

MN NWAC Risk Assessment Worksheet (04-2011)	Common Name	Latin Name
Reviewer	Hound's Tongue, Gypsyflower	<i>Cynoglossum officinale</i> L.
Roger Becker	Affiliation/Organization	Date (mm/dd/yyyy)
	University of Minnesota	9/12/2012

Hound's Tongue (*Cynoglossum officinale* L.) is native to Eurasia or Asia and is thought to have been introduced to North America in the mid-1800's in grain. It is a herbaceous biennial or short-lived perennial reproducing by seed only.

It is most problematic in grazing or non-cropland areas where open niches prevail, historically occurring at high populations in the Douglas Fir, Ponderosa Pine-bunchgrass biogeoclimatic zones of Washington State and British Columbia - though hound's tongue is widely distributed throughout North America. It is most competitive on droughty sand or gravelly soils, particularly if high in pH and where nitrogen is abundant. It is not common on clay or loam soils, nor on acidic sands. It thrives in climates with hot, dry summers and cold winters.

Hound's tongue has been used medicinally for 'folk' remedies and red pigments extracted from the outer roots are used as food colorants and for antibacterial, antitumorogenic, and wound healing activity. It does not provide nutritious forage, is toxic and can cause mortality to horses and cattle. Upadhyaya et al. 1988.

Note: blue highlights information not required via the assessment protocol but wanted to keep the info in mind.

Box	Question	Answer	Outcome
1	Is the plant species or genotype non-native?	Yes. Native to Eurasia or Asia. (Upadhyaya et al. 1988)	Go to box 3
2	Does the plant species pose significant human or livestock concerns or has the potential to significantly harm agricultural production?		
	A. Does the plant have toxic qualities that pose a significant risk to livestock, wildlife, or people?		
	B. Does the plant cause significant financial losses associated with decreased yields, reduced quality, or increased production costs?		
3	Is the plant species, or a related species, documented as being a problem elsewhere?	Noxious weed in Colorado, Montana, Nevada, Washington, and Wyoming. Quarantined in Oregon. (USDA Plants)	Go to box 6.
4	Are the plant species' life history and growth requirements understood?	Yes. . (Upadhyaya et al. 1988)	
5	Gather and evaluate further information:	(Comments/Notes)	

Box	Question	Answer	Outcome
6	Does the plant species have the capacity to establish and survive in Minnesota?		
	A. Is the plant, or a close relative, currently established in Minnesota?	Yes. Is present in Minnesota. USDA Plants, U of M Herbarium, eddmaps.org http://www.eddmaps.org/distribution/usstate.cfm?sub=5502	Go to box 7.
	B. Has the plant become established in areas having a climate and growing conditions similar to those found in Minnesota?	Yes.	
7	Does the plant species have the potential to reproduce and spread in Minnesota?		
	A. Does the plant reproduce by asexual/vegetative means?	No	Go to 7 C
	B. Are the asexual propagules effectively dispersed to new areas?		
	C. Does the plant produce large amounts of viable, cold-hardy seeds?	Yes.	Go to 7 F
	D. If this species produces low numbers of viable seeds, does it have a high level of seed/seedling vigor or do the seeds remain viable for an extended period?		
	E. Is this species self-fertile?		
	F. Are sexual propagules – viable seeds – effectively dispersed to new areas?	Yes. Carried on animals (De Clerk-Floate1997), clothing, etc. Do not float on water or disperse via wind. (Upadhyaya et al. 1988)	Go to 7 I
	G. Can the species hybridize with native species (or other introduced species) and produce viable seed and fertile offspring in the absence of human intervention?	No	
	H. If the species is a woody (trees, shrubs, and woody vines) is the juvenile period less than or equal to 5 years for tree species or 3 years for shrubs and vines?		

