

Taxon: <i>Gilia tricolor</i>	Family: Polemoniaceae
Common Name(s): bird's eyes tri color gilia	Synonym(s): <i>Gilia tricolor</i> f. <i>nivalis</i> Voss <i>Gilia tricolor</i> subsp. <i>tricolor</i> <i>Gilia tricolor</i> var. <i>longipedicellata</i> ~

Assessor: Assessor	Status: Assessor Approved	End Date: 29 Sep 2014
WRA Score: 4.5	Designation: L	Rating: Low Risk

Keywords: Annual, Wildflower, Naturalized, Self-Compatible, Bee-pollinated

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)	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		
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		
405	Toxic to animals	y=1, n=0	n
406	Host for recognized pests and pathogens	y=1, n=0	n
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n
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		

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	y=1, n=-1	n
604	Self-compatible or apomictic	y=1, n=-1	y
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		
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)	y=1, n=-1	y
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
	Baldwin, B.G., Goldman, D.H., Keil, D.J., Patterson, R., & Rosatti, T.J. (eds.). 2012. The Jepson Manual. Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded. University of California Press, Berkeley and Los Angeles	No evidence

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 25 Sep 2014]	"Native: Southwestern U.S.A.: United States - California [n. & c.]"

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]	

203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Dave's Garden. 2014. PlantFiles: Birds-eye - <i>Gilia tricolor</i> . http://davesgarden.com/guides/pf/go/1942/ . [Accessed 26 Sep 2014]	[Able to grow in >5 hardiness zones] Hardiness: USDA Zone 3a - USDA Zone 10b
	The Watershed Nursery. 2012. <i>Gilia tricolor</i> . http://www.watershednursery.com/nursery/plant-finder/gilia-tricolor/ . [Accessed 26 Sep 2014]	[Elevation range exceeds 1000 m, demonstrating environmental versatility] "Elevation: Between 0 and 4000 feet"

Qsn #	Question	Answer
	Porter, J. M. 2013. <i>Gilia</i> , in Jepson Flora Project (eds.) Jepson eFlora. http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=50826 . [Accessed 26 Sep 2014]	[Elevation range exceeds 1000 m, demonstrating environmental versatility] "G. tricolor subsp. diffusa" ... "Open grassland, hills, valleys; 90–1530 m. North Coast, Outer North Coast Ranges, Inner North Coast Ranges, Cascade Range Foothills, Sierra Nevada Foothills, Sacramento Valley (Sutter Buttes), San Joaquin Valley, San Francisco Bay Area, Inner South Coast Ranges, w Mojave Desert."
204	Native or naturalized in regions with tropical or subtropical climates	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence. Reported as naturalize or as a casual alien in regions with temperate climates.
205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Sold in commercial wildflower seed mixes, and reported to be naturalized or a cultivation escape in a number of states and countries outside its native range.
301	Naturalized beyond native range	y
	Source(s)	Notes
	Australian Plant Name Index. 2014. Polemoniaceae - <i>Gilia tricolor</i> . http://www.anbg.gov.au/cgi-bin/apni?taxon_id=271533 . [Accessed 25 Sep 2014]	"APC Comment: In addition to <i>G. tricolor</i> , plants of the <i>G. capitata</i> complex, tentatively named as <i>G. rubra</i> and <i>G. capitata</i> are in cultivation or incipiently naturalised in SA, but identification is difficult. APC Dist.: SA (naturalised)"
	Aplaca, J. 2012. Non-native species new to Texas with comments on other species. <i>Phytoneuron</i> 2012-95: 1–6	" <i>Gilia tricolor</i> Benth. (Polemoniaceae) was a very common wildflower species in a ditch near the Westchase area of Houston, apparently growing from seeds sown in late 2009. The site was visited the next two years and seedlings were observed, but it was not visited again to see if the plants were flowering. The species is native to California and also known to be naturalized in Colorado and Massachusetts (BONAP 2012). There are no <i>Gilia</i> species known from southeast Texas (Correll & Johnston 1970; Hatch et al. 1990). This species is characterized by its tricolor corolla; yellow with purple spots below the blue-violets lobes (Fig. 1). It is the first member of Polemoniaceae to be added to the list of non-native plants of Texas (Nesom et al. 2010; Aplaca 2010). Harris Co.: Houston, Westchase area, growing alongside ditch behind the Robinson Library all the way to and past Walnut Bend; Key Map 489Y; with <i>Lupinus</i> , <i>Bromus</i> , <i>Lolium</i> , <i>Phlox</i> , all possibly seeded, 19 Apr 2010, Aplaca 790 (SBSC, SWT)."
	Lowery, C. A. 1983. Wild flowers: An aesthetic way of conserving water and fuel in Florida. <i>Proceedings of the Florida State Horticultural Society</i> 96: 178-180	"Table 2. Flowers that will naturalize but are not native to Florida." [List includes <i>Gilia tricolor</i>]

