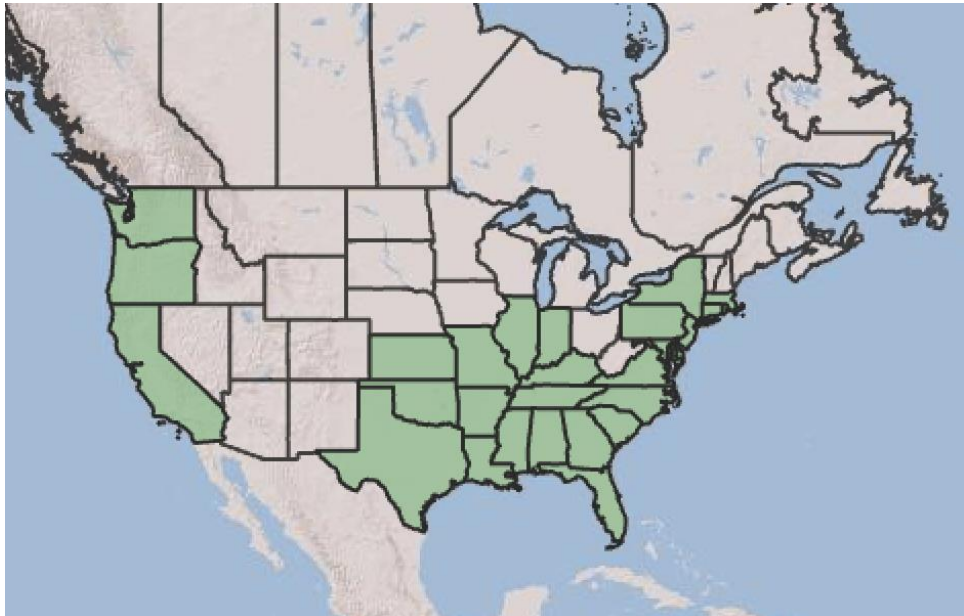
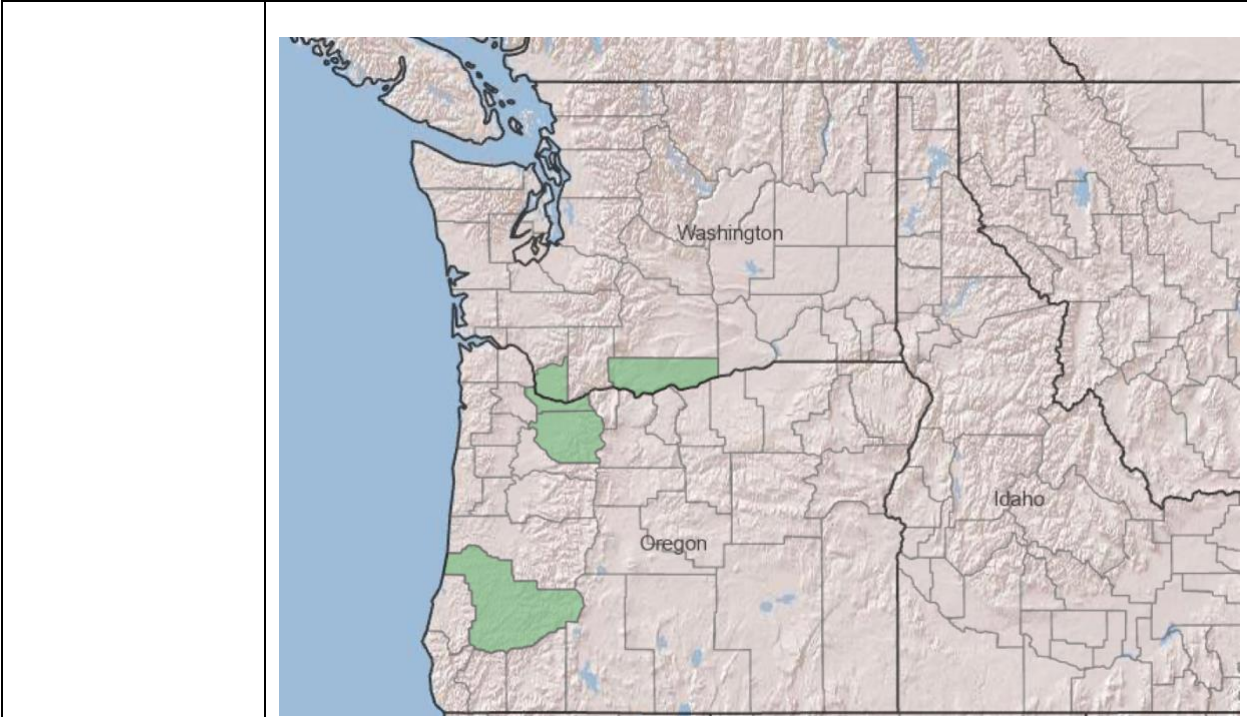


