

Lonicera canadensis

American Fly-Honeysuckle

Caprifoliaceae



Lonicera canadensis courtesy Alan Cressler, Lady Bird Johnson Wildflower Center

***Lonicera canadensis* Rare Plant Profile**

New Jersey Department of Environmental Protection
State Parks, Forests & Historic Sites
State Forest Fire Service & Forestry
Office of Natural Lands Management
New Jersey Natural Heritage Program

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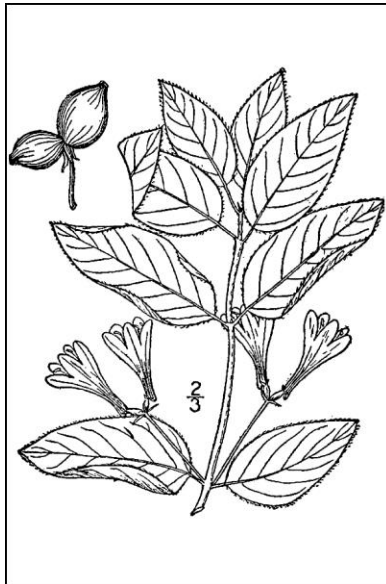
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Life History

American Fly-Honeysuckle (*Lonicera canadensis*) is a deciduous shrub in the Honeysuckle family (Caprifoliaceae). It grows 1–1.5 meters tall, with loose, flexible “irregularly-placed” branches, brownish gray bark and green to purplish twigs (Minnesota Wildflowers 2022; Northern Ontario Plant Database 2022; Strausbaugh and Core 1978; Adirondacks Forever Wild 2022). The leaves are simple, opposite, bright green above and paler below. When young, the leaves may be pubescent underneath and glabrous when mature with ciliate margins. They are oval or acute, slightly rounded at the base, and about 2.5–12 cm long and 1.5–4 cm wide (Britton and Brown 1913; Gleason and Cronquist 1963; New England Wild Flower Society 2022; Seiler et al. 2021; Strausbaugh and Core 1978). American Fly-Honeysuckle has funnel-shaped, pale-yellow flowers that hang in pairs on 2.5 cm-long green stems from the leaf axils on one-year-old branches (Adirondacks Forever Wild 2022; Minnesota Wildflowers 2022; Seiler et al. 2021). The flowers are about 12–22 mm long with 5 triangular lobes and 5 stamens and bloom from April to June, depending on location (Adirondacks Forever Wild 2022; Gleason and Cronquist 1963; Strausbaugh and Core 1978). Later in the season during July and August, the shrub produces smooth red to orange-red berries that grow in “widely divergent pairs” with the berries fused only at the base (DuBois and Blazich 2008; Northern Ontario Plant Database 2022; Seiler et al. 2021). American Fly-Honeysuckle shrubs are most often found growing scattered and singly; they do not exhibit clonal growth patterns (Adirondacks Forever Wild 2022).

American Fly-Honeysuckle twigs have a solid pith, whereas the twigs of the most common non-native shrub honeysuckles in New Jersey (Amur – *L. maackii*, Morrow – *L. morrowii*, and Tatarian – *L. tatarica*) have brown pith with a hollow center. There are also differences in flower form and color among the species (Cofrin Center for Biodiversity 2022; Templeton et al. 2022).



Left: Britton and Brown 1913, courtesy USDA NRCS 2022a. Center and Right: Habitat and fruit courtesy Alan Cressler, Lady Bird Johnson Wildflower Center, 2013, 2015.

Pollinator Dynamics

Honeysuckles are animal-pollinated, predominantly by insects. Pollinators of Japanese honeysuckle (*L. japonica*), and *L. canadensis* and other shrub honeysuckles include Sphinx moths (Sphingidae), for example, Snowberry Clearwing (*Hemaris diffinis*) and Hummingbird Clearwing (*Hemaris thysbe*). A variety of bees also pollinate those plant species including mining bees (Andrenidae), mason bees (*Osmia* spp.), and sweat bees (Halictidae), with occasional visits by bumble bees (*Bombus* spp.) (Eastman 1992; Johnson 2021).

Ruby-throated Hummingbirds (*Archilochus colubris*) also visit American Fly-Honeysuckle and the shrub is considered an important nectar source (Weidensaul et al. 2020). (Note: In addition to red, hummingbirds also will visit yellow, pink, and purple flowers; location and flower shape may be more important than color [Weidensaul et al. 2020]). Because hummingbirds feed on nectar from *Lonicera canadensis* flowers, they may also provide some pollination service to the plants.

