Vicia americana var. americana

American Purple Vetch

Fabaceae



Vicia americana var. americana by Alex Abair, 2017

Vicia americana var. americana Rare Plant Profile

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

> 501 E. State St. PO Box 420 Trenton, NJ 08625-0420

Prepared by: Elizabeth A. Johnson eajohnson31@gmail.com

July, 2025

For:

New Jersey Department of Environmental Protection Office of Natural Lands Management New Jersey Natural Heritage Program natlands@dep.nj.gov

This report should be cited as follows: Johnson, Elizabeth A. 2025. *Vicia americana* var. *americana* Rare Plant Profile. New Jersey Department of Environmental Protection, State Parks, Forests & Historic Sites, Forests & Natural Lands, Office of Natural Lands Management, New Jersey Natural Heritage Program, Trenton, NJ. 19 pp.

Life History

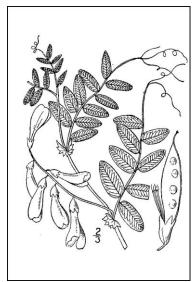
American Purple Vetch (*Vicia americana* var. *americana*) is an herbaceous perennial member of the Pea family (Fabaceae). *Vicia americana* var. *americana* and *V. americana* ssp. *americana* are both in use as names for American Purple Vetch but they are essentially equivalent (see Synonyms section), and *americana* is the only variety that occurs in the eastern United States.

The slender stems of American Purple Vetch can be erect but are usually trailing or climbing, dependent on surrounding vegetation for support. Reaching 30–100+ cm in length, the stems are square, usually hairless, occasionally pubescent (Britton and Brown 1913; Craighead et al. 1963; Gleason and Cronquist 1991; Gucker and Shaw 2022; Kirk and Belt 2010; LBJWC 2025; Minnesota Wildflowers 2025; Sturla 2025). Plants have a long, often branched taproot (to 100 cm deep) with fibrous roots and can spread by rhizomes (Allen and Tilley 2014).

The leaves of American Purple Vetch are alternate, entire, almost sessile, and pinnately compound with 4–8 pairs of pinnately veined leaflets. The rachises are 2–8 cm in length. Leaflets are variable, 15–35 mm x 1–14 mm, elliptical or ovate oblong, with rounded, blunt, or pointed tips. The leaflets become smaller toward the end of the leaf. At each leaf tip, there is a forked, prehensile tendril used to clasp nearby vegetation for support. At the base of the leaf there are a pair of broad, sharply pointed "toothed" stipules (Britton and Brown 1913; Broich 2025; Gleason and Cronquist 1991; LBJWC 2023; Strausbaugh and Core 1978).

Flowers are borne in loose one-sided racemes that are minutely hairy and arise from leaf axils, with three to nine blooms per cluster. The racemes are shorter than the underlying leaves. Each flower of American Purple Vetch consists of five petals; one large petal ("banner" or "standard"), two smaller "wing" petals, and two petals fused into the "keel", which covers the ovary and stamens. The entire flower is (12–)15–22 (–25) mm long. Petal color ranges from blueish to deep pinkish purple to reddish lavender, typically turning bluer with age. The flower calyx has five unequal triangular lobes, all minutely hairy and shorter than the calyx tube. American Purple Vetch blooms from May to September, although this can vary depending on location (Allen and Tilley 2014; Broich 2025; Gleason and Cronquist 1991; Gucker and Shaw 2022; Gunn 1979; Minnesota Wildflowers 2025; Strausbaugh and Core 1978; Weakley et al. 2025). In New Jersey, blooming has been recorded from late May to July, with fruiting through August (Hough 1983).

A month after flowering, American Purple Vetch produces fruits called legumes (informally known as pods) that contain two to several, up to ten+ purplish brown to olive green or black mottled seeds. Each seed is 3.5–5.0 mm in diameter, smooth, and subspherical to oblong in shape. Pods are smooth, reticulate, partially flattened 2.0–3.5 by 0.5–1.0 cm and acute at both ends (Britton and Brown 1913; Gucker and Shaw 2022; Gunn 1979; Pahl and Smreciu 1999; Strausbaugh and Core 1978).







Left: Britton and Brown 1913, courtesy USDA, NRCS 2025a. Center & Right: Alex Abair 2017.

Pollinator Dynamics

Vicia americana var. americana is self-incompatible (Rantala-Sykes 2018). Insect-pollinated, Gunn and Kluve (1976) posited that only "bees or similar 'stiff-haired' vectors" could break the vetch's hardened stigmatic membrane to allow pollination to occur. Documented bee pollinators from observations in selected eastern and Rocky Mountain locations included bumble bees (Bombus appositus; B. fervidus, B. flavirons; B. impatiens, B. vagans) and European Honey Bee (Apis mellifera) (Apidae); Common Little Eastern Carpenter Bee (Ceratina dupla) (Anthophoridae); Southern Bronze Furrow Bee (Halictus confusus) and European Legume Miner Bee (Andrena wilkella) (Halictidae) as well as mason bees (Osmia spp.) and leaf-cutter bees (Megachile spp.) (Gucker and Shaw 2022; Hilty 2020). Hobomoke Skipper butterflies (Lon hobomok) also visit the flowers (Hilty 2020), as do hummingbirds (Sturla 2022) and those as well as certain other insects (e.g., Syrphidae and Bombyliidae flies) may make minor contributions to pollination. American Purple Vetch is also known to be one of a number of pea family host plants for larvae of the Eastern Tailed-blue butterfly (Cupido comyntas) (Sturla 2022) as well as some western species of Lycaenidae butterflies (Gucker and Shaw 2022).

