

Taxon: <i>Dichondra carolinensis</i> Michx.	Family: Convolvulaceae
Common Name(s): Carolina pony's foot Carolina ponysfoot grass ponysfoot kidney grass kidney weed ponyfoot	Synonym(s): <i>Demidofia repens</i> J.F.Gmel. <i>Dichondra caroliniana</i> Willd. ex DC. <i>Dichondra evolvulacea</i> var. <i>carolinensis</i> (Michx.) Poir. ex Kuntze

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 18 May 2023
WRA Score: 10.0	Designation: H(HPWRA)	Rating: High Risk

Keywords: Mat-forming herbs, Naturalized Elsewhere, Lawn Weed, Spreads vegetatively, Gravity-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)	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	n
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	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	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		

Qsn #	Question	Answer Option	Answer
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	y=1, n=0	y
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	y=1, n=-1	y
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	y
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	y=1, n=-1	y
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	y
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m2)		
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	n
803	Well controlled by herbicides	y=-1, n=1	y
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
	Austin, D. F., Demissew, S., & Young, J. (1998). Studies Of the Florida Convolvulaceae—VI. <i>Dichondra</i> . <i>Florida Scientist</i> , 61(3/4), 195-202	[Not domesticated] "Distribution: Originally an endemic to southeastern United States (Virginia, North Carolina, South Carolina, Georgia, Florida, Mississippi, Alabama, Arkansas, Louisiana, Oklahoma, Texas) and Bermuda; there are sporadic records of the species in other states (e.g., Missouri, Howell Co. 29 Apr. 1991. Summers 4210 MO; California, Solano Co. 2 Apr. 1943. Schaller! 42 MO). Found in pinelands, occasionally in hammocks. The species is less tolerant of full sun than <i>D. micrantha</i> and rarely grows where there is not some shade. Although found in lawns, the plants are usually restricted to the vicinity of buildings or under trees, particularly pines."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2023). 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
	KewScience. (2023). Plants of the World Online - <i>Dichondra carolinensis</i> . http://powo.science.kew.org . [Accessed 15 May 2023]	"Native to: Alabama, Arkansas, Bermuda, Connecticut, Delaware, District of Columbia, Florida, Georgia, Illinois, Kansas, Louisiana, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Ontario, Pennsylvania, South Carolina, Texas, Virginia, West Virginia Introduced into: Brazil Southeast, California, Pakistan, South Australia, Tennessee"

202	Quality of climate match data	High
	Source(s)	Notes
	KewScience. (2023). Plants of the World Online - <i>Dichondra carolinensis</i> . http://powo.science.kew.org . [Accessed 15 May 2023]	"Native to: Alabama, Arkansas, Bermuda, Connecticut, Delaware, District of Columbia, Florida, Georgia, Illinois, Kansas, Louisiana, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Ontario, Pennsylvania, South Carolina, Texas, Virginia, West Virginia Introduced into: Brazil Southeast, California, Pakistan, South Australia, Tennessee "

203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Malakhova, O., Wilber, W. L., Wilson, S. B., Russo, K. A., Jones, J. C., Moffis, B. L., Walker, J. S. & Iannone III, B. V. (2023). Getting Into the "weeds": An Introduction to Common Lawn Plants and Their Ecological Benefits in North Central Florida: FOR388. UF/IFAS Extension: https://edis.ifas.ufl.edu/publication/FR459 . [Accessed 16 May 2023]	"Hardiness Zone: 7A-11"
	Harrison, M. (2006). Groundcovers for the South. Pineapple Press Inc., Sarasota, FL	"Zones: 8-9"
	Tropicos.org. (2023). Tropicos v3.4.1. Missouri Botanical Garden. http://www.tropicos.org/ . [Accessed 16 May 2023]	Collected from sea level to 920 ft elevation, and over a latitude of 25°37'N (sea level) to 36°42'N (920 ft).

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Austin, D. F., Demissew, S., & Young, J. (1998). Studies Of the Florida Convolvulaceae—VI. <i>Dichondra</i> . Florida Scientist, 61(3/4), 195-202	"Distribution: Originally an endemic to southeastern United States (Virginia, North Carolina, South Carolina, Georgia, Florida, Mississippi, Alabama, Arkansas, Louisiana, Oklahoma, Texas) and Bermuda"
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Preferred Climate/s: Subtropical"
	Gallaher, T.J., Brock, K., Kennedy, B.H., Imada, C.T., Imada, K., & Walvoord, N. (2023). Plants of Hawai'i. http://www.plantsofhawaii.org.. [Accessed 16 May 2023]	No evidence in the Hawaiian Islands to date

