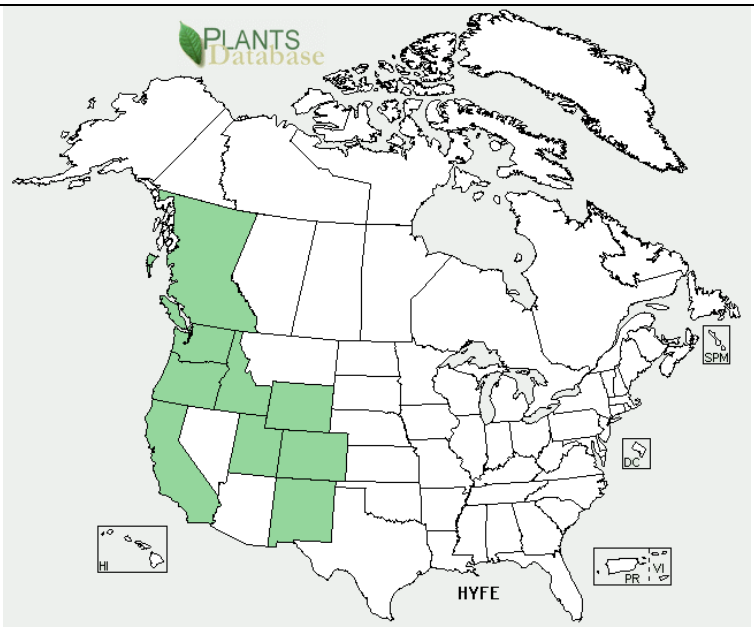
Plant Propagation Protocol for *Hydrophyllum fendleri*

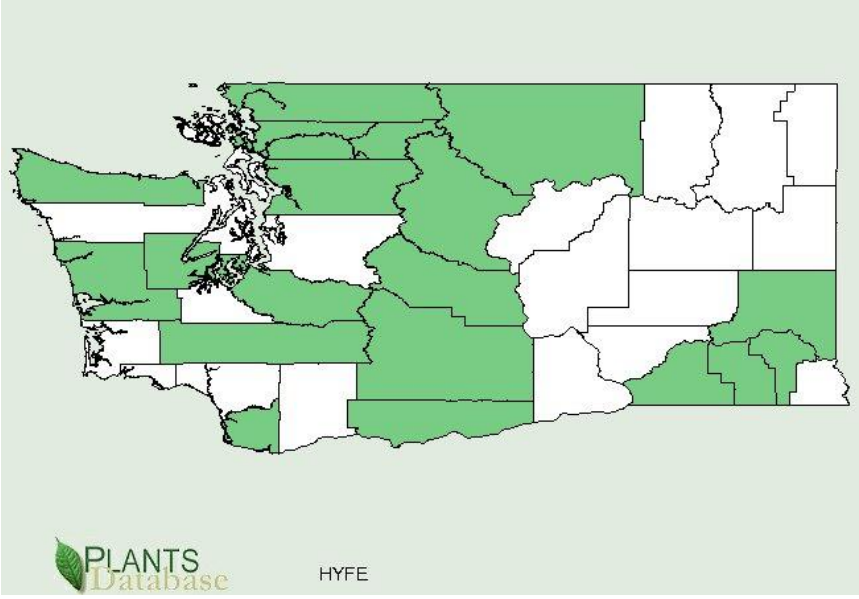
ESRM 412 – Native Plant Production

Protocol URL: https://courses.washington.edu/esrm412/protocols/HYFE.pdf

TAXONOMY	
Plant Family	
Scientific Name	Hydrophyllaceae
Common Name	Waterleaf family
Species Scientific Name	
Scientific Name	*Hydrophyllum fendleri* A. Heller
Varieties	Var. *albifrons* (HYFEA) and var. *fendleri* (HYFEF)
Sub-species	None listed in USDA plants database at time of writing
Cultivar	
Common Synonym(s)	None listed in USDA plants data base at time of writing.
Common Name(s)	Fendler's Waterleaf
Species Code (as per USDA Plants database)	HYFE
GENERAL INFORMATION	



Above: Known *H. fendleri* distribution in the continental United States.