Seed Dispersal

After flowering, the legumes (seed pods) of *Vicia americana* var. *americana* mature, changing color from green to a tawny reddish brown. Each pod has two sutures, one on each side, that split and twist as the pods dry to release the seeds (Allen and Tilley 2014; Broich 2025; Minnesota Wildflowers 2025). Gould et al. (2013) reported that seeds can be projected over distances up to 1.5 m (5.0 ft) but Gucker and Shaw (2022) noted that most seeds end up near the parent plant. The number of seeds produced per pod is variable, from two to several or more (USDA Forest Service 1937). Vetch seeds, particularly those in xeric habitats like some American Purple Vetch populations tend to be hard coated, their impervious surfaces helping to prevent excessive moisture loss (Lassetter 1978).

Vetch species seeds are eaten by upland game birds (Ruffed Grouse [Bonasa umbellus], Ringnecked Pheasant [Phasianus colchicus], Wild Turkey [Meleagris gallopavo]), songbirds such as the Song Sparrow (Melospiza melodia), and many species of small rodents (Martin et al. 1951; Sturla 2022) and are likely animal dispersed (Gould et al. 2013). Animals can disperse seeds even farther than a seed could be propelled by dehiscence. For example, turkeys regularly travel 1000 to 3700 m (0.6–2+ mi) within their home territories, thereby moving whatever seeds might be in their digestive tract or on their feet (Gross et al. 2015). According to USDA Forest Service (1937) all above ground parts of American Purple Vetch are palatable in part due to their "delicacy and fragility" and larger mammals may inadvertently consume seeds while browsing on leaves. Seeds of Purple Crown-Vetch (Securigera varia) have been documented from Whitetailed Deer (Odocoileus virginiana) feces (Baty et al. 2015), so it likely that larger herbivores such as deer consume other Vicia seeds including those of American Purple Vetch while browsing and transport them some distance.

There is a wealth of information related to the cultivation of American Purple Vetch as it is often used for habitat restoration and in pasture mixes, especially in the western states (Gucker and Shaw 2022; Kirk and Belt 2010). Seed collected for future planting should be stored in a cool dry location with longevity lasting several years (Burton and Burton 2003). Deno (1993) observed that seed dry stored for more than six months at 70°F only had an 6% germination rate vs. a 55% germination rate when dry stored at 40°F. Detailed instructions for seed collection can be found in Burton (2003).

Research by Deno (1993) showed that 65% of seeds of American Purple Vetch dry stored at 70°F germinated in three months without any treatment; however, if the seed coat was pierced after three months there was 100% germination in 2–4 days. Deno found that the seed coat became impervious over that three-month period, reducing the germination rate. In contrast, according to Pahl and Smreciu (1999) untreated American Purple Vetch seeds take 14 days to germinate but with scarification the time to germination is more than halved (3–7 days) and there is no difference in germination rates with or without scarification. See Gucker and Shaw (2022) for detailed discussion of germination research.

Most *Vicia* species have impervious seed coats that require scarification or stratification to germinate. In the wild, most American Purple Vetch seeds are likely scarified by passing through the digestive tracts of the animals that consume them. Examples of horticultural scarification techniques for American Purple Vetch include soaking the seeds in warm water for 24 hours, puncturing the seed coats, or rubbing them with sandpaper prior to spring planting. Although less effective for American Purple Vetch, seed stratification can also be used to support germination. Recommended planting depths vary, depending on the source, from no more than 12 mm (.5 in) deep to 25.4 mm (1.0 inch) or more (Allen and Tilley 2014; Deno 1993; Gucker and Shaw 2022; Great Basin Seed 2025; Interlake Forage Seeds 2025; Pahl and Smreciu 1999). For habitat restoration purposes, Smreciu et al. (2003) considered *V. americana* seeds to have good germination if scarified, moderate seedling vigor, and weak growth overall. American Purple Vetch also reproduces vegetatively by rhizome spread and is easily propagated by cutting and planting rhizome pieces in spring (Interlake Forage Seeds 2025; Kirk and Belt 2010).

Habitat

American Purple Vetch is widespread, ranging from Mexico to Canada. In the east it is predominantly found north of the 23°C (74°F) thermocline and confined to the higher elevations of mountainous regions of West Virginia and Virginia (up to 1067 m [3500 ft]) (Britton and Brown 1913) with scattered populations in the piedmont of Pennsylvania and the coastal plain of New York. Gunn (1979) considered the species to be intolerant of high heat. In the west, it is usually found in cooler coastal regions or at higher elevations in mountains up to 2100–3566 m (7000–11,700 ft) (Craighead et al. 1963; Gucker and Shaw 2022; Gunn 1979).

American Purple Vetch has a heliophily rank of 7, indicating that while it can tolerate some shade, it "rather strongly prefers" more open, sunny areas (Weakley et al. 2025). Depending on population location, typical habitats include dry, shaly or rocky woodlands, forest edges and clearings, stream scoured shorelines, tall grass prairies, thickets or meadows, roadsides, railroads, fencerows, borders, or foothill canyons (Allen and Tilley 2014; Broich 2025; Clemants and Gracie 2006; Michigan Flora Online 2025; Minnesota Wildflowers 2025; Sturla 2022; Virginia Botanical Associates 2025; Werier et al. 2025). In Indiana, American Purple Vetch is found in marshes, and along the edges of lakes and moist roadsides (Deam 1940). It can do well in sandy or loamy soils of fine to medium texture, whether moist or somewhat dry, being tolerant of some drought conditions due to its long taproot. According to Allen and Tilley (2014), American Purple Vetch can tolerate mean annual precipitation amounts as low as 254 mm (10 in) up to 1270 mm (50 in). However, with prolonged drought, American Purple Vetch produces fewer flowers (Weaver et al. 1935). Vicia americana var. americana seems to prefer a neutral to slightly acidic soil pH (Great Basin Seed 2025; Gucker and Shaw 2022; Kirk and Belt 2010).

