An assessment of long-term monitoring data, and the need for a functional database

The status of aquatic weed biocontrol in South Africa

Julie Coetzee
Rhodes University
Worst aquatic weeds in South Africa

- Red water fern  
- Azolla filiculoides
- Kariba weed  
- Salvinia molesta
- Parrot's feather  
- Myriophyllum aquaticum
- Water lettuce  
- Pistia stratiotes
- Water hyacinth  
  *Eichhornia crassipes*
Historical localities
Why survey?

• First biocontrol agents released in early 1970s
  – where are they now?
• Establish a comprehensive database
• Includes:
  – all known records of aquatic weeds
  – all known releases of control agents, dates of release and establishment
  – estimates of spread
• Data analyses
• Data available and accessible (www)
Rhodes University Aquatic Weed Programme
2008-2012
>350 sites
Data collected

- GPS co-ordinates, locality name, contact person
- Size of water body
- Type of water body
- Aquatic weed species present/absent
  - % cover, water hyacinth plant parameters
- Control agents present/absent
  - % damage
- Other aquatic plant species present/absent
- Other methods of control
- Fixed point photographs
2008 - 240 sites sampled

- Salvinia: 23 sites, 17 sites with weed present, 6 sites with agent present
- Water lettuce: 23 sites, 19 sites with weed present, 8 sites with agent present
- Parrot's feather: 26 sites, 20 sites with weed present, 12 sites with agent present
- Azolla: 107 sites, 35 sites with weed present, 17 sites with agent present
- Water hyacinth: 95 sites, 88 sites with weed present, 69 sites with agent present
• Floating aquatic weeds are excellent targets for biological control
• Weevils (Coleoptera) prove to be most effective agents
• Control exerted by 1 species only (except water hyacinth)
January 2009
Mbozambo Swamp
KZN
Over the last 5 years, there has been an increase in other invasive aquatic species:

- *Myriophyllum spicatum*
- *Hydrilla verticillata*
- *Egeria densa*
- *Lythrum salicaria*
- *Sagittaria platyphylla*
Distribution records of ‘new’ aquatic weeds
Misidentifications and misconceptions

*Iris pseudacorus*  
*Moraea huttonii*
Aquatic weeds database
<table>
<thead>
<tr>
<th>WeedSite</th>
<th>Province</th>
<th>Weed</th>
<th>Date</th>
<th>Station</th>
<th>Assessors</th>
<th>Locality</th>
<th>Agents</th>
<th>Year</th>
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<tbody>
<tr>
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<td>Eastern Cape</td>
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<td>1099</td>
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</table>
Other aquatic species: Weeds
Station: 147
Locality: Pietermaritzburg botanical gardens → KwaZulu-Natal

2010 January

Collectors: Hill, Martin, Coetzee, Julie, Schlange, Dieter

General site remarks: released a bag of lysathia

Remote Weed Damage

Records: 1 of 1

New Species
www.capetowninvasives.co.za
Acknowledgements