Threatened and Endangered Species Survey Final Report

Vogtle Electric Generating Plant and Associated Transmission Corridors

for

Tetra Tech NUS, Inc.
900 Trail Ridge Road
Aiken, South Carolina 29803

January 16, 2006

THIRD ROCK CONSULTANTS
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Environmental Analysis & Restoration

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I. INTRODUCTION

Third Rock Consultants, LLC (Third Rock) was retained by Tetra Tech NUS, Inc. (TtNUS) to conduct a survey to identify species of interest on the Vogtle Electric Generating Plant (VEGP) site and on five transmission line corridors associated with the VEGP. The survey was conducted to provide information for the re-licensing of the plant.

Third Rock is a subcontractor to TtNUS, which is under contract to Southern Nuclear Operating Company, the VEGP operator. The location of the VEGP and associated transmission corridors are shown on Exhibit 1. Target species are defined in this report as:

- Species that the U.S. Fish and Wildlife Service (USFWS) has listed, proposed for listing, or candidate species that may be proposed as threatened or endangered in accordance with the Endangered Species Act.
- Species classified by the Georgia Department of Natural Resources (GDNR) as endangered, threatened, rare, or unusual in accordance with the Georgia Endangered Wildlife Act and Wildflower Preservation Act.
- Species classified by the South Carolina Department of Natural Resources (SCDNR) Heritage Trust Program as threatened or endangered.

The USFWS defines endangered as a species of plant or animal that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered within the foreseeable future. Proposed species are those that have been nominated by the USFWS for federal listing as endangered or threatened. Candidate species are those for which the USFWS has enough information to warrant proposing them for listing as endangered or threatened, but have not yet been proposed for listing.

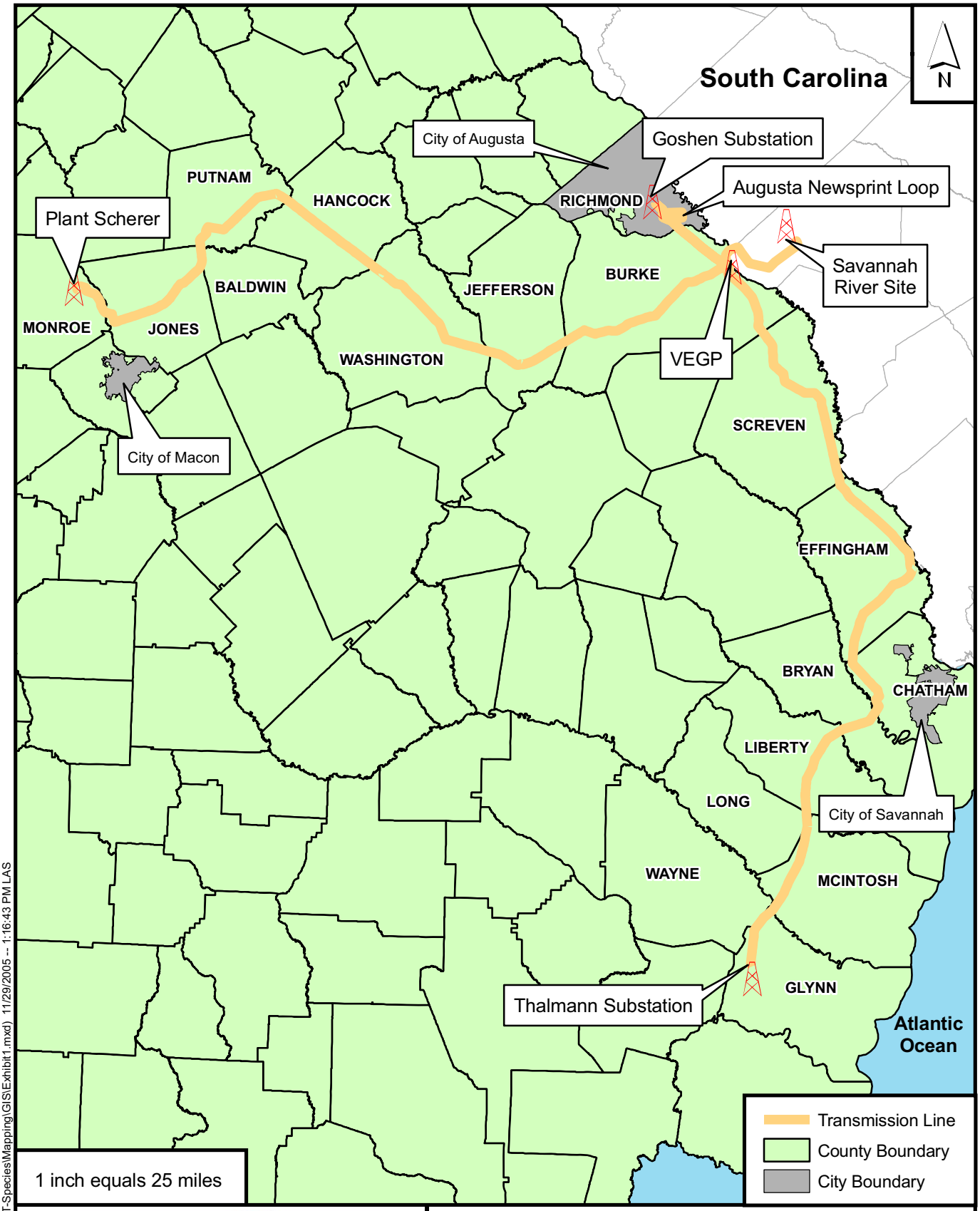

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Exhibit 1
Corridor Overview
Vogtle Electric Generating Plant and Associated Transmission Corridors

II. PROJECT AREA

This survey was conducted along five transmission corridors in 17 counties in Georgia, on the Savannah River Site (SRS) in Barnwell County, South Carolina, and on the VEGP located in Burke County, Georgia; the transmission corridors and the plant site are collectively herein after referred to as the "project area." The project area consists of approximately 340 miles of transmission corridors in Monroe, Jones, Baldwin, Putnam, Hancock, Washington, Jefferson, Burke, Richmond, Screven, Effingham, Chatham, Bryan, Liberty, Long, McIntosh, and Glynn Counties in Georgia, approximately 18.3 miles of transmission corridor in Barnwell County, South Carolina, and 1669 acres of the 3169 acres of the VEGP situated along the Savannah River, 34 miles south of Augusta, Georgia.

The five transmission lines in this survey connect the VEGP to a larger electric grid. These five transmission lines were assigned names according to the plant at which they originated and the plant or substation at which they terminated. The following is a brief description of the lines and the ecoregions through which they run.

A. Vogtle-Scherer (VS) Corridor

This 500-kilovolt (kV) transmission corridor runs east-west across central Georgia from the VEGP to Plant Scherer just north of Macon. It crosses Burke, Jefferson, Washington, Hancock, Putnam, Baldwin, Jones and Monroe Counties, Georgia. The standard width of this corridor is 150 feet and it is 152 miles long.

The Vogtle-Scherer transmission corridor crosses two Level III Ecoregions: Southeastern Plains and Piedmont (Griffith, *et al.*, 2001). Approximately half of the transmission corridor crosses the Southeastern Plains and half is located in the Piedmont. That portion of the Southeastern Plains Ecoregion involved, can be further subdivided into three Level IV Ecoregions: the Sand Hills, Coastal Plain Red Uplands, and the Atlantic Southern Loam Plains (see Exhibits 2a and 2b). The Sand Hills form a

EXHIBIT 2A – SURVEYED AREAS

EXHIBIT 2B – SURVEYED AREAS

narrow, rolling to hilly belt across Georgia in a northeast-southwest direction. On the drier, sandier soils turkey oak (*Quercus laevis*) and longleaf pine (*Pinus palustris*) are the dominants, while shortleaf (*P. echinata*)- loblolly (*P. taeda*) pine forest and oak-pine forest, are common on less droughty soils. The Coastal Plain Red Uplands are well drained but less droughty and the majority of the area is cropland and pasture. The Atlantic Southern Loam Plains is lower and flatter, with a predominance of agriculture, but also contains forested wetlands in poorly drained areas.

Agricultural Area In Project Corridor

Closely Mowed Agricultural Area

The Piedmont Ecoregion is characterized by hilly topography and a variety of ecosystems, from the exposed rock surfaces and rocky, shallow soils of the granite outcrops to the few relic mature oak-hickory-poplar hardwood forests. More than half of the Piedmont is former farmland in some stage of reforestation, either through natural plant succession or pine plantations. That portion of the line within the Piedmont is wholly within the Southern Outer Piedmont Level IV Ecoregion. This is an area dominated by shortleaf-loblolly pine and smaller areas of oak-pine or oak-hickory forest.

B. Vogtle-Savannah River Site (V-SRS) Corridor

This transmission corridor carries one 230-kV line from VEGP to the Savannah River Site. It originates at VEGP in Burke County, Georgia, crosses the Savannah River into Barnwell County, South Carolina, and ends on the SRS. There are 2.5 miles of transmission line in Georgia and 18.3 miles in South Carolina. The corridor is oriented approximately in a northeast direction from VEGP. The standard width of this corridor is 125 feet wide. The Vogtle-Savannah River Site transmission corridor lies totally within the Level III Southeastern Plains Ecoregion and crosses two Level IV Ecoregions: the Sand Hills and the Southeastern Floodplains and Low terraces (Exhibit 2A, Sheet 1). The latter is characterized by riverine swamp forests of bald cypress (*Taxodium distichum*), tupelo gum (*Nyssa aquatica*), and oak dominated bottomland hardwood forest.

Savannah River Site

Habitat Along Savannah River Site

Wetland Located in Savannah River Site

Third Rock Biologist Surveying Wetland

C. Vogtle-Goshen (VG) Corridor

This transmission corridor carries two 230-kV lines from VEGP to the Goshen Substation (Exhibit 2a, Sheet 1). The total length of this corridor is approximately 19 miles. It crosses the northeast portion of Burke County and the southeast portion of Richmond County, Georgia. The corridor is oriented in a northeast direction from VEGP. The standard width of these two 230-kV lines is contained within a single 225-foot wide corridor. This transmission corridor ends at the Goshen Substation. The Vogtle-Goshen Substation transmission corridor lies totally within the Level III Southeastern Plains Ecoregion and the Sand Hills Level IV Ecoregions.

D. Augusta Newsprint Loop Corridor

This short 8-mile long corridor is a loop off of the Vogtle-Goshen line and serves a large paper mill located in southeast Richmond County, Georgia (Exhibit 2A, Sheet 1). It lies almost entirely within the Sandhills Level IV Ecoregion, with only the outer edge of the loop crossing into the Southeastern Floodplains and Low Terraces Level IV Ecoregion. The line shares a common corridor with another transmission line but only the 150 feet occupied the "Newsprint Loop" of the total 300-foot width was surveyed. The area is predominantly former farmland and contained several large man-made ponds.

Pond Located in Augusta Newsprint Loop Corridor

E. Vogtle-Thalmann (VT) Corridor

This transmission corridor carries one 500-kV line from VEGP to the Thalmann Substation northwest of Brunswick, Georgia. The total length of this corridor is approximately 159 miles. The corridor begins at VEGP and crosses Burke, Screven, Effingham, Chatham, Bryan, Liberty, Long, McIntosh, and Glynn Counties, Georgia. The corridor is orientated in a southern direction from the VEGP. This single 500-kV line lies within a 150-foot wide corridor.

The Vogtle-Thalmann Substation transmission corridor lies across two Level III Ecoregions: approximately one-fourth of length of this transmission line crosses the Southeastern Plains Ecoregion and three-fourths of its length is found on the Southern Coastal Plain Ecoregion (Exhibits 2c and 2d). The Southern Coastal Plain Ecoregion extends from South Carolina and Georgia through much of central Florida, and along the Gulf coast lowlands of the Florida panhandle, Alabama and Mississippi. From a national perspective, it appears to be mostly flat plains, but it is a heterogeneous region also containing barrier islands, coastal lagoons, marshes and swampy lowlands along the Gulf and Atlantic coasts. This ecoregion is generally lower in elevation with less relief and wetter soils. Once covered by a variety of forest communities that included longleaf pine, slash pine, pond pine, beech, sweetgum, southern magnolia, white oak and laurel oak, land cover in the region is now mostly slash and loblolly pine with oak-gum-cypress forest in some low lying areas.

Coastal Plain

III. METHODS

The methods section is divided into three sub-sections: the preparation of a target species list, selection of power-line corridor segments for study, and field methods.

EXHIBIT 2C – SURVEYED AREAS

EXHIBIT 2D – SURVEYED AREAS

A. Compiling a Target Species List

The first step was to compile a list of species that potentially could occur within the project area and that fell under the three previously defined state and federally protected species classifications. The list was compiled from the on-line databases of the USFWS and the Georgia and South Carolina Natural Heritage Programs. Species were included that were known from the counties through which the lines passed, or from adjacent or nearby counties if there was a strong likelihood that the species might also occur in the counties of concern.

Additional information was gathered on the life history of each species, particularly their distribution, habitat requirements and the time of year when the species was most readily observable and/or identifiable. The habitat and seasonal information was distilled into a species spreadsheet table so that the data could be sorted by habitat and season. This allowed the generation of species lists by season and limited the searches to those habitats that would be most productive for each season. The information was also used to compile a field reference guide. The guide contained identification keys, photographs and/or line drawings, habitat, and life history information. Copies of this large field reference were supplied to each member of the field survey team. The project species spreadsheet is included as Appendix A. The project field reference guide is included on CD ROM as Appendix B.

B. Study Segment Selection

Based on current land use, only portions of the power-line rights-of-way (ROWS) were likely to be potential habitat for target species. Therefore, a primary objective of the planning portion of the study was to identify those segments with a high potential for occurrences of one or more target species. To this end, a variety of data sources were used to identify those sections of ROW on which to focus the field survey.

Aerial photos from 1982-83, obtained from Georgia Power, contained information on land use prior to power-line construction. Based on these pre-construction aerials, it

was determined that the majority of the ROW was previously in agriculture or was being converted from agriculture to pine plantations. For most plant species this meant that much of the ROW, and the adjacent land, had no surviving seed-bank that could give rise to rare species even if the areas were allowed to revert to natural vegetation. The 1982-83 aerial photos also indicated that most of the natural areas that were relatively undisturbed at that time were wetlands.

Pine Plantations Along Transmission Corridor

Additional sources of information used in identifying segments to survey were: 2003 Georgia GAP data, National Wetland Inventory (NWI) maps, occurrence records of listed species obtained from the Georgia Natural Heritage Program, and recent videos of the power-line corridors taken from a helicopter. The GAP data is part of the much larger nationwide Gap Analysis Program that uses satellite imagery, aerial photography, and field data to develop digital databases on the distribution of vertebrate species, their habitats, current land use, and plant communities. The 2003 Georgia GAP land cover mapping was used to provide more current information on the land use/plant communities adjacent to the power line corridors. The NWI maps were used to provide information on the presence of existing wetlands. The Georgia Heritage Program data indicated areas of known listed species occurrence.

The recent helicopter videos of the lines were reviewed in their entirety and were used to determine adjacent land use as well as land use within the corridors. In many cases an adjacent agricultural land use extended beneath the lines allowing the elimination of a substantial acreage from consideration. Wetlands indicated on the NWI maps and pre-construction aerials could also be verified as still existing from the videos. Road crossings and dirt roads on the corridors themselves were noted as ways to access segments of interest.

Data from the Georgia Natural Heritage Program on the known occurrences of listed species was also used in selecting segments. Occurrence data was plotted on 7.5-minute topographic maps along with the transmission corridors. Where known occurrences were close to a line and similar habitat was present on the ROW, a segment was selected.

Based on all these sources of information, 85 segments totaling 87.7 miles of line were identified to be field surveyed during the study. The distribution of segments by line was: VEGP to Scherer – 38 segments and 36.4 miles, VEGP to Goshen – 5 segments and 3.7 miles, and VEGP to Thalmann - 42 segments and 44.6 miles. Because of the short length of the Augusta Newsprint Loop, no segments were identified prior to the field survey.

Approximately 37.7 miles of the above segments were identified as wetlands by the NWI mapping. Most of the balance was a variety of habitat types commonly associated with or in proximity to wetlands. The habitat and wetland types associated with each selected segment are presented in Appendix C. These segments were expected to represent the greatest potential for producing listed species within the project area.

