

DRAFT -- Georgia Granite Outcrop Plants -- DRAFT

Effects Determination Guidance for Endangered & Threatened Species (EDGES)

Central Georgia Counties

Species Covered by this EDGES:

- Endangered: Black-spored quillwort (*Isoetes melanospora*) and mat-forming quillwort (*Isoetes tegetiformans*)
- Threatened: Little amphianthus (*Amphianthus pusillus*)

These three plant species grow in shallow, ephemeral pools on granite outcrops. Granite outcrops are found in the Piedmont region of Alabama, Georgia, and South Carolina. The pools have sandy, low nutrient soils and hold water for periods in the winter and spring. Little amphianthus grows, blooms, and sets seeds during this



short period when the pools hold water. This is the most common of the three species, occurring on many of the outcrops throughout the state.

The two quillwort species tend to occur in pools that are deeper and hold water for longer periods. Mat-forming quillworts are known from the eastern portion of the state on outcrops with an underlying porphyritic granite geology. Black-spored quillwort occurs in the central and western portion of the state on outcrops with an underlying granitic gneiss or non-porphyritic geology.

Threats to granite outcrops include quarrying/mining, litter/trash dumping, development, off-road vehicle use, other recreational activities that destroy pools, eutrophication from excess nutrients (cattle and other grazing), invasive species (plants competing for habitat, insects disrupting seed or spore dispersal), encroachment



from woody plants, increased use of outcrops for film and other industry, solar development, and vandalism.

This EDGES covers any project that will impact a granite outcrop in Georgia.

Endangered Species Act Consultation Checklist:

Applicant:

1. IPAC indicates granite outcrop plants may occur in the project area.
 - a. No.....No effect. Provide IPaC information to the Savannah District with application/PCN.
 - b. Yes.....Go to #2.
2. The project will alter granite outcrops in one of the counties highlighted in red on the map on page 2.
 - a. No.....No effect. Provide this information to the Savannah District with application/PCN
 - b. Yes.....Go to #3.

3. The Fish and Wildlife Service-Georgia Field Offices (FWS-GA) provided documentation evaluating habitat, potential presence of species, suitable survey methodology and/or potential project impacts (FWS-GA signed letter or sticker, T&E survey where FWS-GA provided concurrence with negative findings, or similar documentation).
 - a. No.....Provide completed EDGES Applicant Coordination Slip and supporting documentation to the Savannah District with 404 application/PCN.
 - b. Yes.....Provide FWS-GA project review documentation and/or survey data to the Savannah District with application/PCN.

Savannah District:

4. Granite outcrops are visible on aerial photographs, or the applicant documents granite outcrops on or near the project area:
 - a. No.....No effect. Consultation complete. FWS-GA concurrence is not needed.
 - b. Yes.....Go to #5.
5. Surveys, conducted by a qualified botanist when the listed plants are active, document occupied pools on the outcrop.
 - a. No.....No effect on these listed plants. Consultation complete.
 - b. Surveys not conducted.....Go to #6.
 - c. Yes.....Go to #6.
6. The Savannah District, in consultation with FWS-GA, determines all or part of the project will involve use of fill, ground disturbance, or activities that may change the granite outcrop’s hydrology, sun exposure, or sedimentation.
 - a. No..... NLAA. Consultation complete. FWS-Athens concurrence is needed, in writing, for individual permits, but is assumed if FWS does not contest a Friday PCN spreadsheet notification that the 4(d) rule applied.
 - a. Yes.....Go to #7.
7. Project Design Data (below) are provided to assist the Savannah District and FWS-GA evaluate T&E impacts:
 - a. No.....Request the information and, once received, continue with #7b.
 - b. Yes.....Share data with FWS-GA-Athens and continue consultation. If consultation results in a Savannah District determination of:
 - i) NLAA, and FWS-GA-Athens concurs in writing, consultation complete.
 - ii) LAA, and FWS-GA-Athens concurs, initiate formal consultation.

Information to be Provided the Savannah District for Endangered Species Act Review

- Photos of the granite outcrop, including pools where listed plants might occur.
- Data detailing land disturbance activities and how they would affect granite outcrops during or after the project is completed (i.e. proposed fill placement on granite outcrops, proposed stormwater runoff pathways that would traverse a granite outcrop).
- Plans for re-vegetation and maintenance of disturbed habitats adjacent to granite outcrops. Plans should focus on use of native, non-invasive species that minimize seed dispersal and encroachment on granite outcrop habitats.

