

Ron Gehret

ESRM 412, Native Plant Prod.

April 21, 2009

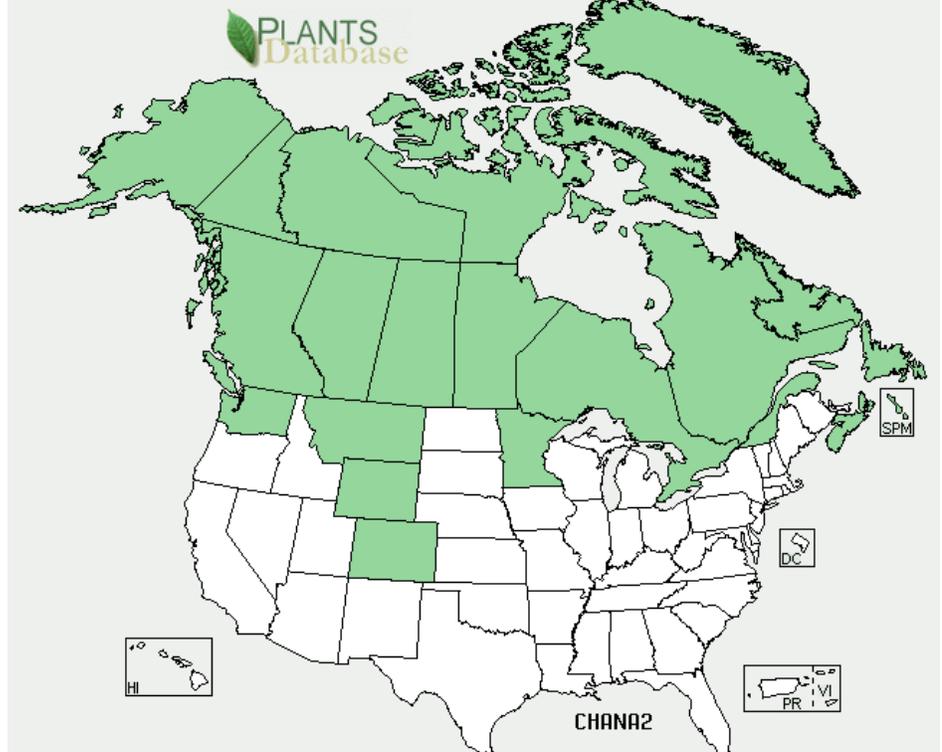
Protocol #1, Fireweed



Ron Gehret, Valdez, AK, 2006

Plant Propagation Protocol for *[Insert Species]*
ESRM 412 – Native Plant Production

TAXONOMY	
Family Names	
Family Scientific Name:	Onagraceae
Family Common Name:	Evening primrose, Rosebay Willowherb
Scientific Names	
Genus:	Latifolium
Species:	<i>Epilobium angustifolium</i>
Species Authority:	.
Variety:	
Sub-species:	<i>Chamerion angustifolium</i> (L.) Holub ssp. <i>angustifolium</i>
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s) (include full scientific names (e.g., <i>Elymus glaucus</i> Buckley), including variety or subspecies information)	<i>Chamerion angustifolium</i> , <i>Chamerion danielsii</i> , <i>Chamerion platyphyllum</i> , <i>Chamaenerion angulstifoium</i>
Common Name(s):	Common Fireweed or Rosebay Willowherb
Species Code (as per	EPAN2, CHANA2

USDA Plants database):	
GENERAL INFORMATION	
Geographical range (distribution maps for North America and Washington state)	
Ecological distribution (ecosystems it occurs in, etc):	Widespread and common at low to subalpine elevations in disturbed areas, especially recently burned sites; also in open forests, generally absent from arid regions. (Parish, p 240)
Climate and elevation range	Temperate climates Coastal lowlands to mountain timberlines. In North America, fireweed occurs in maritime to strongly continental climates with short, warm summers and long, cold winters. Precipitation averages between 13 and 134.7 inches a year o the west coastal edge.
Local habitat and abundance; may include commonly associated species	Meadows and woods throughout most of Alaska. (Pratt p 14) Fireweed inhabits a wide range of site and soil conditions (moist to dry), but it is most common in disturbed areas such as burned forests and swamps, avalanche areas, riverbars, highway and railroad rights-of-way, waste places and old fields. It grows well in coniferous forests, mixed forest, aspen parklands, meadows, thickets, and grasslands.
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	Common name derived from its ability to revegetate after a fire because of its deep roots. Fireweed often occurs with conifers such as: black spruce, cedar, hemlock, Douglas-fir, silver fir, Jack pine, Balsam fir, tamarack, shortleaf pine, lodgepole pine, western larch, blue sprces and Sitka spruce. Hardwoods associated with fireweed include: red maple, aspen, paper birch, and oak. Common shrubs found with fireweed are snowbrush, snowberry, thimbleberry, salmonberry, prickly rose, hoary willow, black twinberry and common juniper.

Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)	Tall plant (forb), 2-1/2 to 5 ft, growing from deep horizontal roots. Lanceolate leaves; alternate on stem, Stems; simple or branched, Flowers; irregular, bright pink. Blooms from bottom upward through the summer creating seed capsules from bottom up.
PROPAGATION DETAILS	
Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from):	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	
Propagation Method (Options: Seed or Vegetative):	Seeds or cuttings. Root cuttings should be planted 5 cm deep.
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	
Stock Type:	
Time to Grow (from seeding until plants are ready to be outplanted):	
Target Specifications (size or characteristics of target plants to be produced):	Maximum height 5.5 ft. (USDA)
Propagule Collection (how, when, etc):	Collect in the fall as seed pods are splitting open. (USDA) Softwood stem cuttings taken late in spring work very well for Ebilobium.

Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	6500000 seeds /lb (USDA) One plant of fireweed can produce about 80,000 seeds per year! The seedbank of fireweed is not long-lived. Most seeds lose viability after 18-24 months. The seed hairs (plume) respond to humidity. As humidity increases, the plume diameter decreases, resulting in a reduced loft. This increases the chance that seeds are deposited in places with moisture adequate for germination.
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	Seeds are nondormant and germinate over a variety of temperatures. Most of the newly collected seeds germinate within 10 days.
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	Fireweed may be grown in well-drained, moist soil but they establish best with the addition of fertilizer. They grow best in full sun, but will tolerate some shade. Mix seeds with equal amounts or more of damp sand, vermiculite, or other <u>sterile</u> media (moist—but not so wet that water will squeeze out of a handful). We use silica sand (purchased at a building supply center) for small quantities. For large quantities we use coarse grade vermiculite. Place mixture in a labeled, sealed plastic bag and store in a refrigerator (33–38°F). Stratify for the number of days indicated in parentheses. If two months (C(60)) of this cold storage before planting is normally required to break the dormancy of these seeds, one month may work for many species if time is a constraint. Some seeds may sprout in the storage bag if moist stratified too long. If sprouting occurs, plant immediately. Another method of breaking dormancy for species requiring moist stratification is to sow seeds outdoors in the fall so they may overwinter.(Prairiemoon)
Establishment Phase (from seeding to germination):	
Length of Establishment Phase:	
Active Growth Phase (from germination until plants are no longer actively growing):	
Length of Active Growth Phase:	
Hardening Phase (from end of active growth phase to end of growing	

season; primarily related to the development of cold-hardiness and preparation for winter):	
Length of Hardening Phase:	
Harvesting, Storage and Shipping (of seedlings):	
Length of Storage (of seedlings, between nursery and outplanting):	
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	
Other Comments (including collection restrictions or guidelines, if available):	

INFORMATION SOURCES

References (full citations):	<p style="text-align: center;">Work Cited</p> <p>Map: http://plants.usda.gov/java/profile?symbol=CHANA2</p> <p>Parish, Robert. Ray Coupe, and Dennis Lloyd. <u>Plants of Southern Interior British Columbia and the Inland Northwest</u>. Vancouver, B.C. Lone Pine Publishing, 1996</p> <p>Pratt, Verna E. <u>Field Guide to Alaskan Wildflowers</u>. Anchorage, AK. Alaskakrafts, Inc., April 2005</p> <p>Shebitz, Daniela. http://depts.washington.edu/propplnt/Plants/epilobium.htm</p> <p>Pojar, J. and A. MacKinnon. 1994. <i>Plants of the Pacific Northwest</i></p>
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	<p><i>Coast: Washington, Oregon, British Columbia and Alaska.</i> B.C. Ministry of Forests and Lone Pine Publishing. Vancouver, British Columbia.</p> <p>Jacobson, A.L. 2001. Wild plants of Greater Seattle: A field guide to native and naturalized plants of the Seattle area. Arthur Lee Jacobson Publisher. Seattle, Washington.</p> <p>http://www.botany.com/</p> <p>www.rook.org/earl/bwca/nature/herbs/chamerionan.html</p> <p>Cullina, William. <u>The New England Wild Flower Society Guide to Growing and Propagating Wild Flowers.</u> 2000</p> <p>Prairiemoon: http://www.prairiemoon.com/store/template/product_detail.php?IID=1063&=1d255913267c3c84498fc2f434947bb6</p>
Other Sources Consulted (but that contained no pertinent information) (full citations):	
Protocol Author (First and last name):	Ron Gehret
Date Protocol Created or Updated (MM/DD/YY):	04/21/09

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