Minutes of the Second Fireweed Research Community Consultative Steering Committee

Wednesday 1 February 2012

Problem Based Learning Room, Agronomy and Soil Science Department, University of New England

Attendees

Committee Members

Clare Edwards – NSW Department of Primary Industries (NSW DPI; **Chair**), ***CE***
Bertie Hennecke – Department of Agriculture, Forestry and Fisheries (DAFF), ***BH1***
Noel Watson – Bega Valley Fireweed Association (BVFA), ***NW***
Bill Palmer – Queensland Department of Employment, Economic Development and Innovation (DEEDI), ***BP1***
Rowley Beckett - Dorrigo Community Weed Action (DCWA), ***RB***
Barry Powells – Coffs Harbour City Council (CHCC), ***BP2***
Andy Sheppard – Commonwealth Scientific and Industrial Research Organisation (CSIRO), ***AS***
Michael Coleman – University of New England (UNE), ***MC***
Brian Sindel – UNE, ***BS***

Presenters and Observers

Bronwen Wicks – NSW DPI, ***BW***
Phoebe Barnes – UNE, ***PB1***
Bob Hawkins – DCWA, ***BH2***
Phil Blackmore – NSW DPI, ***PB2***

Project milestones and status – *February 2012*

Milestone	*Status*
1. Establishment of a community consultation Steering Committee at commencement of the Services, to remain active until completion of all activities by the Consultant.	**Complete**
2. A report on fireweed against the Australian Weeds Committee (AWC) assessment criteria for the Weeds of National Significance (WoNS) nomination process (criteria to be made available by the AWC).	**Complete**
3. A communication plan to keep industry and community groups informed of research aims and progress and to help translate research findings into practical tools.	**Complete**
4. A national best practice management manual for fireweed of approximately 32 pages produced in hard copy and DVD.	**Draft complete**
5. A final report synthesising existing research and new practical research into fireweed ecology and impacts on agricultural productivity and biodiversity in Australia.	**Pending**
6. A final report on investigation of potential biological control agents in South Africa, including the KwaZulu-Natal province and surrounding areas.	**Pending**

1 Introductions and background – *CE and BS*

1.1 Presentation

- CE welcomed attendees to the meeting and introduced presenters and observers. Committee members introduced themselves.
- BS explained the background to this project and the need to conduct further research into fireweed. Since the first steering committee meeting, anecdotal evidence suggests that fireweed has spread into the East Gippsland, Victoria, the ACT, and has been identified in the New England Tablelands.

- BS detailed the role of the steering committee in supervising the project workplan and providing guidance as the team seeks to meet project milestones.
- BS also gave an overview of progress against project milestones (see table above).
- BS noted that the final report is due to be delivered to DAFF in mid-June, 2012. The project was on track to meet all reporting deadlines with DAFF, while the biological control research in South Africa will need to continue beyond the formal life of the project.

2 Update on WoNS nomination and what this may mean – *BW*

2.1 Presentation

- BW, National Coordinator for Serrated Tussock and Chilean Needle Grass, was invited to attend to meet some of the key people involved in fireweed management. BW has been tasked with developing a draft national strategy for fireweed as part of the WoNS nomination process.
- BW noted that the current WoNS status of fireweed was that it had been 'nominated'. Formal naming of new WoNS species requires an announcement by the Minister of Agriculture. BW was unable to say when or if this will take place.
- BW discussed the main implications of a weed being formally named as a WoNS:
    - development of a National Strategic Plan for the species (in consultation with key researchers, managers and landholders);
    - appointment of a National Coordinator; and
    - formation of a National Management Group, representative of all key government, research and community stakeholders.
    - *BW is likely to be the National Coordinator for fireweed if it is formally named as a WoNS.*
- BW noted that less funding was currently available for WoNS species, and for weed research in general, than was the case under earlier government programmes such as Defeating the Weeds Menace. However, she suggested formal naming of fireweed as a WoNS will increase its national profile and priority.

- Practical outcomes may include:
    - listing research priorities for the weed in the Strategic Plan. The Plan provides an opportunity to name current knowledge gaps in a formal setting and increases the chance that projects addressing these priorities are funded;
    - developing extension materials, including a national best practice guide for the weed, to extend research findings, overcome fireweed management impediments and foster community action; and
    - increasing the chance that funding applications through schemes such as Caring for our Country (Australian Government) are successful.