No GIS shape files were available for the 22-mile line from VEGP to the Savannah River Site. As a result, no segments were selected prior to the field survey. The field effort for VEGP - Savannah River Site consisted of an initial reconnaissance based on aerials obtained on site and recommendations from a TtNUS biologist who had spent several years working at SRS.

Areas to be surveyed on the Vogtle site were based on a review of aerial photos of the site, recommendations from TtNUS biologists and an initial reconnaissance during the first site visit. Those areas that were undisturbed by the plants construction and subsequent land management received the most attention.

Base maps for field use were prepared using USGS (1:24,000) quadrangle maps on which the ROWS were delineated. Additional data overlays were produced from the NWI maps and records of listed species occurrences by quarter quad from the Georgia Natural Heritage database.

By the last field survey in October, many of the previously identified segments had been eliminated from further search, and a survey of additional sites was undertaken. These additional sites were selected randomly using a Georgia road atlas to determine access. These random segment searches served as a quality control check on the segment selection process initiated at the beginning of the project. If these random sites contained little or no habitat or yielded few or no listed species, then our initial study segment process was validated.

C. Field Survey Methods

The field survey was conducted seasonally during spring, summer and fall of 2005. Each seasonal effort lasted for 10 days and began on the following dates: April 12, August 22, and October 24.

Three biologists were utilized in the spring field effort, sometimes working as a team, however, usually separated working as two groups. When separated, the biologists were in phone contact or met several times a day to compare observations. A team of two biologists was utilized in both the summer and fall field effort.

Each survey team member carried binoculars and larger, unwadeable wetlands were searched using a spotting scope. Tin, lumber, plywood, old tires, logs, and any other cover for small animals found within the study area were turned over and examined. All surveyed segments were examined for tracks and scats of animals. Dens of burrowing animals were also checked for activity and tracks in order to identify the animals using the burrow.

Plants made up the majority of the target species (51 of 85). Thus, the core of the field effort was directed toward those listed plant species. Where possible, floral species were identified in the field. In some cases an appropriate amount of plant material of the specimen in question was collected using standard collection procedures for later identification. Digital images were taken to aid in the identification of taxonomically difficult species as well. Field notes were taken as species were encountered and the location of occurrence marked with a waypoint using a Garman V handheld GPS.

IV. RESULTS

A variety of habitats were found beneath the transmission corridors and on the Vogtle plant site. The major habitats encountered are described in the following along with a brief description of the corridor maintenance program, a primary determinant of plant communities beneath the lines.

According to Jim Candler, a biologist with Georgia Power, the transmission lines from the Vogtle plant were constructed in the mid 1980s. In many areas, the construction of the corridors required the clearing of existing, natural vegetation. Forest, either pine, oak-pine or oak-hickory is the normal climax habitats for the areas crossed by the lines. With forests on one or both sides of the line, or at least nearby; natural plant succession would bring these cleared areas back into forest without continual maintenance. The current vegetation management program calls for mowing in year one, selected back-pack spraying of woody species in year two, skip year three, selected spraying again in year four, and mowing again in year five. This regimen is then repeated through another cycle (Candler, 2005).

The habitat encountered in our field survey depended to some degree on where that particular portion of the line was in the vegetation management cycle. Portions of the line surveyed in April contained woody plants up to eight feet tall but were closely mowed when the site was revisited in August.

More than half of the Vogtle-Thalmann line is located in the Sea Island Flatwoods Level IV Ecoregion. This is an area of flat, poorly drained sandy to muck soils dominated by pine plantations. Within the corridor itself, the primary habitat differences are related to changes in micro-topography and resulting degrees of wetness. Areas of open water are found in shallow, closed depressions and, what are labeled streams on the topographic maps, are often wide expanses of shallow flowing water. Because of the flatness of the terrain, a stream normally a few yards wide may become tens of yards wide during flooding. These areas are dominated by long beaked rush (*Rhynchospora corniculata*), pickerelweed (*Pontederia cordata* var. *cordata* and var. *lancifolia*), arrowhead (*Saggitaria graminea*), redroot (*Lacnanthes caroliniana*), and buttonbush (*Cephalanthus occidentalis*). A change in elevation of a foot or less will result in a plant community with different dominants. These slightly higher but still wet soil communities are dominated by bushy bluestem (*Andropogon glomeratus*), blue sedge (*Carex glaucescens*), several species of meadow beauty (*Rhexia*), boneset (*Eupatorium perfoliatum*), several species of gayfeather (*Liatris*), plumegrass (*Saccharum strictus*), and scattered saw palmetto (*Serenoa repens*).

Shallow Closed Depression

Slightly Higher Area But Still Wet Site

Pickerel Weed at VT 35

Close-up View of Pickerel Weed

A third slightly higher but much drier community is dominated by: broomsedge (*Andropogon virginicus*), bracken fern (*Pteridium aquilinum*), blackberry and dewberry (*Rubus* sp.), peppervine (*Ampelopsis arborea*), and several species of goldenrods (*Solidago* sp.).

The Level IV Atlantic Southern Loam Plains makes up the majority of the remainder of the Vogtle-Thalmann line. This area is gently rolling and drier than the previously described habitats but has many of the same dominants: broomsedge, blackberry and dewberry, goldenrods, and bracken fern. Additional dominants are beaked panicgrass (*Panicum anceps*), dog fennel (*Eupatorium capillifolium*), and winged sumac (*Rhus copallinum*).

Dog Fennel in Old-Field VEGP

The initial segments of the Vogtle-Thalman line and the Vogtle-Scherer line, all of the Vogtle-Goshen line, and almost all of the Augusta Newsprint Loop, as well as most of the Vogtle site are located in the Sandhills Level IV Ecoregion. The dominant plant community beneath the lines in this ecoregion are very similar to the drier communities already described with only a few changes: splitbeard bluestem (*Andropogon ternarius*) becomes a co-dominant with or replaces broomsedge, several species of greenbriar (*Smilax* sp.) are common, and prickly pear (*Opuntia humifusia*) is commonly scattered along the line.

Almost all of the Vogtle-Scherer line passes through the Southern Outer Piedmont, an area of rolling hills. The plant communities along this line are similar in that most are in an early stage of old field succession. Broomsedge, blackberry, dog fennel, and winged sumac were the dominant species. Wetlands were fewer and smaller and a significant percentage of the line crosses land in agricultural uses.

While the Vogtle plant is located on a relatively small area, it is located in two Level IV Ecoregions: the Sandhills and the southeastern Floodplains and Low Terraces. A majority of the areas surveyed on the plant site were areas that had not been disturbed by the plant's construction or cleared for transmission lines. There were five major habitats present on the plant site: man-made or beaver created wetlands, pine plantations, oak-pine uplands, river bluff, and the bottomland hardwoods adjacent to the Savannah River.

The man-made wetlands were dominated by open water or mudflats with heavily vegetated fringes. The common species surrounding the open water are broadleaf cattail (*Typha lattifolia*), sugarcane plumegrass (*Saccharum giganteum*), woolgrass (*Scirpus cyperinus*), bushy bluestem, and black willow (*Salix nigra*). The natural or beaver enhanced wetlands had open to closed canopies depending on water depth. In those areas with a tree canopy, the dominants were water oak (*Quercus nigra*), red maple (*Acer rubrum*), and black gum (*Nyssa sylvatica*). There was also a relatively dense understory of vines and shrubs composed of cane (*Arundinaria gigantea*),

trumpet creeper (*Campsis radicans*), muscadine (*Vitis rotundifolia*), and American holly (*Ilex opaca*). The herbaceous ground cover was less dense and dominated by cinnamon fern (*Osmunda cinamomea*) and royal fern (*O. regalis*).

Retention Pond

Emergent Wetland Around Retention Pond

The pine plantations are in various ages and stocking rates, and vary from a nearly closed canopy with very little understory, to areas that resemble old fields with only scattered pine. The dominant pines were loblolly and longleaf and the sparse herbaceous ground cover was bracken fern, while in the more open areas dog fennel, broomsedge, and blackberry were common.

Pine Plantation

The undisturbed uplands are a mix of a xeric longleaf pine-scrub oak community and a slightly more mesic oak-hickory community: the ridgetops and south and west slopes are more xeric while the north and east slopes support the more mesic oak-hickory. Longleaf pine, turkey oak (*Quercus laevis*), and bluejack oak (*Q. incana*) form the

canopy along with lesser amounts of blackjack oak (*Q. marilandica*), and scattered flowering dogwood (*Cornus florida*) and hawthorns (*Craetegus* sp.). The shrub layer is composed of sparkleberry (*Vaccinium arboreum*), dwarf huckleberry (*Gaylussacia dumosa*), and yellow jessamine (*Gelsemium sempervirens*). The density and diversity of the herbaceous ground cover varies with the degree of canopy closure. Under dense shade, only clumps of slender wood oats (*Chasmanthium laxum*) were found. In more open areas, gopher weed (*Baptisia perfoliata*), jointweed (*Polygonella Americana*), tread-softly (*Cnidoscolus stimulosus*), and reindeer lichen (*Cladina rangifera*) were common.

Turkey Oak

Turkey Oak- Hickory Community Above Bluff

The oak-hickory community canopy is composed of white oak (*Q. alba*), white ash (*Fraxinus americana*), mockernut hickory (*Carya tomentosa*), and flowering dogwood, but still retains a few turkey oaks and a scattering of shortleaf pine (*Pinus echinata)*.

A steep, east-facing bluff lies between the dry upland forest and the often flooded bottomland along the river. The bluff is completely wooded and in places still supports some very large trees, several in excess of 3 feet in diameter. White oak, southern red oak (*Q. falcata*), mockernut hickory, tulip poplar (*Liriodendron*

tulipifera), sweet gum (*Liquidambar stryaciflua*), American elm (*Ulmus americana*), basswood (*Tilia americana*), and sugar maple (*Acer barbatum*) are common canopy species. There is also well developed understory of smaller trees, shrubs and vines. The more common understory species are: pawpaw (*Asimina triloba*), hop hornbeam (*Ostrya virginiana*), muscadine, American beautyberry (*Callicarpa americana*), crossvine (*Bignonia capreolata*), and poison ivy (*Toxicodendron radicans*). The herbaceous ground cover varies with soil moisture, varying from dry areas near the top of the slope to wet seeps at the foot of the slope. On the upper slope, Christmas fern (*Polystichum acrostichoides*), white snakeroot (*Agertina altisima*), and several species of aster were most common. On the lower slopes and around seeps the mottled trillium (*Trillium macualtum*), wild ginger (*Asarum canadense*), false nettle (*Boehmeria cylindrical*), and jewelweed (*Impatiens capensis*) were the dominants.

Plant Site at Bottom of Bluff

Bluff Showing Steep Slope

Mature Poplar Tree

The bottomland hardwoods along the river are a mix of hardwoods and cypress-tupelo gum. Bald cypress (*Taxodium distichum*) and tupelo gum (*Nyssa aquatica)* are found in the canopy of the lower, wetter sites; while sycamore (*Platanus occidentalis*), boxelder (*Acer negundo*), sugarberry (*Celtis laevigata*), and swamp chestnut oak (*Quercus michauxii*) occupy the slightly higher ground. Long periods of inundation have limited the understory and herbaceous layers but some species persist. American holly, ironwood (*Carpinus caroliniana*), water locust (*Gleditsia aquatica*), cane, and buttonbush form the understory. Ground cover is sparse and limited to those species that can survive both inundation and dense shade: richweed (*Pilea pumila*), lizard tail (*Saururus cernus*), sensitive fern (*Onoclea sensibilis*), and Virginia dayflower (*Commelina virginica*) were the dominant species.

Floodplain Near the Base of the Bluff

Floodplain Showing Water Level Line on Trees

Habitats encountered on the Savannah River Site in South Carolina were similar to those already described. A large hillside seep wetland was the only new habitat encountered. This wetland had deep muck soils and was dominated by a dense growth of water primrose (*Ludwugia leptocarpa*) and soft rush (*Juncus effusus*).

V. OBSERVATIONS OF TARGET SPECIES

In addition to the 85 segments identified prior to the beginning of the fieldwork, there were 9 segments on the SRS line, 5 segments that included over half of the Augusta Newsprint loop, and an additional 26 randomly selected segments that were surveyed, bringing the total number of segments surveyed to 125. Out of this large number of segments surveyed, target species were found on only 10 prior selected ROW segments, on one randomly selected segment, and at three locations on the VEGP site (Table 1). Occurrence data sheets for each observation of a listed species can be found in Appendix D.

TABLE 1 – SUMMARY OF OCCURRENCES

SPECIES NAME	OCCURRENCE ID*	LOCATION	SEGMENT**	X COORDINATES	Y COORDINATES
Bay Star-Vine	2	Vogtle Electric Generating Plant	VEGP	-81.7599	33.1536
Bay Star-Vine	3	Vogtle Electric Generating Plant	VEGP	-81.7318	33.3303
Bay Star-Vine	16	Vogtle Electric Generating Plant	VEGP	-81.7530	33.1298
Wood Stork	4	Vogtle-Scherer	VS-28	-82.0807	32.9964
Wood Stork	5	Vogtle-Scherer	VS-37	-81.9145	33.0927
Wood Stork	7	Vogtle-Thalmann	VT-17	-81.3866	32.5516
Wood Stork	7a	Vogtle-Thalmann	VT-17	-81.3866	32.5516
Pond Spice	13	Vogtle-Thalmann	VT-41	-81.5943	31.4689
Spotted Turtle	6	Vogtle-Thalmann	VT-9	-81.4771	32.8059
Gopher Tortoise	12	Vogtle-Thalmann	VT-16	-81.4102	32.5791
Gopher Tortoise	8a	Vogtle-Thalmann	VT-42	-81.5954	31.4681
Gopher Tortoise	8	Vogtle-Thalmann	VT-41	-81.5908	31.4737
Hooded Pitcher Plant	9	Vogtle-Thalmann	VT-27	-81.3079	32.0442
Hooded Pitcher Plant	10	Vogtle-Thalmann	VT-38	-81.5073	31.6672
Hooded Pitcher Plant	11	Vogtle-Thalmann	VT-40	-81.5295	31.5807
Hooded Pitcher Plant	14	Vogtle-Thalmann	VT-40	-81.5285	31.5849
Hooded Pitcher Plant	17	Vogtle-Thalmann	Random Segment	-81.4597	31.8815

*See Species Occurrence Data sheets in Appendix A
**See Exhibits and Text for segment locations; see Appendix D for nearest ROW tower number

A. Wood Stork

Only one federally listed species, the wood stork (*Mycteria americana*), was observed within the entire project area. It was observed at three locations during the spring survey: a single bird at two sites, VS 28 and VS 37 on the Vogtle-Scherer line, and two birds observed at VT 17 along the Vogtle-Thalmann line (Exhibit 3). The latter site was the only one with storks present in August, when 17 storks were observed. No wood storks were observed at any of the sites in October. A portion of Segment VT 17 is an open water swamp bordered by a tall stand of cypress-tupelo gum on the east and shorter second growth to the west. The site was also heavily used by other wading birds in both April and August: in excess of 50 great egrets (*Ardea alba*) and little blue herons (*Egretta caerulea*) were observed.

Wood Stork Wetland Site (Segment VT-17)

It was difficult to get an accurate count of mature and immature storks in August, but it appeared that a little less than half of the 17 birds observed were immature. The birds were either loafing or actively feeding, often in heavy cover. No signs of nests were observed in any of the trees adjacent to the corridor at VT 17.

