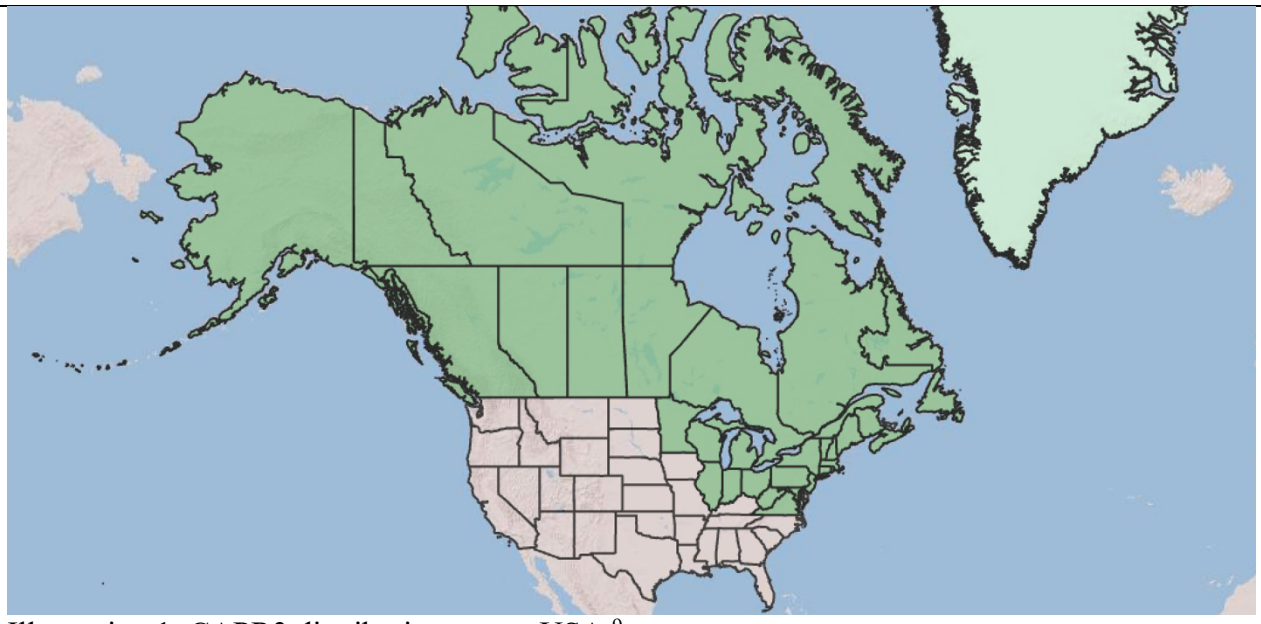
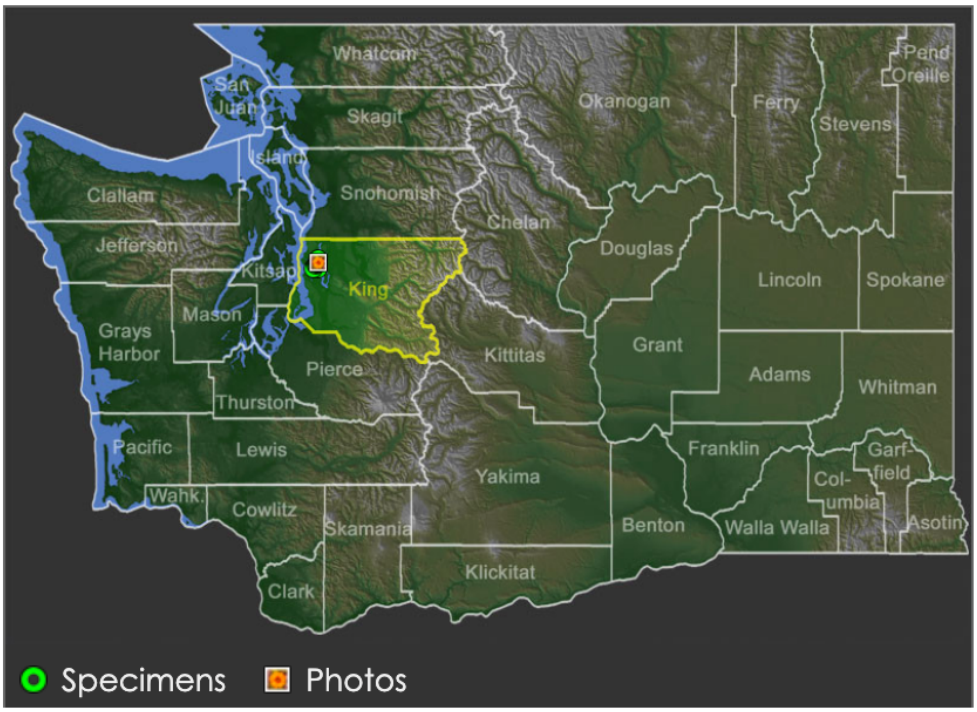
Plant Propagation Protocol for Cardamine pratensis (Cuckoo Flower)
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/2026/CAPR3.pdf