2.2 Committee feedback

- RB considered that the main benefit of WoNS naming for fireweed would be in supporting ongoing research efforts.
- RB was skeptical about the practical benefits of more extension work and funding for control programmes that are not sufficiently accountable. He suggested that such funding needs to be more closely monitored, and that continued funding be more closely aligned with performance.
- BH2 commented that regulation must be central to any process under WoNS in which community action is encouraged to manage fireweed more effectively. He suggested that efforts to encourage community action on fireweed without strengthening regulation will be less successful.

3 Communication and extension activities including BPM manual – *MC*

3.1 Presentation

- MC summarised the communications strategy for the project:
    - developing a mailing list (email and post), of farmers, researchers and government weeds managers (state and local); and
    - targeted media releases or project updates being published (for example upon release of the draft BPM guide, or at commencement of the landholder survey).

- A mailing list of over 200 addresses had been collected, with another 200 expected in the mail survey forms.
- There were approximately 940 visitors to the fireweed research project home page since the beginning of 2011, and approximately 350 visitors to the news page.
- MC discussed the draft BPM guide, which was published in electronic format and made freely available online in December 2011. The final version is due to be published in hard copy and online in June 2012. Revisions to the guide will be based on the findings of the ecology and impact study and farmer survey. Approximately 2,000 copies are to be printed, and distributed free of charge on a 'first come first served' basis.
- MC and BW suggested that the guide may evolve into a WoNS best practice guide if fireweed is named as a WoNS. Ideally, more copies would be printed to meet demand, though BW suggested that funding may not be forthcoming for additional printing or a comprehensive guide such as that developed for serrated tussock.

3.2 Committee feedback

- MC asked the committee to provide suggestions for improving the guide before its revision in June 2012. A range of suggestions were received and will be incorporated with other suggestions into the final guide. Some suggestions were more relevant to a WoNS best practice guide for fireweed, given the limited funds available for this aspect of the current project:
    - BH2 said 'control' needs to be defined more precisely, for example how the weed is to be controlled and to what extent – 'zero tolerance' of fireweed or reducing the population to a manageable level that has minimal impact on pasture and livestock production. The extent of control possible depends on location and circumstances. BW noted that 'levels of control' and 'active management' are discussed in the serrated tussock best practice guide and may be helpful principles.
    - BP2 suggested that a one page summary version of the guide be produced for handing out at field days etc. MC suggested this could be based on the current 'key points' page.
    - RB suggested that data on the 'cost' of fireweed be included, both in terms of control and lost production associated with fireweed infestation, both at a national scale to indicate the broad impact of the weed, and on farm to

demonstrate the benefits of control to individual farmers. BS noted that such research has not been conducted for fireweed at this stage, and would otherwise have been included. This was considered a priority for fireweed research.

- NW noted that the guide could include information on herbicides that control fireweed seeds as well as the plants themselves, if such herbicides became available.
- BH2 suggested that the guide may evolve into several versions customised by region, rather than a single national guide. At the moment for example, some sections are not relevant to landholders in northern NSW, and others not relevant to those in southern NSW.
- BP2 suggested that the section on herbicide highlight that the optimum time for spraying is after the second flush of fireweed germination (normally there are three flushes), as using a bromicide/amicide mix this will also effectively control the first flush of plants, and give farmers more value for money out of their single herbicide treatment.
- BP2 noted that wick wiping needs to be discussed in the guide (it is currently in there but may need to be highlighted), as he considers it effective and cost-effective, even in coastal situations. Terry Launders has conducted research on wick wiping with fireweed that may be included in the guide.
- BH1 suggested that the WoNS coordinator's contact details be included inside the front cover and highlighted, as is the case with existing WoNS best practice management guides.
- BH2 noted that the file size of the draft guide is still too large for many people who have slower internet connections. This may be addressed by making low resolution and high resolution versions available, or splitting the guide into sections so that farmers may download only those they consider relevant.

