MN NWAC Risk Assessment Worksheet (04-2011) http://www.pfaf.org/user/Plant.aspx?LatinName=Pimpinella+saxifraga http://plants.usda.gov/core/profile?symbol=pisa http://www.luontoportti.com/suomi/en/kukkakasvit/burnet-saxifrage http://dnr.wi.gov/topic/Invasives/fact/Pimpinella.html http://fieldguide.mt.gov/detail_PDAPI1S030.aspx	Common Name	*Latin Name*
	Solidstem Burnet Saxifrage	***Pimpinella saxifraga* L.**
Reviewer	**Affiliation/Organization**	**Date (mm/dd/yyyy)**
Anthony Cortilet	**MN Dept. of Agriculture**	**Year 1 04/29/2014 Revised 09/08/2015**

Box	Question	Answer	Outcome
1	Is the plant species or genotype non-native?	Yes. It is native to Europe [A;B;C].	Box 3
3	Is the plant species, or a related species, documented as being a problem elsewhere?	Not necessarily documented as a problem, but is thought to behave similarly to Queen Anne's Lace – *Daucus carota*. Wisconsin has assessed the plant and has listed it as a Restricted Noxious Weed due to its potential to invade grasslands and wood edges [G]. They also document that it "rapidly spreads by human activity" and "has a high seed production". It is documented in 10 WI counties and several in MI. Also has been found in CT, DE, IN, MA, MD, ME, MN, MT, NJ, NY, OH, PA, TN, VA, VT, WA, and WV.	Yes Box 6
4	Is the plant species' life history & Growth requirements understood?	**** Yes, it is perennial forb and has been described in a host of European botanical texts and websites and a few in North America [A;B;E;F;G].***	***This text is provided as additional information not directed through the decision tree process for this particular risk assessment.***
5	Gather and evaluate further information:		

Box	Question	Answer	Outcome
6	Does the plant species have the capacity to establish and survive in Minnesota?	Yes [B;K;L;N;O,W,X].	
	A. Is the plant, or a close relative, currently established in Minnesota?	Yes. Twenty-nine locations in Three River Parks – Hennepin County –one location near Thief River Falls – 4 locations in Clearwater County- several locations in Pine County – approximately 60 locations in 4 adjoining Beltrami County townships [B;K;L;N;O; W; X].	Go to Box 7.
7	Does the plant species have the potential to reproduce and spread in Minnesota?	Yes, it has been recently found at 29 locations in Hennepin County, one location in Marshall County, four locations in Clearwater County, several locations in Pine County and approximately 60 locations in Beltrami County. It was initially described and documented by the University of Minnesota Herbarium in Hennepin and Pine Counties (Pine County recorded in 1982) [B;K;L;N;O;P;W;X].	
	A. Does the plant reproduce by asexual/vegetative means?	Yes, but it is through limited clonal growth through short extensions of the main tap root (Grime et al. 2007)[S]. Primarily through seed reproduction.	7B
	B. Are the asexual propagules effectively dispersed to new areas?	No data or literature that supports successful movement and establishment of asexual propagules.	7C
	C. Does the plant produce large amounts of viable, cold-hardy seeds?	Yes [P;Q;R;S].	7F
	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?		

Box	Question	Answer	Outcome
	E. Is this species self-fertile?	***Yes - - Flowers are perfect and contain male and female parts*** [F]	***This text is provided as additional information not directed through the decision tree process for this particular risk assessment.***
	F. Are sexual propagules – viable seeds – effectively dispersed to new areas?	Yes [P;Q;R;S]. Wind, water, animals, snow, machinery, ATVs, humans.	7I
	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?	*Unknown if this species can hybridize with other members of the Apiaceae* [U] *– "Hybridization. There is no conclusive evidence of hybridization in the genus, but a few specimens which are intermediate between P. major and P. saxifraga have been seen (D Sjæ Roskilde and Søndersøen, N Vf Larvik). Their leaflets on the lower leaves are similar to P. saxifraga or intermediate in shape; the sheaths on the upper leaves are similar to P. major or intermediate, and the stem is either sulcate (specimens from D) or terete (specimen from N). Only c. 50–70% pollen grains stained in cotton blue, but a reduced pollen fertility has been seen also in typical specimens of both P. major and P. saxifraga."* *Pimpinella anisoides V. Brig. was reported from D ØJy Vejle 1930 (Madsen & Lyck 1991, Faurholdt & Schou 2004) based on sterile material which has been redetermined to Anthriscus cerefolium.* *No evidence of hybridization in North America. WI Risk Assessment for P. saxifraga contains no information for hybridization* [G].	***This text is provided as additional information not directed through the decision tree process for this particular risk assessment.***
	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?		
	I. Do natural controls exist, species native to Minnesota, that are documented to effectively prevent the spread of the plant in question?	No data, literature or professional land manager input has been documented at this time.	Box 8