Distribution in Washington State. Maps from USDA Plant Database, 5/21/2014.

Ecological distribution:	Widely distributed throughout much of Washington, BC, south to California, east to Utah. (4) (5).
Climate and elevation range:	Lowlands to mid elevations in mountains. (4)
Local habitat and abundance:	Thickets and moist woodland shaded areas (2), can also be present in open spaces (4). Abundant, not considered of conservation concern (5) but much less common than Pacific Waterleaf which shares much of the same distribution.
Plant strategy type / successional stage:	Perennial with a strong rhizome. Can tolerate limited light and moisture conditions and remain dormant in drought. Seeds can persist until moisture conditions are appropriate for germination.
Plant characteristics:	Short, stout rhizome, fibrous roots. Solitary stems 20-80cm tall. Mostly hispid, long-petiolate leaves with 7-11 leaflets. Small white or lavender flowers up to 1 cm long. (1) (4) (7).
PROPAGATION DETAILS	
Ecotype:	Temperate woodlands.
Propagation Goal:	Mature plants that can be transplanted.
Propagation Method:	Seed.
Product Type:	Container stock or transplants from seedbed.
Time to Grow:	Sow seeds immediately on collection in wet outdoor bed in fall for germination in spring (or stratify in moist conditions). Seeds sown in spring may not germinate until the following spring if not stratified correctly (2).

Propagule Collection Instructions:	Blooms in May-June. Seeds are generally mature by August, so collection in late summer is recommended (2). On maturity, capsules change to dark brown or black. Each contains 3 seeds.
Propagule Processing / Propagule Characteristics:	Snip off the cluster of capsules (beneath the leaves) and split open to release seeds. They should be light brown in color (2).
Pre-Planting Propagule Treatments:	For best results sow immediately. To store, stratify in damp spaghnum moss in a sealed container and refrigerate (2). Stratification should be for a minimum of 2 months in cold-damp conditions (8).
Growing Area Preparation / Annual Practices for Perennial Crops:	Sow freshly collected seed in a shaded outdoor bed. Moist soil with compost or, preferably, rotted leaves. (2) (9).
Establishment Phase Details:	Stratified seeds will germinate in moist spring conditions. (9).
Length of Establishment Phase	Establishment will take 1 season if seeds are sown in the fall. It can take 2 seasons if not properly stratified. (2)
Active Growth Phase:	Seedlings should emerge in the early spring.
Length of Active Growth Phase:	4-8 weeks (generally April – May)
Hardening Phase:	Plants are hardened through late summer. Allow seedlings to remain undisturbed for their first growing season in the seedbed (2).
Length of Hardening Phase	One growing season. (2).
Harvesting, Storage and Shipping:	Storage and shipping of the live plants may be difficult. Seeds can be stored and shipped if cool moist conditions (damp sphagnum moss) are maintained, for up to 6 months. (2)
Guidelines for Outplanting / Performance on Typical Sites:	Waterleaf prefers shaded, naturally moist sites. Keeping the soil evenly moist during dry periods is important. (2)
Other Comments:	
INFORMATION SOURCES	

References:	1)Intermountain Flora, Vascular Plants of the Intermountain West, USA. Arthur Cronquist et al, Volume 4. New York Botanical Gardens, 1984. 2)Growing and Propagating Wild Flowers, Harry Phillips, University of North Carolina Press. Chapel Hill NC, 1985. 3)Armitage's Native Plants for North American Gardens. Alan Armitage, Timber Press Inc, Portland OR, 2006. 4) University of Washington Burke Museum: *http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Hydrophyllum&Species=fendleri* 5) USDA Plant List: http://plants.usda.gov/core/profile?symbol=HYFE 7) Vascular Plants of the Pacific Northwest. C. Leo Hitchcock et al. University of Washington Press, 1959. 9) Handbook of Wild Flower Cultivation. Kathryn Taylor et al. Macmillan Company, Toronto, Canada, 1963.
Other Sources Consulted:	6) Guide to Growing and Propagating Wildflowers. William Cullina, Houghton Mifflin Company, 2000. 8) Directory to Resources on Wildflower Propagation. Gene A. Sullivan et al. National Council of State Garden Clubs, Missouri Botanical Garden 1981. 10) Lady Bird Johnson Wildflower Center Plant Database. http://www.wildflower.org/plants/result.php?id_plant=HYFE
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Date Protocol Created or Updated	5/19/2014