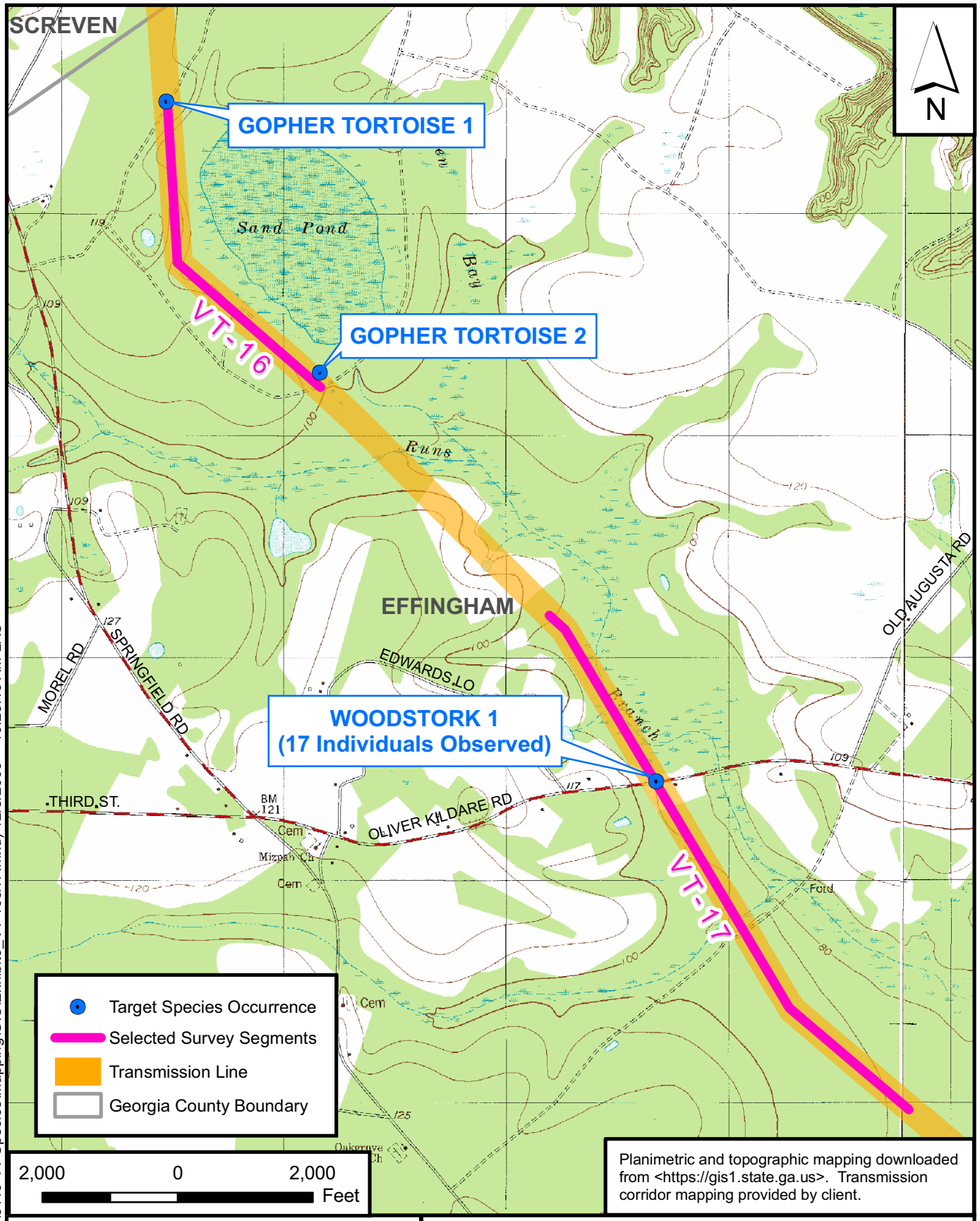

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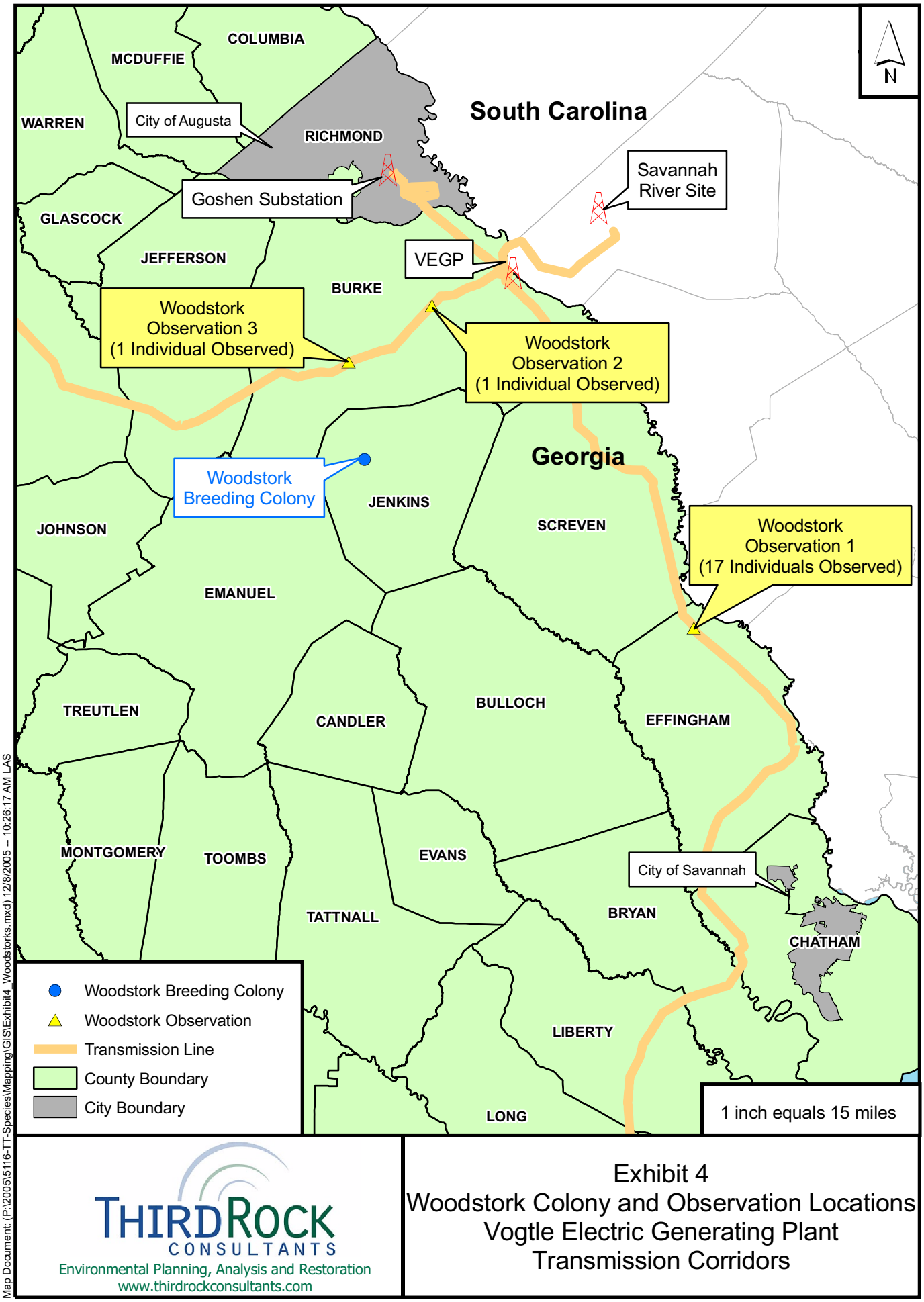
Exhibit 3
Segments VT-16 and VT-17
Vogtle -Thalmann Transmission Corridor

A large nesting colony of wood storks exists at Birdsville in Jenkins County, approximately 45 miles west-northwest of VT 17 and the birds observed at all three transmission sites are likely from that colony (Exhibit 4). The sighting at VS 28 is only 10 miles from the breeding colony and VS 37 is approximately 20 miles away. It is not uncommon for wood storks to forage as far as 50 miles from the nesting colony (USFWS, 1996). Immature wood storks banded at the Harris Neck breeding colony just south of Savannah, and wood storks from the Birdsville colony have been observed feeding at ponds on the SRS, which is 40 miles north of VT17 (Wood Stork research at SRS, 2005; USFWS, 1996).

B. Gopher Tortoise

The gopher tortoise (*Gopherus polyphemus*) is listed as state threatened in Georgia but is not federally listed in Georgia. It is federally listed in the western portion of its range, however, in portions of Alabama, Mississippi, and Louisiana. It was observed at three locations: on Segments 41 and 42 just north of the Altamaha River in McIntosh County and on Segment 16 at the edge of Sand Pond in Effingham County all three segments are on the Vogtle-Thalmann line. Both locations are in the Sea Islands Flatwoods Level IV Ecoregion but separated by over 100 miles.

The two locations just north of the Altamaha River (Exhibit 5) are located on narrow sand ridges crossed by the Vogtle-Thalmann line. A live tortoise and the largest concentration of burrows were observed on the first sand ridge north of the river (VT 42). This sand ridge is approximately 200 yards wide and extends in a northwest-southeast direction along the edge of the floodplain. There were three active burrows (one containing a live tortoise), four older burrows, and the remains of three nest sites at this location. The nests sites contained eggshell fragments that were confined to an area not much larger than a square foot and may or may not have been successful.



Map Document: (P:\2005\5116-TT-Species\Mapping\GIS\Exhibit4_Woodstorks.mxd) 12/8/2005 -- 10:26:17 AM LAS

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Exhibit 4
Woodstork Colony and Observation Locations
Vogtle Electric Generating Plant
Transmission Corridors

Map Document: (P:\2005\5116-TT-Species\Mapping\GIS\Exhibit5_VT-41&42(11X17).mxd) 12/8/2005 -- 10:37:55 AM LAS

Planimetric and topographic mapping downloaded from <https://gis1.state.ga.us>. Transmission corridor mapping provided by client.

N

SANDRIDGE 2 & GOPHER TORTOISE

PONDSPICE

SANDRIDGE 1 & GOPHER TORTOISE

VT-41

VT-42

WAYNE

MCINTOSH

PLUM ORCHARD CEMETERY RD.

TOWNSEND COX RD.

BARRINGTON FERRY RD.

COAST

SEABOARD

ALTAMAHA

Exhibit 5
Segments VT-41 and VT-42
Vogtle-Thalmann Transmission Corridor

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Target Species Occurrence
Selected Survey Segments
Transmission Line
Georgia County Boundary

2,000 0 2,000 Feet

Gopher Tortoise

Gopher Tortoise Burrow at Sandpond

Gopher Tortoise Habitat at VT-42

The area under the line was thinly vegetated, a mix of grasses and forbs. Splitbeard bluestem (*Andropogon ternarius*) and wiregrass (*Aristida beyrichiana*) were the dominant grasses, while bitterweed (*Helenium amurum*), poorjoe (*Diodia teres*), prickly pear, and hairy lespedeza (*Lespedeza hirta*) were the common forbs. Most of these species are listed as food items commonly eaten by gopher tortoises (Landers, 1981).

The adjacent habitat was mixed hardwood-pine with a relatively dense understory. A brief search on either side of the corridor indicated that gopher tortoise activity was confined to the open area under the line. Optimum gopher tortoise habitat has no more than 10 percent closed canopy (Spillers and Speake, 1986) and nests are generally laid in full sun (Ernst and Barbour, 1972).

The second sand ridge (VT 41) is located approximately 1,500 feet north of the first ridge and is much smaller. A single active burrow and several abandoned burrows were found under the line. The vegetation in the corridor was similar in density and species composition to that described above. Pine plantations occupied both sides of the corridor and were being harvested during the October visit.

The third site found supporting gopher tortoises is on Segment VT 16 along the Vogtle-Thalmann line, in the northeastern corner of Effingham County (Exhibit 3, page 26). The corridor at this location skirts the edge of a large Carolina Bay called Sand Pond. The soils are very sandy, particularly along the south edge of the pond, where the bulk of the tortoise activity was observed. Most of the burrows found were off of the line, but two burrows were found within the edge of the corridor. A large portion of the corridor at this location is being tilled in wildlife food plots, which probably discourages tortoises from burrowing in the corridor proper.

One of the major factors in the decline of the gopher tortoise range-wide has been the conversion of longleaf pine stands to loblolly/slash pine and subsequent fire suppression. Pine plantations have a closed canopy after a few years and fire suppression may allow the development of relatively dense woody understory, both conditions leading to a reduction in forbs and grasses, the primary food of gopher tortoises. Maintaining the open transmission corridors on these sandy soils creates small islands of optimum conditions for both tortoise foods and nesting sites, in what may otherwise be sub-optimum habitat.

C. Spotted Turtle

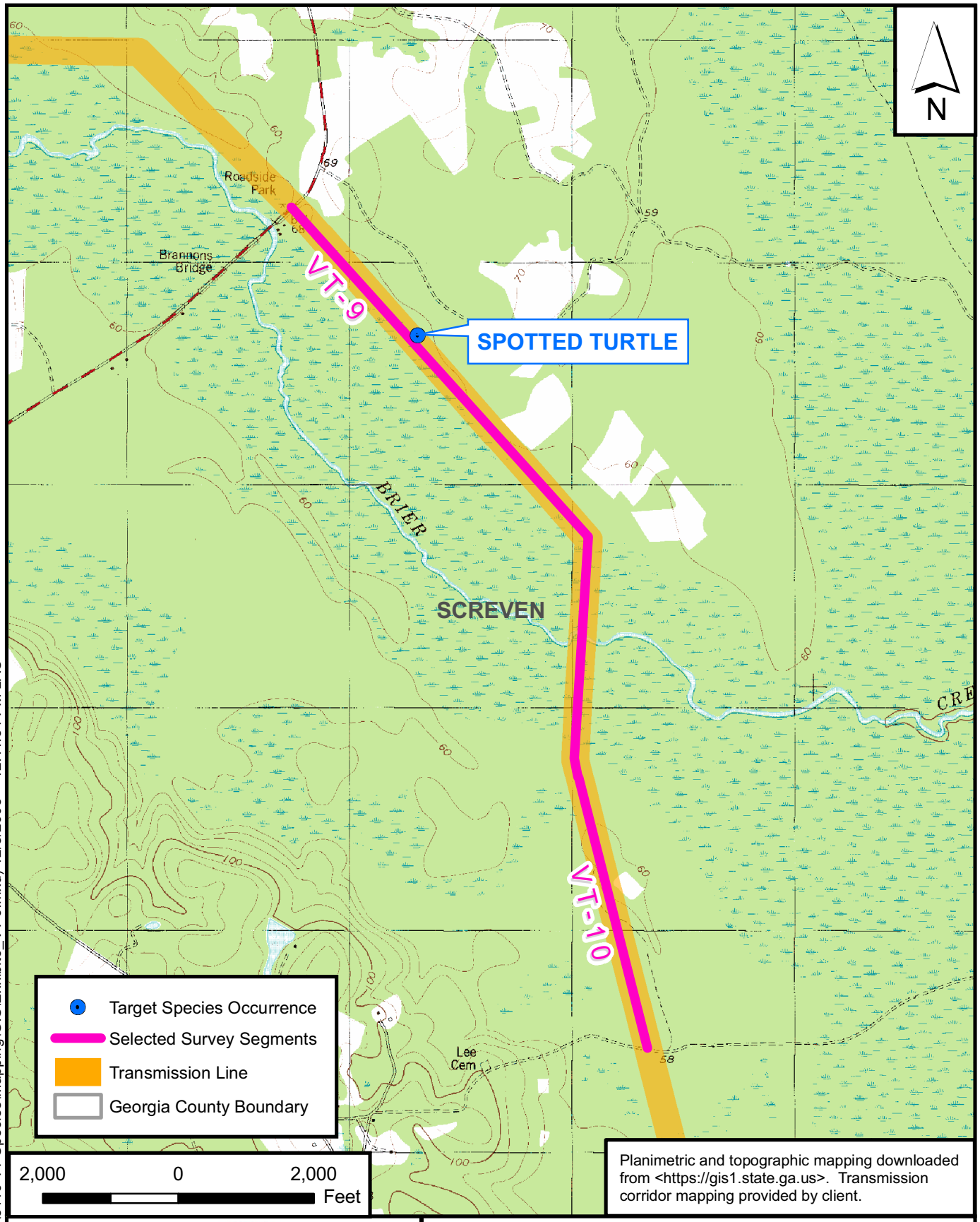
A single observation of a spotted turtle (*Clemmys guttata*), listed as unusual in Georgia, was made at VT 9 on the Vogtle-Thalmann line in April (Exhibit 6). The site was revisited in August and October, however no further sightings were made. The habitat was a small, shallow, open-water marsh that contained numerous fallen logs. The area is part of the much larger Brier Creek wooded swamp and is on the Tuckahoe State Wildlife Management Area.

D. Pond Spice

Two state listed plant species were found on the Vogtle-Thalmann line. Pond spice (*Litsea aestivalis*) is a state threatened species that occurs in scattered locations across southeast Georgia. The occurrence of pond spice at VT 41 was already known to the Georgia Natural Heritage Commission and was verified by our observations. It occurs along the edges and is scattered under the line in a permanently inundated area just north of Barrington Road (Exhibit 5, page 29). This small wetland lies between the two sand ridges earlier described as gopher tortoise habitat.

Pond Spice at VT 41

Additional View of Pond Spice at VT 41



Planimetric and topographic mapping downloaded from <https://gis1.state.ga.us>. Transmission corridor mapping provided by client.

