

**Family:** *Apiaceae*

**Taxon:** *Torilis arvensis*

**Synonym:** *Caucalis elongata* Hoffmanns. & Link  
*Caucalis purpurea* Ten  
*Torilis arvensis* subsp. *purpurea* (Ten.) Hayek  
*Torilis heterophylla* Guss.  
*Torilis homophylla* Stapf & Wettst.  
*Torilis neglecta* Spreng.  
*Torilis radiata* Moench

**Common Name:** spreading hedge parsley  
Common Hedge Parsley

<b>Questionnaire :</b>	current 20090513	<b>Assessor:</b>	Chuck Chimera	<b>Designation:</b>	H(HPWRA)
<b>Status:</b>	Assessor Approved	<b>Data Entry Person:</b>	Chuck Chimera	<b>WRA Score 9</b>	
101	Is the species highly domesticated?			y=-3, n=0	n
102	Has the species become naturalized where grown?			y=1, n=-1	
103	Does the species have weedy races?			y=1, n=-1	
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)	Intermediate
203	Broad climate suitability (environmental versatility)			y=1, n=0	y
204	Native or naturalized in regions with tropical or subtropical climates			y=1, n=0	n
205	Does the species have a history of repeated introductions outside its natural range?			y=-2, ?=-1, n=0	y
301	Naturalized beyond native range			y = 1*multiplier (see Appendix 2), n= question 205	y
302	Garden/amenity/disturbance weed			n=0, y = 1*multiplier (see Appendix 2)	y
303	Agricultural/forestry/horticultural weed			n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed			n=0, y = 2*multiplier (see Appendix 2)	
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			y=1, n=0	n
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			y=1, n=0	y
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	n
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	y
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	
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)	y=1, n=-1	y
702	Propagules dispersed intentionally by people	y=1, n=-1	n
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	y
706	Propagules bird dispersed	y=1, n=-1	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	y
708	Propagules survive passage through the gut	y=1, n=-1	
801	Prolific seed production (>1000/m2)	y=1, n=-1	y
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	y
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)	y=-1, n=1	

Designation: H(HPWRA)

WRA Score 9

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**Supporting Data:**

101	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Is the species highly domesticated?? No] No evidence
102	2011. WRA Specialist. Personal Communication.	NA
103	2011. WRA Specialist. Personal Communication.	NA
201	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Species suited to tropical or subtropical climate(s) 0-Low] "Native to Eurasia"
202	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Quality of climate match data 1-intermediate] "Native to Eurasia ... Throughout California, except Great Basin and deserts, to 1600 m. Oregon, Washington, Idaho, Utah, and eastern half of United States, except far northern states and Florida."
203	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Broad climate suitability (environmental versatility)? Yes] "Native to Eurasia ... Throughout California, except Great Basin and deserts, to 1600 m. Oregon, Washington, Idaho, Utah, and eastern half of United States, except far northern states and Florida." [Broad distribution, and elevation range exceeds 1000 m]
204	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Native or naturalized in regions with tropical or subtropical climates? No] "Native to Eurasia ... Throughout California, except Great Basin and deserts, to 1600 m. Oregon, Washington, Idaho, Utah, and eastern half of United States, except far northern states and Florida."
