

**Weed Risk Assessment based on Pheloung et al. (1999) for non-native biofuel crops under various scenarios.  
(Barney JN, DiTomaso JM 2008. Non-native species and bioenergy: Are we cultivating the next invader? BioScience)**

		Switchgrass ( <i>Panicum virgatum</i> )		
		Target Region:	California	
<b>A. Biogeography/Historical</b>		<b>Answer</b>	<b>Points</b>	
1 Domestication / cultivation	1.01	Is the species highly domesticated?	Y	-3
	1.02	Has the species become naturalized where grown?	N	-1
	1.03	Does the species have weedy races?	N	-1
Climate and Distribution	2.01	Species suited to target region climate (0-low; 1-intermediate; 2-high)	2	
	2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
	2.03	Broad climate suitability (environmental versatility)	Y	
	2.04	Native or naturalized in regions with similar climate	N	
	2.05	Does the species have a history of repeated introductions outside its natural range?	Y	
3 Weed Elsewhere (depends on 2.01 and 2.02)	3.01	Naturalized beyond native range	N	
	3.02	Garden/amenity/disturbance weed	N	
	3.03	Weed of agriculture	N	
	3.04	Environmental weed	N	
	3.05	Congeneric weed	Y	
<b>B. Biology/Ecology</b>				
4 Undesirable traits	4.01	Produces spines, thorns or burrs	N	0
	4.02	Allelopathic	-	0
	4.03	Parasitic	N	0
	4.04	Unpalatable to grazing animals	N	-1
	4.05	Toxic to animals	N	0
	4.06	Host for recognized pests and pathogens	-	0
	4.07	Causes allergies or is otherwise toxic to humans	-	0
	4.08	Creates a fire hazard in natural ecosystems	Y	1
	4.09	Is a shade tolerant plant at some stage of its life cycle	Y	1
	4.10	Grows on infertile soils	Y	1
	4.11	Climbing or smothering growth habit	N	0
	4.12	Forms dense thickets	Y	1
5 Plant type	5.01	Aquatic	N	0
	5.02	Grass	Y	1
	5.03	Nitrogen fixing woody plant	N	0
	5.04	Geophyte	N	0
6 Reproduction	6.01	Evidence of substantial reproductive failure in native habitat	N	0
	6.02	Produces viable seed.	Y	1
	6.03	Hybridizes naturally	-	0
	6.04	Self-compatible or apomictic	N	-1
	6.05	Requires specialist pollinators	N	0
	6.06	Reproduction by vegetative fragmentation	Y	1
	6.07	Minimum generative time (years)	1	1
Dispersal mechanisms	7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	Y	1
	7.02	Propagules dispersed intentionally by people	Y	1
	7.03	Propagules likely to disperse as a produce contaminant	N	-1
	7.04	Propagules adapted to wind dispersal	-	0
	7.05	Propagules water dispersed	Y	1
	7.06	Propagules bird dispersed	-	0
	7.07	Propagules dispersed by other animals (externally)	N	1
	7.08	Propagules survive passage through the gut	-	0
8 Persistence attributes	8.01	Prolific seed production (>2000/m2)	Y	1
	8.02	Evidence that a persistent propagule bank is formed (>1 yr)	Y	1
	8.03	Well controlled by herbicides	-	0
	8.04	Tolerates, or benefits from, mutilation or cultivation	-	0
	8.05	Effective natural enemies present in target region	-	0
<b>Score:</b>			<b>5</b>	
<b>Outcome:</b>			Evaluate further	

