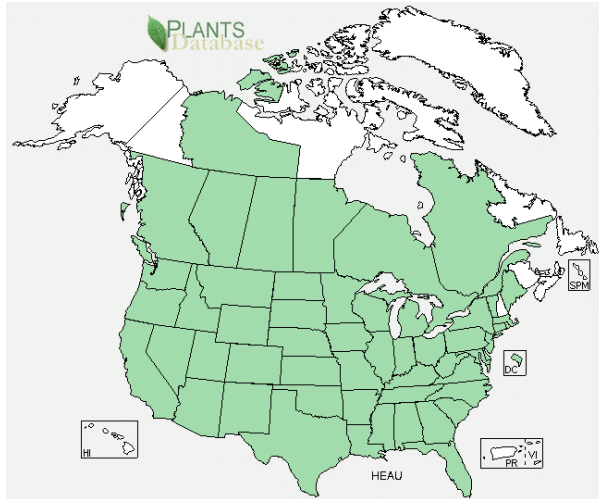
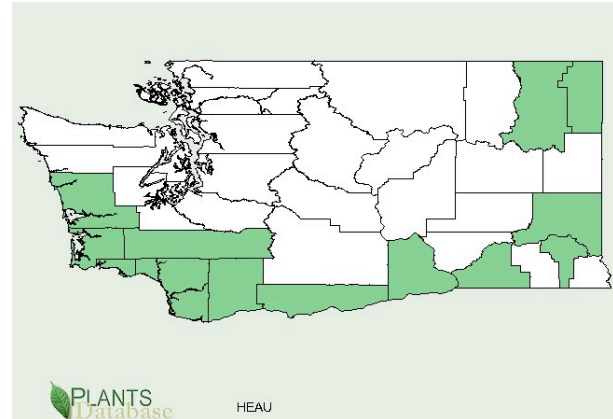


Plant Propagation Protocol for *Helenium autumnale* L.
ESRM 412 – Native Plant Production

North America Distribution



Washington Distribution



Source: USDA PLANTS Database

TAXONOMY	
Family Names	
Family Scientific Name:	Asteraceae
Family Common Name:	Aster
Scientific Names	
Genus:	<i>Helenium</i>
Species:	<i>autumnale</i>
Species Authority:	L.
Variety:	<i>Helenium autumnale</i> L. var. <i>autumnale</i> <i>H. autumnale</i> L. var. <i>canaliculatum</i> (Lam.) Torr. & A. Gray <i>H. autumnale</i> var. <i>fylesii</i> B. Bolvin <i>H. autumnale</i> var. <i>grandiflorum</i> Torrey & A. Gray <i>H. autumnale</i> var. <i>montanum</i> (Nuttall) Fernald <i>H. autumnale</i> var. <i>parviflorum</i>
Sub-species:	
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>H. altissimum</i> Link <i>H. canaliculatum</i> Lam. <i>H. latifolium</i> Mill.
Common Name(s):	common sneezeweed
Species Code (as per USDA Plants	HEAU

database):	
GENERAL INFORMATION	
Geographical range (distribution maps for North America and Washington state)	West Quebec to British Columbia., south to South Carolina, Texas and Northern California, and naturalized in New England
Ecological distribution (ecosystems it occurs in, etc):	Moist, open areas along streams and ponds, wet meadows, waste areas, roadsides
Climate and elevation range	Temperate zone Low elevations; <2,000 m. ⁱ Wide climatic tolerances, between Zone 3 and Zone 8 ⁱⁱ
Local habitat and abundance; may include commonly associated species	In North America, <i>H. autumnale</i> is found in bottom lands and edges of marshes where soils are sandy loamy ⁱⁱⁱ .
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	Moderately low drought tolerant Contains sesquiterpene lactones (dugaldin, helenalin, helenanolide, tenulin, and hymenoxon), causing severe levels of toxicity if ingested ^{iv} .
Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)	Erect, clump-forming perennial that is 40-120 cm tall forb, with many outward spreading lance-shaped leaves (4-15 cm long), dotted with glands and several heads of 10 -20 yellow rays around a prominent, dome-like dull yellow center disk on each inflorescence ^v .
PROPAGATION DETAILS	
Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from):	Unavailable
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants
Propagation Method (Options: Seed or Vegetative):	Seed or Vegetative Division
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	Container (plug)
Stock Type:	Unavailable
Time to Grow (from seeding until plants are ready to be outplanted):	Spring
Target Specifications (size or characteristics of target plants to be	Division can be done in the spring and is suggested any time the center of the clump becomes bare or when the