Seed Dispersal

After blooming, oval to elongated red or orange-red berries 6–8 mm in length are produced in pairs, with each pair joined together at one end (DuBois and Blazich 2008; Minnesota Wildflowers 2022; Northern Ontario Plant Database 2022). The seeds are small, about 4 mm in diameter (DuBois and Blazich 2008). Berries are most abundant from July to September, depending on location. While *L. canadensis* is not considered a preferred food source (Eastman 1992), birds are the main dispersers of its seeds. Stiles (1980) has classified the berries of *L. canadensis* as “summer small-seeded”, meaning that they are mainly available as a summer food source, low in lipids but high in sugar content and are not retained on the plant. Examples of the bird species mentioned in the literature that commonly feed on the fruits of honeysuckle species in the northeast include Gray Catbird (*Dumetella carolinensis*), American Robin (*Turdus migratorius*), Northern Cardinal (*Cardinalis cardinalis*) and Blue Jay (*Cyanocitta cristata*) as well as upland game birds (Bobwhite Quail [*Colinus virginianus*] and Wild Turkey [*Meleagris gallopavo*]) (Martin et al. 1951); in cooler forested northern regions bird species might include other thrushes (*Catharus* spp.) or Wood Thrush (*Hylocichla mustelina*), Brown Thrasher (*Toxostoma rufum*), Ruffed Grouse (*Bonasa umbellus*), Yellow-rumped Warbler (*Setophaga coronata*) and White-throated Sparrow (*Zonotrichia albicollis*) (Johnson 2021).

The fruits of *Lonicera* spp. are also listed as an occasional or potential food source for White-tailed Deer (*Odocoileus virginianus*) and small mammals such as cottontail rabbits (*Sylvilagus* sp.), respectively (Martin et al. 1951). However, Martin et al. (1951) only considered *Lonicera japonica* to be of value as a food source due to its widespread distribution at the time compared to native honeysuckles. While American Fly-Honeysuckle fruits may be consumed by deer or small mammals, those animals would not be considered major seed disseminators.

There is nothing specific in the literature about seed dispersal distance of American Fly-Honeysuckle; however, research cited by Stiles (1980) suggests that seed dispersal distance from berries consumed by birds is relatively short, given that seeds pass through a bird’s digestive

tract or are disgorged relatively rapidly, probably in less than an hour. For this reason, it is unlikely that American Fly-Honeysuckle seeds are widely dispersed.

Not much is known about seed viability in *L. canadensis*. DuBois and Blazich (2008) mention that seeds of many *Lonicera* spp. can remain viable for several years in dry storage at room temperature, although they lose viability over time. Cold storage of dried *L. tatarica* seeds in sealed containers retained viability for 15 years (Brinkman 1974) and this technique could be used to extend viability in other species. Some *Lonicera* spp. exhibit seed dormancy and may require cold and/or warm stratification for germination. While dormancy is suspected in Hairy (*L. hispidula*) or Swamp Fly (*L. oblongifolia*) honeysuckles, it has not been shown experimentally (DuBois and Blazich 2008). *L. canadensis* is not known to exhibit seed dormancy and does not require any special treatment for germination (Brinkman 1974).

Habitat

American Fly-Honeysuckle is typically found in cool forests, near watercourses along streambanks and ledges, and on rocky wooded slopes. Although usually found in moist habitats, it can be found in drier forests with good drainage (Lubell and Shrestha 2016) and along roadsides in dry gravelly soil (Hightshoe 1988). In West Virginia, this species is found in moist mountain woods at high elevations (Strausbaugh and Core 1978); in Ontario, it reaches the northern edge of its range at 50° N latitude (Soper and Heimburger 1982). American Fly-Honeysuckle can be found in many forest types, including beech/maple/hemlock, aspen, or oak forests and coniferous woods in Michigan (Rezniek et al. 2011) and cedar groves and in ash/elm stands in Quebec (Montréal Space for Life 2022). In northern New York State, *L. canadensis* is considered a common understory shrub; however, it is confined to cooler sites in the southern, warmer areas of the state (Werier et al. 2022). Adirondack populations are found in hardwood or mixed spruce/northern hardwood forests with Red Spruce (*Picea rubens*), Balsam Fir (*Abies balsamea*), Eastern Hemlock (*Tsuga canadensis*), Red Maple (*Acer rubrum*) and Yellow Birch (*Betula alleghaniensis*) (Adirondack Forever Wild 2022). American Fly-Honeysuckle has also been reported from coniferous swamps (Adirondack Forever Wild 2022; Rezniek et al. 2011; Weakley et al. 2022).