Plant Propagation Protocol for *Plantago pusilla*

ESRM 412 – Native Plant Production

URL: <https://courses.washington.edu/esrm412/protocols/2026/PLPU.pdf>

TAXONOMY	
Plant Family	Plantaginaceae
Scientific Name	Plantain family
Common Name	Dwarf plantain
Species Scientific Name	
Scientific Name	<i>Plantago pusilla</i>
Varieties	<i>Plantago pusilla</i> var. <i>major</i>
Sub-species	n/a
Cultivar	n/a
Common Synonym(s)	<i>Plantago hybrida</i>
Common Name(s)	Dwarf plantain
Species Code (as per USDA Plants database)	<i>Plantago pusilla</i> – PLPU - <i>Plantago pusilla</i> var. <i>major</i> – PLPUM <i>Plantago hybrida</i> – PLHY5
GENERAL INFORMATION	
Geographical range	Washington, Oregon, California, southern and eastern US: in PNW, mostly in the southern WA and northern OR 



Source: USDA

Ecological distribution	Low-lying conifer forests, preferably with sandy soils (Jepson eFlora); does not usually occur in wetland areas (Go Botany)
Climate and elevation range	Temperate areas, under 100 m elevation (Jepson eFlora)
Local habitat and abundance	Commonly occurs in conifer forests, but can also be found in oak savannas (Consortium of Pacific)
Plant strategy type / successional stage	Strong competitor; prefers disturbed environments (Rosatti 1984) – likely early successional
Plant characteristics	Forb, annual (USDA), flowers April-May (Jepson eFlora) Dehiscent fruits (Rosatti 1984)

PROPAGATION DETAILS: FROM SEED

Ecotype	n/a
Propagation Goal	plants
Propagation Method	By seed
Product Type	container
Stock Type	seedlings
Time to Grow	Four months

Target Specifications	Pre-flowering
Propagule Collection Instructions	Collect in late May-early June, after flowering. Fruits should be a light golden brown (Christy 2011). Collect fruits in large batches, but take no more than 10% of seeds on entire plant.
Propagule Processing/Propagule Characteristics	Collected propagules will likely contain a lot of debris that comprise of the fruits and the dried leftover flowers. Collected propagules will be very dense (hundreds of seeds per pound).
Pre-Planting Propagule Treatments	Preparation: sort fruit parts from flowers using a pan or a sieve, remove seeds from fruits using a rubber tube. Since fruits split open at the middle (but have hard shells, use just enough force so that the shells barely open (Rethke 683) Storage: store in a dry, cool place away from sunlight - Dormancy treatments not required
Growing Area Preparation / Annual Practices for Perennial Crops	Propagate in a pit-moss medium, using 4-inch pots for individual plants - Seeds should be started large square pots
Establishment Phase Details	Before seedling, scarify seeds by scraping the outer coat
Length of Establishment Phase	One week
Active Growth Phase	Store at room temperature, with natural lighting, provide water every day
Length of Active Growth Phase	Two months
Hardening Phase	Store outside to mimic natural environmental conditions.
Length of Hardening Phase	One month
Harvesting, Storage and Shipping	Transport seedlings before the flowering phase. Transport them in 4-inch pots.
Length of Storage	One week
Guidelines for Outplanting / Performance on Typical Sites	Planting the plants before they flower is essential to ensure that they can reproduce in time. Ideally, move individual plants to the planting sites 1-2 weeks before flowering.

Other Comments	n/a
INFORMATION SOURCES	
References	<p>Jepson Flora Project. (n.d.). <i>Plantago pusilla</i>. University of California, Berkeley. https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=38600</p> <p>U.S. Department of Agriculture, Natural Resources Conservation Service. (n.d.). <i>Plantago pusilla</i>—Plant profile. https://plants.sc.egov.usda.gov/plant-profile/PLPU</p> <p>Native Plant Trust. (n.d.). <i>Plantago pusilla</i>. GoBotany. https://gobotany.nativeplanttrust.org/species/plantago/pusilla/</p> <p>Consortium of Pacific Northwest Herbaria. (n.d.). <i>Plantago pusilla</i> specimen records. https://www.pnwherbaria.org/data/results.php?DisplayAs=WebPage&LimitToImaged=Y&ExcludeCultivated=Y&GroupBy=ungrouped&SortBy=Year&SortOrder=DESC&SearchAllHerbaria=Y&QueryCount=1&IncludeSynonyms1=Y&Genus1=plantago&Species1=pusilla&Zoom=4&Lat=55&Lng=-135&PolygonCount=0</p> <p>Rethke, R. V. (1946). The Anatomy of Circumscissile dehiscence. <i>American Journal of Botany</i>, 33(8), 677–683. https://doi.org/10.2307/2437348</p> <p>OregonFlora. (n.d.). <i>Plantago pusilla</i> specimen image (OSC-V-055495). https://oregonflora.org/imglib/OSU_V/OSC-V-055/OSC-V-055495_lg.jpg</p>
Other Sources Consulted	<p>Primack, R. B. (1978). Evolutionary aspects of wind pollination in the genus <i>Plantago</i> (Plantaginaceae). <i>New Phytologist</i>, 81(2), 449–458. https://doi.org/10.1111/j.1469-8137.1978.tb02650.x</p> <p>Rosatti, T. J. (1984). THE PLANTAGINACEAE IN THE SOUTHEASTERN UNITED STATES. <i>Journal of the Arnold Arboretum</i>, 65(4), 533–562. http://www.jstor.org/stable/43782150</p>
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