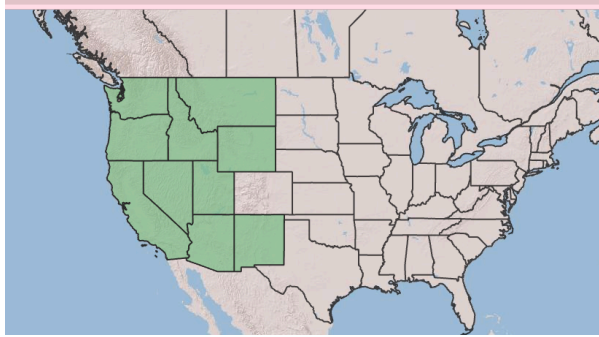


North America Distribution:



Washington Distribution:



(Source: USDA PLANTS Database- source 1)

TAXONOMY:	
(Family Names)	
Family Scientific name	Arenaria aculeata
Family Common name	Prickly Sandwort
(Scientific Names)	
Genus	<i>Eremonge</i>
Species	<i>aculeata</i>
Species Authority	(S. Watson) Ikonn
Variety	
Sub species	
Cultivar	
Common synonyms	<ol style="list-style-type: none"> 1. Arenaria aculeata (S. Watson) 2. Arenaria congesta var. aculeata (S. Watson) B.L. Rob. 3. Arenaria fendleri var. aculeata (S. Watson) Jepson <p>(Source 3)</p>
Common names	<ul style="list-style-type: none"> - Prickly sandwort - Spiny sandwort - Needle leaf sandwort

Species code	ARAC2 (source 1)
GENERAL INFORMATION:	
Geographical range	<p>North America- native to Arizona, California, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming (source 2)</p> <p>Washington state: Primarily found east of the cascade Range, inhabiting dry, rocky and alpine environments, specifically found in areas with volcanic soils (source 2)</p>
Ecological Distribution	Thrives in sagebrush steppe, mountain regions and areas with volcanic soils (source 10)
Climate and elevation range	<p>Elevation: found at elevations ranging from 5,800- 8,400 feet. But the most common range that prickly sandwort is found at ranges from 6,400 to 7,500 feet. (Source 3)</p> <p>Climate: Adapted to dry rocky slopes, alluvial areas, and volcanic terrains</p>
Local habitat and abundance	<p>Habitat: occupies rocky slopes, alluvial deposits and volcanic regions</p> <p>Abundance: present across multiple western states, suggests it is locally common in suitable habitats</p> <p>Associated Species: sagebrush, junipers, lodgepole pines</p> <p>(Source 9)</p>
Plant strategy type/ successional stage	<p>Strategy type: Exhibits characteristics of a stress tolerant species, adapted to survive in harsh nutrient- poor environments</p> <p>Successional Stage: early to mid-successional species, colonizing disturbed or challenging sites and contributing to soil stabilization</p> <p>(Source 4)</p>
Plant characteristics	<ul style="list-style-type: none"> - Life Form: mat- forming perennial herb with a woody base - Longevity: Typically lives for 3-5

	<p>years, reaching maturity within 1 to 2 years</p> <ul style="list-style-type: none"> - Key characteristics: - Grows from 7-25 cm - needle like and ridged leaves that are waxy and are spiny at the tip - Produces white, five- petaled flowers arranged in open cymes, bloom from summer to early fall - Fruit develops capsules containing yellowish-tan to gray seeds <p>(Source 8)</p>
PROPAGATION DETAILS:	
Ecotype	<p>Seeds used for propagation were collected from wild populations of prickly sandwort located in alpine and subalpine environments of the Cascade Range in Washington State at elevations between 1,800- 2,400 meters</p> <p>(Source 7)</p>
Propagation Goal	Plants
Propagation Method	Seeds
Product Type	Container (plug)
Stock Type	12 cu. In
Time to Grow	4 months (seedling- outplant)
Target Specifications	Germinants
Propagule Collection Instructions	<p>Fruit is in a capsule, seed is small, yellowish and oblong in shape. Seed is collected when the capsule begins to split in late or early august. Seed is stored in enveloped or paper bags at room temperature until cleaned.</p> <p>(source 7)</p>
Propagule Processing/ Propagule Characteristics	<ul style="list-style-type: none"> - Seed size: 1-2 mm, shape: oval, brown or tan, smooth and hard seeds - Seeds contained to a few capsules - Seeds are produced within the fruit or capsule of the plant - Seeds contribute to the persistence of the species, since plant is perennial