Map Document: (P:\2005\5116-TT-Species\Mapping\GIS\Exhibit6_VT-9.mxd) 12/8/2005 -- 12:11:34 PM LAS

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Exhibit 6
Segment VT-9
Vogtle-Thalmann Transmission Corridor

Pond Spice Location at VT-41

E. Hooded Pitcher Plant

The hooded pitcher plant (*Sarracenia minor*) was found on four segments of the Vogtle-Thalmann line: VT 40, VT 38, VT 27 and a random site north of Segment 33 (Exhibit 7). All four locations fall within the Sea Island Flatwoods Level IV Ecoregion. This species of pitcher plant is the most common of the six pitcher plants found in Georgia and is listed as unusual. It has been recorded in 50 of the states southern counties. This plant occurred in small, scattered colonies beneath the line in low spots and was commonly associated with foxtail clubmoss (*Lycopodium alopecuroides*).

Hooded Pitcher Plant

Map Document: (P:\2005\5116-TT-Species\Mapping\GIS\Exhibit7_VT-27-40(11X17).mxd) 12/8/2005 -- 12:13:57 PM LAS

Planimetric and topographic mapping downloaded from <https://gis1.state.ga.us>. Transmission corridor mapping provided by client.

HOODED PITCHER PLANT

VT-27

VT-28

VT-30

VT-32

VT-33

VT-36

VT-38

VT-40

I-95 NB

VICTORY ST.

SILK HOPE RD.

CHATHAM

OCEAN HWY.

MCALLISTER RD.

FORD AVE.

SR 144

BRYAN

MCALLISTER RD. BRYAN NECK RD.

HOODED PITCHER PLANT

Random Survey Location (North of VT-33)

OGLETHORPE HWY.

VIRGINIA RD.

E M PKWY

COASTAL HWY.

E OGLETHORPE HWY.

SR25

SUNBURY RD.

LIBERTY

OLD CLYDE RD.

BRYAN NECK RD.

E B COOPER HWY.

STATE ROUTE 119

LONG

JONES RD

HOODED PITCHER PLANT

HOODED PITCHER PLANT

HOODED PITCHER PLANT

HOODED PITCHER PLANT

HOODED PITCHER PLANT

MACON STOWN

WALTON ST.

I-95

MCIN

N

Target Species Occurrence

State Route

Selected Survey Segments

Transmission Line

Georgia County Boundary

2 0 2 Miles

Exhibit 7
SegmentS VT-27 to VT-40
Vogtle -Thalmann
Transmission Corridor

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F. Bay Star-Vine

Bay star-vine (*Schisandra glabra*), listed as state threatened in Georgia, and is the only listed species observed on the Vogtle plant site (Exhibit 8). This woody vine occurred at several locations along the wooded bluff bordering the Savannah River and in a wooded wetland immediately south of the plant.

Bay Star-Vine from Bluff

Planimetric and topographic mapping downloaded from <https://gis1.state.ga.us>. Transmission corridor mapping provided by client.

Vogtle-Savannah River Site

Vogtle-Goshen

Vogtle-Scherer

Vogtle Electric Generating Plant

Vogtle-Thalmann

BAY-STARVINE 1

BAY-STARVINE 2

BAY-STARVINE 3

VG-5

HANCOCK LANDING RD.

RIVERSIDE PK RD

BOTSFORD CH RD

JACK DELAIGLE RD.

EBENEZER CH RD.

RINER RD.

GA POWER RD.

SON DELAIGLE RD.

Target Species Occurrence

Selected Survey Segments

Transmission Line

Georgia County Boundary

2,000 0 2,000 Feet

N

Exhibit 8
Plant Location
Vogtle Electric Generating Plant
Transmission Corridors

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Map Document: (P:\2005\5116-TT-Species\Mapping\GIS\Exhibit8_VEGP(11x17).mxd) 12/8/2005 -- 12:44:56 PM LAS

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APPENDIX A – PROJECT SPECIES SPREADSHEET

Species Name	Common Name	Gap Habitat	Spring	Summer	Fall	Animal Habitat	Georgia State Listed	South Carolina State Listed	Federally Listed	Quarter Qurangle	Co. Name
Ambystoma cingulatum	Flatwoods Salamander	Open Loblolly-Shortleaf Pine	Yes	No	No	Pine woodlands and cypress swamps	T		T	Meldrim, GA_NE	Effingham
		Loblolly-Slash Pine								Meldrim, GA_SW	Chatham
		Longleaf Pine								Richmond Hill, GA_NE	Chatham
		Cypress-Gum Swamp								Richmond Hill, GA_NW	Chatham
		Mixed Pine-Hardwood								Rincon, GA-SC_SW	Effingham
		Evergreen Forested Wetland								Cox, GA_NW	McIntosh
										Limerick NW GA_SW	Liberty
										Meldrim SE, GA_SE	Chatham
										Springfield South, GA_SE	Effingham
										Townsend, GA_SW	McIntosh
Notophthalmus perstriatus	Striped Newt	Hardwood Forest	Yes	Yes	Yes	Small ponds, drainage ditches, and other standing or sluggish bodies of water during breeding season. Live in surrounding forests at other times of the year.	R			Jacksonboro Bridge, GA_NW	Screven
		Open loblolly-Shortleaf Pine									
		Loblolly-Shortleaf Pine									
		Open Water									
		Cypress-Gum Swamp									
		Freshwater Marsh									
		Shrub Wetland									
		Evergreen Forested Wetland									
Rana capito	Gopher Frog	Longleaf Pine	Yes	Yes	No	The principal habitat of the gopher frog is longleaf pine-turkey oak sandhill, but it also inhabits xeric to mesic longleaf pine flatwoods, sand pine scrub, and xeric oak hammock. Gopher frogs typically breed in circular or near circular, ephemeral to semipermanent graminoid-dominated wetlands found within these communities.		E		Cox, GA_NW	McIntosh
		Sandhill								Meldrim SE, GA_SE	Chatham
		Mixed Pine-Hardwood									
		Xeric Hardwood									
		Freshwater Marsh									
		Open Water									

Species Name	Common Name	Gap Habitat	Spring	Summer	Fall	Animal Habitat	Georgia State Listed	South Carolina State Listed	Federally Listed	Quarter Qurangle	Co. Name
Macroclemys temminckii	Alligator Snapping Turtle	Open Water	Yes	Yes	Yes	Lives in large muddy rivers	T				
		Cypress-Gum Swamp									
		Freshwater Marsh									
Clemmys guttata	Spotted Turtle	Open Water	Yes	Yes	Yes	Shallow wetlands including sedge meadows adjoining cattail marshes, marshy pastures, bogs, small woodland streams. Soft substrate and some aquatic vegetation.	U	T		Brighton, SC-GA SW	Effingham
		Cyperss-Gum Swamp								Springfield North, GA NE	Effingham
		Freshwater Marsh								Springfield North, GA NW	Effingham
		Shrub Wetland								Waynesboro, GA SE	Burke
		Evergreen Forested Wetland								Idlewood, GA SW	Burke
										Meldrim, GA NW	Chatham
Gopherus polyphemus	Goper Tortoise	Utility Swaths	Yes	Yes	Yes	Well drained, sandy soils in transitional areas (ecotones) when two different ecological communities, such as forest and grassland, come together.	T	E	T	Cox, GA NW	McIntosh
		Sandhill								Townsend, GA SW	McIntosh
										Cox, Ga SW	McIntosh
										Meldrim SE, GA SE	Chatham
										Meldrim SE, GA SW	Bryan
										Richmond Hill, GA NW	Bryan
										Everett, GA SE	Wayne
Clemmys muhlenbergii	Bog Turtle	Open Water	Yes	Yes	Yes	Sphagnum bogs, swamps, and marshy meadows have clear, slow-moving streams with soft bottoms are the preferred habitat.	U				
		Cypress-Gum Swamp									
		Freshwater Marsh									
Graptemys barbouri	Barbour's Map Turtle	Open Water	Yes	Yes	Yes	Clear, limestone-bottomed stream with an abundance of snags and fallen trees.	T				
Graptemys pulchra	Alabama Map Turtle	Open Water	Yes	Yes	Yes	Deep water with a slow current and a sand or gravel bottom is preferred, and basking sites such as logs or debris are necessary.	R				
Graptemys geographica	Common Map Turtle	Open Water	Yes	Yes	Yes	Large bodies of water, such as rivers or lakes. Mill ponds, oxbows, and the overflow ponds of rivers often contain many individuals. Abundant basking sites, much aquatic vegetation, and a soft bottom are required.	R				
		Cypress-Gum Swamps									
		Freshwater Marsh									
Drymarchon corais couperi	Eastern Indigo Snake	Sandhill	Yes	Yes	Yes	Scrub oak woods, pine flatwoods, and forested sandhills and ridges in the northern part of its range. In the southern portions of its range, it can be found around wetland areas such as swamps, streams, and canals. The distribution and habitat preference closely overlap that of the ***Gopher Tortoise***.	T		T	Cox, GA_NW	McIntosh
		Open Water									
		Cypress-Gum Swamp									
		Freshwater Marsh									
		Shrub Wetland									
		Evergreen Forested Wetland									
		Longleaf Pine									
		Sandhill									
		Open Loblolly-Shortleaf Pine									
		Loblolly-Shortleaf Pine									
		Loblolly-Slash Pine									

Species Name	Common Name	Gap Habitat	Spring	Summer	Fall	General Habitat	Georgia Listed	South Carolina Listed	Federally Listed	Quarter Quadrangle	Co. Name
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	Open Water	Yes	Yes	Yes	Summer frequently encountered in building where females from nursery colonies. Males are generally solitary during the nursing season and can be found in buildings crevices behind loose bard, and in hollow trees.	Rare	E	None	Dorchester, GA NW	Liberty
		Utility Swaths								Dorchester, GA SW	Liberty
		Forested Urban-Deciduous									
		Forested Urban-Mixed									
		Hardwood Forest									
		Live Oak									
		Bottomland Hardwood									
		Mixed Pine-Hard									
		Xeric Hardwood									
		Cypress-Gum									
		Evergreen Forested Wetland									
Felis concolor coryi	Florida Panther	Hardwood Forest	Yes	Yes	Yes	Florida panthers reside in upper dry lands such as hardwood hammock, pine flatwoods, saw palmetto and cabbage palm thickets, and in wetland areas including cypress forests, mangrove forests, and freshwater marshes. They often den and sleep in the drier scrub and saw palmetto environments. In search of food and safer resting locations, panthers are known to wade and swim through canals and swamps. Preferring secluded habitats away from human activity, panthers rarely visit agricultural lands. They require large remote tracts of land with plenty of prey and cover along with low levels of human disturbance. Home ranges of panthers in southwest Florida average 200 square miles for resident males and 75 square miles for resident females. These territories are maintained by each animal as hunting grounds. Males will not tolerate other males, and will fight, sometimes inflicting deadly wounds on the other. However, these territories tend to overlap with potential mates. They mark territories by leaving scat and urine on piles of dirt and leaves. Social structure consists of mature resident animals who have territorial ranges, along with the transient and subdominant individuals who live on the peripheries. These panthers have suboptimal hunting grounds and an increased chance of human encounters.	E		E		
		Xeric Hardwood									
		Mixed Pine-Hardwood									
		Loblolly-Shortleaf									
		Loblolly-Slash Pine									
		Longleaf Pine									
		Cypress-Gum Swamp									
		Bottomland Hardwood									
		Freshwater Marsh									
		Evergreen Forested Wetland									
Felis concolor couguar	Eastern Cougar	Hardwood Forest	Yes	Yes	Yes	Diversity of habitats used by panthers is greater in northern parts of the study area and dominated by uplands (hardwood hammocks, low pinelands, and palm forests). Lower diversity and predominately wetland habitat use are characteristic of southern areas (mixed swamp and cypress swamp). Appropriate cover is an important component of habitats used, especially during hunting, denning, and day-bedding. Saw palmetto was the dominant cover in 72 percent of observed day bedding sites.	E		E		
		Xeric Hardwood									
		Mixed Pine-Hardwood									
		Loblolly-Shortleaf									
		Loblolly-Slash Pine									
		Longleaf Pine									
		Cypress-Gum Swamp									
		Bottomland Hardwood									
		Freshwater Marsh									
		Evergreen Forested Wetland									
Myotis grisescens	Gray Myotis	Open Water	Yes	Yes	Yes	Gray bat colonies are restricted entirely to caves or cave-like habitats. During summer the bats are highly selective for caves providing specific temperature and roost conditions. Usually these caves are all located within a kilometer of a river or reservoir. In winter they utilize only deep, vertical caves having a temperature of 6-11 degrees Centigrade. Consequently, only a small proportion of the caves in any area are or can be used regularly. There are nine known caves that are believed to house roughly 95 percent of the hibernating population.	E		E		
		Utility Swaths									
		Forested Urban-Deciduous									
		Forested Urban-Mixed									
		Hardwood Forest									
		Live Oak									
		Bottomland Hardwood									
		Mixed Pine-Hard									
		Xeric Hardwood									
Neofiber alleni	Round-tailed Muskrat	Open Water	Yes	Yes	Yes	Shallow water marshes that have sandy bottoms and dense aquatic vegetation. The lodge is frequently buildt at the base of a cypress tree or clumps of brush.	E		None		
		Cypress-Gum Swamp									
		Freshwater Marsh									
Trichechus manatus	Manatee	Open Water	Yes	No	Yes	Rivers and near mouth of large streams (can been seen near warm water outlets of power plants)	E		E	Richmond Hill, Ga.-NE	Chatham

Species Name	Common Name	Gap Habitat	Spring	Summer	Fall	Animal Habitat	Georgia State Listed	South Carolina State Listed	Federally Listed	Quarter Quandragle	Co. Name
Mycteria americana	Wood Stork	Open Water	Yes	Yes	Yes	Mangroves, swamps, marshes, and streams	E		E		
		Cypress-Gum Swamp									
		Freshwater Marsh									
Elanoides forficatus	Swallow-tailed Kite	Open Water	Yes	Yes	No	Swamps and forested wetlands	R	E		Hardeeville NW, SC-GA_SW	Effingham
		Cypress-Gum Swamp								Rincon, GA-SC_NW	Effingham
		Freshwater Marsh								Cox, GA_SW	Gylnn
		Bottomland Hardwood								Cox, GA_SW	McIntosh
		Evergreen Forested Wetland								Cox, GA_SW	Wayne
										Everett, GA_SE	Gylnn
										Everett, GA_SE	McIntosh
										Everett, GA_SE	Wayne
										Townsend, GA_SW	Long
										Townsend, GA_SW	McIntosh
										Townsend, GA_SW	Wayne
										Cox, GA_NW	Gylnn
										Cox, GA_NW	McIntosh
										Cox, GA_NW	Wayne
Aimophila aestivalis	Bachman's Sparrow	Open Loblolly-Shortleaf Pine	Yes	Yes	No	Pine woodlands, dry wooded areas	R			Limerick NW, GA_SW	Liberty
		Loblolly-Shortleaf Pine								Meldrim SE, GA_SW	Bryan
		Loblolly-Slash Pine								Townsend, GA_SW	McIntosh
		Longleaf Pine								Cox, GA_NW	McIntosh
		Mixed Pine-Hardwood									
		Xeric Hardwood									
Haliaeetus leucocephalus	Bald Eagle	Open Water	Yes	Yes	No	Larger bodies of open water	E	T	T	Richmond Hill, GA_NE	Chatham
		Bottomland Hardwood								Rockville, GA_NE	Hancock
										East Juliette, GA_SE	Monroe
Falco peregrinus	Peregrine Falcon	Open Water	No	No	Yes	Open areas like marshes, fields, swamps, and tidal areas	E		E		
		Pasture, Hay									
		Cypress-Gum Swamp									
		Freshwater Marsh									
		Shrub Wetland									
Charadrius melodus	Piping Plover	Open Water	Yes	Yes	Yes	Coastal beaches with sand, gravel, or pebbles	T		T		
Haematopus palliatus	American Oystercatcher	Open Water	Yes	Yes	Yes	Coastal beaches, among the rocks or dune, and occansionally in salt marshes	R				
Sterna antillarum	Least Tern	Open Water	Yes	Yes	Yes	Sandy or gravel beaches along the coast, rivers, or lakes	R		E		
Picoides borealis	Red-cockaded Woodpecker	Open Loblolly-Shortleaf Pine	Yes	Yes	Yes	Old pine forests with open understory maintained by frequent, natural lightening fires. Home range of each family group includes a cluster of cavity trees. Cavity trees of this species always have a cavity entrance in which the edges of the hole are thickly coated with pine sap or resin.	E	E	E	Limerick NW, GA_SW	Liberty
		Loblolly-Shortleaf Pine								Meldrim SE, GA-SC_SW	Byran
		Loblolly-Slash Pine								Rincon, GA-SC_NW	Effingham
		Longleaf Pine								Downs, GA_SE	Washington
Campephilus principalis	Ivory-billed Woodpecker	Cypress-Gum Swamp	Yes	Yes	Yes	Mature old-growth forest and cypress swamps	E		E		
		Bottomland Hardwood									
		Evergreen Forested Wetland									
		Mixed Pine-Harwood									
		Hardwood Forest									

