DRAFT WRITTEN FINDINGS OF THE WASHINGTON STATE NOXIOUS WEED CONTROL BOARD

SCIENTIFIC NAME: *Clinopodium vulgare*

SYNONYMS: *Calamintha vulgaris, Clinopodium vulgare var. neogaea, Satureja vulgaris, Satureja vulgaris var. diminuta, Satureja vulgaris var. neogaea* (USDA).

COMMON NAMES: wild basil, basil savory, field basil (Idaho Fish & Game), dog mint (University of Michigan), cushion calamint (Plant Life).

FAMILY: Mint Family, Lamiaceae.

LEGAL STATUS: Being considered for 2022 Class B listing.

DESCRIPTION AND VARIATION:

OVERALL HABIT:

This perennial, herbaceous mint usually grows to 45 cm (18 inches) tall (Lysuik and Lutsenko, 2017), but can grow as tall as 70 cm (28 inches) (SW Biodiversity). *C. vulgare* grows taller, and has more leaves during times of rainfall, and grows shorter while producing less leaves during times of drought (Staley *et al*., 2007). In Washington State, it is often seen growing in spreading, dense groups or clumps, which push out all other vegetation (C. Lucero, personal communication, June 1, 2021).

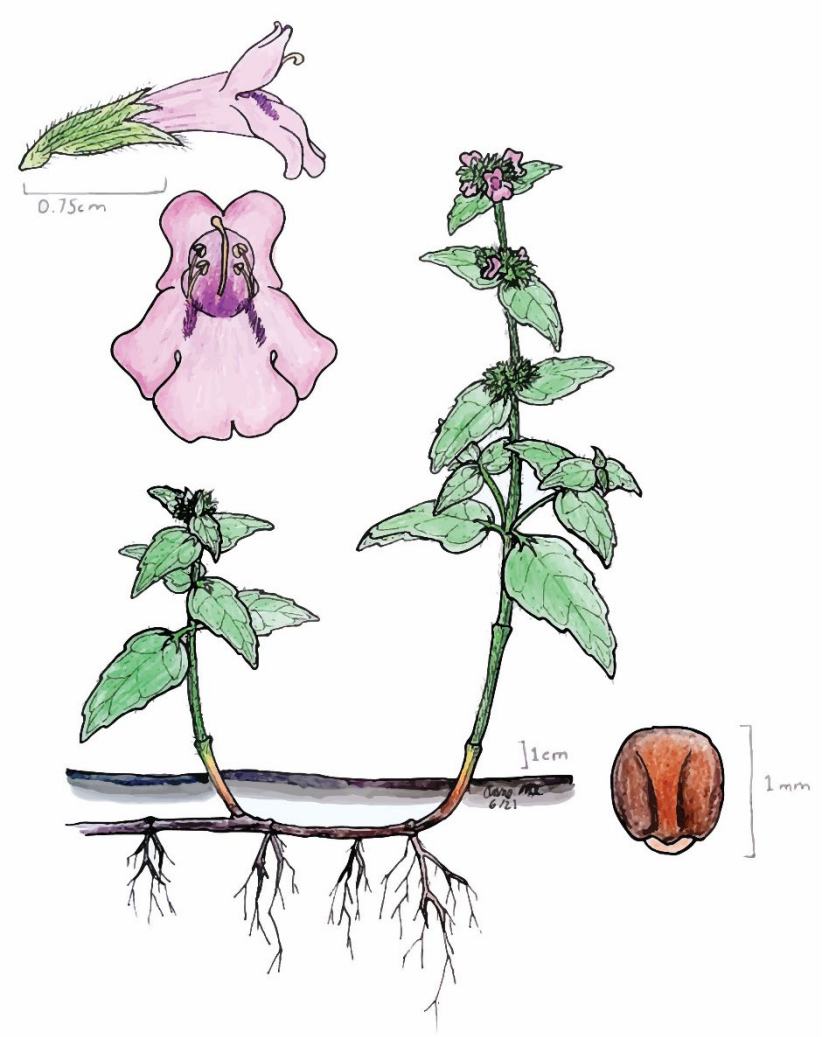


Illustration by Anne Schuster

STEMS:

Stems are square, and usually unbranched, but sometimes few-branched, and very hairy (Minnesota Wildflowers).



Stem picture from Native Plant Trust.

LEAVES:

The leaves, which grow in opposite pairs up the stem, are egg to oval-shaped, usually rounded at the base and usually bluntly serrated along the margins, ending in a blunt tip. Leaves are 2.5cm (1 in) – 6.5 cm (2.5 in) long and 2.5cm (1 in) wide. The leaves are covered in hairs, though less densely than the stems. When crushed, the leaves give off a faint aroma (Minnesota Wildflowers).



