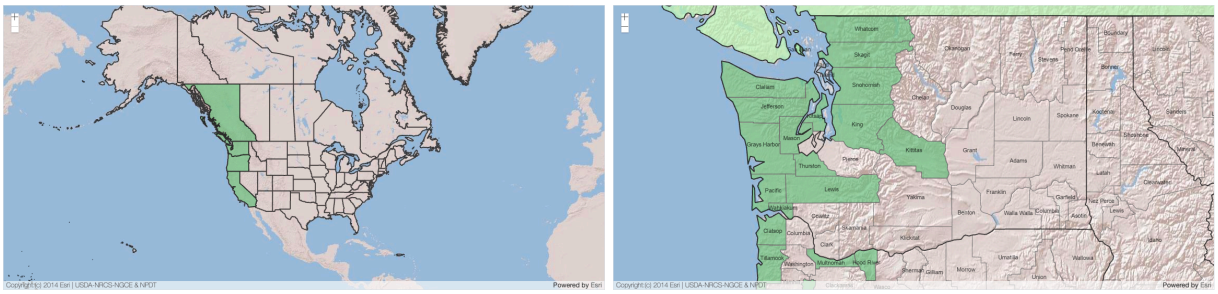

Artemisia suksdorfii distribution from USDA-NRCS PLANTS Database.[1]

Plant Propagation Protocol for *Artemisia suksdorfii* Piper

ESRM 412 – Native Plant Production

URL: https://courses.washington.edu/esrm412/protocols/2026/*ARSU4*.pdf

TAXONOMY	
Plant Family	
Scientific Name	Asteraceae Brecht. & J. Presl[1]
Common Name	Aster Family[1]
Plant Genus	
Scientific Name	*Artemisia L.*[1]
Common Name	Sagebrush[1], Wormwood[2], Sagewort[2]
Species Scientific Name	
Scientific Name	*Artemisia suksdorfii* Piper[1]  Image © 2004 Rod Gilbert (Burke Herbarium Image Collection)
Varieties	None listed.[1]

Sub-species	None listed.[1]
Cultivar	None listed.[1]
Common Synonym(s)	*Artemisia vulgaris* L. var. *littoralis* Suksd.[3]
Common Name(s)	Coastal Wormwood[1] Coastal Mugwort, Suksdorf Sagewort[3]
Species Code (as per USDA Plants database)	ARSU4[1]
GENERAL INFORMATION	
Geographical range	See distribution maps above for distribution range in North America and Washington state.[1] West of the Cascades crest in Washington. Also found in British Columbia and southward to California.[3] The genus *Artemisia* L. is circumboreal in distribution.[9]
Ecological distribution	Prefers bluffs, beaches, rocky areas, and river banks especially by the coast. Near the coast, *A. suksdorfii* occurs in clay pockets on rocky shores and to a lesser extent the upper parts of sandy beaches.[3, 5, 7] Facultative upland species.[1]
Climate and elevation range	0–300 meters.[4]
Local habitat and abundance	Local specimens along the Pacific Northwest coast have been found along beaches and rivers with sand or gravel substrate. Others have been found in roadside drainage and on dry hillsides or fields.[8] Common in the Elwha riparian ecosystem alongside *Rubus parviflorus* and *Rubus spectabilis*.[12]
Plant strategy type / successional stage	*A. Suksdorfii* is stress-tolerant considering the plant occurs in harsh, coastal environments and is rhizomatous.[3] Seedlings of the genus *Artemisia* L. in the presence of strong exotic grass competition have almost universally all been failures. Seeding and establishment of native perennial understory is a necessary prerequisite to successful establishment of *Artemisia* L. plants. Also, most species do not have the ability to resprout following burning.[9]

Plant characteristics	General: A stout perennial forb with clustered stems (5–15 dm). Rhizomatous.[3, 7] Leaves: Broadly lanceolate to elliptic with a few teeth or lobes (8–15 cm long and 1.5–5 cm wide). Green leaves are white-woolly beneath and glabrous above.[3] Flowers: Numerous heads in a dense, pyramidal shaped inflorescence, yellow-green in color. The width of the involucre is about half the height. Narrow and few-flowered tubular corollas are pistillate on the outside and perfect inside. Receptacle naked. No pappus. Each head has 6–12 flowers.[3, 6] Fruits: Achenes glabrous (0.8–1.5 mm).[3, 4]  Image © 2004 Rod Gilbert (Burke Herbarium Image Collection)

PROPAGATION DETAILS: FROM SEED

NOTE: Some fields have been adapted from a propagation protocol for *A. douglasiana* which is reportedly similar in vegetative characteristics to *A. suksdorfii*.

