

Taxon: <i>Leucanthemum maximum</i>	Family: Asteraceae
Common Name(s): daisy chrysanthemum max chrysanthemum Shasta daisy	Synonym(s): Chrysanthemum maximum Ramond

Assessor: Assessor	Status: Assessor Approved	End Date: 13 Mar 2014
WRA Score: 4.5	Designation: H(HPWRA)	Rating: High Risk

Keywords: : Naturalized, Disturbance Weed, Herbaceous Wildflower, Annual, Wind-dispersed

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)	High
203	Broad climate suitability (environmental versatility)	y=1, n=0	y
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	y
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	y
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	y
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed		
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	y
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	y
405	Toxic to animals		
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans		
408	Creates a fire hazard in natural ecosystems	y=1, n=0	n
409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	n

Qsn #	Question	Answer Option	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	y
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	y
603	Hybridizes naturally		
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	1
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant		
704	Propagules adapted to wind dispersal	y=1, n=-1	y
705	Propagules water dispersed		
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m ²)		
802	Evidence that a persistent propagule bank is formed (>1 yr)		
803	Well controlled by herbicides	y=-1, n=1	y
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	n
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
	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/ . [Accessed 12 Mar 2014]	No evidence [Recognized as a legitimate species, despite several references indicating that it is an artificial hybrid]

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2014. 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
	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/ . [Accessed 11 Mar 2014]	" Native: EUROPE Southwestern Europe: France [Pyrenees]; Spain [Pyrenees]"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/ . [Accessed 11 Mar 2014]	

203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Flora of North America Editorial Committee. 2006. Flora of North America: North of Mexico. Magnoliophyta: Asteridae, part 6: Asteraceae, part 1. Oxford University Press, Oxford, UK	"Disturbed sites, meadows, seeps, clearings; 0–1500+ m; introduced; Ala., Calif., Wyo.; w Europe" [Broad distribution, and elevation range exceeds 1000 m]

Qsn #	Question	Answer
204	Native or naturalized in regions with tropical or subtropical climates	n
	Source(s)	Notes
	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/ . [Accessed 12 Mar 2014]	"Naturalized: (links to other web resources are provided for some distributions) AUSTRALASIA Australia: Australia New Zealand: New Zealand NORTHERN AMERICA Northwestern U.S.A.: United States - Wyoming Southeastern U.S.A.: United States - Alabama Southwestern U.S.A.: United States - California"

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	Flora of North America Editorial Committee. 2006. Flora of North America: North of Mexico. Magnoliophyta: Asteridae, part 6: Asteraceae, part 1. Oxford University Press, Oxford, UK	"(widely cultivated, sparingly adventive)."

301	Naturalized beyond native range	y
	Source(s)	Notes
	Wheeler, J.R., Marchant, N.G. & Lewington, M. 2002. Flora of the South West: Dicotyledons. UWA Publishing, Crawley, Western Australia	"A garden escape, occasionally locally naturalized in disturbed areas near settlement. Recorded from Busselton; also from SA; a native to the Pyrenees."
	Flora of North America Editorial Committee. 2006. Flora of North America: North of Mexico. Magnoliophyta: Asteridae, part 6: Asteraceae, part 1. Oxford University Press, Oxford, UK	"Disturbed sites, meadows, seeps, clearings; 0–1500+ m; introduced; Ala., Calif., Wyo.; w Europe (widely cultivated, sparingly adventive)."
	Howell, C. J., & Sawyer, J. W. (2006). New Zealand naturalised vascular plant checklist. New Zealand Plant Conservation Network, Wellington, NZ	"Fully naturalized"
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	"Max chrysanthemum has escaped cultivation as an ornamental in some disturbed areas of the North Coast, Central Coast, western South Coast Ranges, and western Transverse Ranges, to 200 m. It also occurs in Oregon, Washington, Louisiana, New York, and Ohio. Native to Europe."
	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/ . [Accessed]	"Naturalized: (links to other web resources are provided for some distributions) AUSTRALASIA Australia: Australia New Zealand: New Zealand NORTHERN AMERICA Northwestern U.S.A.: United States - Wyoming Southeastern U.S.A.: United States - Alabama Southwestern U.S.A.: United States - California"

Qsn #	Question	Answer
	Johnston, F. M., & Pickering, C. M. 2001. Alien plants in the Australian Alps. Mountain Research and Development, 21(3), 284-291	"Some Asteraceae species have been deliberately introduced, sometimes in gardens, from where they have escaped into surrounding native vegetation (<i>Leucanthemum maximum</i> and <i>L. vulgare</i> ; cf McDougall and Appleby 2000)."