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		Switchgrass ( <i>Panicum virgatum</i> )		
		Target Region:	California	
<b>A. Biogeography/Historical</b>		<b>Answer</b>	<b>Points</b>	
1 Domestication / cultivation	1.01 Is the species highly domesticated?	N	0	
	1.02 Has the species become naturalized where grown?	N	-1	
	1.03 Does the species have weedy races?	N	-1	
2 Climate and Distribution	2.01 Species suited to target region climate (0-low; 1-intermediate; 2-high)	2		
	2.02 Quality of climate match data (0-low; 1-intermediate; 2-high)	2		
	2.03 Broad climate suitability (environmental versatility)	Y		
	2.04 Native or naturalized in regions with similar climate	N		
	2.05 Does the species have a history of repeated introductions outside its natural range?	Y		
3 Weed Elsewhere (depends on 2.01 and 2.02)	3.01 Naturalized beyond native range	N		
	3.02 Garden/amenity/disturbance weed	N		
	3.03 Weed of agriculture	N		
	3.04 Environmental weed	N		
	3.05 Congeneric weed	Y		
<b>B. Biology/Ecology</b>				
4 Undesirable traits	4.01 Produces spines, thorns or burrs	N	0	
	4.02 Allelopathic	-	0	
	4.03 Parasitic	N	0	
	4.04 Unpalatable to grazing animals	N	-1	
	4.05 Toxic to animals	N	0	
	4.06 Host for recognized pests and pathogens	-	0	
	4.07 Causes allergies or is otherwise toxic to humans	-	0	
	4.08 Creates a fire hazard in natural ecosystems	Y	1	
	4.09 Is a shade tolerant plant at some stage of its life cycle	Y	1	
	4.10 Grows on infertile soils	Y	1	
	4.11 Climbing or smothering growth habit	N	0	
	4.12 Forms dense thickets	Y	1	
5 Plant type	5.01 Aquatic	N	0	
	5.02 Grass	Y	1	
	5.03 Nitrogen fixing woody plant	N	0	
	5.04 Geophyte	N	0	
6 Reproduction	6.01 Evidence of substantial reproductive failure in native habitat	N	0	
	6.02 Produces viable seed.	Y	1	
	6.03 Hybridizes naturally	-	0	
	6.04 Self-compatible or apomictic	N	-1	
	6.05 Requires specialist pollinators	N	0	
	6.06 Reproduction by vegetative fragmentation	Y	1	
	6.07 Minimum generative time (years)	1	1	
7 Dispersal mechanisms	7.01 Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	Y	1	
	7.02 Propagules dispersed intentionally by people	Y	1	
	7.03 Propagules likely to disperse as a produce contaminant	N	-1	
	7.04 Propagules adapted to wind dispersal	-	0	
	7.05 Propagules water dispersed	Y	1	
	7.06 Propagules bird dispersed	-	0	
	7.07 Propagules dispersed by other animals (externally)	N	1	
	7.08 Propagules survive passage through the gut	-	0	
8 Persistence attributes	8.01 Prolific seed production (>2000/m <sup>2</sup> )	Y	1	
	8.02 Evidence that a persistent propagule bank is formed (>1 yr)	Y	1	
	8.03 Well controlled by herbicides	-	0	
	8.04 Tolerates, or benefits from, mutilation or cultivation	-	0	
	8.05 Effective natural enemies present in target region	-	0	
		<b>Score:</b>	<b>10</b>	
		<b>Outcome:</b>	Reject	

Assumption of domestication has been changed (Q1.01). We submit that biofuel feedstocks will be more competitive than their wild-type ancestors, not less.

