TAXON: Euphorbia 'Ascot Rainbow'

SCORE: -5.0

RATING:Low Risk

Taxon: Euphorbia 'Ascot Rainbow'

Family: Euphorbiaceae

Common Name(s): 'Ascot Rainbow'

Synonym(s): Euphorbia x martini

Rating:

Assessor: Chuck Chimera

Status: Assessor Approved

End Date: 6 Jun 2017

WRA Score: -5.0

Designation: L

Low Risk

Keywords: Cultivar, Ornamental, Unarmed, Toxic Sap, Seedless

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	(0-low; 1-intermediate; 2-high) (See Appendix 2)	Low
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	Low
203	Broad climate suitability (environmental versatility)	y=1, n=0	У
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	n
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	?
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	У
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals	y=1, n=-1	у
405	Toxic to animals	y=1, n=0	у
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	у
408	Creates a fire hazard in natural ecosystems		
409	Is a shade tolerant plant at some stage of its life cycle		
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	У

Qsn #	Question	Answer Option	Answer
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	n
603	Hybridizes naturally		
604	Self-compatible or apomictic	y=1, n=-1	n
605	Requires specialist pollinators		
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)		
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	n
702	Propagules dispersed intentionally by people	y=1, n=-1	у
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m2)	y=1, n=-1	n
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	n
803	Well controlled by herbicides		
804	Tolerates, or benefits from, mutilation, cultivation, or fire		
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)		

Supporting Data:

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	[A cultivar produced from an artificial hybrid, but not domesticated] "The new Euphorbia cultivar named 'ASCOT RAINBOW' was discovered by the breeder in Victoria, Australia as a naturally occurring branch sport of the parent plant, namely an individual plant of Euphorbia×martinii (species, unpatented). The inventor selected 'ASCOT RAINBOW' in 2005 based on the criteria of variegated cream-yellow and gray-green foliage that turns red-pink with the onset of winter."
102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	NA
	•	
103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	NA
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	Low
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Euphorbia x martinii 'ASCOT RAINBOW' was discovered as a naturally occurring branch sport of the parent an individual Euphorbia martini I." "Hardiness: Classified at least as hardy as USDA Hardiness Zone 6." [Euphorbia x martinii parents are predominantly temperate species]
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202	Quality of climate match data	Low
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Euphorbia x martinii 'ASCOT RAINBOW' was discovered as a naturally occurring branch sport of the parent an individual Euphorbia martini I." "Hardiness: Classified at least as hardy as USDA Hardiness Zone 6."
203	Broad climate suitability (environmental versatility)	У
	Source(s)	Notes
	Monrovia. 2017. Ascot Rainbow Spurge. http://www.monrovia.com/plant- catalog/plants/5127/ascot-rainbow-spurge/. [Accessed 6 Jun 2017]	"A heat-tolerant, fuss-free choice for containers, mixed beds, with low water needs. Hardy to at least zone 5b, provided soil is fast draining."

Rainbow'		
Qsn #	Question	Answer
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Hardiness: Classified at least as hardy as USDA Hardiness Zone 6."
	Singer, C. 2006. Deer in My Garden: Vol. 1: Perennials & Subshrubs. Garden Wisdom Press, Grass Valley, CA	"Zones 8-10. Euphorbia x martinii will not survive in the coldest mountain regions of the western United States, but it has survived ice storms in the Pacific Northwest, and winter temperatures to 10°F, with no snow cover." [The parent of 'ASCOT RAINBOW' is an individual Euphorbia×martinii]
204	Native or naturalized in regions with tropical or subtropical climates	n
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Euphorbia x martinii 'ASCOT RAINBOW' was discovered as a naturally occurring branch sport of the parent an individual Euphorbia martini I." "Hardiness: Classified at least as hardy as USDA Hardiness Zone 6." [Euphorbia x martinii parents are predominantly temperate species]
205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	Notes
	Keys, A. & Michaels, K. 2015. Growing the Northeast Garden. Timber Press, Portland, OR	[Cultivated as an ornamental] "Similar E. x martinii 'Ascot Rainbow' (Zone 5) may promise the best show of all: rosettes with red centers and leaves edged decadently in gold, and yellow-green flowers with red eyes. All grow easily into neat domes of foliage, color best in sun, and prefer dry, well-drained soil."
301	Naturalized beyond native range	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	Wagner, W.L., Herbst, D.R.& Lorence, D.H. 2017. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/. [Accessed 6 Jun 2017]	No evidence to date
	,	
302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
303	Agricultural /forestm://howticultural.co.ad	
303	Agricultural/forestry/horticultural weed Source(s)	n Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

Creation Date: 6 Jun 2017 (Euphorbia 'Ascot Page **4** of **12** Rainbow')

WRA Specialist. 2017. Personal Communication

2017. National Plant Germplasm System [Online

[Accessed 6 Jun 2017]

Parasitic

Source(s)

USDA, ARS, Germplasm Resources Information Network.

Database]. http://www.ars-grin.gov/npgs/index.html.