Qsn #	Question	Answer
	Dehnen-Schmutz, K., Touza, J., Perrings, C., & Williamson, M. 2007. The horticultural trade and ornamental plant invasions in Britain. <i>Conservation Biology</i> , 21(1): 224-231	"Table 3. The 26 species available from four or more nurseries out of eight in the 1860s and their availability from nurseries today (according to the Plant Finder [Lord 1987; Royal Horticultural Society 2004])." [<i>Gilia tricolor</i> - Status = casual "(i.e., not persisting in Britain without reintroduction, unlikely to be permanent...")]
	Imada, C. 2012. Hawaiian Native and Naturalized Vascular Plants Checklist (December 2012 update). Bishop Museum Technical Report 60. Bishop Museum, Honolulu, HI	No evidence in the Hawaiian Islands

302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Randall, R.P. 2012. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

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

304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. 2012. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

305	Congeneric weed	
	Source(s)	Notes
	Randall, R.P. 2012. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	[Several species listed as escaped or naturalized, but no information found on any significant impacts as invasive weeds] " <i>Gilia achilleifolia</i> - naturalized and a cultivation escape <i>Gilia capitata</i> - Naturalized, Casual Alien, Included in list of Environmental weeds <i>Gilia inconspicua</i> - Casual alien <i>Gilia laciniata</i> - Casual alien <i>Gilia micrantha</i> - Casual alien <i>Gilia multicaulis</i> - Casual alien, cultivation escape <i>Gilia pungens</i> - Weed (of undetermined impacts) <i>Gilia rigidula</i> - Weed (of undetermined impacts)"

401	Produces spines, thorns or burrs	n
	Source(s)	Notes

Qsn #	Question	Answer
	Abrams, L. & Ferris, R.S. 1923. An Illustrated Flora of the Pacific States: Geraniaceae to Scrophulariaceae, geraniums to figworts. Stanford University Press, Stanford, CA	[No evidence] "Erect annual, 0.5-3 dm tall, stems simple or branched, lightly pubescent or villous to glabrate, usually densely stipitate-glandular or puberulent above and on pedicels and calyces. Lower leaves 1.5-10 cm long, sometimes forming rosette at base, bipinnately lobed, the rachis and lobes filiform, glabrous, to lightly pubescent or villous; upper leaves somewhat shorter, becoming reduced and bract-like in the inflorescence ..."

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

403	Parasitic	n
	Source(s)	Notes
	Abrams, L. & Ferris, R.S. 1923. An Illustrated Flora of the Pacific States: Geraniaceae to Scrophulariaceae, geraniums to figworts. Stanford University Press, Stanford, CA	"Erect annual, 0.5-3 dm tall..." [No evidence. Polemoniaceae]

404	Unpalatable to grazing animals	
	Source(s)	Notes
	The Watershed Nursery. 2012. <i>Gilia tricolor</i> . http://www.watershednursery.com/nursery/plant-finder/gilia-tricolor/ . [Accessed 26 Sep 2014]	[Possibly Unpalatable] "Deer Resistant"
	Hormay, A. L. 1940. Palatabilities of foothill range plants for cattle. Forest Research Notes. Research Note No. 25. USDA Forest Service in Cooperation with the University of California, Berkeley	[Possibly unpalatable] "The following palatability figures represent preliminary information on a class of vegetation in California which has received comparatively little study in the past but is now claiming the attention of many experimental and land planning agencies. This vegetation is commonly referred to as the "annual type" because the herbaceous ground cover is dominated to the extent of 95 to 99 percent by annual plants, both introduced and native." [Gilia tricolor - Percent Palatability = 0]

405	Toxic to animals	n
	Source(s)	Notes
	California Poison Control System. 2009. Know Your Plants. http://www.calpoison.org/hcp/KNOW%20YOUR%20PLANTS-plant%20list%20for%20CPCS%2009B.pdf . [Accessed 26 Sep 2014]	"Table 1. – Nontoxic Plants by Common Name" [List includes <i>Gilia</i> spp.]
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

406	Host for recognized pests and pathogens	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Right Plants 4 Me. 2014. <i>Gilia tricolor</i> . http://www.rightplants4me.co.uk/content/plantPlantID=1581&LatinName=Gilia%20tricolor . [Accessed 26 Sep 2014]	"Pests: Trouble Free Diseases: Trouble Free"

