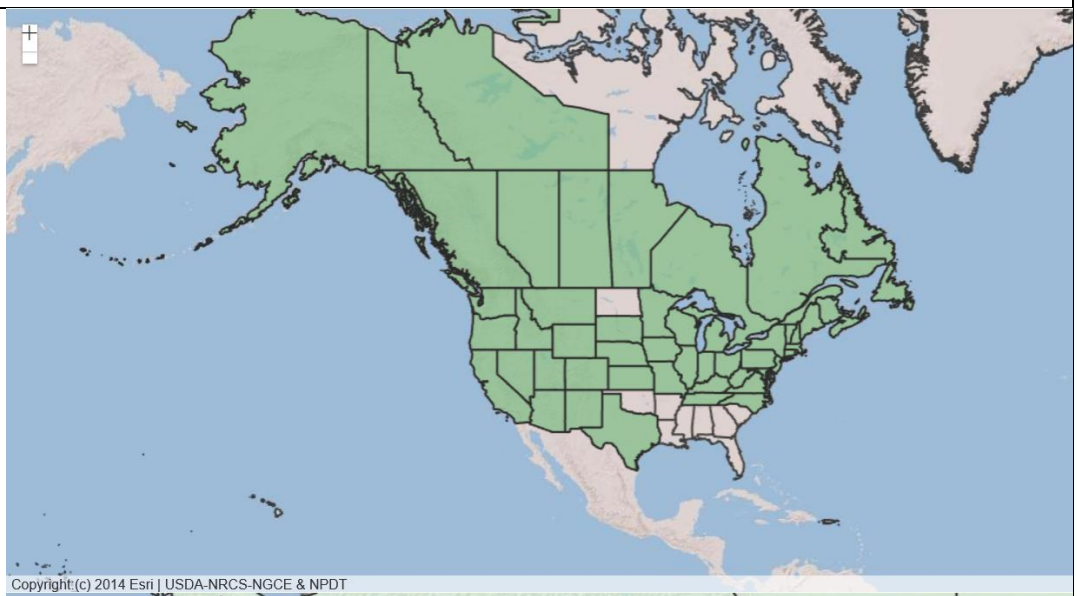
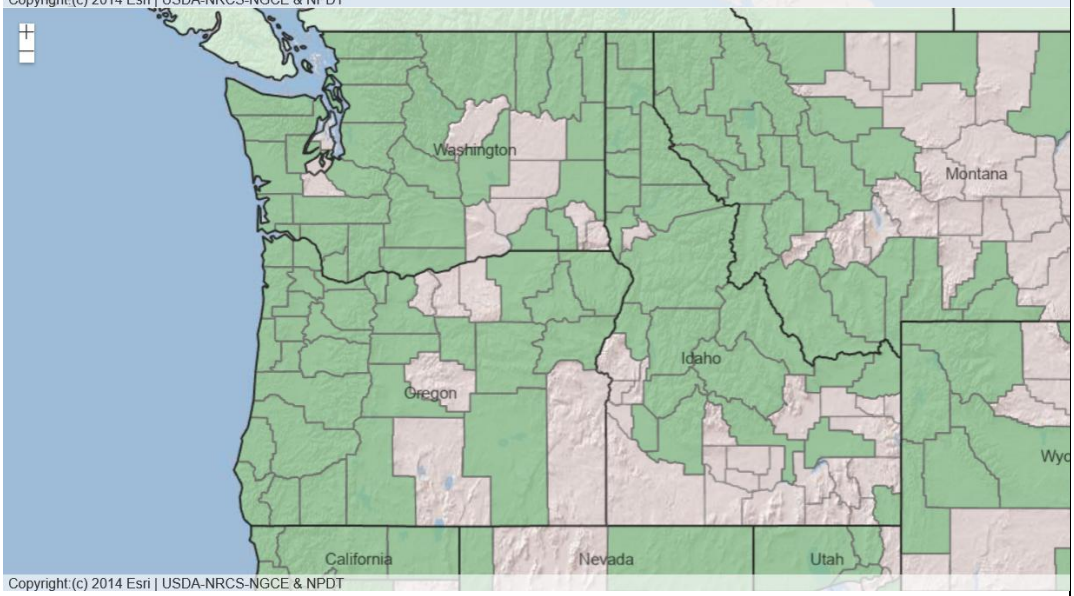
Plant Propagation Protocol for *Anaphalis margaritacea*

ESRM 412 – Native Plant Production

URL: https://courses.washington.edu/esrm412/protocols/*2025/ANMA.pbf*

https://plants.sc.egov.usda.gov/ImageLibrary/original/anma_004_php.jpg

TAXONOMY	
Plant Family	
Scientific Name	Asteraceae Bercht. & J. Presl
Common Name	Aster family
Species Scientific Name	
Scientific Name	*Anaphalis margaritacea* (L.) Benth.
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	**Symbol** **Scientific Name** ANMAA *Anaphalis margaritacea* (L.) Benth. var. *angustior* (Miq.) Nakai