New Jersey occurrences are found in rocky woods, on talus slopes in shaded pockets and in the woods at the base of the talus slope with an overstory of *Acer saccharum*, *A. pennsylvanicum*, and *Betula lenta*. It is also found along streams in moist hemlock woods and densely wooded hemlock ravines (NJNHP 2022).

Lonicera species do have mycorrhizal associations. Research by Alverson (2013) found that Amur Honeysuckle (*L. maackii*) is heavily colonized by arbuscular mycorrhizae, which may provide a competitive advantage in sites where the shrub invades. There is no information specifically about mycorrhizae and *L. canadensis* but it is likely that similar mycorrhizal associations do exist.

Wetland Indicator Status

Lonicera canadensis is a facultative upland species, meaning that it usually occurs in nonwetlands but may occur in wetlands (U. S. Army Corps of Engineers 2020).

USDA Plants Code (USDA, NRCS 2022b)

LOCA7

Coefficient of Conservatism (Walz et al. 2018)

CoC = 9. Criteria for a value of 9 to 10: Native with a narrow range of ecological tolerances, high fidelity to particular habitat conditions, and sensitive to anthropogenic disturbance (Faber-Langendoen 2018).

Distribution and Range

The global range of *Lonicera canadensis* is restricted to the central and eastern United States and Canada (POWO 2022). The map in Figure 1 depicts the extent of *L. canadensis* in North America.

The USDA PLANTS Database (2022b) shows records of American Fly-honeysuckle in three New Jersey counties: Passaic, Sussex, and Warren (Figure 2). The data include historic observations and does not reflect the current distribution of the species, which only includes two counties, Passaic and Sussex.

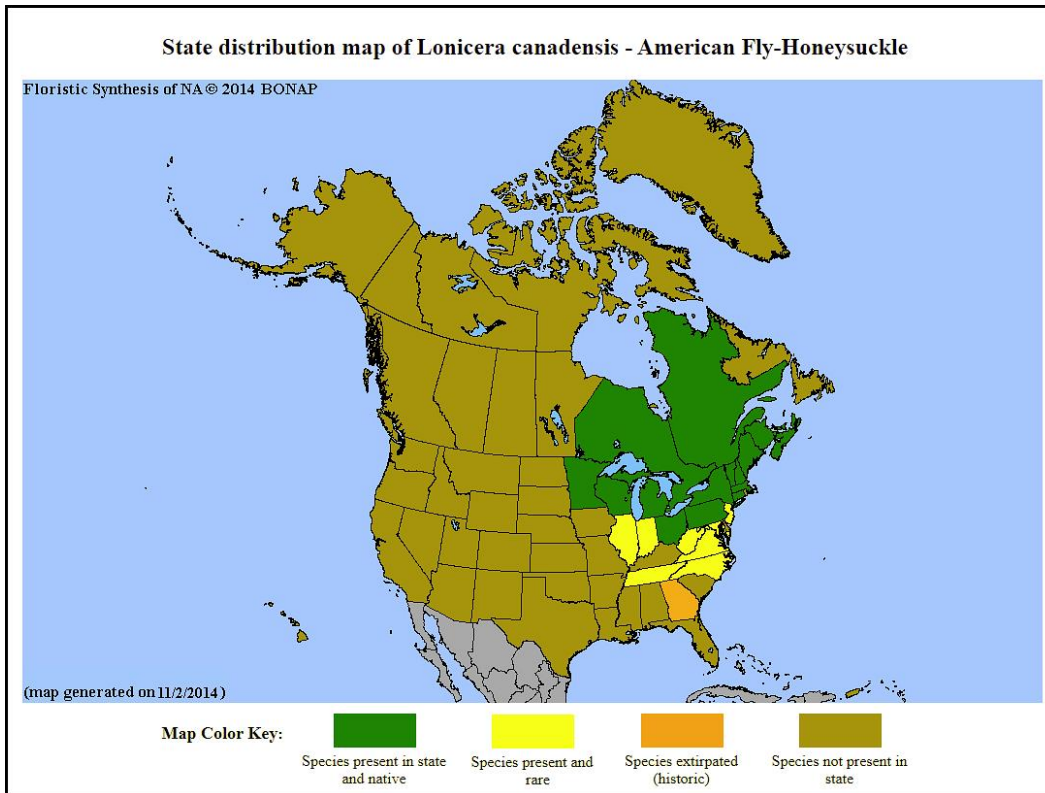


Figure 1. Distribution of *L. canadensis* in North America, adapted from BONAP (Kartesz 2015).

