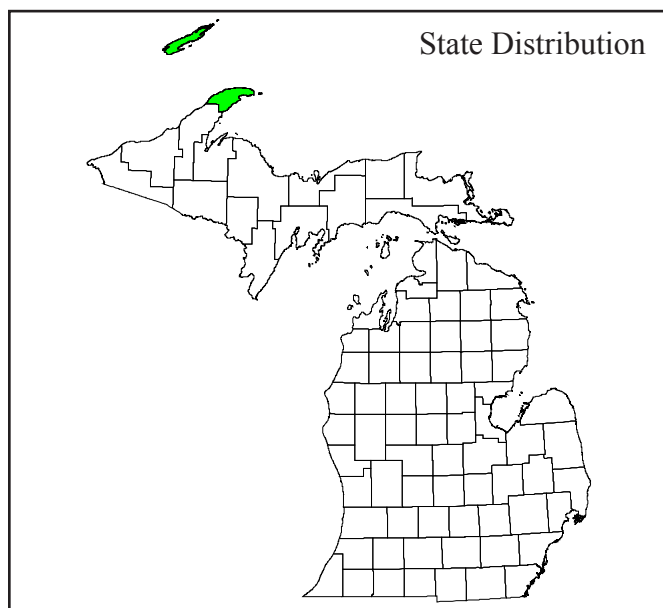
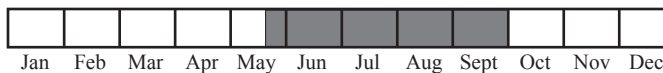


Photo by Susan R. Crispin



Best Survey Period



**Status:** State threatened

**Global and state rank:** G4G5/S2

**Other common names:** redstem ceanothus

**Family:** Rhamnaceae (buckthorn family)

**Taxonomy:** The Rhamnaceae is a large family of ca. 900 species of flowering trees, shrubs, and vines that occurs worldwide, primarily in subtropical and tropical regions. Members of the North American genus *Ceanothus* are characterized by leaves that are 3-nerved from the base and numerous flowers with long-clawed petals.

**Range:** Wild lilac is primarily a species of western North America, where it is known from British Columbia, Washington, Oregon, California, Idaho, and Montana, with one dubious report from South Dakota. Disjunct populations are known from Keweenaw County, Michigan. Wild lilac is considered secure throughout its range except in Michigan (NatureServe 2009).

**State distribution:** Wild lilac was first reported from Michigan by Farwell (1915), who collected a fruiting specimen near Copper Harbor (Keweenaw County) in 1886. A total of six occurrences of the species have been

documented since that time in a small area between Great Sand Bay and Copper Harbor in Keweenaw County. Michigan populations of wild lilac are considerably disjunct from the core range of the species in western North America.

**Recognition:** Wild lilac is an erect, perennial shrub ranging to **3 m in height**, characterized by its **red or purplish stems**. Plants bear alternate, ovate-elliptic leaves to 4-7 cm long, and ascending, **leafless inflorescences** 8-15 cm long consisting of umbels of white flowers separated by internodes to 2 cm long. **Inflorescence peduncles arise from the previous year's branches**, unlike those of the other two species of *Ceanothus* in Michigan, *C. americanus* (New Jersey-tea) and *C. herbaceus* (New Jersey-tea), both of which also occur in the western Upper Peninsula. Wild lilac fruits are smooth, 3-lobed capsule-like drupes to 4 mm long.

**Best survey time/phenology:** Wild lilac is best sought in flower from late May to June or when in fruit from July to September.

**FQI Coefficient and Wetland Category:** 10, UPL

**Habitat:** Wild lilac is of local occurrence on volcanic conglomerate ridgetops and slopes in the northern



Keweenaw Peninsula in habitats classified as northern bald and volcanic cliff (Kost et al. 2007). These areas are characterized by scattered, shrubby tree cover and patchy shrub and ground layers. Significant areas of bare rock occur on slopes and cliff faces. Native associates of wild lilac in these habitats include *Acer rubrum* (red maple), *A. saccharum* (sugar maple), *Amelanchier* spp. (serviceberries), *Arctostaphylos uva-ursi* (bearberry), *Aster macrophyllus* (big-leaved aster), *Betula papyrifera* (paper birch), *Cornus* spp. (dogwoods), *Juniperus communis* (common juniper), *Pinus banksiana* (jack pine), *P. resinosa* (red pine), *P. strobus* (white pine), *Populus tremuloides* (quaking aspen), *Prunus virginiana* (choke cherry), *Quercus rubra* (red oak), *Shepherdia canadensis* (soapberry), and *Thuja occidentalis* (northern white-cedar). In the Pacific Northwest, wild lilac occurs in canopy gaps and shrub-dominated early to mid-seral stages of mixed conifer forests, often on slopes (Hickey and Leege 1970, Johnson 2000).