New Jersey's extant occurrences are found along the Delaware River on limestone ledges and woodland edges that overlook the river. The substrate at one riverside occurrence was characterized as river cobble and deep alluvial deposits interspersed with hard rock outcrops and seepage areas. The American Purple Vetch was growing among dense vegetation. Associated native plant species found on ledges and wooded slopes away from the river included American Elm (*Ulmus americana*), American Sycamore (*Platanus occidentalis*), Eastern Hemlock (*Tsuga canadensis*) with Atlantic Ninebark (*Physocarpus opulifolios*), Tall Thimbleweed (*Anemone virginiana*) and Purple-Flowering Raspberry (*Rubus odoratus*). Upslope species included Silver Maple (*Acer saccharinum*), White Sweet-Clover (*Melilotus alba*), Goldenrod (*Solidago* spp.), Groundnut (*Apios americana*), Spotted Trumpetweed (*Eutrochium maculatum*), and grasses. Grapes (*Vitis* spp.) and Tall Woodbeauty (*Drymocallis arguta*) were noted on another Delaware River set of ledges with American Purple Vetch. The eight historical and extirpated populations were found on dry bluffs and woodside slopes, with one occurrence found in the woods at the edge of a saltmarsh (NJNHP 2024).

Most plants in the Pea Family have associations with mycorrhizal fungi that assist the plants with nutrient and water uptake. Wang and Qiu's (2006) survey of post 1987 literature confirmed that nine related *Vicia* species did have vesicular-arbuscular mycorrhizae (VAM), with one (*Vicia sylvatica*) having associations with both VAM and ectomycorrhiza. While American Purple Vetch was not specifically named in that paper, an earlier study of selected vascular plants in Alberta, Canada populations by Currah and Van Dyk (1986) did find that American Purple Vetch had active VAM associations.

American Purple Vetch and other members of the Pea Family also have symbiotic relationships with nitrogen-fixing *Rhizobium* bacteria, which live in nodules on the plant roots (Burton and Burton 2003; USDA Forest Service 1937). Those bacteria can convert atmospheric nitrogen (N₂) into chemical forms (e.g., ammonia [NH₃]) that can be used by the bacteria as well as their host plants. Such nitrogen-fixing plants are often used as cover crops to replenish nutrients in agricultural lands. Although Kirk and Belt (2010) noted that in some places American Purple Vetch can become weedy or invasive, they recommended its use as a native alternative to Purple Crown-Vetch for landscape and habitat restoration.

Wetland Indicator Status

Vicia americana is a facultative upland species in all the wetland regions that fall within New Jersey, meaning that it usually occurs in nonwetlands but may occur in wetlands. In some parts of the country, it is listed as facultative, meaning that it occurs in both wetlands and nonwetlands (U. S. Army Corps of Engineers 2020).

USDA Plants Code (USDA, NRCS 2025b)

The USDA plants code for *Vicia americana* var. *americana* is VIAMA6. The USDA lists it as a subspecies rather than a variety under the code VIAMA3.

Coefficient of Conservancy (Walz et al. 2020)

CoC = 10. 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 native range of *Vicia americana* var. *americana* encompasses much of Canada, the United States, and Mexico (POWO 2025). The map in Figure 1 depicts the extent of American Purple Vetch in the United States and Canada.

The USDA PLANTS Database (2025b) shows records of *Vicia americana* in six New Jersey counties: Burlington, Hunterdon, Mercer, Middlesex, Sussex, and Warren (Figure 2). It has also been reported in Cape May County (Mid-Atlantic Herbaria 2025). The data include historic observations and do not reflect the current distribution of the species.

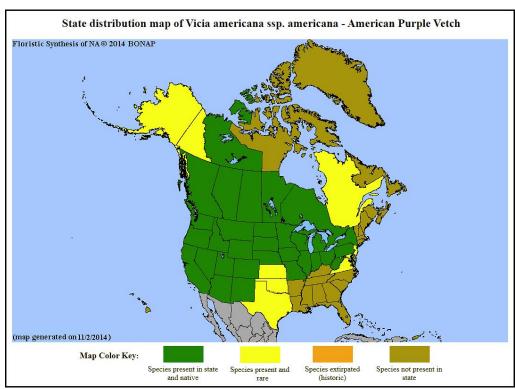


Figure 1. Distribution of V. americana var. americana in the United States and Canada, adapted from BONAP (Kartesz 2015).

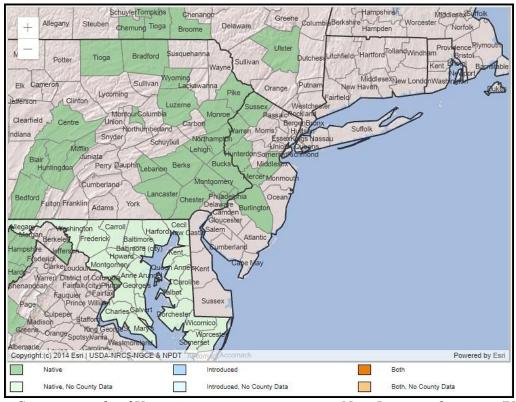


Figure 2. County records of V. americana var. americana in New Jersey and vicinity (USDA, NRCS 2025b).