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	Degen, J. L., Criley, R. A. & McLain, D. A. (1973). Ground Covers for Hawaii Landscapes. Circular 457. Cooperative Extension Service, University of Hawaii, Honolulu, HI	"Commonly grown as a lawn substitute requiring little maintenance, dichondra produces a dense mass of bright-green, roundish leaves." [Cultivated in the Hawaiian Islands]
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	" <i>Dichondra carolinensis</i> Michx. Convolvulaceae Synonym/s (n° of refs): <i>Dichondra repens</i> Forst. var. <i>carolinensis</i> (Michx.) Choisy (2) Total N° of Refs: 10 Preferred Climate/s: Subtropical Major Pathway/s: Herbal, Ornamental Dispersed by: Humans References: United States of America-W-161, Japan-N-287, North America-G-249, Japan-N-794, Japan-N-1278, Global-W-1349, Brazil-N-1597, Japan-W-1977."
	KewScience. (2023). Plants of the World Online - <i>Dichondra carolinensis</i> . http://powo.science.kew.org . [Accessed 16 May 2023]	"Introduced into: Brazil Southeast, California, Pakistan, South Australia, Tennessee "

301	Naturalized beyond native range	y
	Source(s)	Notes
	UT Herbarium - TENN. (2023). Vascular Plant Herbarium - <i>Dichondra carolinensis</i> * Michx. https://herbarium.utk.edu/ . [Accessed 17 May 2023]	"*Non-native taxon known to be naturalized in Tennessee"

Qsn #	Question	Answer
	Ferreira, P.P.A. & Delgado-Junior, G.C. (2023). <i>Dichondra</i> in Flora e Funga do Brasil. Jardim Botânico do Rio de Janeiro. https://floradobrasil.jbrj.gov.br/FB6986.. [Accessed 17 May 2023]	"Origin: Naturalized Distribution: Geographic distribution Confirmed occurrences: Southeast (São Paulo) Phytogeographic Domains: Atlantic Rainforest Vegetation Type: High Altitude Grassland"
	Mito, T. & Uesugi, T. (2004). Invasive Alien Species in Japan: The Status Quo and the New Regulation for Prevention of their Adverse Effects. <i>Global Environmental Research</i> 8(2): 171-191	"Table 1 Alien species recognized to be established in Japan or found in the Japanese wild (as of October 27, 2004)" [Includes <i>Dichondra carolinensis</i>]
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	[Reported to be naturalized in Japan and Brazil] "References: United States of America-W-161, Japan-N-287, North America-G-249, Japan-N-794, Japan-N-1278, Global-W-1349, Brazil-N-1597, Japan-W-1977."

302	Garden/amenity/disturbance weed	y
	Source(s)	Notes
	Eason, M. (2018). <i>Wildflowers of Texas</i> . Timber Press, Portland, OR	"A common lawn weed. Widely distributed in eastern half of state. Spreading because of accidental human transport."
	PictureThis. (2023). Carolina ponyfoot - <i>Dichondra carolinensis</i> . https://www.picturethisai.com/wiki/Dichondra_carolinensis.html . [Accessed 17 May 2023]	"Carolina ponyfoot is native to southeastern North America and Bermuda. Today, it can be found throughout the United States, the Caribbean, Japan, and Brazil. It roots in disturbed areas with dry soils in USDA zones 10 to 11. It is considered an invasive species in Brazil and Japan, and in the U.S. it is considered a weed because it spreads quickly through self-sowing. It also forms dense mats in large spaces such as lawns or meadows, making it an aggressive ground cover. When necessary, carolina ponyfoot can be treated mechanically (e.g. with mowing) or chemically (e.g. with glyphosate herbicides)."
	Cotterman, L., Waite, D., & Weakley, A. (2019). <i>Wildflowers of the Atlantic Southeast</i> . Timber Press, Portland, OR	"Creeping, mat-forming perennial of lawns, roadsides, and moist pinelands; rarely seen in natural habitats."
	Tveten, J., (1997). <i>Wildflowers of Houston and Southeast Texas</i> . University of Texas Press, Austin, TX	"Houston residents encounter pony-foot primarily as a weed in their lawns. A prostrate, creeping perennial, it branches and roots at the nodes to form dense mats in late winter and early spring."
	Foley, D. J. (1972). <i>Ground Covers for Easier Gardening</i> . Dover Publications, New York, NY	"like most carpeting plants, it can be invaded by weeds, especially in its starting stages, and it tends to bunch so that it needs mowing when this condition occurs." ... "While it is widely claimed that dichondra kills out various types of lawn grass, it does not conquer Bermuda grass-at least in the California region- but rather covers it, giving a greener appearance in spring."
	Brosnan, J. T., & DeFrank, J. (2008). <i>Chemical Weed Control Options for Turfgrasses in Hawai'i</i> . CTAHR, University of Hawaii at Manoa, Honolulu, HI	[Controlled as a weed of turfgrass] "Turfgrass weed control in Hawai'i is challenging. Environmental conditions in the state favor the year-round growth of weed populations. Winter weather doesn't eliminate weed populations like it does on the mainland; thus, many species traditionally classified as "annual" act as perennials here in Hawai'i."
	WRA Specialist. (2023). Personal Communication	Although commonly labeled as a weed of lawns, <i>Dichondra carolinensis</i> is intentionally cultivated and appreciated for its low-growing, carpet-like appearance and its ability to provide ground cover in areas where grass may not thrive. It is generally not known for invasive or aggressive behavior that would classify it as a weed in agriculture or natural environments, but in this assessment is categorized as a minor weed of landscaping.