403

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Notes

Qsn #	Question	Answer
304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	·	
305	Congeneric weed	У
	Source(s)	Notes
	Weber, E. 2003. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	"Euphorbia esula spreads by seeds and by vegetative growth from the rootstock. It rapidly expands and forms large and dense patches that displace native grasses and forbs."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	Numerous Euphorbia species have become invasive weeds
401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	[No evidence] "'ASCOT RAINBOW' exhibits compact slightly spreading habit, sturdy red stems, markedly variegated flowers that bloom spring through summer, and variegated foliage. The flowers are tubular in shape and cream-yellow, lime, green, and red in color. Foliage exhibits tones of cream yellow, gray-green, and red-pink color with the onset of winter."
	<u></u>	<u>, </u>
402	Allelopathic	
402	Allelopathic Source(s)	Notes

Unknown

Euphorbiaceae. No evidence

WRA Specialist. 2017. Personal Communication

Qsn #	Question	Answer
404	Unpalatable to grazing animals	у
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Hazardous considerations: All parts exude a white milky substance or sap when bruised. The sap of 'ASCOT RAINBOW' is toxic and will elicit dermal irritation." [Toxic sap would likely deter browsing]
	Woodie, M. 2012. Ascot Rainbow: A Colorful Perennial Euphorbia. Horticulture. http://www.hortmag.com/plants/plants-we-love/ascotrainbow-a-colorful-perennial-euphorbia. [Accessed 6 Jun 2017]	"These drought, deer and rabbit tolerant perennials can grow in most soils but do best when it is well drained."
	<u> </u>	Τ
405	Toxic to animals	У
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Hazardous considerations: All parts exude a white milky substance or sap when bruised. The sap of 'ASCOT RAINBOW' is toxic and will elicit dermal irritation."
406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Pest or disease susceptibility: Susceptible to two-spotted mite. Disease and pest resistance: None known to the inventor."
407	Causes allergies or is otherwise toxic to humans	у
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Hazardous considerations: All parts exude a white milky substance or sap when bruised. The sap of 'ASCOT RAINBOW' is toxic and will elicit dermal irritation."
408	Creates a fire hazard in natural ecosystems	
	Source(s)	Notes

Flammability unknown

2017]

Qsn #	Question	Answer
409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	Woodie, M. 2012. Ascot Rainbow: A Colorful Perennial Euphorbia. Horticulture. http://www.hortmag.com/plants/plants-we-love/ascotrainbow-a-colorful-perennial-euphorbia. [Accessed 6 Jun 2017]	"Ascot Rainbow Spurges prefer full sun to part shade, and are great plants for container gardening."
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Cultural requirements: Full sun, porous well-draining soil, and minimal to moderate water."
	Monrovia. 2017. Ascot Rainbow Spurge. http://www.monrovia.com/plant- catalog/plants/5127/ascot-rainbow-spurge/. [Accessed 6 Jun 2017]	"Partial to full sun"
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	у
	Source(s)	Notes
	Learn 2 Grow. 2017. Euphorbia x martini 'Ascot Rainbow'. http://www.learn2grow.com/plants/euphorbia-x-martini-ascot-rainbow-ppaf/. [Accessed 6 Jun 2017]	"Martin's Spurge is a tough plant. It grows well in just about any soil as long as it is well-drained." "Soil pH: Acidic, Neutral, Alkaline Soil Drainage: Well Drained Soil type: Loam, Sand"
	Woodie, M. 2012. Ascot Rainbow: A Colorful Perennial Euphorbia. Horticulture. http://www.hortmag.com/plants/plants-we-love/ascotrainbow-a-colorful-perennial-euphorbia. [Accessed 6 Jun	"These drought, deer and rabbit tolerant perennials can grow in most soils but do best when it is well drained."

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"exhibits compact slightly spreading habit."

412	Forms dense thickets	n
	Source(s)	Notes
	http://www.learn2grow.com/plants/euphorbia-x-martini-ascot-rainhow-nnaf/ [Accessed 6 Jun 2017]	"It is beautiful in containers which are best in colder zones, but spreads to form tidy mounds in beds, boarders and as edging in warmer locations." [No evidence. Does not produce seeds or spread vegetatively]