Box	Question	Answer	Outcome
	I. Do natural controls exist, species native to Minnesota, that are documented to effectively prevent the spread of the plant in question?	No. Biocontrol with <i>Mogulones cruciger</i> released in Canada, but not 'officially' in the US. (De Clerck-Floate and Schwarzlander 2002.). Herbicides can control Tordon and Glean (Evans and Bagley 1986, Upadhyaya and Cranston 1991). Hard on other dicots.	Go to box 8.
8	Does the plant species pose significant human or livestock concerns or has the potential to significantly harm agricultural production, native ecosystems, or managed landscapes?		
	A. Does the plant have toxic qualities, or other detrimental qualities, that pose a significant risk to livestock, wildlife, or people?	Yes. Seeds decrease value of wool and animals with seeds in their coat. Irritation decrease animal performance. Seeds cause eye problems and irritation of the mouth in grazing animals. Toxic pyrrolizidine alkaloids can cause mortality. (Baker et al 1989 and 1991, Upadhyaya et al. 1988)	Go to box 9.
	B. Does, or could, the plant cause significant financial losses associated with decreased yields, reduced crop quality, or increased production costs?		
	C. Can the plant aggressively displace native species through competition (including allelopathic effects)?		
	D. Can the plant hybridize with native species resulting in a modified gene pool and potentially negative impacts on native populations?	No.	
	E. Does the plant have the potential to change native ecosystems (adds a vegetative layer, affects ground or surface water levels, etc.)?		
	F. Does the plant have the potential to introduce or harbor another pest or serve as an alternate host?	Yes. Alfalfa mosaic virus (Bellardi and Rubies-Autonell 2002).	

Box	Question	Answer	Outcome
9	Does the plant species have clearly defined benefits that outweigh associated negative impacts?	No. Benefits that do not outweigh the negative impacts include many reported uses in folk medicine. Lipophilic red pigments (alkannins) antibacterial, antitumorogenic, and wound healing activity. Used a food and wine colorants in Europe.	
	A. Is the plant currently being used or produced and/or sold in Minnesota or native to Minnesota?	No.	Go to box 10
	B. Is the plant an introduced species and can its spread be effectively and easily prevented or controlled, or its negative impacts minimized through carefully designed and executed management practices?	It can spread. Has been in Minnesota at least since my arrival in the mid-80s, likely much longer (Check U of M Herbarium records when become available online again). Its spread cannot be effectively nor easily controlled. No biological control approved for the U.S. currently. Herbicides can control it (Evans and Bagley 1986, Upadhyaya and Cranston 1991) but there are no good herbicide options that offer selective dicot tolerance.	
	C. Is the plant native to Minnesota?		
	D. Is a non-invasive, alternative plant material commercially available that could serve the same purpose as the plant of concern?		
	E. Does the plant benefit Minnesota to a greater extent than the negative impacts identified at Box #8?		
10	Should the plant species be enforced as a noxious weed to prevent introduction &/or dispersal; designate as prohibited or restricted?		
	A. Is the plant currently established in Minnesota?	Yes.	Go to 10 B.
	B. Does the plant pose a serious human health threat?	No.	Go to 10 C.

Box	Question	Answer	Outcome
	C. Can the plant be reliably eradicated (entire plant) or controlled (top growth only to prevent pollen dispersal and seed production as appropriate) on a statewide basis using existing practices and available resources?	No.	Protocol says to list as Restricted Noxious Weed. However I recommend it be added to our internal watch list and not list it as a Restricted Noxious Weed at this time.
11	Should the plant species be allowed in Minnesota via a species-specific management plan; designate as specially regulated?		
Final Results of Risk Assessment			
	Review Entity	Comments	Outcome
	NWAC Listing Subcommittee	<ul style="list-style-type: none"> - Primarily a western state problem on large grazing acres. - MN does have infestations, but other than Becker County, low focus has been given to this weed. - It is extremely toxic for livestock - Becker County has listed this species as a County Noxious Weed. It was suggested since Becker has led the way with this process, allowing counties to decide the fate of Hounds Tongue regulation. - Suggest not regulating at this time, but moving this risk assessment to the NWAC Watch List to monitor over time if it becomes more problematic in MN. 	Suggest no regulation at this time, but moving to the NWAC internal watch list for further monitoring of this species.
	NWAC Full-group		Approved Subcommittee recommendation – moved to watch list.
	MDA Commissioner	No Listing	No Listing
File #	MDARA00019HOUTO_1_18_2013		

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(List any literature, websites, and other publications)

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