<p>Pre-Planting Propagule Treatments</p>	<p>Seed Cleaning: seeds are small and may need to be separated from chaff</p> <p>Dormancy Treatments: (cold stratification)- mix seeds with moist sand, store at 34- 41 degrees fahrenheit for 30- 60 days in a refrigerator</p> <p>Optional Treatments: pre-soak seeds in water for 12-24 hours (source 7)</p>
<p>Growing Area Preparation/ Annual Practices for Perennial crops</p>	<ul style="list-style-type: none"> - Find an area with well drained soil and lots of sun exposure - thrives in sandy or loamy soils (Source 6) - Provide a 2-3 inch layer of mulch to conserve water, reduce weeds and moderate soil temperature - Apply a balanced fertilizer before new growth begins <p>(source 7)</p>
<p>Establishment Phase Details</p>	<p>Dig two splits that are about 45 cm deep in the soil, creating a bed that is 1 meter wide for a double row, add a layer of organic matter on top of the soil pit. Lime can be added to adjust the soil pH to 6.7-7, ensuring optimal conditions for seedling growth. Propagation site should be sunny. Ensure that the rows run north to south to maximize sunlight exposure throughout the day. Provide some shelter to the north and east of the seedbed, this will help prevent wind damage and maintain stable moisture levels. Gently sow the presoaked or chipped seeds in the pots, gently pressing them into the soil. Prickly sandwort can be sown in autumn or early winter, when the soil temperatures are cooler.</p> <p>(source 7)</p>
<p>Length of Establishment Phase</p>	<p>1 week</p>
<p>Active Growth Phase</p>	<p>During the active growth phase, prickly sandwort can be grown using a simple container- based system using small pots with good drainage for seedlings. Use small pots with good drainage for seedlings, as the</p>

	<p>plants grow, provide support with stakes or small canes for stability. When plants reach about 5-10 cm tall, choose the strongest seedlings to maintain and remove any weaker growth. Keep the soil moist but not soggy to avoid root rot. Apply low- nitrogen fertilizer (10-10-10) every 4-6 weeks to encourage strong root development and compact growth. Add a light mulch of well-rotted compost to suppress weeds and maintain stable soil temperature. Ensure plants are receiving full sun and maintain daytime temperatures of around 59- 68 degrees fahrenheit. Once plants reach about 10 cm in height, pinch back any leggy or weak growth to promote bushier, compact plants.</p> <p>(source 7)</p>
Length of Active growth phase	3 months
Hardening Phase	<p>Overwinter in a well-ventilated cold frame or unheated greenhouse. Provide protection with frame lights or fleece only when temperatures fall below 0°C. If temperatures drop below -2°C, insulate plants using hessian, straw, or breathable thermal fabric. Avoid over watering during cold periods to prevent root rot. In late winter, pinch back any leggy growth to encourage compact, lateral development. Begin hardening off in early to mid-spring by gradually increasing exposure to outdoor conditions, readying plants for planting out once the risk of hard frost has passed.</p> <p>(source 7)</p>
Length of Hardening Phase	2-4 weeks
Harvesting, storage and shipping (of seedlings)	<p>Transplant is done in early may with an electric drill 1.5 inch diameter holes at the planting site</p> <p>(source 7)</p>
Length of storage	
Guidelines for outplanting	<p>Transplanting into sites with existing vegetation may reduce survival, depending</p>

	on weather conditions (source 7)
Other comments	No insect or disease problems have been noted.

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