Managing crown land boundaries

Future challenges for Invasive Species Control

The purpose of the session is to highlight the issues at private/public interface which impact now and how they are being dealt with. Also explore projected changes in the future and options for management.
Before lunch

- Pathogens for blackberry biocontrol. Louise Morin, CSIRO
- Blackberry biological control; invertebrate options and a role for citizen science. Greg Lefoe and Raelene Kwong DEDJTR
- Lessons from the Community Wild Dog Control Program, Barry Davies DELWP

- Morning tea
- Projected increases in Deer populations. Greg Baxter University of Qld.
After lunch

- **HVP Plantations Boundary Management Program**, Andrew Bussau

- **DELWP Good Neighbour Program**, Stefan Kaiser, DELWP

- **Regional and Local Parks Victoria Pest Plant and Animal Control**, John Silins, Ranger I Kiewa Murray Area I Upper Murray and Elaine Thomas, Regional Project Coordinator (Alps Intensive Management Program)

- **Group Discussions**: What’s working? What can we do better? Opportunities to get better outcomes.
Foundations for the day

• Listen
• Respect others point of view
• Contribute your ideas in group session- everyone involved
• Focus on issue not person
• Be solutions focussed
• Explore what is possible and think outside the square
Blackberry Biocontrol:
Invertebrate options – Raelene Kwong
Role for citizen science – Greg Lefoe
History of biocontrol of blackberry in Australia

- First surveys conducted in 1977 across continental Europe, mostly central and southern Europe
- 38 arthropods (insects and mites) and 15 pathogens identified that were restricted to *Rubus* spp.
- Three potential agents short-listed:
  - leaf-rust fungus *Phragmidium violaceum*
  - purple blotch fungus *Septocyta ruborum*
  - stem-boring sawfly *Hartigia albomaculata*
Background

Stem-boring sawfly *Hartigia albomaculata*

- Univoltine (one generation per year)
- Parthenogenetic (offspring produced without mating)
- Adults emerge in spring and lay eggs into succulent primocanes
- Larvae tunnel into the pith
- Dieback of primocanes reduces the formation of daughter plants
**Background**

**Stem-boring sawfly Hartigia albomaculata**

- Preliminary host specificity tests conducted in 1970s on 35 plant species
- Larval development occurred on some cultivated blackberry and rose varieties
- But raspberry and four Australian native *Rubus* spp were not attacked, and
  - *Hartigia albomaculata* as never been found to attack plants other than *R. fruticosus* in the field
- Results from preliminary host tests may have been influenced by laboratory procedure
**New Zealand – insects imported but not released (1925-1932)**

<table>
<thead>
<tr>
<th>Organism</th>
<th>Name</th>
<th>Plant association</th>
</tr>
</thead>
</table>
| Buprestid beetles | *Agrilus ruficollis* (USA) - could not establish a colony for host testing  
                   *Coraebus rubi* (England) – specific to *R. fruticosus* but adults fed on a range of plants | Crown borers           |
| Gall midge        | *Dasineura plicatrix*  
                   *Lasioptera rubi*  
                   Attacked raspberry | Leaf and stem galls    |
| Moths             | *Thyatira batis*  
                   Attacked raspberry and loganberry  
                   *Pennisetia marginata* (USA) – could not be reared | Leaf feeders            |
<table>
<thead>
<tr>
<th>Organism</th>
<th>Name</th>
<th>Plant association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eriophyid mite</td>
<td><em>Eriophyes rubicolens</em></td>
<td>Leaf erineum</td>
</tr>
<tr>
<td>Sawflies</td>
<td><em>Claremontia alternipes</em></td>
<td>Leaf-feeders</td>
</tr>
<tr>
<td></td>
<td><em>Empria excisa</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Macrophya militaris</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>M. montana montana</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Monophadnoides ruficrucis</em></td>
<td></td>
</tr>
<tr>
<td>Moth</td>
<td><em>Ectoedemia erythrogenella</em></td>
<td>Leaf miner</td>
</tr>
</tbody>
</table>
Promising candidates

Root borers  *Coraeus rubi*

Stem borers  *Hartigia albomaculata*

Gall formers  *Dasineura plicatrix* (leaf galls)
*Lasioptera rubi* (stem galls)
Conclusions

1. Invertebrates for the biological control of blackberry warrants further investigation

2. Previous laboratory host testing (1930’s & 1970s) may have dismissed “good candidates”

3. Host specificity testing procedures have greatly improved and new tools (molecular) are available