204	2011. Starr, F./Starr, K.. Plants of Hawaii - <i>Torilis arvensis</i> . <a href="http://www.hear.org/starr/images/species/?q=torilis+arvensis&amp;o=plants">http://www.hear.org/starr/images/species/?q=torilis+arvensis&amp;o=plants</a>	[Native or naturalized in regions with tropical or subtropical climates? No] " <i>Torilis arvensis</i> (Spreading hedge parsley) Flowers HVC Haleakala National Park, Maui October 18, 2011" [Only collected at high elevations of Maui, Hawaiian Islands]
205	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Does the species have a history of repeated introductions outside its natural range? Yes] "Throughout California, except Great Basin and deserts, to 1600 m. Oregon, Washington, Idaho, Utah, and eastern half of United States, except far northern states and Florida."
301	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Naturalized beyond native range? Yes] "Throughout California, except Great Basin and deserts, to 1600 m. Oregon, Washington, Idaho, Utah, and eastern half of United States, except far northern states and Florida."
302	2006. Zika, P.. Help collect noxious weeds in Washington. <i>Douglasia</i> . Winter: 19-25.	[Garden/amenity/disturbance weed? Yes] "Table 5. Class B noxious weeds – 2006 Class B noxious weeds are: "Non native species presently limited to portions of the state. Species are designated for control in regions where they are not yet widespread. Preventing new infestations in these areas is a high priority. In regions where a Class B species is already abundant, control is decided at the local level, with containment as the primary goal." [ <i>Torilis arvensis</i> listed as a Class B noxious weed of Washington state]
302	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Garden/amenity/disturbance weed? Yes] "Habitat: Disturbed sites, roadsides, fields, woodlands. Occasionally in orchards and vineyards."
302	2010. Boos, T./Kearns, K./LeClair, C./Panke, B./Scriver, B/Williams, B.. A Field Guide to Terrestrial Invasive Plants in Wisconsin. Wisconsin Department of Natural Resources, Madison, WI	[Garden/amenity/disturbance weed? Yes] "Hedgeparsleys invade forests, prairies, fields, fencerows, and roadsides."
302	2011. California Invasive Plant Council. Invasive Plants > Invasive Plant Management > plant profiles > <i>Torilis arvensis</i> . <a href="http://www.cal-ipc.org/ip/management/plant_profiles/Torilis_arvensis.php#proc">http://www.cal-ipc.org/ip/management/plant_profiles/Torilis_arvensis.php#proc</a>	[Garden/amenity/disturbance weed? Yes] " <i>Torilis arvensis</i> (hedgeparsely) (family Apiaceae) occurs throughout California in disturbed sites and woodlands. It has small hooks on the mature fruit, which and cling to clothing, hair or fur, facilitating long distance dispersal. Cal-IPC Inventory rating: Moderate"
302	2011. Dave's Gardern. PlantFiles: Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://davesgarden.com/guides/pf/go/32053/">http://davesgarden.com/guides/pf/go/32053/</a>	[Garden/amenity/disturbance weed? Yes. Nuisance weed] "On Jun 15, 2004, Wingnut from Spicewood, TX (Zone 8b) wrote: INCREDIBLY AGGRAVATING plant when it goes to seed! If you brush against it, even slightly, the seeds will stick to your clothing. If it's socks, forget trying to get them out ~ just throw them away or you'll risk insanity trying to pick all the nasty little buggers off! I once had to shave a dog bare when he went gallivanting through a large patch of them. The plant has a rather attractive flower, but there are so many others so similar that I wouldn't bother with this one."

