Australia/New Zealand Weed Risk Assessment adapted for Florida.


<table>
<thead>
<tr>
<th>Question number</th>
<th>Question</th>
<th>Answer</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.01</td>
<td>Is the species highly domesticated?</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>1.02</td>
<td>Has the species become naturalised where grown?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.03</td>
<td>Does the species have weedy races?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.01</td>
<td>Species suited to Florida's USDA climate zones (0-low; 1-intermediate; 2-high)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2.02</td>
<td>Quality of climate match data (0-low; 1-intermediate; 2-high)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2.03</td>
<td>Broad climate suitability (environmental versatility)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.04</td>
<td>Native or naturalized in habitats with periodic inundation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.05</td>
<td>Does the species have a history of repeated introductions outside its natural range?</td>
<td>y</td>
<td></td>
</tr>
<tr>
<td>3.01</td>
<td>Naturalized beyond native range</td>
<td>y</td>
<td>0</td>
</tr>
<tr>
<td>3.02</td>
<td>Garden/amenity/disturbance weed</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>3.03</td>
<td>Weed of agriculture</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>3.04</td>
<td>Environmental weed</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>3.05</td>
<td>Congeneric weed</td>
<td>y</td>
<td>0</td>
</tr>
<tr>
<td>4.01</td>
<td>Produces spines, thorns or burrs</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>4.02</td>
<td>Allelopathic</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>4.03</td>
<td>Parasitic</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>4.04</td>
<td>Unpalatable to grazing animals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.05</td>
<td>Toxic to animals</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>4.06</td>
<td>Host for recognised pests and pathogens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.07</td>
<td>Causes allergies or is otherwise toxic to humans</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>4.08</td>
<td>Creates a fire hazard in natural ecosystems</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>4.09</td>
<td>Is a shade tolerant plant at some stage of its life cycle</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>4.1</td>
<td>Grows on infertile soils (oligotrophic, limerock, or excessively draining soils)</td>
<td>y</td>
<td>1</td>
</tr>
<tr>
<td>4.11</td>
<td>Climbing or smothering growth habit</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>4.12</td>
<td>Forms dense thickets</td>
<td>n</td>
<td>0</td>
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<tr>
<td>5.01</td>
<td>Aquatic</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Symbol</td>
<td>Score</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------------</td>
<td>--------</td>
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<tr>
<td>5.02</td>
<td>Grass</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>5.03</td>
<td>Nitrogen fixing woody plant</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>5.04</td>
<td>Geophyte</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>6.01</td>
<td>Evidence of substantial reproductive failure in native habitat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.02</td>
<td>Produces viable seed</td>
<td>y</td>
<td>1</td>
</tr>
<tr>
<td>6.03</td>
<td>Hybridizes naturally</td>
<td>y</td>
<td>1</td>
</tr>
<tr>
<td>6.04</td>
<td>Self-compatible or apomictic</td>
<td>n</td>
<td>-1</td>
</tr>
<tr>
<td>6.05</td>
<td>Requires specialist pollinators</td>
<td>n</td>
<td>0</td>
</tr>
<tr>
<td>6.06</td>
<td>Reproduction by vegetative fragmentation</td>
<td>n</td>
<td>-1</td>
</tr>
<tr>
<td>6.07</td>
<td>Minimum generative time (years)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7.01</td>
<td>Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)</td>
<td>y</td>
<td>1</td>
</tr>
<tr>
<td>7.02</td>
<td>Propagules dispersed intentionally by people</td>
<td>y</td>
<td>1</td>
</tr>
<tr>
<td>7.03</td>
<td>Propagules likely to disperse as a produce contaminant</td>
<td>n</td>
<td>-1</td>
</tr>
<tr>
<td>7.04</td>
<td>Propagules adapted to wind dispersal</td>
<td>n</td>
<td>-1</td>
</tr>
<tr>
<td>7.05</td>
<td>Propagules water dispersed</td>
<td>n</td>
<td>-1</td>
</tr>
<tr>
<td>7.06</td>
<td>Propagules bird dispersed</td>
<td>?</td>
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<tr>
<td>7.07</td>
<td>Propagules dispersed by other animals (externally)</td>
<td>n</td>
<td>-1</td>
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<tr>
<td>7.08</td>
<td>Propagules dispersed by other animals (internally)</td>
<td></td>
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<tr>
<td>8.01</td>
<td>Prolific seed production</td>
<td></td>
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<tr>
<td>8.02</td>
<td>Evidence that a persistent propagule bank is formed (&gt;1 yr)</td>
<td></td>
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</tr>
<tr>
<td>8.03</td>
<td>Well controlled by herbicides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.04</td>
<td>Tolerates, or benefits from, mutilation or cultivation</td>
<td></td>
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</tr>
<tr>
<td>8.05</td>
<td>Effective natural enemies present in Florida, or east of the continental divide</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Score**: 3

