The Value of National Weed Icon Species in Australia

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Acknowledgments

The achievements discussed today could not have occurred without the Weeds of National Significance coordinators, their management groups, host organizations and the widespread support provided by officials across all governments in Australia.

Programme funding has been provided from a range of Australian Government funding programmes (approx. $70M) matched by in kind contributions and financial assistance from all state and territory governments, industry, and community groups and land managers.

It is also a great credit to the attitude and dedication of the people involved in the nations weed management task that so much has been achieved over the past seven or so years.
Outline

• National Arrangements
• Weeds of National Significance
• Species case studies
• Other achievements
• WONS reviews determine their future
• Overarching benefits
Australian Weeds Strategy

- National Weeds Strategy 1997
- AWS approved Nov. 2006
- High level document
- Contains action plans
- Should set the direction for future funding and on ground action and framework for Weeds of National Significance
Australia is governed by a federation of states and territories under an overarching Australian Government.

Under the constitution, the states and territories have sovereignty over their lands.

To establish a coordinated national approach, it is necessary to have the agreement of all jurisdictions.
The worst of the worst

27,000 taxa

400+ noxious taxa

WONS cand 74

WONS 20

Aust weeds 2,733+

no. species

weediness
Weeds of National Significance

• Transparent process
  – States nominated candidate species
  – States provided distribution data
• Species announced May 2000
• Form State/Territory management committees
• Develop strategies
• Develop action plans
• Secure funding
• Appoint Co-ordinators
• Continuously improve the programme
WONS Criteria

• Invasiveness
• Impacts
• Potential for Spread
  – Current & potential distribution
• Socioeconomic and Environmental Values
  – Economic data primary industries
  – Social impacts
  – Environmental values
Diagram Illustrating the Variables Used in Ranking Weeds of National Significance (Thorp & Lynch 2000)

- **Weeds of National Significance**
  - Maximum Weighting 3.25
  - **Invasiveness Index**
    - Max. weighting 1
  - **Impacts Index**
    - Max. weighting 1
  - **Potential for Spread Index**
    - Max. weighting 0.5
  - **Socioeconomic and Environmental Index**
    - Max. weighting 0.75

- **Current Distribution**
  - Max. weighting 0.25
- **Potential Distribution**
  - Max. weighting 0.25

- **Economic Data for Agriculture & Forestry (Cost of Control)**
  - Max. weight 0.25
- **Environmental Index**
  - Max. weighting 0.25
- **Social Index**
  - Weighting 0.25

- **Species**
  - Max. weighting 0.0625
- **Communities**
  - Max. weighting 0.0625
- **IBRA Regions**
  - Max. weighting 0.0625
- **Monoculture**
  - Max. weighting 0.0625
WONS Species

- alligator weed
- athel pine
- blackberry
- bitou bush / boneseed
- bridal creeper
- cabomba
- Chilean needle grass
- gorse
- hymenachne
- lantana
- mesquite
- mimosa
- Parkinsonia
- parthenium weed
- pond apple
- prickly acacia
- rubber vine
- salvinia
- serrated tussock
- willows

Native species not included, some willow species excepted
WONS Characteristics

- Nationally agreed by Ministers
- Scope for improvement
- Mix of production and environmental weeds
- Species require more effective national cooperation
- More effective on ground action
- Prohibited from sale in all jurisdictions
- +5 year life
- Renewal subject to performance
- Procedure for adding species
Alligator Weed
Alternanthera philoxeroides

• A weed used as a herb in Asian cooking, better alternatives available. Devastates waterways, is also terrestrial;
Australian Distribution of Alligator Weed
*Alternanthera philoxeroides*
Cabomba & Salvinia
*Cabomba caroliniana, Salvinia molesta*

- Sold illegally in aquarium and water plants trade. Devastate waterways, affect amenity, spread by fish tank dumping;
Salvinia

Biological Control
Western National Boneseed Containment in South Australia

SOUTH AUSTRALIA
All boneseed populations in Eyre Peninsula and Northern and Yorke Regions to be eliminated.

Eyre Peninsula
~150 ha of boneseed

Northern & Yorke
~40 ha of boneseed

Black circles represent boneseed infestations.
Proposed Western Containment Line to prevent spread from core infestation around Adelaide.
Boneseed Containment in Tasmania

Controlling strategic outlier populations
Community Commitment
Bridal Creeper
Asparagus asparagoides
Biological Control

Bridal Creeper  Asparagus asparagoides

Before Rust Release  After Rust Release

Rust attacking Bridal Creeper
Other Asparagus species

Current and potential distribution of *Asparagus officinalis* in Qld*

Current and potential distribution of *Asparagus aethiopicus/densiflorus* in NSW*
willows

Salix spp. except *S. babylonica*, *S. X calodendron* and *S. X reichardtiji*

- Problems arise from seeding and fragile species. Cross pollination and the range of germplasm poses an increasing threat.
Willows Species Risk Assessment
Willow Control