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	California Poison Control System. 2009. Know Your Plants. http://www.calpoison.org/hcp/KNOW%20YOUR%20PLANTS-plant%20list%20for%20CPCS%2009B.pdf . [Accessed 26 Sep 2014]	"Table 1. – Nontoxic Plants by Common Name" [List includes <i>Gilia</i> spp.]
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	S&S Seeds. 2014. <i>Gilia tricolor</i> . http://www.ssseeds.com/plant-database/gilia-tricolor/ . [Accessed 26 Sep 2014]	"Characteristics / Comments: fire retardent properties Fire Resistant / Low Fuel: TRUE"
	Abrams, L. & Ferris, R.S. 1923. An Illustrated Flora of the Pacific States: Geraniaceae to Scrophulariaceae, geraniums to figworts. Stanford University Press, Stanford, CA	[An annual herb unlikely to accumulate biomass that contributes to wildfires] Genus Description: "Annual, biennial, or perennial herbs" Species Description: "Erect annual, 0.5-3 dm tall"

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	Right Plants 4 Me. 2014. <i>Gilia tricolor</i> . http://www.rightplants4me.co.uk/content/plantPlantID=1581&LatinName=Gilia%20tricolor . [Accessed 26 Sep 2014]	"Preferred Aspect: Full Sun"
	Dave's Garden. 2014. PlantFiles: Birds-eye - <i>Gilia tricolor</i> . http://davesgarden.com/guides/pf/go/1942/ . [Accessed 29 Sep 2014]	[May be somewhat shade tolerant] "Sun Exposure: Full Sun" ... "On Sep 12, 2010, Ian01 from Rio de Janeiro Brazil wrote: A carefree and well branched plant that showed good tolerance to tropical climate (semi-shade conditions)."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Right Plants 4 Me. 2014. <i>Gilia tricolor</i> . http://www.rightplants4me.co.uk/content/plantPlantID=1581&LatinName=Gilia%20tricolor . [Accessed 26 Sep 2014]	"Likes Soil Type: Any reasonably fertile soil Chalky Loam Loam Sandy Sandy Loam Silty" "Likes PH: Slightly Acid - Neutral - Slightly Alkaline"

Qsn #	Question	Answer
411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Abrams, L. & Ferris, R.S. 1923. An Illustrated Flora of the Pacific States: Geraniaceae to Scrophulariaceae, geraniums to figworts. Stanford University Press, Stanford, CA	"Erect annual, 0.5-3 dm tall, stems simple or branched ... "

412	Forms dense thickets	n
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	[No evidence, and an annual that would not be likely to exclude other vegetation] " <i>Gilia tricolor</i> (Polemoniaceae) is a winter annual native to California. It is a delicate plant of small stature (typically ,15 cm tall) and rarely occurs in densely vegetated, fertile, grassland sites."
	Abrams, L. & Ferris, R.S. 1923. An Illustrated Flora of the Pacific States: Geraniaceae to Scrophulariaceae, geraniums to figworts. Stanford University Press, Stanford, CA	No evidence

501	Aquatic	n
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	[Terrestrial] " <i>Gilia tricolor</i> (Polemoniaceae) is a winter annual native to California. It is a delicate plant of small stature (typically ,15 cm tall) and rarely occurs in densely vegetated, fertile, grassland sites."

502	Grass	n
	Source(s)	Notes
	Kubitzki, K. (ed.). 2004. The Families and genera of vascular plants. Volume VI. Flowering plants, Dicotyledons: Celastrales, Oxalidales, Rosales, Cornales, Ericales. Springer-Verlag, Berlin, Heidelberg, New York	Polemoniaceae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Kubitzki, K. (ed.). 2004. The Families and genera of vascular plants. Volume VI. Flowering plants, Dicotyledons: Celastrales, Oxalidales, Rosales, Cornales, Ericales. Springer-Verlag, Berlin, Heidelberg, New York	"Polemoniaceae" ... " <i>Gilia</i> " ... "Annuals or herbaceous to suffrutescent perennials, rarely subshrubs; basal leaves often in a rosette, often senescent at bolting, cauline leaves alternate, abruptly to gradually reduced in size; pubescence eglandular or glandular."

