

NAME OF SPECIES: <i>Cytisus scoparius</i>	
Synonyms: <i>Sarothamnus scoparius</i> (1)	
Common Name: Scotch broom, English broom (1)(2), common broom (3), European broom (3)	
A. CURRENT STATUS AND DISTRIBUTION	
I. In Wisconsin?	1. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
	2. <u>Abundance</u> : single population
	3. <u>Geographic Range</u> : Iowa County
	4. <u>Habitat Invaded</u> : Disturbed Areas <input type="checkbox"/> Undisturbed Areas <input checked="" type="checkbox"/>
	5. <u>Historical Status and Rate of Spread in Wisconsin</u> : May 2007, 1 plant found in Iowa County
	6. <u>Proportion of potential range occupied</u> : <1%
II. Invasive in Similar Climate Zones	1. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> <u>Where (include trends)</u> : 1850 in British Columbia (3)(4) into OR, WA, ID, MT; late 1800s in MA into CT, DE, ME, MI, NH, NJ, NY, OH, PA (5); Nova Scotia (3)
	III. Invasive in Similar Habitat Types
III. Invasive in Similar Habitat Types	1. Upland <input type="checkbox"/> Wetland <input type="checkbox"/> Dune <input checked="" type="checkbox"/> Prairie <input checked="" type="checkbox"/> Aquatic <input type="checkbox"/> Forest <input 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: disturbed open areas: roadsides, pastures, logged/burned open woods, waterways (2)(5)(6)(7)
IV. Habitat Affected	1. <u>Soil types favored or tolerated</u> : dry, sandy soils (5)(7); does well in pH 4.5 to 7.5, high phosphorus or boron (7)
	2. <u>Conservation significance of threatened habitats</u> : dry prairie (S3), sand prairie (S2), sand barrens (SU) potentially affected
V. Native Habitat	1. <u>List countries and native habitat types</u> : UK, central and southern Europe (5)(7), northern Africa (2); heaths, acidic grasslands, coastal beach or dune, edge habitat, pasture (7)
VI. Legal Classification	1. <u>Listed by government entities?</u> noxious weed in CA, OR, WA, HI, and ID.(1)
	2. <u>Illegal to sell?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Notes: CA, HI, ID, OR, WA (1)
B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
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 type="checkbox"/> Vine <input type="checkbox"/> Shrub <input checked="" type="checkbox"/> Tree <input type="checkbox"/>
	2. <u>Time to Maturity</u> : 2-5 yrs (4)(7)
	3. <u>Length of Seed Viability</u> : >80 yrs in ideal conditions (7), 30-60 yrs in field (2)(3)
	4. <u>Methods of Reproduction</u> : Asexual <input checked="" type="checkbox"/> Sexual <input checked="" type="checkbox"/> <u>Notes</u> : Can reproduce vegetatively: cuttings, resprouts (4)(7). High seed production is cyclical; less than half of seeds germinate, and only at <10 cm depth (7); 60-3500 pods/plant & 5-9 seeds/pod (4)(7).
	5. <u>Hybridization potential</u> : n/a

II. Climate	<p>1. <u>Climate restrictions</u>: Prefers mild climate and sunny conditions, but tolerates wide range of environmental conditions (4). Limited to 1200 m elevation in NE (2). Likely that cold winters limit northern expansion and summer droughts limit southern range (7). USDA zone 6A Unlikely to have the winter hardiness to survive in Wisconsin (10).</p> <p>2. <u>Effects of potential climate change</u>: Could survive warmer winters.</p>
III. Dispersal Potential	<p>1. <u>Pathways - Please check all that apply</u>:</p> <p><u>Unintentional</u>: Bird <input checked="" type="checkbox"/> Animal (ants) <input checked="" type="checkbox"/> Vehicles/Human <input checked="" type="checkbox"/> Wind <input type="checkbox"/> Water <input checked="" type="checkbox"/> Other: Ballistic or explosive pods can spread seeds greater distances (4)(7).</p> <p><u>Intentional</u>: Ornamental <input checked="" type="checkbox"/> Forage/Erosion control <input checked="" type="checkbox"/> Medicine/Food: Other: dune stabilization (5)</p> <p>2. <u>Distinguishing characteristics that aid in its survival and/or inhibit its control</u>: Dense monocultures, facultative nitrogen-fixer, deep roots, resprouts, rapid growth, long-lived (up to 20-30 yrs), prolific, drought resistant, tolerates wide environmental conditions (soil, temperature, moisture) (4)(7).</p>
IV. Ability to go Undetected	1. HIGH <input type="checkbox"/> MEDIUM <input type="checkbox"/> LOW <input checked="" type="checkbox"/>
C. DAMAGE POTENTIAL	
I. Competitive Ability	<p>1. <u>Presence of Natural Enemies</u>: none known in WI</p> <p>2. <u>Competition with native species</u>: Grows rapidly. Out-competes herbaceous and smaller woody plants. (2)(7)</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: Became established and dominated new Douglas fir plantation within 2 yrs in British Columbia (4).</p>
II. Environmental Effects	<p>1. <u>Alteration of ecosystem/community composition?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Notes: Forms monocultures and crowds out native vegetation, including conifer seedlings (3)(4)(6)(8)</p> <p>2. <u>Alteration of ecosystem/community structure?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Notes: Eliminates grassland wildlife habitat (3)(6)(7). Open grassland systems become dense shrublands (6).</p> <p>3. <u>Alteration of ecosystem/community functions and processes?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Notes: Reduces biodiversity and forage (4)(6), but seedlings provide forage (2). May facilitate other invasive species and change fire regime (6)(7).</p>