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		Switchgrass ( <i>Panicum virgatum</i> )	
		Target Region: California	
<b>A. Biogeography/Historical</b>		<b>Answer</b>	<b>Points</b>
1 Domestication / cultivation	1.01 Is the species highly domesticated?	N	0
	1.02 Has the species become naturalized where grown?	N	-1
	1.03 Does the species have weedy races?	N	-1
2 Climate and Distribution	2.01 Species suited to target region climate (0-low; 1-intermediate; 2-high)	2	
	2.02 Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
	2.03 Broad climate suitability (environmental versatility)	Y	
	2.04 Native or naturalized in regions with similar climate	N	
	2.05 Does the species have a history of repeated introductions outside its natural range?	Y	
3 Weed Elsewhere (depends on 2.01 and 2.02)	3.01 Naturalized beyond native range	N	
	3.02 Garden/amenity/disturbance weed	N	
	3.03 Weed of agriculture	N	
	3.04 Environmental weed	N	
	3.05 Congeneric weed	Y	
<b>B. Biology/Ecology</b>			
4 Undesirable traits	4.01 Produces spines, thorns or burrs	N	0
	4.02 Allelopathic	-	0
	4.03 Parasitic	N	0
	4.04 Unpalatable to grazing animals	N	-1
	4.05 Toxic to animals	N	0
	4.06 Host for recognized pests and pathogens	-	0
	4.07 Causes allergies or is otherwise toxic to humans	-	0
	4.08 Creates a fire hazard in natural ecosystems	Y	1
	4.09 Is a shade tolerant plant at some stage of its life cycle	Y	1
	4.10 Grows on infertile soils	Y	1
	4.11 Climbing or smothering growth habit	N	0
	4.12 Forms dense thickets	Y	1
5 Plant type	5.01 Aquatic	N	0
	5.02 Grass	Y	1
	5.03 Nitrogen fixing woody plant	N	0
	5.04 Geophyte	N	0
6 Reproduction	6.01 Evidence of substantial reproductive failure in native habitat	N	0
	6.02 Produces viable seed.	N	-1
	6.03 Hybridizes naturally	-	0
	6.04 Self-compatible or apomictic	N	-1
	6.05 Requires specialist pollinators	N	0
	6.06 Reproduction by vegetative fragmentation	Y	1
	6.07 Minimum generative time (years)	5	-1
7 Dispersal mechanisms	7.01 Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	Y	1
	7.02 Propagules dispersed intentionally by people	Y	1
	7.03 Propagules likely to disperse as a produce contaminant	N	-1
	7.04 Propagules adapted to wind dispersal	N	-1
	7.05 Propagules water dispersed	Y	1
	7.06 Propagules bird dispersed	N	-1
	7.07 Propagules dispersed by other animals (externally)	N	-1
	7.08 Propagules survive passage through the gut	N	-1
8 Persistence attributes	8.01 Prolific seed production (>2000/m2)	N	-1
	8.02 Evidence that a persistent propagule bank is formed (>1 yr)	N	-1
	8.03 Well controlled by herbicides	-	0
	8.04 Tolerates, or benefits from, mutilation or cultivation	-	0
	8.05 Effective natural enemies present in target region	-	0
		<b>Score:</b>	<b>-1</b>
		<b>Outcome:</b>	<b>Accept</b>

This represents the risk of a hypothetical switchgrass cultivar that produces no seed (it is sterile).

**Weed Risk Assessment based on Pheloung et al. (1999) for non-native biofuel crops under various scenarios.  
(Barney JN, DiTomaso JM 2008. Non-native species and bioenergy: Are we cultivating the next invader? BioScience)**

