## MAINTENANCE RECOMMENDATIONS FOR PROTECTION OF GRANITE OUTCROP NATURAL COMMUNITIES ON GEORGIA POWER COMPANY RIGHTS OF WAY

Granite outcrops occur in a line of counties extending east to west across the Georgia Piedmont. Area sizes may vary from Stone Mountain Park to a fraction of an acre. Panola Mountain and Mount Arabia near Atlanta and Heggies' Rock in Columbia County, along with Stone Mountain, are the better known outcrops. Quarry operations are the major negative factors facing granite outcrop communities. But vandalism and trash dumping pose a harmful threat to the sensitive plant communities existing on outcrops.

Three **Federal Endangered and Threatened** plant species occurring on Georgia granite outcrop habitats on Georgia Power Company rights of ways:

- 1. Black-spored quillwort *(Isoetes melanospora)* occurs at 5 sites in 3 counties (Rockdale, Dekalb and Gwinnett). Endangered.
- 2. Mat-forming quillowort *(Isoetes tegitiformia)* occurs at 10 sites in 4 counties (Columbia, Hancock, Putnam and Greene). Endangered.
- 3. Little Amphianthus (Amphianthus Pusillus) occurs at 39 sites in 17 counties (Dekalb, Rockdale, Gwinnett, Columbia, Hancock, Putnam, Greene, Walton, Douglas, Butts, Oglethorpe, Harris, Meriwether, Henry, Pike, Newton and Heard). Threatened.

#### State Protected Plants:

- 1. Flatrock Onion (allium speculare)
- 2. Dwarf Granite Stonecrop (Sedum pusillium)

**BASIC GRANITE OUTCROP ECOLOGY:** Granite outcrops occur as domes projecting onto the landscape or as less obvious sheets or flat-rock outcrops. Walton County leads the state with 168 outcrops over ¼ acre in area while the largest total acreage is in Dekalb County with 2,045 acres. The most obvious features of outcrops are the exposed lichen covered rock surfaces and the shallow circular depressions referred to as "solution pools". These pools may contain soil and support aquatic vegetation, but only for several weeks of the year. During dry periods, the pools dry out and the vegetation disappears but reappears during wet periods. Due to such a harsh environment, there are several plants that grow specifically on outcrops, most of these have no federal protection, but are listed by the State of Georgia. Overstory vegetation on outcrops is generally sparse and appears stunted due to shallow soil, nutrient and moisture availability. Quarry operations have had a serious impact on outcrop communities. Several rare plant locations are located on active quarry operations within short distances of active quarry operations. Vandalism, trash dumping and 4-wheeling have caused serious impacts also; as outcrops are very sensitive to disturbance and take a

long period of time to recover. In general, outcrops with easy visible access and no protection are pretty well trashed while more remote sites appear to be in good shape.

#### POSSIBLE IMPACTS AND RECOMMENDATIONS:

- 1. <u>Maintenance vehicle traffic</u>: This does not appear to be a major concern based on observations made during this survey. Maintenance vehicles appear to stay on the drier, more solid areas and avoid driving through pools when they have to access the rights of way.
- 2. The Georgia Natural Heritage Inventory should be ask to provide locations of important outcrop locations so that Georgia Power Environmental could inform Transmission Maintenance of the locations to assure sensitive treatment for the areas, if necessary.
- 3. <u>Herbicide use</u>: Because of the sparse vegetation on granite outcrops; very little mowing, hand clearing or herbicide is required on outcrops,. However herbicide application could do extensive harm to some of the sensitive areas, such as the solution pools. It would be best not to use herbicide on these areas.

Overall, Georgia Power Company's maintenance activities have little impact of granite outcrops. Quarry operations for marble and construction material, vandalism and other human activities have by far the greatest impacts.

### MAINTENANCE RECOMMENDATIONS FOR THE PROTECTION OF GOPHER TORTOISE *(GOPHERUS POLYPHEMUS)*, TORTOISE DENS AND OTHER ANIMALS\*\* THAT UTILIZE THESE DENS ON GEORGIA POWER COMPANY RIGHTS OF WAY.

