

WEED RISK ASSESSMENT FORM

Botanical name:	<i>Hypericum perforatum</i> L.		
Common name:	St. Johnswort		
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Outcome score:

A. Climatic Comparison		
This species is present or may potentially establish in the following eco-geographic regions:		
1 South Coastal	Yes	
2 Interior-Boreal	Yes	
3 Arctic-Alpine	Yes	

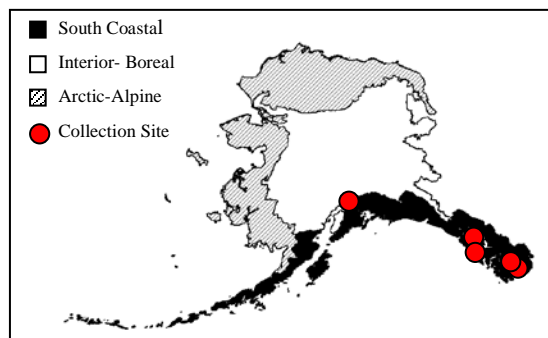
B.	Invasiveness Ranking	Total (Total Answered*) Possible	Total
1	Ecological impact	40 (40)	11
2	Biological characteristic and dispersal ability	25 (25)	15
3	Ecological amplitude and distribution	25 (25)	18
4	Feasibility of control	10 (10)	8
	Outcome score	100 (100) ^b	52 ^a
	Relative maximum score†		0.52

* For questions answered "unknown" do not include point value for the question in parentheses for "Total Answered Points Possible."

† Calculated as ^a/_b.

A. CLIMATIC COMPARISON:

	1.1. Has this species ever been collected or documented in Alaska?
Yes	Yes – continue to 1.2
	No – continue to 2.1
	1.2. Which eco-geographic region has it been collected or documented (see inset map)? <i>Proceed to Section B. Invasiveness Ranking.</i>
Yes	South Coastal
Yes	Interior-Boreal
	Arctic-Alpine



Documentation: *Hypericum perforatum* has been recorded from Anchorage, Sitka, Ketchikan, and Baranof Island, Alaska (AK Weed Database 2004).
 Sources of information:
 AK Weeds Database. 2004. Database of exotic vegetation collected in Alaska. University of Alaska, Alaska Natural Heritage Program – US Forest Service – National Park Service Database. Available: <http://akweeds.uaa.alaska.edu/>

- 2.1. Is there a 40% or higher similarity (based on CLIMEX climate matching) between climates any where the species currently occurs and
- a. Juneau (South Coastal Region)?
 - Yes – record locations and similarity; proceed to Section B.
Invasiveness Ranking
 - No
 - Yes b. Fairbanks (Interior-Boreal)?
 - Yes – record locations and similarity; proceed to Section B.
Invasiveness Ranking
 - No
 - Yes c. Nome (Arctic-Alpine)?
 - Yes – record locations and similarity; proceed to Section B.
Invasiveness Ranking
 - No
 - If “No” is answered for all regions, reject species from consideration

Documentation: Climatic similarity is high between Nome (Arctic-Alpine ecoregion) and areas where the species is documented. Native range of the species includes Ust’Tsil’ma, Ust’Shchugor, and Zlatoust, Russia (Gubanov et al. 2003, USDA, ARS 2004), which has a 78%, 73% and 71% climatic match with Nome, and 66%, 67%, and 64% with Fairbanks, respectively. The species has been recorded from Anchorage, Alaska, which has a 61% climatic match with Nome. Thus establishment of *Hypericum perforatum* in Arctic-Alpine and Interior Boreal ecoregions may be possible.
 Sources of information: CLIMEX for Windows, Version 1.1a. 1999. CISRO Publishing, Australia. Gubanov IA, Kiseleva KV, Novikov VS, Tihomirov VN. An illustrated identification book of the plants of Middle Russia, Vol. 2: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 2003. 666 p.
 USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: <http://www.ars-grin.gov/var/apache/cgi-bin/npgs/html/taxon.pl?2017> (June 15, 2004).