4 Ecology and impacts research – *PB1*

4.1 Presentation

- PB1 discussed the Dorrigo field trial which has the following goals:
    - to assess the affect of fireweed on pasture production and availability;
    - to examine the seasonal emergence patterns of fireweed; and
    - to assess the longevity of fireweed seeds in the soil at different burial depths and locations.
- Fenced enclosures for the impact assessment were set up in October, 2010. A number of plots were established including high fireweed population, low fireweed population, zero population, bare ground, and a cattle grazed pasture. Fireweed cover is recorded in each plot monthly and pasture harvested in the high, low and zero fireweed plots, and weighed. In the bare and grazed plots, fireweed emergence was measured monthly.
- In these trials pasture production per se was not reduced significantly by the presence of fireweed, but because cattle would not graze the pasture growing in a heavy infestation of fireweed, pasture availability was reduced significantly.
- Emergence of seedlings in grazed pasture during the trial period was minimal but on bare ground was significantly higher and peaked in the autumn period.
- A seed burial trial conducted in Dorrigo showed that that approximately 30% of seeds remained viable at a 10cm depth after one month of burial. A small percentage of surface seed remained viable after 12 months. This work is ongoing.

4.2 Committee feedback

- BH2 raised concerns about data lacking from the ecology and impact study, such as soil and air temperature data, but this will be obtained from nearby weather stations.
- BH2 was also concerned that the site selection favoured kikuyu, a relatively scarce species in the Dorrigo district. BS and PB1 responded that selection of the two trial sites was based on the highest possible initial density of fireweed infestation.

5 Survey progress and preliminary results – *MC*

5.1 Presentation

- The survey goals were to assess the various fireweed control options (how commonly each method is used and their effectiveness), the impact of fireweed, and to identify changes by comparison with a survey conducted in 1985 by BS.
- A simultaneous mail and internet survey was conducted in late 2011, focusing on the known geographic extent of fireweed (by post code), and in particular on dairy and grazing enterprises. About 450 mail survey responses and 400 internet survey responses were received.
- MC presented a sample of draft results from the internet survey data:
    - The largest proportion of respondents consider fireweed a problem because it competes with crops or pasture, has the potential to rapidly get worse, and is difficult to control.
    - Situations considered to favour fireweed growth by the larger proportion of respondents included heavily grazed pasture, bare ground, and low fertility soils.
    - Favoured control methods included hand weeding, slashing, promoting competitive pasture and herbicides. Those methods considered most successful included grazing with sheep or goats, hand weeding, promoting competitive pasture and herbicides. Sheep/goat grazing has become more popular but is still not widely used. The committee expressed surprise at the proportion of respondents still using slashing, given its perceived ineffectiveness.
    - The most significant fireweed impacts included an inability to devote time to other activities, impact on farm profitability, and tension with neighbours.
    - *Analysis of the full data set (online and mail surveys) may yield different results.*

5.2 Committee feedback

- AS asked whether the internet survey was limited to the fireweed spread area. MC responded that this was done as much as possible through a targeted promotional strategy, but that respondents were asked to record their post code so regional

analysis can be conducted. Online and mail survey data sets will also be compared to identify and explain differences between the two data sets.

- AS, BP1 and RB were particularly interested in the social aspects of fireweed control, and considered that these data from the survey might help in building a 'case' for future fireweed research and management funding, by demonstrating the impact on individual farmers and rural communities. The committee suggested that social impacts might form a separate project for fireweed, particularly if named as a WoNS.

- BP1 and BH2 expressed interest in statistically significant relationships that might emerge in the data, such as between favoured control methods and the impacts of fireweed, and between the former and current fireweed surveys. MC indicated that full cross tabulation analysis would be conducted to identify such relationships, and options for comparative analysis of the former and current surveys will be explored.

- Committee members offered to assist with data analysis and interpretation if required.

6 Biological control update – *AS*

6.1 Presentation

- AS indicated that there have been delays in establishing the biological control research programme in South Africa. These stemmed from delays in the signing of contracts and transfer of funds to the University of Kwa-Zulu Natal (UKZN). Furthermore, a post-doctoral researcher was to be appointed in UKZN to conduct the study but the candidate was forced to withdraw at a late stage. A replacement candidate was yet to be found.

- The delays have meant that the research was not as advanced as planned. Nonetheless AS noted that the biological control side of the project is scheduled to continue beyond the formal completion of the project, using funds which have already been transferred to UKZN.

- UKZN has appointed a Masters level student to sample natural enemies across various South African *Senecio* species throughout the year. A number of natural enemies of fireweed have been identified, including four stem borers, eight capitulum feeders, two sap suckers and three plant pathogens.

- UKZN has also developed considerable interest in fireweed research given its international impact, with plans to appoint a South African PhD student to conduct taxanomic research into fireweed.

- AS will travel to South Africa in early 2012, and hopes to appoint a post-doctoral research fellow at this time.