	ANMAI *Anaphalis margaritacea* (L.) Benth. var. *intercedens* H. Hara ANMAO *Anaphalis margaritacea* (L.) Benth. var. *occidentalis* Greene ANMAR *Anaphalis margaritacea* (L.) Benth. var. *revoluta* Suksd. ANMAS *Anaphalis margaritacea* (L.) Benth. var. *subalpina* A. Gray ANOC8 *Anaphalis occidentalis* (Greene) A. Heller GNMA2 *Gnaphalium margaritaceum* L.
Common Name(s)	Western Pearly Everlasting
Species Code (as per USDA Plants database)	ANMA
GENERAL INFORMATION	
Geographical range	  https://plants.usda.gov/plant-profile/ANMA

Ecological distribution	Dry to moist rocky, sandy, open areas, dunes, fields, roadsides, shores. (Schultz et al. 2002) *A. margaritacea* is a widespread, circumboreal species, occurring throughout North America and eastern Asia. In North America, it is found from Newfoundland south to North Carolina, Kansas and California in open slopes, shaded hillsides, mountain meadows and old burns (Luna et al. 2008).
Climate and elevation range	lowlands to moderately high elevations (Luna et al. 2008) (Flessner et al. 2003)
Local habitat and abundance	
Plant strategy type / successional stage	often a pioneer species on open slopes and meadows, roadcuts and gravelly soils.
Plant characteristics	Rhizomatous. Single stalk with densly packed clusters of flowers at the top of stem. Leaves are somewhat wooly with gland tipped hairs on undersides. Stems white wooly. Leaves alternate on stem. Height up to 3 feet. (Schultz 2002)
PROPAGATION DETAILS: FROM SEED FOR PLANTS	
Ecotype	Forest margin in well drained soils, Fish Creek, 1000 m elevation, Glacier National Park, MT. (Luna et al. 2008) Mt Rainier and Crater Lake National park, at elevations ranging from 2500 to 7,000 feet. (Flessner et al. 2003) Old Faithful Main Shop Area of Yellowstone National Park (Scianna 2003)
Propagation Goal	Plants (Schultz et al. 2002, Luna et al. 2008, Flessner et al. 2003, Scianna 2003, Young 2001)
Propagation Method	Seed
Product Type	Container (plug) Propagules (seeds, cuttings, poles, etc.)
Stock Type	160 ml containers (Luna et al. 2008) 1-year plugs (Flessner et al. 2003) 10-cubic-inch conetainers (Scianna 2003) Deepot 16 (Young 2001)
Time to Grow	12-18 weeks
Target Specifications	Height: 5 to 6 true leaves; 10 to 12 cm. Several crown buds. Root System: roots well-developed and filling container. (Luna et al. 2008) (Flessner et al. 2003)
Propagule Collection Instructions	Collect seed by hand from mature locally native plants. Plant flower from July-August. Seed is an achene and is harvested from June to October. The small achenes are dark brown to black at maturity. Collect entire flowering head in cloth sack or paper bag and air dry 1-2 weeks before processing. (Flessner et al. 2003, Shultz et al. 2002) (Luna et al. 2008)

Propagule Processing/Propagule Characteristics	Seed can be threshed from well-dried flower heads using a geared-down hammermill or stationary thresher for large quantities. Moisture or dampness in the material or equipment will make cleaning nearly impossible. (Flessner et al. 2003) Seed can be cleaned with small clippers and air blower, or with an air screen (3/16" for scalping and 1/18 to 1/22" bottom screen with very low air flow. (Flessner et al. 2003) (Luna et al. 2008) Seed can be clead by hand by rubbing over screen. (Young 2001) Seed 8-11,000,000 per pound (Flessner et al. 2003) Seed dormancy is classified as non dormant. (Luna et al. 2008)
Pre-Planting Propagule Treatments	None. (Luna et al. 2008) (Flessner et al. 2003) 6-week cold moist stratification at 1-3C (Scianna 2003)
Growing Area Preparation / Annual Practices for Perennial Crops	Direct Seeding. Seeds thinly surface sown. Seeds are extremely small and will not germinate if covered Media: 1) Milled sphagnum peat, perlite, and vermiculite with Osmocote controlled release fertilizer (13N:13P2O5:13K2O; 8 to 9 month release rate at 21C) and Micromax fertilizer (12%S, 0.1%B, 0.5%Cu, 12%Fe, 2.5%Mn, 0.05%Mo, 1%Zn) at the rate of 1 gram of Osmocote and 0.20 gram of Micromax (172 ml conetainers) (Luna et al. 2008) 2) Fisons' Sunshine #1 amended with 3-month slow-release Osmocote NPK fertilizer and small amounts of Micromax trace elements. (SC-10 super cells) (Flessner et al. 2003) 3) Scotts Redi-earth Plug and Seedling Mix (24 cell 2" diameter) (Schultz 2002) 4) Fafard Germinating Mix (4x8 flat) (Schultz 2002) 5) Sunshine Mix #4 Aggregate Plus (peat moss, perlite, major and minor nutrients, gypsum, and dolomitic lime) (Deepot 16) (Young 2001) Containers filled and sown in late fall prior to winter stratification in the outdoor nursery or just prior to seeding in the greenhouse. (Luna et al. 2008) Containers sown in late April to early May were ready to ship by late August. (Flessner et al. 2003)
Establishment Phase Details	Germination occurs when day temperatures reach 23C in the outdoor nursery or at 19-29C for 12 hours and 10-18C at night in the greenhouse.