B. INVASIVENESS RANKING

1. ECOLOGICAL IMPACT

1.1. Impact on Natural Ecosystem Processes

- A. No perceivable impact on ecosystem processes 0
- B. Influences ecosystem processes to a minor degree (e.g., has a perceivable but mild influence on soil nutrient availability) 3
- C. Significant alteration of ecosystem processes (e.g., increases sedimentation rates along streams or coastlines, reduces open water that are important to waterfowl) 7
- D. Major, possibly irreversible, alteration or disruption of ecosystem processes (e.g., the species alters geomorphology; hydrology; or affects fire frequency, altering community composition; species fixes substantial levels of nitrogen in the soil making soil unlikely to support certain native plants or more likely to favor non-native species) 10
- U. Unknown

Score

3

Documentation:
 Identify ecosystem processes impacted:
 Common St. Johnswort depletes soil moisture. It is likely to delay establishment of native species in disturbed sites. In late summer, the dry stalks of St. Johnswort may constitute a fire hazard to forests and rangelands (Sampson and Parker 1930).
 Rational:

Sources of information:

Sampson, A.W. and K.W. Parker. 1930. St. Johns-wort on rangelands of California. California Agricultural Experiment Station Bulletin 503. Berkeley, California. 48 pp.

Crompton, C.W., I.V. Hall, K.I.N. Jensen, P.D. Hildebrand, P.D. 1988. The biology of Canadian weeds. 83. *Hypericum perforatum* L. Canadian Journal of Plant Science 68(1): 149-162.

1.2. Impact on Natural Community Structure

- A. No perceived impact; establishes in an existing layer without influencing its structure 0
- B. Influences structure in one layer (e.g., changes the density of one layer) 3
- C. Significant impact in at least one layer (e.g., creation of a new layer or elimination of an existing layer) 7
- D. Major alteration of structure (e.g., covers canopy, eradicating most or all layers below) 10
- U. Unknown

Score 3

Documentation:

Identify type of impact or alteration:

Common St. Johnswort is capable of forming dense stand in grasslands and pastures (Powell et al. 1994, Tisdale et al. 1959, White et al. 1993).

Rational:

Sources of information:

Powell, G.W., A. Sturko, B.M. Wikeen, and P. Harris. 1994. Field Guide to the biological control of weeds in British Columbia. Land Management Handbook No. 27. Province of British Columbia, Ministry of Forests.

Tisdale, E.W., M. Hironaka, W.L. Pringle. 1959. Observations on the autecology of *Hypericum perforatum*. Ecology 40(1): 54-62.

White, D.J., E. Haber, and C. Keddy. 1994. Invasive plants of natural habitats in Canada: an integrated review of wetland and upland species and legislation governing their control. Canadian Wildlife Service, Ottawa, Canada. 121 p.

1.3. Impact on Natural Community Composition

- A. No perceived impact; causes no apparent change in native populations 0
- B. Influences community composition (e.g., reduces the number of individuals in one or more native species in the community) 3
- C. Significantly alters community composition (e.g., produces a significant reduction in the population size of one or more native species in the community) 7
- D. Causes major alteration in community composition (e.g., results in the extirpation of one or several native species, reducing biodiversity or change the community composition towards species exotic to the natural community) 10
- U. Unknown

Score 3

Documentation:

Identify type of impact or alteration:

Common St. Johnswort is capable of displacing native species and modifying native plant community composition (Rutledge and McLendon 1996).

Rational:

Sources of information:

Rutledge, C.R., and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97 pp. Northern Prairie Wildlife Research Center Home Page.

<http://www.npwrc.usgs.gov/resource/othrdata/Explant/explant.htm> (Version 15DEC98).

