

Taxon: <i>Sida ciliaris</i> L.	Family: Malvaceae
Common Name(s): bracted fanpetals fringed fanpetals	Synonym(s): <i>Sida anomala</i> A.St.-Hil.

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 12 Oct 2021
WRA Score: 7.0	Designation: H(HPWRA)	Rating: High Risk

Keywords: Procumbent Herb, Disturbance Weed, Open Habitats, Palatable, Annual/Perennial

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)	High
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	y
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	n
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	n=0, y = 2*multiplier (see Appendix 2)	n
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	n
405	Toxic to animals	y=1, n=0	n
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n
408	Creates a fire hazard in natural ecosystems		
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	n
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)	y=1, n=-1	y
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	n
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed		
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut	y=1, n=-1	y
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
	Woodson, R. E., Schery, R. W., & Robyns, A. (1965). Flora of Panama. Part VI. Family 115. Malvaceae. Annals of the Missouri Botanical Garden, 52(4), 497–578	[Not domesticated] "A polymorphic species distributed from southern United States to Argentina and in the West Indies; savannas."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2021). 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"	High
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 8 Oct 2021]	"Native Northern America SOUTHEASTERN U.S.A.: United States [Florida] SOUTH-CENTRAL U.S.A.: United States [Texas] NORTHERN MEXICO: Mexico [Baja, Chihuahua, San Luis Potosí, Sinaloa, Tamaulipas] SOUTHERN MEXICO: Mexico [Campeche, Chiapas, Colima, Guerrero, Jalisco, México, Michoacán de Ocampo, Morelos, Nayarit, Oaxaca, Puebla, Querétaro, Veracruz de Ignacio de la Llave, Yucatán] Southern America CARIBBEAN: Anguilla, Antigua and Barbuda, Barbados, Guadeloupe, Grenada, Jamaica, St. Lucia, Montserrat, Martinique, United States [Puerto Rico] CENTRAL AMERICA: Belize, Costa Rica, Guatemala, Nicaragua, Panama NORTHERN SOUTH AMERICA: Guyana, Venezuela BRAZIL: Brazil WESTERN SOUTH AMERICA: Bolivia, Colombia, Ecuador [Galápagos, El Oro, Guayas, Manabí], Peru [Amazonas, Lambayeque, Tumbes] SOUTHERN SOUTH AMERICA: Argentina [Chaco, Formosa], Paraguay"

Qsn #	Question	Answer
202	Quality of climate match data	High
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 8 Oct 2021]	

203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Dave's Garden. (2021). <i>Sida ciliaris</i> . https://davesgarden.com/guides/pf/go/101773/ . [Accessed 11 Oct 2021]	"Hardiness: USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)"
	Tropicos.org. (2021). Missouri Botanical Garden. http://www.tropicos.org/ . [Accessed 11 Oct 2021]	Collected over a broad elevational and latitudinal range: 0 m - 2880 m elevation, 02°56'N to 26°50'N latitude, and 01°16'S to 26°35'S latitude

Qsn #	Question	Answer
204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	<p>USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/. [Accessed 8 Oct 2021]</p>	<p>"Native Northern America SOUTHEASTERN U.S.A.: United States [Florida] SOUTH-CENTRAL U.S.A.: United States [Texas] NORTHERN MEXICO: Mexico [Baja, Chihuahua, San Luis Potosí, Sinaloa, Tamaulipas] SOUTHERN MEXICO: Mexico [Campeche, Chiapas, Colima, Guerrero, Jalisco, México, Michoacán de Ocampo, Morelos, Nayarit, Oaxaca, Puebla, Querétaro, Veracruz de Ignacio de la Llave, Yucatán] Southern America CARIBBEAN: Anguilla, Antigua and Barbuda, Barbados, Guadeloupe, Grenada, Jamaica, St. Lucia, Montserrat, Martinique, United States [Puerto Rico] CENTRAL AMERICA: Belize, Costa Rica, Guatemala, Nicaragua, Panama NORTHERN SOUTH AMERICA: Guyana, Venezuela BRAZIL: Brazil WESTERN SOUTH AMERICA: Bolivia, Colombia, Ecuador [Galápagos, El Oro, Guayas, Manabí], Peru [Amazonas, Lambayeque, Tumbes] SOUTHERN SOUTH AMERICA: Argentina [Chaco, Formosa], Paraguay Naturalized (natzd. elsewhere)"</p>
	<p>Wagner, W.L., Herbst, D.R.& Lorence, D.H. (2021). Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. https://naturalhistory2.si.edu/botany/hawaiianflora/. [Accessed 8 Oct 2021]</p>	<p>"<i>Sida ciliaris</i> L. Status: Naturalized Distribution: K/ O/ Ka (Honokanaia)/ Mo (Kaunakakai)/ L (Manele)/ M"</p>

205	Does the species have a history of repeated introductions outside its natural range?	n
	Source(s)	Notes
	<p>Oppenheimer, H. (2008). New Hawaiian plant records for 2007. Bishop Museum Occasional Papers 100: 22-38</p>	<p>[Limited evidence of introduction outside native range, other than Hawaiian Islands] "Only recently found as a naturalized species in Hawai'i but already documented from Kaua'i (Staples et al. 2003: 14–15), O'ahu (Wagner et al. 1997: 59), Lāna'i (Oppenheimer 2007: 26), Maui (Oppenheimer & Bartlett 2000: 6; Starr et al. 2004: 24), and Kaho'olawe (Starr et al. 2006: 36). With the following voucher specimen collected on Moloka'i, this species is now known from all of the main islands except Ni'ihau."</p>