TAXONOMY	
Plant Family	
Scientific Name	Brassicaceae Burnett[9]
Common Name	Mustard[9]
Species Scientific Name	
Scientific Name	Genus: Cardamine Epithet: pratensis Authority: L. (abbreviation for Carl Linneaus) Cardamine pratensis L. [9]
Varieties	Cardamine pratensis L. var. pratensis (CAPRP); used to distinguish old and new world populations as separate varieties, with CAPRP being the term for the European-introduced variety.[10] Cardamine pratensis L. var. palustris; considered native North American/new world variety, but there is scientific uncertainty as to whether the pratensis and palustris varieties are taxonomically distinct[1]
Sub-species	Cardamine pratensis L. var. angustifolia (CAPRA); arctic alpine sub-species[11]
Cultivar	N/A
Common Synonym(s)	N/A
Common Name(s)	Cuckoo flower[9]
Species Code (as per USDA Plants database)	CAPR3
GENERAL INFORMATION	

Geographical range	 Illustration 1: CAPR3 distribution across USA [9]  Illustration 2: CAPR3 distribution across Washington State[4] *Note that the USDA Plants Database map does not include Cardamine pratensis as being native to WA state. However, data from our very own Burke Herbarium indicates that the plant is known to grow in WA, only in King County. The plant is otherwise found across Canada and Alaska, and is more common across Northeastern North America.[4]
Ecological distribution	Known to grow in disturbed areas, such as lawns and forest edges, across urban and suburban landscapes[4]

	Var. palustris is typically restricted to cooler latitudes with cold, wet climates, and thrives in moist, shady areas such as bogs, swamps, and streams.[6] Var. pratensis is more widely adapted, and can be found in warmer, drier forests and meadows.[6]
Climate and elevation range	Low-to-mid elevation range (including arctic-alpine variety common in Alaska/Northern Canada)[2] Thrives in part shade to full shade, in moist to wet climate conditions. They are commonly found forested swamps and wet meadows with acidic to neutral soils (pH 5.0-7.5). [5, 6, 7] The species can also be found less frequently and abundantly on drier sites (wood margins or clearings, marshy ground, pastures), but never found on steep slopes or shallow and rocky ground.[5]
Local habitat and abundance	Potential habitat appears expansive, but the actual number of occurrences of the plant is small. Status varies across its habitat, but is considered threatened in Minnesota and Massachusetts. Relatively rare across anthropogenic/disturbed habitats, river or stream floodplains, forests, meadows, shores of rivers and lakes, swamps, and edges of wetlands.[3]
Plant strategy type / successional stage	Mid-successional, disturbance-tolerant perennial. Weakly competitive, cannot invade or establish among already tall, well-established, aggressive, or heavily shading species. Has colonization success when environment is modified (like in the anthropogenic, disturbed case) and plant competition is limited, but prefers relatively stable grassy turf and wet meadows to highly disturbed bare ground. Benefits from grazing, cutting, periodic flooding, and moderate disturbance.[5]
Plant characteristics	Cardamine pratensis is an herbaceous perennial forb in the Brassicaceae (mustard) family and is typically classified as a semi-rosette perennial meadow species. It has erect, usually unbranched stems that can reach up to 55 cm (22 in.) tall and are generally glabrous, though sometimes sparsely hairy near the base. Its leaves are pinnate or pinnately compound, with rounded to broadly obovate terminal leaflets. The stem leaves usually contain 4–7 pairs of leaflets with mostly smooth margins. In spring, the species produces racemes of delicate white to pale lilac flowers with four petals typical of the mustard family, followed by long, narrow siliques containing very small light-brown seeds.[3, 5, 6, 7]

Illustrations 3 and 4: Cardamine pratensis plant and flowers, courtesy of Burke Herbarium[4]

The plant is shallow-rooted and has rhizomes that allow for vegetative spread and overwintering. The species reproduces both sexually in the wild through seed production and vegetatively through rhizome branching and plantlets that can develop on leaves.

