ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PMORC0K011
Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Coeloglossum viride* var. *virescens* (Muhl. ex Willd.) Luer
COMMON NAME: longbract frog orchid, long-bract frog orchid, frog orchid, American frog orchid, long-bract green orchis, bracted green orchis, satyr orchid
SYNONYMS: *Coeloglossum bracteatum* (Muhl. ex Willd.) Parl.; *Coeloglossum viride* ssp. *bracteatum* (Muhl. ex Willd.) Luer; *Habenaria bracteata* (Muhl. ex Willd.) R. Br. ex Ait. f.; *Habenaria viridis* var. *bracteata* (Muhl. ex Willd.) Reichenb. ex Gray
FAMILY: Orchidaceae

AUTHOR, PLACE OF PUBLICATION: *Coeloglossum viride* var. *virescens* (Muhl. ex Willd.) Luer, The Native Orchids of the United States and Canada 172. 1975. *Orchis virescens* Muhl. ex Willd., Sp. Pl. 4: 37. 1805.

TYPE LOCALITY:

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: The genus is monotypic, with 2 varieties in the species *viride*. Both varieties occur in North America, but only var. *virescens* occurs in the lower 48 states. (Coleman 2002).

DESCRIPTION: Stout, glabrous, herbaceous perennial, growing 15–40 cm (6-16 in) tall in our region, but reported as tall as 80 cm (31.5 in) elsewhere. There are usually two thick, tuberous, palmate roots, often with cordlike smaller roots at extreme tips of tubers and base of stem. Stems have three to six leaves alternating along the stem. Leaves are 12 cm (4.7 in) long and 5 cm (2 in) wide, the lower ones elliptic, becoming elliptic lanceolate higher on the stem. The leaves are sheathing, becoming reduced above. The inflorescence is a dense raceme, up to 20 cm (8 in) long, with 35-40 flowers with long floral bracts. Floral bracts are lanceolate, to 6 cm (2.4 in) long and 1.2 cm wide; the lower bracts are much longer than the flowers. The flowers are green with yellow and rose highlights on the lip, 1-1.8 cm long and 0.4-1 cm wide; the sepals and petals form a hood over the column. The sepals are dark green, the lateral sepals ovate lanceolate, 8 x 4 mm; the dorsal sepal are lanceolate, 7 x 3 mm. Petals are pale green to whitish green, lanceolate, 4.5 x 1 mm. The lip on the flower is pale green to yellowish green with rose to reddish shading near the column; measures 1.0 cm long x 0.4 cm wide. It is oblong, spreading slightly on the lower two-thirds; the apex has two prominent lateral lobes connected by the smaller middle lobe or tooth; the ridge down the center is thickened. The whitish spur is scrotiform, 2 mm wide x 2.2 mm long. The glabrous capsule is elliptical, semi erect to erect, 7–10 mm long. (Coleman 2002).

AIDS TO IDENTIFICATION: Differences between the two varieties are the size of the plants and the size of the floral bracts. *Coeloglossum viride* var. *virescens* is the more robust of the two, growing to 80 cm tall, with floral bracts often more than three times longer than the flower. Variety *viride* is circumboreal in distribution, occurring in the subarctic tundra regions of Canada and Alaska in North America. It seldom reaches 30 cm tall and is usually much shorter, blooming when as short as 5 cm. Its floral bracts are twice as long as the flower, and usually shorter. When comparing *C. v.* var. *virescens* in Arizona and New Mexico, to other parts of the United States, it is not nearly as robust. It ranges from 15–40 cm (6-15.7 in) tall, with most plants under 30 cm. The length of the floral bracts, however, is still characteristic of *C. v.* var. *virescens*. (Coleman 2002).

In other parts of the country, *C. v.* var. *virescens* is often confused with *Platanthera flava* var. *herbiola* (pale green orchid) particularly when dried and mounted as a herbarium specimen. *Coeloglossum* can be distinguished most effectively by its labellum, which is notched at the tip and lack the prominent tubercle of *P. f.* var. *herbiola*. (*in* **http://www.botany.wisc.edu/Orchids/Coeloglossum.html**, accessed 2002)

ILLUSTRATIONS: Line drawing (Cronquist et al. 1977: p. 557)
Line drawing (N.L. Britton & A. Brown, 1913, *in* **http://plants.usda.gov/cgi_bin/large_image_rpt.cgi?imageID=cobr3_001_avd.tif**)
Color photos of plant and flowers (Coleman 2002: Plate 2)

TOTAL RANGE: Ranges from northeastern United States and Canada across southern Alaska and the northeastern Pacific coast of Asia. It does not occur in Europe. In the eastern United States, it extends as far south as North Carolina. It is found in the Great Lakes region, and also occurs in Washington State of the Pacific Northwest. It is also found in the Rocky Mountain States, including the Dakotas and Nebraska, with disjunct populations in Utah, Arizona, and New Mexico.