301	Naturalized beyond native range	y
	Source(s)	Notes

Qsn #	Question	Answer
	Starr, F., Starr, K. & Loope, L.L. (2004). New plant records from the Hawaiian Archipelago. Bishop Museum Occasional Papers 79: 20-30	[East Maui] " <i>Sida ciliaris</i> L. Range extension. Previously known from Kaua'i, O'ahu, and West Maui (Wagner et al., 1997; Oppenheimer & Bartlett, 2000; Staples et al., 2003), <i>S. ciliaris</i> is now known from East Maui, where it is found near roadsides in the Kanahā Beach area of Kahului. This collection represents a range extension to East Maui. Material examined: MAUI: East Maui, Kahului, Kanahā Beach, growing on side of Amala Rd along with <i>Scaevola sericea</i> and <i>Indigofera suffruticosa</i> , 15 ft [5 m], 23 Nov 2001, Starr & Martz 011123-1."
	Starr, F., Starr, K. & Loope, L.L. (2006). New plant records from the Hawaiian Archipelago. Bishop Museum Occasional Papers 87: 31-43	[Kahoolawe] " <i>Sida ciliaris</i> (red flowered sida) was previously known from Kaua'i, O'ahu, and Maui (Wagner et al., 1997; Oppenheimer & Bartlett, 2000; Staples et al., 2003, Starr et al., 2004). This prostrate shrub is now also known from Kaho'olawe where it is found in the "lawn" at base camp. Material examined. KAHO'OLAWA: Honokanaia, growing in disturbed lawn at base camp near the galley, in association with <i>Indigofera spicata</i> and <i>Cenchrus ciliaris</i> , 20 ft [6 m], 13 Oct 2004, Starr, Starr, Higashino, & Abbott 041013-1."
	Staples, G. W., Imada, C.T. & Herbst, D. R. (2003). New Hawaiian plant records for 2001. Bishop Museum Occasional Papers. 74: 7-21	[Kauai] " <i>Sida ciliaris</i> L. New island record. First collected in 1987 and reported as naturalized on O'ahu (Wagner et al., 1997: 59) and later on Maui (Oppenheimer & Bartlett, 2000: 6), this is the first record of this species on Kaua'i, where the species appears to be well established in the Po'ipū area. Material examined. KAUA'I: Köloa Distr., Po'ipū, Po'ipū Beach Park, forming low mats in dirt and gravel parking lot and in lawn, 17 Aug 2001, W. Char et al.s. n. (BISH 683118); same loc., 22 Nov 2000, W. Char 20.031; Kalanipo Park, just N of parking area in secondary vegetation, elev. ca. 6 m, 20 Mar 2001, T. Flynn 6793 (BISH, MO, NY, PTBG, US)."
	Oppenheimer, H. (2007). New plant records from Moloka'i, Lāna'i, Maui, and Hawai'i for 2006. Bishop Museum Occasional Papers 96:17-34	[Lanai] " <i>Sida ciliaris</i> L. New island record. While only recently found as a naturalized species in Hawai'i, <i>S. ciliaris</i> was already documented from Kaua'i (Staples et al. 2003: 14–15), O'ahu (Wagner et al. 1997: 59), Maui (Oppenheimer & Bartlett 2000: 6; Starr et al. 2004: 24), and Kaho'olawe (Starr et al. 2006: 36). With the following voucher specimen collected on Lāna'i, it is now known from all the main islands except Ni'ihau and Moloka'i. Material examined. LĀNA'I: Mānele, 5 m, common along road from harbor to Hulopo'e, and in lawns at Hulopo'e Beach Park, 20 Oct 2006, Oppenheimer H100640."
	Oppenheimer, H. (2008). New Hawaiian plant records for 2007. Bishop Museum Occasional Papers 100: 22-38	[Molokai] " <i>Sida ciliaris</i> L. New island record. Only recently found as a naturalized species in Hawai'i but already documented from Kaua'i (Staples et al. 2003: 14–15), O'ahu (Wagner et al. 1997: 59), Lāna'i (Oppenheimer 2007: 26), Maui (Oppenheimer & Bartlett 2000: 6; Starr et al. 2004: 24), and Kaho'olawe (Starr et al. 2006: 36). With the following voucher specimen collected on Moloka'i, this species is now known from all of the main islands except Ni'ihau. Material examined. MOLOKA'I: Kaunakakai, growing in waste areas around town, 15 m, 20 Feb 2007, Oppenheimer H20712."

