Maple conservation in the 21st Century

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www.bgci.org
Botanic Gardens Conservation International

BGCI – links together 800 botanic gardens in 118 countries
The Global Strategy for Plant Conservation

• Understanding and documenting plant diversity
• Conserving plant diversity
• Using plant diversity sustainably
• Promoting education & awareness about plant diversity
• Capacity building for plant diversity
Documenting the response to Target 8:

“60% of threatened plants in *ex situ* collections, 10% in recovery and restoration programmes”
PlantSearch database:

• A list of plants in cultivation in botanic gardens around the world
• Open access via www.bgci.org
• Includes lists provided by >850 botanic gardens
• Includes records for 105,000 species

We have accurate information on the location in cultivation of almost one third of the world’s plants
GSPC Target 8 – Global Progress

- > 9,000 globally threatened species in BGCI database
- 40,000 globally threatened species known (IUCN 1997, 2010)
- 23% known to be in BG collections
2011 IUCN Red List

12,624 plants listed as threatened in 2011 Red List

• c.7,922 trees
How many are at risk?

Global Flora:
- 400,000 plants
- 100,000 tree species

Current estimates of threatened spp.:
- 100,000 plants
- 25,000 trees species

In light of the impact of climate change:
- 50% of all plants maybe at risk
- 50,000 tree species

*Acer miyabei var. shibatai*
The main drivers of loss of biodiversity

- Habitat transformation
- Climate change
- Invasive alien species
- Over-exploitation of species
- Pollution
What can be done?

**In situ conservation**
- identify and protect key areas that will provide refugia for maximum species diversity
- strengthen biodiversity corridors
- monitor existing wild populations
- restoration and rehabilitation programmes

**Ex situ conservation**
- seed banking
- living *ex situ* collections
- propagation protocols
Global Trees Campaign
Why trees?

- Trees constitute around 25% of all plant species.
- Socio-economic value – timber, fuel, fibre, food, flowers, medicine
- Ecological value – carbon sinks, producers of nearly half the world’s oxygen, major structural component of terrestrial biomes
- Key potential role in ecological restoration initiatives
Red List of Maples
Red List of Maples

Extinct (EX)
Extinct in the Wild (EW)
Critically Endangered (CR)
Endangered (EN)
Vulnerable (VU)
Near Threatened (NT)
Least Concern (LC)
Data Deficient (DD)
Not Evaluated (NE)
# Red List of Maples

<table>
<thead>
<tr>
<th>RDL Category</th>
<th>No. of taxa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically Endangered (CR)</td>
<td>7</td>
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<tr>
<td>Endangered (EN)</td>
<td>19</td>
</tr>
<tr>
<td>Vulnerable (VU)</td>
<td>28</td>
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<tr>
<td>Near Threatened (NT)</td>
<td>8</td>
</tr>
<tr>
<td>Data Deficient (DD)</td>
<td>22</td>
</tr>
<tr>
<td>Least Concern (LC)</td>
<td>107</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>191</strong></td>
</tr>
</tbody>
</table>
Red List of Maples
Red List of Maples
What next?
Ex situ survey of maple collections

4,405 maple records, from 228 institutions in 37 countries.
"Ex situ" survey of maple collections

4,405 maple records, from 228 institutions in 37 countries.
Ex situ survey of maple collections

The Red List of Maples

Unknown or horticultural source

<table>
<thead>
<tr>
<th></th>
<th>No. of collections</th>
<th>Known wild source</th>
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<tbody>
<tr>
<td></td>
<td>No. of collections</td>
<td>No. of species</td>
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<tr>
<td>CR</td>
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<tr>
<td>EN</td>
<td>162</td>
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<td>VU</td>
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<td>NT</td>
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<td>17</td>
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<tr>
<td>DD</td>
<td>113</td>
<td>32</td>
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<tr>
<td>LC</td>
<td>3187</td>
<td>546</td>
</tr>
</tbody>
</table>

4,405 maple records, from 228 institutions in 37 countries.
**Ex situ survey of maple collections**

**Critically Endangered (CR) taxa currently absent from ex situ collections:**

<table>
<thead>
<tr>
<th>Acer leipoense</th>
</tr>
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<tbody>
<tr>
<td>Acer tenellum var. septemlobum</td>
</tr>
<tr>
<td>Acer undulatum</td>
</tr>
</tbody>
</table>

**CR taxa currently in very few ex situ collections and therefore still a priority for new collections:**

<table>
<thead>
<tr>
<th>Acer paihengii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acer yangbiense</td>
</tr>
</tbody>
</table>
### Endangered (EN) taxa currently absent from ex situ collections:

- Acer buergerianum var. yentangense
- Acer crassum
- Acer gracilifolium
- Acer kwangnanense
- Acer oblongum var. omeiense
- Acer poliophyllum
- Acer tibetense

### EN taxa currently in very few ex situ collections and therefore still a priority for new collections:

- Acer miyabei var. shibatai
- Acer sutchuenense
- Acer sycopseoides
- Acer yui
- Dipteronia dyeriana
Acer yangbiense

2002 – 10 trees
Described in 2003
Acer yangbiense

2002 – 10 trees
Described in 2003
Single location
2007 – 4 trees
Acer yangbiense