Qsn #	Question	Answer
303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Eason, M. (2018). <i>Wildflowers of Texas</i> . Timber Press, Portland, OR	"A common lawn weed. Widely distributed in eastern half of state. Spreading because of accidental human transport."
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

304	Environmental weed	n
	Source(s)	Notes
	Eason, M. (2018). <i>Wildflowers of Texas</i> . Timber Press, Portland, OR	"A common lawn weed. Widely distributed in eastern half of state. Spreading because of accidental human transport."
	WRA Specialist. (2023). Personal Communication	<i>Dichondra carolinensis</i> is intentionally cultivated and appreciated for its low-growing, carpet-like appearance and its ability to provide ground cover in areas where grass may not thrive. It is generally not known for invasive or aggressive behavior that would classify it as an environmental weed.
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

305	Congeneric weed	y
	Source(s)	Notes
	Ventosa-Febles, E., Cordero, N., & Acevedo-Rodriguez, P. (2022). <i>Dichondra repens</i> (kidneyweed). CABI Compendium. https://doi.org/10.1079/cabicompendium.110231 . [Accessed 17 May 2023]	"Summary of Invasiveness: <i>Dichondra repens</i> is a prostrate perennial herbaceous plant found in grassland, lawns, scrub, crops, forest clearings and margins. It is listed in the Global Compendium of Weeds as an 'agricultural weed' and 'garden thug'. It may have been deliberately planted as low maintenance ground cover to replace grass lawns; it can establish spontaneously in lawns as a weed. <i>D. repens</i> has naturalized in many countries including China, Japan, South Africa and the USA. In California, it has escaped gardens to become a localized weed throughout the state. It is described as very invasive under humid and low traffic conditions. Although listed as invasive in several countries in Europe, there are no details on impacts."
	Zhenghao Xu & Le Chang. (2017). <i>Identification and Control of Common Weeds: Volume 3</i> . Zhejiang University Press, Hangzhou and Springer Nature Singapore	[<i>Dichondra micrantha</i>] "Ecology <i>Dichondra micrantha</i> usually grows densely and always establishes an advantageous population. Harmfulness A common weed in uplands, wetlands, or other areas." ... "Management Chemical control can choose methoxone and tribenuron-methyl."
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	[<i>Dichondra repens</i>] "Dispersed by: Humans, Vehicles, Escapee Weed of: Cotton, Orchards & Plantations, Pastures"

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

Qsn #	Question	Answer
	Austin, D. F., Demissew, S., & Young, J. (1998). Studies Of the Florida Convolvulaceae–VI. <i>Dichondra</i> . Florida Scientist, 61(3/4), 195-202	[No evidence] "Spreading, mat-forming herbs. Stems mostly 2-50 cm long, sparsely pubescent, the trichomes appressed or erect and medifixed, the internodes (0.5-)1-2(-4) cm long. Petiole 1-5(-10.5) cm long, sparsely pubescent; leave blade suborbicular-reniform, somewhat cupped, thin, (6-) 10-20(25) mm long, (9-)12-22(-30) mm wide, the base broadly cordate with a relatively shallow sinus, the apex rounded to shallowly emarginate, the veins on upper surface not conspicuous or depressed, upper leaf surface often remotely appressed pubescent, trichomes of lower leaf surface denser, appressed. Peduncle at flowering shorter or more often as long as or longer than petioles, (4-)8-20(-42) mm long, the flowers rarely below leaves, usually at level of leaves, or above. Flower 3-6 mm in diameter; calyx campanulate, the sepals 1.5-3 mm long, spatulate, obtuse apically, densely spreading pubescent without and ciliate on margins; corolla creamy-white, shorter than the calyx, 1.5-3 mm long, lobes oblong to slightly ovoid, the apex mostly obtuse, glabrous; anthers white, 0.3 mm long; styles 1-1.3 mm long, the stigmas at the same level as anthers; calyx lobes at fruiting accrescent to 3.5-5 mm long; peduncle at fruiting straight or barely nodding. Fruit contained within the longer calyx, 2-3 mm long, 1.6--2 mm thick, containing (1-)2 seeds. Seeds obovoid to pyriform, 1.8-2.7 mm long, tan to brown, smooth, dull."

402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	Unknown. No evidence found.

403	Parasitic	n
	Source(s)	Notes
	Austin, D. F., Demissew, S., & Young, J. (1998). Studies Of the Florida Convolvulaceae–VI. <i>Dichondra</i> . Florida Scientist, 61(3/4), 195-202	"Spreading, mat-forming herbs." [Not parasitic]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Thill, R. E. (1983). Deer and cattle forage selection on Louisiana pine-hardwood sites. Research Paper S0-196. USDA Forest Service Southern Forest Experiment Station. New Orleans, Louisiana	"Appendix 2 Seasonal composition of cattle and tame deer diets, percent frequency of occurrence of forages, and relative forage selectivity ratings on two recently clearcut pine-hardwood sites in central Louisiana." [<i>Dichondra carolinensis</i> browsed by deer]