1.4. Impact on higher trophic levels (cumulative impact of this species on the animals, fungi, microbes, and other organisms in the community it invades)

- A. Negligible perceived impact 0
- B. Minor alteration 3

- C. Moderate alteration (minor reduction in nesting/foraging sites, reduction in habitat connectivity, interference with native pollinators, injurious components such as spines, toxins) 7
- D. Severe alteration of higher trophic populations (extirpation or endangerment of an existing native species/population, or significant reduction in nesting or foraging sites) 10
- U. Unknown

Score

2

Documentation:

Identify type of impact or alteration:

The plant contains a toxin that causes severe dermatitis in light-haired livestock when they are exposed to strong sunlight (Powell et al. 1994, Rutledge and McLendon 1996, Whitson et al. 2000). Hybrid of *H. perforatum* and *H. maculatum* is common in Europe where both species occur (Campbell and Delfosse 1984, Lid and Lid 1994).

Rational:

Sources of information:

Campbell, M.H. and E.S. Delfosse. 1984. The biology of Australian Weeds. 13. *Hypericum perforatum* L. The Journal of the Australian Institute of Agricultural Science 50(2): 63-73.

Lid, J. and D. T. Lid. 1994. Flora of Norway. The Norske Samlaget, Oslo. Pp. 1014.

Powell, G.W., A. Sturko, B.M. Wikeen, and P. Harris. 1994. Field Guide to the biological control of weeds in British Columbia. Land Management Handbook No. 27. Province of British Columbia, Ministry of Forests.

Rutledge, C.R., and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97 pp. Northern Prairie Wildlife Research Center Home Page.

<http://www.npwrc.usgs.gov/resource/othrdata/Explant/explant.htm> (Version 15DEC98).

Whitson, T. D., L. C. Burrill, S. A. Dewey, D. W. Cudney, B. E. Nelson, R. D. Lee, R. Parker. 2000. Weeds of the West. The Western Society of Weed Science in cooperation with the Western United States Land Grant Universities, Cooperative Extension Services. University of Wyoming. Laramie, Wyoming. 630 pp.

Total Possible

40

Total

11

2. BIOLOGICAL CHARACTERISTICS AND DISPERSAL ABILITY

2.1. Mode of reproduction

- A. Not aggressive reproduction (few [0-10] seeds per plant and no vegetative reproduction) 0
- B. Somewhat aggressive (reproduces only by seeds (11-1,000/m²)) 1
- C. Moderately aggressive (reproduces vegetatively and/or by a moderate amount of seed, <1,000/m²) 2
- D. Highly aggressive reproduction (extensive vegetative spread and/or many seeded, >1,000/m²) 3
- U. Unknown

Score

3

Documentation:

Describe key reproductive characteristics (including seeds per plant):

Common St. Johnswort reproduces by seed and short runners. Root system spreads horizontally and forms new buds (Rutledge and McLendon 1996). According to Davey (1919) plant is capable of producing up to 15,000 seeds. Seed production during a 2-year study in Idaho averaged 23,350 seeds per plant (Tisdale et al. 1959).

Rational:

Sources of information:

Davey, H.W. 1919. Experiments in the control of St. John's wort. Journal of

Agriculture 17: 378-379.

Rutledge, C.R., and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97 pp. Northern Prairie Wildlife Research Center Home Page.

<http://www.npwrc.usgs.gov/resource/othrdata/Explant/explant.htm> (Version 15DEC98).

Tisdale, E.W., M. Hironaka, W.L. Pringle. 1959. Observations on the autecology of *Hypericum perforatum*. Ecology 40(1): 54-62.

2.2. Innate potential for long-distance dispersal (bird dispersal, sticks to animal hair, buoyant fruits, wind-dispersal)

- A. Does not occur (no long-distance dispersal mechanisms) 0
- B. Infrequent or inefficient long-distance dispersal (occurs occasionally despite lack of adaptations) 2
- C. Numerous opportunities for long-distance dispersal (species has adaptations such as pappus, hooked fruit-coats, etc.) 3
- U. Unknown

Score

3

Documentation:

Identify dispersal mechanisms:

Water and animals are likely the main factors of seed dispersal (Rutledge and McLendon 1996, Parsons 1957). Seeds have no adaptation to wind dispersal, however a few tests conducted in Idaho indicate that seeds can be distributed by wind up to 30 feet from the nearest plant (Tisdale et al. 1959). Gelatinous coat of the seed facilitates long-distance dispersal by sticking to moving objects or beings (Sampson and Parker 1930 cited in Crompton et al. 1988).

