

**WEED RISK ASSESSMENT FORM**

Botanical and common name: *Cerastium fontanum* ssp. *vulgare* (Hartman) Greuter & Burdet, common mouse-ear chickweed, big chickweed  
*Cerastium glomeratum* Thuill., sticky chickweed

Assessors: Irina Lapina, Botanist, Alaska Natural Heritage Program, University of Alaska Anchorage, 707 A Street, Anchorage, Alaska 99501 tel: (907) 257-2710; fax (907) 257-2789  
 Matthew L. Carlson, Ph.D., Assistant Professor, Alaska Natural Heritage Program, University of Alaska Anchorage, 707 A Street, Anchorage, Alaska 99501 tel: (907) 257-2790; fax (907) 257-2789

Reviewers: Michael Shephard, Vegetation Ecologist Forest Health Protection State & Private Forestry 3301 C Street, Suite 202, Anchorage, AK 99503 (907) 743-9454; fax 907 743-9479  
 Jeff Conn, Ph.D., Weed Scientist, USDA Agricultural Research Service PO Box 757200 Fairbanks, Alaska 99775 tel: (907) 474-7652; fax (907) 474-6184  
 Roseann Densmore, Ph.D., Research Ecologist, US Geological Survey, Alaska Biological Science Center, 1101 East Tudor Road Anchorage, AK 99503 tel: (907) 786-3916, fax (907) 786-3636  
 Jeff Heys, Exotic Plant Management Program Coordinator, National Park Service, Alaska Region - Biological Resources Team, 240 W. 5th Ave, #114, Anchorage, AK 99501 tel: (907)644-3451, fax: 644-3809  
 Jamie M. Snyder, UAF Cooperative Extension Service 2221 E. Northern Lights Blvd. #118 Anchorage, AK 99508-4143 tel: (907) 786-6310 alt. tel: (907) 743-9448

**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)	6
2	Biological characteristic and dispersal ability	25 (25)	8
3	Ecological amplitude and distribution	25 (19)	15
4	Feasibility of control	10 (10)	5
	Outcome score	100 (94) <sup>b</sup>	34 <sup>a</sup>
	Relative maximum score†		0.36

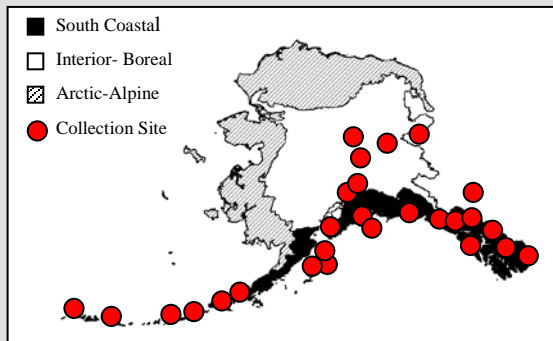
\* For questions answered “unknown” do not include point value for the question in parentheses for “Total Answered Points Possible.”

† Calculated as <sup>a</sup>/<sub>b</sub>.

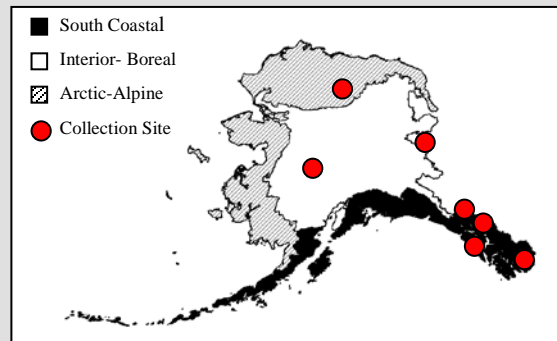
**A. CLIMATIC COMPARISON:**

	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
Yes	Interior-Boreal
No	Arctic-Alpine

Documentation: *Cerastium fontanum* ssp. *vulgare* has been documented in Interior-Boreal and South-Coastal ecogeographic regions of Alaska (Weeds of Alaska Database 2005, Hultén 1968, UAM 2004, Welsh 1974).



