

**WEED RISK ASSESSMENT FORM**

Botanical name: Campanula rapunculoides L.  
 Common name: creeping bellflower  
 Assessors: Irina Lapina Matthew L. Carlson, Ph.D.  
 Botanist, Alaska Natural Heritage Program, University of Alaska Anchorage, 707 A Street, Anchorage, Alaska 99501  
 Assistant Professor, Alaska Natural Heritage Program, University of Alaska Anchorage, 707 A Street, Anchorage, Alaska 99501  
 tel: (907) 257-2710; fax (907) 257-2789  
 tel: (907) 257-2790; fax (907) 257-2789  
 Reviewers: Jeff Conn, Ph.D. Jeff Heys  
 Weed Scientist, USDA Agricultural Research Service  
 Exotic Plant Management Program Coordinator, National Park Service, Alaska Region - Biological Resources Team, 240 W. 5th Ave, #114, Anchorage, AK 99501  
 PO Box 757200 Fairbanks, Alaska 99775  
 tel: (907) 474-7652; fax (907) 474-6184  
 tel: (907)644-3451, fax: 644-3809  
Jamie M. Snyder Julie Riley  
 UAF Cooperative Extension Service  
 Horticulture Agent, UAF Cooperative Extension Service  
 2221 E. Northern Lights Blvd. #118  
 Anchorage, AK 99508-4143  
 tel: (907) 786-6310  
 alt.tel: (907) 743-9448  
 tel: (907) 786-6306  
Erin Uloth Roseann Densmore, Ph.D.  
 Forest Health Protection State and Private Forestry, 3301 C Street Suite 202  
 Research Ecologist, US Geological Survey, Alaska Biological Science Center, 1101 East Tudor Road Anchorage, AK 99503  
 Anchorage, AK 99503  
 tel: (907) 743-9459, fax (907) 743-9479  
 tel: (907) 786-3916, fax (907) 786-3636

**Outcome score:**

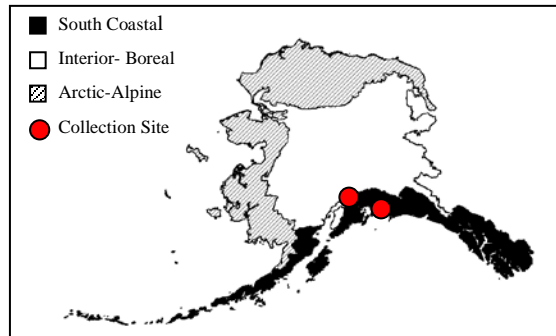
<b>A. Climatic Comparison</b>		
This species is present or may potentially establish in the following eco-geographic regions:		
1	South Coastal	Yes
2	Interior-Boreal	Yes
3	Arctic-Alpine	Yes

B.	Invasiveness Ranking	Total (Total Answered*) Possible	Total
1	Ecological impact	40 (40)	18
2	Biological characteristic and dispersal ability	25 (20)	16
3	Ecological amplitude and distribution	25 (25)	20
4	Feasibility of control	10 (7)	5
	Outcome score	100 (92) <sup>b</sup>	59 <sup>a</sup>
	Relative maximum score†		0.64

\* For questions answered "unknown" do not include point value for the question in parentheses for "Total Answered Points Possible."  
 † Calculated as <sup>a</sup>/<sub>b</sub>.

**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
	Interior-Boreal
	Arctic-Alpine



Documentation: *Campanula rapunculoides* has been collected in Anchorage and Cordova, Alaska (UAM 2004).

Sources of information:

University of Alaska Museum. University of Alaska Fairbanks. 2004.

<http://hispidamuseum.uaf.edu:8080/home.cfm>

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

b. Fairbanks (Interior-Boreal)?

Yes – record locations and similarity; proceed to Section B.

*Invasiveness Ranking*

No

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: The native range of creeping bellflower includes Røros and Dombas, Norway (Lid and Lid 1994), which has a 55% and 52% of climatic match with Fairbanks and 76% and 63% of climatic match with Nome (CLIMEX 1999). These suggest that establishment of creeping bellflower in Interior Boreal and Arctic-Alpine eco-geographic regions of Alaska may be possible.

Sources of information: CLIMEX for Windows, Version 1.1a. 1999. CISRO Publishing, Australia.

