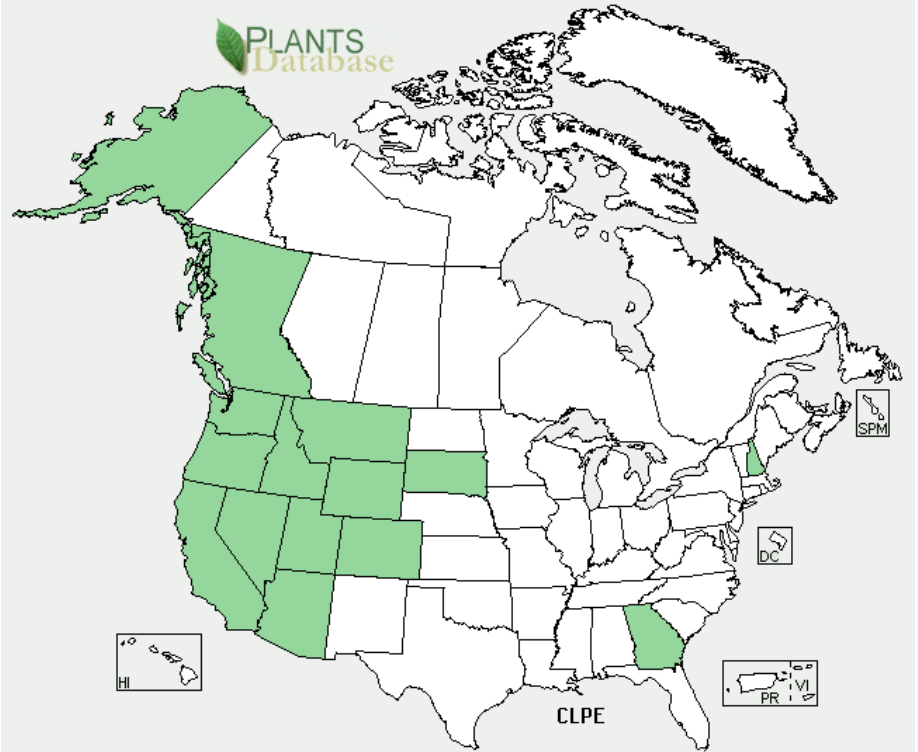


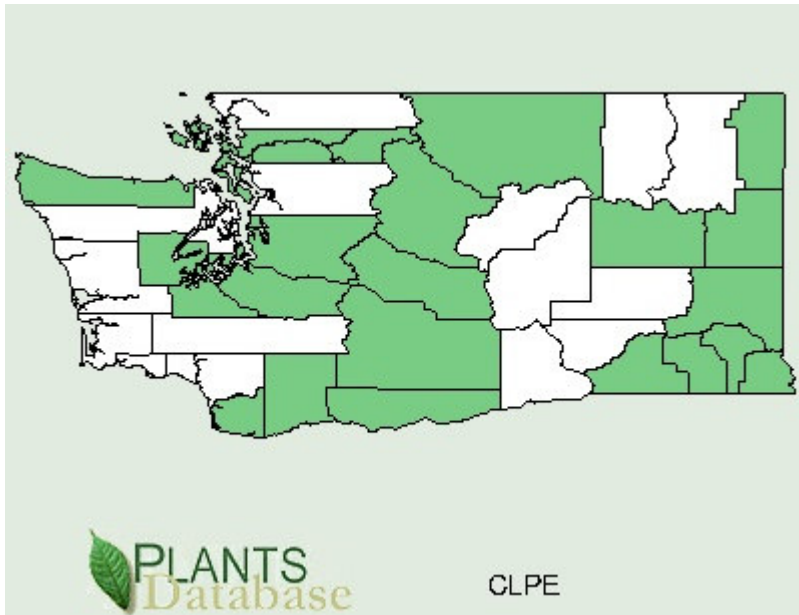
**Plant Propagation Protocol for \_\_\_\_\_ Miner's Lettuce \_\_\_\_\_**  
 ESRM 412 – Native Plant Production  
 Spring 2008

