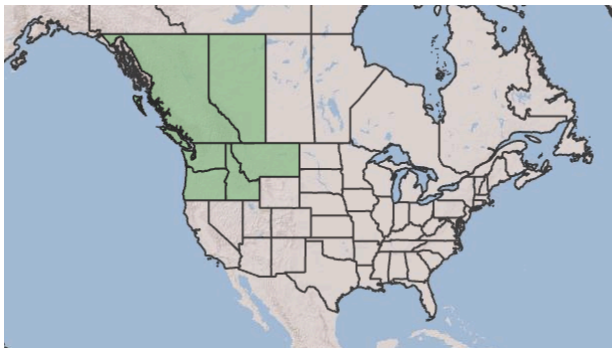
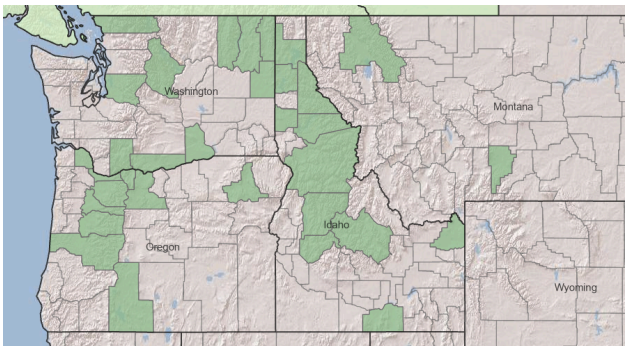
Plant Propagation Protocol for *Carex aperta*
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/*2026*/*CAAP3.pdf*

North America Range:



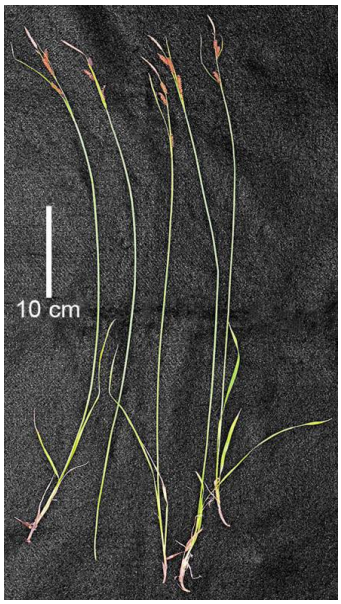
PNW Range:



Native (USDA, 2026)

Robert L. Carr, 2018
(Burke Herbarium, 2018)

David Gilbrin, 2013



Robert L. Carr, 2018

TAXONOMY	
Plant Family	
Scientific Name	Cyperaceae Juss.
Common Name	Sedge family
Species Scientific Name	
Scientific Name	*Carex aperta* Boott.
Varieties	N/A
Sub-species	N/A
Cultivar	N/A

Common Synonym(s)	*Carex accedens* T. Holm *Carex stylosa* C.A. Mey. var. *virens* L.H. Bailey *Carex acutina* L.H. Bailey var. *Tenuior* *Carex turgidula* L.H. Bailey (USDA, 2026)
Common Name(s)	Columbian Sedge
Species Code	CAAP3
GENERAL INFORMATION	
Geographical range	Blue and Wallowa Mountains, Cascades, Columbia Basin, Eastern Cascade Slopes and Foothills, Willamette Valley. ID, WA; north to British Columbia, northeast to MT. Native. See figures above. (USDA, 2026)
Ecological distribution	Facultative wetland plant in some regions, and an obligate wetland plant in others. Occurs in floodplains, montane bogs, lake shores, pond margins, wet prairies, and sedge meadows. (USDA, 2026; OregonFlora, 2026)
Climate and elevation range	0-1400 m, USDA Hardiness zones 3-9. (OregonFlora, 2026; PlantHardiness, 2026)
Local habitat and abundance	Found most abundantly mainly on lake shores in the Cascades. Commonly associated with other early seral graminoids and sedges. (OregonFlora, 2026)
Plant strategy type / successional stage	Early to mid-seral, as it resprouts quickly in floodplains, and is known as a soil stabilizer on banks and shores, appearing alongside early seral sedges and grasses. Spreads with dense rhizomatous mats and seeds. (OregonFlora, 2026)
Plant characteristics	Perennial monocot graminoid. Mainly rhizomatous spreading with deep rhizomes, though flowers in July-August. Grows between 1 and 3 feet tall, with 3-6 mm wide green blades. Mainly distinguished by its absence of flowers and its spike-like, olive-orange perigynia, growing to 1-3 cm in length. This is its fruiting body. See the above images. (OregonFlora, 2026; WYFieldGuide, 2026)
PROPAGATION DETAILS: FROM SEED	
Ecotype	N/A
Propagation Goal	Plants with developed crowns ready for outplanting
Propagation Method	Seed