Qsn #	Question	Answer
	Wagner, W.L., Shannon, R.K. & Herbst, D.R. (1997). Contributions to the Flora of the Hawai'i. VI. Bishop Museum Occasional Papers 48: 51-65	[Oahu] " <i>Sida ciliaris</i> L. New state record. There are 4 conspicuous differences (2 of them vegetative) between <i>Sida ciliaris</i> and the 7 naturalized or indigenous species of <i>Sida</i> reported for the Hawaiian Islands by Bates (1990). <i>Sida ciliaris</i> is the only species in the Hawaiian Islands that is a procumbent herb; it has much smaller leaf blades than any of the other species, with a length of only 1–2 cm; the petals are often rose colored, although they are sometimes red-orange or yellowish; and the schizocarps are muricate (Fryxell, 1988). Other characters described by Fryxell include leaf blades narrowly elliptic, few-toothed apically, and glabrous above; stipules linear to oblanceolate; flowers subsessile in dense terminal clusters; calyx lobes divided in apical half; schizocarp conical; and mericarps 5–8. A plant of disturbed, often arid habitats, <i>S. ciliaris</i> was previously known from southern North America, South America, and the West Indies (Fryxell, 1988) and is now also known from several localities on O'ahu. Material examined. O'AHU: Ke'ehi Lagoon Park, in lawns, 5 May 1987, Whistler s.n. (BISH); Makakilo, lowland dry grassland and forest W of Makakilo town and below paved road leading toward Camp Timberline access road, growing along road with other alien species, uncommon, 22 Oct. 1990, Imada & Char s.n. (BISH); Pearl Harbor, Pearl City Peninsula, near Surtass Bldg., 13 Aug. 1991, E. Funk s.n. (BISH); Honolulu Dist., Camp Catlin area, at edge of parking lot, locally common, ca. 10 ft., 15 March 1991, Herbst 9373 (BISH); 'Ewa Dist., Barbers Point Naval Air Station, naturalized in lawn in front of terminal, ca. 1.5 m, 7 Sept. 1992, Nagata 4250 (BISH). Whistler s.n. and E. Funk s.n. det. by D. Bates."
	Oppenheimer, H.L. & Bartlett, R.T. (2000). New plant records from Maui, O'ahu, and the Hawai'i Islands. Bishop Museum Occasional Papers 64: 1-10	[West Maui] " <i>Sida ciliaris</i> L. New island record. This taxon was first reported as naturalized in the Hawaiian Islands by Wagner et al. (1997: 59–60), citing collections from several locations on O'ahu. The following voucher documents it's occurrence on Maui. Material examined: MAUI: West Maui, Lahaina District, Wahikuli, lawn and roadside weed at Lahaina Civic Center access road, near the railroad tracks, 6 m, 21 Aug 1999, Oppenheimer H89923."
	Guézou, A., Trueman, M., Buddenhagen, C. E., Chamorro, S., Guerrero, A. M., Pozo, P., & Atkinson, R. (2010). An extensive alien plant inventory from the inhabited areas of Galapagos. PLoS One, 5(4), e10276	Table S1: <i>Sida ciliaris</i> - Introduction status in Galapagos = Ac) Accidental (introduced unintentionally, naturalized

302	Garden/amenity/disturbance weed	y
	Source(s)	Notes
	Leon Levy Native Plant Preserve. (2021). <i>Sida ciliaris</i> . https://www.levypreserve.org/Plant-Listings/Sida-ciliaris . [Accessed 11 Oct 2021]	"Habitat: <i>Sida ciliaris</i> grows in sandy Human Altered environments (yards, roadsides/abandoned fields)." [Grows in disturbed habitats, but not regarded as a weed on this website]
	Oppenheimer, H. (2007). New plant records from Moloka'i, Lāna'i, Maui, and Hawai'i for 2006. Bishop Museum Occasional Papers 96:17-34	"LĀNA'I: Hulopo'e, 15 m, locally common near rock walls and under hedges"
	Oppenheimer, H.L. & Bartlett, R.T. (2000). New plant records from Maui, O'ahu, and the Hawai'i Islands. Bishop Museum Occasional Papers 64: 1-10	"lawn and roadside weed at Lahaina Civic Center access road, near the railroad tracks"

Qsn #	Question	Answer
	Starr, F., Starr, K. & Loope, L.L. (2006). New plant records from the Hawaiian Archipelago. Bishop Museum Occasional Papers 87: 31-43	"Material examined. KAHO'OLAWA: Honokanaia, growing in disturbed lawn at base camp near the galley, in association with <i>Indigofera spicata</i> and <i>Cenchrus ciliaris</i> , 20 ft [6 m], 13 Oct 2004, Starr, Starr, Higashino, & Abbott 041013-1."
	Staples, G. W., Imada, C.T. & Herbst, D. R. (2003). New Hawaiian plant records for 2001. Bishop Museum Occasional Papers. 74: 7-21	"Material examined. KAUA'I: Kōloa Distr., Po'ipū, Po'ipū Beach Park, forming low mats in dirt and gravel parking lot and in lawn, 17 Aug 2001, W. Char et al.s. n. (BISH 683118); same loc., 22 Nov 2000, W. Char 20.031; Kalanipo Park, just N of parking area in secondary vegetation, elev. ca. 6 m, 20 Mar 2001, T. Flynn 6793 (BISH, MO, NY, PTBG, US)."
	Wagner, W.L., Shannon, R.K. & Herbst, D.R. (1997). Contributions to the Flora of the Hawai'i. VI. Bishop Museum Occasional Papers 48: 51-65	"Material examined. O'AHU: Ke'ehi Lagoon Park, in lawns, 5 May 1987, Whistler s.n. (BISH); Makakilo, lowland dry grassland and forest W of Makakilo town and below paved road leading toward Camp Timberline access road, growing along road with other alien species, uncommon, 22 Oct. 1990, Imada & Char s.n. (BISH); Pearl Harbor, Pearl City Peninsula, near Surtass Bldg., 13 Aug. 1991, E. Funk s.n. (BISH); Honolulu Dist., Camp Catlin area, at edge of parking lot, locally common, ca. 10 ft., 15 March 1991, Herbst 9373 (BISH); 'Ewa Dist., Barbers Point Naval Air Station, naturalized in lawn in front of terminal, ca. 1.5 m, 7 Sept. 1992, Nagata 4250 (BISH). Whistler s.n. and E. Funk s.n. det. by D. Bates."
	Starr, F., Starr, K. & Loope, L.L. (2004). New plant records from the Hawaiian Archipelago. Bishop Museum Occasional Papers 79: 20-30	"Material examined: MAUI: East Maui, Kahului, Kanahā Beach, growing on side of Amala Rd along with <i>naupaka</i> (<i>Scaevola sericea</i>) and <i>Indigofera suffruticosa</i> "
	Oppenheimer, H. (2008). New Hawaiian plant records for 2007. Bishop Museum Occasional Papers 100: 22-38	"MOLOKA'I: Kaunakakai, growing in waste areas around town, 15 m,"
	WRA Specialist. (2021). Personal Communication	In Hawaii, this plant occurs in disturbed, or otherwise human-modified habitats, lawns, roadsides, etc. but has not been identified as causing any significant problems. Here regarded as a minor weed of unspecified impacts.