Conservation Status

Vicia americana var. americana is considered globally secure. The G5T5 rank means the variety 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 2025). The map below (Figure 3) illustrates the conservation status of V. americana var. americana in the United States and Canada. In the majority of places where it occurs the variety is secure, apparently secure, or unranked. It is vulnerable (moderate risk of extinction) in one province, imperiled (high risk of extinction) in one state, and critically imperiled (very high risk of extinction) in three states. It is most at risk in the southeastern, eastern, and far northeastern edges of it range.

Vicia americana var. *americana* has been identified as a plant species that is likely to be a high conservation priority for the North Atlantic region, which includes four Canadian provinces and twelve U. S. states. However, it is currently deemed unrankable (RU) due to lacking or conflicting information about its regional status and trends (Frances 2017).

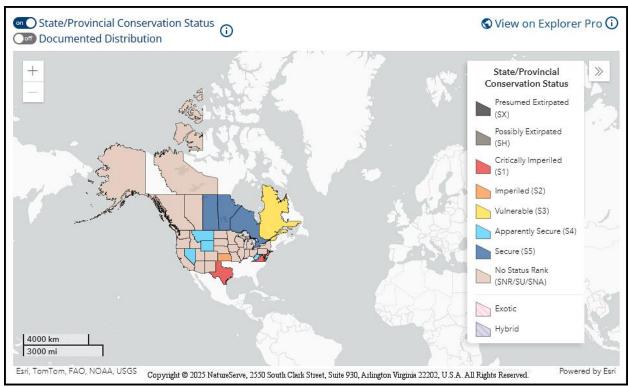


Figure 3. Conservation status of V. americana var. americana in the United States and Canada (NatureServe 2025).

Vicia americana var. americana is critically imperiled (S1) in New Jersey (NJNHP 2024). 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. American Purple Vetch 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 vetch signify that the species is eligible for protection under the jurisdictions of the Highlands Preservation Area (HL) and the New Jersey Pinelands (LP) (NJNHP 2010a).

During the nineteenth century, New Jersey records of *Vicia americana* var. *americana* were restricted to the Delaware River Valley (Britton 1889; Taylor 1915) although it was later collected along the Raritan River and seemingly from a location in Cape May County (Mid-Atlantic Herbaria 2025). At the turn of the current century *V. americana* var. *americana* was listed as imperiled in the state but within a decade its status had been revised to critically imperiled (NJNHP 2001, 2010b). Only two of the eleven populations tracked by the Natural Heritage Program are currently listed as extant and recent visits to those sites have failed to turn up any *V. americana* var. *americana* plants (NJNHP 2024).

Threats

Due to its wide distribution and relative adaptability, there was not much discussion of threats to the species in the literature consulted. In New Jersey, however, non-native invasive species were the most mentioned threat to American Purple Vetch occurrences. Purple Loosestrife (*Lythrum salicaria*), Japanese-Knotweed (*Reynoutria japonica*), Common Wormwood (*Artemisia vulgaris*), Autumn-Olive (*Elaeagnus umbellata*), and Japanese Honeysuckle (*Lonicera japonica*) have all been found encroaching on populations of *Vicia americana* var. *americana* (NJNHP 2024). While American Purple Vetch does rely on adjacent vegetation on which to climb, it also requires relatively open habitat. Increased canopy cover and competition with aggressive invasives will negatively affect vetch plant growth and reproduction, reducing the viability of the populations.

New Jersey's riverside populations of American Purple Vetch may also be susceptible to flooding. NJNHP (2024) noted that plants at one Delaware River American Purple Vetch occurrence may have been severely diminished or destroyed after three consecutive years of high water drowned the plants. Such high-water events are becoming more frequent as storms increase in intensity with changing climate (Hill et al. 2020). American Purple Vetch is also sensitive to trampling (Gould et al. 2013). Although the Delaware Water Gap National Recreation Area is a favorite with canoers and campers, site visit records noted that at the time, most American Purple Vetch populations were well away from the water's edge and not exposed to trampling (NJNHP 2024).

Herbivory was not observed to be a threat to New Jersey occurrences during any past site visits (NJNHP 2024). However, many references describe American Purple Vetch (and vetches in general) as excellent forage plants for wildlife and livestock (e.g., USDA Forest Service 1937) and it is frequently included in pasture seed mixes in the western United States. Interestingly, research by Patton and Nyren (2014) found that *Vicia americana* responded favorably to cattle grazing in their North Dakota study plots possibly in part because those grazers were targeting grasses that competed with the vetch in the open pastures. Removal of those grasses allowed more sunlight and rainwater to reach the soil, which improved growing conditions for the vetch. Nonetheless, USDA Forest Service (1937) and Pahl and Smreciu (1999) cautioned that under continuous herbivore pressure, American Purple Vetch can be easily grazed out.

Apart from livestock, native browsers in western regions such as Mule deer (*Odocoileus hemionus*), American Black Bear (*Ursus americanus*), and Grizzly Bear (*Ursus arctos horribilis*) forage on *Vicia americana* leaves and flowers (Coladonato 1993; Martin et al. 1951) and it is considered a preferred spring and summer forage species for North American Elk (*Cervus canadensis*) (Ogle and Brazee 2009). In New Jersey, White-tailed Deer are the primary browsers. Although no signs of herbivory were noted at New Jersey occurrences, those small, isolated, yet tender plants would be particularly vulnerable to over browsing by high densities of deer. Browsing activity that removes flowers or seeds will prevent reproduction as well as inhibit replenishment of underground food reserves that support growth in the following year (USDA Forest Service 1937).

