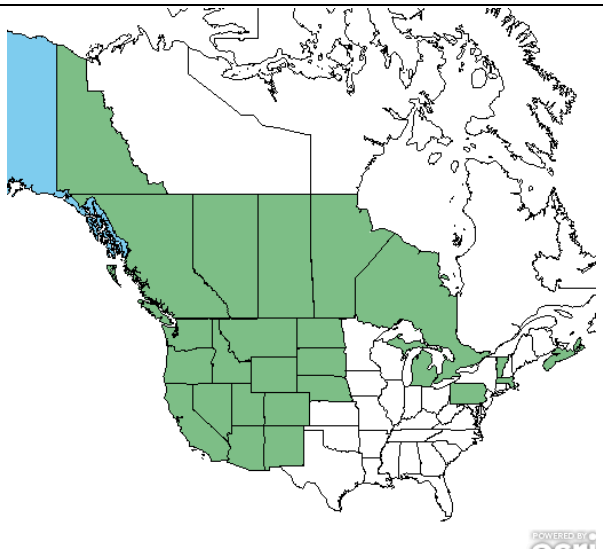
Plant Propagation Protocol for *Collinsia parviflora*

ESRM 412 – Native Plant Production

Protocol URL:

TAXONOMY	
Plant Family	
Scientific Name	*Plantaginaceae*
Common Name	Mare's-tail
Species Name	
Scientific Name	*Collinsia parviflora* Lindl.
Varieties	None
Sub-species	None
Cultivar	None
Common Synonym(s)	*Antirrhinum tenellum* Pursh, *Collinsia grandiflora* Lindl. var. *pusilla* A. Gray, *Collinsia tenella* (Pursh) Piper
Common Name(s)	Maiden Blue-Eyed Mary, Small-Flowered Blue-Eyed Mary, Few Flowered Blue-Eyed Mary, Small Flowered Collinsia
Species Code	COPA3
GENERAL INFORMATION	
Geographical range (Native range in green)	
Ecological distribution	Gravelly, open flats and banks, with little other vegetation and some grasses. Can also occur in open forests or uncovered patches of forest.
Climate and elevation range	Of unknown climate type and occurs in regions of 25-2330m elevation.
Local habitat and abundance	Lowland to montane zones, in nitrogen-free/limited, well-drained soils, free of shade, and increases in abundance with increasing temperature and decreases with moisture. Relatively

	common. Occurs in Sagebrush Scrub, Yellow Pine Forest, Red Fir Forest, Lodgepole Forest, and Subalpine Forest.
Plant strategy type / successional stage	Stress-tolerator.
Plant characteristics	Herb.
PROPAGATION DETAILS	
Ecotype	Paradise Creek drainage, Pullman, WA
Propagation Goal	Seeds.
Propagation Method	Seed.
Product Type	Propagules (seeds, cuttings, poles, etc.)
Stock Type	Unknown.
Time to Grow	7 Months
Target Specifications (size or characteristics of target plants to be produced)	Unspecified.
Propagule Collection Instructions	Flowers are borne in the leaf axils and plants flower and ripen seed indeterminately. Collecting the tiny capsules by hand is tedious. Plants are cut or pulled up and dried in paper bags at room temperature until cleaned. Seed is reddish brown when ripe and shatters readily. Seed usually ripens in late May.
Propagule Processing/Propagule Characteristics	350000 seeds/lb. Much of the seed will shattered in the bags. Capsules can be crushed to recover unshattered seed. Coarse trash is separated with a hand screen and the seed is cleaned with an air column separator. Clean seed is stored in controlled conditions at 40 degrees Fahrenheit and 40% relative humidity. Seed longevity was unspecified.
Pre-Planting Propagule Treatments	None required. This is a winter annual species and must be seeded in the fall. Spring germination will occur under exceptional climatic circumstances, but plants are less vigorous and seed yield is much lower than fall seeded plants.
Growing Area Preparation / Annual Practices for Perennial Crops	In the fall, seed is sown at a rate of 30-40 seeds/linear foot. Seedings should be made in a firm, weed-free seedbed. A firm seed bed holds moisture near the surface of the soil and assures accurate seed placement. Seed should be placed so that it is barely covered by soil.
Establishment Phase Details	Seedlings will emerge when fall rains begin and may develop 2-4 true leaves before winter.

Length of Establishment Phase	Unspecified.
Active Growth Phase	Plants resume growth in late winter or early spring and may flower as soon as late March, depending on weather conditions.
Length of Active Growth Phase	2 months
Hardening Phase	None.
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	Plants are harvested by cutting or pulling them up when the capsules toward the middle of the plant are drying but not splitting. Capsules on the lower stem will already have split and shattered their seed by this time. Harvester must use judgement in determining when the greatest amount of seed will be obtained from the plants.
Length of Storage	Unknown.
Guidelines for Outplanting / Performance on Typical Sites	None.
Other Comments	No insect or disease problems have been noted. In direct seeding trials at the PMC, spring sown seed germinated only in one year, following an extended cool and wet period. The plants were smaller, later, and produced much less seed than plants sown in the fall. No spring germination has occurred in other years.
	INFORMATION SOURCES
References	"Collinsia Parviflora Lindl. ." *USDA Plant Profiles*, USDA, plants.sc.egov.usda.gov/core/profile?symbol=COPA3. Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria.[web application]. 2019. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/ (Accessed: May 06, 2019). Klinkenberg, Brian. 2017. *E-Flora BC: Electronic Atlas of the Plants of British Columbia*[eflora.bc.ca]. Lab for Advanced Spatial Analysis, Department of Geography, University of

	British Columbia, Vancouver. [Accessed: 06/05/2019 1:22:09 PM] Skinner, David M,. 2005. Propagation protocol for production of Propagules (seeds, cuttings, poles, etc.) *Collinsia parviflora* Lindl. seeds USDA NRCS - Pullman Plant Materials Center Pullman, Washington. In: Native Plant Network. URL: http://NativePlantNetwork.org (accessed 2019/05/07). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources. TWC Staff. "Collinsia Parviflora." *Lady Bird Johnson Wildflower Center - The University of Texas at Austin*, 21 June 2021, www.wildflower.org/plants/result.php?id_plant=COPA3.
Other Sources Consulted	Michael S. Park & Elizabeth Chase Neese 2012, *Collinsia parviflora*, in Jepson Flora Project (eds.) *Jepson eFlora*, http://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=20000, accessed on May 06, 2019. Turner, Mark. "Collinsia Parviflora." *PNW Flowers*, Turner Photographics, 2018, www.pnwflowers.com/flower/collinsia-parviflora.
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