Documentation: *Cerastium glomeratum* is known from many disjunct localities in South-Coastal, Interior-Boreal and Arctic-Alpine ecogeographic regions in Alaska and Yukon (Hultén 1968, UAM 2004, Welsh 1974).



Sources of information:

Hultén, E. 1968. Flora of Alaska and Neighboring Territories. Stanford University Press, Stanford, CA. 1008 p.

University of Alaska Museum. University of Alaska Fairbanks. 2004. <http://hispidamuseum.uaf.edu:8080/home.cfm>

Weeds of Alaska Database. 2005. 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/>

Welsh, S.L. 1974. Anderson's flora of Alaska and adjacent parts of Canada. Brigham University Press. 724 pp.

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

Yes

Documentation: *Cerastium fontanum* ssp. *vulgare* has a cosmopolitan distribution with introduction into a variety of climatic zones including arctic and sub-arctic (Hultén 1968). Using the CLIMEX matching program, the climatic similarity between Nome and other areas where the species is documented is fairly high. The range of the species includes Chirka-Kem', Arkhangel'sk, and Zlatoust, Russia (Gubanov et al. 2003, Hultén 1968), which have a 77%, 76%, and 71% of climatic match with Nome respectively. This suggests that establishment of common mouse-ear chickweed in Alaska arctic and alpine ecoregions may be possible.

Sources of information: CLIMEX for Windows, Version 1.1a. 1999. CISRO Publishing, Australia. Gubanov I.A., Kiseleva K.V., Novikov V.S., Tihomirov V.N. An Illustrated identification book of the plants of Middle Russia, Vol. 2: Angiosperms (dicots: archichlamydeans). Moscow: Institute of Technological Researches; 2003. 666 p.

Hultén, E. 1968. Flora of Alaska and Neighboring Territories. Stanford University Press, Stanford, CA. 1008 p.

## 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

#### Documentation:

Identify ecosystem processes impacted:

Common mouse-ear chickweed and sticky chickweed do not appear to occur in high densities in natural areas in Alaska. The impact of these species on ecosystem processes is nearly negligible (J. Conn – pers. obs., M. Carlson – pers. obs.).

Rational:

Sources of information:

Carlson, M.L., Assistant Professor, Alaska Natural Heritage Program, University of Alaska Anchorage, 707 A Street, Anchorage, Alaska 99501 tel: (907) 257-2790; fax (907) 257-2789

Conn, J., Weed Scientist, USDA Agricultural Research Service PO Box 757200 Fairbanks, Alaska 99775 tel: (907) 474-7652; fax (907) 474-6184.

#### 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

#### Documentation:

Identify type of impact or alteration:

Common mouse-ear chickweed and sticky chickweed likely alter the density of the layer of vegetation (Ohio perennial and biennial weed guide 2006).

Rational:

Sources of information:

Ohio perennial and biennial weed guide. 2006. Mouse-ear chickweed. The Ohio State University. Available: <http://www.oardc.ohio-state.edu/weedguide/> [January 18, 2006].

#### 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

#### Documentation:

Identify type of impact or alteration:

On disturbed ground common mouse-ear chickweed and sticky chickweed can form a mat that excludes other plants (Ohio perennial and biennial weed guide 2006). However, these species have not been observed in undisturbed plant communities in Alaska (M. Carslon – pers. obs.) and its impact on native community composition is not documented.

Rational:

Sources of information:

Carlson, M.L., Assistant Professor, Alaska Natural Heritage Program, University of Alaska Anchorage, 707 A Street, Anchorage, Alaska 99501 tel: (907) 257-2790; fax (907) 257-2789

Ohio perennial and biennial weed guide. 2006. Mouseear chickweed. The Ohio State University. Available: <http://www.oardc.ohio-state.edu/weedguide/> [January 18, 2006].

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 

1
---

Documentation:

Identify type of impact or alteration:

Flowers of common mouse-ear chickweed are self-pollinated and rarely visited by insects (Mulligan 1972). Both species are host for some nematodes (Townshend and Davidson 1962).

Rational:

Sources of information:

Mulligan, G.A. 1972. Autogamy, allogamy, and pollination in some Canadian weeds. *Canadian Journal of Botany* 50: 1767-1771.