*Outcome: Accept*

### A

- **# questions answered**: 6
- **satisfy minimum?**: yes

### B

- **# questions answered**: 10
- **satisfy minimum?**: yes

### C

- **# questions answered**: 15
- **satisfy minimum?**: yes

### total

- **# questions answered**: 31
- **satisfy minimum?**: yes

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**Data collected 2006-2007**

<table>
<thead>
<tr>
<th>Question number</th>
<th>Reference</th>
<th>Source data</th>
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<tr>
<td>3.02</td>
<td>no evidence</td>
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<td>3.03</td>
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<td>4.02</td>
<td>no evidence</td>
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<tr>
<td>4.04</td>
<td>no evidence</td>
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<tr>
<td>4.05</td>
<td>no evidence</td>
<td></td>
</tr>
<tr>
<td>4.06</td>
<td>no evidence</td>
<td></td>
</tr>
<tr>
<td>4.07</td>
<td>no evidence</td>
<td></td>
</tr>
<tr>
<td>4.09</td>
<td>&quot;Grow in full sun&quot;</td>
<td></td>
</tr>
<tr>
<td>4.1 Heiser (1951) Hybridization in the annual sunflowers: Helianthus annuus x H. argophyllus. The American Naturalist 85: 65-72.</td>
<td>&quot;In Texas it is found only in or near the southern coast in regions of sandy soil.&quot;</td>
<td></td>
</tr>
<tr>
<td>4.12</td>
<td>no evidence</td>
<td></td>
</tr>
<tr>
<td>5.01</td>
<td>terrestrial</td>
<td></td>
</tr>
<tr>
<td>5.04</td>
<td>annual (1, 2)</td>
<td></td>
</tr>
<tr>
<td>6.03 Heiser (1951) Hybridization in the annual sunflowers: Helianthus annuus x H. argophyllus. The American Naturalist 85: 65-72.</td>
<td>&quot;Helianthus annuus and H. argophyllus are closely related species and natural hybrids between the two have been found in Texas.&quot;</td>
<td></td>
</tr>
</tbody>
</table>

"from observations in the field and in the experimental garden it is obvious that bees, including the honey bee, are the principal pollinators [of the genus *Helianthus*]."


annual (1, 2) [and no evidence of vegetative reproduction]


"In *Helianthus* the pappus in most species is readily deciduous at maturity of the seed, thus it does not aid in any obvious manner in seed dispersal; and even if it were persistent, it would probably not serve as a particularly effective means of seed dispersal."


"Before man appeared on the scene probably both birds and small mammals were important agents in dispersal, for sunflower seeds are an attractive food to both groups. Some birds in visiting mature sunflower heads may scatter achenes. Most birds to my knowledge crack sunflower achenes before eating them but it is possible that some are eaten whole and may pass through the digestive system unharmed...it seems likely that sunflower seed dispersal is probably highly localized and it is unlikely that long-distance dispersal has been..."
involved in extending the distributions of most of the species."