Rational:

Sources of information:

Parsons, W.T. 1957. St. John's wort in Victoria. History, distribution, control. The Journal of Agriculture, Victoria 55: 781-788.

Rutledge, C.R., and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97 pp. Northern Prairie Wildlife Research Center Home Page.

<http://www.npwrc.usgs.gov/resource/othrdata/Explant/explant.htm> (Version 15DEC98).

Sampson, A.W. and K.W. Parker. 1930. St. Johns-wort on rangelands of California. California Agricultural Experiment Station Bulletin 503. Berkeley, California. 48 pp.

Tisdale, E.W., M. Hironaka, W.L. Pringle. 1959. Observations on the autecology of *Hypericum perforatum*. Ecology 40(1): 54-62.

2.3. Potential to be spread by human activities (both directly and indirectly – possible mechanisms include: commercial sales, use as forage/revegetation, spread along highways, transport on boats, contamination, etc.)

- A. Does not occur 0
- B. Low (human dispersal is infrequent or inefficient) 1
- C. Moderate (human dispersal occurs) 2
- D. High (there are numerous opportunities for dispersal to new areas) 3
- U. Unknown

Score

3

Documentation:

Identify dispersal mechanisms:

Common St. Johnswort was introduced to new areas for ornamental and medicinal purposes (Parsons 1957). It has been cultivated on farms in eastern European countries (Gubanov et al. 2003). Seeds may contaminate commercial crop seed (USDA, ARS 2005). Seeds also can be distributed over large areas, adhering to wheels of vehicles, or contaminating hay, or soil (Parsons 1957).

Rational:

Sources of information:
 Gubanov IA, Kiseleva KV, Novikov VS, Tihomirov VN. An illustrated identification book of the plants of Middle Russia, Vol. 2: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 2003. 666 p.
 Parsons, W.T. 1957. St. John's wort in Victoria. History, distribution, control. The Journal of Agriculture, Victoria 55: 781-788.
 USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: <http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?19600> (May 19, 2005).

2.4. Allelopathic

- A. No 0
- B. Yes 2
- U. Unknown

Score

Documentation:
 Describe effect on adjacent plants:
 Allelopathy has never been reported for common St. Johnswort, there is likely no allelopathy potential for this plant..
 Rational:
 Sources of information:

2.5. Competitive ability

- A. Poor competitor for limiting factors 0
- B. Moderately competitive for limiting factors 1
- C. Highly competitive for limiting factors and/or nitrogen fixing ability 3
- U. Unknown

Score

Documentation:
 Evidence of competitive ability:
 Seedlings of common St. Johnswort are very small, grow slowly, and are extremely susceptible to competition from other pasture plants. Once the new seedlings pass their first year and are established, they are able to outcompete and displace their neighbors (Cambell 1985). Tisdale and others (1959) found than perennial pasture grasses are more competitive plants compared to common St. Johnswort.
 Rational:
 The root system of seedlings commonly attains a depth of about one foot during its first growing season. Mature plants have an extensive root system which extends 4 to 5 feet in depth and about 3 feet laterally. The deep root system is capable of supporting the plant when soil water has been depleted (Tisdale et al. 1959).
 Sources of information:
 Campbell, M.H. 1985. Germination, emergence and seedling growth of *Hypericum perforatum* L. Weed Research 25: 259-266.
 Tisdale, E.W., M. Hironaka, W.L. Pringle. 1959. Observations on the autecology of *Hypericum perforatum*. Ecology 40(1): 54-62.