\*\*These same recommendations apply to the eastern indigo snake (*Drymarchon corais couperi*). The indigo snake is a <u>Federal Listed Threatened</u> species that commonly utilize gopher dens during the cooler months. Its range is the southeastern portion of Georgia.

**<u>STATUS:</u>** <u>Federally Threatened</u> in Louisiania, Mississippi and west of the Tombigbee and Mobile Rivers in Alabama. Georgia – state imperiled (S-2). It is the State Reptile of Georgia.

**BASIC GOPHER TORTOISE BIOLOGY:** The gopher tortoise or gopher's range is the southern half of Georgia, below the fall line, within the Coastal Plain Province of Georgia. Dens are usually seen on deep sand ridges in pine/oak forests with open overstory. The sandy soil provides easy burrowing; and open canopy forests allows the growth of grasses and other herbaceous plants for food. A component of the wiregrass/long leaf pine communities, gophers now exist in old-field habitats, pastures, rights of way and other open area since the loss of the long leaf forest/wiregrass communities. Fortunately a number of large plantations still exist in south Georgia that manage for quail and long leaf pine through the use of controlled burning which mimics the historical natural conditions of the long leaf pine and maintains an open canopy that favors the gopher.

The gopher's most obvious sign are the burrow entrances that are 12 to 15 inches wide and may be up to 30 feet long. One gopher may use several burrows. The burrows provide protection from heat and fire as well as a winter hibernacula. Most of its activities is spent within several hundred feet of its dens, as a gopher's territory is usually 5-10 acres. A number of other invertebrates and vertebrates also use the den. The diamondback rattlesnake and the federally listed indigo snake are the best know of the species that depend on gopher dens. So although the gopher tortoise is not a federally endangered species in Georgia; its burrow is considered prime habitat for a species that is federally listed.

Gophers become sexually mature at 15-20 years and may live to be 80 years old; however females may not nest every year. In early summer (June to mid-July) 6 eggs are deposited in the sandy mound at the den entrance. The eggs hatch in 95 - 100 days, but predation is high. Raccoons are especially efficient at raiding tortoise nests. It is estimated that 97% of the hatchling do not survive through their second year.

Threats to gopher populations include: continued loss of habitat, predation, a low rate of reproductive success, highway mortality, animal collectors and fatalities from rattlesnake

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hunters who pour gas into dens to force the rattlesnakes out into the open where they can be captured for rattlesnake rodeos.

Gopher dens appear common on portions of some transmission rights of way. It may be due to concentration of tortoises from adjacent land where land use (development, agriculture and timber management) has altered or removed their habitat.

Overall, maintained rights of way have created conditions favorable for gophers even though it is on a relative small portion of their overall range. These positive effects have been brought about with normal maintenance operation without any major costs or problems for Georgia Power Company. The following recommendations are made in the hope that they can further protect gophers without causing any additions costs or problems for Georgia Power Company's Transmission Maintenance:

#### POSSIBLE IMPACTS AND RECOMMENDATIONS:

1. <u>Maintenance vehicles running over tortoise dens.</u> This is the most serious maintenance impact on gopher populations. Power line/tower maintenance vehicles stay on access roads and probably have very little impact on gophers or their dens. However vegetation control vehicles (mowers and spray equipment) have to cover the entire area of the ROW but this is generally only once every 3 or 4 years.

Suggested recommendations are:

- a. Georgia Power Company Transmission Maintenance should be aware of the major active colonies know so that the locations can be passed along to maintenance crews (GPS locations, maps, verbal or written reports, etc)
- b. An education effort to teach "The man on the tractor" what to look for in the field and instruct him to avoid running over the den with his equipment. All equipment operators should be alert to identify gopher burrows and know to avoid them. This could be accomplished through brochures, seminar etc.
- c. There is no point in telling line maintenance truck drivers to stay on access roads as they already are doing this. They should be made aware that now that gopher dens are a company concern and that Transmission Maintenance has an interest in addressing this concern.
- d. Flagging colonies might be appropriate when dealing with known major colonies, but it is impractical to locate and flag all the dens on a line that is to be mowed. Flagging may have a downside as it can draw attention of the location to vandalism.