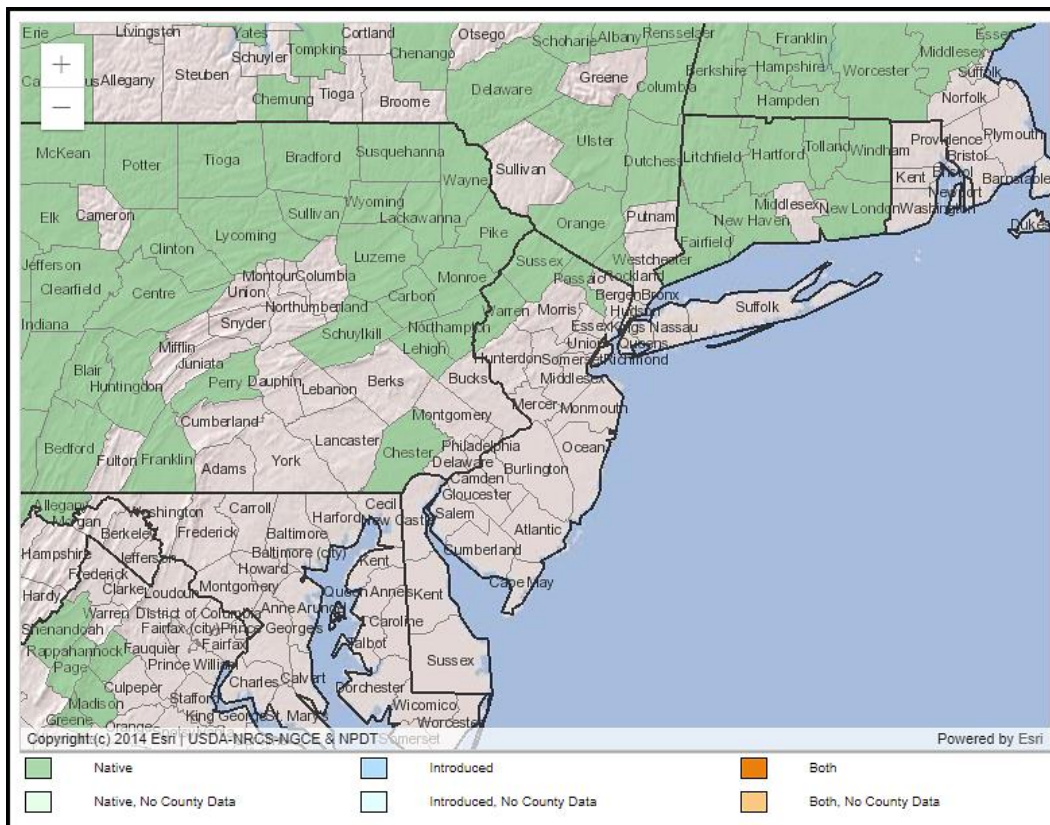


Figure 2. County records of *L. canadensis* in New Jersey and vicinity (USDA NRCS 2022b).

Conservation Status

Lonicera canadensis is considered globally secure. The G5 rank means the species has a very low risk of extinction or collapse due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats (NatureServe 2022). The map below (Figure 3) illustrates the conservation status of *L. canadensis* throughout its range. The shrub is critically imperiled (very high risk of extinction) in five states and one province, imperiled (high risk of extinction) in two states, and vulnerable (moderate risk of extinction) in one state. These sites are located at either the southern edge or the far northwestern portion of the species' range in the U. S. Throughout the rest of its range *L. canadensis* is secure, apparently secure, or unranked.