Qsn #	Question	Answer
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Abrams, L. & Ferris, R.S. 1923. An Illustrated Flora of the Pacific States: Geraniaceae to Scrophulariaceae, geraniums to figworts. Stanford University Press, Stanford, CA	[Annual. No evidence] "Erect annual, 0.5-3 dm tall, stems simple or branched ... "

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Baldwin, B.G., Goldman, D.H., Keil, D.J., Patterson, R., & Rosatti, T.J. (eds.). 2012. The Jepson Manual. Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded. University of California Press, Berkeley and Los Angeles	No evidence

602	Produces viable seed	y
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	" <i>G. tricolor</i> germinates in late fall and, depending on rainfall patterns, flowering occurs between late February and mid April. Small seeds (.0.7 mm) disperse passively from openings at the top of dried fruit capsules by late May."

603	Hybridizes naturally	n
	Source(s)	Notes
	Grant, V. 1953. The Role of Hybridization in the Evolution of the Leafy-Stemmed <i>Gilias</i> . <i>Evolution</i> , 7(1): 51-64	" <i>Gilia tricolor</i> , which apparently forms a comparium by itself, since it is not known to hybridize with any other species either in nature or in the breeding plot (part III), presents no difficulties at all from the taxonomic point of view."
	Grant, V. 1966. The selective origin of incompatibility barriers in the plant genus <i>Gilia</i> . <i>American Naturalist</i> , 100 (911): 99-118	"Table 4 shows that hybridization between the sympatric foothill- and- valley species is blocked by strong incompatibility barriers." ... "One species in this class, <i>Gilia tricolor</i> , is isolated from all other species by an incompatibility block which has never been breached in numerous attempts (Grant, 1952b)."

604	Self-compatible or apomictic	y
	Source(s)	Notes
	Morrell, P. L., & Rieseberg, L. H. 1998. Molecular tests of the proposed diploid hybrid origin of <i>Gilia achilleifolia</i> (Polemoniaceae). <i>American Journal of Botany</i> , 85(10): 1439-1453	" <i>Gilia tricolor</i> is primarily outcrossing but facultatively autogamous..."

605	Requires specialist pollinators	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	"The species' showy, funnel-form flowers are displayed in loose panicles of 1–5, and are pollinated by a variety of small bees, bumble bees, lepidoptera, and flies."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Schmidt, M.G. 1980. <i>Growing California Native Plants</i> . University of California Press, Berkeley and Los Angeles, CA	[Annual. No evidence of vegetative spread] "Culture: Gilias may be planted from seed broadcast in late autumn to early spring, but they germinate more freely when planted with the early autumn rains. If allowed to go to seed, they will usually provide volunteers the following season."

607	Minimum generative time (years)	1
	Source(s)	Notes
	Abrams, L. & Ferris, R.S. 1923. <i>An Illustrated Flora of the Pacific States: Geraniaceae to Scrophulariaceae, geraniums to figworts</i> . Stanford University Press, Stanford, CA	[Annual] "Erect annual, 0.5-3 dm tall, stems simple or branched ... "

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	Source(s)	Notes
	Abrams, L. & Ferris, R.S. 1923. <i>An Illustrated Flora of the Pacific States: Geraniaceae to Scrophulariaceae, geraniums to figworts</i> . Stanford University Press, Stanford, CA	[Unknown. No means of external attachment, but small size could allow for adherence to vehicles or footwear in mud or soil] "capsule ovoid, 4-6 mm long; seeds small, brown, several in each cell."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	GrowOrganic.com. 2014. PV Flowering Pollinator Mix. http://www.groworganic.com/pv-flowering-pollinator-mix-lb.html . [Accessed 29 Sep 2014]	[Bird's Eyes = <i>Gilia tricolor</i> . Sold in commercial seed mix] "Annuals and Biennial Open Pollinated. Attracts a wide range of insects and pollinators. Contains: Arroyo Lupine, Golden Lupine, Chinese Houses, Five Spot, California Poppy, Lacey Phacelia, Baby Blue Eyes, Dwarf Sunflower, White Alyssum, Globe Gilia, Tidy Tips, Bird's Eyes, and Primrose. 1/4 lb covers approximately 500 sq ft if broadcast."

Qsn #	Question	Answer
703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	[Unknown. Small size could result in inadvertent dispersal and contamination of soil or plant materials growing in the vicinity] "G. tricolor germinates in late fall and, depending on rainfall patterns, flowering occurs between late February and mid April. Small seeds (.0.7 mm) disperse passively from openings at the top of dried fruit capsules by late May."

704	Propagules adapted to wind dispersal	
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	[No specific adaptations, but wind likely facilitates the passive dispersal of the small seeds] "G. tricolor germinates in late fall and, depending on rainfall patterns, flowering occurs between late February and mid April. Small seeds (.0.7 mm) disperse passively from openings at the top of dried fruit capsules by late May."