		Giant reed ( <i>Arundo donax</i> )	
		Target Region:	Florida
<b>A. Biogeography/Historical</b>		<b>Answer</b>	<b>Points</b>
1 Domestication / cultivation	1.01 Is the species highly domesticated?	Y	-3
	1.02 Has the species become naturalized where grown?	Y	1
	1.03 Does the species have weedy races?	-	0
2 Climate and Distribution	2.01 Species suited to target region climate (0-low; 1-intermediate; 2-high)	2	
	2.02 Quality of climate match data (0-low; 1-intermediate; 2-high)	0	
	2.03 Broad climate suitability (environmental versatility)	-	
	2.04 Native or naturalized in regions with similar climate	Y	
	2.05 Does the species have a history of repeated introductions outside its natural range?	Y	
3 Weed Elsewhere (depends on 2.01 and 2.02)	3.01 Naturalized beyond native range	Y	
	3.02 Garden/amenity/disturbance weed	Y	
	3.03 Weed of agriculture	N	
	3.04 Environmental weed	Y	
	3.05 Congeneric weed	N	
<b>B. Biology/Ecology</b>			
4 Undesirable traits	4.01 Produces spines, thorns or burrs	N	0
	4.02 Allelopathic	N	0
	4.03 Parasitic	N	0
	4.04 Unpalatable to grazing animals	-	0
	4.05 Toxic to animals	N	0
	4.06 Host for recognized pests and pathogens	-	0
	4.07 Causes allergies or is otherwise toxic to humans	N	0
	4.08 Creates a fire hazard in natural ecosystems	-	0
	4.09 Is a shade tolerant plant at some stage of its life cycle	N	0
	4.10 Grows on infertile soils	-	0
	4.11 Climbing or smothering growth habit	N	0
	4.12 Forms dense thickets	N	0
5 Plant type	5.01 Aquatic	-	0
	5.02 Grass	-	0
	5.03 Nitrogen fixing woody plant	-	0
	5.04 Geophyte	-	0
6 Reproduction	6.01 Evidence of substantial reproductive failure in native habitat	-	0
	6.02 Produces viable seed.	Y	1
	6.03 Hybridizes naturally	N	-1
	6.04 Self-compatible or apomictic	-	0
	6.05 Requires specialist pollinators	Y	0
	6.06 Reproduction by vegetative fragmentation	Y	1
	6.07 Minimum generative time (years)	5	-1
7 Dispersal mechanisms	7.01 Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	N	-1
	7.02 Propagules dispersed intentionally by people	Y	1
	7.03 Propagules likely to disperse as a produce contaminant	N	-1
	7.04 Propagules adapted to wind dispersal	Y	1
	7.05 Propagules water dispersed	N	-1
	7.06 Propagules bird dispersed	N	-1
	7.07 Propagules dispersed by other animals (externally)	N	-1
	7.08 Propagules survive passage through the gut	-	0
8 Persistence attributes	8.01 Prolific seed production (>2000/m2)	-	0
	8.02 Evidence that a persistent propagule bank is formed (>1 yr)	-	0
	8.03 Well controlled by herbicides	-	0
	8.04 Tolerates, or benefits from, mutilation or cultivation	Y	1
	8.05 Effective natural enemies present in target region	-	0
		<b>Score:</b>	<b>4</b>
		<b>Outcome:</b>	Evaluate Further

This is the original assessment used in Pheloung et al. 1999

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		Target Region:	Giant reed ( <i>Arundo donax</i> )
			Florida
<b>A. Biogeography/Historical</b>		<b>Answer</b>	<b>Points</b>
1 Domestication / cultivation	1.01 Is the species highly domesticated?	Y	-3
	1.02 Has the species become naturalized where grown?	Y	1
	1.03 Does the species have weedy races?	-	0
Climate and 2 Distribution	2.01 Species suited to target region climate (0-low; 1-intermediate; 2-high)	2	
	2.02 Quality of climate match data (0-low; 1-intermediate; 2-high)	0	
	2.03 Broad climate suitability (environmental versatility)	-	
	2.04 Native or naturalized in regions with similar climate	Y	
	2.05 Does the species have a history of repeated introductions outside its natural range?	Y	
3 Weed Elsewhere (depends on 2.01 and 2.02)	3.01 Naturalized beyond native range	Y	
	3.02 Garden/amenity/disturbance weed	Y	
	3.03 Weed of agriculture	N	
	3.04 Environmental weed	Y	
	3.05 Congeneric weed	N	
<b>B. Biology/Ecology</b>			
4 Undesirable traits	4.01 Produces spines, thorns or burrs	N	0
	4.02 Allelopathic	N	0
	4.03 Parasitic	N	0
	4.04 Unpalatable to grazing animals	-	0
	4.05 Toxic to animals	N	0
	4.06 Host for recognized pests and pathogens	-	0
	4.07 Causes allergies or is otherwise toxic to humans	N	0
	4.08 Creates a fire hazard in natural ecosystems	-	0
	4.09 Is a shade tolerant plant at some stage of its life cycle	N	0
	4.10 Grows on infertile soils	-	0
	4.11 Climbing or smothering growth habit	N	0
	4.12 Forms dense thickets	N	0
5 Plant type	5.01 Aquatic	-	0
	5.02 Grass	Y	1
	5.03 Nitrogen fixing woody plant	-	0
	5.04 Geophyte	-	0
6 Reproduction	6.01 Evidence of substantial reproductive failure in native habitat	N	0
	6.02 Produces viable seed.	Y	1
	6.03 Hybridizes naturally	N	-1
	6.04 Self-compatible or apomictic	-	0
	6.05 Requires specialist pollinators	Y	0
	6.06 Reproduction by vegetative fragmentation	Y	1
	6.07 Minimum generative time (years)	5	-1
Dispersal 7 mechanisms	7.01 Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	N	-1
	7.02 Propagules dispersed intentionally by people	Y	1
	7.03 Propagules likely to disperse as a produce contaminant	N	-1
	7.04 Propagules adapted to wind dispersal	Y	1
	7.05 Propagules water dispersed	Y	1
	7.06 Propagules bird dispersed	N	-1
	7.07 Propagules dispersed by other animals (externally)	N	-1
	7.08 Propagules survive passage through the gut	-	0
8 Persistence attributes	8.01 Prolific seed production (>2000/m2)	-	0
	8.02 Evidence that a persistent propagule bank is formed (>1 yr)	-	0
	8.03 Well controlled by herbicides	N	1
	8.04 Tolerates, or benefits from, mutilation or cultivation	Y	1
	8.05 Effective natural enemies present in target region	-	0
		<b>Score:</b>	<b>8</b>
		<b>Outcome:</b>	<b>Reject</b>