	Germination is usually complete in 1 to 2 weeks and seedlings are thinned at this stage. (Luna et al. 2008) (Flessner et al. 2003)
Length of Establishment Phase	2-4 weeks
Active Growth Phase	Shoot and root development occur rapidly following germination. Plants are fertilized with 20-20-20 liquid NPK fertilizer at 100 ppm until root tightness is obtained. Plants are rhizomatous and quickly fill containers. (Luna et al. 2008)
Length of Active Growth Phase	4-10 weeks
Hardening Phase	Shade cloth is removed in August and irrigation is gradually reduced in September and October. Plants are leached with clear water and fertilized with 10-20-20 liquid NPK fertilizer once before winterization. (Luna et al. 2008)
Length of Hardening Phase	2-4 weeks
Harvesting, Storage and Shipping	Total time To Harvest: 12-16 weeks Storage Conditions: Overwinter in outdoor nursery under insulating foam cover and snow. (Luna et al. 2008)
Length of Storage	5 months Container plants can be overwintered as long as they are not subjected to mechanical damage from freeze / thaw cycles, or to excess moisture which encourages crown rot.
Guidelines for Outplanting / Performance on Typical Sites	None
Other Comments	Vegetative Propagation Method: Established nursery stock can be increased by divisions. *A. margaritacea* readily establishes on road shoulders and in old burns. If direct seeding on restoration sites, seeds must be rolled or pressed into prepared sites; ensuring that seeds have soil contact but are not buried. Burying or raking seeds too deeply into soil will result in poor germination. (Luna et al. 2008)
PROPAGATION DETAILS: FROM SEED FOR SEED	
Ecotype	Mt Rainier and Crater Lake National park, at elevations ranging from 2500 to 7,000 feet. (Flessner et al. 2003) USFS land, Olympic National Forest, Washington (Barner 2009) Marin County, California
Propagation Goal	Seeds (Flessner et al. 2003, Barner 2009, Butler 2001, Wellons 2025, Archibald 2006)
Propagation Method	Seed
Product Type	Propagules (seeds, cuttings, poles, etc.)
Stock Type	seed from seed increase
Time to Grow	12-18 weeks
Target Specifications	clean viable seed, free of noxious weeds.

Propagule Collection Instructions	See above
Propagule Processing/Propagule Characteristics	In addition to above: Seed lot is first processed using a Westrup Model LA-H laboratory brush machine, with a #40 mantel, at medium speed. Seeds are then air-screened using an office Clipper, with a top screen: 40 x 40 wire and a bottom screen: blank, low speed, low air. (Barner 2009)
Pre-Planting Propagule Treatments	None
Growing Area Preparation / Annual Practices for Perennial Crops	A finely tilled, weed-free, firm seed bed is surface-sown by broadcasting at the rate of 2 to 4 lbs Pure Live Seed / acre or a target density of 130 plants per m^2. Seed drilling not recommended because the tiny seeds tend to be buried too deeply and flow rate could not be controlled acceptably. Lightly surface-raking the seed to improve seed / soil contact and to very lightly cover the seed could be beneficial. (Flessner et al. 2003) (Wellons 2025) (Archibald 2006)
Establishment Phase Details	Seedlings sown in late May emerge in 21 days
Length of Establishment Phase	6-8 weeks
Active Growth Phase	Seedlings remain quite small for several weeks before taking off. By the end of the first season, the plants are beginning to spread from rhizomes.
Length of Active Growth Phase	8 weeks
Hardening Phase	Irrigation is withheld in August and September
Length of Hardening Phase	8 weeks
Harvesting, Storage and Shipping	Harvest times are determined when at least 25% of inflorescences in a cluster expand its bracts from a tightly closed ball into an open, puffed-up seed head. The seed was harvested by hand from the matured clusters of branched pedicels that make up an indeterminate corymb inflorescence. (Wellons 2025)
Length of Storage	N/A
Guidelines for Outplanting / Performance on Typical Sites	N/A
Other Comments	
INFORMATION SOURCES	
References	Schultz, Jan; Beyer, Patty; Williams, Julie. 2002. Propagation protocol for production of Container (plug) *Anaphalis margaritacea* L.(Bentham) plants USDA FS - Hiawatha National Forest Marquette, Michigan. In: Native Plant Network. URL: https://NativePlantNetwork.org (accessed 2025/04/14). US Department of

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Other Sources Consulted	Potash, Laura. 1991. Sensitive plants and noxious weeds of the Mt.Baker-Snoqualmie National Forest. U.S. Dept. of Agriculture, Forest Service, Pacific Northwest Region.
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