Box	Question	Answer	Outcome
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?	Has been associated with photosensitization through ingestion and absorption into the blood stream and transfer to the skin (Puschner 2005[T]) and is known to contain sufficient levels of furocoumarins (psoralen compounds) to cause photosensitization dermatitis ([V] Pathak et. al. 1962). However, it has not been determined to be a significant health risk in Minnesota or Wisconsin where it is currently regulated [G]. Furthermore, the WI risk assessment ranks it as having medium competitive ability, but lists no specific examples or data supporting that claim.	No – Box B
	B. Does, or could, the plant cause significant financial losses associated with decreased yields, reduced crop quality, or increased production costs?	No evidence in the literature for North America at this time. The species closely resembles wild carrot (*Daucus carota*) and could be under reported in Minnesota. Wild carrot has not been reported to be a problem for livestock or grain producers in MN.	Box C

Box	Question	Answer	Outcome
	C. Can the plant aggressively displace native species through competition (including allelopathic effects)?	It has been documented to spread effectively in disturbed habitats in MN, WI and MI and occupy a similar niche to *Daucus carota*. However, at this point it is uncertain as to how aggressive this species will/could become on a statewide or regional basis. Daucus carota was evaluated in 2012 by NWAC and although it was determined to be an aggressive weedy species in the southern ½ of the state, because of available treatments for control it was not recommended for listing as a noxious weed. Unlike *D. carota* which is biennial, *P. saxifraga* is a perennial species and could pose a greater problem for sustainable control [A, B, C, F, G, P]. In 2015, 87 County Agricultural Inspectors, 1800 township supervisors, 800 city personnel, MN DNR field staff, MN DOT field staff, SWCD personnel, among others, were given a fact sheet provided by the MDA to try and increase awareness of Burnet and request for infestations to be reported by the end of the summer. To this point, only four counties have reported Burnet (Box 6A) infestations. Beltrami and Hennepin counties have found the most significant infestations. Hennepin county infestations are within the Three River's Park properties and Beltrami's sites are along roads in three adjoining townships south of Lower Red Lake. Understanding the differences between species like wild carrot, water hemlock, wild chervil and Burnet can be difficult to the untrained eye and may be causing underreporting of this species within the state even with the education MDA has provided field professionals over the past two year.	No – Box D

Box	Question	Answer	Outcome
	D. Can the plant hybridize with native species resulting in a modified gene pool and potentially negative impacts on native populations?	Unknown if this species can hybridize with other members of the Apiaceae [U] – "Hybridization. There is no conclusive evidence of hybridization in the genus, but a few specimens which are intermediate between P. major and P. saxifraga have been seen (D Sjæ Roskilde and Søndersøen, N Vf Larvik). Their leaflets on the lower leaves are similar to P. saxifraga or intermediate in shape; the sheaths on the upper leaves are similar to P. major or intermediate, and the stem is either sulcate (specimens from D) or terete (specimen from N). Only c. 50–70% pollen grains stained in cotton blue, but a reduced pollen fertility has been seen also in typical specimens of both P. major and P. saxifraga." Pimpinella anisoides V. Brig. was reported from D ØJy Vejle 1930 (Madsen & Lyck 1991, Faurholdt & Schou 2004) based on sterile material which has been redetermined to Anthriscus cerefolium. No evidence of hybridization in North America. WI Risk Assessment for P. saxifraga contains no information for hybridization [G].	* Box E
	E. Does the plant have the potential to change native ecosystems (adds a vegetative layer, affects ground or surface water levels, etc.)?	Because this species has established in North America and has been documented to grow and spread in native ecosystems, it has the ability to "change" these systems. However, the question remains to what extent and how significant its role in the changing of a native systems is compared to potentially hundreds of other non-native and native species impacting the same ecosystems [A, B, C, E, F, P]	No Box F
	F. Does the plant have the potential to introduce or harbor another pest or serve as an alternate host?	No information available.	**The species is not currently believed to be a risk.**