2.6. Forms dense thickets, climbing or smothering growth habit, or otherwise taller than the surrounding vegetation

- A. No 0
- B. Forms dense thickets 1
- C. Has climbing or smothering growth habit, or otherwise taller than the surrounding vegetation 2
- U. Unknown

Score

Documentation:

Describe grow form:

Common St. Johnswort forms a dense spreading canopy over 3 feet tall and may overtop other pasture forbs and grasses (Crompton et al. 1988).

Rational:

Sources of information:

Crompton, C.W., I.V. Hall, K.I.N. Jensen, P.D. Hildebrand, P.D. 1988. The biology of Canadian weeds. 83. *Hypericum perforatum* L. Canadian Journal of Plant Science 68(1): 149-162.

2.7. Germination requirements

- A. Requires open soil and disturbance to germinate 0
- B. Can germinate in vegetated areas but in a narrow range or in special conditions 2
- C. Can germinate in existing vegetation in a wide range of conditions 3
- U. Unknown

Score

Documentation:

Describe germination requirements:

Seeds require bare soil, sunlight and/or heavy rain for germination (Tisdale et al. 1959). Germination is generally inhibited by high levels of litter (Rutledge and McLendon 1996).

Rational:

Sources of information:

Rutledge, C.R., and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97 pp. Northern Prairie Wildlife Research Center Home Page. <http://www.npwrc.usgs.gov/resource/othrdata/Explant/explant.htm> (Version 15DEC98).

Tisdale, E.W., M. Hironaka, W.L. Pringle. 1959. Observations on the autecology of *Hypericum perforatum*. Ecology 40(1): 54-62.

2.8. Other species in the genus invasive in Alaska or elsewhere

- A. No 0
- B. Yes 3
- U. Unknown

Score

Documentation:

Species:

Hypericum androsaemum is a very important weed in Australia (Parsons 1957).

Sources of information:

Parsons, W.T. 1957. St. John's wort in Victoria. History, distribution, control. The Journal of Agriculture, Victoria 55: 781-788.

2.9. Aquatic, wetland, or riparian species

- A. Not invasive in wetland communities 0
- B. Invasive in riparian communities 1
- C. Invasive in wetland communities 3
- U. Unknown

Score

Documentation:

Describe type of habitat:

Common St. Johnswort is commonly found along roadsides and on other disturbed areas. It also invades rangelands, pastures, and meadows (Guide to weeds in British Columbia 2002, Powell et al. 1994). It is known to invade large areas on river banks in northeast Australia (Parsons 1957).

Rational:

Sources of information:

Guide to weeds in British Columbia. 2002. British Columbia, Ministry of Agriculture, Food and Fisheries, Open Learning Agency. Available: <http://www.weedsbc.ca/resources.html> [April 23, 2005].

Parsons, W.T. 1957. St. John's wort in Victoria. History, distribution, control. The Journal of Agriculture, Victoria 55: 781-788.

Powell, G.W., A. Sturko, B.M. Wikeen, and P. Harris. 1994. Field Guide to the biological control of weeds in British Columbia. Land Management Handbook No. 27. Province of British Columbia, Ministry of Forests.

Total Possible	25
Total	15

3. DISTRIBUTION

3.1. Is the species highly domesticated or a weed of agriculture

- A. No 0
- B. Is occasionally an agricultural pest 2
- C. Has been grown deliberately, bred, or is known as a significant agricultural pest 4
- U. Unknown

Score

4

Documentation:

Identify reason for selection, or evidence of weedy history:

Although common St. Johnswort is not domesticated, it has been cultivated on farms in eastern European countries for medicinal purposes (Gubanov et al. 2003)

Rational:

Sources of information:

Gubanov IA, Kiseleva KV, Novikov VS, Tihomirov VN. An illustrated identification book of the plants of Middle Russia, Vol. 2: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 2003. 666 p.