This is an initial assessment of giant reed for Florida (Fox 2007 Wildland Weeds)

**Weed Risk Assessment based on Pheloung et al. (1999) for non-native biofuel crops under various scenarios.**

**(Barney JN, DiTomaso JM 2008. Non-native species and bioenergy: Are we cultivating the next invader? BioScience)**

		Target Region:	Giant reed ( <i>Arundo donax</i> ) Florida	
<b>A. Biogeography/Historical</b>		<b>Answer</b>	<b>Points</b>	
1 Domestication / cultivation	1.01 Is the species highly domesticated?	N	0	
	1.02 Has the species become naturalized where grown?	Y	1	
	1.03 Does the species have weedy races?	Y	1	
Climate and Distribution	2.01 Species suited to target region climate (0-low; 1-intermediate; 2-high)	2		
	2.02 Quality of climate match data (0-low; 1-intermediate; 2-high)	2		
	2.03 Broad climate suitability (environmental versatility)	-		
	2.04 Native or naturalized in regions with similar climate	Y		
	2.05 Does the species have a history of repeated introductions outside its natural range?	Y		
3 Weed Elsewhere (depends on 2.01 and 2.02)	3.01 Naturalized beyond native range	Y		
	3.02 Garden/amenity/disturbance weed	Y		
	3.03 Weed of agriculture	N		
	3.04 Environmental weed	Y		
	3.05 Congeneric weed	N		
<b>B. Biology/Ecology</b>				
4 Undesirable traits	4.01 Produces spines, thorns or burrs	N	0	
	4.02 Allelopathic	-	0	
	4.03 Parasitic	N	0	
	4.04 Unpalatable to grazing animals	-	0	
	4.05 Toxic to animals	-	0	
	4.06 Host for recognized pests and pathogens	-	0	
	4.07 Causes allergies or is otherwise toxic to humans	-	0	
	4.08 Creates a fire hazard in natural ecosystems	Y	1	
	4.09 Is a shade tolerant plant at some stage of its life cycle	Y	1	
	4.10 Grows on infertile soils	-	0	
	4.11 Climbing or smothering growth habit	N	0	
	4.12 Forms dense thickets	Y	1	
5 Plant type	5.01 Aquatic	N	0	
	5.02 Grass	Y	1	
	5.03 Nitrogen fixing woody plant	N	0	
	5.04 Geophyte	N	0	
6 Reproduction	6.01 Evidence of substantial reproductive failure in native habitat	-	0	
	6.02 Produces viable seed.	N	-1	
	6.03 Hybridizes naturally	-	0	
	6.04 Self-compatible or apomictic	-	0	
	6.05 Requires specialist pollinators	N	0	
	6.06 Reproduction by vegetative fragmentation	Y	1	
	6.07 Minimum generative time (years)	5	-1	
7 Dispersal mechanisms	7.01 Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	Y	1	
	7.02 Propagules dispersed intentionally by people	Y	1	
	7.03 Propagules likely to disperse as a produce contaminant	N	-1	
	7.04 Propagules adapted to wind dispersal	N	-1	
	7.05 Propagules water dispersed	Y	1	
	7.06 Propagules bird dispersed	N	-1	
	7.07 Propagules dispersed by other animals (externally)	N	-1	
	7.08 Propagules survive passage through the gut	-	0	
8 Persistence attributes	8.01 Prolific seed production (>2000/m2)	N	-1	
	8.02 Evidence that a persistent propagule bank is formed (>1 yr)	N	-1	
	8.03 Well controlled by herbicides	N	1	
	8.04 Tolerates, or benefits from, mutilation or cultivation	Y	1	
	8.05 Effective natural enemies present in target region	-	0	
		<b>Score:</b>	<b>11</b>	
		<b>Outcome:</b>	<b>Reject</b>	