<b>TAXONOMY</b>	
<b>Family Names</b>	
Family Scientific Name:	Portulacaceae
Family Common Name:	Bitterroot Family
<b>Scientific Names</b>	
Genus:	<i>Claytonia</i>
Species:	<i>perfoliata</i>
Species Authority:	Donn. Ex Willd.
Variety:	
Sub-species:	<i>Claytonia perfoliata</i> subsp. <i>intermontana</i> <i>Claytonia perfoliata</i> subsp. <i>Mexicana</i> <i>Claytonia perfoliata</i> subsp. <i>utahensis</i>
Cultivar:	
Authority for Variety/Sub-species:	N/A
Common Synonym(s)	<i>Montia perfoliata</i> . Donn.
Common Name(s):	Miner's lettuce, Winter purslane, Indian lettuce, Claspleaf miner's lettuce
Species Code (as per USDA Plants database):	CLPE
<b>GENERAL INFORMATION</b>	

Geographical range





©<http://plants.usda.gov>  
Distribution of *Claytonia perfoliata* in North America.



©<http://plants.usda.gov>  
Distribution of *Claytonia perfoliata* in Washington State.

*C. perfoliata* is found in many different habitats from Lower California to British Columbia and inland to Alberta and south through the Rocky Mountain states. 2

Ecological distribution	Moist (at least in spring), open to shady, often sandy, forests, thickets, meadows. (3) usually where vernal moist. (8)
Climate and elevation range	Common at low to medium elevation. (3)
Local habitat and abundance; may include commonly associated species	<i>C. perfoliata</i> has many plant associations, including some with bigcone Douglas-fir ( <i>Pseudotsuga macrocarpa</i> ), interior live oak ( <i>Quercus wislizenii</i> ), and Coulter pine ( <i>Pinus coulteri</i> )(7)
Plant strategy type / successional stage	Miner's-lettuce occurs in all seral stages. It often colonizes disturbed sites, particularly following fire. (7)
Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)	 <p>Miner's lettuce (<i>Claytonia perfoliata</i>), Gaviota State Park, California Wikipedia.com</p> <p><i>C. perfoliata</i> or Miner's-lettuce is a native winter or spring annual. It is branched from the base with stems growing up to 14 inches (35 cm) tall. Leaves are mostly basal, simple, and 2.4 to 8.0 inches (6-20 cm) long, including the stalk. Miner's-lettuce has two stem leaves that fuse to form a disc just below the flower stalk. The elongate stalk bears numerous small flowers. Fruits are tiny, three-valved capsules containing one to three seeds. Roots are fibrous. (7)</p>
<b>PROPAGATION DETAILS</b>	
Ecotype	Marin County, California
Propagation Goal:	Plants
Propagation Method	Seed
Product Type	Container (plug)

Stock Type:	Container Seedling
Time to Grow (from seeding until plants are ready to be outplanted):	N/A
Target Specifications	Height: N/A Caliper: N/A Root System: Firm plug in container (2)
Propagule Collection (how, when, etc):	Seeds are collected between April 4 <sup>th</sup> and July 7 <sup>th</sup> . Mature inflorescences begin to split at maturity. Seeds are disc shaped and shiny black at maturity. (2)  The Burke Museum, Ben Legler
Propagule Processing/ Propagule Characteristics	Seed Cleaning: Seeds are rubbed on screens to separate from pods and chaff. Storage Conditions: Seeds are kept dry and stored at room temperature. Seeds/gram:886 (2)
Pre-Planting Propagule Treatments	None required. (2) Seeds of <i>M. perfoliata</i> require two months' cold-moist stratification for germination.(5)
Growing Area Preparation / Annual Practices for Perennial Crops	Fully Controlled Greenhouse. Sowing Method: Direct Seeding. Seeds are sown in containers. (2)
Establishment Phase:	N/A
Length of Establishment Phase:	N/A
Active Growth Phase	Spring (2)

