Common Name: GREAT PLAINS LADIES-TRESSES

Scientific Name: *Spiranthes magnicamporum* Sheviak

Other Commonly Used Names: none

Previously Used Scientific Names: none

Family: Orchidaceae (orchid)

Rarity Ranks: G4/S1

State Legal Status: Endangered

Federal Legal Status: none

Federal Wetland Status: NI

Description: Perennial **herb** with an erect stem 3 - 24 inches (7 - 60 cm) tall, with several bracts sheathing the stem. **Leaves** are all at the base and are rarely seen, withering before the plant flowers. **Flower spike** usually up to 6 inches (15 cm) tall with tightly spiraled rows of white or cream-colored, nearly translucent, fragrant flowers. **Flowers** ⅜ - ½ inch (0.8 - 1.2 cm) long, with a hood-like bract, fragrant. Two narrow **lateral sepals** spread out, point up, or cross over the center of the flower; an **upper sepal** and two narrow **petals** overlap in the center of the flower to form a short tube; and the wavy **lip petal** curves downward, exposing a fleshy, yellow center. **Fruit** a capsule, less than ⅜ inch (1 cm) long, with many tiny seeds.

Similar Species: Several ladies-tresses species bloom in the fall in northwest Georgia. Great Plains ladies-tresses is distinguished by the lack of stem leaves, the absence of basal leaves during flowering, the (usually) spreading sepals, and the yellow (not green or white) lip.

Related Rare Species: See Florida ladies-tresses (*S. floridana*) on this website. Five other species are also considered rare in Georgia: short-lipped ladies-tresses (*Spiranthes brevilabris*), Eaton's ladies-tresses (*S. eatonii*), northern oval ladies-tresses (*S. ovalis* var. *erostellata*), and long-lipped ladies-tresses (*S. longilabris*).

Habitat: Grassy areas on limestone cedar glades and prairie openings in the Coosa River valley.

Life History: The leaves of Great Plains ladies-tresses emerge in the spring from a stout root, persist through the summer, and begin to wither and disappear several weeks before flowering. Ladies-tresses flowers are pollinated by bumblebees and halictid bees. Self-pollination is discouraged by two sequences of events. First, when a flower opens, a tiny structure at the center of the flower (the column) is pressed against the flower's lip, covering the stigma and leaving only a narrow space into which a bee can insert its tongue in search of nectar. While the stigma is covered, the flower can't be pollinated. As the bee sips nectar, two pollen packets stick to its proboscis. Once the bee exits the flower, carrying with it that flower's pollen packets, the column lifts up, exposing the stigma. The next bee that comes along to sip nectar – possibly carrying pollen packets from another plant – may brush against the exposed stigma and deposit the pollen. Second, in order to discourage the movement of pollen between flowers on the same plant, the flowers in a spike open from the bottom to the top of the spike. Bees always work their way from the bottom to the top of a flower spike as they gather nectar. If they pick up pollen from flowers at the bottom of the spike, flowers on the same spike nearer the top will not yet be open and receiving pollen. Instead, the bee flies to an open flower on another plant, gathers nectar, and deposits its pollen load, thus cross-pollinating the flower. If pollinated, the flowers produce small capsules containing many dust-like seeds that are dispersed by the wind. As with all species of

orchid, the seeds of Great Plains ladies-tresses require the presence of certain species of fungi to germinate and support seedlings.

Survey Recommendations: Surveys must be conducted during flowering (mid-October) since the leaves are not distinctive and are very hard to see.

Range: Georgia, west to New Mexico and north to Pennsylvania and Manitoba.

Threats: Conversion of habitat to pine plantations and developments. Fire suppression and encroachment by woody species.

Georgia Conservation Status: Seven populations are known, four on conservation lands.

Conservation and Management Recommendations: Conduct prescribed fires to control woody species encroachment. Prevent off-road vehicle access, trampling, and mechanical clearing.

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