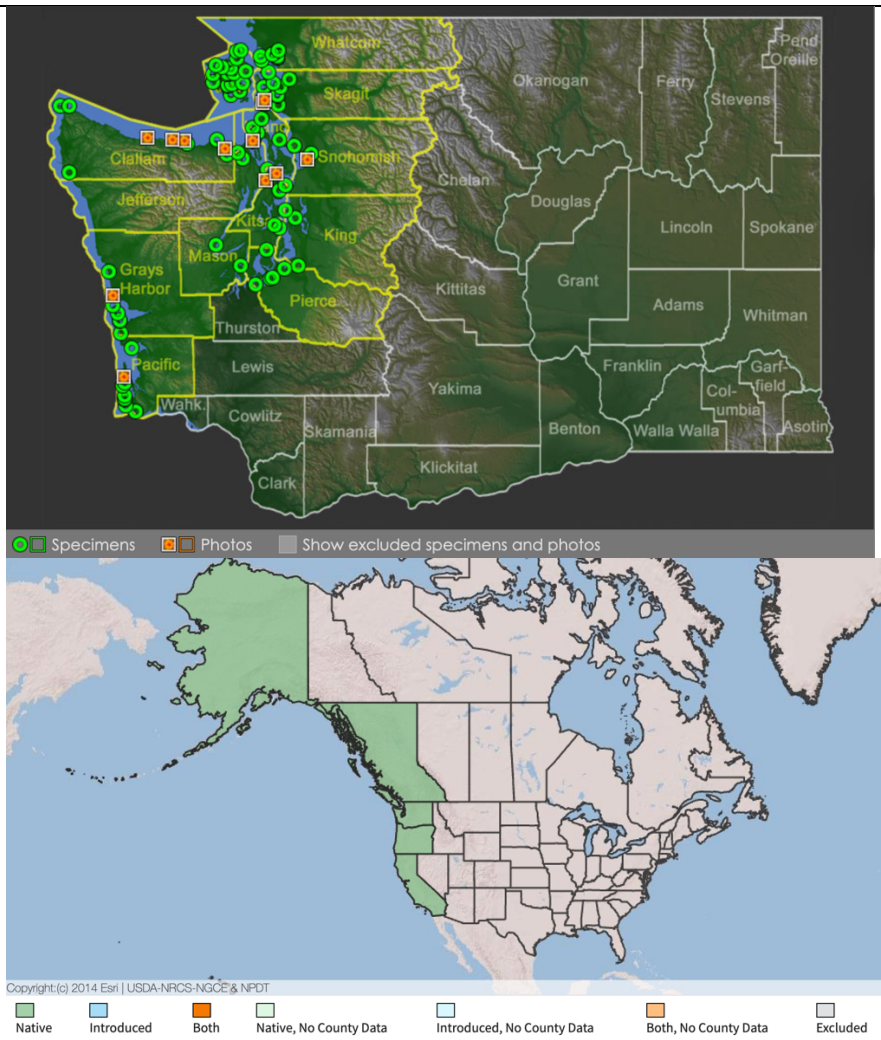
Plant Propagation Protocol for *Ambrosia chamissonis*

ESRM 412 – Native Plant Production

URL: https://courses.washington.edu/esrm412/protocols/*2025/AMCH4.pdf]*

TAXONOMY	
Plant Family	
Scientific Name	Asteraceae
Common Name	Aster/Sunflower Family
Species Scientific Name	*Ambrosia chamissonis*
Scientific Name	*Ambrosia chamissonis* (Less.) Greene
Varieties	None (10)
Sub-species	None (10)
Cultivar	None
Common Synonym(s)	*Franseria chamissonis* Less. ssp. *bipinnatisecta* (Less.) Wiggins & Stockw. *Franseria chamissonis* Less. ssp. *Chamissonis*. (10)
Common Name(s)	silver beachweed, silver beach bur, silver bur-ragweed (1,7)
Species Code (as per USDA Plants database)	AMCH4
GENERAL INFORMATION	

Geographical range	 Sources: Figure 1 (top figure) Burke Herbarium Image Collection; Figure 2 (bottom figure) USDA Plants Database
Ecological distribution	*A. chamissonis* can typically be found on the west coast of North America in coastal strand dune ecosystems; more specifically, ranging from central coastal California to Alaska (1,7).
Climate and elevation range	The species is found above high tide levels and up to around 50ft in elevation, most common on sand dunes and beaches. *A. chamissonis* thrives in a temperate climate that can be generally characterized with dry summers and wet winters (7,10).
Local habitat and abundance	*A. chamissonis* is a sand-dwelling species, often found in groups, growing on sand dunes and beaches with fast draining soil (typically sand). The species is fire resistant and drought tolerant, able to withstand nutrient-poor conditions, full sun exposure and little to no water intake for periods of time (7).
Plant strategy type / successional stage	*A. chamissonis* is a stress-tolerant colonizer species, due to its resistance to varying harsh environmental conditions, such as salt spray and high winds (4).