303	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Agricultural/forestry/horticultural weed? No. Mostly regarded as a disturbance weed] "This species [Upper Compound Leaf & Stem] is adventive from Eurasia, and it appears to be spreading throughout the state. Habitats include thickets, woodland borders, weedy meadows, areas along railroads and roadsides, gravelly areas along streams, and waste areas. Disturbed habitats are preferred, including degraded prairies and woodlands that have been recently logged."
303	2011. PlantNetwork. <i>Torilis arvensis</i> . <a href="http://plantnetwork.org/projects/datasheets/toriarve.pdf">plantnetwork.org/projects/datasheets/toriarve.pdf</a>	[Agricultural/forestry/horticultural weed? No] "Reasons for decline: Intensive crop management, i.e. vulnerable to herbicides and unable to compete in dense crop swards." [Not within UK, part of native range]
304	2002. Bowen, B./Johnson, K./Franklin, S./Call, G./Webber, M.. Invasive Exotic Pest Plants in Tennessee. <i>Journal of the Tennessee Academy of Science</i> . 77(2): 45-48.	[Environmental weed? Potentially] "RANK 2 , Significant Threat. Exotic plant species that possess characteristics of invasive species but are not presently considered to spread as easily into native plant communities as those species listed as Rank 1." [Includes <i>Torilis arvensis</i>
304	2006. Cal-IPC. California Invasive Plant Inventory. Cal-IPC Publication 2006-02. California Invasive Plant Council, Berkeley, CA <a href="http://www.cal-ipc.org">www.cal-ipc.org</a>	[Environmental weed? Potentially] "Expanding range. Appears to have only moderate ecological impacts."
304	2011. Dave's Gardern. PlantFiles: Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://davesgarden.com/guides/pf/go/32053/">http://davesgarden.com/guides/pf/go/32053/</a>	[Environmental weed? Potentially] "On Apr 7, 2008, bjanke from Madison, WI wrote: This plant is a serious invasive across the United States. Due to its sticky seeds it is spread easily by people and pets (especially dogs). It then moves into natural areas and out competes native vegetation. If you insist on planting this species in your gardens make sure to remove the seeds and destroy them so that you do not contribute to the spread of this species."
305	2011. Midwest Invasive Plant Network. <a href="http://mipn.org/Midwest%20Invasives%20Fact%20Sheets/PDF/hedgeparsley.pdf">http://mipn.org/Midwest%20Invasives%20Fact%20Sheets/PDF/hedgeparsley.pdf</a>	[Congeneric weed? Yes] " <i>Torilis japonica</i> ...Ecological threat: This plant threatens woodlands and savannas. It tends to spread very quickly in areas high in human or animal traffic due to the fact that the fruits grab hold of nearly any fabric and any hairy appendage which happens to be exposed."
401	2004. Wisconsin Department of Natural Resources. Spreading Hedge Parsley ( <i>Torilis arvensis</i> ). <a href="http://dnr.wi.gov/invasives/fact/hedgeparsley.htm">http://dnr.wi.gov/invasives/fact/hedgeparsley.htm</a>	[Produces spines, thorns or burrs? No] "Hedge parsleys are parsley-like annuals with taproots and erect, ridged stems. They grow in a spreading form up to 3 feet in height. Leaves are alternate, pinnately divided, 2 to 5 inches long and may be slightly downy. Small, white flowers are clustered in small, open, flat topped umbels."
402	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Allelopathic? No] "Erect winter or summer annuals to 1 m tall, with pinnate-dissected leaves and bristly fruits."
403	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Parasitic? No] No evidence
404	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Unpalatable to grazing animals? No] "The foliage is not known to be toxic, and may be eaten occasionally by mammalian herbivores."
405	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Toxic to animals? No] "The foliage is not known to be toxic, and may be eaten occasionally by mammalian herbivores."
406	1984. Snodgrass, G.L./Scott, W.P./Smith, J.W.. Host Plants and Seasonal Distribution of the Tarnished Plant Bug (Hemiptera: Miridae) in the Delta of Arkansas, Louisiana, and Mississippi. <i>Environmental Entomology</i> . 13(1): 110-116.	[Host for recognized pests and pathogens? Yes] "The tarnished plant bug (TPB), <i>Lygus lineolaris</i> (Palisot de Beauvois), is a serious pest of many cultivated plant species grown in the United States, and also utilizes a large number of wild host plant species for food and reproduction...During the early summer, annual fleabane, <i>E. annuus</i> (L.) Persoon; hedge-parsley, <i>Torilis arvensis</i> (Hudson) Link; tickseed, <i>Coreopsis tinctoria</i> Nuttall; and sour dock were the best hosts."
407	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Causes allergies or is otherwise toxic to humans? No] No evidence
407	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Causes allergies or is otherwise toxic to humans? No] "The foliage is not known to be toxic, and may be eaten occasionally by mammalian herbivores." [No evidence]