303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

304	Environmental weed	n
	Source(s)	Notes
	Chau, M. M., & Reyes, W. R. (2014). Effects of light, flooding, and weeding on experimental restoration of an endangered Hawaiian fern. <i>Restoration Ecology</i> , 22(1), 107-116	[In this study of the endangered fern, <i>Marsilea villosa</i> , <i>Sida ciliaris</i> is present in the study site, but does not occur with greater than 3% cover and is not identified as invasive by the authors] "This study shows that if reintroducing new populations, the need for labor-intensive weed management might be reduced if <i>M. villosa</i> is planted under conditions of flooding and moderate shade."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

305	Congeneric weed	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[<i>Sida acuta</i>] "This deep-rooted plant competes strongly with crops and pastures for light and nutrients. It is a serious weed of several crops, ranging from onions and beans in Brazil to coffee in Colombia, coconuts in Trinidad, rubber in Malaysia, pastures in the Markham Valley of Papua New Guinea, and sugarcane and pastures in Australia. Together with flannel weed (see page 511), spinyhead sida has become one of the most serious weeds of crops and pastures in the Top End of the Northern Territory. Although it is grazed occasionally, infested areas are usually ignored by stock. In consequence, the animals eating more of the remaining species, reduce their competitiveness and favour the spread and persistence of the weed."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	A number of <i>Sida</i> species are listed as invasive weeds

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 8 Oct 2021]	[No evidence] "Herbs, probably perennial, 0.1–0.3 m. Stems procumbent, branched from base, with appressed, stellate, usually 4-rayed hairs. Leaves usually crowded at stem apex; stipules partially adnate to petiole, 1-veined, linear to oblanceolate, 4–12 mm, usually longer than petiole; petiole 2–10 mm, 1/4–1/2 length of blade, with appressed stellate hairs; blade narrowly elliptic, 1–2 cm, usually 2–3 times longer than wide, base truncate to subcordate, margins dentate apically, entire basally, apex acute or obtuse, surfaces stellate-hairy abaxially, glabrous adaxially. Inflorescences terminal, subsessile, usually 1–10-flowered, flowers crowded at branch apices because of shortening of internodes, obscurely solitary, axillary. Pedicels adnate to petiole of leaflike bract, 0.1–0.4 cm, shorter than calyx. Flowers: calyx obscurely angulate, 4–6 mm, hirsute, lobes ovate; petals usually salmon-pink, red-orange, sometimes yellowish, 5–11 mm; staminal column hairy; style 5–8-branched. Schizocarps conic, 5–6 mm diam., subglabrous; mericarps 5–8, prominently muricate, otherwise glabrous."

402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	Unknown. No evidence found. Other <i>Sida</i> species documented to have allelopathic properties

Qsn #	Question	Answer
403	Parasitic	n
	Source(s)	Notes
	Woodson, R. E., Schery, R. W., & Robyns, A. (1965). Flora of Panama. Part VI. Family 115. Malvaceae. Annals of the Missouri Botanical Garden, 52(4), 497–578	"Herb, perennial, or suffrutex, up to 45 cm high but usually shorter, the stem prostrate to ascending or erect, diffusely branched from the base, strigose-pubescent, often hirsute to tomentose toward the apex, the hairs mostly stellate or submalpighiaceus." [Malvaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Everitt, J.H., Drawe, D.L.& Lonard, R.I. (1999). Field Guide to the Broad-leaved Herbaceous Plants of South Texas: Used by Livestock and Wildlife. Texas Tech University Press, Lubbock, TX	"Frequent on sand or clayey loams in prairies, openings, and waste places in the Rio Grande Plains and Coastal Prairies. The leaves and stems are eaten by cattle."
	Everitt, J. H., Gonzalez, C. L., Scott, G., & Dahl, B. E. (1981). Seasonal food preferences of cattle on native range in the South Texas Plains. Journal of Range Management, 34(5), 384-388	"Table 2. Average seasonal botanical composition of plant species (% \pm SE) in cattle diets on the Tijerina Ranch in south Texas." [Sida ciliaris comprised an average of 1.4% of cattle diets from Fall 1976 to Fall 1977]