Qsn #	Question	Answer
405	Toxic to animals	n
	Source(s)	Notes
	Bryson, C.T.& DeFelice, M.S. (2009). Weeds of the South. University of Georgia Press, Athens, GA	"Toxic Properties - None reported."
	Thill, R. E. (1983). Deer and cattle forage selection on Louisiana pine-hardwood sites. Research Paper S0-196. USDA Forest Service Southern Forest Experiment Station. New Orleans, Louisiana	[No evidence] "Appendix 2 Seasonal composition of cattle and tame deer diets, percent frequency of occurrence of forages, and relative forage selectivity ratings on two recently clearcut pine-hardwood sites in central Louisiana." [Dichondra carolinensis browsed by deer]
	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

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	The Spruce. (2023). How to Grow Dichondra. https://www.thespruce.com/how-to-grow-and-care-for-dichondra-4766843 . [Accessed 17 May 2023]	"Dichondra plants are typically very healthy and don't often have disease problems. However, flea beetles and cutworms tend to feed on the plants, damaging and weakening the foliage. You can treat plants with an insecticide, though healthy plants will usually overcome pest nibbling on their own. "
	Malakhova, O., Wilber, W. L., Wilson, S. B., Russo, K. A., Jones, J. C., Moffis, B. L., Walker, J. S. & Iannone III, B. V. (2023). Getting Into the "weeds": An Introduction to Common Lawn Plants and Their Ecological Benefits in North Central Florida: FOR388. UF/IFAS Extension: https://edis.ifas.ufl.edu/publication/FR459 . [Accessed 16 May 2023]	"Host Plant: Eaten by pink-spotted hawkmoth larva (<i>Agrius cingulata</i>) Disease: <i>Dichondra</i> fungal rust (<i>Puccinia dichondra</i>)"

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Eat the Weeds. (2023). Pony Foot. https://www.eattheweeds.com/pony-foot/ . [Accessed 17 May 2023]	"Are they edible? That is often asked about a little lawn plant called Pony Foot, or <i>Dichondra carolinensis</i> . I think they are bitter and medicinal, others toss them into salads. My herbalist friends call them a "liver tonic." But, since they are bitter it is better to mix them with other greens – as one does chicory – rather than using them as the main ingredient."
	Bryson, C.T.& DeFelice, M.S. (2009). Weeds of the South. University of Georgia Press, Athens, GA	"Toxic Properties - None reported."
	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

Qsn #	Question	Answer
408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Duncan, W. H. & Duncan, M. B. (2005). <i>Wildflowers of the Eastern United States</i> . University of Georgia Press, Athens, Georgia	"Finely hairy prostrate perennial 1-12 cm" ... "Usually moist to wet places, tolerating short-time flooding; broadleaf woods, pinelands, roadsides, pond margins, swales, lawns;" [No evidence and unlikely. A low growing plant of moist places]

Qsn #	Question	Answer
409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	Notes
	Foley, D. J. (1972). <i>Ground Covers for Easier Gardening</i> . Dover Publications, New York, NY	"It is surprisingly tolerant as far as various types of soil are concerned, and has proved to be successful in both sun and shade."
	Malakhova, O., Wilber, W. L., Wilson, S. B., Russo, K. A., Jones, J. C., Moffis, B. L., Walker, J. S. & Iannone III, B. V. (2023). <i>Getting Into the "weeds": An Introduction to Common Lawn Plants and Their Ecological Benefits in North Central Florida</i> : FOR388. UF/IFAS Extension: https://edis.ifas.ufl.edu/publication/FR459 . [Accessed 16 May 2023]	"Light Requirement: Full sun to partial shade"
	Harrison, M. (2006). <i>Groundcovers for the South</i> . Pineapple Press Inc., Sarasota, FL	"Light: Sun"
	Austin, D. F., Demissew, S., & Young, J. (1998). <i>Studies Of the Florida Convolvulaceae—VI. Dichondra</i> . <i>Florida Scientist</i> , 61(3/4), 195-202	"The species is less tolerant of full sun than <i>D. micrantha</i> and rarely grows where there is not some shade. Although found in lawns, the plants are usually restricted to the vicinity of buildings or under trees, particularly pines."

Qsn #	Question	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Foley, D. J. (1972). <i>Ground Covers for Easier Gardening</i> . Dover Publications, New York, NY	"It is surprisingly tolerant as far as various types of soil are concerned, and has proved to be successful in both sun and shade."
	Malakhova, O., Wilber, W. L., Wilson, S. B., Russo, K. A., Jones, J. C., Moffis, B. L., Walker, J. S. & Iannone III, B. V. (2023). <i>Getting Into the "weeds": An Introduction to Common Lawn Plants and Their Ecological Benefits in North Central Florida</i> : FOR388. UF/IFAS Extension: https://edis.ifas.ufl.edu/publication/FR459 . [Accessed 16 May 2023]	"Soil: Sandy; adaptable to varying pH (~6.1-7.8 pH)"

Qsn #	Question	Answer
411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Austin, D. F., Demissew, S., & Young, J. (1998). <i>Studies Of the Florida Convolvulaceae—VI. Dichondra</i> . <i>Florida Scientist</i> , 61(3/4), 195-202	"Spreading, mat-forming herbs. Stems mostly 2-50 cm long, sparsely pubescent, the trichomes appressed or erect and medifixed, the internodes (0.5-)1-2(-4) cm long."