Townshend, J.L. and T.R. Davidson. 1962. Some weed hosts of the northern root-knot nematode, *Meloidogyne hapla* Chitwood, 1949, in Ontario. *Canadian Journal of Botany* 40: 543-548.

Total Possible 

30
----

Total 

6
---

---

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
---

Documentation:

Describe key reproductive characteristics (including seeds per plant):

Common mouse-ear chickweed and sticky chickweed reproduce by seeds and stems rooting at the nodes (Ohio perennial and biennial weed guide 2006).

Rational:

Sources of information:

Ohio perennial and biennial weed guide. 2006. Mouse-ear chickweed. The Ohio State University. Available: <http://www.oardc.ohio-state.edu/weedguide/> [January 18, 2006].

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

Documentation:

Identify dispersal mechanisms:

Seabirds probably have some role in transport of seeds. Viable seeds of *Cerastium* species were found in pellets of sea gulls (Gillham 1956).

Rational:

Sources of information:

Gillham, M.E. 1956. Ecology of the Pembrokeshire Islands: V. Manuring by the colonial seabirds and mammals, with a note on seed distribution by gulls. *The Journal of Ecology* 44(2): 429-454.

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

Documentation:

Identify dispersal mechanisms:

Common mouse-ear chickweed and sticky chickweed are weeds of gardens and lawns. Seeds can be transported with horticultural stock (Hodkinson and Thompson 1997).

Rational:

Sources of information:

Hodkinson, D., K. Thompson. 1997. Plant dispersal: the role of man. *Journal of Applied Ecology*, 34: 1484-1496.

2.4. Allelopathic

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

Score

Documentation:

Describe effect on adjacent plants:

Common mouse-ear chickweed and sticky chickweed are not known to be allelopathic.

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:

Common mouse-ear chickweed and sticky chickweed cannot compete with established vegetation (Bonis et al. 1997, Jesson et al. 2000).

Rational:

In experiment common mouse-ear chickweed had low survival of transplants and no germination in undisturbed environments due to competition from the surrounding vegetation (Jesson et al. 2000). Growth rate of common mouse-ear chickweed plants can be decrease by competition with grasses (Bonis et al. 1997).

Sources of information:

Bonis, A. P.J. Grubb and D.A. Coomes. 1997. Requirements of gap-demanding species in chalk grassland: reduction of root competition versus nutrient-enrichment by animals. *Journal of Ecology* 85: 625-633.

Jesson, L., D. Kelly and A. Sparrow. 2000. The importance of dispersal, disturbance, and competition for exotic plant invasions in Arthur's Pass National Park, New Zealand. *New Zealand Journal of Botany* 38: 451-468.

**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 mouse-ear chickweed and sticky chickweed do not form dense patches in Alaska (M. Carslon – pers. obs.). Both species do not possess climbing or smothering growth habit (Douglas and MacKinnon 1998, Hultén 1968, Welsh 1974).

Rational:

Sources of information:

Carlson, M.L., Assistant Professor, Alaska Natural Heritage Program, University of Alaska Anchorage, 707 A Street, Anchorage, Alaska 99501 tel: (907) 257-2790; fax (907) 257-2789

Douglas, G.W. and A. MacKinnon. Caryophyllaceae. In: Douglas, G. W., G. B. Straley, D. Meidinger, J. Pojar. 1998. *Illustrated flora of British Columbia*. V. 2. Ministry of Environment, Lands and Parks Ministry of Forests. British Columbia. 401 pp.

Hultén, E. 1968. *Flora of Alaska and Neighboring Territories*. Stanford University Press, Stanford, CA. 1008 p.

Welsh, S.L. 1974. *Anderson's flora of Alaska and adjacent parts of Canada*. Brigham University Press. 724 pp.

**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:

Common mouse-ear chickweed requires open soil for germination and establishment

(Jesson et al. 2000).

Rational:

No germination and establishment of seedlings were recorded in undisturbed environments in an experiment in New Zealand (Jesson et al. 2000).