405	Toxic to animals	n
	Source(s)	Notes
	Everitt, J.H., Drawe, D.L.& Lonard, R.I. (1999). Field Guide to the Broad-leaved Herbaceous Plants of South Texas: Used by Livestock and Wildlife. Texas Tech University Press, Lubbock, TX	[No evidence] "Frequent on sand or clayey loams in prairies, openings, and waste places in the Rio Grande Plains and Coastal Prairies. The leaves and stems are eaten by cattle."
	Burrows, G. E., & Tyrl, R. J. (2013). Toxic Plants of North America. Second Edition. Wiley-Blackwell, Hoboken, NJ	No evidence
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	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	
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	Unknown

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Burrows, G. E., & Tyrl, R. J. (2013). Toxic Plants of North America. Second Edition. Wiley-Blackwell, Hoboken, NJ	No evidence

Qsn #	Question	Answer
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	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	
	Source(s)	Notes
	Pilon, N. A., Cava, M. G., Hoffmann, W. A., Abreu, R. C., Fidelis, A., & Durigan, G. (2021). The diversity of post-fire regeneration strategies in the cerrado ground layer. <i>Journal of Ecology</i> , 109(1), 154-166	"Table 1 Ground-layer species strategies to colonize post-fire, based on their functional traits." [Seeders : Forbs which do not resprout after fire, colonizing mainly by seed germination - Includes <i>Sida ciliaris</i> . No information on fuel load or fire risk]
	WRA Specialist. (2021). Personal Communication	Distribution and habitat in Hawaii suggests this species is unlikely to increase fire risk, but information on flammability and contribution to fuel load are lacking

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 12 Oct 2021]	"Roadsides, pastures, disturbed habitats, usually in open areas"
	Dave's Garden. (2021). <i>Sida ciliaris</i> . https://davesgarden.com/guides/pf/go/101773/ . [Accessed 11 Oct 2021]	"Sun Exposure: Full Sun Sun to Partial Shade"
	The National Gardening Association. (2021). Fringed Fanpetals (<i>Sida ciliaris</i>). https://garden.org/plants/view/85199/Fringed-Fanpetals-Sida-ciliaris/ . [Accessed 12 Oct 2021]	"Sun Requirements: Full Sun Full Sun to Partial Shade"
	Everitt, J.H., Drawe, D.L. & Lonard, R.I. (1999). <i>Field Guide to the Broad-leaved Herbaceous Plants of South Texas: Used by Livestock and Wildlife</i> . Texas Tech University Press, Lubbock, TX	[Occurs in open, high light environments] "Frequent on sand or clayey loams in prairies, openings, and waste places in the Rio Grande Plains and Coastal Prairies."
	Wunderlin, R. P., B. F. Hansen, A. R. Franck, and F. B. Essig. (2021). <i>Atlas of Florida Plants</i> . USF Water Institute.] Institute for Systematic Botany, University of South Florida, Tampa. http://florida.plantatlas.usf.edu/ . [Accessed 12 Oct 2021]	[<i>Sida ciliaris</i>] "Rocky-clay soil, soft-shaley, in full sun - moist level disturbed area along road; former upper limit of dry forest and beginning of humid forest species, now much disturbed and with much <i>Dodonaea viscosa</i> ."
	WRA Specialist. (2021). Personal Communication	In Hawaii, this plant occurs in disturbed, or otherwise human-modified habitats, lawns, roadsides, and other generally high light environments

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Everitt, J.H., Drawe, D.L.& Lonard, R.I. (1999). Field Guide to the Broad-leaved Herbaceous Plants of South Texas: Used by Livestock and Wildlife. Texas Tech University Press, Lubbock, TX	"Frequent on sand or clayey loams in prairies, openings, and waste places in the Rio Grande Plains and Coastal Prairies."
	Texas Wildbuds. (2021). <i>Sida ciliaris</i> [Malvaceae]. http://www.texaswildbuds.com/sb/flower-database/redpink/sida-ciliaris/ . [Accessed 12 Oct 2021]	"Habitat: Sandy or clay soils in open areas along roadsides, in pastures and disturbed sites."
	Richardson, A. & King, K. (2011). Plants of Deep South Texas: A Field Guide to the Woody and Flowering Species. Texas A&M University Press, College Station, TX	"It grows primarily on sandy soils."
	The National Gardening Association. (2021). Fringed Fanpetals (<i>Sida ciliaris</i>). https://garden.org/plants/view/85199/Fringed-Fanpetals-Sida-ciliaris/ . [Accessed 12 Oct 2021]	"Soil pH Preferences: Moderately acid (5.6 – 6.0) Slightly acid (6.1 – 6.5) Neutral (6.6 – 7.3) Slightly alkaline (7.4 – 7.8)"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 8 Oct 2021]	"Herbs, probably perennial, 0.1–0.3 m. Stems procumbent, branched from base, with appressed, stellate, usually 4-rayed hairs."