produced):	plant needs to be controlled. ^{vi}
Propagule Collection (how, when, etc):	Divide into clumps every other year in the spring ^{vii} .
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	1,464,516 seeds/ lb (USDA 2006) ^{viii}
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	Unavailable
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	<p>When seeds are large enough to handle, prick the seedlings out into individual pots and grow them in the greenhouse for their first winter. Plant them into permanent positions in late spring or early summer, after the last expected frosts^{ix}.</p> <p>Cuttings of soft wood from the base of the plant should occur in June and July, harvesting them while they are about 10-15 cm long with plenty of underground stem. Place them in individual pots and keep in light shade in a cold frame or greenhouse until rooting. Plant in the summer and divide in spring or autumn to be done regularly because the clumps become congested soon^x.</p>
Establishment Phase (from seeding to germination):	Unavailable
Length of Establishment Phase:	Unavailable
Active Growth Phase (from germination until plants are no longer actively growing):	Unavailable
Length of Active Growth Phase:	Rapid ^{xi}
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):	Unavailable
Length of Hardening Phase:	Unavailable
Harvesting, Storage and Shipping (of seedlings):	Unavailable
Length of Storage (of seedlings, between nursery and outplanting):	Unavailable
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	Unavailable
Other Comments (including	Unavailable

collection restrictions or guidelines, if available):	
INFORMATION SOURCES	
References (full citations):	See below
Other Sources Consulted (but that contained no pertinent information) (full citations):	See below
Protocol Author (First and last name):	Sonia Tien
Date Protocol Created or Updated (MM/DD/YY):	5/17/2011

References:

- ⁱ UC/JEPS: Jepson Manual treatment for *Helenium autumnale*, Available online at: http://ucjeps.berkeley.edu/cgi-bin/get_JM_treatment.pl?609,1294,1296 [Accessed 5/17/2011]
- ⁱⁱ Missouri Botanical Garden (2001-2011) "*Helenium autumnale*" Available online at: <http://www.mobot.org/gardeninghelp/plantfinder/plant.asp?code=C930> [Accessed 5/17/2011]
- ⁱⁱⁱ Abrams, Leroy and Roxanna Stinchfield Ferris (1960), "*Helenium*" Illustrated Flora of the Pacific States: Vol IV Stanford University Press, pp. 210
- ^{iv} Knight, Anthony P. and Richard G. Walter (2001) A Guide to Plant Poisoning of Animals in North America Teton NewMedia, pp. 100
- ^v Pojar, J., A. McKinnon (1994), Plants of the Pacific Northwest: Washington, Oregon, British Columbia and Alaska, B.C. Ministry of Forests and Lone Publishing, Canada, p.290
- ^{vi} Michigan State University Extension '*Helenium autumnale*' Available online at: <http://web1.msue.msu.edu/imp/modzz/00000701.html> [Accessed 5/17/2011]
- ^{vii} Washington State University Spokane County Extension "Propagating Perennials" pp. 6, Available online at: http://www.google.com/url?sa=t&source=web&cd=8&ved=0CE0QFjAH&url=http%3A%2F%2Fwww.spokane-county.wsu.edu%2FSpokane%2Ffeastside%2FFact%2520Sheets%2FC101%2520Propagating%2520Perennials.pdf&rct=j&q=helenium%20autumnale%20propagate&ei=o3rTTduNC4PniALLwuG-BA&usg=AFQjCNE894KXYJNwO4h6BC8PP_IhG6DQhg&cad=rja [Accessed 5/17/2011]
- ^{viii} USDA, NRCS. (2006) The PLANTS Database, Version 3.5 Available online at <http://plants.usda.gov/java/charProfile?symbol=HEAU> [Accessed 5/17/2011]
- ^{ix} Plants For A Future "*Helenium autumnale*" Available online at <http://www.pfaf.org/user/Plant.aspx?LatinName=Helenium+autumnale> [Accessed 5/17/2011]
- ^x See x.
- ^{xi} See ix.