This is our re-assessment of giant reed for Florida.

**Weed Risk Assessment based on Pheloung et al. (1999) for non-native biofuel crops under various scenarios.  
(Barney JN, DiTomaso JM 2008. Non-native species and bioenergy: Are we cultivating the next invader? BioScience)**

		Target Region:	Giant reed ( <i>Arundo donax</i> ) Florida	
<b>A. Biogeography/Historical</b>		<b>Answer</b>	<b>Points</b>	
1 Domestication / cultivation	1.01 Is the species highly domesticated?	N	0	
	1.02 Has the species become naturalized where grown?	Y	1	
	1.03 Does the species have weedy races?	Y	1	
2 Climate and Distribution	2.01 Species suited to target region climate (0-low; 1-intermediate; 2-high)	2	2	
	2.02 Quality of climate match data (0-low; 1-intermediate; 2-high)	2	2	
	2.03 Broad climate suitability (environmental versatility)	-	-	
	2.04 Native or naturalized in regions with similar climate	Y	1	
	2.05 Does the species have a history of repeated introductions outside its natural range?	Y	1	
3 Weed Elsewhere (depends on 2.01 and 2.02)	3.01 Naturalized beyond native range	Y	1	
	3.02 Garden/amenity/disturbance weed	Y	1	
	3.03 Weed of agriculture	N	0	
	3.04 Environmental weed	Y	1	
	3.05 Congeneric weed	N	0	
<b>B. Biology/Ecology</b>				
4 Undesirable traits	4.01 Produces spines, thorns or burrs	N	0	
	4.02 Allelopathic	-	0	
	4.03 Parasitic	N	0	
	4.04 Unpalatable to grazing animals	-	0	
	4.05 Toxic to animals	-	0	
	4.06 Host for recognized pests and pathogens	-	0	
	4.07 Causes allergies or is otherwise toxic to humans	-	0	
	4.08 Creates a fire hazard in natural ecosystems	Y	1	
	4.09 Is a shade tolerant plant at some stage of its life cycle	Y	1	
	4.10 Grows on infertile soils	-	0	
	4.11 Climbing or smothering growth habit	N	0	
	4.12 Forms dense thickets	Y	1	
5 Plant type	5.01 Aquatic	N	0	
	5.02 Grass	Y	1	
	5.03 Nitrogen fixing woody plant	N	0	
	5.04 Geophyte	N	0	
6 Reproduction	6.01 Evidence of substantial reproductive failure in native habitat	-	0	
	6.02 Produces viable seed.	Y	1	
	6.03 Hybridizes naturally	-	0	
	6.04 Self-compatible or apomictic	-	0	
	6.05 Requires specialist pollinators	N	0	
	6.06 Reproduction by vegetative fragmentation	Y	1	
	6.07 Minimum generative time (years)	1	1	
7 Dispersal mechanisms	7.01 Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	Y	1	
	7.02 Propagules dispersed intentionally by people	Y	1	
	7.03 Propagules likely to disperse as a produce contaminant	N	-1	
	7.04 Propagules adapted to wind dispersal	Y	1	
	7.05 Propagules water dispersed	Y	1	
	7.06 Propagules bird dispersed	N	-1	
	7.07 Propagules dispersed by other animals (externally)	N	-1	
	7.08 Propagules survive passage through the gut	-	0	
8 Persistence attributes	8.01 Prolific seed production (>2000/m <sup>2</sup> )	-	0	
	8.02 Evidence that a persistent propagule bank is formed (>1 yr)	-	0	
	8.03 Well controlled by herbicides	N	1	
	8.04 Tolerates, or benefits from, mutilation or cultivation	Y	1	
	8.05 Effective natural enemies present in target region	-	0	
		<b>Score:</b>	<b>19</b>	
		<b>Outcome:</b>	<b>Reject</b>	