302	Garden/amenity/disturbance weed	y
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	" <i>Leucanthemum maximum</i> (Ramond) DC. Asteraceae See: <i>Chrysanthemum maximum</i> Ramond Cultivated Refs: 28 1265-N, 1262-E, 1259-E, 1243-N, 1162-N, 1049-N, 975-I, 945-N, 919-N, 872-CN, 869-W, 855-N, 853-W, 819-N, 784-E, 534-N, 401-C, 327-E, 314-U, 310-EN, 289-E, 280-N, 198-N, 101-N, 86-N, 72-E, 42-C, 7-N" [Included in a number of references as a weed, or an environmental weed]
	Dujmović Purgar, D., & Hulina, N. 2004. Vineyard weed flora in the Jastrebarsko area (NW Croatia). Acta Botanica Croatica, 63(2): 113-123	"Tab. 1. The list of weed species in the vineyards in the Jastrebarsko area." [Includes <i>Leucanthemum maximum</i> . No impacts specified]
	WRA Specialist. 2014. Personal Communication	Despite inclusion in a number of weed lists, most weed references include <i>Leucanthemum maximum</i> to distinguish it from the similar-looking <i>L. vulgare</i> , which is well documented as an environmental weed. There is enough evidence to include <i>L. maximum</i> as an amenity or disturbance weed, but insufficient support to characterize it as an Environmental weed.

303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

304	Environmental weed	
	Source(s)	Notes
	Gatehouse, H.A.W. 2008. Ecology of the naturalisation and geographic distribution of the non-indigenous seed plant species of New Zealand. PhD Dissertation. Lincoln University, Lincoln, NZ	"Appendix 7.1. List of wild non-indigenous seed plant species recorded by the year 2000 in New Zealand. The list is annotated with the naming authority, family, reference, status (N = fully naturalised, C = casual), environmental weed status (Y = Yes, N = No) (Howell, 2008), year of discovery and whether year is from a collection (c) or published list (l) (Max.), and latest year of absence assumed from published species lists (Min.) References that the numbers in the reference column refer are presented at the end of this Appendix." [<i>Leucanthemum maximum</i> - Weed = No; Not considered an environmental weed in New Zealand]

Qsn #	Question	Answer
	Sustainable Gardening Australia. 2007. Sustainable Gardening in the Shire of Yarra Ranges. Shire of Yarra Ranges, Lilydale, Vic	"Environmental Weeds in Yarra Ranges" [List includes Shasta Daisy (<i>Leucanthemum maximum</i>), but with no description of impacts]
	Miles, J. 2013. Weeds of the Monaro: a guide to identification and control. Snowy River Shire Council, Berridale, AU	"Look-alikes - Shasta daisy (<i>Leucanthemum maximum</i>), a larger plant, is another occasional garden escape." [This information is provided to distinguish L. maximum from the related Oxeye Daisy (<i>Leucanthemum vulgare</i>), which is considered an environmental weed with negative impacts]
	Klein, H., Greenstein, C., Phelps, M., Flagstad, L., Cortés-Burns, H.& Carlson, M. 2012. Municipality of Anchorage Non-Native Plant Survey. Anchorage Park Foundation and Municipality of Anchorage, Anchorage, AK	"The remaining four non-listed species; <i>Achillea ptarmica</i> (sneezeweed; 46), <i>Centaurea Montana</i> (perennial cornflower; 46), <i>Lamium album</i> (white deadnettle; 40) and <i>Leucanthemum maximum</i> (Shasta daisy; NR) are ornamentals that are not likely to pose a high level of ecological or economic impact, and because of their popularity as garden plants there is a high potential for reintroduction to treated areas."
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	Possibly. See 3.02

305	Congeneric weed	y
	Source(s)	Notes
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	" <i>Leucanthemum vulgare</i> " ... "In California, it is most invasive in moist grassland and coast scrub. Livestock generally avoid grazing the foliage, and milk from dairy cattle that have consumed the plant can have an unpleasant flavor. Oxeye daisy is a state-listed noxious weed in Colorado, Minnesota (secondary), Montana (category 1), Ohio (prohibited), Washington (class B, plant quarantine), and Wyoming. It is a noxious weed in southeastern Australia. Oxeye daisy can host the yellow dwarf potato virus."