412	Forms dense thickets	n
	Source(s)	Notes
	Oppenheimer, H. (2008). New Hawaiian plant records for 2007. Bishop Museum Occasional Papers 100: 22-38	"Kaunakakai, growing in waste areas around town, 15 m" [No evidence in this or other records of naturalization within the Hawaiian Islands]
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 12 Oct 2021]	"Roadsides, pastures, disturbed habitats, usually in open areas" [No evidence]
	Everitt, J.H., Drawe, D.L.& Lonard, R.I. (1999). Field Guide to the Broad-leaved Herbaceous Plants of South Texas: Used by Livestock and Wildlife. Texas Tech University Press, Lubbock, TX	[No evidence] "Frequent on sand or clayey loams in prairies, openings, and waste places in the Rio Grande Plains and Coastal Prairies."
	Clement, I. D. (1957). Studies in <i>Sida</i> (Malvaceae). Contributions from the Gray Herbarium of Harvard University, 180: 3-91	No evidence

501	Aquatic	n
	Source(s)	Notes
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 8 Oct 2021]	[Terrestrial] "Roadsides, pastures, disturbed habitats, usually in open areas; 0–100 m; Fla., Tex.; Mexico; West Indies; South America."

Qsn #	Question	Answer
502	Grass	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 8 Oct 2021]	Family: Malvaceae Subfamily: Malvoideae Tribe: Malveae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 8 Oct 2021]	Family: Malvaceae Subfamily: Malvoideae Tribe: Malveae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Everitt, J.H., Drawe, D.L. & Lonard, R.I. (1999). Field Guide to the Broad-leaved Herbaceous Plants of South Texas: Used by Livestock and Wildlife. Texas Tech University Press, Lubbock, TX	"Perennial: From a woody rootstock."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 11 Oct 2021]	[No evidence. Broad distribution] "Flowering year-round. Roadsides, pastures, disturbed habitats, usually in open areas; 0–100 m; Fla., Tex.; Mexico; West Indies; South America."

602	Produces viable seed	y
	Source(s)	Notes
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 11 Oct 2021]	"Schizocarps conic, 5–6 mm diam., subglabrous; mericarps 5–8, prominently muricate, otherwise glabrous."
	Leon Levy Native Plant Preserve. (2021). <i>Sida ciliaris</i> . https://www.levypreserve.org/Plant-Listings/Sida-ciliaris . [Accessed 11 Oct 2021]	"The ovary is superior with numerous locules and numerous seeds. The fruit is a numerous locule loculicidal capsule covered in small bumps."

603	Hybridizes naturally	
	Source(s)	Notes

Qsn #	Question	Answer
	Clement, I. D. (1957). Studies in <i>Sida</i> (Malvaceae). Contributions from the Gray Herbarium of Harvard University, 180: 3-91	[<i>Sida ciliaris</i> var. <i>mexicana</i> . Possibly Yes] "The species appears to be one of hybrid origin which is still in the process of segregation and recombination in much of its area. -Only in a few areas such as Jamaica is there any constancy in the nature of the population. In the southern part of its range, as in the northern, a tendency to narrow leaves and large flowers is strongly evident, and to a lesser extent 'in the intervening area."

604	Self-compatible or apomictic	
	Source(s)	Notes
	Cruden, R. W. (1977). Pollen-ovule ratios: a conservative indicator of breeding systems in flowering plants. <i>Evolution</i> , 31: 32-46	"Appendix 1. Pollen-ovule ratios of some angiosperms" [Breeding systems are reported for a number of taxa, but no information is provided for the entry on <i>Sida ciliaris</i>]
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 12 Oct 2021]	[Unknown. Self-compatibility documented in other species of <i>Sida</i>] "Inflorescences terminal, subsessile, usually 1–10-flowered, flowers crowded at branch apices because of shortening of internodes, obscurely solitary, axillary. Pedicels adnate to petiole of leaflike bract, 0.1–0.4 cm, shorter than calyx. Flowers: calyx obscurely angulate, 4–6 mm, hirsute, lobes ovate; petals usually salmon-pink, red-orange, sometimes yellowish, 5–11 mm; staminal column hairy; style 5–8-branched."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 12 Oct 2021]	[Floral morphology does not suggest specialization] "Inflorescences terminal, subsessile, usually 1–10-flowered, flowers crowded at branch apices because of shortening of internodes, obscurely solitary, axillary. Pedicels adnate to petiole of leaflike bract, 0.1–0.4 cm, shorter than calyx. Flowers: calyx obscurely angulate, 4–6 mm, hirsute, lobes ovate; petals usually salmon-pink, red-orange, sometimes yellowish, 5–11 mm; staminal column hairy; style 5–8-branched."
	Singh, D. K., Agnihotri, R. K., Singh, G., Ganie, S. A. & Sharma, R. (2014). Pollination Mechanism and Role of Insects in <i>Sida cordifolia</i> . <i>Int. J. Pharm. Sci. Rev. Res.</i> , 24(1): 139-142	[Related species are insect-pollinated] "On the basis of visitation rate and pollen load on their body parts honey bees (<i>Apis</i> spp.) and butterflies (<i>Pieris</i> spp.) were found to be the most efficient pollinators during the entire flowering period."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Pilon, N. A., Cava, M. G., Hoffmann, W. A., Abreu, R. C., Fidelis, A., & Durigan, G. (2021). The diversity of post-fire regeneration strategies in the cerrado ground layer. <i>Journal of Ecology</i> , 109(1), 154-166	[No evidence of vegetative spread] "Seeders : Forbs which do not resprout after fire, colonizing mainly by seed germination"