408	2005. Pausas, J.G./Paula, S.. Plant functional traits database for Euro-Mediterranean ecosystems. Deliverable D-04-06. EUFIRELAB, <a href="http://eufirelab.org">http://eufirelab.org</a>	[Creates a fire hazard in natural ecosystems? No] No evidence
408	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Creates a fire hazard in natural ecosystems? No] No evidence
409	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Is a shade tolerant plant at some stage of its life cycle? No] "The preference is full sun, mesic to dry conditions, and a rather heavy soil containing gravel or clay."
409	2011. Lady Bird Johnson Wildflower Center. Harry T. Cliffe Bexar Regional Herbarium - <i>Torilis arvensis</i> . <a href="http://www.wildflower.org/herbaria/show.php?id=910">http://www.wildflower.org/herbaria/show.php?id=910</a>	[Is a shade tolerant plant at some stage of its life cycle? No] "Habitat: Full sun"
410	2000. Uvalde Research and Extension Center. Hedge Parsley. Texas A&M University, <a href="http://www.soilcropandmore.info/crops/Weeds/UvaldeWeedSite/toar.htm">http://www.soilcropandmore.info/crops/Weeds/UvaldeWeedSite/toar.htm</a>	[Tolerates a wide range of soil conditions? Yes] "Hedge-Parsley grows in most soil types of the Edwards Plateau region."
410	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Tolerates a wide range of soil conditions? Yes] "The preference is full sun, mesic to dry conditions, and a rather heavy soil containing gravel or clay. Because this plant often grows in soil containing limestone gravel, it appears to tolerate alkaline conditions."
410	2011. PlantNetwork. <i>Torilis arvensis</i> . <a href="http://plantnetwork.org/projects/datasheets/toriarve.pdf">plantnetwork.org/projects/datasheets/toriarve.pdf</a>	[Tolerates a wide range of soil conditions? Yes] "Substrates: wide range of soils, including calcareous clays, sands and gravels."
411	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Climbing or smothering growth habit? No] "Erect winter or summer annuals to 1 m tall, with pinnate-dissected leaves and bristly fruits."
412	2008. Walck, J.L./Baskin, C.C./Hidayati, S.N./Baskin, J.M.. Comparison of the seed germination of native and non-native winter annual Apiaceae in North America, with particular focus on <i>Cyclospermum leptophyllum</i> naturalized from South America. <i>Plant Spec</i>	[Forms dense thickets? No] "...forms large populations in disturbed shallow-soil areas that are not mowed during the summer. It is particularly abundant along fence rows where dense populations of perennial plants have not become established." [No evidence that populations form monocultures or exclude other vegetation]
501	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Aquatic? No] "Erect winter or summer annuals to 1 m tall, with pinnate-dissected leaves and bristly fruits." [Terrestrial]
502	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Grass? No] Apiaceae
503	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Nitrogen fixing woody plant? No] Apiaceae
504	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "The root system consists of a taproot. This plant spreads by a reseeding itself, and it often forms colonies." [Although taprooted, there is no evidence that this species spreads or persists via the root structure]
601	1998. UK Biodiversity Group. Species Action Plan - Spreading Hedge Parsley ( <i>Torilis arvensis</i> ). <a href="http://www.ukbap.org.uk/UKPlans.aspx?ID=612">http://www.ukbap.org.uk/UKPlans.aspx?ID=612</a>	[Evidence of substantial reproductive failure in native habitat? Yes] "Spreading hedge parsley has declined rapidly in the UK from 136 ten km squares between 1930 and 1960, to just 82 since 1970 and perhaps less than 20 since 1986. This species is found throughout western, southern and central Europe and south-western Asia, but is declining and threatened in most countries in north-western Europe. In GB the species is classified as Nationally Scarce. It receives general protection under the Wildlife and Countryside Act 1981."
601	2011. PlantNetwork. <i>Torilis arvensis</i> . <a href="http://plantnetwork.org/projects/datasheets/toriarve.pdf">plantnetwork.org/projects/datasheets/toriarve.pdf</a>	[Evidence of substantial reproductive failure in native habitat? Yes] "IUCN category (2001) Endangered."
602	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Produces viable seed? Yes] "Propagation / Phenology: Reproduce by seed."

