



Legal status: State Threatened

Global and state rank: G5 – Secure; SNR – Not ranked

Other common name(s): basil bee-balm, basil bergamot

Family: Lamiaceae (mint family)

Synonyms: *Monarda allophylla* Michx., *Monarda fistulosa* var. *clinopodia* (L.) Cooper.

Taxonomy: White bergamot (*Monarda clinopodia*) is a member of the mint family, Lamiaceae, which is the sixth most diverse plant family in the world (Ortiz-Mendoza 2023). Within Lamiaceae, the genus *Monarda* is included in the subfamily Nepetoideae with other aromatic species such as mint (*Mentha* spp.), basil (*Ocimum* spp.) rosemary (*Salvia rosmarinus*), and lavender (*Lavandula* spp.; Stevens 2017). The genus *Monarda* is also further divided into sections based on flower head, or glomerule, morphology (Prather 2002). White bergamot is a member of the section *Monarda*, which encompasses species with a single, terminal flower

head. There are as many as twenty-five accepted species and hybrids of *Monarda* in existence, with five occurring in Michigan.

A hybrid has been known to form between white bergamot and bee-balm (*M. didyma*), or wild bergamot (*M. fistulosa*) and bee-balm, in the Appalachian region, known as *Monarda x media*. This hybrid rarely occurs in Michigan, and it is uncertain whether it occurs naturally or is a garden escapee (Reznicek et. al. 2011). *Monarda x media* is described as having intermediate flower characteristics between all three species; the flowers are of intermediate size, but overall showier than white bergamot and wild bergamot, and the flower color is bright purple as opposed to the bright red bee-balm (Whitten 1981, Prather 2002).

Total Range: Its full range extends from Missouri to the west, north to Michigan and New York, east to the Atlantic coast, and south to South Carolina and Alabama. The species' nativity is questionable in some New England states, and it is assumed many of the occurrences in Vermont, Connecticut, and Rhode Island are escapees from cultivation. The stronghold of the species lies in the Appala-



chian Mountains where it is common in the mountains and uncommon in the western piedmont. It is listed as Possibly Extirpated (SH) in New Jersey; Critically Imperiled (S1) in New York and Missouri; Imperiled (S2) in Illinois, Delaware, and Alabama; Vulnerable (S3) in Maryland; and Secure (S5) in Kentucky, West Virginia, Pennsylvania, and North Carolina (NatureServe 2023).

State Distribution: White bergamot enters only the southernmost counties of Michigan's lower peninsula. As of 2025, it has been found only at sites located in Berrien and Lenawee Counties.

Recognition: As a characteristic member of the family Lamiaceae and subfamily Nepetoideae, white bergamot has a square stem, opposite leaves, two-lipped flowers (i.e. bilabiate), and a distinctive basil or mint-like smell when crushed. Stems are branched and glabrous to glabrate and often reach a stature of 75–90 cm (2.5–3 ft) in height. Leaves are simple, ovate-lanceolate, and acuminate with serrate margins and sparse villous hairs on both surfaces and on the petioles. Leaf blades reach 6.5–11 cm (2.5–4.3 in) long and 2–6 cm (0.8–2.4 in) wide with petioles reaching lengths of 2–3.5 cm (0.8–1.4 in). Flowers are crowded in terminal heads of 15–20 individuals that are subtended by distinctive, lanceolate bracts that are usually whitened but rarely purple-pink at the base. The calyx is conspicuously bearded in the throat, which is easily visible before flowers open. The corolla ranges from 1.5–3 cm (0.6 – 1.2 in) and is white, cream-colored, or very pale pink. The upper lip lacks hair, and the lower lip usually exhibits purple spotting.

White bergamot most closely resembles wild bergamot but three characteristics distinguish the two species: white bergamot has **pale flowers with a hairless** (i.e., glabrous) **upper lip, longer leaf petioles** and a habitat preference of **moist, floodplain forests**. Wild bergamot flowers are a more saturated pink or purple with a hairy upper lip, have shorter leaf petioles (1–2.4 cm, 0.4–0.9 in), and prefer sunny, open, and dry habitats. Another similar species is bee-balm, although the latter species

is larger in stature [up to 1.83 m (6 ft) tall] and has bright red flowers.

Best survey time/phenology: White bergamot is known to flower from early July to mid-September and sets fruit from mid-September to mid-October. It is easiest to identify when it is in flower, but it can also be identified by its longer petioles, terminal flower head, and habitat outside of the ideal survey window.

Habitat: Information regarding white bergamot's habitat in Michigan is limited, but occurrences have been documented in moist floodplain forests and similar habitats, such as wet-mesic flatwoods, and southern hardwood swamps (Reznicek et. al. 2011). A population was noted as growing amongst a “dense herbaceous understory” in association with Ohio buckeye (*Aesculus glabra*), pawpaw (*Asimina triloba*), hackberry (*Celtis occidentalis*), and box-elder (*Acer negundo*) (Prather MSC0256469 MSC 2017).