This assumes that giant reed produces fertile seed.

Weed Risk Assessment based on Pheloung et al. (1999) for non-native biofuel crops under various scenarios.

(Barney JN, DiTomaso JM 2008. Non-native species and bioenergy: Are we cultivating the next invader? BioScience)

		Target Region:	<i>Miscanthus x giganteus</i> United States	
<b>A. Biogeography/Historical</b>		<b>Answer</b>	<b>Points</b>	
1 Domestication / cultivation	1.01 Is the species highly domesticated?	Y	-3	
	1.02 Has the species become naturalized where grown?	N	-1	
	1.03 Does the species have weedy races?	N	-1	
Climate and 2 Distribution	2.01 Species suited to target region climate (0-low; 1-intermediate; 2-high)	2		
	2.02 Quality of climate match data (0-low; 1-intermediate; 2-high)	2		
	2.03 Broad climate suitability (environmental versatility)	Y		
	2.04 Native or naturalized in regions with similar climate	Y		
	2.05 Does the species have a history of repeated introductions outside its natural range?	Y		
3 Weed Elsewhere (depends on 2.01 and 2.02)	3.01 Naturalized beyond native range	N		
	3.02 Garden/amenity/disturbance weed	N		
	3.03 Weed of agriculture	N		
	3.04 Environmental weed	N		
	3.05 Congeneric weed	Y		
<b>B. Biology/Ecology</b>				
4 Undesirable traits	4.01 Produces spines, thorns or burrs	N	0	
	4.02 Allelopathic	-	0	
	4.03 Parasitic	N	0	
	4.04 Unpalatable to grazing animals	-	0	
	4.05 Toxic to animals	-	0	
	4.06 Host for recognized pests and pathogens	-	0	
	4.07 Causes allergies or is otherwise toxic to humans	-	0	
	4.08 Creates a fire hazard in natural ecosystems	-	0	
	4.09 Is a shade tolerant plant at some stage of its life cycle	-	0	
	4.10 Grows on infertile soils	-	0	
	4.11 Climbing or smothering growth habit	N	0	
	4.12 Forms dense thickets	Y	1	
5 Plant type	5.01 Aquatic	N	0	
	5.02 Grass	Y	1	
	5.03 Nitrogen fixing woody plant	N	0	
	5.04 Geophyte	N	0	
6 Reproduction	6.01 Evidence of substantial reproductive failure in native habitat	N	0	
	6.02 Produces viable seed.	N	-1	
	6.03 Hybridizes naturally	N	-1	
	6.04 Self-compatible or apomictic	N	-1	
	6.05 Requires specialist pollinators	N	0	
	6.06 Reproduction by vegetative fragmentation	Y	1	
	6.07 Minimum generative time (years)	5	-1	
Dispersal 7 mechanisms	7.01 Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	Y	1	
	7.02 Propagules dispersed intentionally by people	Y	1	
	7.03 Propagules likely to disperse as a produce contaminant	N	-1	
	7.04 Propagules adapted to wind dispersal	N	-1	
	7.05 Propagules water dispersed	-	0	
	7.06 Propagules bird dispersed	N	-1	
	7.07 Propagules dispersed by other animals (externally)	N	-1	
	7.08 Propagules survive passage through the gut	-	0	
8 Persistence attributes	8.01 Prolific seed production (>2000/m <sup>2</sup> )	N	-1	
	8.02 Evidence that a persistent propagule bank is formed (>1 yr)	N	-1	
	8.03 Well controlled by herbicides	-	0	
	8.04 Tolerates, or benefits from, mutilation or cultivation	Y	1	
	8.05 Effective natural enemies present in target region	-	0	
		<b>Score:</b>	<b>-7</b>	
		<b>Outcome:</b>	<b>Accept</b>	