603	1985. Gupta, S.K./Hamal, I.A./Koul, A.K.. Reproductive biology of <i>Torilis arvensis</i> (Hudson) Link. Proceedings of the Indian Academy of Plant Sciences. 95(4): 227-236.	[Hybridizes naturally? Unknown]
604	1985. Gupta, S.K./Hamal, I.A./Koul, A.K.. Reproductive biology of <i>Torilis arvensis</i> (Hudson) Link. Proceedings of the Indian Academy of Plant Sciences. 95(4): 227-236.	[Self-compatible or apomictic? Yes] " <i>Torilis arvensis</i> is an andromonoecious umbellifer which produces hermaphrodite and staminate flowers in the ratio of 1:0-36. This figure is recorded for the first time among andromonoecious umbellifers. The species practices geitonogamy on account of weak protandry and little visual impact of its umbels."
605	2006. Gibson, R.H./Nelson, I.L./Hopkins, G.W./Hamlett, B.J./Memmott, J.. Pollinator webs, plant communities and the conservation of rare plants: arable weeds as a case study. Journal of Applied Ecology. 43: 246–257.	[Requires specialist pollinators? No] " <i>Torilis arvensis</i> was the most abundant and generalized plant species in the plot, being visited by 25 (40%) insect species, and 15% of all visits to flowers were to <i>Torilis arvensis</i> . <i>Chloromyia formosa</i> (Diptera: Stratiomyidae) appeared to visit only <i>Torilis arvensis</i> , on which it was caught nine times. The most abundant insects on <i>Torilis arvensis</i> , however, were hoverflies (Diptera: Syrphidae) (22%). Eighteen species were identified, with the number of individuals per species caught ranging from one ( <i>Cheilosia pagana</i> , <i>Metasyrphus luniger</i> and <i>Syrphus torvus</i> ) to 19 ( <i>Sphaerophoria scripta</i> ). Syrphids visited 27 out of the 35 plant species at the site. The plant species most frequently visited by syrphids were <i>Sinapis arvensis</i> (Brassicaceae), 18% of visits, and <i>Epilobium tetragonum</i> (Onagraceae), 13%...our results show that <i>Galeopsis angustifolia</i> , <i>Silene gallica</i> and <i>Torilis arvensis</i> are generalists with respect to pollination, and that their visitors also show a relatively high level of generalization."
605	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Requires specialist pollinators? No] "Like other members of the Carrot family, the small white flowers attract various insects, including small bees, flies, wasps, and beetles."
606	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Reproduction by vegetative fragmentation? No] "The root system consists of a taproot. This plant spreads by a reseeding itself, and it often forms colonies."
607	2006. Gibson, R.H./Nelson, I.L./Hopkins, G.W./Hamlett, B.J./Memmott, J.. Pollinator webs, plant communities and the conservation of rare plants: arable weeds as a case study. Journal of Applied Ecology. 43: 246–257.	[Minimum generative time (years)? 1] " <i>Torilis arvensis</i> is an annual plant most frequently found on heavy calcareous soils, almost exclusively in autumn-sown cereal crops (Anonymous 1998)."
607	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Minimum generative time (years)? 1] "It matures quickly during the growing season, produces flowers and seeds, and then dies, although the stems remain more or less erect for some time."
701	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Yes] "Fruits fall near the parent plant or disperse to greater distances with water, mud, and by clinging to animals, to the shoes and clothing of humans, and to vehicle tires."
701	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Yes] "The most distinctive characteristic of <i>Torilis</i> spp. is the bur-like seeds, which are often rosy green in appearance and have a dense covering of fine bristles. It can be a major inconvenience to walk through a colony of these plants, as the abundant bur-like seeds cling tenaciously to clothing and are difficult to remove."
702	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Propagules dispersed intentionally by people? No] "Fruits fall near the parent plant or disperse to greater distances with water, mud, and by clinging to animals, to the shoes and clothing of humans, and to vehicle tires." [Dispersal outside native range is now mostly unintentional]
703	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	"Fruits fall near the parent plant or disperse to greater distances with water, mud, and by clinging to animals, to the shoes and clothing of humans, and to vehicle tires."
704	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Propagules adapted to wind dispersal? No] "Fruits generally oblong, 3-5 mm long, ribs covered with minutely barbs, hook-tipped bristles. Inner faces of fruit halves as bristly as the outer parts...Fruits fall near the parent plant or disperse to greater distances with water, mud, and by clinging to animals, to the shoes and clothing of humans, and to vehicle tires."