Outside of Michigan, white bergamot occurs along moist, wooded slopes and seepage bluffs near rivers as well as rich, mesic forests, ravines, and bottomlands. In the greater Chicago region, it is consistently associated with wood nettle (*Laportea canadensis*) and commonly associated with Michigan lily (*Lilium michiganense*) and fringed loosestrife (*Lysimachia ciliata*; Wilhelm and Rericha 2017). In New York, it associates with maples (*Acer* spp.), slippery elm (*Ulmus rubra*), shagbark hickory (*Carya ovata*), blue-beech (*Carpinus caroliniana*), common blackberry (*Rubus allegheniensis*), stoneroot (*Collinsonia canadensis*) wild geranium (*Geranium maculatum*), dame's rocket (*Hesperis matronalis*), bloodroot (*Sanguinaria canadensis*), goldenrod (*Solidago* spp.), and common trillium (*Trillium grandiflorum*; NYNHP 2025).

Biology: White bergamot is an herbaceous, rhizomatous perennial that can spread clonally or via seed dispersal. Flowers are relatively short lived with anthers maturing the first day after opening, styles maturing the day after, and the corolla senescing



between days three and four. Flowers attract insect pollinators through a mildly sweet scent, nectar guides, and nectar reservoirs. The nectar is primarily comprised of sucrose with lesser amounts of other natural fructose and glucose (Whitten 1981). Fruits consist of four dry, indehiscent nutlets that do not disperse far from the parent plant. If the encapsulating calyx is bent and released, the nutlets are flung up to 90 cm (3 ft) away, but nutlets can also remain stuck inside the calyx for up to two years before dropping (Scora 1964).

The genus *Monarda* plays an important role in its environment as it attracts a variety of pollinators, such as wasps, bees, moths, butterflies, bee-flies, beetles, and hummingbirds (Whitten 1981). The pale and fragrant flowers of white bergamot primarily attracts bumblebees (*Bombus* spp.), although hoverflies (family Syrphidae) have been observed foraging for pollen. Animals and insects may eat *Monarda* foliage and seeds, but such interactions have not been documented (Scora 1964).

Conservation/management: Southern Michigan is part of the northernmost extent of white bergamot's range, and our populations are fairly isolated from the core population in the Appalachian Mountains. As such, our plants likely host differing genetics from those that reside within the stronghold of its range (Lesica and Allendorf 1995). These unique genetics are important to preserve, not only for the resilience and representation of the species itself, but also for the insect species that rely on white bergamot for food in Michigan. To better understand the conservation needs and management strategies for white bergamot, more surveys are needed to understand the full extent of populations within Michigan, their relationship to the population stronghold in Appalachia, and their associates and habitat.

White bergamot is susceptible to many anthropogenic disturbances such as mowing and herbicide use as well as forest clearing. Plants require partial shade and moist soil conditions, and an opened canopy can lead to changes in local hydrological



Photograph by R.W. Smith, courtesy of Michigan Flora

regimes and unfavorable conditions. White bergamot is also commonly sold as seed for garden plantings, and native populations interbreeding with cultivated varieties is of concern.

Comments: The genus *Monarda* was named after the 16th century botanist and physician Nicolas Bautista Monardes who studied medicinal plants in the Americas. The specific epithet *clinopodia* is in reference to the bract leaves of the species resembling cauline leaves of the genus *Clinopodium* (Gray and Fernald 1950).

The broader subfamily Nepetoideae is consistently utilized for medicinal purposes by many cultures on every continent except Australia and Antarctica. These species, including those in the genus *Monarda*, contain several essential oil compounds that are promising for pain management or other medical therapies (Ortiz-Mendoza et. al. 2023). The two most abundant compounds found in white bergamot (linalyl acetate and 1,8-cineole) have been studied independently for such uses (Scora 1967b, Peana et. al. 2002, Hoch et. al., 2023). The close relative of white bergamot – wild bergamot, “weca’ wûs wackwî’ nek” in Ojibwe, has been known to be used by the Flambeau Ojibwe to cure bronchial infections. Additionally, white bergamot, and other species of *Monarda* are currently being studied for their ability to suppress or prevent fungal infections in agricultural crops, such as tomatoes, without negative side effects (Gwin et. al. 2023).





Photograph by R.W. Smith, courtesy of Michigan Flora

Research needs: There is little to no modern research on white bergamot, or species of *Monarda* in general, especially regarding ecology and natural history. Studies regarding animal interactions outside of pollination, seed dispersal, genetic variation between core and peripheral populations, and the likelihood of interbreeding between cultivated and native populations are desirable. More surveys are needed to better understand white bergamot's habitat, associate species, and full range in Michigan as well as assess the health of known populations.

Related abstracts: Floodplain forest, wet-mesic flatwoods, southern hardwood swamp, mesic southern forest, Virginia bluebells, Virginia snake-root, Jacob's ladder, ginseng, wild hyacinth, showy orchis, Blanding's turtle, Indiana bat

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