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Webb, C. J., Sykes, W. R., & Garnock-Jones, P. J. 1988. Flora of New Zealand Volume IV. Botany Division, DSIR, Christchurch, New Zealand	"Scarcely scented, perennial herb. Stems erect, up to c. 1 m tall, glabrous or with a few scattered hairs, striate, simple or branched at base or above. Basal and lower cauline lvs petiolate, narrow elliptic, acute to obtuse at apex, cuneate, evenly 1-serrate, glabrous, up to c. 30 × 4 cm; cauline lvs similar to basal but above becoming smaller, apetiolate, amplexicaul, the uppermost lanceolate to linear and sometimes almost entire. "

402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown

403	Parasitic	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Webb, C. J., Sykes, W. R., & Garnock-Jones, P. J. 1988. Flora of New Zealand Volume IV. Botany Division, DSIR, Christchurch, New Zealand	"Scarcely scented, perennial herb. Stems erect, up to c. 1 m tall, glabrous or with a few scattered hairs, striate, simple or branched at base or above." [Asteraceae]

404	Unpalatable to grazing animals	y
	Source(s)	Notes
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	"Leucanthemum vulgare" ... "In California, it is most invasive in moist grassland and coast scrub. Livestock generally avoid grazing the foliage, and milk from dairy cattle that have consumed the plant can have an unpleasant flavor." [Related species unpalatable to cattle]
	Adler, B. 1999. Outwitting Deer. Globe Pequot Press, Guilford, CT	"Plants Rarely Damaged - This is the ultimate list, a combination of deer-resistant plants from a variety of sources in a number of places." [List includes <i>Leucanthemum maximum</i>]

405	Toxic to animals	
	Source(s)	Notes
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	Unknown. Related taxa may be slightly toxic

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Gardenguides.com. 2014. Shasta Daisy Diseases. http://www.gardenguides.com/96734-shasta-daisy-diseases.html . [Accessed 12 Mar 2014]	"Shasta daisies (<i>Leucanthemum</i>) and their chrysanthemum cousins have a long list of diseases, as the University of Massachusetts Extension Service admits before listing them all on a fact sheet; yet, when given full sun, good soil that is well-drained and the proper amount of water, they're basically trouble-free. Humidity, too much rain, poor air circulation, heavy soil or a combination of these conditions can increase the odds of certain diseases having an impact on Shasta daisies."

407	Causes allergies or is otherwise toxic to humans	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown. No evidence found

Qsn #	Question	Answer
408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Gardenology.org. 2014. <i>Leucanthemum maximum</i> . http://www.gardenology.org/wiki/Leucanthemum_maximum . [Accessed 12 Mar 2014]	"Features: ☑ fire resistant"
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	No evidence

409	Is a shade tolerant plant at some stage of its life cycle	n
	Source(s)	Notes
	Learn 2 Grow. 2014. <i>Leucanthemum maximum</i> . http://www.learn2grow.com/plants/leucanthemum-maximum/ . [Accessed 12 Mar 2014]	"Sun Exposure - Full Sun, Partial Sun"

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Learn 2 Grow. 2014. <i>Leucanthemum maximum</i> . http://www.learn2grow.com/plants/leucanthemum-maximum/ . [Accessed 12 Mar 2014]	"Soil pH - Neutral, Alkaline Soil Drainage - Average Soil type - Clay, Loam, Sand"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Webb, C. J., Sykes, W. R., & Garnock-Jones, P. J. 1988. Flora of New Zealand Volume IV. Botany Division, DSIR, Christchurch, New Zealand	"Scarcely scented, perennial herb. Stems erect, up to c. 1 m tall, glabrous or with a few scattered hairs, striate, simple or branched at base or above."

412	Forms dense thickets	n
	Source(s)	Notes
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	"...an uncommon perennial to 0.7 m tall" ... "Max chrysanthemum has escaped cultivation as an ornamental in some disturbed areas of the North Coast, Central Coast, western South Coast Ranges, and western Transverse Ranges, to 200 m." ... " [Tends not to dominate areas like the related, and highly invasive <i>L. vulgare</i>]

501	Aquatic	n
	Source(s)	Notes
	Webb, C. J., Sykes, W. R., & Garnock-Jones, P. J. 1988. Flora of New Zealand Volume IV. Botany Division, DSIR, Christchurch, New Zealand	"Waste places, especially roadsides, pasture, cemeteries,..." [Terrestrial]

