Small Whorled Pogonia *(Isotria medeoloides)*

Common Name
Small Whorled Pogonia

Scientific Name
Isotria medeoloides

Status
Small whorled pogonia is listed by the U.S. Fish and Wildlife Service as federally Threatened. Nature Serve posts a Global Heritage Status Rank of G2 for it. As of 1993, one hundred four extant sites were known.

West Virginia Status
This plant was not known from West Virginia until its discovery in 1996. There are two populations of this species recorded to date in the state, with only one to three plants in each.

Description
This is an herbaceous perennial plant of the Orchid Family (Orchidaceae). Orchids are perennial herbs with two-ranked leaves, three-merous irregular (zygomorphic) flowers, usually with three specialized structures: a lower petal modified into a lip (labellum), pollen that is usually agglutinated into a waxy or mealy mass (pollinia), and a complex structure composed of the stigmas, styles and the androecium (all the anthers) combined, called a column or gynandrium. Orchids have an inferior ovary. Small whorled pogonia grows to three dm in height, and has a whorl of five to six leaves near the top of the stem and beneath the flower(s). It reappears in the spring from a perennial underground rootstock, the stems usually single, occasionally in groups of two or three. Leaves and stems are grayish-green, the color of a glaucous green grape. Solitary or occasionally paired greenish-yellow flowers arise from the whorl of leaves in late May to early June in West Virginia, but this species flowers rarely, an individual characteristically waiting 7-8 years before flowering again. Small whorled pogonia can be distinguished in vegetative state from two other 'look-alike' plants that bloom at the same time and grow together (Table 1).


(Photo by Clete Smith)

Habitat
Small whorled pogonia grows in a variety of woodland or forested habitats. In New England, it is found in high acidity soils, generally where a fragipan layer can be found, and where lateral water drainage is pronounced. However, in other parts of its range, it occurs on somewhat "richer", more calcareous sites. Populations in Virginia, grow in mesophytic, mixed deciduous to mixed deciduous and conifer forests, in gently sloping to moderately sloping terrain, in secondary to tertiary forests. Some sites there are very dry sites with very acidic sandy loam soils, and cobbles of quartzitic sandstone and quartzite. Other sites in Virginia are more mesic, and plants are found 20 feet up-slope from an intermittent drainage.

At the far extreme, another site in Virginia is within a mature forest of 80+ year old oaks and tulip trees, with an understory of white oak and American beech. This site is very shaded. At all of these sites, small whorled pogonia emerges from 2-3 inches of deciduous leaf litter, and at most sites, the plants can be found growing with large whorled pogonia orchids and Indian cucumber root plants. It's hard to characterize the habitat in West Virginia for small whorled pogonia with only two sites discovered to date. The first site is located at the base of a

moderately steep, mesic, northeast-facing slope, in filtered sunlight. It is within a second-growth mixed mesophytic forest, with white oak, witch hazel, Virginia pine, and flowering dogwood. The second site is located in a dry mixed oak forest, with scarlet oak, white oak, red oak, black oak, white pine, mountain laurel, squaw huckleberry, beneath tulip tree and red maple. The area is over Pocono sandstone.

Factors

The principle threat to this species is the cutting of forest habitats and conversion of the landscape to other land uses, such as housing and business developments, and golf courses. Digging of plants is a real threat too, as this orchid species does not transplant successfully. Since the plants are small and difficult to see coming through the deciduous leaf litter, it is suspected that other plants have not yet been discovered, but likely exist in West Virginia.

Threats and Prospects

One small whorled pogonia site in West Virginia is on private land, and no protective agreements have been made with the landowner to date. The other population site, on federal land, should survive if properly managed. Additional survey work is needed to fully understand the distribution of the species in our state.

Table 1. *Comparison of Identification Traits Among Three Herbaceous Perennials in Vegetative State*

	Small Whorled Pogonia (*Isotria medeoloides*)	**large whorled pogonia** (*Isotria verticillata*)	**Indian Cucumber Root** (*Medeola virginiana*)
Stem	color of green grape (glaucous)	purple at the very base of the stem and sometimes up the stem at least halfway. Often pubescent with grey hairs.	yellow-green, thin and wiry often with arachnoid hairs along the stem
Whorl of Leaves	glaucous; grey-green	darker green than those of small whorled pogonia. Not glaucous (though leaves may be somewhat so underneath)	yellow-green; flowering stems with two sets of whorls