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

## 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
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Documentation:

Identify ecosystem processes impacted:

Creeping bellflower likely reduces soil moisture and nutrients (Royer and Dickinson 1999).

Rational:

Sources of information:

Royer, F., and R. Dickinson. 1999. Weeds of the Northern U.S. and Canada. The University of Alberta press. 434 pp.

#### 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 5

**Documentation:**

Identify type of impact or alteration:

Creeping bellflower is able to form dense thickets (Gubanov et al. 2004). This species forms ground cover in mixed birch-spruce forest in Anchorage parks. It also was observed interfering with raspberries stand (M. Rasy – pers. obs.).

Rational:

Sources of information:

Gubanov, I.A., K.V. Kiseleva, V.S. Novikov and V.N. Tihomirov. 2004. An illustrated identification book of the plants of Middle Russia, Vol. 3: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 520 p.

Rasy, M. Integrated Pest Management Technician. Cooperative Extension Service, University of Alaska Fairbanks. 2221 E. Northern Lights Boulevard, Suite 118, Anchorage, AK 99508-4143; tel. (907) 786-6309. Pers. obs.

**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 7

**Documentation:**

Identify type of impact or alteration:

Creeping bellflower is able to reduce number of individuals of co-occurring species, especially grasses (Lewis and Lynch 1998).

Rational:

Sources of information:

Lewis, P. and M. Lynch. 1998. Campanulas. A gardener's guide. Portland, Oregon: Timber Press.

**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 3

**Documentation:**

Identify type of impact or alteration:

The flowers of creeping bellflower are pollinated by bees, flies, beetles, moths, and butterflies. It is noted that creeping bellflower rarely if ever damaged by browsing animals (Plants For A Future 2004).

Rational:

Sources of information:

Total Possible	40
Total	18

## 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/m<sup>2</sup>) 1
- C. Moderately aggressive (reproduces vegetatively and/or by a moderate amount of seed, <1,000/m<sup>2</sup>) 2
- D. Highly aggressive reproduction (extensive vegetative spread and/or many seeded, >1,000/m<sup>2</sup>) 3
- U. Unknown

Score 

3
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#### Documentation:

Describe key reproductive characteristics (including seeds per plant):

Creeping bellflower reproduces by creeping rhizomes and by seeds. Each plant may produce 3,000 to 15,000 seeds annually (Gubanov et al. 2004, Whiston et al. 2000, Royer and Dickinson 1999).

Rational:

Sources of information:

Gubanov, I.A., K.V. Kiseleva, V.S. Novikov and V.N. Tihomirov. 2004. An illustrated identification book of the plants of Middle Russia, Vol. 3: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 520 p.

Royer, F., and R. Dickinson. 1999. Weeds of the Northern U.S. and Canada. The University of Alberta press. 434 pp.

Whiston, 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.

### 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
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#### Documentation:

Identify dispersal mechanisms:

Seeds spread by wind because of their light weight and small wings (Gubanov et al. 2004).

Rational:

Sources of information:

Gubanov, I.A., K.V. Kiseleva, V.S. Novikov and V.N. Tihomirov. 2004. An illustrated identification book of the plants of Middle Russia, Vol. 3: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 520 p.

### 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
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**Documentation:**

Identify dispersal mechanisms:

Creeping bellflower was introduced to North America as an ornamental plant (Royer and Dickinson 1999). It is frequently escaping from gardens (Whitson et al. 2000). This plant also disperses with nursery stock (Alfnes 1975).

Rational:

Sources of information:

Alfnes, A.T. 1975. Dispersion of especially troublesome weeds (*Rorippa sylvestris*, *Aegopodium podagraria*, *Campanula rapunculoides*) in nursery stock. *Gartneryrket*; 65: 772-774. In Norwegian.

Royer, F., and R. Dickinson. 1999. Weeds of the Northern U.S. and Canada. The University of Alberta press. 434 pp.

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.

**2.4. Allelopathic**

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

Score 

U
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**Documentation:**

Describe effect on adjacent plants:

Unknown

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 

3
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**Documentation:**

Evidence of competitive ability:

Creeping bellflower is a serious competitor for soil moisture and nutrients. It thrives under the canopy or in sun (Whitson et al. 2000, Royer and Dickinson 1999). This species appears to be successful competitor with lawn grasses and native raspberries (M. Rasy – pers. obs.).