Species Name	Common Name	Gap Habitat	Spring	Summer	Fall	Animal Habitat	Georgia State Listed	South Carolina State Listed	Federally Listed	Quarter Quandragle	Co. Name
Thryomanes bewickii	Bewick's Wren	Hardwood Forest	Yes	Yes	No	Dense, brushy habitats - - - Breeding habitat includes many wooded areas.	R				
		Loblolly-Shortleaf Pine									
		Loblolly-Slash Pine									
		Longleaf Pine									
		Bottomland Hardwood									
		Shrub Wetland									
		Evergreen Forested Wetland									
		Mixed Pine-Hardwood									
		Xeric Hardwood									
Vermivora backmanii	Bachman's Warbler	Bottomland Hardwood	Yes	Yes	No	Bottomland forest, usually those assoicated with water. Birds use canebrakes and other areas with dense understories...wet forested areas.			E - Possibly Extinct		
		Evergreen Forested Wetland									
Dendroica kirtlandii	Kirtland's Wabler	Bottomland Hardwood	No	No	Yes	Breeds is areas of young Jack Pine. Winters in areas with dense understories and scrub thickets.	E		E		
		Hardwood Fores									
		Mixed Pine-Hardwood									
Corvus corax	Common Raven	Hardwood Forest	Yes	Yes	Yes	Variety of habitats in upper elevations such as woodlands, fields, and field edges. Breeding habitatis wooded mountainous regions with rocky cliffs and ledges.	R				
		Pasture, Hay									
		Utility Swaths									
Sterna nilotica	Gull-billed Tern	Open Water	Yes	Yes	No	Sand, gravel, or shell beaches, or some grassy areas of coastal islands.	T				
Charadrius wilsonia	Wilson's Plower	Open Water	Yes	Yes	No	A variety of coastal areas such as sandy beaches, tial flats, and small water sources.	R				

Species name	Common Name	Gap Habitat	Spring	Summer	Fall	Plant Habitat	Georgia State Listed	South Carolina State Listed	Federally Listed	Quarter Quadrangle	Co. Name
Amphianthus pusillus	Pool Sprite	Quarries, Strip Mines	Yes	No	No	Restricted to shallow, flat-bottomed depressions on granitic outcroping, where water collects after a rain	T		LT	Rockville, GA_NE	Putnam
										Warthen, NW, NW_NW	Hancock
Asplenium heteroresiliens	Marl Spleenwort	Quarries, strip mines	Yes	Yes	Yes	Outcroppings of marl, damp limestone, and on masonry composed of tabby	T	None	Candidate		
		Forested Urban-Deciduous									
		Forested Urban-Evergreen									
		Forested Urban-Mixed									
Baldunina atropurpurea	Purple Honeycomb	Longleaf Pine	No	Yes	Yes	Found in wetter areas of peaty pitcherplant bogs and pine savannas	Rare	None	Candidate		
		Cypress-Gum Swamp									
		Bottomland Hardwood									
		Shrub Wetland									
		Open Loblolly Shortleaf Pine									
		Loblolly-Shortleaf Pine									
		Loblolly-Slash Pine									
Baptisia arachnifera	Hairy Rattleweed	Open Loblolly-Shortleaf Pine	No	Yes	Yes	Sandy soils in open, pine flatwoods, persisting on intensively manage slash pine plantations, and along road and powerline rights-of ways where competitors are kept under control	E	None	E		
		Loblolly-Shortleaf Pine									
		Loblolly-Slash Pine									
		Longleaf Pine									
		Transportation									
		Utility Swaths									
Bumelia thornei	Swamp Buckthorn	Live Oak	No	Yes	Yes	Oak flatwoods where the soil is normally saturated for long periods folloing flods and periods of heavy rains	E	None	Candidate		
		Cypress-Gum Swamp									
		Bottomland Hardwood									
Calaminthat ashei	Ashe's Savory	Xeric Hardwoods	Yes	Yes	Yes	Found in sand dunes along the Ohoopee River in longleaf pine-shrub oak forests	T	None			
		Sandhill									
		Longleaf Pine									
Carex dasycarpa	Velvet Sedge	Longleaf Pine	Yes	Yes	No	Sandy, acit woods of floodplain hummocks and streambanks, in mature longleaf pine forests	Rare	None	None		
		Cypress-Gum Swamp									
		Bottomland woodland									
		Freswater Marsh									
Ceratiola ericoides	Rosemary	Xeric Hardwoods	Yes	Yes	Yes	Driest, openly vegetated, scrub oak sandhills and river dunes with deep white sands of Kershaw soil series	T	None	None		
		Sandhill									
Chamaecyparis thyoides	Atlantic white-cedar	Cypress-Gum Swamp	Yes	Yes	Yes	Wet, sandy terraces along clear streams and in acidic bogs; often with seet pitcherplant	Rare	None	None		
		Bottomland Hardwoods									
		Shrub Wetland									
		Evergreen Forested Wetland									
Cuscuta harperi	Harper Dodder	Quarries, Strip Mines	No	Yes	Yes	Granitic and sandstone (Altamaha Grit) outcrops; common host include rayless goldendrod (*Bigelowia nuttallii* , once know as *Chondrophora virgata*), blazing star (*Litaris microcephala* , and pineweed or orange-grass (*Hypericum gentianoides*).	T	None	Candidate		
		Xeric Hardwood									
		Sandhill									
Cypripedium acaule	Moccasin Flower	Hardwood Forest	Yes	Yes	No	Acid soils of pinelands, upland hardwoods with pine, occasionally on the edges of rhododenron thickets, and in mountain bog	Unusual	None	None		
		Xeric Hardwoods									
		Live Oak									
		Open Loblolly-Shortleaf Pine									
		Loblolly-Shortleaf Pine									
		Loblolly-Slash Pine									
		Mixed Pine-Hardwood									
		Longleaf Pine									
		Bottomland Hardwood									

Species name	Common Name	Gap Habitat	Spring	Summer	Fall	Plant Habitat	Georgia State Listed	South Carolina State Listed	Federally Listed	Quarter Quadrangle	Co. Name
Cypripedium calceolus	Yellow Ladslipper	Hardwood Forest	Yes	Yes	No	Rich, moist, hardwood coves and forests	Unusual	None	None		
		Mixed Pine-Hardwoods									
		Bottomland Hardwood									
Draba aprica	Sun-loving Draba	Xeric Hardwoods	Yes	Yes	No	Shallow soils on granitic outcrops, especially beneath widely scattered, old-growth eastern redcedar (*Juniperus virginiana*).	E	None	None		
Echinacea laevigata	Smooth Coneflower	Utility Swaths	Yes	Yes	No	Found in meadow and open woodlands on basic or near neutral soils; often with redcedar (*Junuipers virginiana*) and rattlesnake materster of button snakeroot (*Eryngium yuccifolium*).	E	E	E		
		Mixed Pine-Hardwood									
		Clearcut-Sparse Vegetation									
		Open Loblolly-Shortleaf Pine									
Elliottia racemosa	Georgia Plum	Xeric Hardwood	No	Yes	Yes	Sand ridges, dry oak ridges, evergreeen hammocks, and sandstone outcrops (Altamaha Grit) in a variety of sandy soil conditions ranging from moist to extremely dry (xeric).	T	None	`None	Alexander, GA_NE	Burke
		Sandhill								Idlewood, GA_NE	Burke
		Evergreen Forested Wetland									
Epidendrum conopseum	Greenfly Orchid	Hardwood Forest	Yes	Yes	Yes	Moist to seasonally dry woods on shaded limbs of hardwoods, especially southern magnolia and live oak, and the walls of deep sandstone crevices kept cool by shade and evaporation of moisture.	Unusual	None	None	Cox, GA_NW	McIntosh
		Xeric Hardwood								Cox, GA_SW	Glynn
		Live Oak								Everett, GA_SW	Glynn
		Mixed Pine-Hardwood								Everett, GA_SE	Wayne
		Bottomland Hardwood								Limerick NW, GA_SW	Liberty
Evolvulus sericeus	Silky Morning		No	Yes	Yes	Sparsely vegetated, partially shaded outcrops of the Altamaha Formation (Altamaha Brit), a coarse, gritty, resilient, sandstone-like hardened clay.	E	None	None		
Forthergillia gardenii	Dwarf Witch-alder	Cypress-Gum Swamp	Yes	Yes	Yes	Low, flat, swampy areas, especially the shrub-dominated Margins of upland swamps, Carolina bas, pticherplant bogs, wet savannas, and Atlantic white-cedar	T	None	None		
		Bottomland Hardwood									
		Shrub Wetland									
		Evergreeen Forested Wetland									
Hartwrightia floridana	Harwrightia	Longleaf Pine	No	No	Yes	Peaty muck of pine flatwoods, sedge meadows, and wettest parts of poorly drained ditches and sloughs; often with water-spider orchid (*Habenaria repens*).	T	None	Candidate		
		Cypress-Gum Swamp									
		Shrub Wetland									
		Evergreen Forested Wetland									
Hexastylis shuttleworthii var. harperi	Harper Wild Ginger	Cypress-Gum Swamp	Yes	Yes	Yes	Peaty soils at edges of forested bogs on the Piedmont, and on moist hammocks and bases of bluff forest slopes along and within floodplain forest of the Coastal Plain	Unusual	None	None		
		Bottomland Hardwood									
		Evergreen Forested Wetland									
Hymenocallis coronaria	Shoals Spiderlily	Open Water	Yes	Yes	No	Major streams and rivers in rocky shoals and in cracks of exposed bedrock. Plants can be completely submerged during flooding, the bulbs anchored among the rocks.	E	None	Candidate		
Isoetes melanospora	Black-spored Quillwort	Quarries, Strip Mines	Yes	Yes	No	Restricted to shallow, flat-bottomed depressions on granitic outcrops, where water collects after a rain.	E	None	E		
Isoetes tegetiformanus	Mat-forming Quillwort	Quarries, Strip Mines	Yes	Yes	Yes	Restricted to shallow, flat-bottomed depressions on grantic outcrops, where water collects after a rain.	E	None	E	Rockville, GA_NE	Putman
										Warthen, NW, NW_NW	Hancock
Lindera melissifolia	Pondberry	Sandhill	Yes	Yes	Yes	Shallow depression ponds of sandhills, along margins of cypress ponds, and in seasonally wet, low areas among bottomland hardwoods	E	None	E	Brington, SC-GA_SW	Effingham
		Cypress_Gum Hardwood								Brington, SC-GA_SW	Screven
		Bottomland Hardwood								Hardeeville NW, SC-GA_SW	Effingham
		Shrub Wetland								Kildare, GA-SC_NE	Effingham
		Evergreen Forest Wetland								Kildare, GA-SC_NE	Screven
										Kildare, GA-SC_ SE	Effingham
										Kildare, GA-SC_SE	Screven
										Meldrim SE, GA_SE	Chatham
										Richmond Hill, GA_NE	Chatham

Species name	Common Name	Gap Habitat	Spring	Summer	Fall	Plant Habitat	Georgia State Listed	South Carolina State Listed	Federally Listed	Quarter Quadrangle	Co. Name
Litsea aestivalis	Pond Spice	Bottomland Hardwood	Yes	Yes	Yes	Margins of swamps, cypress ponds, sandhill depression ponds, and in hardwood swamps	T	None	Candidate	Brington, SC-GA_SW	Effingham
		Sandhill								Brington, SC-GA_SW	Screven
		Cypress-Gum Swamp								Cox, GA_NW	McIntosh
		Shrub Wetland								Hardeeville NW, SC-GA_NW	Effingham
		Evergreen Forested Wetland								Kildare, GA-SC_NE	Effingham
										Kildare, GA-SC_NE	Screven
										Kildare, GA-SC_SE	Effingham
										Kildare, GA-SC_SE	Screven
										Richmond Hill, GA_NW	Byran
Marshallia ramosa	Pineland Barbara Buttons	Hardwood Fores	Yes	Yes	Yes	Open mixed oak-longleaf pine forests in thin soils on and near rock outcrops, particularly on the Altamaha Formation found on the Inner Coastal Plain..on serpentine-line rock outcrops, which are rich in magnesium	R	None	Candidate		
		Open Loblolly-Shortleaf Pine									
		Mixed Pine-Hardwood									
		Longleaf Pine									
Matelea alabamensis	Alabama Spiny-pod	Hardwood Forest	Yes	Yes	No	Upper area os slopes and bluffs and in open or dense oak-hickory-mixed hardwood forests in sandy, acidic to near neutral soils	T	None	Candidate		
		Xeroc Hardwood									
		Mixed Pine-Hardwood									
Matelea pubiflora	Trailing Milkvine	Xeric Hardwood	Yes	Yes	Yes	Open deep whie sands of sand ridges in association with turkey oak and longleaf pine	R	None	None	Cox, GA_NW	McIntosh
		Mixed Pine-Hardwood								Townsend, GA_SW	McIntosh
		Sandhill									
		Longleaf Pine									
Nestronia umbellula	Indian Olive	Xeric Hardwood	Yes	Yes	Yes	Dry, open, upland forest of mixed hardwood and pine	T	None	None	Alexander, GA_NE	Burke
		Mixed Pine-Hardwood									
Oxypolis canbyi	Canby Dropwort	Cypress-Gum Swamp	No	Yes	Yes	Peaty muck of shallow cypress ponds, wet pine savannas, and adjacent sloughs and drainage ditches	E	None	E		
		Bottonland Hardwood									
		Shrub Wetland									
		Evergreen Forested Wetland									
Penstemon dissectus	Cutleaf Beardtongue	Xeric Hardwood	Yes	Yes	No	Dry, open, mixed oak-longleaf pine forests or on thin soils near rock outcrops of the Altamaha Formation	Rare	None	None	Louisville South, GA_SW	Jefferson
		Open Loblolly-Shortleaf Pine									
Physostegia leptophylla	Narrowleaf Obedient	Cypress-Gum Swamp	Yes	Yes	No	Wet muck or peat in shallow water of river swamp openings, and in the margins of both freshwater and brackish (tidal) marshes	T	None	None	Richmond Hill, GA_NE	Bryan
		Bottomland Hardwood									
		Fresh Water Marsh									
Ptilimnium nodosum	Harperella	Longleaf Pine	Yes	Yes	No	Coastal Plain in wet savannas and on peaty fringes of pineland pools and cypress ponds; also on the Piedmont Plateau in seeps on a granitic outcrop	E	E	E		
		Cypress-Gum Swamp									
Quercus oglethorpensis	Oglethorpe Oak	Cypress-Gum Swamp	No	Yes	Yes	Mostly in poorly drained, heavy clay soils of seasonal wet Piedmont seepage swamps often with cherrybark oak (*Quercus pagoda*)...sometimes found in surrounding uplands and on stream terraces, especially with chalk maple (*Acer leucoderme*).	T	None	None		
		Shrub Wetland									
		Evergreen Forested Wetland									
Rhus michauxii	Dwarf Sumac	Xeric Hardwood	No	Yes	Yes	Piedmont Plateau in rocky open woods, especially in soils high in magnesium...perhaps also on sandhills of the Inner Coastal Plain	E	None	E		
		Open Loblolly Shortleaf Pine									
		Sandhill									
Sageretia minutiflora	Climbing Buckthorn	Cypress-Gum Swamp	Yes	Yes	Yes	On calcareous rocky bluffs, forested shell middens on barrier island, and evergreen hammocks along banks of streams and coastal marshes	T	None	None		
		Fresh Water Marsh									
		Evergreem Forested Wetland									