607	Minimum generative time (years)	1
	Source(s)	Notes

Qsn #	Question	Answer
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 12 Oct 2021]	"Herbs, probably perennial ... Flowering year-round."
	Dave's Garden. (2021). <i>Sida ciliaris</i> . https://davesgarden.com/guides/pf/go/101773/ . [Accessed 12 Oct 2021]	"It is a herbaceous annual or short lived perennial which has up to 14 inch tall ascending or prostrate stems."
	The National Gardening Association. (2021). Fringed Fanpetals (<i>Sida ciliaris</i>). https://garden.org/plants/view/85199/Fringed-Fanpetals-Sida-ciliaris/ . [Accessed 12 Oct 2021]	"Life cycle: Annual"

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y
	Source(s)	Notes
	Eason, M. (2018). <i>Wildflowers of Texas</i> . Timber Press, Portland, OR	"Fields, grasslands, pastures, open brushlands, roadsides and other open areas."
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	"Major Pathway/s: Contaminant, Herbal"
	Waterhouse, B. M., Mitchell, A. A., & Eldershaw, V. (2012). <i>Weeds of tropical Australia: how do they get here?</i> . In <i>Developing solutions to evolving weed problems</i> . 18th Australasian Weeds Conference, Melbourne, Victoria, Australia, 8-11 October 2012 (pp. 9-12). Weed Science Society of Victoria Inc.	"Table 1. Date of first naturalised record and probable entry pathways for some recent weeds of northern Australia" [<i>Sida ciliaris</i> - Probable pathway = Contaminant of military equipment]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	"Dispersed by: Humans"

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	[Possibly Yes. Not cultivated with produce, but a frequent weed of human-modified, disturbed, and potentially agricultural habitats] "Major Pathway/s: Contaminant, Herbal Dispersed by: Humans"

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	"Major Pathway/s: Contaminant, Herbal Dispersed by: Humans"
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed]	"Schizocarps conic, 5–6 mm diam., subglabrous; mericarps 5–8, prominently muricate, otherwise glabrous." [No adaptations for wind dispersal]

705	Propagules water dispersed	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 12 Oct 2021]	"Roadsides, pastures, disturbed habitats, usually in open areas" [Not described from riparian habitats]
	Wagner, W.L., Shannon, R.K. & Herbst, D.R. (1997). Contributions to the Flora of the Hawai'i. VI. Bishop Museum Occasional Papers 48: 51-65	[Not reported from riparian habitats in this or other records from Hawaiian Islands. Overland flow of water likely moves seeds, but generally unlikely to be a water-dispersed species] "lowland dry grassland and forest ... growing along road with other alien species ... at edge of parking lot ... naturalized in lawn in front of terminal"

706	Propagules bird dispersed	
	Source(s)	Notes
	Muñoz, J., Marín, G., & Rodríguez, J. R. (2005). Dieta de tres especies de aves colúmbidas en un hábitat xerofítico litoral del nororiente de Venezuela. <i>Saber</i> , 17(2), 215-223	[Consumed by Columbidae birds. Birds acting as seed predators. Unknown if any seeds survive ingestion] "Columbidae birds have a worldwide distribution but their alimentary ecology has been somewhat neglected. We endeavored to analyze seasonal variations in the diet of three typical species of the littoral xeric forests in the northeast of Venezuela: <i>Columbina squammata</i> , <i>Columbina passerine</i> , and <i>Leptotila verreauxi</i> . Monthly captures using mist nets were carried out all year long. After being netted, the birds were fed an emetic, 1.5% antimony potassium tartrate, to get them to regurgitate. Items were identified up to the genus and/or species category. The three species primarily consumed seeds (n = 21 spp), progressing eventually to invertebrates (insects and mollusks) and tiny stones. The greatest item diversity was during the rainy season. <i>C. squammata</i> showed the widest feeding scope, suggesting a greater capacity for adaptation and survival in these semiarid habitats. <i>C. passerine</i> revealed the greatest repletion rate, and <i>L. verreauxi</i> ingested the largest seeds. A partial overlap of feeding niches for <i>C. passerine</i> and <i>C. squammata</i> was observed (with an item coincidence of 57%). <i>Euphorbia maculate</i> was the only common species of the three doves. <i>Euphorbiaceae</i> , <i>Malvaceae</i> , and <i>Poaceae</i> were the food staples most frequently consumed, a preference for determinate vegetal species possibly being conditioned to phenological (e.g., fruiting patterns), physioanatomical (e.g., size, digestability), and coevolutionary (e.g., endozoochory mechanisms) factors. The generalist feeding behavior exhibited by the three species seems to indicate seasonal fluctuations in the availability of food resources."

707	Propagules dispersed by other animals (externally)	
	Source(s)	Notes
	Flora of North America. (2021). <i>Sida ciliaris</i> . http://www.efloras.org . [Accessed 12 Oct 2021]	[Possibly. Muricate, or pointed, mericarps, may be able to get tangled in or adhere to fur] "Schizocarps conic, 5–6 mm diam., subglabrous; mericarps 5–8, prominently muricate, otherwise glabrous."

