Nelson's checkermallow (*Sidalcea nelsoniana*)

THREATENED

Flowers (left), habit (center), and habitat (right) of Nelson's checkermallow. Photos by Rhiannon Thomas. If downloading images from this website, please credit the photographer.

Family
Malvaceae

Taxonomic notes
Interspecific hybridization is known to occur between Nelson's checkermallow and the other species of *Sidalcea* that occur within or near its range in the Willamette Valley. However, ecological and genetic barriers appear to limit hybridization among existing populations of these species. Though sexually compatible, *Sidalcea nelsoniana* flowers later in the year than *S. malviflora* ssp. *virgata* in sites where the species co-occur; *S. nelsoniana* and *S. cusickii* are fully sexually compatible and share flowering times and pollinators, but their ranges are narrowly separated by less than a mile and the species do not currently co-occur within any known sites; *S. nelsoniana* and *S. campestris* co-occur in many sites, but the two species exhibit low sexual compatibility, likely because of chromosomal pairing problems due to differing ploidy levels in the two species.

Plant description
Nelson's checkermallow is an erect perennial arising from a stout taproot, the stems 40-100 cm tall and glabrous or with short, simple hairs. Leaf blades are glabrous above and sparsely covered with small, stiff hairs beneath. Basal leaves are round and palmately lobed, the lobes toothed; upper leaves are increasingly deeply cleft. The species is gynodioecious, with plants that are either pistillate (female, lacking stamens) or perfect (having both male and female parts). Racemes are somewhat spikelike, but elongate and open, bearing many flowers. Petals are pinkish lavender, calyces usually purplish tinged. Petals of perfect flowers are 9-15 mm long, the calyx 4.5-7 mm long; petals of pistillate flowers are 5-9 mm long, the calyx 4-6 mm long. Carpels are approximately 3 mm long and lightly reticulate on the sides, the beak less than 0.5 mm long.

Distinguishing characteristics
Four other *Sidalcea* species occur within or near the range of Nelson's checkermallow: *S. campestris, S. cusickii, S. hirtipes, and S. malviflora* ssp*. virgata*. *Sidalcea campestris* is distinguished from Nelson's checkermallow by its typically taller stature

(0.5-2 m tall versus 0.4-1 m tall) and by its petals, which are white to pink (versus pinkish lavender) and usually longer (petals of perfect flowers 13-25 mm long versus 9-15 mm long, petals of pistillate flowers 9-12 mm long versus 5-9 mm long). *Sidalcea cusickii* occurs just south of the range of Nelson's checkermallow and has forked to stellate stem hairs (versus glabrous or with simple hairs) and calyx lobes that are broadened above the base and prominently veined (versus calyx lobes not broadened above the base nor prominently veined). *Sidalcea hirtipes* has stems copiously covered with long hairs (versus stems glabrous or with short hairs) and longer calyces copiously long-hairy (calyces 9-15 mm long with hairs up to 2.5 mm long versus calyces 5-7 mm long and subglabrous to covered with tiny star-shaped hairs). *Sidalcea malviflora* ssp. *virgata* usually begins flowering earlier and tends to inhabit dryer, more upland sites, and has stems with forked or branched stem hairs (versus glabrous or with simple hairs) and petals that are deep pink to rose colored (versus pinkish lavender) and typically longer (petals of perfect flowers 15-25 mm long versus 9-15 mm, petals of pistillate flowers 9-13 mm long versus 9-12 mm).

When to survey
Surveys should be completed when the species is flowering, typically from late May through mid July, although flowering can continue until early September, depending on conditions. Coast Range populations generally flower later and senesce earlier than Willamette Valley populations.

Habitat
Willamette Valley populations of Nelson's checkermallow are typically found in open prairie remnants along the margins of streams, sloughs, ditches, roadsides, fence rows, and drainage swales and in fallow fields. Occasionally, the species occurs in the understory or at the edges of ash woodlands or among woody shrubs. Substrates at Willamette Valley sites range from gravelly, well drained loams to poorly drained, hydric clay soils. Coast Range populations often occur in open areas in wet to dry meadows and intermittent stream channels, and on the edges of coniferous forests in substrates ranging from clay to loam. The species is found at elevations from about 43-610 m (140-2000 ft).

Commonly associated native plant species include *Achillea millefolium*, *Carex* spp., *Crataegus* spp., *Deschampsia caespitosa*, *Equisetum arvense*, *Fragaria virginiana*, *Fraxinus latifolia*, *Galium aparine*, *Geum macrophyllum*, *Heracleum lanatum*, *Hordeum brachyantherum*, *Juncus* spp., *Lupinus polyphyllus*, *Madia sativa*, *Prunella vulgaris*, *Pteridium aquilinum*, *Quercus garryana*, *Senecio triangularis, Spiraea douglasii*, *Symphoricarpos albus,* and *Triteleia hyacinthina*. Common non-native associates include *Alopecurus pratensis*, *Arrhenatherum elatius*, *Cirsium* spp., *Dactylis glomerata*, *Daucus carota*, *Holcus lanatus*, *Hypericum perforatum*, *Hypochaeris radicata*, *Leucanthemum vulgare*, *Lotus corniculatus*, *Parentucellia viscosa*, *Phalaris arundinacea*, *Phleum pratense*, *Rosa* spp., *Rubus* spp., *Schedonorus arundinaceus*, *Senecio jacobaea,* and *Vicia* spp.

Range
Nelson's checkermallow occurs in the Willamette Valley and on the western flanks of the Coast Range, from southern Benton County, Oregon north to Lewis County, Washington. The majority of populations occur in Oregon, with many concentrated near the cities of Corvallis and Salem. Only two populations are known from Washington, one from Cowlitz County and one from Lewis County.

Oregon counties
Benton, Clackamas, Clatsop, Columbia, Linn, Marion, Polk, Tillamook, Washington, Yamhill

Federal status
Threatened

Threats
Major threats to this species include habitat loss due to agricultural and urban development, ecological succession resulting in the encroachment of trees and woody shrubs into open prairie habitats, and exotic weed invasions. Seed survival in many populations of Nelson's checkermallow is severely limited by pre-dispersal seed predation by native, host-specific weevils (*Macrorhoptus sidalceae*). The weevils seem to be restricted to the Willamette Valley, southwestern Washington, and lower Coast Range; there are no reports of the parasite from Coast Range populations of Nelson's checkermallow in Yamhill, Tillamook, and Washington Counties. Additional threats include possible inbreeding depression due to small population sizes and habitat fragmentation, and interspecific hybridization.

Conservation planning
A U.S. Fish and Wildlife Service Recovery Plan for the threatened Nelson's checkermallow (*Sidalcea nelsoniana*) was released in 1998.

A U.S. Fish and Wildlife Service Recovery Plan for prairie species of western Oregon and southwestern Washington (pdf document, 9.63 MB) was released in 2010 and addresses updated conservation needs of Nelson's checkermallow.

Did you know?
Nelson's checkermallow is strongly outcrossing, as perfect-flowered plants are protandrous (in individual flowers, pollen matures before the stigmas are receptive), and female plants are obligately outcrossed (they must be fertilized with pollen from other plants, as they produce no pollen of their own). Most Willamette Valley populations have a far greater number of female plants than perfect plants.

The species can also spread vegetatively by rhizomes that form multiple crowns with distinct clusters of stems, making it difficult to distinguish individual plants.

Current/Recent ODA projects
Developing population density estimates for nine rare Willamette Valley prairie species

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