

<b>NAME OF SPECIES:</b> <i>Centaurea repens</i>	
<b>Synonyms:</b> <i>Acroptilon repens</i> (more commonly used)	
<b>Common Name:</b> Russian knapweed Turkistan thistle, creeping knapweed, mountain bluet, Russian cornflower, hardheads (6)	<b>Cultivars?</b> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
<b>A. CURRENT STATUS AND DISTRIBUTION</b>	
I. In Wisconsin?	1. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
	2. <u>Abundance:</u> The BLM estimates the average annual rate of spread to be eight percent in the northwestern United States (7)
	3. <u>Geographic Range:</u> Walworth and Milwaukee Co. (5)
	4. <u>Habitat Invaded:</u> Disturbed Areas <input checked="" type="checkbox"/> Undisturbed Areas <input type="checkbox"/>
	5. <u>Historical Status and Rate of Spread in Wisconsin:</u>
	6. <u>Proportion of potential range occupied:</u> low
II. Invasive in Similar Climate Zones	1. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> <u>Where (include trends):</u> AR, AZ, CA, CO, IA, ID, IL, IN, KS, KY, MI, MN, MO, MT, ND, NE, NM, NV, OH, OK, OR, SD, TX, UT, WA, WI, WY (5)
	III. Invasive in Which Habitat Types 1. Upland <input type="checkbox"/> Wetland <input type="checkbox"/> Dune <input type="checkbox"/> Prairie <input checked="" type="checkbox"/> Aquatic <input type="checkbox"/> Forest <input checked="" type="checkbox"/> Grassland <input checked="" type="checkbox"/> Bog <input type="checkbox"/> Fen <input type="checkbox"/> Swamp <input type="checkbox"/> Marsh <input type="checkbox"/> Lake <input type="checkbox"/> Stream <input type="checkbox"/> Other:
IV. Habitat Affected	1. <u>Soil types favored or tolerated:</u> saline, clayey rocky, sandy
	2. <u>Conservation significance of threatened habitats:</u> n/a
V. Native Range and Habitat	1. <u>List countries and native habitat types:</u> Mongolia, western Turkestan, Iran, Turkish Armenia, and Asia Minor (8)
VI. Legal Classification	1. <u>Listed by government entities?</u> AL, AZ, CA, CO, ID, HI, KS, IA, NV, MO, WA, NM, SC, SD, UT (5)
	2. <u>Illegal to sell?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
	Notes: In some of the states listed above
<b>B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS</b>	
I. Life History	1. <u>Type of plant:</u> Annual <input type="checkbox"/> Biennial <input type="checkbox"/> Monocarpic Perennial <input type="checkbox"/> Herbaceous Perennial <input checked="" type="checkbox"/> Vine <input type="checkbox"/> Shrub <input type="checkbox"/> Tree <input type="checkbox"/>
	2. <u>Time to Maturity:</u> Flowers from June to October (8)
	3. <u>Length of Seed Viability</u> seed remains viable for 2-3 years (8)
	4. <u>Methods of Reproduction:</u> Asexual <input checked="" type="checkbox"/> Sexual <input checked="" type="checkbox"/> <u>Notes:</u> Up tp 1,200 seeds per plant
	5. <u>Hybridization potential:</u> n/a
II. Climate	1. <u>Climate restrictions:</u> Common on heavier saline soils as well as sub irrigated slopes and flats (8)
	2. <u>Effects of potential climate change:</u> Extended growing season in the north

III. Dispersal Potential	<p>1. <u>Pathways</u> - Please check all that apply:</p> <p><u>Unintentional</u>: Bird <input type="checkbox"/> Animal <input type="checkbox"/> Vehicles/Human <input checked="" type="checkbox"/>  Wind <input checked="" type="checkbox"/> Water <input type="checkbox"/> Other:</p> <p><u>Intentional</u>: Ornamental <input type="checkbox"/> Forage/Erosion control <input type="checkbox"/>  Medicine/Food: Other:</p> <p>2. <u>Distinguishing characteristics that aid in its survival and/or inhibit its control</u>: Infestations of Russian knapweed can survive indefinitely through their root system. A stand in Saskatchewan has survived for almost 100 years (8) one plant may produce 1,200 seeds per year (8)</p>
IV. Ability to go Undetected	1. HIGH <input type="checkbox"/> MEDIUM <input checked="" type="checkbox"/> LOW <input type="checkbox"/>
<b>C. DAMAGE POTENTIAL</b>	
I. Competitive Ability	<p>1. <u>Presence of Natural Enemies</u>: No</p> <p>2. <u>Competition with native species</u>: Highly</p> <p>2. Rate of Spread:  -changes in relative dominance over time:  -change in acreage over time:  HIGH(1-3 yrs) <input checked="" type="checkbox"/> MEDIUM (4-6 yrs) <input type="checkbox"/> LOW (7-10 yrs) <input type="checkbox"/>  Notes: Strong competitor and can form dense colonies in disturbed areas. Dense patches of Russian knapweed may have up to 100-300 shoots/m<sup>2</sup> (Watson 1980). The plant extends radially in all directions and can cover an area of 12 m<sup>2</sup> within two years (8).</p>
II. Environmental Effects	<p>1. <u>Alteration of ecosystem/community composition?</u>  YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>  Notes:</p> <p>2. <u>Alteration of ecosystem/community structure?</u>  YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>  Notes:</p> <p>3. <u>Alteration of ecosystem/community functions and processes?</u>  YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>  Notes:</p> <p>4. <u>Allelopathic properties?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>  Notes: effectively inhibits root length elongation of grasses as well as broad-leaved plants by 30% when the polyacetylene compound is at a soil concentration of 4 parts per million (8)</p>
<b>D. SOCIO-ECONOMIC EFFECTS</b>	
I. Positive aspects of the species to the economy/society:	Notes:
II. Potential Socio-Economic Effects of Requiring Controls:	Positive: Negative: Eradication may not be feasible if infestations are large.
III. Direct and indirect Socio-Economic Effects of Plant :	Notes: when present in hay decreases its feed and market value, with an annual loss of 55 percent in livestock carrying capacity. (7) <i>It has</i> caused serious reductions in yields, crop value, and may even significantly devalue the land itself. Shoot densities of 11-64