Box	Question	Answer	Outcome
9	Does the plant species have clearly defined benefits that outweigh associated negative impacts?	***There are numerous web pages that show the benefits of using this species as a medicinal herb or as flavoring for cooking that are too numerous to list in this assessment. An internet search using the key words "Pimpinella saxifraga uses" will yield pages of results.***	***This text is provided as additional information not directed through the decision tree process for this particular risk assessment.***
	A. Is the plant currently being used or produced and/or sold in Minnesota or native to Minnesota?	***Not native and unknown if it is sold at MN retailers (2014 and 2015, Steve Malone, MDA Seed Program Supervisor). An internet search using the keywords "Pimpinella saxifraga seeds" will yield many online sources where it can be purchased. Listed as being sold as an ornamental in WI[F].*** ***In 2014, MDA Nursery Staff searched for Burnet plants during their annual growing season inspections of nurseries statewide. No positive finds were found.***	***This text is provided as additional information not directed through the decision tree process for this particular risk assessment.***
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?		
	B. Does the plant pose a serious human health threat?	***No information suggesting that it poses a serious human health threat. Livestock toxicity is thought to be rare in the U.S. and has not been reported at this time in MN (see Box 8 A).***	***This text is provided as additional information not directed through the decision tree process for this particular risk assessment.***

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?	***Controls used for wild parsnip, cow parsnip, and wild carrot are deemed suitable for this species. Wisconsin DNR's risk assessment suggest early mowing prior to seed set, but no application data for herbicides. This species is not known to be wide-spread at this time in MN (See Box 6 and Box 6a). But it could be under reported due to its similarity to Daucus carota. Confusion with wild carrot could also be a difficulty in controlling this species statewide. Wild carrot was reviewed by NWAC in 2011 and was not recommended for regulation as a noxious weed (See St. Aubin and Kearns 2011) and also references*** [N,O,P,Q,R]	***This text is provided as additional information not directed through the decision tree process for this particular risk assessment.***
Final Results of Risk Assessment			
	Review Entity	**Comments**	**Outcome**
	NWAC Listing Subcommittee	Not enough information is available regarding the status of this plant in MN and its impacts on native ecosystems. This risk assessment is the result of two years of review in Minnesota. The listing subcommittee does not believe that this species ranks high enough to take the alternate route provided through Box 10 and subsequent listing as a prohibited noxious weed. Therefore, the main route of this risk assessment ends at Box 8 and determines that *Burnet saxifrage* is not a risk in Minnesota at this time.	**Final assessment in 2015: Not currently a risk in Minnesota. Should remain on the NWAC watch list.**
	NWAC Full-group	Members voted 11 in favor and 0 opposed.	**NO REGULATORY ACTION. DO NOT LIST.**
	MDA Commissioner		
	FILE # **BurnetSaxifrage_2015_MDARA00035BUSX**		

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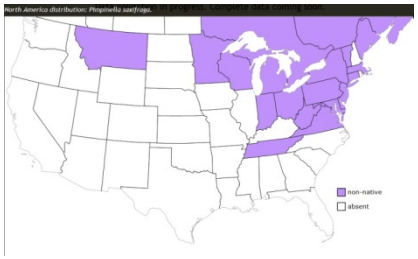
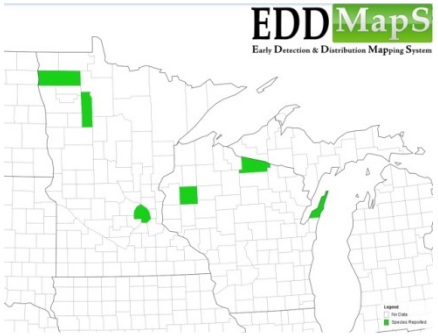
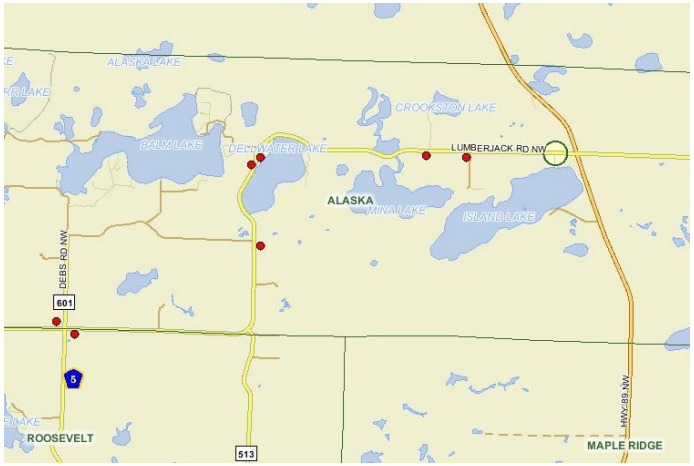
[X] Monika Chandler. 2015. Minnesota Department of Agriculture Research Scientist. Personal communication.