- AS noted that in South Africa fireweed has a much lower density infestation than in Australia, possibly because local grass species are better equipped to out-compete the plant, particularly late in the growing season. These species will be documented by the post-doctoral fellow at UKZN.

6.2 Committee feedback

- Members of the committee are keen to see the biological control research continue beyond the time period and funding dedicated under the current project.

- Discussion took place regarding avenues for ongoing funding to be explored, to ensure that researchers are given sufficient time to look at all potential biological control options.

7 Where to from here with funding/general discussion – *Committee*

7.1 Future funding options

- *Discussion took place regarding funding options to continue the research undertaken by the project beyond its June, 2012 deadline, particularly with regard to continuing the biological control research which is expected to take several years.*

- BH1 and AS indicated that ongoing funding may not be available at this stage, given that the RIRDC Weeds Program is scheduled to finish in mid-2012 and no further government funding programs had been announced at the time of the meeting.

- BS and/or AS may approach *Jeanine Baker at DAFF* to see if there is potential to fund the project beyond its June completion, particularly the biological control research, and where gaps exist in social and ecological aspects.

- BW suggested that *Caring for our Country* funds may be available for research as well as management activities for fireweed if it is named as a WoNS. It was thought that WoNS status may enable researchers to apply for funding from this program that normally funds on-ground control or rehabilitation activities. It was again

suggested that project leaders approach Jeanine Baker to determine whether this is likely.

- The committee considered it important to lobby for a continuation of funding during February and March 2012, given that many Australian Government decisions pertaining to the 2012 Budget are made before the end of May. Lobbying options include:
    - NW and members of BVFA approaching their local Federal member, *Mike Kelly*, former Parliamentary Secretary for Agriculture.
    - Project leaders BS and AS approaching the *Minister for Agriculture, Joe Ludwig*, and/or new *Parliamentary Secretary Sid Sidebottom*, possibly through Jeanine Baker.
    - RB, BH2 and members of the DCWA raising the issue with State and Federal members covering the Dorrigo district.
- Other funding options were discussed by committee members.

7.2 Future research and extension priorities

- The committee discussed potential future research areas and options for extending research results to the public. It was considered important to include these in the national fireweed strategy if the weed is accepted as a WoNS:
    - *The social impacts of fireweed*, including the strain it imposes on farming families, conflict created between neighbours, impacts on farmer health, including the potential for alkaloid poisoning from hand pulling weeds (BS is conducting some research in this last area with colleagues in the USA).
    - *The economic impacts of fireweed*, including the practical level of tolerance farmers can assume for fireweed, a benefit/cost analysis of its impact on pasture production, impact on a national scale and on individual farmer livelihoods.
    - *Toxicity*, including the impact of alkaloid poisoning on animals and humans through milk production.
    - The *allelopathic impact of fireweed* on pasture production (PB2).

- The challenge of *extending best practice management of fireweed* to those farmers least interested in controlling the weed, and transferring research results into practical outcomes on farms through effective extension.
- *Improving the effectiveness of regulation*, particularly at local government level – institutional changes to complement best practice extension to provide best practice methods and ensure compliance.
- Ensuring that *results of the current fireweed project are widely available to the public*, including field days, a possibility to hold a second fireweed conference in Armidale/Dorrigo (AS), including materials on the project web site, and academic paper publication to encourage ongoing research.
- *Weed ecology research*, including reducing the seed bank and germination rates to improve capacity to limit outbreaks, exploring spray/slash topping, interactions between the weed and pasture, relationships between flowering stage and seed viability, and causes of fireweed seed and plant mortality (BH2).
- The *effectiveness of herbicides on seed mortality* (NW).
- More up to date research on the *effectiveness of wick wiping* for fireweed control (BP2).

7.3 Other issues

- BS and BW suggested that several committee members may form the National Management Group/WoNS committee for fireweed if named as a WoNS. Committee members will be consulted by BW in coming months while the draft fireweed management strategy is developed.
- AS, BH1 and BW suggested that a formal launch of the final BPM guide be undertaken, possibly involving the Minister or Parliamentary Secretary for Agriculture, to boost the profile of fireweed. The launch may also feature successful outcomes from the project, and allow fireweed to stand separate from other newly nominated WoNS species.
- *BS suggested that the committee may not meet again over the remainder of the project, although consultation via email and telephone will continue. Their role in the success of this project is acknowledged and has been greatly appreciated.*