Product Type	Container (plug)
Stock Type	10 cubic inch conetainer
Time to Grow	3 months
Target Specifications	A healthy, developed root system that fills the entire container and has a full crown.
Propagule Collection Instructions (how, when, etc.)	Collected by hand. Fruiting heads to be cut from stems using shears. Fruiting between July and August. Repeated field visits to monitor maturity are suggested. Seeds are hard and brown when mature. (OregonFlora, 2026; Tilley, 2010)
Propagule Processing/Propagule Characteristics	Air-dry seed in paper bags for multiple weeks before processing. Remove seed from stem using a hammer mill with a 0.25-inch screen. Pre-clean seeds using an air screen cleaner with a 1.8 mm screen to remove stems and chaff. Remove the perigynium from the seed using a rubbing board or hammer mill. Re-clean using a 1.55 mm screen and air. Yields ~ 900,000 seeds/lb with perigynium removed. (Tilley, 2010)
Pre-Planting Propagule Treatments	Store in cool-dry conditions @ approximately 50 degrees Fahrenheit and a relative humidity of 20-30 %. No cold stratification needed. (Tilley, 2010)
Growing Area Preparation / Annual Practices for Perennial Crops	Prepare a 1:1:1 soil mix of coconut fiber, compost, and perlite. Prepare 10 cubic inch ConeTainers on their stands. (Tilley, 2010)
Establishment Phase Details	Place 5-25 seeds on the soil and press for soil-seed contact. Do not cover with soil or sand, but keep moist with overhead misting on a schedule of 2 minutes/hr from 9-5 for the first 30 days. Keep greenhouse temperatures between 85-90 degrees Fahrenheit. Keep growlights on constantly. (Tilley, 2010)
Length of Establishment Phase	First emergence typically occurs within 5-7 days, and full emergence occurs around 12 days. (Tilley, 2010)
Active Growth Phase	Fertilize with Miracle-Gro All Purpose Plant Food (15-30-15) once per week after establishment. After 30 days, increase watering schedule to 3 minutes/hr from 9-5 and turn grow lights off. Keep the temperature of the greenhouse around 85 degrees Fahrenheit. (Tilley, 2010)

Length of Active Growth Phase	3 months
Hardening Phase	Reduce temperatures to ambient conditions. Move to an outdoor facility mid-September. (Tilley, 2010; Riley, 2018)
Length of Hardening Phase	Until winter.
Harvesting, Storage, and Shipping	Harvest in October. Discontinue watering 3 days before delivery. (Tilley, 2010)
Length of Storage	N/A
Guidelines for Outplanting / Performance on Typical Sites	Typically outplanted in the fall. (Riley, 2018)
Other Comments	This protocol is adapted based on protocols developed by Derek Tilley in 2010 and Lee Riley in 2018 for *Carex aquatilis.* There are no protocols otherwise available for *Carex aperta,* and *C.aquatilis* was chosen for its similar seed morphology and due to the fact that they both are in the Carex genus section Phacocystis. (Standley et al., 2026)
INFORMATION SOURCES	
References (full citations)	Burke Herbarium. (2018). *Carex aperta - Burke Herbarium Image Collection*. Burkeherbarium.org. https://burkeherbarium.org/imagecollection/taxon.ph p?Taxon=Carex%20aperta Cyperaceae. (2020). *Cyperaceae - Carex aperta Boott*. Cyperaceae.org. https://cyperaceae.org/aphia.php?p=taxdetails&id=1677204 E-Flora BC. (2020). *E-Flora BC Atlas Page Carex aperta Boott.* Geog.ubc.ca. https://linnet.geog.ubc.ca/Atlas/Atlas.aspx?scinam e=Carex%20aperta OregonFlora. (2026). *OregonFlora Carex aperta Boott.* Oregonflora.org. https://oregonflora.org/taxa/index.php?tid=3618 PlantHardiness. (2026). *Canada's Plant Hardiness Site | Natural Resources Canada*. Planthardiness.gc.ca. https://www.planthardiness.gc.ca/index.php?phz=p27257361971-2000&s=b&speciesid=2725736&m=7&lang=en# Riley, L. (2018). *RNGR Carex (aquatilis) Propagation Protocol*. Rngr.net.

	https://npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=cyperaceae-carex-7 Standley, L., Cayouette, J., & Bruederle, L. (2026). *CAREX sect. PHACOCYSTIS in Flora of North America @ efloras.org*. Efloras.org. http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=302722 Tilley, D. (2010). *RNGR Carex (aquatilis) Propagation Protocol*. Rngr.net. https://npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=cyperaceae-carex-3864 USDA. (2026). *USDA Plants Database Carex aperta Boott.* Usda.gov. https://plants.sc.egov.usda.gov/plant-profile/CAAP3 WYFieldGuide. (2026). *WY Field Guide*. Wyndd.org; Wyoming Natural Diversity Database - WYNDD. https://fieldguide.wyndd.org/?species=carex%20aperta
Protocol Author	Kol Timura
Date Protocol Created or Updated	06/08/2026