Qsn #	Question	Answer
412	Forms dense thickets	n
	Source(s)	Notes
	Tveten, J., (1997). <i>Wildflowers of Houston and Southeast Texas</i> . University of Texas Press, Austin, TX	"Houston residents encounter pony-foot primarily as a weed in their lawns. A prostrate, creeping perennial, it branches and roots at the nodes to form dense mats in late winter and early spring."

Qsn #	Question	Answer
	Foley, D. J. (1972). <i>Ground Covers for Easier Gardening</i> . Dover Publications, New York, NY	"While it is widely claimed that dichondra kills out various types of lawn grass, it does not conquer Bermuda grass-at least in the California region- but rather covers it, giving a greener appearance in spring."
	WRA Specialist. (2023). Personal Communication	<i>Dichondra carolinensis</i> does not form dense thickets. It has a prostrate growth pattern, with the stems and leaves growing close to the ground.

501	Aquatic	n
	Source(s)	Notes
	Austin, D. F., Demissew, S., & Young, J. (1998). <i>Studies Of the Florida Convolvulaceae-VI. Dichondra</i> . <i>Florida Scientist</i> , 61(3/4), 195-202	[Terrestrial] "Found in pinelands, occasionally in hammocks."

502	Grass	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). <i>Germplasm Resources Information Network (GRIN-Taxonomy)</i> . National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 16 May 2023]	Genus: <i>Dichondra</i> Family: Convolvulaceae Tribe: Dichondreae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Austin, D. F., Demissew, S., & Young, J. (1998). <i>Studies Of the Florida Convolvulaceae-VI. Dichondra</i> . <i>Florida Scientist</i> , 61(3/4), 195-202	"Spreading, mat-forming herbs." [Convolvulaceae]

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Bryson, C.T.& DeFelice, M.S. (2009). <i>Weeds of the South</i> . University of Georgia Press, Athens, GA	"Roots fibrous from taproot. Stems creeping, matting, and procumbent; 2.0-7.0 cm tall, round, green to whitish green, rooting at nodes."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Austin, D. F., Demissew, S., & Young, J. (1998). <i>Studies Of the Florida Convolvulaceae-VI. Dichondra</i> . <i>Florida Scientist</i> , 61(3/4), 195-202	[No evidence] "Distribution: Originally an endemic to southeastern United States (Virginia, North Carolina, South Carolina, Georgia, Florida, Mississippi, Alabama, Arkansas, Louisiana, Oklahoma, Texas) and Bermuda"

602	Produces viable seed	y
	Source(s)	Notes
	Austin, D. F., Demissew, S., & Young, J. (1998). <i>Studies Of the Florida Convolvulaceae-VI. Dichondra</i> . <i>Florida Scientist</i> , 61(3/4), 195-202	"Fruit contained within the longer calyx, 2-3 mm long, 1.6--2 mm thick, containing (1-)2 seeds. Seeds obovoid to pyriform, 1.8-2.7 mm long, tan to brown, smooth, dull."

Qsn #	Question	Answer
	Foley, D. J. (1972). <i>Ground Covers for Easier Gardening</i> . Dover Publications, New York, NY	"However, it is a vigorous grower and self-sows readily. To grow it, the soil is prepared as for a lawn and handled in the same manner. It is important that the seed be properly dried and bleached to assure good germination. It can also be planted from sods started in flats or from cuttings."
	Malakhova, O., Wilber, W. L., Wilson, S. B., Russo, K. A., Jones, J. C., Moffis, B. L., Walker, J. S. & Iannone III, B. V. (2023). Getting Into the "weeds": An Introduction to Common Lawn Plants and Their Ecological Benefits in North Central Florida: FOR388. UF/IFAS Extension: https://edis.ifas.ufl.edu/publication/FR459 . [Accessed 16 May 2023]	"Propagation: Transplant divisions 6-9 inches (15-22 cm) apart (i.e., dig up the plant and separate some rooted stems), seeds"

603	Hybridizes naturally	
	Source(s)	Notes
	Felger, R. S., Austin, D. F., Van Devender, T. R., Sánchez-Escalante, J. J., & Costea, M. (2012). Convolvulaceae of Sonora, Mexico. I. Convolvulus, Cressa, Dichondra, Evolvulus, Ipomoea, Jacquemontia, Merremia, and Operculina. <i>Journal of the Botanical Research Institute of Texas</i> , 6(2): 459-527	No evidence in genus
	WRA Specialist. (2023). Personal Communication	Unknown. No evidence found.