	4. Allelopathic properties? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Notes:
D. SOCIO-ECONOMIC EFFECTS	
I. Positive aspects of the species to the economy/society:	Notes: Can be planted as an ornamental, or can also be used to stabilize soils (3)(7)(8).
II. Potential Socio-Economic Effects of Requiring Controls:	Notes:
III. Direct and indirect Socio-Economic Effects of Plant :	Notes: Reduces pasture/range capacity (7); may be toxic to livestock (8); reduces agricultural yields (6); increases cost of right-of-way maintenance (7), reduces conifer plantation success (4)(8), reduces habitat for popular game species [potentially reducing recreation and tourism] (3)(6)(7), reduces attractive native vegetation [potentially reducing tourism] (6)
IV. Increased Costs to Sectors Caused by the Plant::	Notes: Forestry—reduces conifer plantation regeneration, requires additional plantings, control efforts (4); may increase wildfire suppression costs (7). Agriculture—reduced yields, control costs (6)
V. Effects on human health:	Notes: Quinolizidine alkaloids (sparteine, isosparteine) make flowers and seeds poisonous and the leaves unpalatable (2). Cystisin also found in twigs and leaves of plant..
VI. Potential socio-economic effects of restricting use:	Notes: (+) [no loss of wildlife habitat, no reduced agricultural and forest productivity, prevent risk to threatened ecosystems such as dry prairies and Great Lakes barrens] (-) [costs of establishing and maintaining monitoring program, cost of educating green industries on restrictions, possible lost income to nurseries, although not widely sold now] (+) [Not grown, nor sold by nurseries in the state]
E. CONTROL AND PREVENTION	
I. Costs of Prevention (please be as specific as possible):	Notes: Education; private landowner notification and instruction; monitoring/surveying; nursery inspection and enforcement; use of uncontaminated hay, gravel, ballast and other materials transported into the state
II. Responsiveness to prevention efforts:	Notes: Early detection should be very effective. Control methods that disturb the soil or create bare soil (manual pulling, burning, large equipment) can enhance germination, making long-term control difficult (4); glyphosate not always effective (4); cutting or burning without followup herbicide, pulling without fully removing root will result in some resprouting (7); picloram, sodium chlorate, and 2,4-D generally effective (7)
III. Effective Control tactics:	1. Mechanical <input checked="" type="checkbox"/> 2. Biological <input checked="" type="checkbox"/> 3. Chemical <input type="checkbox"/> 1. <u>Pull</u> : When soil is moist hand pull small plants (<1.5 m tall), use weed wrench for stems <6 cm dbh; Bradley strategy can be effective long-term (2)(6)(7)(8) <u>Cut/mow</u> to prevent seed set, however 50% of roots will resprout, must be repeated and may result in greater density (2)(7)(8) <u>Burn</u> : torch can heat-girdle basal stems (7); slow, backing fire may top-kill dense stands; can control resprouts and seedlings when grass present, especially long-term (2)(6), best with other methods: followup herbicide to stumps, native plantings (3)(7) 2. <u>Grazing</u> : (Angora) goats or sheep, especially for resprouts, or

	chickens for seeds/seedlings (2)(3)(7) <u>Competition</u> : dense, tall or fast-growing plants to shade it out (2)(7) 3. <u>broadcast</u> : 2,4-D, picloram, sodium chlorate, triclopyr (7) <u>foliar</u> : 2-3% glyphosate (2), but not always effective (7); <u>basal</u> 25% triclopyr in oil (2)
IV. Minimum Effort:	Notes: [Pull small patches. Prescribed burn, basal bark, or broadcast spray larger patches. Broadcast native seed in cleared areas to reduce need for follow-up treatments.]
V. Costs of Control:	Notes: Cost for control in OR (per acre): cutting \$100-350, mowing \$250-\$500, pulling \$2000 (300 hours), chemical \$300 (9)
VI. Cost of prevention/control vs. Cost of allowing invasion:	Notes:
VII. Non-Target Effects of Control:	Notes: Some methods, such as herbicides or mowing, can be harmful to surrounding plants. Its removal may require replacing with other vegetation (5)(6).
VIII. Efficacy of monitoring:	Notes:
IX. Legal and landowner issues:	Notes: May be present on private lands and desired by landowners for ornamental purposes

F. REFERENCES USED:

- UW Herbarium
 WI DNR
 TNC → "Element Stewardship Abstract for *Cystisus scoparius* and *Genista monspessulanus*"
"Controlling Scotch (Scots) Broom in the Pacific Northwest"
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 IPANE
 USDA Plants

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