Rational:

Sources of information:

Rasy, M. Integrated Pest Management Technician. Cooperative Extension Service, University of Alaska Fairbanks. 2221 E. Northern Lights Boulevard, Suite 118, Anchorage, AK 99508-4143; tel. (907) 786-6309. Pers. obs.

Royer, F., and R. Dickinson. 1999. Weeds of the Northern U.S. and Canada. The

University of Alberta press. 434 pp.  
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.

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:  
Creeping bellflower is able to form dense thickets and quickly colonize areas (Gubanov et al. 2004); however, it does not generally overtop surrounding vegetation.  
**Rational:**  
  
**Sources of information:**  
Gubanov, I.A., K.V. Kiseleva, V.S. Novikov and V.N. Tihomirov. 2004. An illustrated identification book of the plants of Middle Russia, Vol. 3: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 520 p. In Russian.

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:  
Unknown  
**Rational:**  
  
**Sources of information:**

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

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

Score

**Documentation:**  
Species:  
*Campanula glomerata* is introduced cultivated species known to be invasive in gardens (J. Riley – pers. com.); however it does not have legal weed status (USDA 2002).  
**Sources of information:**  
Riley, J. Horticulture Agent, UAF Cooperative Extension Service, 2221 E. Northern Lights Blvd. #118 Anchorage, AK 99508-4143; tel: (907) 786-6306.  
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.

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 

0
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**Documentation:**

Describe type of habitat:

Creeping bellflower is a weed of gardens, horticultural fields, and forest plantations. It is a serious weed in lawns. In its native range creeping bellflower grows in open woodlands, forest edges, and meadows (Gubanov et al. 2004, Royer and Dickinson 1999).

Rational:

Sources of information:

Gubanov, I.A., K.V. Kiseleva, V.S. Novikov and V.N. Tihomirov. 2004. An illustrated identification book of the plants of Middle Russia, Vol. 3: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 520 p. In Russian.

Royer, F., and R. Dickinson. 1999. Weeds of the Northern U.S. and Canada. The University of Alberta press. 434 pp.

Total Possible 

20
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Total 

16
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### 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
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**Documentation:**

Identify reason for selection, or evidence of weedy history:

Creeping bellflower is use as an ornamental plant in Europe and North America (USDA, ARS 2005, Whitson et al. 2000). It is a serious weed in the nursery industry (Alfnes 1975). In European countries it is cultivated in vegetable gardens (Plants For A Future 2004).

Rational:

Sources of information:

Alfnes, A.T. 1975. Dispersion of especially troublesome weeds (*Rorippa sylvestris*, *Aegopodium podagraria*, *Campanula rapunculoides*) in nursery stock. Gartneryrket; 65: 772-774. In Norwegian.

Plants For A Future. 2004. *Campanula rapunculoides*. Available from: <http://www.pfaf.org/index.html>

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?300618> [October 5, 2005].

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.

#### 3.2. Known level of ecological 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 3

- those present in Alaska
- 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:

Creeping bellflower is known to invade mixed birch-spruce forest in Anchorage (M. Rasy – pers. obs.).

Sources of information:

Rasy, M. Integrated Pest Management Technician. Cooperative Extension Service, University of Alaska Fairbanks. 2221 E. Northern Lights Boulevard, Suite 118, Anchorage, AK 99508-4143; tel. (907) 786-6309. Pers. obs.

**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:

It is readily establish along trails, but is capable of moving into adjacent undisturbed areas (M. Rasy – pers. obs.).

Rational:

Sources of information:

Rasy, M. Integrated Pest Management Technician. Cooperative Extension Service, University of Alaska Fairbanks. 2221 E. Northern Lights Boulevard, Suite 118, Anchorage, AK 99508-4143; tel. (907) 786-6309. Pers. obs.

**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 5

**Documentation:**

Describe distribution:

Creeping bellflower is native to Europe and Western Asia, including arctic and subarctic regions of Norway and Sweden (Lid and Lid 1995). It has naturalized in North America and has been occasionally recorded in Siberia (USDA, ARS 2005, Gubanov et al. 2004).