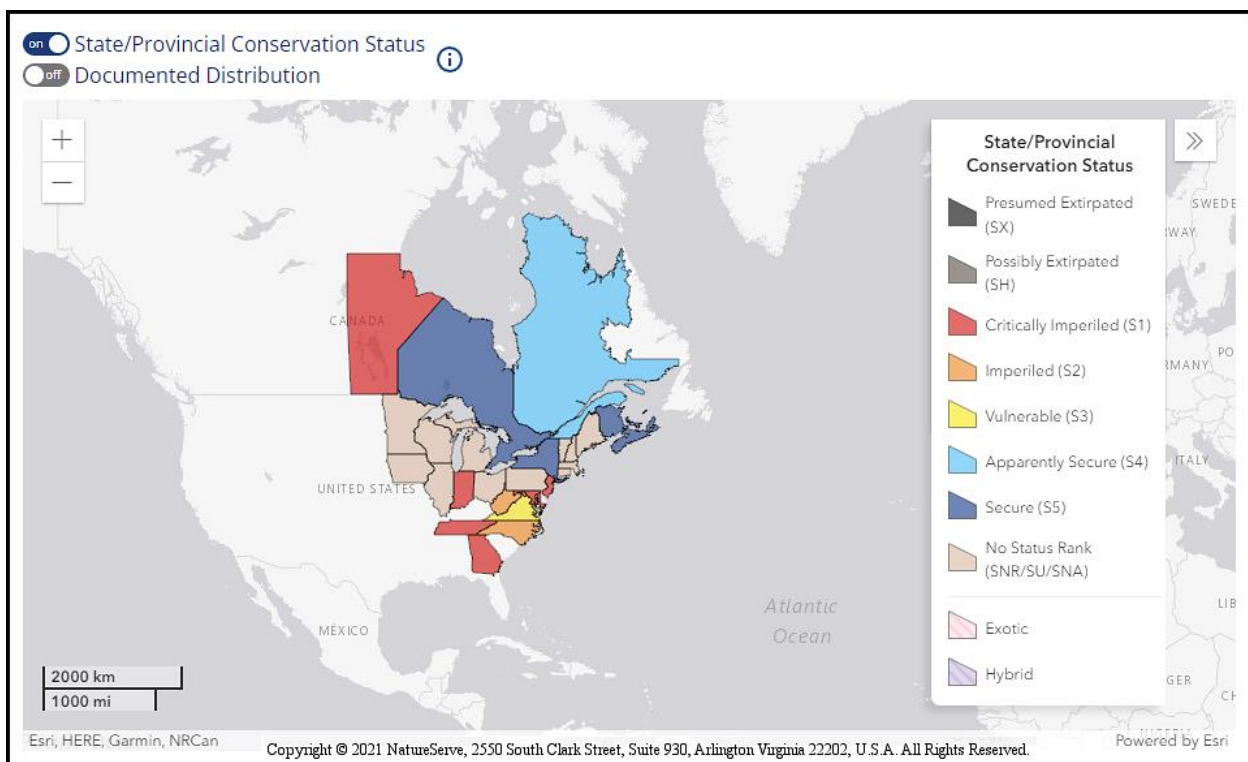


Figure 3. Conservation status of *L. canadensis* in North America (NatureServe 2022).

Lonicera canadensis is critically imperiled (S1) in New Jersey (NJNHP 2022). The rank signifies five or fewer occurrences in the state. A species with an S1 rank is typically either restricted to specialized habitats, geographically limited to a small area of the state, or significantly reduced in number from its previous status. *L. canadensis* is also listed as an endangered species (E) in New Jersey, meaning that without intervention it has a high likelihood of extinction in the state. Although the presence of endangered flora may restrict development in certain communities, being listed does not currently provide broad statewide protection for plants. Additional regional status codes assigned to the plant signify that the species is eligible for protection under the jurisdictions of the Highlands Preservation Area (HL) and the New Jersey Pinelands (LP) (NJNHP 2010).

New Jersey has eight known occurrences: three are extant and five are historical (last observed in 1921, 1922, 1934, 1945, and 1956—although all five sites still have unsearched suitable habitat). All occurrences are located at the northern edge of the state in Passaic and Sussex counties (NJNHP 2022).