Leaf picture from Native Plant Trust.

FLOWERS:

Flowers grow in dense clusters at the top of leaf pairs, as well as at the top of the plant. The clusters are in densely hairy calyxes, which start green, and age to brown as the seeds mature. Each cluster has about 30 flowers, which are a pale to bright pink-purple, and only a few flowers will be in bloom at one time. The flowers are tube shaped, trumpeting out to a two lobed top lip, and a four lobed bottom lip. There are two lines of very small, fine hairs that go up the centers of the bottom two lobes of the bottom lip, and into the tube of the flower. Each flower is about 1.25 cm (0.5 inch) long (Minnesota Wildflowers, Lysuik and Lutsenko, 2017).



Flower picture from Native Plant Trust.

DRAFT

FRUITS/SEEDS:

As the calyx clusters persist and age to brown, they house small capsules with very small, round, brown nutlets inside (Minnesota Wildflowers).



Dried calyx picture from Native Plant Trust.

ROOTS:

C. vulgare has rhizomatous roots (Dauber, *et al*., 2010).

SIMILAR SPECIES:

Most similar looking mints, which grow in Washington, are much taller or otherwise look very different from *C. vulgare*.

Clinopodium douglasii, native yerba buena has similar looking flowers, the vegetation is scarcely hairy, and it does not have dense clusters of calyxes (Burke Herbarium).

Non-native, *Lamium purpureum*, purple dead-nettle has very red-purple pigmented leaves, which lay closely on each other, as well has not having the dense clusters of flowers that *C. vulgare* possesses (Burke Herbarium).

Self-heal, *Prunella vulgaris*, which has native and introduced varieties and subspecies, have cooler, more purple flowers, which grow from taller, more pyramidal flowering clusters. The calyxes of these flowering clusters, along with the stems and leaves of the plant, are much less hairy than *C. vulgare* (Burke Herbarium). Native varieties of P. vulgaris grow in open prairies and grasslands, while the introduced varieties are frequent garden escapees in urban and suburban areas.

HABITAT:

C. vulgare grows in woodlands, forests, brush land, grasslands, disturbed areas, and edge habitats (Lysuik and Lutsenko, 2017). It grows better in alkaline soils (Dauber, *et al*., 2010) and with low organic matter (Allison, *et al.*, 2013).

DRAFT

BIOLOGY

GROWTH AND DEVELOPMENT:

In Washington, flowers bloom from June to September (Burke Herbarium), then seeds begin to ripen in August. *C. vulgare* is frost resistant (Plants for a Future). *C. vulgare* is perennial (Dauber, *et al*., 2010).

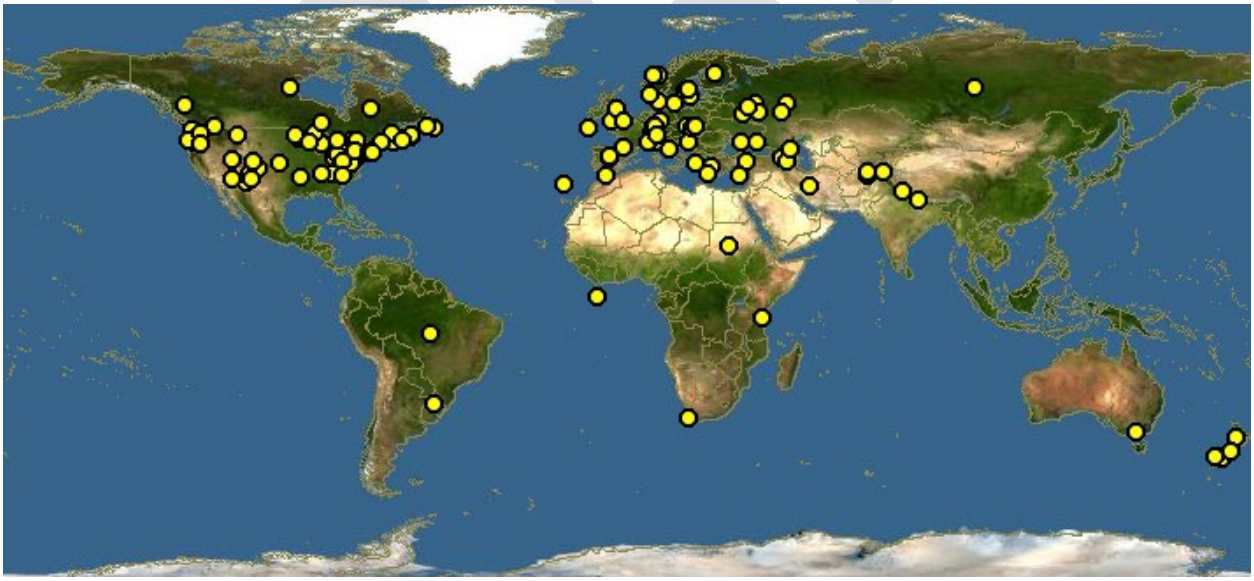
REPRODUCTION:

C. vulgare reproduces well by seed and vegetatively with rhizomes, and is self-compatible (Dauber, *et al*., 2010).

GEOGRAPHIC DISTRIBUTION:

NATIVE DISTRIBUTION

C. vulgare grows natively in western Asia, north Africa, and throughout Europe (Lysuik and Lutsenko, 2017) and the British Isles (Staley *et al*., 2007). It also grows in eastern Canada the U.S., though this range may be from European introductions and garden escapees (Lady Bird Johnson Wildflower Center, Lysuik and Lutsenko, 2017, SW Biodiversity).



Global records of *C. vulgare*, from Discover Life records.

NON-NATIVE DISTRIBUTION

C. vulgare has likely been introduced to the western U.S. (C. Bartlett, personal communication, April, 2021) and perhaps to the U.S. generally (Biota of North America Program, Kew Science, Lady Bird Johnson Wildflower Center, Lysuik and Lutsenko, 2017, Nature Serve, SW Biodiversity). Other locations

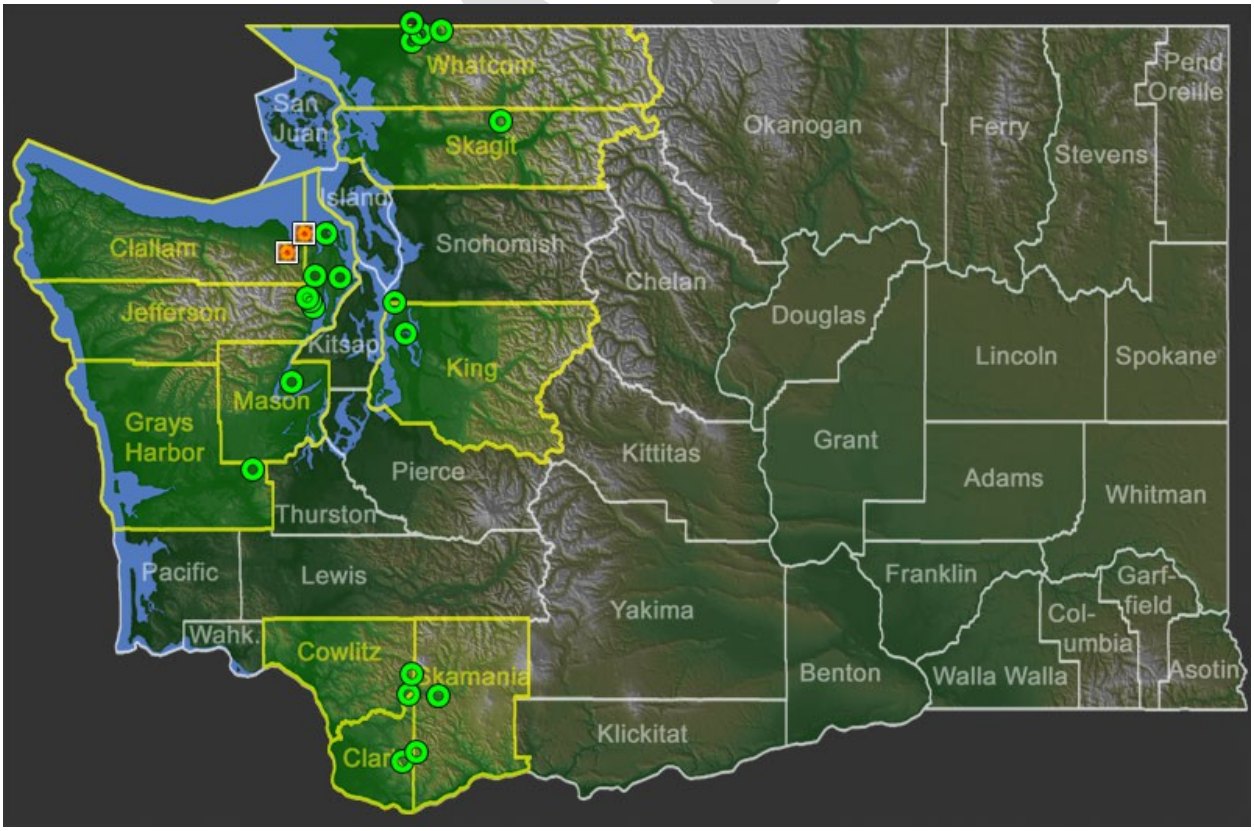
it has been found outside of its native range are South America, central Africa, central Russia, the Himalayas, southeast Australia, and New Zealand (Discover Life).