There was no mention of disease or genetic isolation as major threats in the literature consulted other than the fact that American Purple Vetch is vulnerable to a number of *Botrytis* fungal species (Allen and Tilley 2014). However, due to the isolation of New Jersey's occurrences and relatively limited dispersal capacity of the species, it may be difficult for populations to recover after decline or for new populations to become established without human assistance.

Climate Change Vulnerability

Information from the references cited in this profile was used to evaluate the vulnerability of New Jersey's *Vicia americana* var. *americana* populations to climate change. The species was assigned a rank from NatureServe's Climate Change Vulnerability Index using the associated tool (Version 3.02) to estimate its exposure, sensitivity, and adaptive capacity to changing climactic conditions in accordance with the guidelines described by Young et al. (2016) and historical state climactic computations by Ring et al. (2013). Based on available data American Purple Vetch was assessed as Moderately Vulnerable, meaning that climate change is expected to have a detrimental impact on its extent in New Jersey by 2050. This conclusion was reached with very high confidence; however, gaps in information regarding the species' ecological requirements and range limitations in the northeastern United States remain.

Shifting climatic conditions in New Jersey are resulting in higher temperatures, more frequent and intense precipitation events, and lengthier periods of drought and New Jersey is warming faster than any northeastern state (Hill et al. 2020). As previously mentioned, American Purple Vetch is not very heat tolerant so it is likely that future warming would make conditions even less hospitable to this species. Canada has developed current and future range maps for plant species based on climate change projections. Their American Purple Vetch range maps indicate that the species' southern range boundary will contract northward out of Virginia, West Virginia, New Jersey, and most of Pennsylvania by 2040, with additional range contractions northward likely in subsequent years due to warming temperatures (Natural Resources Canada 2020).

The increasing number of intense storm events has caused widespread stream flooding in certain areas of the state. Potential flooding events are likely to become a greater threat to the remaining riverside American Purple Vetch occurrences for those plants nearest the Delaware River. At the same time, while the vetch is considered somewhat drought tolerant, the longer more extreme

droughty periods that New Jersey has been experiencing recently may become a challenge to plant reproduction and survival in future years (e.g., Weaver et al. 1935).

Non-native invasive plant species were noted as a threat at three New Jersey occurrences (NJNHP 2024). As the climate continues to warm, the spread of such species into New Jersey is likely to increase. Bellard et al. (2013) considered the northeastern United States to be a probable hotspot for new invasions by non-native flora, due in part to its higher latitude and more temperate conditions. Salva and Bradley (2023) identified more than a dozen new range-shifting species that could have "major ecological impacts" on New Jersey's plant communities by 2050, while Coville et al. (2021) and O'Uhuru (2022) cautioned that some already established but relatively uncommon non-native plant species could become invasive with projected climate changes.

Management Summary and Recommendations

No plants were found at the two extant populations during the most recent (2021) site visits, although it was suggested that plants could have been missed, hidden underneath the dense cover of invasive plant species. Revisits to both occurrences are recommended to confirm population condition (i.e., whether plants or suitable habitat remain) and to determine current threats. Return visits to other occurrences that were noted as having suitable habitat despite a lack of plants (one "Failed to Find"; four "Historical") would also be worthwhile. Checking other potential locations along the river might also be of interest in case any seeds were able to move downstream with the current to become established on other silty or cobble areas.

If warranted after new site visits, removal of invasive non-native species to reduce competition and open the canopy could encourage germination of any seeds remaining in the seed bank as well as improve the vigor of American Purple Vetch plants onsite. Regular site monitoring is critical as river over wash and scour regularly bring new influxes of non-native seeds or stem pieces ashore.

Some western populations of American Purple Vetch responded favorably to varying grazing intensities and to the application of prescribed fire that reduced vegetation density and retained an open canopy (Coladonato 1993; Gucker and Shaw 2022; Patton and Nyren 2014). However, given the small population sizes and locations of New Jersey occurrences, the use of grazing or prescribed fire as management tools may not be relevant.

Past population observations noted that, although the Delaware River and shoreline in the Delaware Water Gap Natural Recreation Area is a major recreational site, there was no impact from such use because most plants were found growing well away from the shoreline (NJNHP 2024). If any new plants are located closer to the water's edge, a determination should be made regarding the need for protective measures to prevent trampling by campers or boaters. Similarly, although deer herbivory was not noted during earlier site visits, New Jersey's over abundant deer population coupled with the palatability of American Purple Vetch makes over browsing by deer a likely threat. If so, installation of fencing or other deer population management actions would be warranted.

Although there is much information about western populations of American Purple Vetch, less is known about eastern populations. Possible avenues for research include: What limits the plant in the Northeastern United States? What might have caused the decline in New Jersey? How critical is seed scarification to germination of American Purple Vetch (given conflicting research results)? How long do seeds remain viable in the seed bank in the wild? What aspects of the American Purple Vetch's life history are most vulnerable to warmer temperatures or altered precipitation patterns? In addition to animal dispersal, can the riverside vetch seeds also be dispersed by water? With all the information available about vetch cultivation, it might be possible to restore New Jersey's American Purple Vetch populations; however, given projected climate change impacts to the state, is this realistic?

Synonyms

The accepted botanical name of the species is *Vicia americana* Muhl. ex Willd. var. *americana*. Orthographic variants, synonyms, and common names are listed below (Allen and Tilley 2014; ITIS 2025; POWO 2025; USDA, NRCS 2025b).