**Weed Risk Assessment based on Pheloung et al. (1999) for non-native biofuel crops under various scenarios.  
(Barney JN, DiTomaso JM 2008. Non-native species and bioenergy: Are we cultivating the next invader? BioScience)**

		<i>Miscanthus x giganteus</i>
		Target Region: United States
<b>A. Biogeography/Historical</b>		<b>Answer Points</b>
1 Domestication / cultivation	1.01 Is the species highly domesticated?	N 0
	1.02 Has the species become naturalized where grown?	N -1
	1.03 Does the species have weedy races?	N -1
Climate and 2 Distribution	2.01 Species suited to target region climate (0-low; 1-intermediate; 2-high)	2
	2.02 Quality of climate match data (0-low; 1-intermediate; 2-high)	2
	2.03 Broad climate suitability (environmental versatility)	Y
	2.04 Native or naturalized in regions with similar climate	Y
	2.05 Does the species have a history of repeated introductions outside its natural range?	Y
3 Weed Elsewhere (depends on 2.01 and 2.02)	3.01 Naturalized beyond native range	N
	3.02 Garden/amenity/disturbance weed	N
	3.03 Weed of agriculture	N
	3.04 Environmental weed	N
	3.05 Congeneric weed	Y
<b>B. Biology/Ecology</b>		
4 Undesirable traits	4.01 Produces spines, thorns or burrs	N 0
	4.02 Allelopathic	- 0
	4.03 Parasitic	N 0
	4.04 Unpalatable to grazing animals	- 0
	4.05 Toxic to animals	- 0
	4.06 Host for recognized pests and pathogens	- 0
	4.07 Causes allergies or is otherwise toxic to humans	- 0
	4.08 Creates a fire hazard in natural ecosystems	- 0
	4.09 Is a shade tolerant plant at some stage of its life cycle	- 0
	4.10 Grows on infertile soils	- 0
	4.11 Climbing or smothering growth habit	N 0
	4.12 Forms dense thickets	Y 1
5 Plant type	5.01 Aquatic	N 0
	5.02 Grass	Y 1
	5.03 Nitrogen fixing woody plant	N 0
	5.04 Geophyte	N 0
6 Reproduction	6.01 Evidence of substantial reproductive failure in native habitat	N 0
	6.02 Produces viable seed.	N -1
	6.03 Hybridizes naturally	N -1
	6.04 Self-compatible or apomictic	N -1
	6.05 Requires specialist pollinators	N 0
	6.06 Reproduction by vegetative fragmentation	Y 1
	6.07 Minimum generative time (years)	5 -1
Dispersal 7 mechanisms	7.01 Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	Y 1
	7.02 Propagules dispersed intentionally by people	Y 1
	7.03 Propagules likely to disperse as a produce contaminant	N -1
	7.04 Propagules adapted to wind dispersal	N -1
	7.05 Propagules water dispersed	- 0
	7.06 Propagules bird dispersed	N -1
	7.07 Propagules dispersed by other animals (externally)	N -1
	7.08 Propagules survive passage through the gut	- 0
8 Persistence attributes	8.01 Prolific seed production (>2000/m2)	N -1
	8.02 Evidence that a persistent propagule bank is formed (>1 yr)	N -1
	8.03 Well controlled by herbicides	- 0
	8.04 Tolerates, or benefits from, mutilation or cultivation	Y 1
	8.05 Effective natural enemies present in target region	- 0
<b>Score:</b>		<b>-2</b>
<b>Outcome:</b>		<b>Accept</b>

The domestication assumption was changed.