2. <u>Project WINGS impacts:</u> Project WINGS is a conservation program that helps fund wildlife habitat/food plantings on rights of ways. While impacts of mowing and/or planting operations are small due to the small areas of land involved; Georgia Power Company should consider requiring WINGS administrators to require

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participants to avoid gopher dens during planting and clearing lands where gopher dens occur. This would be a minor issue with only a few WINGS participants and would give credibility to Georgia Power's concern and efforts to protect the gopher.

#### 3. Construction on rights of ways:

Construction concentrates human and equipment activities, particularly in the area where a new tower or pole structure is being built. Generally the construction period is short and limited mainly to structure locations. It may be appropriate to flag active burrows, particularly at the major colonies so that construction vehicles can avoid them. Routing teams should be made aware of den areas as soon as possible in order to take precautions or make changes that could decrease impacts.

#### 4. Provide greater public access to colony areas resulting in vandalism.

Georgia Power Company does not generally own transmission line corridors, but does have rights of way, which includes access for company related activities. Therefore Georgia Power has no legal right to control access to another person's land. Access roads are generally gated and locked at the landowner's discretion. Georgia Power will generally have a company lock on the gate for company business only. Access for Georgia Power does not mean open access to the public as the gates are always locked after entering and exit. The solution to this is "keep the gate locked after you leave".

# MAINTENANCE RECOMMENDATIONS FOR ENDANGERED PLANTS ON GEORGIA POWER COMPANY RIGHTS OF WAY

The Federal protected species of plants found include Harpella (*Ptilimnium* nodosum)/Federal Listed Endangered, Coosa Barbara Buttons (*Marshallia* mohrii)/Federal Listed Threatened and Hairy Rattleweed (*Baptisia* arachnifera)/Federal Listed Endangered. Other species are treated in recommendations written for pitcherplant bogs and granite outcrops. Several other species of plants were searched for and found near the lines, but these are the only ones that were found on the rights of way and require some maintenance concern.

#### **COOSA BARBARA BUTTONS:**

These perennial plants are generally found in seasonally wet meadows or "glades" with widely spaced trees. It is rare throughout its range. The location is in Floyd County is near the Alabama line on land owned by the Temple Timber Company. The plant flowers in May-June and seeds in July-August. Fire suppression (resulting in forest invasion) and loss of habitat are the threats facing Coosa Barbara buttons. The plants have been able to exist in these locations because the overstory vegetation has been removed by right of way maintenance. Mowing should continue; in addition maintenance persons should be made aware of the locations of the plants. Mowing before flowering and after seeding and not using herbicide in the close vicinity of the plants is advised.

#### HARPERELLA

A long lost population was rediscovered in Dooley County in a flooded area on a right of way. The proper water depth is critical to the plant's survival. Plants were only found on the right of way, although the adjacent areas were wetlands as well. Harperella is only known from 2 locations in Georgia. Drainage is the major threat. Recommendations are to make sure Transmission Maintenance is aware of the location and to avoid mowing the area when the plants are in flower and seed (June-July).

#### **BAPTISIA ARACHNIFERA**

Hairy rattleweed is known from only Brantley and Lowndes Counties in southeast Georgia. The plant grows in open areas or open wooded areas in deep sandy soil. Periodic prescribed burns or clearing to eliminate overstory species is a management technique. Georgia Power has scheduled rights of way mowing around the plants

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flowering and seeding period (June-October) for several years at the request of Georgia Southern University and Georgia Wildlife Resources. In addition to scheduled mowing; restricting herbicide use around the plants is recommended.