RANGE WITHIN ARIZONA: Hannagan Meadow, Greenlee County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial orchid.

PHENOLOGY: In our region, flowering occurs between late June and the middle of July, with peak bloom occurring near the first of July. For its range, blooming occurs from May to early August. The saccate spur fades within a few days of opening, but the rest of the flower persists for several weeks, appearing fresh even as the capsules mature. According to Reddoch and Reddoch (1997, in Coleman 2002), the shoot that will be the next year's plant appears 1 to 2 cm

above ground in late fall next to the old stem, and overwinters in that exposed condition. Growth resumes the following spring. (Coleman 2002).

BIOLOGY: According to a detailed report on the cross-pollination of this variety by Baldwin (1884, in Coleman 2002), the opening to the saccate spur is protected by a narrow slit, which requires some probing for the insect to gain access. The insect is guided to the proper spot by the curved margins of the lip. Pollinia carried by the visiting insect come in contact with the stigma and are deposited. As the insect backs out or forages on the nectar secreted on the lip, it picks up new pollinia. The pollinia adhere to the head of the insect and after several minutes rotate to point slightly forward in order to contact the stigma on the next flower visited. The time taken for the pollinia to rotate forward helps ensure they will be deposited on a different plant than the one from which they were taken.

HABITAT: *C. viride* var. *virescens* grows in mixed aspen and fir forest among ferns, in Arizona. In New Mexico, it also grows in aspen and fir forest, but in slightly more open habitat. The forest floor is densely populated with grasses and other small herbaceous plants that provide cover for the orchids. The topography ranges from flat to gently sloping hillsides. It grows in light to medium shade. (Coleman 2002).

ELEVATION: In Arizona and New Mexico, it is found in a narrow band between 9,000 and 10,000 feet (2745-3050 m).

EXPOSURE: Light to medium shade.

SUBSTRATE:

PLANT COMMUNITY: Mixed aspen and fir forest among ferns. Associated orchids in flower at the same time as *C. viride* include: *Cypripedium parviflorum* (American yellow lady's-slipper), *Platanthera huronensis* (green orchid), *P. purpurascens* (=*stricta*, slender bog orchid), and *Listera cordata* (heartleaf twayblade). Earlier bloomers in the same area include: *Corallorhiza maculata* (spotted coralroot), *C. striata* (striped coral-root), *C. wisteriana* (spring coralroot), *Calypso bulbosa* (fairy slipper), and *Schiedeella arizonica* (fallen ladies'-tresses). When *C. viride* flowers fade, *Goodyera oblongifolia* (giant rattlesnake-plantain) and *G. repens* (dwarf rattlesnake-plantain) will be spiking but are not yet in bloom. (Coleman 2002).

POPULATION HISTORY AND TRENDS: Unknown. Although *C. viride* var. *virescens* is fairly common elsewhere, it is the rarest orchid in Arizona (Coleman 2002). Three collection records show the Arizona population was last observed 1995, and was first observed in 1937, all from the same area in Greenlee County. Epple's report (1995, in Coleman 2002) of *C. viride* var. *virescens* from Apache County suggests that it may be more widespread in Arizona than the collection records show, but is merely underreported. (Coleman 2002). NatureServe (2004) indicates that they are rather widespread in their range; no indication of rarity in the literature. In

New Mexico, it is rare, but occurs in several counties and in larger numbers than in Arizona. (Coleman 2002).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: Salvage Restricted (ADA, NPL 1999)
OTHER STATUS: None

MANAGEMENT FACTORS: According to the Southern Appalachian Species Viability Project (2002, in NatureServe 2004), they are "Highly threatened by forest management practices, and to a lesser extent by land-use conversion and habitat fragmentation."

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Determine the status of the Hannagan Meadow population. Evaluate the impact of recreation, logging, grazing, and forest fires on this orchid.

LAND MANAGEMENT/OWNERSHIP: USFS - Apache-Sitgreaves National Forest.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

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ADDITIONAL INFORMATION:

The generic name *Coeloglossum* is derived from the Greek *kiolos glossum* meaning "hollow tongue," referring to the hollow spur on the tongue-like labellum. The specific epithet *viride* and the varietal epithet *virescens* are both taken from the Latin meaning "green," in reference to the green color of the flowers. The origin of the common name "Frog orchid," may be due to the resemblance of the flower to a leaping frog (Grier 1984). Another possibility: the lip with its lobed apex suggests the hind legs, and the hood over the column suggests the frog's body. (Coleman 2002).

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