502	Grass	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Webb, C. J., Sykes, W. R., & Garnock-Jones, P. J. 1988. Flora of New Zealand Volume IV. Botany Division, DSIR, Christchurch, New Zealand	Asteraceae
503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Webb, C. J., Sykes, W. R., & Garnock-Jones, P. J. 1988. Flora of New Zealand Volume IV. Botany Division, DSIR, Christchurch, New Zealand	"Scarcely scented, perennial herb." [Asteraceae]
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Webb, C. J., Sykes, W. R., & Garnock-Jones, P. J. 1988. Flora of New Zealand Volume IV. Botany Division, DSIR, Christchurch, New Zealand	"Scarcely scented, perennial herb. Stems erect, up to c. 1 m tall, glabrous or with a few scattered hairs, striate, simple or branched at base or above. Basal and lower cauline lvs petiolate, narrow-elliptic, acute to obtuse at apex, cuneate, evenly 1-serrate, glabrous, up to c. 30 × 4 cm; cauline lvs similar to basal but above becoming smaller, apetiolate, amplexicaul, the uppermost lanceolate to linear and sometimes almost entire. Involucral bracts 6-12 mm long, glabrous; margins and apex brown, membranous; inner bracts at least with extended apical flap. Capitula solitary, (50)-70-120 mm diam.; ray florets 20-40; ligules white; disc florets numerous, yellow. Achenes 2.5-4 mm long, dark brown with paler ribs; achenes of disc florets ± terete or somewhat flattened, with 10 ± equal ribs, and corona 0; achenes of ray florets similar to those of disc florets but with lateral ribs sometimes somewhat thicker, and an irregular corona up to c. 1 mm long."
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	No evidence
602	Produces viable seed	y
	Source(s)	Notes
	Plants for a Future. 2014. <i>Leucanthemum maximum</i> . http://www.pfaf.org/user/Plant.aspx?LatinName=Leucanthemum+maximum . [Accessed 11 Mar 2014]	"Seed - sow spring in a greenhouse"
603	Hybridizes naturally	
	Source(s)	Notes

Qsn #	Question	Answer
	Learn 2 Grow. 2014. <i>Leucanthemum maximum</i> . http://www.learn2grow.com/plants/leucanthemum-maximum/ . [Accessed 11 Mar 2014]	" <i>Leucanthemum maximum</i> has been crossed with its sister species, <i>Leucanthemum lacustre</i> to produce numerous showy hybrids known collectively as 'Shasta Daisies', many of which have become popular garden staples." [Potentially Yes. Artificial hybrids possible]
	Flora of North America Editorial Committee. 2006. Flora of North America: North of Mexico. Magnoliophyta: Asteridae, part 6: Asteraceae, part 1. Oxford University Press, Oxford, UK	"The name Shasta daisy of horticulture is associated also with <i>Leucanthemum ×superbum</i> (Bergmans ex J. Ingram) Bergmans ex D. H. Kent, which is generally thought to have been derived from hybrids between <i>L. maximum</i> and <i>L. lacustre</i> . Cultivars of "Shasta daisy" number in the dozens, including "single," "double," "quill," and "shaggy" forms; they may be encountered as waifs or persisting from abandoned plantings." [Artificial hybrids possible]

604	Self-compatible or apomictic	
	Source(s)	Notes
	Greiner, R. 2013. The impact of polyploidy on genetic structure and reproductive isolation in the genus <i>Leucanthemum</i> Mill.(Compositae, Anthemideae). PhD Dissertation. University of Regensburg, Regensburg, Germany	"Concerning <i>Leucanthemum</i> , Villard (1970) reported incompatibility of the widespread species <i>L. vulgare</i> (2x) and <i>L. ircutianum</i> (4x)." [Unknown for <i>L. maximum</i>]

605	Requires specialist pollinators	n
	Source(s)	Notes
	Plants for a Future. 2014. <i>Leucanthemum maximum</i> . http://www.pfaf.org/user/Plant.aspx?LatinName=Leucanthemum+maximum . [Accessed 11 Mar 2014]	"The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, flies, beetles, Lepidoptera"

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	<i>Leucanthemum vulgare</i> "Reproduces by seed and vegetatively from creeping roots and root fragments." [No evidence for <i>L. maximum</i>]

607	Minimum generative time (years)	1
	Source(s)	Notes
	Calflora: 2014. Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of Calif. Herbaria. [web application]. Berkeley, California: The Calflora Database [a non-profit organization]. http://www.calflora.org/ . [Accessed 12 Mar 2014]	" <i>Leucanthemum maximum</i> , a dicot, is an annual or perennial herb that is not native to California; it was introduced from elsewhere and naturalized in the wild." [Annual. Capable of reaching reproductive maturity in <1 year]