3.2. Known level of impact in natural areas

- A. Not known to cause impact in any other natural area 0
- B. Known to cause impacts in natural areas, but in dissimilar habitats and climate zones than exist in regions of Alaska 1
- C. Known to cause low impact in natural areas in similar habitats and climate zones to those present in Alaska 3
- D. Known to cause moderate impact in natural areas in similar habitat and climate zones 4
- E. Known to cause high impact in natural areas in similar habitat and climate zones 6
- U. Unknown

Score

3

Documentation:

Identify type of habitat and states or provinces where it occurs:

Common St. Johnswort invades grasslands and open forest land in California, Oregon, Washington, Idaho, and Montana. In Idaho, common St. Johnswort creates medium to dense stands in grassland replacing native vegetation. It has been established in cut and burned-over areas in *Pinus ponderosa* forests in Idaho (Tisdale et al. 1959). This weed forms large dense stands in moist grasslands and open forest areas in British Columbia (Powell et al. 1994, White et al. 1993). Common St. Johnswort invades large areas in forests, river banks, and pastures in northeast Australia (Parsons 1957)

Sources of information:

Parsons, W.T. 1957. St. John's wort in Victoria. History, distribution, control. The Journal of Agriculture, Victoria 55: 781-788.

Powell, G.W., A. Sturko, B.M. Wikeen, and P. Harris. 1994. Field Guide to the biological control of weeds in British Columbia. Land Management Handbook No. 27. Province of British Columbia, Ministry of Forests.

Tisdale, E.W., M. Hironaka, W.L. Pringle. 1959. Observations on the autecology of

Hypericum perforatum. Ecology 40(1): 54-62.
 White, D.J., E. Haber, and C. Keddy. 1994. Invasive plants of natural habitats in Canada: an integrated review of wetland and upland species and legislation governing their control. Canadian Wildlife Service, Ottawa, Canada. 121 p.

3.3. Role of anthropogenic and natural disturbance in establishment

- A. Requires anthropogenic disturbances to establish 0
- B. May occasionally establish in undisturbed areas but can readily establish in areas with natural disturbances 3
- C. Can establish independent of any known natural or anthropogenic disturbances 5
- U. Unknown

Score

3

Documentation:

Identify type of disturbance:

Original infestations usually associated with logging, fire, mining, or other disturbance. It can be established in forested areas experiencing natural disturbances such as fire or animal digging and burrowing (Clark 1953, Davey 1919). Vegetative propagation is usually stimulated when St. Johnswort plants are affected by grazing, mowing, or fire (Tisdale et al. 1959).

Rational:

Sources of information:

Clark, N. 1953. The biology of St. John's wort (*Hypericum perforatum* L. var *angustifolium* DC.) in Ovens Valley, Victoria, with particular references to entomological control. Australian Journal of Botany 1(1): 95-120.

Davey, H.W. 1919. Experiments in the control of St. John's wort. Journal of Agriculture 17: 378-379.

Tisdale, E.W., M. Hironaka, W.L. Pringle. 1959. Observations on the autecology of *Hypericum perforatum*. Ecology 40(1): 54-62.

3.4. Current global distribution

- A. Occurs in one or two continents or regions (e.g., Mediterranean region) 0
- B. Extends over three or more continents 3
- C. Extends over three or more continents, including successful introductions in arctic or subarctic regions 5
- U. Unknown

Score

3

Documentation:

Describe distribution:

Common St. Johnswort is native to Europe, and it is naturalized in Asia, south Africa, Japan, North and South America, Australia, and New Zealand (Gubanov et al. 2003, USDA, ARS 2005).

Rational:

Sources of information:

Gubanov IA, Kiseleva KV, Novikov VS, Tihomirov VN. An illustrated identification book of the plants of Middle Russia, Vol. 2: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 2003. 666 p.

USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: <http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?19600> (May 19, 2005).

