



## Natural Heritage & Endangered Species Program

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Massachusetts Division of Fisheries & Wildlife

## Wall-rue Spleenwort *Asplenium ruta-muraria* L.

State Status: **Threatened**

Federal Status: **None**

**DESCRIPTION:** The Wall-rue Spleenwort is a small, delicate, evergreen fern with branched fronds about 1.5 to 7 inches (4 to 17 cm) long. It is a member of the spleenwort family (Aspleniaceae). It typically grows in clusters or tufts on dry limestone, conglomerate, or traprock cliffs and ledges. The small, fan-shaped leaflets are bluish-green or olive-green, have toothed or indented margins, and are borne on somewhat rigid stalks. The species' common and scientific names have European origins. It is named for its resemblance to the European rue (genus *Ruta*) and for its tendency to grow on rock walls (in Latin, *murus*) and buildings in Europe.



Photo by Bryan Connolly, NHESP

**AIDS TO IDENTIFICATION:** The fronds of the Wall-rue Spleenwort are bipinnate (or twice-divided), unlike the other spleenworts in our region, which are simply pinnate (once-divided). The clusters of spore-producing structures (called "sori") on the underside of the leaflets are short and oblong, are oriented along the veins, and are detectable from June through September. The plants often have many dead stalks attached to the roots. In times of drought, the plant dries up and may appear dead, but revives quickly with rain.

**SIMILAR SPECIES:** Mountain Spleenwort (*Asplenium montanum*) superficially resembles the Wall-rue Spleenwort, but its leaflets are not fan-shaped nor as delicately cut. In addition, the Mountain Spleenwort is more commonly found on non-calcareous cliffs. Young Fragile Fern (*Cystopteris fragilis*) is sometimes difficult to distinguish from the Wall-rue Spleenwort, but its leaves are much thinner-textured (nearly translucent). Mature Fragile Fern is several times larger than Wall-rue Spleenwort, and its leaves are sub-opposite with triangular leaflets. In addition, the sori of Fragile Fern are nearly round, compared to the more elongate sori of the Wall-rue Spleenwort. Finally, one might confuse the Maidenhair Spleenwort (*Asplenium trichomanes*), a common associate, with the Wall-rue Spleenwort. However, the Maidenhair Spleenwort frond is merely pinnate (versus bi-pinnate), the frond shape is linear (vs. more triangular), and the rachis is brown (instead of green).

*A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan*

### Massachusetts Division of Fisheries & Wildlife

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**HABITAT:** Wall-rue Spleenwort is found in shaded to open sites, primarily in cracks and fissures on dry ledges of dolomitic limestone and conglomerate. It commonly occurs with Maidenhair Spleenwort, Fragile Fern, Purple Cliff-brake (*Pellaea atropurpurea*), Columbine (*Aquilegia canadensis*), Harebell (*Campanula rotundifolia*), and Thread-leaf Sedge (*Carex eburnea*).

**POPULATION STATUS IN MASSACHUSETTS:** Wall-rue Spleenwort is listed under the Massachusetts Endangered Species Act as Threatened. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. There are nine currently known occurrences in the state (verified within the past 25 years) and one historic occurrence, all of which are located in western Massachusetts in Franklin, Hampden, or Berkshire Counties. Reasons for its rarity in Massachusetts include scarcity of appropriate habitat and over-collecting. This species is not considered to be rare throughout the New England region, and is present in Vermont and Connecticut.

**RANGE:** Wall-rue Spleenwort is found from Vermont and southwestern Quebec through the Appalachians to Alabama and westwards to the Ozarks. North of the Ohio River Valley, it occurs only as a disjunct in southwest Ontario and northwest Michigan.

**FRONDS PRESENT:**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

**MANAGEMENT RECOMMENDATIONS:** As for many rare species, the exact needs for management of the Wall-rue Spleenwort are not known. The following comments are based primarily on observation of populations in Massachusetts. Threats to this species include development, rock climbing, and over-collection. Protection of calcareous cliff communities should be a conservation priority in the state due to their relative rarity, as well as the interesting and unusual plant life they support. Rock-climbing should be prevented or discouraged on calcareous cliffs (for safety reasons, as well as conservation reasons).

**REFERENCES:**

Flora of North America Editorial Committee, 2000. *Flora of North America, Volume 2: Pteridophytes and Gymnosperms*. Oxford University Press, Inc. New York.

Tryon, A.F., and R. Moran. 1997. *The Ferns and Allied Plants of New England*. Massachusetts Audubon Society, Lincoln, MA.

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