Length of Active Growth Phase:	Time from germination to flowering varied from 33 to 90 days in a Columbia River Gorge population.(7)
Hardening Phase	N/A
Length of Hardening Phase:	N/A
Harvesting, Storage and Shipping:	N/A
Length of Storage:	Seeds should be used as soon as possible. Sow seeds as soon as ripe, in a shaded cold frame. Some self-sow. (6)
Guidelines for Outplanting:	Miner's-lettuce flowers from February to May in Arizona and California. In Utah, it flowers from June to July.(7)
Other Comments:	The common name Miner's lettuce is named after the California gold rush miners who ate it to get their vitamin C to prevent scurvy. It can be eaten as a leaf vegetable. Most commonly it is eaten raw in salads, but it is not quite as delicate as other lettuce. Sometimes it is boiled like spinach, which in fact it resembles in taste. (4)
<b>INFORMATION SOURCES</b>	
References:	<ol style="list-style-type: none"> <li>1. USDA Plant Database. <a href="http://www.plants.usda.gov">www.plants.usda.gov</a>. 2008</li> <li>2. Native Plant Network. Protocol information. Golden Gate National Parks. <a href="http://www.nativeplantnetwork.org">www.nativeplantnetwork.org</a></li> <li>3. Pojar, J. and MacKinnon, A. Plants of the Pacific Northwest Coast. Lone Pine Publishing, Redmond, WA. 1994.</li> <li>4. Wikipedia. <i>Claytonia perfoliata</i>. <a href="http://en.wikipedia.org">http://en.wikipedia.org</a></li> <li>5. Young, James A. and Cheryl G. Young. Collecting, processing and germinating seeds of wildland plants. Timber Press. Portland, OR 1986.</li> <li>6. Toogood, Alan, The American horticultural Society Plant Propagation. DK Publishing INC. 1999</li> <li>7. USDA Forest Service. <a href="http://www.fs.fed.us/database/feis/plants/forb/claper/all.html">http://www.fs.fed.us/database/feis/plants/forb/claper/all.html</a></li> <li>8. The Burke Museum <a href="http://biology.burke.washington.edu/herbarium/imagecollection.php">http://biology.burke.washington.edu/herbarium/imagecollection.php</a></li> <li>9.</li> <li>10.</li> </ol>
Other Sources Consulted :	
Protocol Author :	Danielle Cook
Date Protocol Created:	04/30/08

Note: This template was modified by J.D. Bakker from that available at:  
<http://www.nativeplantnetwork.org/network/SampleBlankForm.asp>

## Plant Data Sheet



Photo by Dave Skinner: images/skinner/mope\_p.jpg!Dave Skinner

### Species (common name, Latin name)

Common Names: Miner's-lettuce, Clasp leaf miner's lettuce, Indian lettuce

Latin Name: *Claytonia perfoliata* (*Montia perfoliata*) (3)

### Range

*Claytonia perfoliata* is found in many different habitats distributed from British Columbia south to Guatemala and east to Alberta and North Dakota, South Dakota, Wyoming, Utah, and Arizona (3) and (4)

### Climate, elevation

*Claytonia perfoliata* usually occurs on moist or vernal moist sites and is common at low to medium elevations. (3) and (2)

### Local occurrence (where, how common)

In the Seattle area it is uncommon, growing mostly on sandy soil, in open woods or beaches. (6)

### Habitat preferences

As noted above, *Claytonia perfoliata* usually occurs on moist or vernal moist sites, open to shady, often sandy, forests, thickets, and meadows. (2) It can be found in a variety of substrates including river silt, sand, gravel, road tar, loam, rock crevices, talus, and scree. (3)

### Plant strategy type/successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)

*Claytonia perfoliata* reproduces by seed. Selfing is the most common method of pollination, but insect pollination also occurs. Seeds are dispersed by explosive dehiscence. They are capable of immediate germination. (3)