708	Propagules survive passage through the gut	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Parejo, S., et al. (2019). Small size does not restrain frugivory and seed dispersal across the evolutionary radiation of Galápagos lava lizards. <i>Current Zoology</i> , 65(4), 353-361	"Figure 3 Quantitative plant-lizard seed dispersal network with all lizard droppings containing intact seeds (n = 370), collected from 2010 to 2016 in the eleven largest Galápagos islands. Interaction frequency was quantified as the number of droppings with at least one intact seed of any plant species. n = number of droppings collected and examined for seeds on each island. *Species not known to be dispersed by any other animal on the Galápagos." [Includes <i>Sida ciliaris</i>]
	Muñoz, J., Marín, G., & Rodríguez, J. R. (2005). Dieta de tres especies de aves colúmbidas en un hábitat xerofítico litoral del nororiente de Venezuela. <i>Saber</i> , 17(2), 215-223	[Consumed by Columbidae birds. Birds acting as seed predators. Unknown if any seeds survive ingestion] "Columbidae birds have a worldwide distribution but their alimentary ecology has been somewhat neglected. We endeavored to analyze seasonal variations in the diet of three typical species of the littoral xeric forests in the northeast of Venezuela: <i>Columbina squammata</i> , <i>Columbina passerine</i> , and <i>Leptotila verreauxi</i> . Monthly captures using mist nets were carried out all year long. After being netted, the birds were fed an emetic, 1.5% antimony potassium tartrate, to get them to regurgitate. Items were identified up to the genus and/or species category. The three species primarily consumed seeds (n = 21 spp), progressing eventually to invertebrates (insects and mollusks) and tiny stones. The greatest item diversity was during the rainy season. <i>C. squammata</i> showed the widest feeding scope, suggesting a greater capacity for adaptation and survival in these semiarid habitats. <i>C. passerine</i> revealed the greatest repletion rate, and <i>L. verreauxi</i> ingested the largest seeds. A partial overlap of feeding niches for <i>C. passerine</i> and <i>C. squammata</i> was observed (with an item coincidence of 57%). <i>Euphorbia maculate</i> was the only common species of the three doves. <i>Euphorbiaceae</i> , <i>Malvaceae</i> , and <i>Poaceae</i> were the food staples most frequently consumed, a preference for determinate vegetal species possibly being conditioned to phenological (e.g., fruiting patterns), physioanatomical (e.g., size, digestability), and coevolutionary (e.g., endozoochory mechanisms) factors. The generalist feeding behavior exhibited by the three species seems to indicate seasonal fluctuations in the availability of food resources."

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Clement, I. D. (1957). Studies in <i>Sida</i> (Malvaceae). Contributions from the Gray Herbarium of Harvard University, 180: 3-91	"Seeds usually with scattered stellate puberulence, denser near the hilum, 2-2.5 mm. radially, light brown, yellowish or nearly white in maturity, rarely purpurascens." [Densities unknown]

Qsn #	Question	Answer
802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Royal Botanic Gardens Kew. (2021) Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/ . [Accessed 12 Oct 2021]	"Storage Behaviour: Orthodox"
	WRA Specialist. (2021). Personal Communication	Unknown, but other <i>Sida</i> species (e.g. <i>Sida spinosa</i>) may form a seed bank that persists for 3.5 to 5.5 years

803	Well controlled by herbicides	y
	Source(s)	Notes
	Huff, S. & Rhodes, Jr., G. N. (2017). Arrowleaf Sida/Prickly Sida. D 51. University of Tennessee Institute of Agriculture, Knoxville, TN. http://utbfc.utk.edu . [Accessed 12 Oct 2021]	[Herbicides used to control <i>Sida spinosa</i> would likely prove effective if needed to control <i>Sida ciliaris</i>] "Timely herbicide applications are required to effectively control arrowleaf and prickly sida. To be adequately controlled, they must be sprayed before exceeding 3 inches tall. Few herbicides provide good control of arrowleaf/prickly sida. A herbicide containing aminopyralid such as ForeFront R&P HL / GrazonNext HL (aminopyralid + 2,4-D) or Chaparral (aminopyralid + metsulfuron) is required for adequate control."

804	Tolerates, or benefits from, mutilation, cultivation, or fire	n
	Source(s)	Notes
	Pilon, N. A., Cava, M. G., Hoffmann, W. A., Abreu, R. C., Fidelis, A., & Durigan, G. (2021). The diversity of post-fire regeneration strategies in the cerrado ground layer. <i>Journal of Ecology</i> , 109(1), 154-166	[<i>Sida ciliaris</i> does not resprout after fire. Recruits from seed bank] "Seeders : Forbs which do not resprout after fire, colonizing mainly by seed germination"

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	Unknown. No limiting factors known to have prevented spread throughout the islands

Summary of Risk Traits:

High Risk / Undesirable Traits

- Broad latitudinal and elevation range
- Grows and spreads in regions with tropical climates
- Naturalized on Kauai, Oahu, Molokai, Lanai, Maui, Kahoolawe (Hawaiian Islands) and elsewhere
- A weed of disturbed, or otherwise human-modified habitats, lawns, and roadsides
- Other *Sida* species are invasive weeds
- Reproduces by seeds
- Able to reach maturity in one growing season
- Seeds dispersed as a contaminant of equipment, potentially other items, by lizards (Galapagos), possibly by birds, and intentionally cultivated by people in some locations

Low Risk Traits

- Despite common occurrence as a disturbance weed, negative impacts are generally not reported
- Unarmed (no spines, thorns, or burrs)
- Palatable to browsing and grazing animals
- Non-toxic
- Occurs in high light environments (dense shade may inhibit establishment or spread)
- Not reported to spread vegetatively
- Herbicides may provide effective control
- Killed by fire (recruits from seed bank)