**Biology:** Wild lilac flowers in late May and June, and fruits in July to fall. The seeds of this species are covered by a hard, water-impermeable coat that opens following exposure to significant heat (Hickey and Leege 1970, Johnson 2000). Moisture that enters the seed following opening of the hilar fissure (the fissure associated with the point of attachment to the plant) allows the dormant embryo to develop and germinate. Germination can be prolific following fire, logging, or other disturbances that expose the seeds to sufficient heat; hundreds to thousands of seedlings per acre have been recorded in the Pacific Northwest following summer and fall burns (Hickey and Leege 1970). Following germination, growth is rapid. Individuals are relatively short lived. Production of a seedbank is particularly important for wild lilac due to the short lifespans of individual shrubs and the relatively rapid succession of the early- to mid-seral habitats it occupies. Fires or other disturbances periodically create suitable patches of habitat for the species, which can recruit from the long-lived seedbank many years after the seed-producing individuals succumbed to shading.

Wild lilac, like other members of the genus *Ceanothus*, has the ability to fix nitrogen via a symbiotic association with root-inhabiting filamentous bacteria of the genus *Frankia*. Nitrogen fixed by wild lilac may be the primary nitrogen input to some forest ecosystems in the Pacific Northwest (Johnson 2000).

**Conservation/management:** Wild lilac is known only from five modern occurrences in Michigan, most of which are found along or in the vicinity of roads, which makes plants susceptible to mowing, herbicide use, and road improvements. In addition, disturbances associated with road construction and foot and vehicular traffic have allowed the establishment at these sites of several invasive plant species, including *Centaurea maculosa* (spotted knapweed), *Hypericum perforatum* (common St. John's-wort), *Poa compressa* (Canada bluegrass), and non-native, invasive *Hieracium* spp. (hawkweeds). The impacts of these species on populations of wild lilac are not known.

Prescribed fire should be considered for management of wild lilac and its habitat. Spring, summer, and fall burns scarify seeds and result in an abundance of seedlings the following spring (Hickey and Leege 1970). In addition to scarifying seeds, fire increases growth of wild lilac by promoting sprouting from top-killed plants. Following fire or other canopy-opening disturbances, wild lilac may recruit from the seedbank in areas where it was not previously noted. One recently documented population of wild lilac in Michigan was discovered following logging activity. In the absence of fire, cutting followed by targeted use of herbicides on shrubs and trees may improve reproductive success of wild lilac. In the absence of fire and other disturbances that increase availability of light in forested habitats, wild lilac tends to disappear (Johnson 2000). Thus, active management may be necessary to perpetuate Michigan populations.

**Comments:** Wild lilac is an important browse species for white-tailed deer, mule deer, Rocky Mountain elk, and snowshoe hares in the Pacific Northwest (Hickey and Leege 1970, Johnson 2000). The genus *Ceanothus* derives from the Greek *keanothus*, a spiny plant. The specific epithet *sanguineus* refers to the reddish-colored twigs.

**Research needs:** Research on the impacts of fire and other management techniques on populations of wild lilac will provide land stewards with methods for maintaining and enhancing populations. Research on the population biology of the species, including the importance of the seedbank in persistence of the species at a site between disturbance events, would improve efforts to identify, protect, and manage populations of the species.



**Related abstracts:** volcanic bedrock glade, volcanic bedrock lakeshore, alpine bistort, alpine bluegrass, *Carex atratifomis*, downy oat-grass, dwarf bilberry, fragrant cliff woodfern, heart-leaved arnica, pale Indian paintbrush, pearlwort, purple clematis, rayless mountain ragwort, rock whitlow-grass, squashberry

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