount



In the Media

The Other Green Army

ABC RN Earshot aired a two-part audio series about the history of bush regeneration in Australia, including changing attitudes and some of the early disagreements on bushland management. The main focus is the revolutionary Eileen and Joan Bradley who developed the Bradley method of bush regeneration to combat weeds in native vegetation. Access to audio:

Part 1: www.abc.net.au/radionational/programs/earshot/bush-regen---part-1-of-2/6309182

Part 2: www.abc.net.au/radionational/programs/earshot/bush-regen-2/6309200

Roundup Probably Carcinogenic

Glyphosate has featured in the news recently following the World Health Organization's International Agency for Research on Cancer classifying the herbicide as 'probably' carcinogenic to humans, as well as the insecticides malathion and diazinon. The insecticides tetrachlorvinphos and parathion were classified as 'possibly' carcinogenic to humans. Media release: www.iarc.fr/en/media-centre/iarcnews/pdf/ MonographVolume112.pdf

\$5.2 Million to Tackle Roadside Weeds and Pest Animals

Minister for Local Government, Natalie Hutchins, has announced that \$5.2 million will be allocated to councils under the Roadside Weeds and Pests Program, as part of the 2015-16 Victorian Budget. The list of eligible weeds will also be updated, using feedback from local councils and communities. www.premier.vic.gov.au/labor-supports-ruraland-regional-councils

Australia III-Equipped to Stop New Invasive Species

The Invasive Species Council has issued a media release following the completion of the Senate Inquiry into the 'adequacy of arrangements to prevent the entry and establishment of invasive species likely to harm Australia's natural environment'. The 9-month Senate Inquiry revealed shortcomings and failures in protecting Australia's borders from potentially devastating new weeds, diseases and invasive animals.

The Senate Inquiry achieved bipartisan support for 26 recommendations. Invasive Species Council CEO, Andrew Cox, has urged federal and state agricultural and environment ministers responsible for biosecurity to immediately address the recommendations.

Andrew has provided a summary of recommendations – see media release: http://invasives.org.au/media-releases/

australia-ill-equipped-to-stop-dangerousnew-invasive-species-senate-inquiry/



Senate Inquiry Report and link to the 92

submissions (including a 170-page submission plus 12 case studies from the Invasive Species Council, and a submission from the Council of Australasian Weeds Societies): www. aph.gov.au/Parliamentary_Business/Committees/Senate/ Environment_and_Communications/biosecurity/Report

Need for Improved Environmental Biosecurity Systems

ABC Rural reported on the handing down of recommendations by the Senate Inquiry into Environmental Biosecurity. The news item emphasised the erosion of Australia's ability to fight and prevent pest and disease incursions resulting from cuts to biosecurity staff and a decline in the level of scientific expertise. A formal response from the Australian Government to the Senate Inquiry is still to be issued.

www.abc.net.au/news/2015-05-14/senate-inquiry-critical-of-biosecurity-management/6469134

Biggest Biosecurity Overhaul in over 100 Years

Bipartisan support has resulted in the *Biosecurity Bill* 2014 passing through the Senate in May 2015, having undergone a series of amendments. The legislation is part of a package of 5 bills to replace the *Quarantine Act 1908* and provide a regulatory framework to manage biosecurity risks. The changes have been welcomed but there was some disappointment that the enacted legislation is not as strong as it could be.

ABC Rural news item, including audio interview: www. abc.net.au/news/2015-05-13/budget-biosecurity-bill-passes-senate/6466418

Role of Inspector General for Biosecurity Enacted

ABC Rural interviewed Opposition agriculture spokesman Joel Fitzgibbon and Andrew Cox from the Invasive Species Council for their response to the enactment of the *Biosecurity Bill 2014* and the overturning of Coalition-proposed review powers for the Federal Agriculture Minister. The legislation passed through the Senate establishes the role of Inspector General for Biosecurity so that departmental processes can be reviewed independently of ministerial interference, though the strength of audit powers could be greater.

Audio: www.abc.net.au/news/2015-05-13/biosecurity-bill-response/6466558

Kew Royal Botanic Gardens facing £5.5m Annual Deficit

Royal Botanic Gardens, Kew, faces cuts in government funding which places the organisation's world-class plant science and research status at risk.

BBC news item: www.bbc.com/news/scienceenvironment-31715081

New Publications

For those interested in response to climate change:

Biodiversity in a Changing Climate - Linking Science and Management in Conservation

Editors: Terry Louise Root, Kimberly Hall, Mark Herzog, Christine Howell

Publication: June 2015 Paperback ISBN: 9780520286719 www.ucpress.edu



CHANGING CLIMATE

LINKING SCIENCE and AANAGEMENT in CONSERVATION



One major consequence of climate change is abrupt, dramatic changes in regional biodiversity. Even if the most optimistic scenarios for mitigating climate change transpire, the fate of many wild species rests on the shoulders of people engaged in conservation planning, management, and policy. Providing managers with the latest and most useful climate change research is critical and requires challenging the conventional divide between scientists and managers.

Biodiversity in a Changing Climate promotes dialogue among scientists, decision makers, and managers who are grappling with climate-related threats to species and ecosystems in diverse forms. The book includes case studies and best practices used to address impacts related to climate change across a broad spectrum of species and habitats—from coastal krill and sea urchins to prairie grass and mountain bumblebees. Focused on California, the issues and strategies presented in this book will prove relevant to regions across the West, as well as other regions, and provide a framework for how scientists and managers in any region can bridge the communication divide to manage biodiversity in a rapidly changing world.

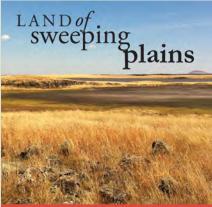
Biodiversity and a Changing Climate will prove an indispensable guide to students, scientists, and professionals engaged in conservation and resource management.

For those interested in grassland restoration:

Land of Sweeping Plains: Managing and Restoring the Native Grasslands of Southeastern Australia

Editors: Nicholas Williams, Adrian Marshall, John Morgan

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Managing and restoring the native grasslands of south-eastern Australia Edited by Nicholas S.G. Williams, Adrian Marshall and John W. Morzan

Native temperate grasslands are Australia's most threatened ecosystems. Grasslands have been eliminated from across much of their former extent and continue to be threatened by urban expansion, agricultural intensification, weed invasion and the uncertain impacts of climate change. Research, however, is showing us new ways to manage grasslands, and techniques for restoration are advancing. The importance of ongoing stewardship also means it is vital to develop new strategies to encourage a broader crosssection of society to understand and appreciate native grasslands and their ecology.

Land of Sweeping Plains synthesises the scientific literature in a readily accessible manner and includes a wealth of practical experience held by policy makers, farmers, community activists and on-ground grassland managers. It aims to provide all involved in grassland management and restoration with the technical information necessary to conserve and enhance native grasslands. For readers without the responsibility of management, such as students and those interested in biodiversity conservation, it provides a detailed understanding of native grassland ecology, management challenges and solutions and, importantly, inspiration to engage with this critically endangered ecosystem.

Practical, easy to read and richly illustrated, this book brings together the grassland knowledge of experts in ethnobotany, ecology, monitoring, planning, environmental psychology, community engagement, flora and fauna management, environmental restoration, agronomy, landscape architecture and urban design.