604	Self-compatible or apomictic	y
	Source(s)	Notes
	Halevy, A. H. (1985). <i>Handbook of Flowering: Volume II</i> . CRC Press, Boca Raton, FL	"Flowers are highly self-pollinating and may be cleistogamous. Many small insects may be observed around the flowers, but their role in pollination, if any, has not been determined."
	PictureThis. (2023). Carolina ponyfoot - <i>Dichondra carolinensis</i> . https://www.picturethisai.com/wiki/Dichondra_carolinensis.html . [Accessed 17 May 2023]	"It is considered an invasive species in Brazil and Japan, and in the U.S. it is considered a weed because it spreads quickly through self-sowing."
	Forde, M. B. (1978). The cultivated dichondra. <i>New Zealand Journal of Botany</i> , 16(2), 283-285	[Related species, <i>Dichondra micrantha</i> , capable of self-pollination] "Possibly because of this abundant unseen flowering it has been stated (Williams 1964) that the species is highly cleistogamic, and that self-pollination occurs in the unopened bud."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Halevy, A. H. (1985). <i>Handbook of Flowering: Volume II</i> . CRC Press, Boca Raton, FL	"Flowers are highly self-pollinating and may be cleistogamous. Many small insects may be observed around the flowers, but their role in pollination, if any, has not been determined."
	Malakhova, O., Wilber, W. L., Wilson, S. B., Russo, K. A., Jones, J. C., Moffis, B. L., Walker, J. S. & Iannone III, B. V. (2023). Getting Into the "weeds": An Introduction to Common Lawn Plants and Their Ecological Benefits in North Central Florida: FOR388. UF/IFAS Extension: https://edis.ifas.ufl.edu/publication/FR459 . [Accessed 16 May 2023]	"Wildlife use: Source of nectar and pollen"

606	Reproduction by vegetative fragmentation	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Eason, M. (2018). <i>Wildflowers of Texas</i> . Timber Press, Portland, OR	"A prostrate, creeping, mat-forming perennial with pubescent stems, rooting at nodes, to 4 inches high."
	Degen, J. L., Criley, R. A. & McLain, D. A. (1973). <i>Ground Covers for Hawaii Landscapes</i> . Circular 457. Cooperative Extension Service, University of Hawaii, Honolulu, HI	"Planting can be by seeding or by setting out "plugs" from flats."
	Correll, D.S. & Correll, H.B. (1972). <i>Aquatic and Wetland Plants of Southwestern United States</i> . Environmental Protection Agency, Washington, D.C.	"Rooting at the nodes, mat-forming, 1-12 cm. high, sparsely pubescent; pedicels one third to two thirds as long as petioles in flower; corolla nearly as long as calyx, light-green."
	Foley, D. J. (1972). <i>Ground Covers for Easier Gardening</i> . Dover Publications, New York, NY	"Sometimes called lawn leaf or pony foot, it spreads by underground runners." ... "To grow it, the soil is prepared as for a lawn and handled in the same manner. It is important that the seed be properly dried and bleached to assure good germination. It can also be planted from sods started in flats or from cuttings."
	Cotterman, L., Waitt, D., & Weakley, A. (2019). <i>Wildflowers of the Atlantic Southeast</i> . Timber Press, Portland, OR	"Stems horizontal below and above the soil surface, rooting at the nodes, green or purplish-red, soft-hairy."

607	Minimum generative time (years)	1
	Source(s)	Notes
	Gann GD, Abbott CJ, Hines KN, and Collaborators. (2005-2023). <i>Natives For Your Neighborhood</i> . The Institute for Regional Conservation. Delray Beach, Florida. https://regionalconservation.org/beta/nfyn/ . [Accessed 17 May 2023]	[Presumably capable of reproducing vegetatively in less than 1 year, and likely flowers within 1-2 years] "Growth Rate: Fast." ... "Horticultural Notes: Easily grown from divisions of creeping, rooted stems, but keep moist at all times."

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	"A common lawn weed. Widely distributed in eastern half of state. Spreading because of accidental human transport."
	Creech, M. N., Katherine Kirkman, L., & Morris, L. A. (2012). Alteration and recovery of slash pile burn sites in the restoration of a fire-maintained ecosystem. <i>Restoration Ecology</i> , 20(4), 505-516	"Appendix. List of species found at slash pile burn sites (burned or adjacent unburned areas) and species characteristics." [Dichondra carolinensis - Dispersal Mode = g, gravity]
	Bryson, C.T. & DeFelice, M.S. (2009). <i>Weeds of the South</i> . University of Georgia Press, Athens, GA	"disturbed areas, fields, lawns, flowerbeds, roadsides, and waste sites"
	Correll, D.S. & Correll, H.B. (1972). <i>Aquatic and Wetland Plants of Southwestern United States</i> . Environmental Protection Agency, Washington, D.C.	[Common on roadsides] "Damp open ground, in mud on edge of lakes and ponds, edge of swamps and marshes, roadsides and lawns"

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Degen, J. L., Criley, R. A. & McLain, D. A. (1973). <i>Ground Covers for Hawaii Landscapes</i> . Circular 457. Cooperative Extension Service, University of Hawaii, Honolulu, HI	"Commonly grown as a lawn substitute requiring little maintenance, dichondra produces a dense mass of bright-green, roundish leaves."
	Harrison, M. (2006). <i>Groundcovers for the South</i> . Pineapple Press Inc., Sarasota, FL	"Dichondra is sometimes used as a lawn substitute. It is also attractive in rock gardens where it is allowed to grow in and among the rocks. Almost no maintenance is required once it is established."
	KewScience. (2023). <i>Plants of the World Online - Dichondra carolinensis</i> . http://powo.science.kew.org . [Accessed 16 May 2023]	"Introduced into: Brazil Southeast, California, Pakistan, South Australia, Tennessee "