*Claytonia perfoliata* occurs in all seral stages. It often colonizes disturbed sites. However, miner's-lettuce is shade tolerant and is more prominent under a canopy than in open areas. (3)

### Associated species

*Claytonia perfoliata* occurs in many plant communities. (3) For example, bluebunch wheatgrass (*Pseudoroegneria spicata*) and Sandberg bluegrass (*Poa secunda*) are associates in southeastern Washington. (3) Associations also include bigcone Douglas-fir (*Pseudotsuga macrocarpa*), interior live oak (*Quercus wislizenii*), and Coulter pine (*Pinus coulteri*). (3)

### May be collected as: (seed, layered, divisions, etc.)

*Claytonia perfoliata* reproduces by seed. (3) It flowers from February to May in Arizona and California. In Utah, it flowers from June to July. (3)

Young (4) reports that seeds are collected between April 4th and July 7<sup>th</sup> with mature inflorescences begin to split at maturity. Seeds are disc shaped and shiny black at maturity. (4)

### Seed germination (needs dormancy breaking?)

Two different recommendations were found for *Claytonia perfoliata*:

No pre-planting treatments are required for *Claytonia perfoliata*. (Young 2001)

Seeds of *Claytonia perfoliata* require two months' cold-moist stratification for germination. (Young and Young 1986)

### Seed life (can be stored, short shelf-life, long shelf-life)

Unknown

### Recommended seed storage conditions

Seed Cleaning: Seeds are rubbed on screens to separate from pods and chaff. (4)

Storage Conditions: Seeds are kept dry and stored at room temperature. (4)

### Propagation recommendations (plant seeds, vegetative parts, cuttings, etc.)

Fully Controlled Greenhouse conditions are recommended with direct seeding of seeds in containers (4)

Other recommendations include sowing seeds in the spring or autumn in situ. The seed usually germinates rapidly. (1) and (3)

### Soil or medium requirements (inoculum necessary?)



*Claytonia perfoliata* may be propagated in a variety of soil media but prefers a moist peaty soil. (1)

### Installation form (form, potential for successful outcomes, cost)

As noted above, possible to sow seeds directly at the site. It is possible to also install containers with established plants in them into a site as well. (1)

### Recommended planting density

Due to its small but variable size, *Claytonia perfoliata* can be planted and seeded quite densely.

### Care requirements after installed (water weekly, water once etc.)

No recommendations found. Plants may need to be watered during first summer of establishment.

### Normal rate of growth or spread; lifespan

No specific information found. Plants do germinate quite rapidly from seed.

### Sources cited

1. Plants for a Future—Species Database: [http://www.scs.leeds.ac.uk/cgi-bin/pfaf/arr\\_html?Blechnum+spicant&CAN=COMIND](http://www.scs.leeds.ac.uk/cgi-bin/pfaf/arr_html?Blechnum+spicant&CAN=COMIND)

2. Pojar, J. and MacKinnon, A. Plants of the Pacific Northwest Coast. Lone Pine Publishing, Redmond, WA. 1994.

3. USDA Forest Service, FEIS website:

<http://www.fs.fed.us/database/feis/plants/fern/blespi/introductory.html>

4. Young, Betty. 2001. "Propagation protocol for production of container *Claytonia perfoliata*" Donn. ex Willd. plants (Container Seedling); Golden Gate National Parks, San Francisco, California. In: Native Plant Network. URL: <http://www.nativeplantnetwork.org> (accessed 9 May 2004). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

5. Young, J. and Cheryl G. Young. "Collecting, Processing, and Germinating Seeds of Wildland Plants". Timber Press, Portland, OR. 1986

6. Jacobson, Arthur Lee. 2001 "Wild Plants of Greater Seattle" Arthur Lee Jacobson. Seattle, WA.

Data compiled by (student name and date)

Wendy DesCamp 5/19/04