Hooker (1831) recognized two varieties of *Vicia americana* (var. *americana* and var. *minor*). A revision by Gunn (1979) divided *V. americana* into three subspecies, two being equivalent to Hooker's varieties and the third being *V. americana* ssp. *mexicana*. The subspecies are still recognized by a number of current sources (e.g. ITIS 2025; Kartesz 2015; NatureServe 2025; USDA, NRCS 2025b). Turner (2014) redescribed *V. americana* ssp. *mexicana* as a separate species (*V. mulleriana*). Hooker's varietal rank is used by Weakley et al. (2025) and POWO (2025) as well as in New Jersey.

Botanical Synonyms

Vicia americana ssp. americana

Vicia americana f. angusta Hoover

Vicia americana var. lathyroides S. L. Welsh & N. D. Atwood

Vicia americana f. oblonga Hoover

Vicia americana ssp. oregana (Nutt.) Abrams

Vicia americana var. oregana (Nutt.) A. Nelson

Vicia americana var. pallida Suksd.

Vicia americana ssp. truncata (Nutt.) Á. Löve & D. Löve

Vicia americana var. truncata (Nutt.) W. H. Brewer

Vicia americana var. villosa (Kellogg) F. J. Herm.

Vicia acicularis Greene

Vicia californica Greene

Vicia californica var. madrensis Jeps.

Vicia copelandii Eastw.

Vicia durbrowii Eastw.

Vicia hypolasia Greene

Vicia oregana Nutt.

Vicia pumila A. Heller

Common Names

American Purple Vetch American Vetch

Purple Vetch

American Deer Vetch

Stiff-leaf Vetch

Vicia sparsifolia var. truncata (Nutt.) S. Watson Vicia perangusta Greene Vicia truncata Nutt.
Vicia truncata var. villosa Kellogg Vicia vexillaris Greene Vicia washingtonensis Suksd.
Lathyrus diffusus G. Don

References

Abair, Alex. 2017. Three photos of *Vicia americana* var. *americana* from Oregon. Shared via iNaturalist at https://www.inaturalist.org/observations/6395002, licensed by https://creativecommons.org/licenses/by-nc/4.0/

Allen, J. and D. Tilley. 2014. Plant Guide for American Vetch (*Vicia americana*). USDA-Natural Resources Conservation Service, Idaho Plant Materials Center. Aberdeen, ID. 3 pp. https://westernnativeseed.com/plant%20guides/vicamepg.pdf

Baty, J., D. N. Zaya, G. Spyreas, B. Molano-Flores, T. J. Benson. 2015. Conservation of the Illinois Flora: A Climate change Vulnerability Assessment of 73 Plant Species. University of Illinois, Illinois Natural History Survey. Champaign, Il. 210 pp.

Bellard, C., W. Thuiller, B. Leroy, P. Genovesi, M. Bakkenes, and F. Courchamp. 2013. Will climate change promote future invasions? Global Change Biology 19(12): 3740–3748.

Britton, N. L. 1889. Catalogue of plants found in New Jersey. Geological Survey of New Jersey, Final Report of the State Geologist 2: 27–642.

Britton, N. L. and A. Brown. 1913. An Illustrated Flora of the Northern United States and Canada in Three Volumes: Volume II (Amaranth to Polypremum). Second Edition. Reissued (unabridged and unaltered) in 1970 by Dover Publications, New York, NY. 735 pp.

Broich, S. 2025. *Vicia americana*. Flora of Oregon. Accessed May 20, 2025 at https://oregonflora.org/taxa/index.php?taxauthid=1&taxon=9096&cl=13686

Burton, C. M. and P. J. Burton. 2003. A Manual for Growing and Using Seed from Herbaceous Plants Native to the Interior of Northern British Columbia. Symbios Research & Restoration, Smithers, BC. 168 pp.

Clemants, S. and C. Gracie. 2006. Wildflowers in the Field and Forest. Oxford University Press, New York, NY. 445 pp.

Coladonato, M. 1993. *Vicia americana*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences

Laboratory (Producer). Accessed October 1, 2023 at https://www.fs.usda.gov/database/feis/plants/forb/vicame/all.html

Coville, W., B. J. Griffin, and B. A. Bradley. 2021. Identifying high-impact invasive plants likely to shift into northern New England with climate change. Invasive Plant Science and Management 14(2): 57–63.

Craighead, J. J., F. C. Craighead, and R. J. Davis. 1963. A Field Guide to Rocky Mountain Wildflowers. The Peterson Field Guide Series. Houghton Mifflin Company, Boston, MA. 275 pp.

Currah, R. S. and M. Van Dyk. 1986. A survey of some perennial vascular plant species native to Alberta for occurrence of mycorrhizal fungi. The Canadian Field-Naturalist 100(3): 330–342.

Deam, C. C. 1940. Flora of Indiana. Department of Conservation, Division of Forestry. Indianapolis, IN. 1236 pp.

Deno, N. C. 1993. Seed Germination Theory and Practice. Second Edition. Pennsylvania State University, State College, PA. 242 pp.

Faber-Langendoen, D. 2018. Northeast Regional Floristic Quality Assessment Tools for Wetland Assessments. NatureServe, Arlington, VA. 52 pp.

Frances, A. (Principal Investigator). 2017. Prioritization and Conservation Status of Rare Plants in the North Atlantic - Final Report. Report prepared for NatureServe by the North Atlantic Landscape Conservation Cooperative, Hadley, MA. Available at https://www.natureserve.org/publications/prioritization-and-conservation-status-rare-plants-north-atlantic-final-report

Gleason, H. A. and A. J. Cronquist. 1991. Manual of vascular plants of northeastern United States and adjacent Canada. 910 pp.