705	Propagules water dispersed	
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	[Small size may allow for some dispersal by overland flow of water following heavy rains] " <i>Gilia tricolor</i> (Polemoniaceae) is a winter annual native to California. It is a delicate plant of small stature (typically .15 cm tall) and rarely occurs in densely vegetated, fertile, grassland sites." ... "Small seeds (.0.7 mm) disperse passively from openings at the top of dried fruit capsules by late May."

706	Propagules bird dispersed	n
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	"Small seeds (.0.7 mm) disperse passively from openings at the top of dried fruit capsules by late May."

707	Propagules dispersed by other animals (externally)	
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	[Unknown. No means of external attachment, but small size could allow for attachment to animals in mud stuck to fur, or feet] "Small seeds (.0.7 mm) disperse passively from openings at the top of dried fruit capsules by late May."

708	Propagules survive passage through the gut	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown, but unlikely to be consumed & internally dispersed

801	Prolific seed production (>1000/m2)	
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Qsn #	Question	Answer
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	[Unknown, but small seeded] "Small seeds (.0.7 mm) disperse passively from openings at the top of dried fruit capsules by late May."
802	Evidence that a persistent propagule bank is formed (>1 yr)	y
	Source(s)	Notes
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	" <i>G. tricolor</i> seeds show substantial dormancy, but patterns of emergence in the second year following planting roughly conformed to those observed in the 2001–2002 growing season..."
	Royal Botanic Gardens Kew. 2008. Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/ . [Accessed 29 Sep 2014]	[Lab storage conditions suggest seeds may persist in the soil] "Storage Behaviour: Orthodox Storage Conditions: Long-term storage under IPGRI preferred conditions at RBG Kew, WP. Oldest collection 15 years; germination change 100 to 100%, 13 years, 1 collection"
803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species, & generally regarded as a desirable plant where grown.
804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	Right Plants 4 Me. 2014. <i>Gilia tricolor</i> . http://www.rightplants4me.co.uk/content/plant/PlantID=1581&LatinName=Gilia%20tricolor . [Accessed 29 Sep 2014]	[Annual plant. Probably does not tolerate pruning] "Generic Pruning: No specific pruning required Specific Pruning: An annual plant that can be discarded at the end of the season and confined to the compost heap. "
	Baack, E. J., Emery, N. C., & Stanton, M. L. 2006. Ecological factors limiting the distribution of <i>Gilia tricolor</i> in a California grassland mosaic. <i>Ecology</i> , 87(11): 2736-2745	[Unknown if adult plants can tolerate mutilation or cultivation, but seedling emergence may require some disturbance] "This study aims to establish the ecological context driving population boundaries in <i>Gilia tricolor</i> , a native California annual restricted to distinct habitat patches in the coastal range of California. A transplant experiment in one hillside <i>G. tricolor</i> population examined the roles of competition and soil chemistry as well as litter and biomass accumulation in setting local population boundaries. Results indicate that boundaries are maintained primarily by inhibition of seedling emergence by vegetation and litter, and that upslope and downslope population boundaries are heterogeneous in litter biomass and transplant performance. Consistent emergence inhibition in undisturbed, peripheral sites maintains limits to the distribution of <i>G. tricolor</i> in this population. Fine-scaled ecological heterogeneity and heterogeneous boundary conditions likely play important roles in limiting adaptation and subsequent range expansion at population boundaries in <i>G. tricolor</i> ."

Qsn #	Question	Answer
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Elevation range exceeds 1000 m, and can grow in >5 hardiness zones demonstrating environmental versatility
- Naturalized outside native range
- Tolerates many soil types
- Self-compatible
- Able to reach maturity in <1 year (annual herb)
- Seeds dispersed passively by dehiscence & intentionally by people
- Small seeds could possibly be accidentally dispersed
- Seeds able to be stored for extended periods and show dormancy. May form a persistent seed bank
- Limited ecological information, particularly on dispersal vectors, makes accurate risk prediction difficult

Low Risk Traits

- Despite naturalization, no reports of negative impacts documented
- Mediterranean to temperate climate species (may only become established at higher elevations in the tropics)
- Unarmed (no spines, thorns or burrs)
- No reports of toxicity
- Ornamental
- Beneficial to bees and other pollinators
- Not reported to hybridize with other *Gilia* species
- Not reported to spread vegetatively

Second Screening Results for Herb or Low Stature Shrubby Life Form

(A) Reported as a weed of cultivated lands? No

Outcome = Accept (Low Risk)