	shoots/m <sup>2</sup> have reduced grain yields by 28-75%. Shoot densities of 19, 32, and 65 shoots/m <sup>2</sup> have reduced the fresh weight yield of corn by 64, 73, and 88% respectively (8)
IV. Increased Costs to Sectors Caused by the Plant::	Notes: Causes the neurological disorder nigropallidal encephalomalacia in horses (8)
V. Effects on human health:	Notes:
VI. Potential socio-economic effects of restricting use:	Positive: Long term prevention through restricting infested hay would be valuable to individual farmers and society as a whole. Negative: Unintentional spread in hay would be the most likely commodity impacted.
<b>E. CONTROL AND PREVENTION</b>	
I. Costs of Prevention (please be as specific as possible):	Notes: limits on infested hay imports
II. Responsiveness to prevention efforts:	Notes:
III. Effective Control tactics: (provide only basic info)	Mechanical <input type="checkbox"/> Biological <input checked="" type="checkbox"/> Chemical <input checked="" type="checkbox"/> Times and uses: Herbicide controls are limited in success but in the developmental stage chlorsulfuron, sodium chlorate, 2, 4-D, and picloram can be used. Biological solutions are effective. The nematode subanguina picridis forms galls on the plant that reduces its vigor, the success rate is being monitored in Washington. (1) The mite Aceria acrotiloni forms galls in the flower heads of Russian knapweed and feeds on the inner bracts and the receptacles of the flowers, and causes the deformation of structures of the flowers. Females lay eggs in the receptacle of the flower and inner bracts. Two or more generations are formed during a single season (8)
IV. Costs of Control:	Notes:
V. Cost of prevention or control vs. Cost of allowing invasion to occur:	Notes: At this point in time prevention is much more cost effective.
VI. Non-Target Effects of Control:	Notes:
VII. Efficacy of monitoring:	Notes:
VIII. Legal and landowner issues:	Notes:
<b>F. HYBRIDS AND CULTIVARS AND VARIETIES</b>	
I. Known hybrids? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	Name of hybrid:  Names of hybrid cultivars:

II. Species cultivars and varieties	Names of cultivars, varieties and any information about the invasive behaviors of each:
	Notes:

**G. REFERENCES USED:**

- UW Herbarium (Madison or Stevens Point)
- WI DNR
- Bugwood (Element Stewardship Abstracts)
- Native Plant Conservation Alliance
- IPANE
- USDA Plants

Number	Reference
1	Washington State Noxious Weed Control Board. < <a href="http://www.nwcb.wa.gov">http://www.nwcb.wa.gov</a> >
2	The University of Montana- Missoula. Invaders Database System. < <a href="http://invader.dbs.umt.edu">http://invader.dbs.umt.edu</a> >
3	North Dakota Department of Agriculture. < <a href="http://www.agdepartment.com">http://www.agdepartment.com</a> >
4	Invasive. Org < <a href="http://invasive.org">http://invasive.org</a> >
5	United states Department of Agriculture. Natural Resources Conservation System. Plants Database. < <a href="http://plants.usda.gov/java/nameSearch">http://plants.usda.gov/java/nameSearch</a> >
6	Oregon State Webside. ODA Plant Division, Noxious Weed Control. < <a href="http://www.oregon.gov/ODA/PLANT/WEEDS/profile_russianknapweed.shtml">http://www.oregon.gov/ODA/PLANT/WEEDS/profile_russianknapweed.shtml</a> >
7	Oregon State Webside. ODA Plant Division, Noxious Weed Control. Weed Appendix. <a href="http://www.oregon.gov/ODA/PLANT/docs/pdf/weed_appendix_a11_20.pdf?ga=t">http://www.oregon.gov/ODA/PLANT/docs/pdf/weed_appendix_a11_20.pdf?ga=t</a>
8	BugwoodWiki < <a href="http://wiki.bugwood.org/Acroptilon_repens">http://wiki.bugwood.org/Acroptilon_repens</a> >

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