Sources of information:

Jesson, L., D. Kelly and A. Sparrow. 2000. The importance of dispersal, disturbance, and competition for exotic plant invasions in Arthur's Pass National Park, New Zealand. *New Zealand Journal of Botany* 38: 451-468.

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

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

Score 

0
---

Documentation:

Species:

A number of *Cerastium* species has been introduced into United States but none of them listed as a noxious weed (USDA, NRCS 2006).

Sources of information:

USDA, NRCS. 2006. *The PLANTS Database*, Version 3.5 (<http://plants.usda.gov>). Data compiled from various sources by Mark W. Skinner. 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 

1
---

Documentation:

Describe type of habitat:

This species is a weed of roadsides, waste places, gardens and fields (Douglas and MacKinnon 1998, Welsh 1974). It can invade grasslands, dwarf shrub heath, fern beds and sand dunes (Broughton and McAdam 2002). However a survey of exotic species distributions in Arthur's Pass National Park, New Zealand found common mouse-ear chickweed to be a species primarily associated with rivers (Jesson et al. 2000). It is also frequent in grass swards beside rivers in number of islands around Antarctica (Walton 1975).

Rational:

Sources of information:

Broughton, D.A. and J.H. McAdam. 2002. The non-native vascular flora of the Falkland Island. *Botanical Journal of Scotland* 54(2): 153-190.

Douglas, G.W. and A. MacKinnon. Caryophyllaceae. In: Douglas, G. W., G. B. Straley, D. Meidinger, J. Pojar. 1998. *Illustrated flora of British Columbia*. V. 2. Ministry of Environment, Lands and Parks Ministry of Forests. British Columbia. 401 pp.

Jesson, L., D. Kelly and A. Sparrow. 2000. The importance of dispersal, disturbance, and competition for exotic plant invasions in Arthur's Pass National Park, New Zealand. *New Zealand Journal of Botany* 38: 451-468.

Walton, D.W.H. 1975. European weeds and other alien species in the subantarctic. *Weed Research* 15: 271-282.

Welsh, S.L. 1974. *Anderson's flora of Alaska and adjacent parts of Canada*. Brigham University Press. 724 pp.

Total Possible 

25
----

Total 

8
---

---

### 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 2

**Documentation:**

Identify reason for selection, or evidence of weedy history:

Common mouse-ear chickweed is a weed of arable and horticultural lands (Broughton and McAdam 2002, Douglas and MacKinnon 1998).

Rational:

Sources of information:

Broughton, D.A. and J.H. McAdam. 2002. The non-native vascular flora of the Falkland Island. *Botanical Journal of Scotland* 54(2): 153-190.

Douglas, G.W. and A. MacKinnon. Caryophyllaceae. In: Douglas, G.W., G.B. Straley, D. Meidinger, J. Pojar. 1998. *Illustrated flora of British Columbia*. V. 2. Ministry of Environment, Lands and Parks Ministry of Forests. British Columbia. 401 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 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 U

**Documentation:**

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

Common mouse-ear chickweed is widespread in grasslands, dwarf shrub heath, fern beds, and sand dunes in Falkland Islands (Broughton and McAdam 2002). This species colonizes animal-disturbed areas in Prince Edward Island and in many islands around Antarctica (Ryan et al. 2003, Walton 1975). In Arthur's Pass National Park, New Zealand, common mouse-ear chickweed was found exclusively in riverbeds (Jesson et al. 2000). However ecological impact of this exotic species on natural community has not been recorded.

Sources of information:

Broughton, D.A. and J.H. McAdam. 2002. The non-native vascular flora of the Falkland Island. *Botanical Journal of Scotland* 54(2): 153-190.

Jesson, L., D. Kelly and A. Sparrow. 2000. The importance of dispersal, disturbance, and competition for exotic plant invasions in Arthur's Pass National Park, New Zealand. *New Zealand Journal of Botany* 38: 451-468.

Ryan, P.G., V.R. Smith and N.J.M. Gremmen. 2003. The distribution and spread of alien vascular plants on Prince Edward Island. *South African Journal of Marine Science* 25: 555-562.

Walton, D.W.H. 1975. European weeds and other alien species in the subantarctic. *Weed Research* 15: 271-282.

