Other Asparagus papers

Summary of a bridal veil (*Asparagus declinatus* L.) workshop for South Australian regional groups

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Summary
A report is given on the outcomes of a South Australian workshop held 5 November 2005 on the management of bridal veil, *Asparagus declinatus*. Working groups have been established to target the weed on Kangaroo Island and for each of the Fleurieu, Yorke and Eyre Peninsulas. Major issues in managing bridal veil are achieving effective control of infestations, mapping, funding and raising community awareness and maintaining involvement.

Introduction

A bridal veil (*Asparagus declinatus* L.) information sharing session was convened by the Asparagus Weeds Working Group (AWWG) at the Waite campus, Adelaide on 9 November 2005, prior to the National Asparagus Weed Workshop. The afternoon provided an opportunity for people to share knowledge, voice concerns and contribute to solutions about controlling and managing bridal veil in South Australia.

Representatives from South Australian regional groups who undertake on-ground control work for bridal veil were invited to attend the session. Attendees included representatives from the Asparagus Weeds Working Group (Southern Hills Region), Kangaroo Island Asparagus Weeds Committee (KIAWC), Yorke Peninsula Animal and Plant Control Board (APCB), Eyre Peninsula Asparagus Weeds Control Group (AWCG), Trees for Life and the South Australia Department for Environment and Heritage.

Background information from regional groups

Each of the regions represented at the workshop face varying threats from bridal veil. On Kangaroo Island, bridal veil was first observed to be spreading during the 1920s and was recorded as naturalized in 1954 and on the southern Fleurieu Peninsula in 1966 (Weidenbach 1994). These regions now contain the most significant and advanced populations of bridal veil in Australia, infesting numerous roadsides, conservation parks and private properties. On Eyre and Yorke Peninsula, bridal veil populations are of a lesser extent, though there are significant scattered infestations including in some conservation parks and roadsides. Bridal veil is also sparsely present in the Barossa region.

The management structure, approach and experiences of the participating groups also varied considerably. Three of the four groups had an established working group or committee planning and coordinating management activities. On the Fleurieu Peninsula, the AWWG had been operating since 1999 with funding from 2001. Over this period the AWWG developed and implemented a strategic plan targeting on-ground control works and also employed a Project Officer. On Kangaroo Island, the KIAWC formed in 2005, though mapping and control initiatives date back to the mid 1990s under the Bridal Creeper Control Committee. Recently the KIAWC developed the Bridal Veil (*Asparagus declinatus*) Management Strategy: 2004-2006 and employed a Project Officer. On Eyre Peninsula, the AWCG formed in 2000 with effort focused on mapping and on-ground control works. All of these groups have had a close working relationship with the relevant regional APCBs. On Yorke Peninsula, where there is no defined group or committee, Yorke Peninsula APCB has undertaken the majority of control works. Specific funding for bridal veil control on Yorke Peninsula was received for the first time in 2005. The other participating group, Trees for Life, has been involved with bridal veil control since 2002 at sites across Fleurieu and Yorke Peninsulas.

Key issues facing regional groups in management of bridal veil

At the workshop, participants raised the following key issues in regional management of bridal veil:

- The transition to Natural Resource Management (NRM) Boards and subsequent boundary/funding/management issues
- Extent of infestations (including difficulties in knowing the extent)
- Funding
- Bird dispersal and potential for new infestations
- Lack of effective control (especially herbicides)
- Engaging the community and maintaining interest, enthusiasm and involvement
- Lack of knowledge and information on ecology, biology and control
- Isolation of information/networks and/or access to information
- Time and costly nature of management initiatives (mapping and control)

These issues formed the basis for the day's proceedings and the following presents a summary of the main discussion points. While various aspects of the biology, ecology and dispersal of bridal veil were discussed at the workshop, they are not presented below as they are covered in another paper presented at the Asparagus Weeds Workshop (see Lawrie 2006).

Control methods

Effective control of bridal veil was considered to be the most important issue confronting all regional groups. There was a general consensus that an effective method had not yet been identified, and that this was the most urgent issue that needed to be addressed in managing bridal veil. Discussion of the control issues covered the different methods of herbicide application, digging, grazing, slashing (mowing) and fire.

Controlling bridal veil through herbicide application has been the most common form of control method attempted. In all of the regions, various herbicide applications have been trialled and employed. The one element that was agreed by all participants was that timing is essential; herbicide needs to be applied before bridal veil flowers.

In terms of herbicide application, unlike bridal creeper (*Asparagus asparagoides* (L.) Druce), metsulfuron-methyl has proven mostly ineffective. Participants had observed that while metsulfuron-methyl initially appeared to be effective with the foliage dying off, in subsequent years the plant produced healthy foliage and continued to flower and fruit. Application of glyphosate has been more effective. There was some conjecture as to the impact of differing application rates of glyphosate and the use of Pulse Penetrant® (apart from more off-target damage when using Pulse). Trials by the AWWG conducted on the southern Fleurieu Peninsula indicated

that bridal veil treated with glyphosate + Pulse had significantly reduced foliage cover and fewer, stunted, non-flowering/fruiting shoots two years after treatment (Bass and Lawrie 2003). Further experiments are underway trialling a glyphosate-based herbicide mix with various surfactants on Kangaroo Island (see Winkler and Taylor 2006) and on the southern Fleurieu Peninsula (AWWG).