Ecotype	Central Oregon coast.[5] *A. douglasiana*: Yosemite National Park.[10]

Propagation Goal	Plants.[5]
Propagation Method	Seed.[5]
Product Type	Container (plug).[5]
Stock Type	Deepot.
Time to Grow	*A. douglasiana*: About 5 months.[10]
Target Specifications	Crowns should be well-developed, while roots and rhizomes should fill the container's soil profile.[5]
Propagule Collection Instructions	*A. suksdorfii* flowers June to August. The flowers of plants are naturally pollinated by wind.[3, 7] Within the *Artemisia* L. genus, fruits fall or are shaken from the plant by wind within a few weeks of maturation.[9] Plants are tall (5–15 dm) and relatively easy to locate. *A. suksdorfii* holds onto seeds when mature, but seeds are sometimes damaged by pests. To collect seeds, flower panicles can be harvested by hand with a rice knife and stored in paper bags to dry. Ensure harvested material is completely dry prior to cleaning.[5, 7] Harvest all standing plant material to prevent pest or weed issues.[7] In the spring *A. suksdorfii* will resprout from crown buds.[7]
Propagule Processing/Propagule Characteristics	Seeds per pound: 2,300,000.[5, 7] Seed yields of *A. suksdorfii* are highly variable. Within the *Artemisia* L. genus, seed yields of wildland stands are affected both spatially and temporally. Specific factors which affect these seed yields include excessive browsing, intraspecific competition, insect or disease attack, and cycles of dry years. Management of wildland stands through thinning or protection from browsing helps to maximize seed production.[7, 9]
Pre-Planting Propagule Treatments	Seeds of *Artemisia* L. species can be cleaned by first beating or stripping the flower panicles into shoulder hoppers, baskets, or bags. Next the inflorescences are processed through a barley de-bearder to release the seeds. An air-screen machine can then be used to further separate seeds from remaining detritus. After cleaning, it

	can be challenging to distinguish between filled and unfilled seed.[5, 7, 9] Seeds of the genus *Artemisa* L. are not long-lived in warehouse storage, commonly holding full viability for 2 or 3 years. However, maintaining moisture content (6–8% is optimal) and storing seeds at relatively low temperatures (<50°F) can extend storage life to 5+ years.[9] *A. suksdorfii* is non-dormant and will germinate without treatment, however germination may be improved by a 2 week treatment of cold/moist stratification. This stratification helps to remove any dormancy or light requirements for germination so establishment may begin during winter if desired.[5, 7, 9] The *Artemisia* L. genus produces seeds that vary in germination response due climatic variation at the collection site rather than a difference in species. Therefore a record of seed collection site may be beneficial in calibrating seed treatments. [9]
Growing Area Preparation / Annual Practices for Perennial Crops	One study found *A. suksdorfii* to have a germination rate of 26 ± 1.7 (mean ± SD, n=5) in alluvial sand, with over a five-fold decline in substrates containing reservoir sediments relative to alluvial sand.[12] *A. douglasiana*: Sunshine Mix #4 used with no fertilizer added. Press seeds into soil and lightly cover with pea gravel so seeds do not move when irrigating.[10]
Establishment Phase Details	Germinates in a temperature controlled greenhouse at 75°F.[5] *A. douglasiana*: Keep the surface of soil moist. 20 minutes of daily irrigation from overhead sprinklers for the first 30 days is sufficient.[10]
Length of Establishment Phase	*A. douglasiana*: 4 weeks.[10]
Active Growth Phase	If significant weed competition is anticipated, do not apply fertilizer to seedlings as *A. suksdorfii* is more competitive in low-nitrogen environments.[7] *A. douglasiana*: Thin deepots if needed at this stage.[10]

Length of Active Growth Phase	*A. douglasiana*: 4 months.[10]
Hardening Phase	*A. douglasiana*: Begin to introduce water stress by watering for 60 minutes every 4 to 5 days.[10]
Length of Hardening Phase	*A. douglasiana*: 1 week.[10]
Harvesting, Storage and Shipping	*A. douglasiana*: Water plants just before shipping. Seedlings were shipped in a 50°F refrigerated truck.[10]
Length of Storage	*A. douglasiana*: Between the nursery and outplanting site, seedlings were kept in a refrigerated truck (50°F) for 2 days.[10]
Guidelines for Outplanting / Performance on Typical Sites	Common garden studies have found many species of the *Artemisia* L. genus to be made up from numerous ecotypes as a result of local adaptation. These individual plants may differ in traits including frost or drought hardiness, growth rate, competitive ability, flowering time, and seed germination regulation. Therefore, outplanting success will be improved by choosing seed sources from a similar ecoregion as outplanting site.[9] Before transplanting *A. suksdorfii*, prepare the outplanting site by reducing weed seed in the seed bank as much as possible. *A suksdorfii* can be easily overtaken by weeds in the first year following transplanting.[7] Transplant plugs in the fall or spring. Allow 24 to 36-inch spacing between rows and 10 to 14-inch spacing between individual plants.[7] If weed control is necessary, hand weeding is the preferred. Herbicide application or cultivation between rows may be performed when there is sufficient space.[7] *A. Suksdorfii* does not produce seeds in the first year following transplanting. Stands are moderately long-lived, remaining productive for five years or more.[7] Once stands of *A. suksdorfii* are mature, they seem to resist competition from weedy vegetation.[7]
Other Comments	No herbicides are labeled for use on *A. suksdorfii*.[7]