Plant characteristics	The species is a perennial forb/herb/shrub/subshrub species that is monoecious. It physically appears as a carpet-like growth habitat and has the growth potential to form large colonies due to its longevity and ability to withstand stress conditions brought about in coastal environments. Additionally, the species can aid in soil stabilization on the dunes they grow from and along the coastline (4).
PROPAGATION DETAILS: FROM SEED	
Ecotype	The Native Plant Network propagation protocol (9) sources their seeds from Marin Country, California; however, with a particular focus on PNW native species, seeds should be sourced from the PNW coastal dunes.
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	Deepot 16
Time to Grow	3-6 months from seeding (3,9).
Target Specifications	Height: N/A, Caliper: N/A, Root System: Firm plug in container (9).
Propagule Collection Instructions	Collect seeds between mid-April to late December. Seeds are 5-10mm in length, brown, and drop from the plant when they have matured (3,9).
Propagule Processing/Propagule Characteristics (	The seed life and density of this species is unknown.
Pre-Planting Propagule Treatments	The seeds do not need to undergo any rigorous cleaning, but the seeds must be dry and stored in the refrigerator (9).
Growing Area Preparation / Annual Practices for Perennial Crops	The media type used should be that of like natural conditions, therefore a well-drained media in flats, Sunshine mix #4 can be used as the standard. The seeds should be kept in an area with proper air circulation and access to sunlight such as a greenhouse or garden (3,9).
Establishment Phase Details	The seeds must be sown into and gently covered with media. The seeds should be sown in around the beginning of May and be very lightly watered. Around 30 days after sowing there should be seed germination (9).
Length of Establishment Phase	Approximately 1 month.
Active Growth Phase	The seeds should have full exposure to the sun to mimic true coastal conditions. Watering should be done very moderately and not overdone, ensuring proper soil drainage. Approximately 30 days after germination occurs, the seeds should be transplanted to Deepot 16 individual containers (3,9).
Length of Active Growth Phase	Anywhere around 2-6 months, depending on the different conditions' seeds are exposed to.
Hardening Phase	As time goes on, begin to water the plants less and less and ensure that they have access to proper sunlight and environmental conditions that could be similar to that of the coastal dunes (3,9).

Length of Hardening Phase	Within a month, typically at least over 2 weeks, before out planting (9).
Harvesting, Storage and Shipping	Once the seedlings have grown a proper root foundation that can hold the plug of the container, they can be transported carefully.
Length of Storage	Between nursery and out planting, seedlings should only undergo storage for a short period of time, at absolute most around 2-3 weeks.
Guidelines for Outplanting / Performance on Typical Sites	When out planting, plants should be placed in an environment like that of which they were sourced from, therefore in PNW coastal dunes with proper sun exposure and well-drained soil. The transplant survival should fall around 80% or higher.
Other Comments	Higher germination rates are associated with the planting of seeds between February -May (7).
PROPAGATION DETAILS: VEGETATIVE	
Ecotype	The PNW coastal dunes populated with healthy vegetative material of the species (4,7).
Propagation Goal	Plants
Propagation Method	Vegetative
Product Type	Container (plug)
Stock Type	Deepot 16
Time to Grow	2-4 months from planting vegetative material to out planting.
Target Specifications	Around half a foot tall or taller, approximately 15 cm, evidence of new shoot growth, strong roots, growth potential.
Propagule Collection Instructions	In late spring-early summer around May, collect stem cuttings from the healthiest looking plants. Try to collect only what is necessary without causing too much disturbance to the area.
Propagule Processing/Propagule Characteristics	Propagules must be kept a bit moist and cool before planting. When collecting rhizome fragments, be aware that they can establish faster than stem cuttings.
Pre-Planting Propagule Treatments	No cleaning required, keep vegetative material moist and cool before planting.
Growing Area Preparation / Annual Practices for Perennial Crops	Using a similar media as described in the seed propagation protocol, one of which allows for proper drainage and mimics the media the species typically grows from (sand) plant in Deepot 16 containers.
Establishment Phase Details	Place collected vegetative material under the surface of the media around 1-2 mm deep in the Deepot 16 container and have constant sun exposure and lightly water.
Length of Establishment	Anywhere between a week or two to a month, ensuring root stability and initiation.
Active Growth	Observe as new shoots grow and develop. Make sure to keep constant daily sunlight exposure and do not over water.

Length of Active Growth Phase	Around 1-3 months.
Hardening Phase	At the end of active growth, expose plants to more extreme, real-life coastal conditions such as wind and temperature changes. Adjust watering accordingly.
Length of Hardening Phase	Around 2 weeks to a month.
Harvesting, Storage and Shipping	When the plug can be held together and root systems are solid and properly developed, transport each plant in trays.
Length of Storage	Maximum 2 weeks, aim for around a few days to a week. Prolonged storage can be harmful to the plant in the long run.
Guidelines for Outplanting / Performance on Typical Sites	Vegetative propagation has the potential to establish quicker than seedlings because they already have root tissue present.
Other Comments	Be aware and mindful while harvesting the species, be mindful and try your best not to over harvest.
INFORMATION SOURCES	
References	1. *Ambrosia chamissonis - Calflora*. (2019). Calflora.org. https://www.calflora.org/app/taxon?crn=292 2. *Ambrosia chamissonis - California Flora Nursery*. (2026, April 22). California Flora Nursery. https://www.calfloranursery.com/plants/ambrosia-chamissonis/ 3. *Asteraceae (Ambrosia) — Reforestation, Nurseries and Genetics Resources*. (2026). Rngr.net. https://npn.rngr.net/npn/propagation/protocols/asteraceae-ambrosia-549/?searchterm=ambrosia%20chamissonis 4. Bails, J. (2024, August 31). *Seeds for Coastal Beach Restoration*. WNPS. https://www.wnps.org/blog/seeds-for-coastal-beach-restoration?highlight=WyJhbWJyb3NpYSIsImNoYW1pc3Nvbmlzll0= 5. Burke, H. (2024). *Ambrosia chamissonis - Burke Herbarium Image Collection*. Burkeherbarium.org.

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Other Sources Consulted	
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