Qsn #	Question	Answer
703	Propagules likely to disperse as a produce contaminant	y
	Source(s)	Notes
	Dyer, A. R., Cochran, J. E., Phillips, J. M., Layne, K. I., Berry, M. E., & Kule, A. K. (2017). Bagged commercial soils are an avenue for regional dispersal of weedy plant species. <i>The American Midland Naturalist</i> , 178(2), 275-283.	"Table 2.-Species identified from 51 bags [40 lb (18 kg) or 1 cu ft (28.3 l)] of 19 different soil products from four major garden product companies. Each bag was spread in five 0.13 m ² trays at 3-5 cm depth and kept moist in a greenhouse. Soil products were not sampled equally (see Table 1) and therefore the number of species found per brand does not necessarily reflect the level of weed seed contamination." [Dichondra carolinensis dispersed as a commercial soil contaminant]

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Creech, M. N., Katherine Kirkman, L., & Morris, L. A. (2012). Alteration and recovery of slash pile burn sites in the restoration of a fire/maintained ecosystem. <i>Restoration Ecology</i> , 20(4), 505-516	"Appendix. List of species found at slash pile burn sites (burned or adjacent unburned areas) and species characteristics." [Dichondra carolinensis - Dispersal Mode = g, gravity]
	Austin, D. F., Demissew, S., & Young, J. (1998). Studies Of the Florida Convolvulaceae-VI. <i>Dichondra</i> . <i>Florida Scientist</i> , 61(3/4), 195-202	"Fruit contained within the longer calyx, 2-3 mm long, 1.6--2 mm thick, containing (1-)2 seeds. Seeds obovoid to pyriform, 1.8-2.7 mm long, tan to brown, smooth, dull." [Primarily relies on a method called barochory for seed dispersal. Barochory is a form of dispersal that involves the physical movement of seeds by gravity or other environmental forces.]

705	Propagules water dispersed	y
	Source(s)	Notes
	Duncan, W. H. & Duncan, M. B. (2005). <i>Wildflowers of the Eastern United States</i> . University of Georgia Press, Athens, Georgia	"Common. Usually moist to wet places, tolerating short-time flooding; broadleaf woods, pinelands, roadsides, pond margins, swales, lawns;"
	Correll, D.S. & Correll, H.B. (1972). <i>Aquatic and Wetland Plants of Southwestern United States</i> . Environmental Protection Agency, Washington, D.C.	[Occurrence near aquatic habitats suggests water plays a role in dispersal] "Damp open ground, in mud on edge of lakes and ponds, edge of swamps and marshes, roadsides and lawns, s.e. Okla. (McCurtain Co.) and cen. and e. Tex., Mar.-June; e. and n. to Fla. and Va."

706	Propagules bird dispersed	n
	Source(s)	Notes
	Creech, M. N., Katherine Kirkman, L., & Morris, L. A. (2012). Alteration and recovery of slash pile burn sites in the restoration of a fire/maintained ecosystem. <i>Restoration Ecology</i> , 20(4), 505-516	"Appendix. List of species found at slash pile burn sites (burned or adjacent unburned areas) and species characteristics." [Dichondra carolinensis - Dispersal Mode = g, gravity]
	Austin, D. F., Demissew, S., & Young, J. (1998). Studies Of the Florida Convolvulaceae-VI. <i>Dichondra</i> . <i>Florida Scientist</i> , 61(3/4), 195-202	"Fruit contained within the longer calyx, 2-3 mm long, 1.6--2 mm thick, containing (1-)2 seeds. Seeds obovoid to pyriform, 1.8-2.7 mm long, tan to brown, smooth, dull." [Not fleshy-fruited. Primarily relies on a method called barochory for seed dispersal. Barochory is a form of dispersal that involves the physical movement of seeds by gravity or other environmental forces.]

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Austin, D. F., Demissew, S., & Young, J. (1998). Studies Of the Florida Convolvulaceae–VI. <i>Dichondra</i> . Florida Scientist, 61(3/4), 195-202	"Fruit contained within the longer calyx, 2-3 mm long, 1.6--2 mm thick, containing (1-)2 seeds. Seeds obovoid to pyriform, 1.8-2.7 mm long, tan to brown, smooth, dull." [Seeds lack means of external attachment, but are small enough to possibly adhere to animal fur or in soil. Primarily relies on a method called barochory for seed dispersal. Barochory is a form of dispersal that involves the physical movement of seeds by gravity or other environmental forces.]