Species name	Common Name	Gap Habitat	Spring	Summer	Fall	Plant Habitat	Georgia State Listed	South Carolina State Listed	Federally Listed	Quarter Quadrangle	Co. Name
Sarracenia flava	Fly-catchers	Open Loblolly-Shortleaf Pine	Yes	Yes	No	Acidic soils of seepy meadows, bogs, wet savannas, and pine flatwoods; sometimes along sloughs and ditches	Unusual	None	None	Hardeeville NW, SC-GA_NW	Effingham
		Loblolly-Shortleaf Pine								Springfield North, GA_NE	Effingham
		Longleaf Pine									
		Cypress-Gum Swamp									
		Shrub Wetland									
		Bottomland Hardwood									
		Evergreen Forested Wetland									
Sarracenia minor	Hooded Pitcherplant	Open Loblolly-Shortleaf Pine	Yes	Yes	No	Acidic soils of open bogs, wet savannas, pond margins, low areas in pine flatwoods, sphagnum seeps of red maple-backgum swamps, and along sloughs and ditches	Unusual	None	None	Bellevue, GA_NW	Burke
		Loblolly-Shortleaf Pine								Cox, GA_NW	McIntosh
		Longleaf Pine								Cox, GA_SW	McIntosh
		Cypress-Gum Swamp								Everett, GA_SE	Wayne
		Shrub Wetland								Meldrim SE, GA_SE	Chatham
		Bottomland Hardwood								Richmond Hill, GA_NE	Chatham
		Evergreen Forested Wetland								Waynesboro, GA_SE	Burke
										Waynesboro, GA_SW	Burke
Sarracenia psittacina	Parrot Pitcherplant	Open Loblolly-Shortleaf Pine	Yes	Yes	No	Acidic soils of open bogs, wet savannas, and low areas in pine flatwoods	T	None	None		
		Loblolly-Shortleaf Pine									
		Longleaf Pine									
		Cypress-Gum Swamp									
		Shrub Wetland									
		Bottomland Hardwood									
		Evergreen Forested Wetland									
Sarracenia purpurea	Purple Pitcherplant	Open Loblolly-Shortleaf Pine	Yes	Yes	No	Coastal Plain in seepy meadows and bogs dominated by pea moss with other pictcherplants *S. minor* and *S. flava*	E	None	None		
		Loblolly-Shortleaf Pine									
		Longleaf Pine									
		Cypress-Gum Swamp									
		Shrub Wetland									
		Bottomland Hardwood									
		Evergreen Forested Wetland									
Sarracenia rubra	Sweet Pitcherplant	Open Loblolly-Shortleaf Pine	Yes	Yes	No	Acidic soils of open bogs, sandhill seeps, Atlantic white-cedar swamps, wet savannas, low areas in pine flatwoods, and along sloughs and diches	E	None	None	Girard, GA-SC_NE	Burke
		Loblolly-Shortleaf Pine									
		Longleaf Pine									
		Cypress-Gum Swamp									
		Shrub Wetland									
		Bottomland Hardwood									
		Evergreen Forested Wetland									
Sarracenia oreophila	Green Pitcherplant	Open Loblolly-Shortleaf Pine	Yes	Yes	Yes	Seepy meadows, poorly drained oak-pine flatwoods, red maple-blackgum swamps, or along sandy banks of streams flushed periodically by floodwaters	E	None	E		
		Loblolly-Shortleaf Pine									
		Longleaf Pine									
		Cypress-Gum Swamp									
		Shrub Wetland									
		Bottomland Hardwood									
		Evergreen Forested Wetland									
Schisandra glabra	Bay Star-vine	Bottomland Hardwoods	Yes	Yes	No	Twining over understory trees and shrubs in rich, forested bottomlands and adjacent lower slopes. Sometimes older vines occur on truck of overstory trees, or sprawl along ground forming patches rooted in the litter	T	None	N		
Schwalbea americana	Chaffseed	Longleaf Pine	Yes	No	No	Coastal Plain in fire-maintained wet savannas with grass pinks , colic root, and invading gallberry and huckleberry	E	None	E		
		Bottomland Hardwoods									

Species name	Common Name	Gap Habitat	Spring	Summer	Fall	Plant Habitat	Georgia State Listed	South Carolina State Listed	Federally Listed	Quarter Quadrangle	Co. Name
Scutellaria ocmulgee	Ocmulgee Skullcap	Hardwood Forest	No	Yes	Yes	Forested trerraces, hardwood slopes, and riverbanks	T	None	Candidate	Girard, GA-SC_NW	Burke
		Mixed Pine-Hardwood									
		Bottomland Hardwood									
Sedum pusillum	Puck's Orpine	Quarries, Strip Mines	Yes	Yes	No	Growing on granitic outcrops among mosses in partial shade, usually in leaf litter and mats of mosses, under old, gnarled eastern redcedar trees	T	None	None		
Silene polypetala	Fringed Campion	Hardwood Forest	Yes	No	No	Mature hardwood or hardwood-pine forests on river bluffs, small stream terraces, moist slopes and well-shaped ridge crests	E	None	E		
		Mixed Pine-Hardwood									
		Bottomland Hardwood									
Stewartia malacodendron	Silky Camelia	Hardwood Forest	Yes	Yes	No	In understory of rich, wooded bluffs and ravine slopes, also in the open edges of transiton zones (ecotones between sandhills and creek swamps	Rare	None	None	Bellevue,GA_NW	Burke
		Mixed Pine-Hardwood								Hardeeville NW, SC-GA_NW	Effingham
		Bottomland Hardwood								Hardeeville NW, SC-GA_SW	Effingham
										Jacksonboro Bridge, GA_NE	Screven
										Jacksonboro Bridge, GA_NW	Screven
										Kildare, GA-SC_NE	Screven
										Rincon, GA-SC_NW	Effingham
Stylisma pickeringii	Pickering Morning-glory	Sandhill	Yes	Yes	No	Coarse, white sands on snadhills near the Fall line, and on a few ancient dunes along the Flint and Ohoopee Rivers. These are scrub habitats with scant litter accumulation, sparse ground cover, and little canopy cover, the latter consisting of mostly of scattered scrubby oaks and pines	T	None	Candidate		
Tillandsia recurvata	Ball-moss	Forested Urban-Decidous	Yes	Yes	Yes	On branches of live oak in Georgia, especially near the coast, either in urban or more natural settings such as evergreen hammocks and swamp forests.	T	None	None		
		Forested Urban-Evergreen									
		Forested Urban-Mixed									
		Live Oak									
		Cypress-Gum Swamp									
		Evergreen Forested Wetland									
Trillium reliquum	Relict Trilliium	Hardwood Forest	Yes	Yes	No	Hardwood forest. In the Coastal Plain, these often with boulders or ledges with soft limestone; in Piedmont, in deep loamy soils, either in rich ravines or adjacent alluvial terraces with numberous other spring-flowering herbs	E	E	E	Macon NW, GA_NW	Jones
		Mixed Pine-Hardwood									
		Bottomland Hardwood									

APPENDIX B – PROJECT FIELD REFERENCE GUIDE

APPENDIX C – HABITAT AND WETLAND TYPES FOR EACH TRANSMISSION CORRIDOR

VOGTLE-SCHERER TRANSMISSION CORRIDOR

SEGMENT	MILES	HABITAT	SUB-HABITAT	WETLAND TYPE
Segment 1	9.6	Loblolly Shortleaf Pine	Hardwood Forest	R2UBH; PFO1A
Segment 2	1.2	Loblolly Shortleaf Pine	Bottomland Hardwood	PFO1A
Segment 3	1.9	Loblolly Shortleaf Pine	Bottomland Hardwood	PEM1Ch; PFO1A
Segment 4	1.1	Loblolly Shortleaf Pine	Pasture Hay	
Segment 5	0.7	Loblolly Shortleaf Pine	Pasture Hay	
Segment 6	0.3	Mixed Pine Hardwood	Loblolly Shortleaf Pine	
Segment 7	1.1	Loblolly Shortleaf Pine	Bottomland Hardwood	PFO1A; PFO1Ad
Segment 8	0.6	Loblolly Shortleaf Pine	Hardwood Forest	
Segment 9	0.7	Loblolly Shortleaf Pine	Hardwood Forest	
Segment 10	0.9	Hardwood Forest	Loblolly Shortleaf Pine	
Segment 11	2.3	Loblolly Shortleaf Pine	Hardwood Forest	
Segment 12	0.6	Clearcut Sparse Vegetation	Loblolly Shortleaf Pine	PUBHh
Segment 13	0.3	Loblolly Shortleaf Pine	Row Crop	U
Segment 14	1.4	Row Crop	Cypress Gum Swamp	PFO4A; PFO1F; PFO1A
Segment 15	3.1	Loblolly Shortleaf Pine	Hardwood Forest	PFO1A; PUBHh
Segment 16	0.3	Loblolly Shortleaf Pine	Bottomland Hardwood	PFO1A
Segment 17	0.6	Mixed Pine Hardwood	Cypress Gum Swamp	PUBHx; PEM1C; PSS4A; PFO1C; U
Segment 18	0.3	Loblolly Shortleaf Pine	Row Crop	
Segment 19	0.2	Loblolly Shortleaf Pine	Row Crop	
Segment 20	2.8	Pasture Hay	Loblolly Shortleaf Pine	PFO1A; PUBHx; PFO1C; PEM1A
Segment 21	0.1	Hardwood Forest	Cypress Gum Swamp	PFO1A
Segment 22	0.1	Loblolly Shortleaf Pine	Evergreen Forested Wetland	
Segment 23	0.1	Freshwater Marsh	Clearcut Sparse Vegetation	PEM1F
Segment 24	0.5	Bottomland Hardwood	Hardwood Forest	PFO1A; PFO1Ch
Segment 25	0.3	Bottomland Hardwood	Cypress Gum Swamp	PFO1A
Segment 26	0.3	Loblolly Shortleaf Pine	Bottomland Hardwood	PFO1Ad
Segment 27	0.2	Bottomland Hardwood	Cypress Gum Swamp	PFO1A
Segment 28	0.5	Bottomland Hardwood	Cypress Gum Swamp	PFO1C; PFO1A
Segment 29	0.2	Loblolly Shortleaf Pine	Cypress Gum Swamp	PFO1Ad; PEM1F; PFO1C
Segment 30	0.3	Freshwater Marsh	Cypress Gum Swamp	PFO1/4A; PSS1C; PEM1/FO1Fb
Segment 31	0.1	Hardwood Forest	Bottomland Hardwood	PFO1/4A

(CONTINUED) – VOGTLE-SCHERER TRANSMISSION CORRIDOR

SEGMENT	MILES	HABITAT	SUB-HABITAT	WETLAND TYPE*
Segment 32	0.5	Loblolly Shortleaf Pine	Cypress Gum Swamp	PFO1/4A; PFO1A; PFO4A; PEM1A; PEM1Ah; PUBHh
Segment 33	0.6	Row Crop	Bottomland Hardwood	U
Segment 34	1.1	Loblolly Shortleaf Pine	Freshwater Marsh	PFO1A; PFO1A; PFO1C; PEM1C;
Segment 35	0.8	Row Crop	Hardwood Forest	PFO1A
Segment 36	0.1	Hardwood Forest	Bottomland Hardwood	PFO1B
Segment 37	0.5	Bottomland Hardwood	Pasture Hay	PFO1B; PFO1C

VOGTLE-GOSHEN TRANSMISSION CORRIDOR

SEGMENT	MILES	HABITAT	SUB-HABITAT	WETLAND TYPE
Segment 1	0.3	Loblolly Shortleaf Pine	Hardwood Forest	
Segment 2	1.2	Loblolly Shortleaf Pine	Bottomland Hardwood	PEM1A; PFO1A; PEM1B; PFO1B; R2UBH
Segment 3	0.5	Hardwood Forest	Bottomland Hardwood	PEM1B
Segment 4	1.7	Clearcut Sparse Vegetation	Row Crop	PFO1A; PFO1B
Segment 5	1.0	Sandhill	Open Water	PFO1B; PFO1C

VOGTLE-THALMANN TRANSMISSION CORRIDOR

SEGMENT	MILES	HABITAT	SUB-HABITAT	WETLAND TYPE
Segment 1	0.6	Row Crop	Mixed Pine Hardwood	PFO1Ch; PUBHh; PSS1Ah
Segment 2	1.5	Pasture Hay	Row Crop	PFO1B; PSS3B
Segment 3	0.3	Loblolly Shortleaf Pine	Hardwood Forest	PSS1/3B; PFO1C
Segment 4	0.4	Freshwater Marsh	Loblolly Shortleaf Pine	PEM1Ad
Segment 5	1.5	Loblolly Shortleaf Pine	Clearcut Sparse Vegetation	PFO1A; PFO6F; PEM1F; U
Segment 6	0.1	Loblolly Slash Pine	Bottomland Hardwood	PFO1C
Segment 7	0.3	Loblolly Slash Pine	Bottomland Hardwood	PFO1/4A; PFO1C; PFO1A
Segment 8	0.6	Bottomland Hardwood	Cypress Gum Swamp	PFO1C; PFO1/4A; PFO6F; PFO1A
Segment 9	1.9	Loblolly Slash Pine	Cypress Gum Swamp	PFO1C; PFO1A; U
Segment 10	0.8	Loblolly Slash Pine	Cypress Gum Swamp	PFO1/2C; PFO1/4A
Segment 11	2.1	Bottomland Hardwood	Hardwood Forest	PFO1/3B; PFO6F; PFO1/4B; PFO1B; U
Segment 12	1.2	Loblolly Slash Pine	Bottomland Hardwood	PFO1B; PFO6F; PFO1/4B; U
Segment 13	1.5	Bottomland Hardwood	Evergreen Forested Wetland	PFO1C; PFO1A; PFO6F; U
Segment 14	1.4	Clearcut Sparse Vegetation	Loblolly Slash Pine	
Segment 15	0.2	Pasture Hay	Hardwood Forest	
Segment 16	1.0	Loblolly Slash Pine	Cypress Gum Swamp	PFO1/4A
Segment 17	1.7	Loblolly Slash Pine	Bottomland Hardwood	PFO1/3B; PFO1C; PFO6C; PSS3B; PFO1/4B; PFO4/1A; PFO7B; PEM1A
Segment 18	1.5	Bottomland Hardwood	Loblolly Slash Pine	PSS3B; PFO1C; PFO7B; PFO1/3B; PFO6F; U
Segment 19	0.2	Loblolly Slash Pine	Clearcut Sparse Vegetation	PFO4B; PSS1C
Segment 20	0.1	Clearcut Sparse Vegetation	Loblolly Slash Pine	PFO1/2C
Segment 21	2.0	Clearcut Sparse Vegetation	Cypress Gum Swamp	PFO1C; PFO1B; PFO6F; U
Segment 22	0.6	Cypress Gum Swamp	Long Leaf Pine	PFO4/2C

(CONTINUED) – VOGTLE-THALMANN TRANSMISSION CORRIDOR

SEGMENT	MILES	HABITAT	SUB-HABITAT	WETLAND TYPE
Segment 23	0.2	Loblolly Slash Pine	Evergreen Forested Wetland	PFO3Bd; PFO1Cd; PFO7B
Segment 24	1.2	Loblolly Slash Pine	Live Oak	PFO4B; PFO1C; PFO4B
Segment 25	0.6	Cypress Gum Swamp	Evergreen Forested Wetland	PFO1/4Bd; PFO1Cd; U
Segment 26	1.5	Loblolly Slash Pine	Cypress Gum Swamp	PFO1CD; PFO1C; PEM1A; U
Segment 27	1.6	Cypress Gum Swamp	Loblolly Slash Pine	PFO1C; PFO1A; U
Segment 28	2.5	Loblolly Slash Pine	Cypress Gum Swamp	PFO1A; PFO1C; PFO1/4C; PFO1/4A; U
Segment 29	0.7	Cypress Gum Swamp	Loblolly Slash Pine	PFO6F; PFO1C; PUBHX; U
Segment 30	1.6	Cypress Gum Swamp	Cypress Gum Swamp	R1UBV; PFO6T
Segment 31	0.2	Cypress Gum Swamp	Cypress Gum Swamp	PFO1F
Segment 32	0.2	Cypress Gum Swamp	Clearcut Sparse Vegetation	U
Segment 33	0.7	Cypress Gum Swamp	Evergreen Forested Wetland	PFO6F; PFO1/4A; PFO1C; PFo1/4C; PFO4A
Segment 34	0.4	Cypress Gum Swamp	Cypress Gum Swamp	PFO1A; PFO1C; PFO6F;
Segment 35	0.2	Cypress Gum Swamp	Clearcut Sparse Vegetation	PFO6F
Segment 36	0.7	Cypress Gum Swamp	Cypress Gum Swamp	PFO1A; PFO1Cd; U
Segment 37	0.3	Cypress Gum Swamp	Clearcut Sparse Vegetation	PFO6C; PFO6F; U
Segment 38	0.7	Loblolly Slash Pine	Cypress Gum Swamp	PFO6F; PFO1C; U
Segment 39	0.8	Loblolly Slash Pine	Cypress Gum Swamp	PFO1C; PFO6F; U
Segment 40	3.5	Loblolly Slash Pine	Cypress Gum Swamp	PFO6F; PSS1Ad; PFO1Ad; PFO6Fd; U
Segment 41	1.9	Sandhill	Clearcut Sparse Vegetation	PFO1C; PFO6F; PFO4/1A; PFO1/3C; PFO7B; U