Gould, K., S. Wood, and A. Smreciu. 2013. *Vicia americana*: Peavine, wild pea, American vetch, wild vetch. Alberta, Canada.

Great Basin Seed. 2025. American Vetch. Accessed May 15, 2025 at https://greatbasinseeds.com/product/american-vetch/#:~:text=American%20Vetch%20forms%20a%20purple,will%20turn%20brown%20when%20mature.

Gross, J. T., A. R. Little, B. A. Collier, and M. J. Chamberlain. 2015. Space use, daily movements, and roosting behavior of male wild turkeys during spring in Louisiana and Texas. Journal of the Southeastern Association of Fish and Wildlife Agencies 2:229–234.

Gucker, C. L. and N. L. Shaw. 2022. American Vetch. Western Forbs. Accessed May 25, 2025 at https://westernforbs.org/species/american-vetch-vicia-americana/

Gunn, C. R. 1979. Genus *Vicia*, with notes about tribe Vicieae (Fabaceae) in Mexico and Central America. Technical Bulletin 1601, United States Department of Agriculture. Washington, DC. 41 pp.

Gunn, C. R. and J. Kluve. 1976. Androecium and pistil characters for tribe Vicieae (Fabaceae). Taxon 25: 563–575.

Hill, R., M. M. Rutkowski, L. A. Lester, H. Genievich, and N. A. Procopio (eds.). 2020. New Jersey Scientific Report on Climate Change, Version 1.0. New Jersey Department of Environmental Protection, Trenton, NJ. 184 pp.

Hilty, J. 2020. Illinois Wildflowers – Flower visiting insects of Purple Vetch. Accessed May 24, 2025 at https://www.illinoiswildflowers.info/flower insects/plants/pp vetch.htm

Hooker, W. J. 1831. Flora Boreali-americana, or, the Botany of the Northern Parts of British America. Volume I. H. G. Bohn, London. 351 pp + illustrations.

Hough, M. Y. 1983. New Jersey Wild Plants. Harmony Press, Harmony, NJ. 414 pp.

Interlake Forage Seeds. 2025. American Vetch. Accessed May 15, 2025 at https://interlakeforageseeds.com/products/american-vetch/

ITIS (Integrated Taxonomic Information System). Accessed February 5, 2025 at http://www.itis.gov

Kartesz, J. T. 2015. The Biota of North America Program (BONAP). Taxonomic Data Center. (http://www.bonap.net/tdc). Chapel Hill, NC. [Maps generated from Kartesz, J. T. 2015. Floristic Synthesis of North America, Version 1.0. Biota of North America Program (BONAP) (in press)].

Kirk, S. and S. Belt. 2010. Plant fact sheet for American Vetch (*Vicia americana*), USDA, Natural Resources Conservation Service, Norman A. Berg National Plant Materials Center, Beltsville, MD. 2 pp.

Lassetter, J. S. 1978. Seed characters in some native American vetches. SIDA, Contributions to Botany 7(3): 255–263.

LBJWC (Lady Bird Johnson Wildflower Center). 2025. *Vicia americana*. Accessed April 10, 2025 at https://www.wildflower.org/plants/result.php?id plant=VIAM

Martin, A. C., H. S. Zim, and A. L. Nelson. 1951. American Wildlife and Plants. Dover Publications, Inc., NY. 500 pp.

Mid-Atlantic Herbaria. 2025. Accessed at https://midatlanticherbaria.org/portal/index.php on February 5, 2025.

Michigan Flora Online. 2025. *Vicia americana*. University of Michigan. Accessed May 10, 2025 at https://michiganflora.net/record/1359

Minnesota Wildflowers. 2025. *Vicia americana* (American Vetch). Accessed April 10, 2025 at https://www.minnesotawildflowers.info/flower/american-vetch

Natural Resources Canada. 2020. Canada's Plant Hardiness Site. Accessed May 9, 2025 at https://www.planthardiness.gc.ca/?phz=xssp126_10048242011-2040&s=b&speciesid=1004824&m=7&lang=en#

NatureServe. 2025. NatureServe Explorer [web application]. NatureServe, Arlington, VA. Accessed February 5, 2025 at https://explorer.natureserve.org/

NJNHP (New Jersey Natural Heritage Program). 2001. List of Endangered Plant Species and Plant Species of Concern, September 2001. Biotics Database. NatureServe, Arlington, Virginia.

NJNHP (New Jersey Natural Heritage Program). 2010a. Explanation of Codes Used in Natural Heritage Reports. Updated March 2010. Available at https://nj.gov/dep/parksandforests/natural/docs/nhpcodes_2010.pdf

NJNHP (New Jersey Natural Heritage Program). 2010b. List of Endangered Plant Species and Plant Species of Concern. Biotics Database. NatureServe, Arlington, Virginia. Accessed January 2010.

NJNHP (New Jersey Natural Heritage Program). 2024. Biotics 5 Database. NatureServe, Arlington, VA. Accessed March 15, 2024.

Ogle, D. and B. Brazee. 2009. Estimating initial stocking rates. Technical Note 3, UDSA-Natural Resources Conservation Service, Boise, ID. 39 pp.

O'Uhuru, A. C. 2022. Identifying New Invasives in the Face of Climate Change: A Focus On Sleeper Populations. Master's Thesis, University of Massachusetts, Amherst, MA. 32 pp.

Pahl, M. D. and A. Smreciu. 1999. Growing Native Plants of Western Canada: Common Grasses and Wildflowers. Alberta Agriculture, Food and Rural Development, and Alberta Research Council. Edmonton, Alberta, CA. 118 pp.