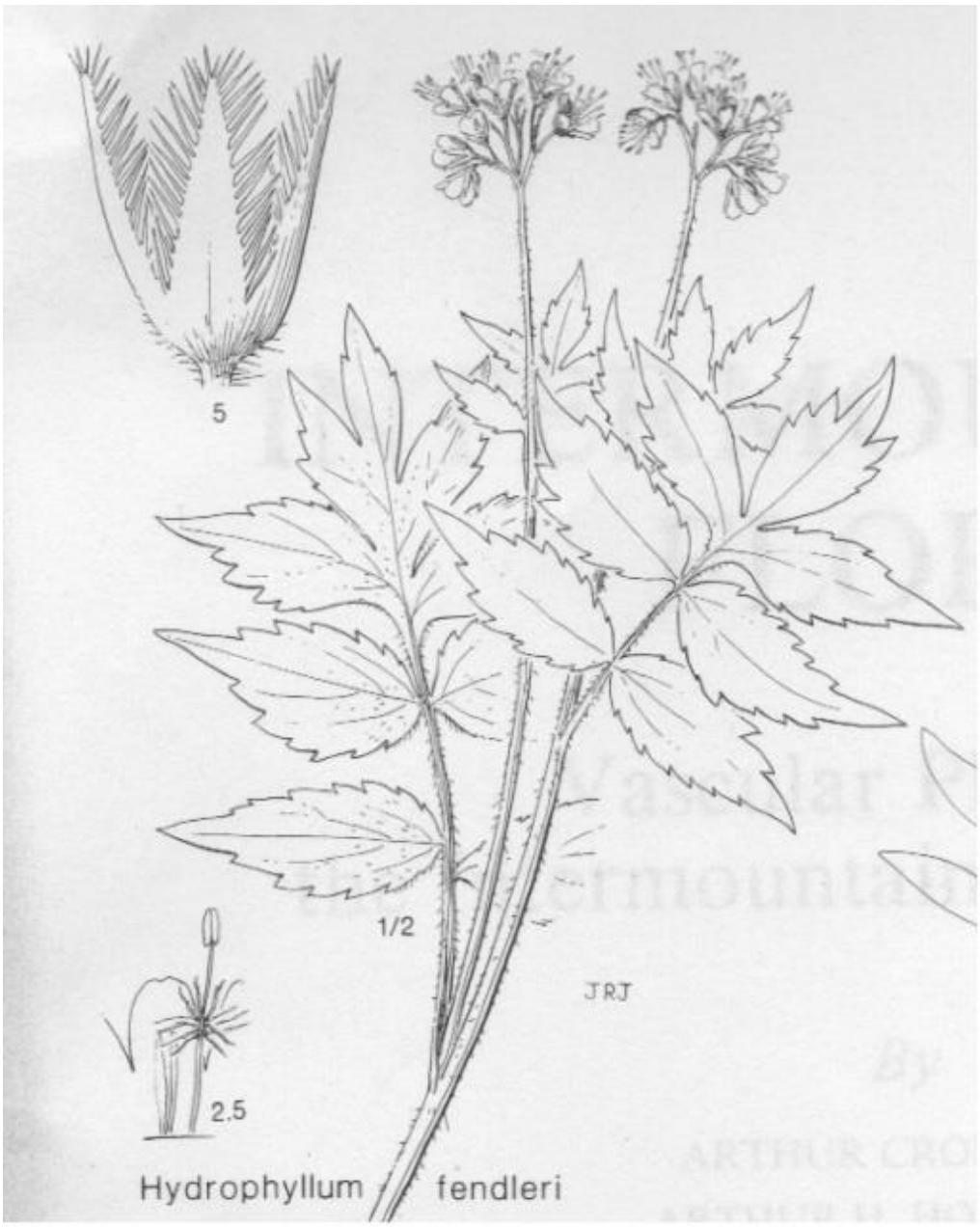

Image from Intermountain Flora (1)