**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:



Common mouse-ear chickweed requires either anthropogenic or natural disturbance for establishment (Broughton and McAdam 2002, Ryan et al. 2002).

**Rational:**

This species has been recorded on sites characterized by intense disturbance by seals and seabirds. It also occurs on dry slopes or erosion scars (Ryan et al. 2003). The survey of exotic species distribution in Arthur's Pass National Park, New Zealand found common mouse-ear chickweed to be a species primarily associated with sites frequently disturbed by flooding rivers (Jesson et al. 2000).

**Sources of information:**

Broughton, D.A. and J.H. McAdam. 2002. The non-native vascular flora of the Falkland Island. *Botanical Journal of Scotland* 54(2): 153-190.  
 Ryan, P.G., V.R. Smith and N.J.M. Gremmen. 2003. The distribution and spread of alien vascular plants on Prince Edward Island. *South African Journal of Marine Science* 25: 555-562.

**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:**

*Cerastium fontanum* ssp. *vulgare* is native to Europe, Asia and Northern Africa. It is now found across the world, including arctic and subarctic regions. It has been introduced into North and South America, Central and South Africa, India, Australia and New Zealand (Hultén 1968, Walton 1975).

**Rational:**

**Sources of information:**

Hultén, E. 1968. *Flora of Alaska and Neighboring Territories*. Stanford University Press, Stanford, CA. 1008 p.  
 Walton, D.W.H. 1975. European weeds and other alien species in the subantarctic. *Weed Research* 15: 271-282.

**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 mouse-ear chickweed is found throughout the United States and Canada (USDA, NRCS 2006). *Cerastium fontanum* ssp. *vulgarum* is listed as a noxious weed in Alberta and Manitoba, Canada (Rice 2006).

**Rational:**

**Sources of information:**

USDA, NRCS. 2006. *The PLANTS Database*, Version 3.5 (<http://plants.usda.gov>). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Total Possible 

19
----

  
 Total 

15
----

---

#### 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:

Seeds of common mouse-ear chickweed germinated after 8 month of dry storage (Williams 1983). In another study most seeds germinated within two years (Brenchley and Warington 1930). Seeds may be viable in arable fields for 16 years (Chancellor 1985).

Rational:

Sources of information:

Brenchley, W.E. and K. Warington. 1930. The weed seed population of arable soil: I. Numerical estimation of viable seeds and observations on their natural dormancy. *The Journal of Ecology* 18(2): 235-272.

Chancellor, R.J. 1985. Changes in the weed flora of an arable field cultivated for 20 years. *Journal of Applied Ecology* 22: 491-501.

Williams, E.D. 1983. Effects of temperature, light, nitrate and pre-chilling on seed germination of grassland plants. *Annals of Applied Biology* 103: 161-172.

##### 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 

1
---

**Documentation:**

Describe vegetative response:

Fragments of stems are likely able to re-root (Ohio perennial and biennial weed guide 2006).

Rational:

Sources of information:

Ohio perennial and biennial weed guide. 2006. Mouseear chickweed. The Ohio State University. Available: <http://www.oardc.ohio-state.edu/weedguide/> [January 18, 2006].

##### 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 

1
---

**Documentation:**

Identify types of control methods and time-term required:

Small population of common mouse-ear chickweed can be controlled by hand-pulling. Herbicides can be effective when applied during active growth (AKEPIC 2005).

Rational:

Sources of information:

**AKEPIC – Alaska Exotic Plant Information Clearinghouse. 2005. Invasive Plants of Alaska. Alaska Association of Conservation Districts Publication. Anchorage, Alaska. 294 p.**

Total Possible	10
Total	5

<b>Total for 4 sections Possible</b>	94
<b>Total for 4 sections</b>	34

References:

- AKEPIC – Alaska Exotic Plant Information Clearinghouse. 2005. Invasive Plants of Alaska. Alaska Association of Conservation Districts Publication. Anchorage, Alaska. 294 p.
- Bonis, A. P.J. Grubb and D.A. Coomes. 1997. Requirements of gap-demanding species in chalk grassland: reduction of root competition versus nutrient-enrichment by animals. *Journal of Ecology* 85: 625-633.
- Brenchley, W.E. and K. Warington. 1930. The weed seed population of arable soil: I. Numerical estimation of viable seeds and observations on their natural dormancy. *The Journal of Ecology* 18(2): 235-272.
- Broughton, D.A. and J.H. McAdam. 2002. The non-native vascular flora of the Falkland Island. *Botanical Journal of Scotland* 54(2): 153-190.
- Carlson, M.L., Assistant Professor, Alaska Natural Heritage Program, University of Alaska Anchorage, 707 A Street, Anchorage, Alaska 99501 tel: (907) 257-2790; fax (907) 257-2789
- Conn, J., Weed Scientist, USDA Agricultural Research Service PO Box 757200 Fairbanks, Alaska 99775 tel: (907) 474-7652; fax (907) 474-6184.
- Chancellor, R.J. 1985. Changes in the weed flora of an arable field cultivated for 20 years. *Journal of Applied Ecology* 22: 491-501.
- CLIMEX for Windows, Version 1.1a. 1999. CISRO Publishing, Australia.
- Douglas, G. W. and A. MacKinnon. Caryophyllaceae. In: Douglas, G. W., G. B. Straley, D. Meidinger, J. Pojar. 1998. *Illustrated flora of British Columbia*. V. 2. Ministry of Environment, Lands and Parks Ministry of Forests. British Columbia. 401 pp.
- Gillham, M.E. 1956. Ecology of the Pembroke Islands: V. Manuring by the colonial seabirds and mammals, with a note on seed distribution by gulls. *The Journal of Ecology* 44(2): 429-454.
- Gubanov I.A., Kiseleva K.V., Novikov V.S., Tihomirov V.N. *An Illustrated identification book of the plants of Middle Russia, Vol. 2: Angiosperms (dicots: archichlamydeans)*. Moscow: Institute of Technological Researches; 2003. 666 p.
- Hodkinson, D., K. Thompson. 1997. Plant dispersal: the role of man. *Journal of Applied Ecology*, 34: 1484-1496.
- Hultén, E. 1968. *Flora of Alaska and Neighboring Territories*. Stanford University Press, Stanford, CA. 1008 p.
- Jesson, L., D. Kelly and A. Sparrow. 2000. The importance of dispersal, disturbance, and competition for exotic plant invasions in Arthur's Pass National Park, New Zealand. *New Zealand Journal of Botany* 38: 451-468.
- Mulligan, G.A. 1972. Autogamy, allogamy, and pollination in some Canadian weeds. *Canadian Journal of Botany* 50: 1767-1771.
- Ohio perennial and biennial weed guide. 2006. Mouseear chickweed. The Ohio State University. Available: <http://www.oardc.ohio-state.edu/weedguide/> [January 18, 2006].

- Rice, P.M. INVADERS Database System (<http://invader.dbs.umt.edu>). Division of Biological Sciences, University of Montana, Missoula, MT 59812-4824.
- Ryan, P.G., V.R. Smith and N.J.M. Gremmen. 2003. The distribution and spread of alien vascular plants on Prince Edward Island. *South African Journal of Marine Science* 25: 555-562.
- Townshend, J.L. and T.R. Davidson. 1962. Some weed hosts of the northern root-knot nematode, *Meloidogyne hapla* Chitwood, 1949, in Ontario. *Canadian Journal of Botany* 40: 543-548.
- University of Alaska Museum. University of Alaska Fairbanks. 2003.  
<http://hispidamuseum.uaf.edu:8080/home.cfm>
- USDA, NRCS. 2006. *The PLANTS Database*, Version 3.5 (<http://plants.usda.gov>). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
- Walton, D.W.H. 1975. European weeds and other alien species in the subantarctic. *Weed Research* 15: 271-282.
- Weeds of Alaska Database. 2006. 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/>
- Welsh, S. L. 1974. Anderson's flora of Alaska and adjacent parts of Canada. Brigham University Press. 724 pp.
- Williams, E.D. 1983. Effects of temperature, light, nitrate and pre-chilling on seed germination of grassland plants. *Annals of Applied Biology* 103: 161-172.