Patton, B. and A. Nyren. 2014. Long-term Grazing Intensity Research in the Missouri Coteau Region of North Dakota: Effects on Plant Production and Composition. Central Grasslands Research Extension Center - North Dakota State University, Streeter, ND. 10 pp.

POWO. 2025. Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Accessed February 5, 2025 at http://www.plantsoftheworldonline.org/

Rantala-Sykes, B. and D. Campbell. 2018. Can fertilizers increase the seed yield of two native herb species in the subarctic? Implications for wild seed collection. Ecological Restoration 36(3): 169–171.

Ring, R. M., E. A. Spencer, and K. S. Walz. 2013. Vulnerability of 70 Plant Species of Greatest Conservation Need to Climate Change in New Jersey. New York Natural Heritage Program, Albany, NY and New Jersey Natural Heritage Program, Department of Environmental Protection, Office of Natural Lands Management, Trenton, NJ, for NatureServe #DDCF-0F-001a, Arlington, VA. 38 pp.

Salva, J. D. and B. A. Bradley. 2023. High-impact invasive plants expanding into mid-Atlantic states: Identifying priority range-shifting species for monitoring in light of climate change. Invasive Plant Science and Management 16: 197–206.

Smreciu, A., H. Sinton, D. Walker, and J. Bietz. 2003. Establishing Native Plant Communities. Alberta Agriculture, Food, and Rural Development, Edmonton, Alberta, CA. 106 pp.

Strausbaugh, P. D. and E. L. Core. 1978. Flora of West Virginia. Second Edition. Seneca Books, Inc., Morgantown, WV. 1079 pp.

Sturla, E. P. 2022. *Vicia americana*, American Deervetch. Southwest Desert Flora. Accessed May 24, 2025 at

https://southwestdesertflora.com/WebsiteFolders/All_Species/Fabaceae/Vicia%20americana,%20American%20Deervetch.html

Taylor, N. 1915. Flora of the vicinity of New York - A contribution to plant geography. Memoirs of the New York Botanical Garden 5: 1–683.

Turner, B. L. 2014. Overview of *Vicia* (Fabaceae) in Mexico. Lundellia 17(1): 24–31.

U. S. Army Corps of Engineers. 2020. National Wetland Plant List, version 3.5. U. S. Army Corps of Engineers Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH. https://cwbi-app.sec.usace.army.mil/nwpl static/v34/home/home.html

USDA Forest Service. 1937. Range Plant Handbook. Department of Agriculture, Forest Service Washington, DC. 816 pp. Accessed June 30, 2025 at https://archive.org/details/rangeplanthandbo00unitrich/page/n562/mode/1up?q=vetch

USDA, NRCS (U. S. Dept. of Agriculture, Natural Resources Conservation Service). 2025a. *Vicia americana* illustration from Britton, N. L. and A. Brown, 1913, An illustrated flora of the northern United States, Canada and the British Possessions, 3 vols., Kentucky Native Plant Society, New York, Scanned By Omnitek Inc. Image courtesy of The PLANTS Database (http://plants.usda.gov). National Plant Data Team, Greensboro, NC.

USDA, NRCS (U. S. Dept. of Agriculture, Natural Resources Conservation Service). 2025b. PLANTS profile for *Vicia americana ssp. americana* (American Vetch). The PLANTS Database, National Plant Data Team, Greensboro, NC. Accessed February 5, 2025 at http://plants.usda.gov

Virginia Botanical Associates. 2025. *Vicia americana* Muhl. ex Willd. var. *americana*. Digital Atlas of the Virginia Flora. Accessed May 5, 2025 at https://vaplantatlas.org/index.php?do=plant&plant=3679#:~:text=Detail,Rare%2C%20mountains.

Walz, K. S., J. L. Hafstad, L. Kelly, and K. Anderson. 2020. Floristic Quality Assessment Index for Vascular Plants of New Jersey: Coefficient of Conservancy (CoC) Values for Species and Genera (update to 2017 list). New Jersey Department of Environmental Protection, New Jersey Forest Service, Office of Natural Lands Management, Trenton, NJ.

Wang, B., and Y. L. Qiu. 2006. Phylogenetic distribution and evolution of mycorrhizas in land plants. Mycorrhiza 16(5): 299–363.

Weakley, A. S. and Southeastern Flora Team. 2025. Flora of the Southeastern United States Web App. University of North Carolina Herbarium, North Carolina Botanical Garden, Chapel Hill, NC. Accessed May 20, 2025 at https://fsus.ncbg.unc.edu/cust/2025/main.php?pg=show-taxon-detail.php&lsid=urn:lsid:ncbg.unc.edu:taxon:%7BF1748CE9-2B07-419D-A27C-D4FEC3A4197E%7D#

Weaver, J. E., L. A. Stoddart, and W. M. Noll. 1935. Response of the prairie to the Great Drought of 1934. Ecology 16(4): 612–629.

Werier, D., K. Webster, T. Weldy, A. Nelson, R. Mitchell, and R. Ingalls. 2025 New York Flora Atlas. New York Flora Association, Albany, NY. Accessed May 20, 2025 at https://newyork.plantatlas.usf.edu/Plant.aspx?id=1451

Young, B. E., E. Byers, G. Hammerson, A. Frances, L. Oliver, and A. Treher. 2016. Guidelines for Using the NatureServe Climate Change Vulnerability Index, Release 3.02, 1 June 2016. NatureServe, Arlington, VA. 65 pp.