Epilobium latifolium L.
broad-leaved willowherb **Family: Onagraceae**

Figure 104. Documented range of *Epilobium latifolium* in northern British Columbia.

Figure 105. Growth habit and flowers of *Epilobium latifolium* growing in the wild. Note the sand, gravel and cobble substrate.

© Symbios Research & Restoration 2003

Epilobium latifolium L. broad-leaved willowherb (continued)

Background Information

Epilobium latifolium is a circumpolar species found frequently throughout British Columbia especially northward (although rare on the Queen Charlotte Islands and adjacent mainland), north to Alaska, the Yukon and Northwest Territories, east to Quebec, south to South Dakota, Colorado and California, and throughout Eurasia (Douglas et al. 1999). It is also known as *Chamaenerion latifolium* (L.) Sweet, the name that is usually applied to this species in Europe.

Growth Form: Low growing herb with a woody base; fleshy alternate leaves with white-grey bloom; large showy pink to rose-purple flowers; mature plant size: 5-30 cm tall (MacKinnon et al. 1992, Douglas et al. 1999).

Site Preferences: Sandy soils and gravel bars, streamside, and on dry subalpine talus or scree slopes in the montane to alpine zones, usually at higher altitudes (Hardy 1989, MacKinnon et al. 1992, Douglas et al. 1999). In coastal B.C., this species is reported to be very shade-intolerant and is found up to alpine tundra, scattered to plentiful on nitrogen-rich water receiving sites especially along intermittent streams, often found in early seral communities on exposed mineral soil (Klinka et al. 1989, Chapin et al. 1994). It can tolerate wide pH range (Hardy 1989). Klinka et al. (1989) report that its occurrence increases with latitude.

Seed Information

Seeds borne with tufts of hairs in elongated capsules.

Seed Size: Length: 1.58 mm (1.15 - 1.84 mm)
Width: 0.55 mm (0.34 - 0.77 mm)

Seeds per gram: 10,489 (range: 7,782 - 13,004)

Volume to Weight Conversion: Unknown

Germination Capacity: At 30°/20° C untreated: 53.0% (44% - 62%)
At 25°/15° C untreated: 61.4% (52 - 78%)
stratified: 39.0%

Germination Speed: To first germination: 10.8 days
To 50% potential: 19.3 days

Seed Longevity: Unknown.

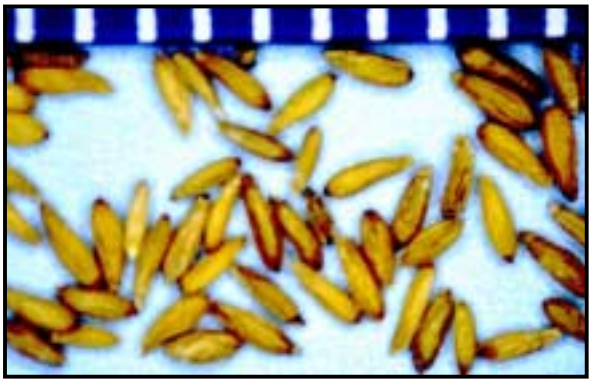

Figure 106. Seeds of *Epilobium latifolium*. Rule divisions are 1.0 mm.

Consideration for Growing

Techniques for Seed Production

Seed treatment: Stratification at 5°C for two months is detrimental, so no pre-germination treatments are recommended.

Soil considerations: Establish on a moist clay loam to sandy firm seedbed (Hardy 1989); gravelly soils seem to be preferred, so long as moisture is available.

Stand establishment: Site should be free of all weeds, especially rhizomatous grasses and other persistent species because there are currently no selective herbicides that can be used once plants are growing. This species can establish in gravelly sandy soils if there is moisture present.

© Symbios Research & Restoration 2003

Epilobium latifolium L. broad-leaved willowherb (continued)

(Techniques for Seed Production, continued)

Row spacing: Unknown; suggest 75 to 120 cm under dryland conditions, 30 to 90 cm with good irrigation.
Seeding density: Unknown at present; suggest 60-100 PLS seeds per linear metre (Smith and Smith 2000).
Seeding depth: Surface with light dusting of peat moss to hold seed in place.
Stand maintenance: Regularly cultivate rows and spot spray with herbicide to keep plot weed free; annual fertilization with low N formulations may extend the life of the plot.

Harvesting and Seed Processing
Dates of selective harvesting in the Bulkley Valley of northwestern B.C. have ranged from July 21st to October 2nd. Harvest seed as quickly as possible when ready, because seeds can float away on the wind once capsules ("pods") dehisce (split open).
Hand clipping: Use sharp hand clippers. Harvest individual seed capsules or entire fruiting stalks as the capsule tips start to split. Hold the seed heads over bins placed alongside the plants being clipped or place a bag over the seed heads before clipping to minimize seed loss. Do not allow seed capsules to become over-ripe or they will dehisce before harvest and you will lose many seeds.
Vacuum: Vacuum ripe seed heads selectively as they ripen by placing vacuum intake completely over the ripe heads. Plastic between rows is recommended so dehisced capsules can be salvaged by vacuum as well.
Seed stripper: Not tested, but may be effective so long as wind blows into the hopper during harvesting and some seed loss is anticipated.
Combine/thresher settings: 1241 rpm with 1-2 mm gap until most of fluff is removed; remove fluff after each hopper is put through.
Seed cleaning: Put through fanning mill with the following configurations: prescreen 1.2 x 7.1 mm slot; top screen 1.2 x 1.5 mm slot; bottom blank. Then put through vacuum separator with suction set to low to remove dust, fluff and <5% of seeds. If necessary (or for small quantities), do a final cleaning with a 0.6 mm hand sieve.
Storage requirements: Cool dry conditions.

Considerations for Use in Revegetation

- *Epilobium latifolium* naturally colonizes disturbed sites associated with tailings ponds at selected hard-rock metaliferous mine sites in B.C. (Hardy 1989).
- This species is very common on landfill sites in Finland (Hardy 1989).
- Growth and establishment of *Epilobium latifolium* is inhibited or delayed in the presence of *Festuca rubra* with >5% cover (Densmore 1992).
- In south-central Alaska, Doak (1991) reports that *Epilobium latifolium* had greatly reduced seed production when subjected to attack by its principal herbivore, the lepidopteran insect *Mompha albapalpella.*

Other considerations:

- *Epilobium latifolium* is an attractive plant with potential ornamental value, especially on gravelly soils.

© Symbios Research & Restoration 2003

***Epilobium latifolium* L.** **broad-leaved willowherb**
(continued)

Notes

© Symbios Research & Restoration 2003