Laurel Hill State Park

This BDA is within the boundary of Laurel Hill State Park, a 3,935-acre park popular for picnicking, hunting, hiking, fishing, and boating. Core habitats are designated around open floodplain forest of Laurel Hill Creek and adjacent wetlands and slopes occupied by globally rare Appalachian blue violet (*Viola appalachiensis*), and state rare creeping bluets (*Houstonia serpyllifolia*), mountain bugbane (*Cimicifuga americana*), and a sensitive species of concern. The supporting landscape of this BDA is the immediate watershed surrounding this section of Laurel Hill Creek.

Open floodplain forest and mowed grassy areas in the park provide habitat for the Appalachian blue violet, a regionally endemic species to Maryland, North Carolina, West Virginia, and Pennsylvania. The violet is considered globally vulnerable and is listed as imperiled in the state although it is abundant at some locations. It is likely that many new occurrences will be discovered since it is believed by several botanists that the species is often overlooked and more common than initially thought (Grund, pers. comm. 2004). Habitats for the Appalachian blue violet include rich moist woods, mountain coves, stream banks, pastures, and mowed areas such as lawns in rural areas.

Steambank habitat along Laurel Hill Creek provides habitat for creeping bluets, an uncommon, but not globally rare species. This species somewhat scattered distribution extends for approximately 500 miles along the southern and central Appalachians from Georgia to Pennsylvania, the northern extent of its range (NatureServe 2005). Creeping bluets are considered critically imperiled in the state and have only been recorded in Somerset and Fayette Counties (Rhoads and Klein 1993). Habitats for this diminutive plant includes streambanks, grassy balds, moist forests, seepy rock outcrops, spray cliffs, and moist disturbed areas such as pastures; growth can be improved if the soil is organically rich (Weakley 1996).

Mountain bugbane was found within a mature oak-maple-hemlock forest with an understory of mountain laurel (*Kalmia latifolia*) and rhododendron (*Rhododendron maximum*) along a seep near a park road. Although mountain bugbane is relatively common at particular locations in the Laurel Highlands, it is considered vulnerable in the state because of its restricted range. The species is primarily endemic to the southern and central Appalachian region from northern Georgia to western Pennsylvania and is considered globally uncommon and speculated to be declining (NatureServe 2005). Mountain bugbane inhabits mesic, northern hardwoods-eastern hemlock (*Tsuga canadensis*) forest. The sensitive species of concern is dispersed along the wetlands. This species has a range that includes all of the eastern U.S. except New England and Florida. This species is found in bogs, wet meadows, low woods, wet fields, low wetlands, and ditches.

**Threats and Stresses:**

Threats to Appalachian blue violet are minimal since this plant appears to be disturbance related and often overlooked. However, direct alteration or destruction of habitat is a concern. Displacement by invasive exotic plant species that typically colonize disturbed habitats may be a threat. Activities that impact the quality of streambank habitat, such as timber harvesting along the stream and road building in upland areas of the supporting landscape, are potential threats to creeping bluets. Herbicide spraying and mowing by road maintenance crews may impact mountain bugbane at this site since this occurrence is in close proximity to a park road. At a larger scale, mountain bugbane may be facing incidental collection and subsequent decline due to its resemblance to the widely collected black cohosh (*C. racemosa*) (NatureServe 2005). The sensitive species of concern may be disturbed by recreational activities along the shoreline of Laurel Hill Lake where they were found. Vegetation is already disturbed due to foot traffic, although saturated soils at times may discourage this activity. Flooding may also pose a threat to this species.
Recommendations:
The surrounding upland landscape area of this BDA is important in helping to maintain water quality of Laurel Hill Lake and the health of floodplain and wetland habitats. Activities such as road development and timber harvesting should not be conducted in core areas of this site. However, if such activities cannot be eliminated, the use of Best Management Practices (BMPs) can prevent or minimize the impact of non-point source pollution from these activities on water quality. For example, a forested riparian buffer of at least 50 meters on either side of the stream should be maintained (U.S. Forest Service 1991) and care should be taken to not alter the hydrology of wetland pockets where the species of concern was observed. Non-native, invasive plants should be removed if possible. Workers involved in roadside maintenance within the site should be informed of the presence of rare species and application of herbicides should be avoided and mowing should not occur until after plants have flowered and seeds have matured. Marking and dyeing roots of targeted populations of mountain bugbane may be a viable means for protecting the species from being collected along with publicizing the need for conservation and protection of wild herbs (NatureServe 2005).