Threats

There are very few threats mentioned in the literature for this species; however, herbivory by deer and other animals has been observed and discussed in a number of publications. In Indiana, American Fly-Honeysuckle had been considered extirpated, having not been seen since 1952. However, Namestnik (2016) reported the discovery of a small “mystery” shrub a few years ago that had been heavily browsed by deer. Once fenced for protection, the shrub was eventually able to flower and fruit—confirming its identification as American Fly-Honeysuckle. A research project looking at the impact of White-tailed Deer (*Odocoileus virginianus*) herbivory on White Pine (*Pinus strobus*) in Quebec demonstrated that overwintering deer preferentially grazed on shrubs, in particular *Lonicera canadensis* and *Diervilla lonicera* (Northern Bush Honeysuckle), over White Pine (Champagne et al. 2018). As *L. canadensis* is palatable to deer, any populations range-wide, including in New Jersey would be vulnerable to overgrazing. Given Namestnik’s (2016) experience in Indiana, it may be that there are heavily browsed *Lonicera canadensis* shrubs in New Jersey that have been unable to reproduce and have been overlooked in past surveys. Other mammals also browse on the shrubs. Herbivory was noted at one New Jersey occurrence, likely by either a North American Porcupine (*Erethizon dorsatum*) or Eastern Cottontail (*Sylvilagus floridanus*) as the shrub stem cut was at a 45° angle (NJNHP 2022). In Canada, American Fly-Honeysuckle is commonly called Chevrefeuille (goat leaf), so named because goats reportedly like to eat its leaves (Montréal Space for Life 2022).

Non-native invasive species could become a threat to populations of *L. canadensis*; although, only one non-native species (Garlic Mustard – *Alliaria petiolata*) was noted as occurring at one New Jersey site (NJNHP 2022). Over time, it is likely that a variety of non-native species could encroach into sites supporting *Lonicera canadensis*. It is possible that the effects of non-native insects, such as the Emerald Ash Borer (*Agrilus planipennis*) and Woolly Adelgid (*Adelges tsugae*) that kill ash (*Fraxinus* spp.) and Eastern Hemlock (*Tsuga canadensis*), respectively, may alter the cool microhabitat conditions required by this shrub, especially important at the southern limits of its range.

New Jersey populations are small and genetically isolated, another potential threat to long-term persistence. Likely the greatest threat to New Jersey populations, however, will be climate change as those scattered occurrences along the far northern counties are already at the southern limit of the species’ range (NJNHP 2022). As temperatures continue to rise in the state, and as rainfall patterns alter freshwater systems, the cool moist habitats required by *L. canadensis* may no longer be available. Summers in New Jersey are projected to become hotter and precipitation patterns may shift, with a greater likelihood of periods of short-term drought (NJDEP 2020).

Management Summary and Recommendations

Field survey is needed to better assess the current site conditions at both historical occurrences that still have extensive potential habitat and at what are considered extant occurrences. Because deer herbivory has been identified as a potential threat, regular monitoring of occurrences will help determine which populations, if any, would benefit from additional protective measures to deter browsing. Likewise, monitoring would enable early detection of the encroachment of non-native invasive species that might affect *L. canadensis* populations. Due to the lack of information about this species, additional research into other potential threats such as disease or habitat fragmentation and genetic isolation might be warranted, specifically as they pertain to New Jersey populations.

Reintroduction of the species at sites likely to persist may be a future consideration and there is abundant information in the literature about propagation of this species. However, given current climate change projections in New Jersey, it may be a challenge to find and/or maintain the specific cooler microhabitats required by this species for the long term.

Synonyms

The accepted botanical name of the species is *Lonicera canadensis* W. Bartram ex Marshall. Orthographic variants, synonyms, and common names are listed below (Adirondacks Forever Wild 2022; Gleason and Cronquist 1963; ITIS 2021; Johnson 2021; POWO 2022; USDA NRCS 2022b).

Botanical Synonyms

Caprifolium ciliatum (Muhl.) Kuntze
Lonicera ciliata Muhl.
Lonicera ciliata var. *alba* (Pursh) DC.
Xylosteon ciliatum (Muhl.) Pursh
Xylosteon ciliatum var. *album* Pursh
Xylosteon canadense
Vitis-idaea alba Moench

Common Names

American Fly-honeysuckle
American Honeysuckle
Canada Fly honeysuckle
Canadian Fly honeysuckle
Chèvrefeuille du Canada
Early Fly Honeysuckle
Medaddy-bush

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Cressler, Alan. 2013. Cover photo of *Lonicera canadensis* flower and photo of plant. Courtesy of the Lady Bird Johnson Wildflower Center, <https://www.wildflower.org/>. Used with permission.

Cressler, Alan. 2015. Photo of *Lonicera canadensis* fruit. Courtesy of the Lady Bird Johnson Wildflower Center, <https://www.wildflower.org/>. Used with permission.

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