705	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Propagules water dispersed? Yes] "Fruits fall near the parent plant or disperse to greater distances with water..."
706	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Propagules bird dispersed? Yes. Externally] "Fruits generally oblong, 3-5 mm long, ribs covered with minutely barbs, hook-tipped bristles. Inner faces of fruit halves as bristly as the outer parts...Fruits fall near the parent plant or disperse to greater distances with water, mud, and by clinging to animals, to the shoes and clothing of humans, and to vehicle tires." [Not fleshy-fruited, but may adhere to feathers]
706	2011. Hilty, J.. Illinois Wildflowers - Weedy Wildflowers of Illinois - Common Hedge Parsley - <i>Torilis arvensis</i> . <a href="http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm">http://www.illinoiswildflowers.info/weeds/plants/hdg_parsley.htm</a>	[Propagules bird dispersed? Yes] "The bur-like covering of the seeds clings readily to the fur of mammals, the feathers of birds, and the clothing of humans."
707	2007. DiTomaso, J.. Weeds of California and Other Western States, Volume 1. ANR Publications, Oakland, CA	[Propagules dispersed by other animals (externally)? Yes] "Fruits generally oblong, 3-5 mm long, ribs covered with minutely barbs, hook-tipped bristles. Inner faces of fruit halves as bristly as the outer parts...Fruits fall near the parent plant or disperse to greater distances with water, mud, and by clinging to animals, to the shoes and clothing of humans, and to vehicle tires."
707	2008. Rosas, C.A./Engle, D.M./Shaaw, J.H./Palmer, M.W.. Seed dispersal by Bison bison in a tallgrass prairie. <i>Journal of Vegetation Science</i> . 19: 769-778.	[Propagules dispersed by other animals (externally)? Yes] "As would be expected, some species with adhesive appendages, such as <i>Xanthium strumarium</i> , <i>Torilis arvensis</i> , and <i>Desmodium sessilifolium</i> , were abundant in bison hair samples."
708	2011. WRA Specialist. Personal Communication.	[Propagules survive passage through the gut? Unknown] Seeds unlikely to be dispersed internally
801	1986. Crawley, M.J./Kornberg, H./Lawton, J.H./Usher, M.B./Southwood, R./O'Connor, R.J./Gibbs, A.. The Population Biology of Invaders [and Discussion]. <i>Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences</i> . 314: 711-731.	[Prolific seed production (>1000/m <sup>2</sup> )? Yes. Potentially] "Table 2... <i>Torilis arvensis</i> ...seed bank = 1-2250 ...the number of viable seeds in the top 10 cm of 2 m <sup>2</sup> sample areas of soil" [potentially exceeds 1000 seeds/m <sup>2</sup> ]
802	1975. Baskin, J.M./Baskin, C.C.. Ecophysiology of seed dormancy and germination in <i>Torilis japonica</i> [ <i>arvensis</i> ] in relation to its life cycle strategy. <i>Bulletin of the Torrey Botanical Club</i> . 102: 67-72.	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "By late July and early August nearly all of the seeds are ripe. The seeds are not dispersed upon ripening but remain attached to the dead, erect plants until autumn. Most of the seeds are shed between late September and early November, but in places protected from wind some of the seeds may not be shed until early winter. At the time of dispersal, however, many seedlings have already become established in the population, indicating that some individuals in the population are from seeds that were produced in a previous year... Seeds that do not germinate in autumn are induced into dormancy by low winter temperatures and thus spring-germination is prevented. During spring and summer the seeds after-ripen, and they germinate during the following autumn. One possible ecological significance of this life cycle strategy is that a reserve of seeds in the soil would give the species in any given area another chance for establishment without immigration should seed crop failure occur." [T. japonica later identified to be T. arvensis]
802	2008. Walck, J.L./Baskin, C.C./Hidayati, S.N./Baskin, J.M.. Comparison of the seed germination of native and non-native winter annual Apiaceae in North America, with particular focus on <i>Cyclosporum leptophyllum</i> naturalized from South America. <i>Plant Spec</i>	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "In <i>Torilis arvensis</i> , whose seeds have only MD, seed dispersal is delayed until autumn, when conditions are suitable for seed germination and seedling survival (Baskin & Baskin 1975). Germination of both native and non-native species with MPD is prevented in summer..."
803	2004. Oneto, S./DiTomaso, J.M./Kyser, G.B.. Control of Hedge Parsley ( <i>Torilis arvensis</i> ) In, C. Piroosko, (ed.). <i>Proceedings of the California Invasive Plant Council Symposium</i> . 8: 135.	[Well controlled by herbicides? Yes] "Hedge parsley was completely controlled at all rates of Plateau®, Garlon 4®, Roundup Max®, and Telar®. These four herbicides had different effects on other vegetation in the plots; for example, a native tarweed ( <i>Madia</i> sp.) showed some tolerance to the Plateau® treatments, but was completely killed by Garlon 4®, Roundup Max®, and Telar® applications. Arsenal® gave partial control of hedge parsley and Transline® failed to effectively control hedge parsley even at the highest rates."
803	2004. Wisconsin Department of Natural Resources. Spreading Hedge Parsley ( <i>Torilis arvensis</i> ). <a href="http://dnr.wi.gov/invasives/fact/hedgeparsley.htm">http://dnr.wi.gov/invasives/fact/hedgeparsley.htm</a>	[Well controlled by herbicides? Yes] "Pull or mow prior to flowering. Treating foliage with glyphosate or triclopyr is effective if done early in the spring or on resprouts after cutting. Monitor site for additional seedlings."
803	2011. PlantNetwork. <i>Torilis arvensis</i> . <a href="http://plantnetwork.org/projects/datasheets/toriarve.pdf">plantnetwork.org/projects/datasheets/toriarve.pdf</a>	[Well controlled by herbicides? Yes] "Reasons for decline Intensive crop management, i.e. vulnerable to herbicides..."

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804	2010. Boos, T./Kearns, K./LeClair, C./Panke, B./Scriver, B./Williams, B.. A Field Guide to Terrestrial Invasive Plants in Wisconsin. Wisconsin Department of Natural Resources, Madison, WI	[Tolerates, or benefits from, mutilation, cultivation, or fire? No] "Manual/Mechanical: Pull, cut, or mow prior to or at earliest stage of flowering; cut or mow as close to the ground as possible. If flowering, burn or bag and landfill. Use controlled burns to kill seedlings, however this may result in more germination."
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]

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