HISTORY:

The first recorded instance of *C. vulgare* in western North America is in a park in British Columbia in 1895. The first record of *C. vulgare* in Washington state was in Jefferson County, in 1973 (Consortium of Pacific Northwest Herbaria), though it is not listed in the first edition of Flora of the Pacific Northwest (Hitchcock and Cronquist, 1973).

WASHINGTON:

The Burke Herbarium has records of C. Vulgare throughout western Washington, mostly in mountainous areas of Clark, Cowlitz, Skamania, Skagit, Whatcom, Mason, Jefferson, and Clallam counties, though it has also been recorded in low-elevation areas of King, Grays Harbor, and Jefferson Counties. It has been observed a lot along Highway 101 from Mason to Cowlitz county, and particularly heavy infestations near Quilcene and along Mt. Walker Road, all of which has appeared in the last six years or so (C. Bartlett pers. comm. 2021, C. Lucero pers. comm. 2021).



Records of *C. vulgare*, from Burke Herbarium.

NEARBY TO WASHINGTON:

OREGON:

There are some records of *C. vulgare* throughout western Oregon (Consortium of Pacific Northwest Herbaria, Oregon Flora Image Project).

IDAHO:

There are no records in Idaho (Idaho Fish & Game), but has been recorded in Montana, where it is considered non-native (Montana Field Guides).

BRITISH COLUMBIA:

C. vulgare has been recorded mostly in the southern half of British Columbia (Consortium of Pacific Northwest Herbaria, E-Flora BC).

CALIFORNIA

There are no records of *C. vulgare* in California, and it is considered non-native (Calflora).

LISTINGS:

C. vulgare is classified as exotic in British Columbia, Colorado, and many eastern U.S. states. It is classified as vulnerable in Indiana, New Jersey, Quebec, and Newfoundland (NatureServe). It is listed as endangered in Croatia (Hulina, 2005).

ECONOMIC AND ECOLOGICAL IMPORTANCE:

DETRIMENTAL:

There is no academic documentation of detrimental economic or ecological impacts due to *C. vulgare*. However, along the eastern side of the Olympic Peninsula, *C. vulgare* has been observed spreading rapidly, and pushing out all other herbaceous vegetation. What started as only a few plants along roads and disturbed areas 7 years ago, has grown to large swaths of monoculture that spread deep into forested areas, away from the roads. Many of these sites are deep in the Olympic National Forest, where hiking in with control tools and chemicals is highly arduous, meanwhile the plant is also spreading in easily accessible roadsides and disturbed areas (C. Bartlett pers. comm. 2021, C. Lucero pers. comm. 2021).

BENEFICIAL:

C. vulgare has been used in folk medicine of Europe for centuries, for instance, it has been used in Bulgaria to treat wounds (Lysuik and Lutsenko, 2017), and viral warts (Opalchenova and Obreshkova, 1999). In trials, *C. vulgare* has been shown to have selective anticancer activity (Batsalova, *et al*., 2013),

DRAFT

as well as anti-inflammatory properties on skin and produces broad-range antibacterial activity, and may have anti-oxidant properties (Lysuik and Lutsenko, 2017).

C. vulgare is an excellent nectar source for bees (Mahale, 2019), and other hymenopterans (Dauber, *et al*., 2010).

CONTROL:

MECHANICAL:

C. vulgare should be able to be pulled by hand or dug out, but all root runners should be removed to have a chance at effectiveness, though there is no source for this statement.

BIOLOGICAL:

In its native range *C. vulgare* is fed on by a leaf mining lepidopteran, *Stephenasia brunnichella*, and root feeders, *Agroites spp*. (Staley *et al*., 2007), and has seed damage from micro-moths and thrips (Stevenson *et al*., 1997), though there have been no studies to see if any of these can be effective as biological controls, or safe to use outside of their native range.

CHEMICAL:

Glyphosate, Chlorimuron ethyl, and Dicamba have all been shown to be effective on *C. vulgare*, especially when the plants are growing in high organic soils (Allison, *et al.*, 2013).

On the Olympic Peninsula, Triclopyr combined with Aminopyralid have been used and been effective at controlling C. vulgare. 2,4-D has also been used, but was not as effective as the Triclopyr and Aminopyralid combination (C. Lucero pers. comm. 2021).

DRAFT

RATIONALE FOR LISTING:

Due to how fast *C. vulgare* spreads and creates monocultures, even far away from human disturbance (C. Bartlett pers. comm. 2021, C. Lucero pers. comm. 2021), it could have a very negative impact on Western Washington's wildlands. Additionally, it is difficult to access many of the places where it is invading, making control more arduous (C. Bartlett pers. comm. 2021, C. Lucero pers. comm. 2021).



Image from Wikimedia Commons

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