Rain	Rainbow'		
Qsn #	Question	Answer	
501	Aquatic	n	
	Source(s)	Notes	
	Learn 2 Grow. 2017. Euphorbia x martini 'Ascot Rainbow'. http://www.learn2grow.com/plants/euphorbia-x-martini-ascot-rainbow-ppaf/. [Accessed 6 Jun 2017]	[Terrestrial] "The cultivar 'Ascot Rainbow' is a compact, tender, evergreen spurge with a clumping, upright habit and lance-shaped leaves with the pointed ends attached to the red stems."	
502	Grass	n	
	Source(s)	Notes	
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	Family: Euphorbiaceae	
503	Nitrogen fixing woody plant	n	
	Source(s)	Notes	
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 26 May 2017]	Family: Euphorbiaceae Subfamily: Euphorbioideae Tribe: Euphorbieae Subtribe: Euphorbiinae	
504	Geophyte (herbaceous with underground storage organs bulbs, corms, or tubers)	n	
	Source(s)	Notes	
	Learn 2 Grow. 2017. Euphorbia x martini 'Ascot Rainbow'. http://www.learn2grow.com/plants/euphorbia-x-martini-ascot-rainbow-ppaf/. [Accessed 6 Jun 2017]	"The cultivar 'Ascot Rainbow' is a compact, tender, evergreen spurge with a clumping, upright habit and lance-shaped leaves with the pointed ends attached to the red stems."	
601	Evidence of substantial reproductive failure in native habitat	n	
	Source(s)	Notes	
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"The new Euphorbia cultivar named 'ASCOT RAINBOW' was discovered by the breeder in Victoria, Australia as a naturally occurring branch sport of the parent plant, namely an individual plant of Euphorbia×martinii (species, unpatented). The inventor selected 'ASCOT RAINBOW' in 2005 based on the criteria of variegated cream-yellow and gray-green foliage that turns red-pink	

with the onset of winter."

Qsn #	Question	Answer
602	Produces viable seed	n
	Source(s)	Notes
	Monrovia. 2017. Ascot Rainbow Spurge. http://www.monrovia.com/plant- catalog/plants/5127/ascot-rainbow-spurge/. [Accessed 6 Jun 2017]	"Asexual reproduction of plants protected by the Plant Patent Act i prohibited during the life of the patent."
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date."
603	Hybridizes naturally	
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date." [Unknown. Hybridization documented in genus Euphorbia]
604	Self-compatible or apomictic	n
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date." [No evidence. Unlikely given lack of seed production]
605	Requires specialist pollinators	
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date." [Unknown, but may b irrelevant given lack of seed production]
606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Asexual propagation method: Stem cuttings." [No evidence of natural vegetative spread]
	Singer, C. 2006. Deer in My Garden: Vol. 1: Perennials & Subshrubs. Garden Wisdom Press, Grass Valley, CA	"Euphorbia x martinii when purchased may be variable. Select the color of leaf that you prefer for your garden. Divisions do not work with this plant because it does not spread aggressively. Leave the established crown alone."
607	Minimum generative time (years)	
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Time to develop roots: 9-12 weeks are needed for roots to develop on an initial cutting." "Seed: No seed has been observed to date [Unknown, but irrelevant if no seeds are produced]

Rain	Rainbow'		
Qsn #	Question	Answer	
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n	
	Source(s)	Notes	
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date." [No evidence of seed production. Asexually propagated with cuttings]	
702	Propagules dispersed intentionally by people	у	
	Source(s)	Notes	
	Keys, A. & Michaels, K. 2015. Growing the Northeast Garden. Timber Press, Portland, OR	[Cultivated as an ornamental] "Similar E. x martinii 'Ascot Rainbow' (Zone 5) may promise the best show of all: rosettes with red centers and leaves edged decadently in gold, and yellow-green flowers with red eyes. All grow easily into neat domes of foliage, color best in sun and prefer dry, well-drained soil."	
703	Propagules likely to disperse as a produce contaminant	n	
	Source(s)	Notes	
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date."	
	·		
704	Propagules adapted to wind dispersal	n	
	Source(s)	Notes	
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date."	
	1		
705	Propagules water dispersed	n	
	Source(s)	Notes	
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date."	
	1		
706	Propagules bird dispersed	n	
	Source(s)	Notes	
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date."	
707	Propagules dispersed by other animals (externally)	n	
	Source(s)	Notes	
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date."	

Qsn #	Question	Answer
708	Propagules survive passage through the gut	n
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date."
801	Prolific seed production (>1000/m2)	n
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date."
802	Evidence that a persistent propagule bank is formed (>1 yr)	n
	Source(s)	Notes
	Glenn, D. (2010). U.S. Patent No. PP21,401. Washington, DC: U.S. Patent and Trademark Office	"Seed: No seed has been observed to date."
	·	
803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species.
804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	de Jauregui, R. 2017. How to Prune an Euphorbia Ascot Rainbow Plant . https://www.hunker.com/12550366/how- to-prune-an-euphorbia-ascot-rainbow-plant. [Accessed 6 Jun 2017]	[Tolerates some pruning] "Ascot Rainbow needs very little pruning, but take care when you pinch back or deadhead the old flower stalks."
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown

SCORE: -5.0

RATING:Low Risk

Summary of Risk Traits:

High Risk / Undesirable Traits

- Broad climate suitability (5 hardiness zones)
- Other Euphorbia species are invasive
- · Sap toxic to animals and people
- Unpalatable to animals
- Tolerates many soil types

Low Risk Traits

- No reports of invasiveness or naturalization or invasiveness
- Unarmed (no spines, thorns, or burrs)
- Ornamental value
- Not reported to produce seeds
- Not reported to spread vegetatively
- · Lack of seed production minimizes risk of inadvertent or long-distance dispersal