PROPAGATION DETAILS: VEGETATIVE

All Vegetative Propagation Details via Salisbury, Edward. "The Reproduction of Cardamine Pratensis L. and Cardamine Palustris Peterman, Particularly in Relation to Their Specialized Foliar Vivipary, and Its Deflexion of the Constraints of Natural Selection".[8]

Ecotype	Water meadows, marsh edges, and damp woodlands across South England[8]
Propagation Goal	Produce rooted plants from leaf-derived plantlets.
Propagation Method	Vegetative
Product Type	Propagules/plantlets
Stock Type	N/A
Time to Grow	Approximately 17-18 weeks until ready for outplanting.
Target Specifications	Plants with visible roots and developing leaf buds ready for transplant to outplanting site.
Propagule Collection Instructions	Collect healthy basal leaves from actively growing plants in spring or early summer under moist conditions. Terminal leaflets are preferred because they produce plantlets most readily.

Propagule Processing/ Propagule Characteristics	Propagation uses detached basal leaves, as they are much more productive than stem leaves. Plantlets form naturally above leaf veins under moist, humid conditions. Vegetative propagules root readily when kept wet.
Pre-Planting Propagule Treatments	Keep leaves moist immediately after collection by storing in moist paper towels in a sealed plastic bag.
Growing Area Preparation Annual Practices for Perennial Crops	Use shallow trays, wet compost, or shallow water. Maintain high humidity and constant moisture.
Establishment Phase Details	Leaves should never be allowed to dry out. Salisbury's experiments showed that complete submergence strongly promoted plantlet formation and detached leaves remained viable underwater for many weeks. Moderate indirect light and cool, moist conditions similar to wet meadow habitats are ideal. Minimal handling is recommended during early root and shoot formation because the young plantlets are delicate. Once small roots and leaf buds become visible, plantlets may remain attached until they are large enough to separate and transplant individually into moist soil.
Length of EstablishmentPhase	Root initials and plantlets first appear approximately 7 to 8 days.
Active Growth Phase	Once plantlets develop visible roots and leaf buds, they should remain under consistently moist to saturated conditions to encourage continued root and shoot growth. Salisbury's experiments showed success after 15 weeks in water, the plants are ready to be transferred to wet soil. Transplant young plants carefully. Keep under moderate light and high humidity.
Length of Active Growth Phase	Up to 15 weeks in water, after which the plants can be transferred to soil to harden.
Hardening Phase	Gradually acclimate plants to outdoor conditions. Prevent plants from drying out.
Length of Hardening Phase	Typically 7–14 days. Plants are gradually acclimated to outdoor temperature, airflow, and light conditions while maintaining consistently moist soil.
Harvesting, Storage and Shipping	N/A
Length of Storage	Short-term storage can be done in sealed plastic bags or moist paper under cool conditions. Long-term storage is not recommended because propagules lose viability if dehydrated.

Guidelines for Outplanting / Performance on Typical Sites	Plant into moist meadows, wet grasslands, marsh edges, or similar open damp habitats. The species naturally spreads rapidly through rhizomatous growth. Flowering generally occurs in spring on established perennial plants, typically after at least one growing season.
Other Comments	Seeds become sticky when wet, allowing dispersal on bird feet or fur.[8] The flowers are an important nectar source for spring pollinators, including orange-tip butterflies.[8] Young leaves and shoots are edible and have a peppery flavor similar to watercress or wasabi. Flowers are also edible.[6] Not particularly suitable for propagation via seed, as seeds are very small and difficult to collect, clean, and handle. Seed pods disperse seeds explosively, making collection difficult. Seed viability is relatively short-lived.[5]
INFORMATION SOURCES	
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