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	

Qsn #	Question	Answer
	Source(s)	Notes
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	L. vulgare - "Seeds disperse with water, mud, soil movement, animals, and vehicle tires and other human activities." [Unknown for L. maximum, but possibly has similar dispersal vectors]
702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Flora of North America Editorial Committee. 2006. Flora of North America: North of Mexico. Magnoliophyta: Asteridae, part 6: Asteraceae, part 1. Oxford University Press, Oxford, UK	"(widely cultivated, sparingly adventive)."
703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown
704	Propagules adapted to wind dispersal	y
	Source(s)	Notes
	Miles, J. 2013. Weeds of the Monaro: a guide to identification and control. Snowy River Shire Council, Berridale, AU	"Oxeye daisy seed is wind-spread. It may also grow from stem pieces." ... "Shasta daisy (<i>Leucanthemum maximum</i>), a larger plant, is another occasional garden escape." [Presumably also wind dispersed]
705	Propagules water dispersed	
	Source(s)	Notes
	Jepson Flora Project (eds.). 2014. Jepson eFlora, http://ucjeps.berkeley.edu/IJM.html . [Accessed 12 Mar 2014]	"Disturbed areas, forest, streambanks; 600–1500 m." [Although presence along streambanks is indicative of an adaptation for disturbance, the seed of <i>L. maximum</i> may be moved by water in these habitats]
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	L. vulgare - "Seeds disperse with water, mud, soil movement, animals, and vehicle tires and other human activities." [Unknown for L. maximum, but possibly has similar dispersal vectors]
706	Propagules bird dispersed	n
	Source(s)	Notes
	Wheeler, J.R., Marchant, N.G. & Lewington, M. 2002. Flora of the South West: Dicotyledons. UWA Publishing, Crawley, Western Australia	"Fruits cylindric, approx. 3 mm long, ribbed, hairless; pappus a minute crown or rim."

Qsn #	Question	Answer
707	Propagules dispersed by other animals (externally)	
	Source(s)	Notes
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	L. vulgare - "Seeds disperse with water, mud, soil movement, animals, and vehicle tires and other human activities." [Unknown for L. maximum, but possibly has similar dispersal vectors]
708	Propagules survive passage through the gut	
	Source(s)	Notes
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	L. vulgare - "Seeds can survive ingestion by animals." [Unknown for L. maximum]
801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown
802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Royal Botanic Gardens Kew. 2008. Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/ . [Accessed 12 Mar 2014]	"Storage Behaviour: Orthodox p Storage Conditions: Viability is halved after >5 years storage under laboratory conditions (Priestley, 1986)" [Possibly Yes]
	DiTomaso, J. 2007. Weeds of California and Other Western States, Volume 1. UCANR Publications, Oakland, CA	L. vulgare - "Some seeds can remain viable for up to about 20 years or more under field conditions." [Related species with persistent seed bank]
803	Well controlled by herbicides	y
	Source(s)	Notes
	Klein, H.. 2011. oxeye daisy <i>Leucanthemum vulgare</i> Lam. Alaska Natural Heritage Program. Anchorage, AK, http://aknhp.uaa.alaska.edu . [Accessed 12 Mar 2014]	"Management Oxeye daisy can be killed by intensive cultivation. Herbicide applications have proven successful in controlling this species. Applications of nitrogen fertilizers are almost as effective at reducing canopy cover as herbicides. Effective biological control agents have not been found." [Herbicides would presumably provide effective control of the less invasive L. maximum]
804	Tolerates, or benefits from, mutilation, cultivation, or fire	n
	Source(s)	Notes
	Klein, H.. 2011. oxeye daisy <i>Leucanthemum vulgare</i> Lam. Alaska Natural Heritage Program. Anchorage, AK, http://aknhp.uaa.alaska.edu . [Accessed 12 Mar 2014]	L. vulgare - "Oxeye daisy can be killed by intensive cultivation." [Would presumably also kill the less invasive L. maximum]
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	

Qsn #	Question	Answer
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Broad climate suitability (Broad distribution, and elevation range exceeds 1000 m)
- Widely naturalized
- A disturbance weed
- Other *Leucanthemum* species have become invasive
- Unpalatable to deer
- Tolerates a wide range of soil conditions
- Seeds freely
- Capable to reach maturity in one growing season
- Seeds dispersed intentionally by people, by wind, and possibly unintentionally
- Seeds may possibly persist in soil

Low Risk or Desirable Traits

- A temperate species (may only be invasive at higher elevation in tropics)
- Unarmed (no spines, thorns or burrs)
- Requires full sun
- Used as an ornamental & to attract & benefit pollinators
- Herbicides and cultivation may provide effective control

Second Screening Results

Reported as a weed of cultivated lands> Yes (See 3.02)

Unpalatable to grazers> Yes

Outcome = Reject (High Risk)