708	Propagules survive passage through the gut	n
	Source(s)	Notes
	Creech, M. N., Katherine Kirkman, L., & Morris, L. A. (2012). Alteration and recovery of slash pile burn sites in the restoration of a fire-maintained ecosystem. Restoration Ecology, 20(4), 505-516	"Appendix. List of species found at slash pile burn sites (burned or adjacent unburned areas) and species characteristics." [<i>Dichondra carolinensis</i> - Dispersal Mode = g, gravity]

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Austin, D. F., Demissew, S., & Young, J. (1998). Studies Of the Florida Convolvulaceae–VI. <i>Dichondra</i> . Florida Scientist, 61(3/4), 195-202	"Fruit contained within the longer calyx, 2-3 mm long, 1.6--2 mm thick, containing (1-)2 seeds. Seeds obovoid to pyriform, 1.8-2.7 mm long, tan to brown, smooth, dull." [Unknown. Few-seeded, but sprawling ground cover]

802	Evidence that a persistent propagule bank is formed (>1 yr)	n
	Source(s)	Notes
	Malakhova, O., Wilber, W. L., Wilson, S. B., Russo, K. A., Jones, J. C., Moffis, B. L., Walker, J. S. & Iannone III, B. V. (2023). Getting Into the "weeds": An Introduction to Common Lawn Plants and Their Ecological Benefits in North Central Florida: FOR388. UF/IFAS Extension: https://edis.ifas.ufl.edu/publication/FR459 . [Accessed 16 May 2023]	"Propagation: Transplant divisions 6-9 inches (15-22 cm) apart (i.e., dig up the plant and separate some rooted stems), seeds Dormancy: None"

803	Well controlled by herbicides	y
	Source(s)	Notes
	Brosnan, J. T., & DeFrank, J. (2008). Chemical Weed Control Options for Turfgrasses in Hawai'i. CTAHR, University of Hawaii at Manoa, Honolulu, HI	"Table 5. Preemergence herbicides exhibiting efficacy against various broadleaf weeds" [atrazine effective on <i>Dichondra carolinensis</i>] "Table 7. Postemergence herbicides exhibiting efficacy against various broadleaf weeds" [triclopyr + clopyralid, sulfentrazone, metsulfuron, diclofop, dicamba, 2,4-D + dicamba, carfentrazone & atrazine reported to be effective on <i>Dichondra carolinensis</i>]

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	Malakhova, O., Wilber, W. L., Wilson, S. B., Russo, K. A., Jones, J. C., Moffis, B. L., Walker, J. S. & Iannone III, B. V. (2023). Getting Into the "weeds": An Introduction to Common Lawn Plants and Their Ecological Benefits in North Central Florida: FOR388. UF/IFAS Extension: https://edis.ifas.ufl.edu/publication/FR459 . [Accessed 16 May 2023]	"Other: Tolerates but does not require mowing. Tolerates temporary flooding."

Qsn #	Question	Answer
	PictureThis. (2023). Carolina ponyfoot - <i>Dichondra carolinensis</i> . https://www.picturethisai.com/wiki/Dichondra_carolinensis.html . [Accessed 18 May 2023]	"When planted in place of lawn grass, it tolerates mowing to keep it short." ... "When necessary, carolina ponyfoot can be treated mechanically (e.g. with mowing) or chemically (e.g. with glyphosate herbicides). "

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	Unknown

Summary of Risk Traits:

Dichondra carolinensis, commonly known as Carolina Pony's-foot or Carolina Dichondra, is a low-growing perennial plant native to southeastern United States. It belongs to the family Convolvulaceae, which includes plants like morning glories and bindweeds. It is valued for its ornamental qualities and is often used as a ground cover in landscapes, lawns, and gardens. It has a prostrate growth habit, with stems that creep along the ground and form a dense mat-like cover. The leaves of *Dichondra carolinensis* are round or kidney-shaped, giving it a distinctive appearance. Although it is valued as a ground cover, it is often regarded as a weed of lawns and turfgrass, and its ability to spread by both gravity-dispersed seeds and vegetatively make it likely that it will escape beyond cultivated sites. However, outside of cultivated settings, it is unlikely to become a serious weed of agriculture or the natural environment.

High Risk / Undesirable Traits

- Grows and can spread in regions with tropical climates
- Naturalized elsewhere, but not documented as naturalized in the Hawaiian Islands to date.
- A common weed in lawns and turfgrass (although also valued as a groundcover in lawns)
- Other *Dichondra* species are invasive weeds
- Shade-tolerant
- Tolerates many soil types.
- Reproduces by seeds and vegetatively by rooting at stem nodes.
- Self-fertile
- Reaches maturity in 1-2 growing seasons
- Seeds by gravity, along heavily trafficked areas (e.g., roadsides), by water (common near aquatic habitats), as a soil contaminant, and through intentional cultivation
- Tolerates mowing (may make mechanical control ineffective)

Low Risk Traits

- Despite categorization as a lawn weed, this plant is often valued for its ground cover in lawns and is not documented to be detrimental to lawns or other low growing vegetation.
- Unarmed (no spines, thorns, or burrs)
- Palatable to deer.
- Non-toxic
- Seeds reported to lack dormancy.
- Herbicides may provide effective control.

TAXON: *Dichondra carolinensis*
Michx.

SCORE: 10.0

RATING: *High Risk*