Rational:

Sources of information:

Gubanov, I.A., K.V. Kiseleva, V.S. Novikov and V.N. Tihomirov. 2004. An illustrated identification book of the plants of Middle Russia, Vol. 3: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 520 p.

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

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?300618> [October 5, 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
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**Documentation:**

Identify states invaded:

Creeping bellflower is found in most American states and Canadian provinces (USDA 2002, Royer and Dickinson 1999). This species is listed as a weed in Alberta and Manitoba (Invaders Database System 2003, Royer and Dickinson 1999).

Rational:

Sources of information:

Invaders Database System. The University of Montana. 2003. Montana Noxious Weed Trust Fund. Department of Agriculture. <http://invader.dbs.umt.edu/>  
 Royer, F., and R. Dickinson. 1999. Weeds of the Northern U.S. and Canada. The University of Alberta press. 434 pp.

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
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 Total 

20
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**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 

U
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**Documentation:**

Identify longevity of seed bank:

Unknown

Rational:

Sources of information:

**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
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**Documentation:**

Describe vegetative response:

Creeping bellflower sprouts readily from roots fragments (I. Lapina – pers. obs., Plants For A Future 2004).

Rational:

Sources of information:

Lapina, I. Botanist, Alaska Natural Heritage Program, University of Alaska

Anchorage, 707 A Street, Anchorage, Alaska. Tel: (907) 257-2710 – Pers. obs.  
 Plants For A Future. 2004. *Campanula rapunculoides*. Available from:  
<http://www.pfaf.org/index.html>

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
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Documentation:

Identify types of control methods and time-term required:

Creeping bellflower infestation is extremely difficult to eradicate (Gubanov et al. 2004). It is practically impossible to control this species mechanically and it is also problematic to control it by chemical methods. Some of the selective herbicides can be effective (Alfnes 1975).

Rational:

Sources of information:

Alfnes, A.T. 1975. Dispersion of especially troublesome weeds (*Rorippa sylvestris*, *Aegopodium podagraria*, *Campanula rapunculoides*) in nursery stock. *Gartneryrket*; 65: 772-774. In Norwegian.

Gubanov, I.A., K.V. Kiseleva, V.S. Novikov and V.N. Tihomirov. 2004. An illustrated identification book of the plants of Middle Russia, Vol. 3: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 520 p. In Russian.

Total Possible 

7
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Total 

5
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**Total for 4 sections Possible**

92
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**Total for 4 sections**

59
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References:

- Alfnes, A.T. 1975. Dispersion of especially troublesome weeds (*Rorippa sylvestris*, *Aegopodium podagraria*, *Campanula rapunculoides*) in nursery stock. *Gartneryrket*; 65: 772-774. In Norwegian.
- CLIMEX for Windows, Version 1.1a. 1999. CISRO Publishing, Australia.
- Gubanov, I.A., K.V. Kiseleva, V.S. Novikov and V.N. Tihomirov. 2004. An illustrated identification book of the plants of Middle Russia, Vol. 3: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 520 p. In Russian.
- Invaders Database System. The University of Montana. 2003. Montana Noxious Weed Trust Fund. Department of Agriculture. <http://invader.dbs.umt.edu/>
- Lapina, I. Botanist, Alaska Natural Heritage Program, University of Alaska Anchorage, 707 A Street, Anchorage, Alaska. Tel: (907) 257-2710 – Pers. obs.
- Lewis, P. and M. Lynch. 1998. *Campanulas*. A gardener's guide. Portland, Oregon: Timber Press.
- Lid, J. and D. T. Lid. 1994. *Flora of Norway*. The Norske Samlaget, Oslo. Pp. 1014.

- Rasy, M. Integrated Pest Management Technician. Cooperative Extension Service, University of Alaska Fairbanks. 2221 E. Northern Lights Boulevard, Suite 118, Anchorage, AK 99508-4143; tel. (907) 786-6309. Pers. obs.
- Plants For A Future. 2004. *Campanula rapunculoides*. Available from:  
<http://www.pfaf.org/index.html>
- Royer, F. and R. Dickinson. 1999. Weeds of the Northern U.S. and Canada. The University of Alberta press. 434 pp.
- University of Alaska Museum. University of Alaska Fairbanks. 2003.  
<http://hispidamuseum.uaf.edu:8080/home.cfm>
- 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.
- 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?300618> [October 5, 2005].
- 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.