



## *Linnaea borealis* Twinflower

### Range

*L. borealis* is a circumboreal species, that occurs south to California, Arizona, New Mexico, South Dakota, Indiana, and West Virginia in open to dense woods.

### Climate, elevation

Shoreline up to timberline

### Local occurrence (where, how common)

Twinflower occurs in several grassland and many hardwood and coniferous forest types. In western Washington, it is named as a dominant understory or indicator species in montane forest community types.

### Habitat preferences

Partial shade; open or dense forest; shrub thickets; boggy or rocky shorelines

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

*L. borealis* is described as a pioneer species which spreads through the surface ash layer devoid of humus following a fire. Also described as a facultative seral species.

### Associated species

In western Washington, *L. borealis* is associated with Douglas-fir/alder/maple forests, as well as wetland/bog communities containing *Pinus contorta*, *Pinus Monticola*, *Thuja plicata* and *Rhamnus purshiana*.

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

Division, cuttings, seeds

### **Collection restrictions or guidelines**

Flowers from June to Sept., and seeds mature in 36 days.

### **Seed germination (needs dormancy breaking?)**

*L. borealis* does not set very much seed, and its germination rate is about one in thirty. This makes propagation from seed, though it should be attempted as a parallel technique, prohibitive as a basic nursery approach to this species.

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

Does not persist in seedbanks.

### **Recommended seed storage conditions**

Air dry the seeds, and plant in fall.

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

Easy to propagate by division from young, rooted sections of runner, carefully detached from parent plants. Can also be grown from hardwood cuttings. If planting seeds in the spring, cold stratify for 60 days.

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

Sandy, acid soil (pH 5 to 6)

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

Seed: germination rate is about one in thirty.

Divisions are most successful.

### **Recommended planting density**

Not found

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

Not found

### **Normal rate of growth or spread; lifespan**

Less than 10cm tall. Very slow to establish; it takes seedlings about thirteen years to bloom. Vegetative reproduction by stolons is the primary method of regeneration. First produces stolons at 5-10 years of age. It is reported to spread as much as a 30 cm (1 ft) per year in lowland revegetation sites.

### **Sources cited**

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- § <http://www.rook.org/earl/bwca/nature/shrubs/linnaea.html>
- § [http://www.nwplants.com/plants/perennials/linnaea/linnaea\\_borealis/](http://www.nwplants.com/plants/perennials/linnaea/linnaea_borealis/)
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Data compiled by Mike Cooksey, 30 April 2003