

**Recommendation for the Designation of
Sensitive Joint-vetch
Aeschynomene virginica (L.) Britton, Sterns, and Poggenburg
as a Virginia Species of Greatest Conservation Need**

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The Virginia Department of Wildlife Resources, with support from the Virginia Department of Conservation and Recreation-Division of Natural Heritage, recommends the addition of Sensitive Joint-vetch (*Aeschynomene virginica* (L.) Britton, Sterns, and Poggenburg) to Virginia's list of Species of Greatest Conservation Need as a tier **I-A*** species (Appendix 1).

Justification

Species Summary

Aeschynomene virginica (Sensitive Joint-vetch; G2/S2, Fed LT/State LT) (Appendix 2) was listed as Federally Threatened by the U.S. Fish and Wildlife Service in May 1992 due to habitat loss, modification, and degradation (USFWS, 1992). *Aeschynomene virginica* is ranked G2 (imperiled) by NatureServe and the Natural Heritage Network, meaning that it is at high risk of extinction on a global scale. (NatureServe, 2023). This annual member of the bean family (Fabaceae) is restricted to tidal freshwater wetlands in the mid-Atlantic states of New Jersey, Maryland, and Virginia but has also been extirpated from Pennsylvania, Delaware, and (potentially) North Carolina. Habitat alteration is the primary threat to the species' continued existence. Some historical populations have been directly eliminated by dredging, deposit of fill, or by the construction of bulkheads. The continued spread of the invasive grass *Phragmites australis* is a serious threat to *Aeschynomene* populations. Systemic impacts leading to wetland degradation or changes in water quality also negatively impact the species. Sea level rise is probably the greatest long-term threat to the tidal freshwater marshes inhabited by *Aeschynomene*. (NatureServe 2023).

Trends

There are 12 extant populations of *Aeschynomene virginica* in Virginia, 9 additional populations of historical occurrence only, and one population thought to be extirpated (VA DCR, 2023). Only 20 populations currently exist range-wide, making Virginia the stronghold for the species

(Natureserve 2023, USFWS 1992). Significant fluctuations in plant numbers have been documented in some populations, a phenomenon presumably caused by variable growing conditions and the species' annual habit. Populations are also well-known for their ability to disperse and germinate in new areas as well as disappear from formerly known sites (USFWS 1995). This combination of factors makes it difficult to detect long-term population trends. A lack of consistent monitoring efforts and methodology across the species' range compounds this problem (USFWS 2012). Virginia populations vary greatly in size, but many are relatively small both in plants numbers and areal extent. Populations such as these are vulnerable to extirpation due to habitat threats combined with natural variation in plant numbers. Several small populations discovered in Virginia in the mid-20th century have not been seen in decades and may no longer exist (VA DCR 2023)

Conservation Action

Conservation actions recommended for *Aeschynomene virginica* include protecting habitat, improving water quality, removing invasive species, restoring tidal flow to impounded waters, and continuing surveys for new populations. Active management is often impossible in the estuarine habitats occupied by *Aeschynomene*, so protection from human impacts is a top priority. Existing populations should be protected from dredging, dumping of spoil, construction, and the spread of invasive species. Protection of marshes by conservation organizations is also a useful tool but success depends heavily on managing larger issues in the watershed. Curbing erosion by protecting adjacent upland buffers is one way land protection can safeguard the species. Sea level rise cannot be combatted through localized actions but broader efforts to stabilize climate change will benefit this species in the long run.

The inventory of tidal freshwater marsh habitats has been a priority in Virginia for decades but is far from complete. Given the large amount of *Aeschynomene* habitat available in these marshes, coupled with fluctuating population sizes and survey logistics, some populations have likely escaped detection. Finding these populations will increase the chances for their conservation, particular by minimizing human impacts.

Summary

Aeschynomene virginica (Sensitive Joint-vetch) is proposed for inclusion in the Virginia State Wildlife Action Plan as a tier 1-A species due to its threatened habitat, restricted range, and susceptibility to water quality impacts.

This species is found in the following Planning District and Regional Commission areas:

Richmond Regional Planning District Commission
George Washington Regional Commission
Northern Neck Planning District Commission
Middle Peninsula Planning District Commission
Crater Planning District Commission
Hampton Roads Planning District Commission

References

NatureServe. 2023. NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.159058/Aeschynomene_virginica [Accessed: Mar. 27, 2023].

United States Fish and Wildlife Service (USFWS). May 20, 1992. Determination of threatened status for the Sensitive Joint-vetch (*Aeschynomene virginica*). Federal Register Vol 57 (Number 98): 21569-21574.

U.S. Fish and Wildlife Service. 1995. Sensitive joint-vetch (*Aeschynomene virginica*) recovery plan. Hadley, Massachusetts. 55 pp.

United States Fish and Wildlife Service (USFWS). 2012. Sensitive Joint-vetch (*Aeschynomene virginica*) 5-Year Review. February 2012. Virginia Field Office, Gloucester, Virginia

Virginia DCR Natural Heritage Program (VA DCR). 2023. Biotics 5 database. Virginia DCR Natural Heritage Program, Richmond, Virginia.

***Rank Tier 1-A based on Very High concern ranking in RSGCN and on the ground conservation strategies have been identified and some implemented. Without this RSGCN rank it would be Tier 2**