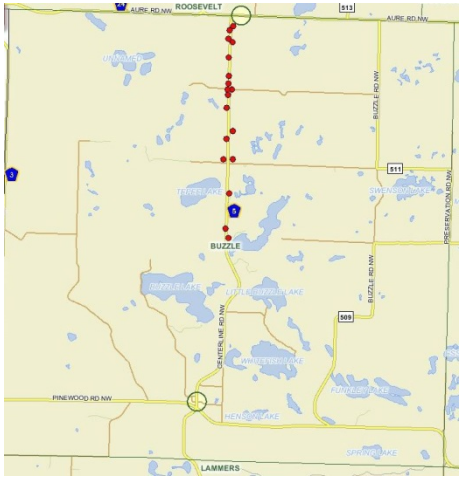
Beltrami County Data - 2015 (Provided by William Best, County Agricultural Inspector)

Alaska Township

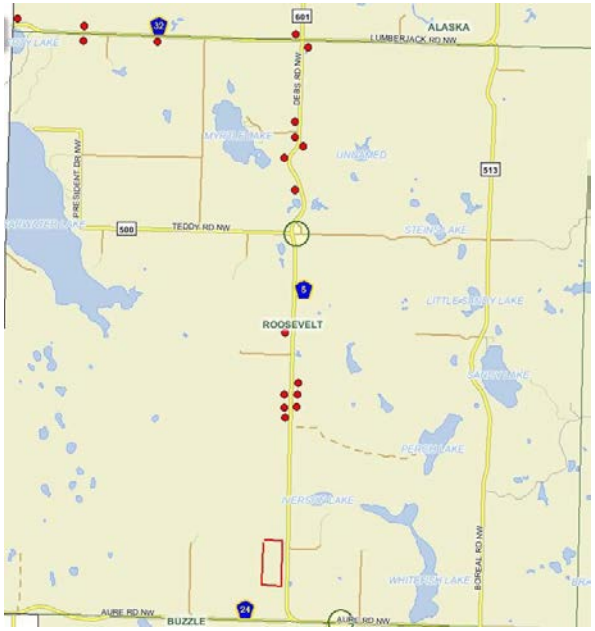


Roosevelt Township

Buzzle Township



Maple Ridge, Nebish, and Alaska Townships


ALASKA
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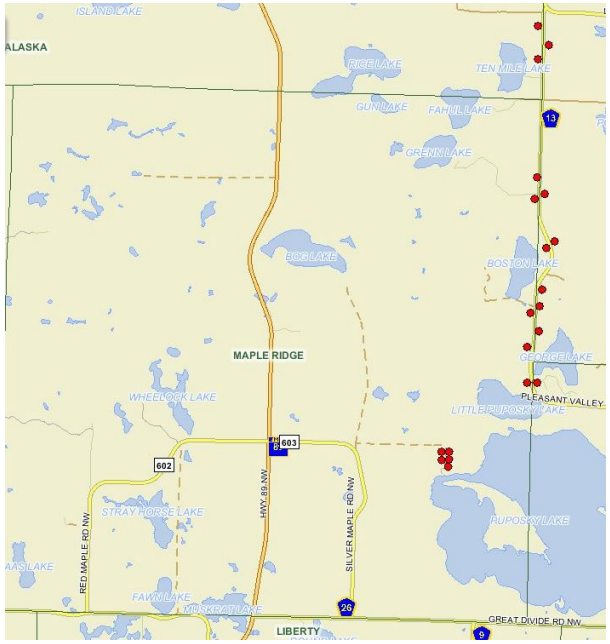
DEBS RD NW
PRESCRIPT DR NW
MYRTLE LAKE
UNNAMED
513
500
TEDDY RD NW
STEIN LAKE
ROOSEVELT
LITTLE SISTAHY LAKE
SADDY LAKE
PERCH LAKE
MERSEA LAKE
WHITEFISH LAKE
BOREAL RD NW
AURE RD NW
BUZZLE
24


ISLAND LAKE
ALASKA
RICE LAKE
TEN MILE LAKE
GUN LAKE
FAHL LAKE
13
GREMM LAKE
BOG LAKE
BOSTON LAKE
MAPLE RIDGE
GEORGE LAKE
PLEASANT VALLEY
WHEELOCK LAKE
LITTLE PUPOSKY LAKE
603
602
STRAY HORSE LAKE
HWY 69 NW
SILVER MAPLE RD NW
RED MAPLE RD NW
PUPOSKY LAKE
FAWN LAKE
MUSKRAT LAKE
29
GREAT DIVIDE RD NW
LIBERTY