PROPAGATION DETAILS: VEGETATIVE

NOTE: Vegetative propagation for *A. suksdorfii* is not widely documented. The following has been adapted from a propagation protocol for *A. douglasiana*.

Ecotype	Not listed.[11]
Propagation Goal	Plants.[11]
Propagation Method	Vegetative.[11]
Product Type	Container (plug).[11]
Stock Type	Wild collected.[11]
Time to Grow	Over 4 months.[11]
Target Specifications	Fully-rooted Deepot 16 container plants.[11]
Propagule Collection Instructions	Collect cuttings in February to May in California (after rains and before summer dieback). Look for herbaceous stems that are at least 12 cm in length and 4 mm in diameter. Collect cuttings prior to bud break with at least 4 nodes.[11] Take cuttings in the morning to keep them turgid and fresh. Pruners need to be sterilized in between cuttings with isopropyl alcohol to avoid spreading diseases.[11]
Propagule Processing/Propagule Characteristics	Cuttings can be stored in plastic bags with moist paper towels in the field. After cuttings are collected, quickly transport them to a nursery refrigerator. All cuttings are propagated within 4 hours of collection.[11]
Pre-Planting Propagule Treatments	Prior to propagation, prepare cuttings by rinsing them and examining for pests.[11] Treat cuttings with Dip ‘n Grow Rooting Hormone #1 (IBA/NAA) diluted to 1250PPM (20:1). Cuttings are debudded and defoliated, except for 4 upper leaves. Leaf area is reduced if exceeded approximately 25 sq. cm. Cutting ends are retrimmed, prior to striking.[11]
Growing Area Preparation / Annual Practices for Perennial Crops	Propagate cuttings in 36 cm x 36 cm flats containing 3:1 perlite/vermiculite. 50 cuttings are propagated per flat. Cuttings are 12 cm in length and stuck 6 cm deep in media.[11]
Establishment Phase Details	Propagate cuttings in a fully controlled greenhouse. Flats are watered with an automatic mist system (VPD 10) and provided with bottom heat (70°F) until roots are fully

	developed. Daytime ambient air temperatures in the greenhouse ranged from 70–85°F. Nighttime ambient air temperature in the greenhouse ranged from 50–60°F.[11] Rooting %: 100.[11]
Length of Establishment Phase	3 weeks.[11]
Active Growth Phase	After cuttings have been established, transplant each into individual Deepot 16 containers. For the growing media, use a compost-based potting mix of compost, perlite, and sand.[11] Place cuttings in a shadehouse and water for 30 minutes every week. During the first 7 days after transplanting, cuttings are very susceptible to wilt and/or burn so cover with an additional shadecloth if needed.[11]
Length of Active Growth Phase	3 months.[11]
Hardening Phase	In general, all rooted cuttings should be hardened off for over 7–10 days by gradually exposing them to lower humidity, temperature fluctuations, and increased light.[13]
Length of Hardening Phase	7-10+ days for most plant species.[13]
Harvesting, Storage and Shipping	Cuttings are in individual containers so harvesting is not necessary. Cuttings should be transplanted in the fall following the hardening phase. In general if short-term storage is necessary, cuttings can be held in a shadehouse or open compound depending on light conditions at the outplanting site.[13, 14]
Length of Storage	Varies.[14]
Guidelines for Outplanting / Performance on Typical Sites	Transplant fully rooted Deepot 16 containers in the fall when there is still 6–8 weeks before the first frost. This allows the plants to establish before dormancy.[13]
Other Comments	*A. suksdorfii and A. douglasiana* are herbaceous so cuttings from these plants are particularly susceptible to insect pests. Thoroughly checking cuttings prior to propagation and removing inflorescence did not curtail insect pests (notably thrips and leaf-miners). Chemical treatment may be prudent.[11]
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Other Sources Consulted	See below.

Protocol Author	Zaida Faulhaber
Date Protocol Created or Updated	06/08/2026

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