3.5. Extent of the species U.S. range and/or occurrence of formal state or provincial listing

- A. 0-5% of the states 0
- B. 6-20% of the states 2
- C. 21-50%, and/or state listed as a problem weed (e.g., "Noxious," or "Invasive") in 1 state or Canadian province 4

- D. Greater than 50%, and/or identified as “Noxious” in 2 or more states or Canadian provinces 5
- U. Unknown

Score

5

Documentation:

Identify states invaded:

Common St. Johnswort has been found in nearly all the continental United States and Hawaii. It is known from British Columbia, Ontario, Manitoba, and Quebec (Crompton et al. 1988, USDA 2002). *Hypericum perforatum* declared a noxious weed in California, Colorado, Montana, Nevada, Oregon, Washington, Wyoming, Manitoba, and Quebec (Invaders Database System 2003, USDA 2002).

Rational:

Sources of information:

Crompton, C.W., I.V. Hall, K.I.N. Jensen, P.D. Hildebrand, P.D. 1988. The biology of Canadian weeds. 83. *Hypericum perforatum* L. Canadian Journal of Plant Science 68(1): 149-162.

Invaders Database System. The University of Montana. 2003. Montana Noxious Weed Trust Fund. Department of Agriculture. <http://invader.dbs.umt.edu/>

USDA (United States Department of Agriculture), NRCS (Natural Resource Conservation Service). 2002. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Total Possible

25

Total

18

4. FEASIBILITY OF CONTROL

4.1. Seed banks

- A. Seeds remain viable in the soil for less than 3 years 0
- B. Seeds remain viable in the soil for between 3 and 5 years 2
- C. Seeds remain viable in the soil for 5 years and more 3
- U. Unknown

Score

3

Documentation:

Identify longevity of seed bank:

In Australia, Clark (1953) found that St. Johnswort seeds may remain viable in the soil for as long as 6 years. In Idaho, seed buried in soil retained viability after 3 years (Tisdale et al. 1959).

Rational:

Sources of information:

Clark, N. 1953. The biology of St. John’s wort (*Hypericum perforatum* L. var *angustifolium* DC.) in Owens Valley, Victoria, with particular references to entomological control. Australian Journal of Botany 1(1): 95-120.

Tisdale, E.W., M. Hironaka, W.L. Pringle. 1959. Observations on the autecology of *Hypericum perforatum*. Ecology 40(1): 54-62.

4.2. Vegetative regeneration

- A. No resprouting following removal of aboveground growth 0
- B. Resprouting from ground-level meristems 1
- C. Resprouting from extensive underground system 2
- D. Any plant part is a viable propagule 3
- U. Unknown

Score

2

Documentation:

Describe vegetative response:

Common St. Johnswort can sprout from buds on lateral roots (Rutledge and McLendon

1996).

Rational:

Sources of information:

Rutledge, C.R., and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97 pp. Northern Prairie Wildlife Research Center Home Page. <http://www.npwrc.usgs.gov/resource/othrdata/Explant/explant.htm> (Version 15DEC98).

4.3. Level of effort required

- A. Management is not required (e.g., species does not persist without repeated anthropogenic disturbance) 0
- B. Management is relatively easy and inexpensive; requires a minor investment in human and financial resources 2
- C. Management requires a major short-term investment of human and financial resources, or a moderate long-term investment 3
- D. Management requires a major, long-term investment of human and financial resources 4
- U. Unknown

Score

3

Documentation:

Identify types of control methods and time-term required:

Common St. Johnswort is difficult to control because of its extensive root system and long-lived seeds. Tillage, hand pulling, mowing, or burning appears to be ineffective because vegetative reproduction may be stimulated by mechanical treatment (Tisdale et al. 1959). Common St. Johnswort can be controlled by herbicides, however wax on the leaves may inhibit herbicide uptake. Biological control has been relatively successful using several leaf-feeding beetles. However, in Canada and at high elevations these insects do not thrive (Rutledge and McLendon 1996, White et al. 1994).

Rational:

Sources of information:

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Total Possible

10

Total

8

Total for 4 sections Possible

100

Total for 4 sections

52

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