Participants confirmed that manual removal, digging or grubbing of bridal veil is labour intensive and, if there is a shortage of volunteers, expensive. It was agreed by all participants that it is only worthwhile to dig out bridal veil if there are small or isolated infestations and in areas that have high conservation value. There were some examples discussed where digging over successive years had proven effective. On the Fleurieu Peninsula for instance, the first year of digging along a roadside proved incredibly time consuming and labour intensive, taking 450 hours to dig out 80 wheat bags of root biomass. Following two more years of manual removal, the effort required was reduced with only eight wheat bags of bridal veil being removed. Nevertheless, given the need to remove both above ground and below ground parts of the plant, which is particularly time and labour intensive, most groups now only use manual removal to target seedlings and isolated infestations.

The effectiveness of fire as a control method has not yet been verified. KIAWC intend to undertake fire control trials in Autumn 2006 and these will hopefully shed some light on the use of fire as a control method. In previous experiments on Kangaroo Island, fire has had little impact on the underground tuber mat due to difficulties in maintaining fire intensity. In some high rainfall regions of South Australia, it was noted that bridal veil tubers grow in the leaf litter and a high intensity fire would most likely 'cook' and ultimately destroy these tubers.

The potential for grazing to control bridal veil was largely dismissed by participants. Several participants had observed bridal veil being grazed by cattle and sheep. It was noted that sheep generally prefer not to eat it; although they will graze the new shoots and are more likely to chew it down than cattle. Bridal veil also appears to be less palatable than bridal creeper. Participants agreed that grazing is not a practical form of control, but if used should be carried out on a high stocking density, short duration basis.

Slashing, which in many ways is similar to grazing, has also been used as a control method. Slashing or mowing the foliage of bridal veil can prevent the plant fruiting but stems will continue to grow from the rhizome. Participants suggested that it might take up to 10 years of repeated slashing to exhaust the tubers. The approach at best stops viable seed being produced and potentially dispersed by animals and is therefore considered a preventative strategy. There are also issues of access which might hinder this method, with bridal veil often entwined around vegetation and fence lines.

Mapping

All participants agreed that mapping is an important component of any bridal veil control program. Walking appears to be the most effective method ensuring that vegetated areas and other known dispersal sites are checked. It was considered important when mapping to ascertain the outer extent of an infestation and also to record where bridal veil is not present, in addition to where it has been found. Participants had also found opportunistic mapping beneficial. Collating distribution information and maintaining a detailed mapping database was also considered important, assisting with strategic planning of on-ground control works and reporting requirements.

Funding

Participants from each regional group stressed that funding was critical for groups to strategically control bridal veil. Over the years, each group had approached funding differently with varying success. The AWWG had been the most successful group/region in obtaining funding to manage *Asparagus* weeds, including bridal veil. Participants noted that there is an apparent trend for NRM Investment Strategy funding for weed management to be reduced annually and in some regions cease altogether. Questions were also raised about how bridal veil fits into the latest Commonwealth funding initiative, the *Defeating the Weeds Menace* (DWM) *Programme*. At the moment it was felt that bridal veil funding is being 'piggybacked' on bridal creeper to ensure funding applications were successful given its elevated status as a Weed of National Significance and the requirements of DWM. Other funding issues raised at the workshop included:

- Experiencing delays in funding and subsequently receiving funds too late in the season for control (control occurs during winter and spring);
- Lack of certainty and continuity associated with annual funding programs. This impacts on effective planning and also means that other stakeholders are more reluctant to provide in-kind support as the project's future is always in doubt;
- Implications of NRM and changes to boundaries with sites previously targeted now falling outside the region and the group's responsibilities.

Raising community awareness and maintaining involvement

Ensuring that community awareness of bridal veil and maintaining enthusiasm is a constant challenge experienced by participants. Difficulty in control and a lack of knowledge about its ecology have, in some cases, led to community members giving up on controlling bridal veil. Hence, workshop participants agreed that it was important to share positive experiences with people, such as successful eradication initiatives, instead of only providing negative information. Utilizing media as much as possible through newspaper articles, radio and possibly television interviews was also considered important as were workshops, field days, displays and fact sheets in spreading the word about bridal veil. The scattered nature of bridal veil populations in some regions was also highlighted as a difficulty that needed to be overcome in raising awareness and garnering support for control programs.

Conclusion

The information day was the first time that representatives from South Australian regional groups had come together to discuss bridal veil and future meetings on an annual basis are likely. It is hoped that a South Australian bridal veil network will be instigated, where information will be regularly gathered and exchanged in an effort to provide a statewide approach to managing and controlling this weed. With regional groups undertaking herbicide control trials and defining their control approaches over the next few years, future meetings and ongoing networking of all regional groups will no doubt be important in responding to the significant challenges of managing bridal veil.

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References

Bass, D.A. and Lawrie, S.L. (2003). Impacts, dispersal, predictive modelling and control of Bridal Veil. Environmental Weeds Group, Flinders University, Adelaide.

Lawrie, S. (2006). The ecology of bridal veil (*Asparagus declinatus* L.) in South Australia. *Plant Protection Quarterly* 21, 99-100.

Weidenbach, M. (1994). Bridal creeper and *Myrsiphyllum declinatum*. Managing weeds for Landcare 1994. Urrbrae, 12 March 1994, eds D. Cooke and J. Choate, p. 2. (Animal and Plant Control Commission and Department for Environment Heritage and Aboriginal Affairs, Adelaide).