Upper Murrumbidgee

Tasmania
Willow Identification
National Mapping Attributes

• Core attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Data record</td>
<td>Unique identifier for the site record. Allocated and maintained by data custodian.</td>
</tr>
<tr>
<td>2. Name of weed</td>
<td>Common name, genus, species, sub-species, variety, hybrid. Any uncertainty on naming recorded in the 'comments' field.</td>
</tr>
<tr>
<td>3. Day/month/year</td>
<td>Collection/observation date or the date the survey commenced. Prefer DD-MON-YYYY, e.g., 12-DEC-2001 as this format is less error-prone than pure numeric dates.</td>
</tr>
<tr>
<td>4. Source of data</td>
<td>Name of collector or institution, identifies either personal contact details or the name of the institution where the record is derived.</td>
</tr>
<tr>
<td>5. Purpose of visit</td>
<td>Reason’s site was chosen. For example, to assess type and extent of WONG prior to treatment or monitoring to determine effectiveness of management action after treatment.</td>
</tr>
<tr>
<td>6. Place name or locality</td>
<td>Plain language description of location e.g. “10 km west of Bourke”. Provides a useful cross-check against specified geocode (latitude and longitude).</td>
</tr>
<tr>
<td>7. Latitude</td>
<td>Latitude in degrees, minutes and seconds. Prefer decimal degrees or AMG coordinates with Zone and datum noted – for GPS entries.</td>
</tr>
<tr>
<td>8. Longitude</td>
<td>Longitude in degrees, minutes and seconds. As for latitude.</td>
</tr>
<tr>
<td>9. Precision of latitude and longitude</td>
<td>Precision of measurement in its locating the site. Measured in meters. Records how the latitude/longitude was determined (GPS, topographic map or estimated).</td>
</tr>
<tr>
<td>10. Area</td>
<td>Area of the infestation measured in hectares. Area of the infestation defined by the outside boundary. For infestations measured by transect, indicate length of transect (in metres).</td>
</tr>
<tr>
<td>11. Cover/density</td>
<td>Density measured by class intervals. Prefer data that records raw density as a percent. For rapid survey density data may be collected as classed data e.g. 50% cover = dense.</td>
</tr>
<tr>
<td>12. Treatment's</td>
<td>Types of control and/or management being used to treat infestation. Management could include subcategories of mechanical, chemical, biological. No treatment should also be recorded.</td>
</tr>
<tr>
<td>13. Comments</td>
<td>Comments at the time of the survey. Qualifications and factors likely to affect the adequacy of the record, e.g., inadequate time spent. Anecdotal observations of the site or photograph/s.</td>
</tr>
<tr>
<td>14. Core site number of records</td>
<td>Number of records for the site or overlapping site. Records multiple sites spatially or multiple visits over time. My be left blank.</td>
</tr>
<tr>
<td>15. Land use Category</td>
<td>Land use/s observed at the site according agreed national classification. Select from Australian Land Use and Management Classification land use categories.</td>
</tr>
</tbody>
</table>
Management Information
NLWRA Weeds Audit

- Under development
- Approximately 100 species
- Snapshot on a 50km grid for the nation
- Will include other information
  - Impact on native vegetation
  - Threatened species
  - Etc.
Serrated Tussock

Upper Murrumbidgee

Property 1  Property 2
Parkinsonia – Lake Eyre Basin

1.2 million square kilometers or 1/6th of Australia

- Number of properties: 136
- Hectares treated: 300,000
- Km creek lines treated: 500
- Average kill rate: 91%
- Shires involved: 9
- Landholder $ & in-kind: $1,011,619
- AG funding: $295,000
External WONS Reviews

Reviews will be conducted by an appropriately qualified organisation;

Terms of Reference for the reviewer:

• 1. Examine the management of the species against the goals and performance indicators in the WONS National Strategy, including:
   – Prevention of spread/containment
   – Management of established infestations
   – Changes in impact and threat
   – Institutional arrangements including legislative requirements
   – Stakeholder support and commitment

• 2. Examine the efficiency and effectiveness of the management and delivery of the program.

• 3. Assess the significance and contribution of the formal national cooperation and coordination provided through the strategy.

• 4. Make recommendations on the future management of the species, including improvements to the national strategy where appropriate.
Overarching Benefits of WoNS

- The development of best practice management information;
- National mapping of the species and a clearer understanding of species predicted and actual distributions;
- Improved understanding of the national distribution and implementation of containment lines for many;
- Strengthened networks at the landholder, local, state and commonwealth levels;
- Exchange and sharing of resources both human and technology based;
- Increased landholder ownership of pest management issues;
- Greater understanding of senior management and elected representatives enabling them to make more informed decisions;
- Closer liaison between community, government and research providers with stakeholders being more involved and having ownership of research programs;
- Increased communication specifically targeted to community needs with landholders exchanging information and offering solutions to each other.
- Increased resources from states, local government and community.
Weeds Australia

- www.weeds.org.au
- Search facility
- Weed identification tool
- Mapping information
- Australian Weeds Strategy
- WONS papers and manuals
- National legislation list
- Other national information