APPENDIX D – OCCURRENCE DATA SHEETS

SPECIES OCCURRENCE DATA SHEET

Segment ID	Vogtle Plant	Occurrence ID: 2		USGS quad:	Girard NW
Examiner(s):	J. Varner - Ed Heuttoi? - W. Meade			Date:	4-12-05
Site coordinates:	Lat: 33.15361			Long:	-81.75991
GPS used?	Y ✓ / N	Accuracy ± feet: 22 feet	Photo ID's: OC-2 BayStar-Vnie	Tower Number	none
Location/directions	On bluff (steep wooded slope) above floodplain of Savannah River approximately ½ NE of Mallard Pond				

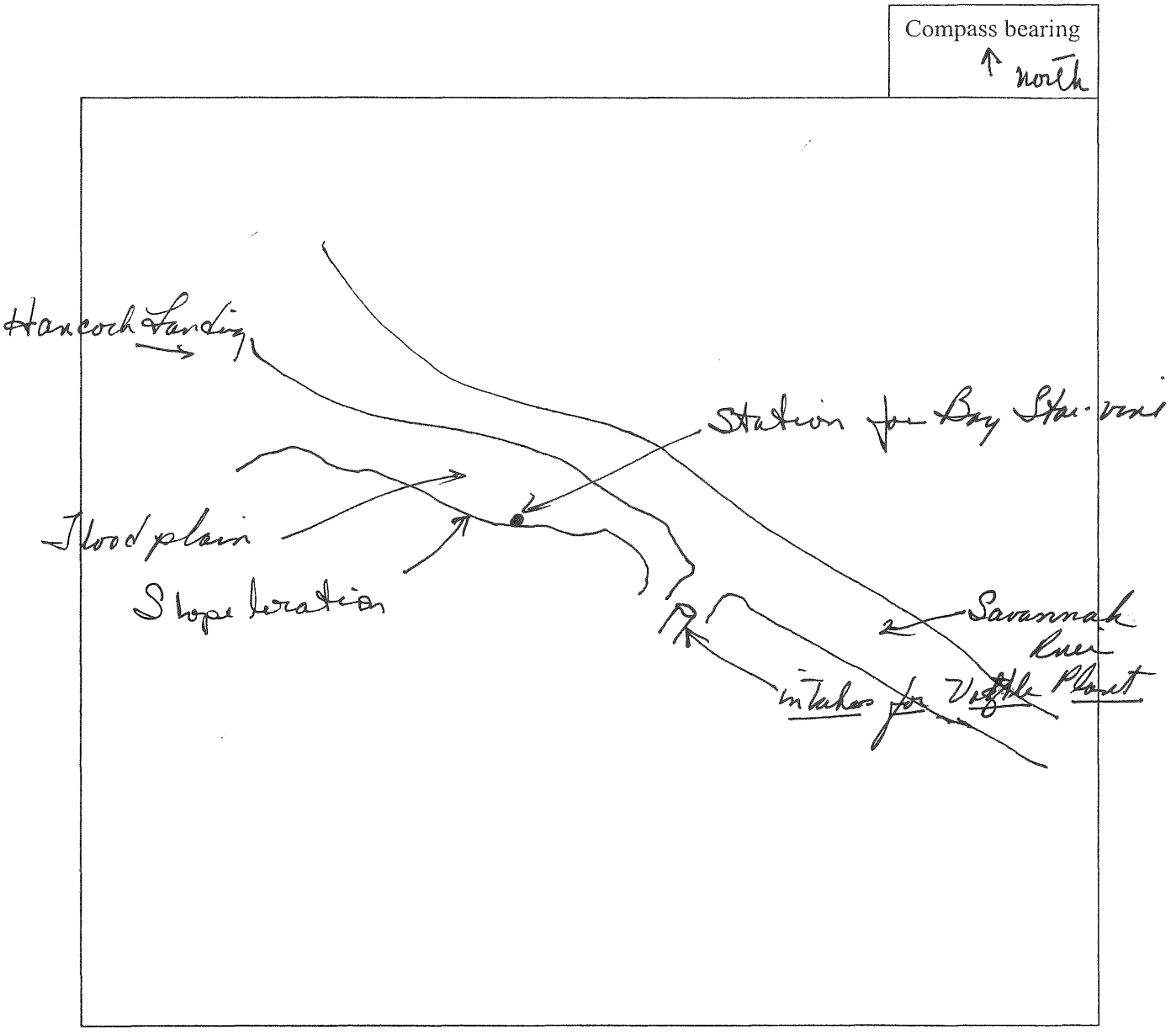
Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Schisandra glabra	Bay Star-vine	+	50-60	B	A	¼ acre

Notes
Evidence of reproduction? no
Stages of development? leaves only with vines
Potential risk to community (envasives)? none
Describe habitat in detail

Wooded steep slope above Savannah River on small narrow bench of slope. Canopy completely closed. Plants were climbing on low trees. Slope was North East facing

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	Vogtle Plant		Occurrence ID: 3		USGS quad:	Shell Bluff Landing	
Examiner(s):	Ed Hastings				Date:	4-12-05	
Site coordinates:	Lat: 33.03305				Long:	-81.73182	
GPS used?	Y ✓	N	Accuracy ± feet 20 ft	Photo ID's	Tower Number	none	
Location/directions	Between mile 149-150 on Savannah River						

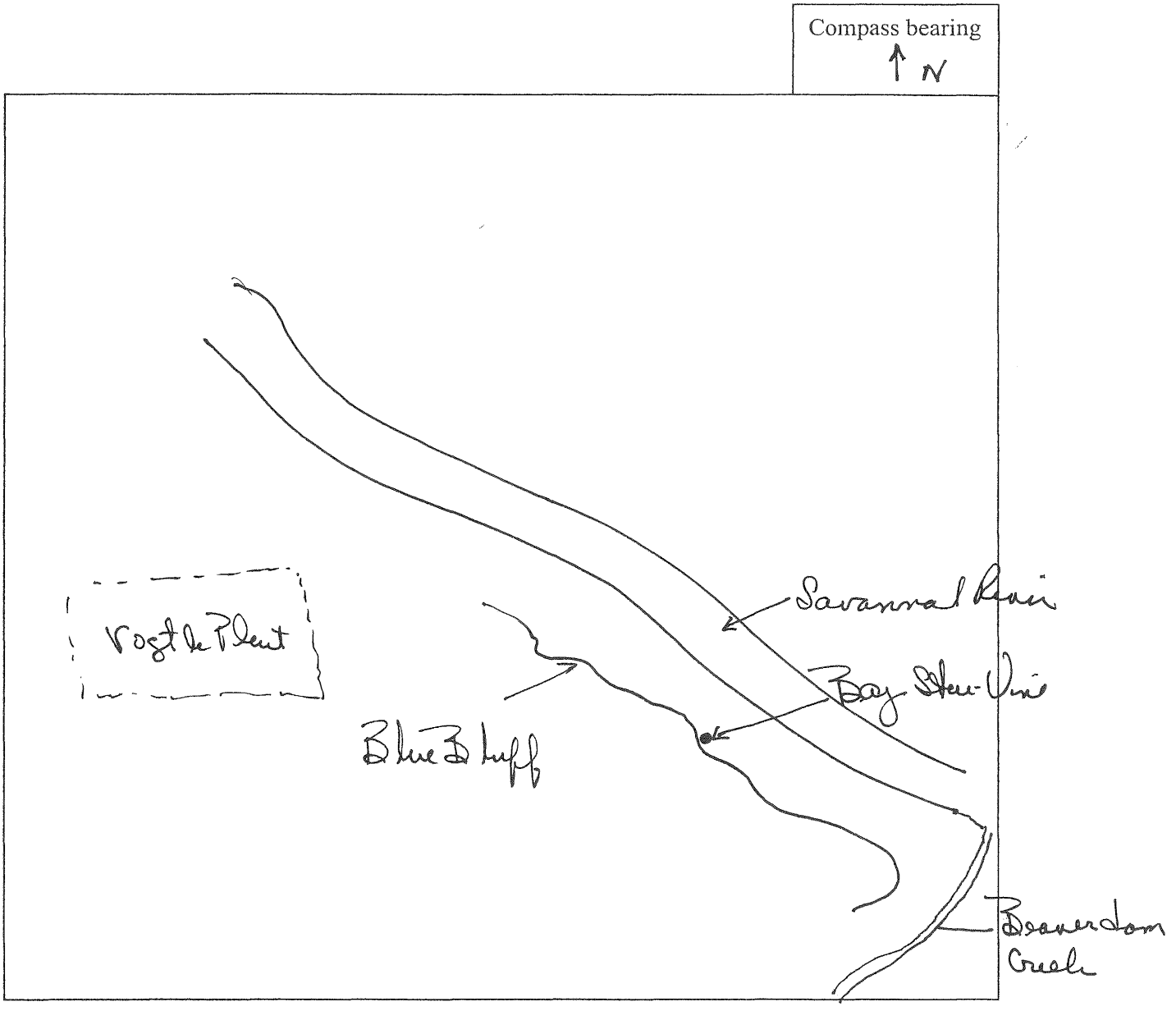
Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Schisandra glabra	Bay Star-vine					

Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

On steep slope (Blue Bluff) above Savannah River
Slope is wooded with completely closed canopy.

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	VS-28		Occurrence ID: 4		USGS quad:	Bellamy	
Examiner(s):	J. Varner - L. Meade				Date:	4-14-05	
Site coordinates:	Lat: 32.99641				Long:	-82.08076	
GPS used?	Y ✓	N	Accuracy ± feet 12 ft	Photo ID's ~~04 wood stork habitat~~	Tower Number		
Location/directions	Service road along side of transmission corridor from the end of Rich Delaigle Road						

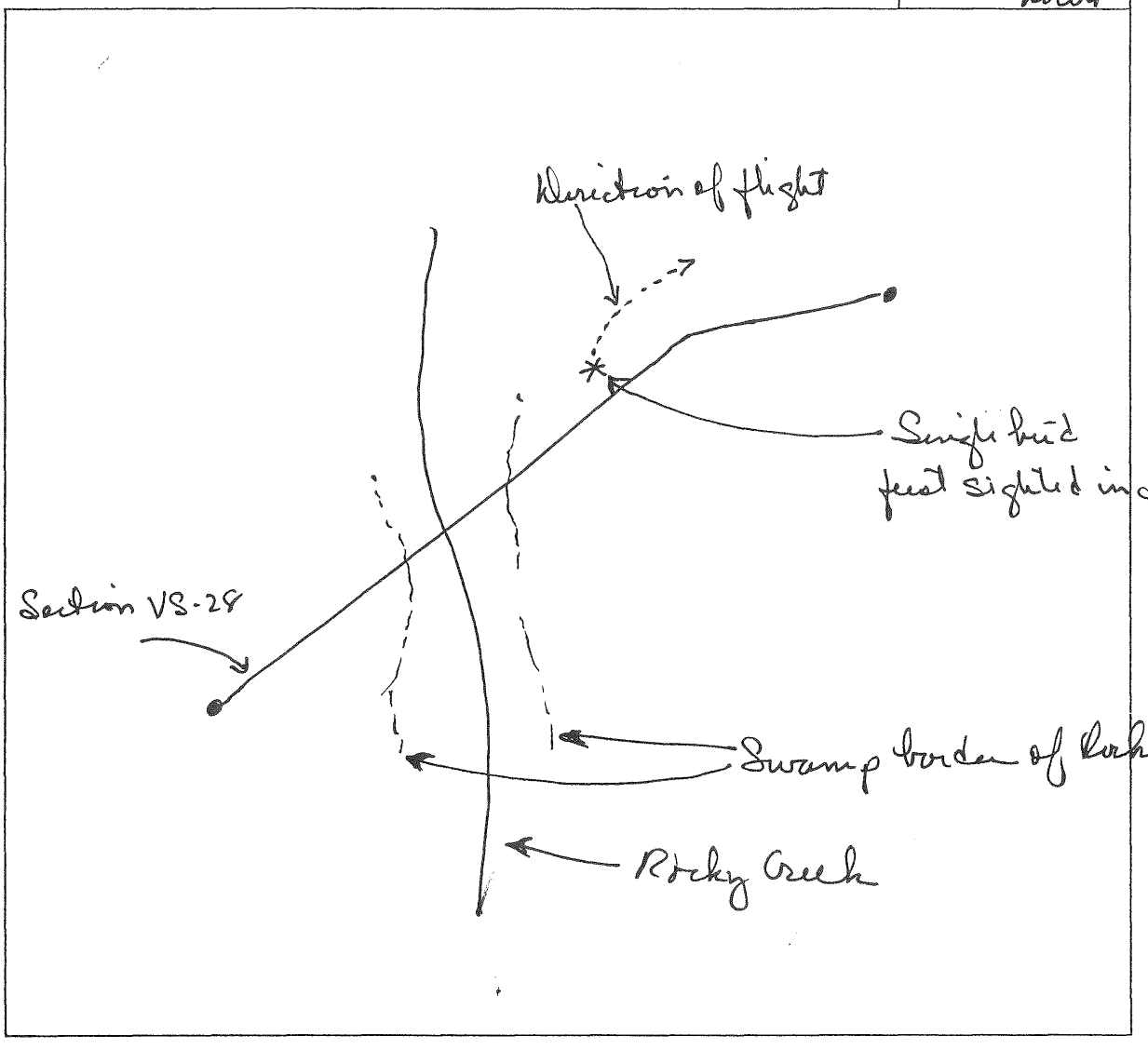
Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Mycteria americana	Wood Stork #3					

Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch

Compass bearing
↑ north



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

Field Note: Single bird flying North east near edge of transmission corridor. Observation time about 7 minutes

SPECIES OCCURRENCE DATA SHEET

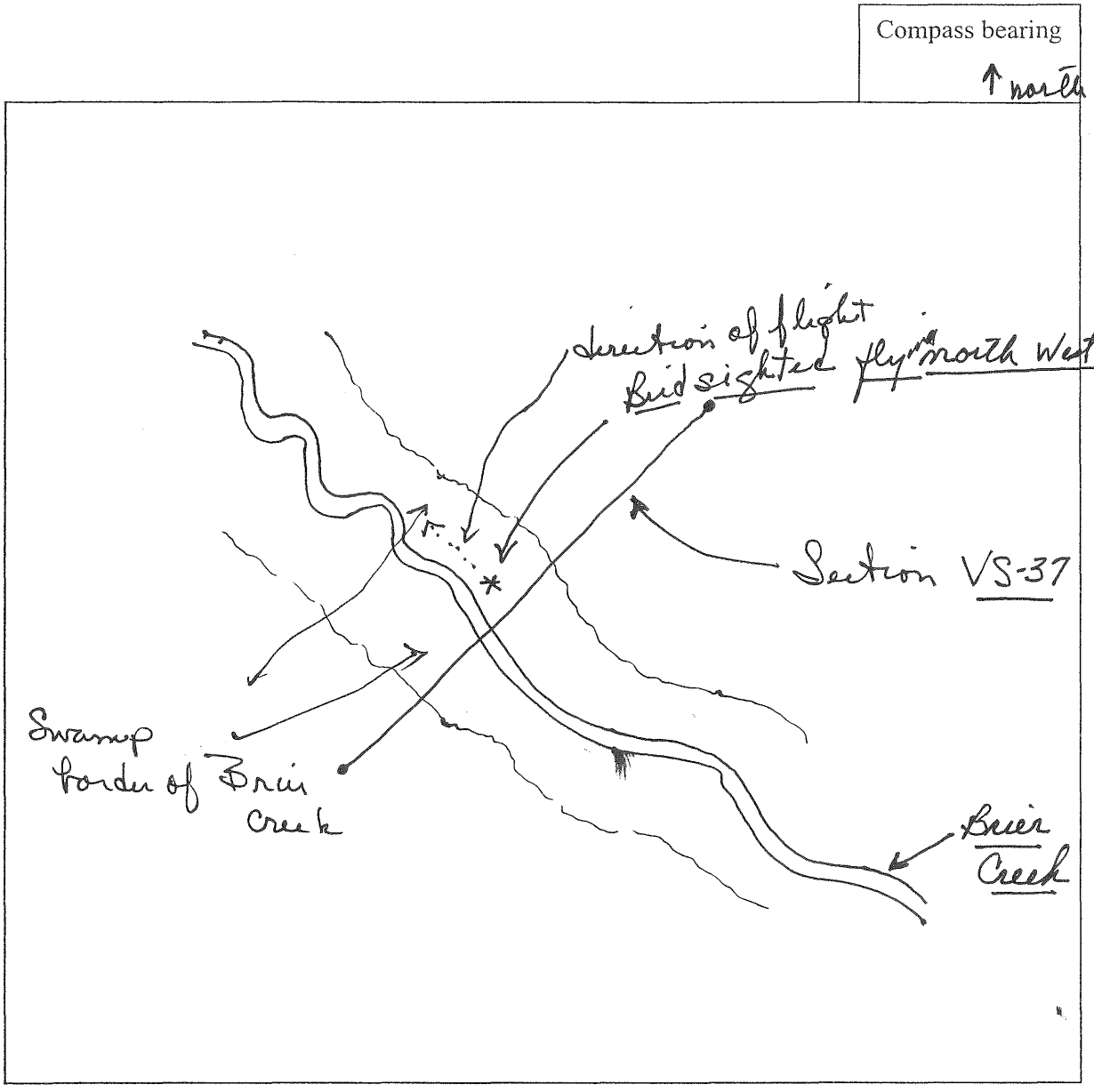
Segment ID	VS-37		Occurrence ID: 5		USGS quad:	Aldenwood	
Examiner(s):	J. Varner - L. Meade				Date:	4-14-05	
Site coordinates:	Lat: 33.09271				Long:	-81.91457	
GPS used?	Y ✓	N	Accuracy ± feet 20	Photo ID's	Tower Number	43	
Location/directions	Servis road along transmission corridor from the end of Griffin Rd.						

Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Mycteria Americana	Wood Stork #2					

Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

Field note: Single bird flying Northwest over Swamp border of Brier Creek. Observation time about 12 minutes.

SPECIES OCCURRENCE DATA SHEET

Segment ID	VT-9		Occurrence ID: 6		USGS quad:	Brair Creek Landing	
Examiner(s):	J Varner				Date:	April 14, 205	
Site coordinates:	Lat: 32.805963				Long:	-84.477176	
GPS used?	Y	N	Accuracy ± feet	Photo ID's	Tower Number	132	
Location/directions	Access road into Wildlife Area SE of Brannens Bridge Road						

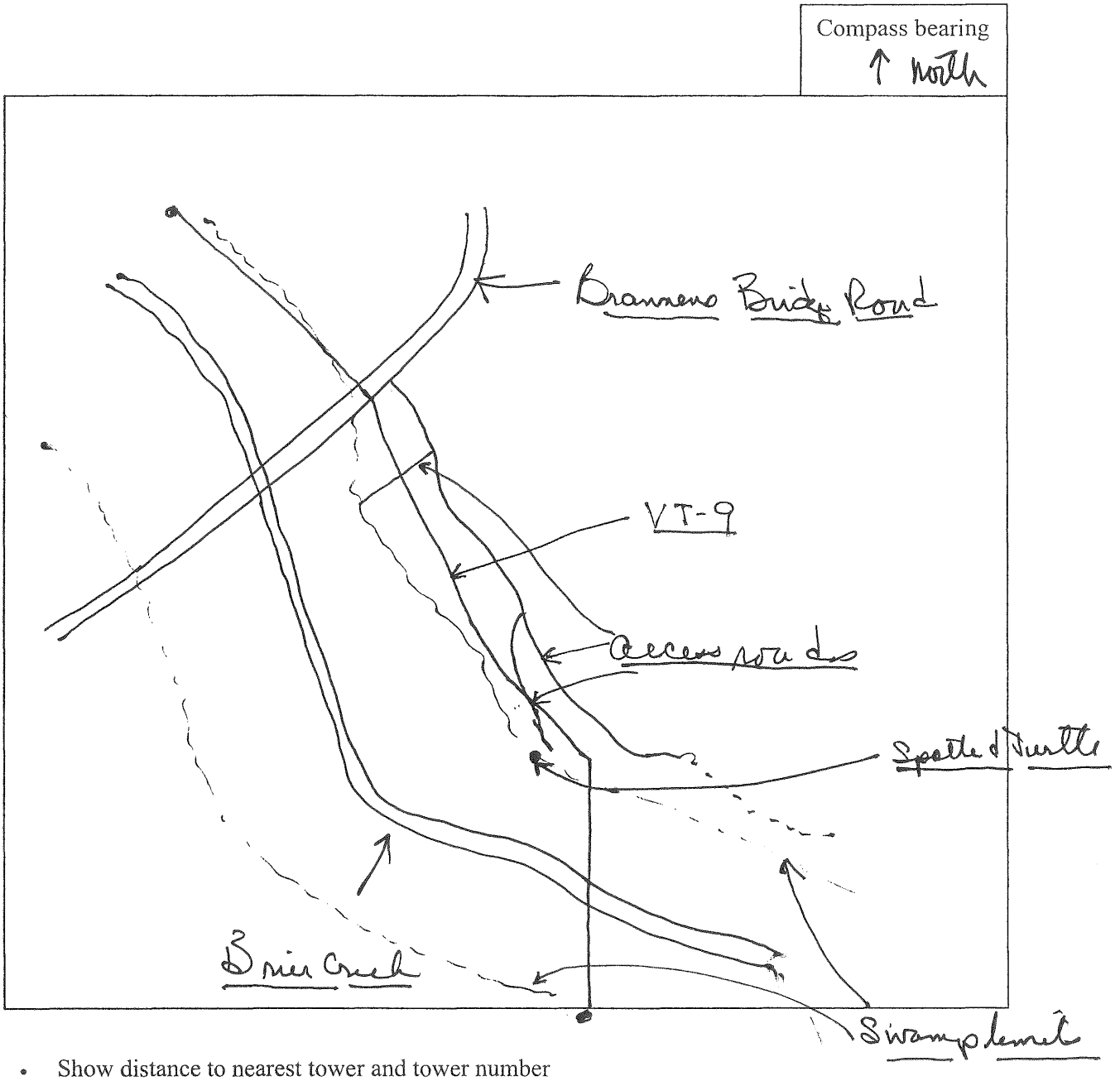
Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Clemmys guttata	Spotted turtle					

Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

On log at edge of swamp surrounding Brair Creek -

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	VT-17		Occurrence ID: 7		USGS quad:	Qge Brighton	
Examiner(s):	Ed Hewtonig - J. Varner				Date:	April 16, 2008	
Site coordinates:	Lat: 32.551613				Long:	-81.386645	
GPS used?	Y ✓	N	Accuracy ± feet 15 ft.	Photo ID's Habitat 00-4	Tower Number		
Location/directions	Swampy area of side branch of Rocs Branch NW of Corneth Church Road & approximately .3 mile SW of junction with Clyo Kildare Road						

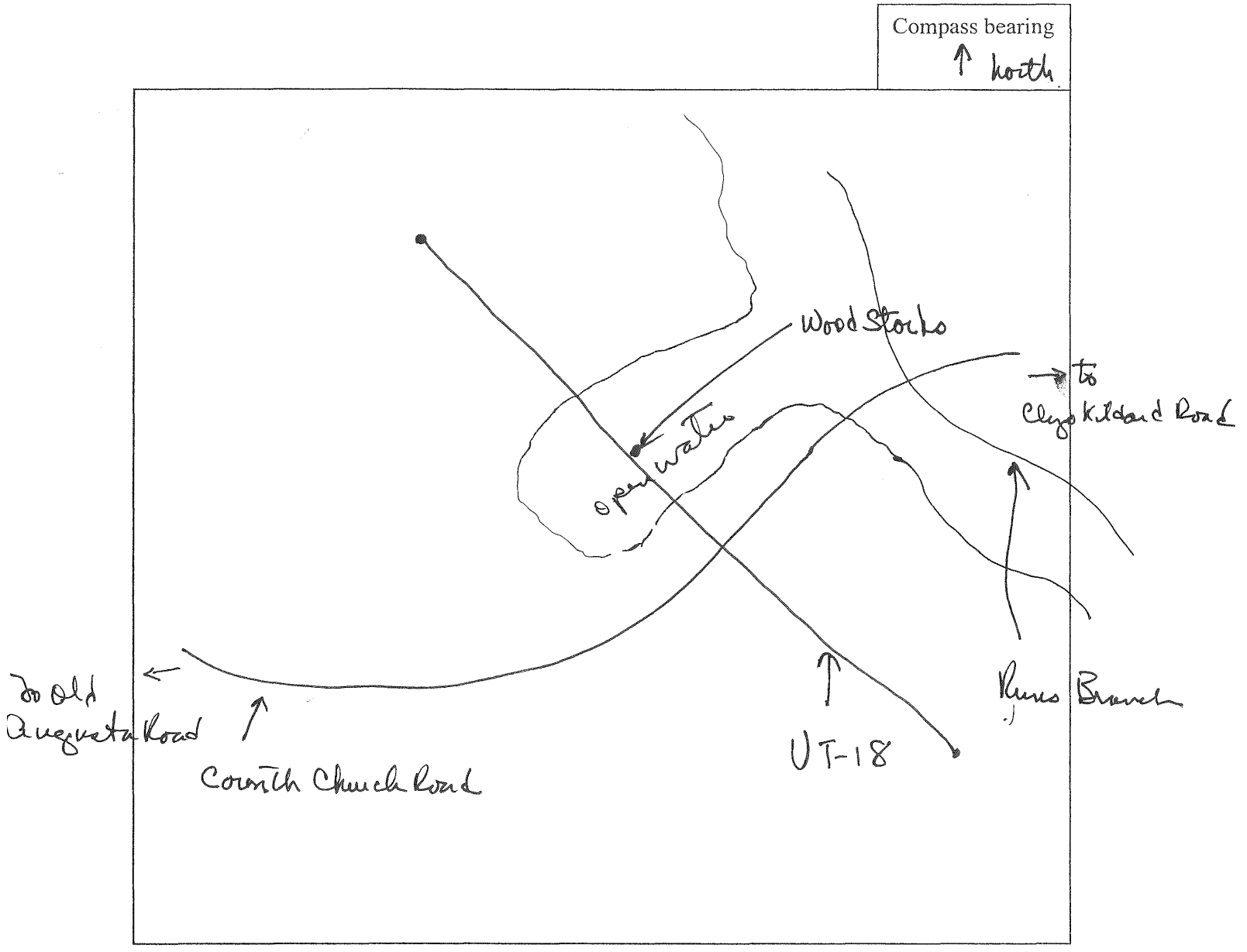
Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Mycteria americana	Wood Stork #1					

Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

Open water with cypress swamp to NE of transmission corridor. Water with large mats of lizard tail and other aquatic plants.

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

Field Notes: Two wood storks were observed feeding in open water. Birds took flight traveling SW and then circling back over the feeding area and then disappearing behind tree line of Rhues Branch swamp area. Observation time was about 15-18 minutes

SPECIES OCCURRENCE DATA SHEET

Segment ID	VT-41		Occurrence ID: 8		USGS quad:	Cox	
Examiner(s):	J. Varner - hes Meade				Date:	4-13-05	
Site coordinates:	Lat: 31.473704				Long:	-81.590841	
GPS used?	Y ✓	N	Accuracy ± feet 8ft	Photo ID's Oct 8 G. Tor Louis Burrow	Tower Number	610	
Location/directions							

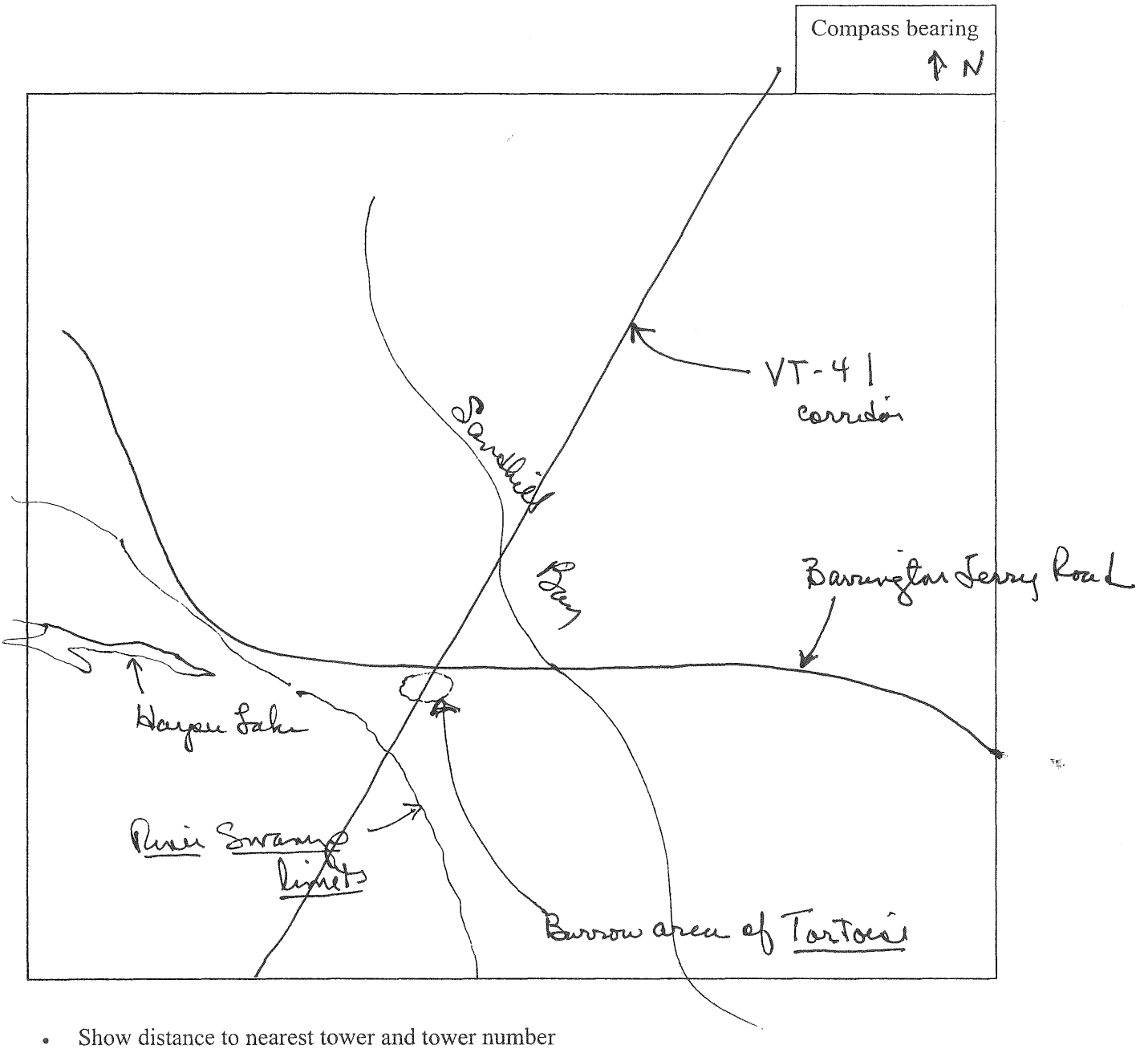
Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Gopherus polyphemus	Gopher Tortoise					

Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

Open dry sandy area (high site between two wetlands) with a few shrubs and low grasses.

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

Field Note: Area of five active Gopher Tortoise burrows within an 50 Square meter area. 3 (three) burrows were abandoned, one burrow across road was also not in use.

SPECIES OCCURRENCE DATA SHEET

Segment ID	VT-27		Occurrence ID: 9		USGS quad:	Meldrim SE	
Examiner(s):	Varner				Date:	4-15-05	
Site coordinates:	Lat: 32.04421				Long:	-81.30796	
GPS used?	Y ✓	N	Accuracy ± feet 14 ft.	Photo ID's Oc-9 Hooded Pitcherplant	Tower Number	396	
Location/directions	Approximately .06 mile North of Brush Road in eastern VT-27						

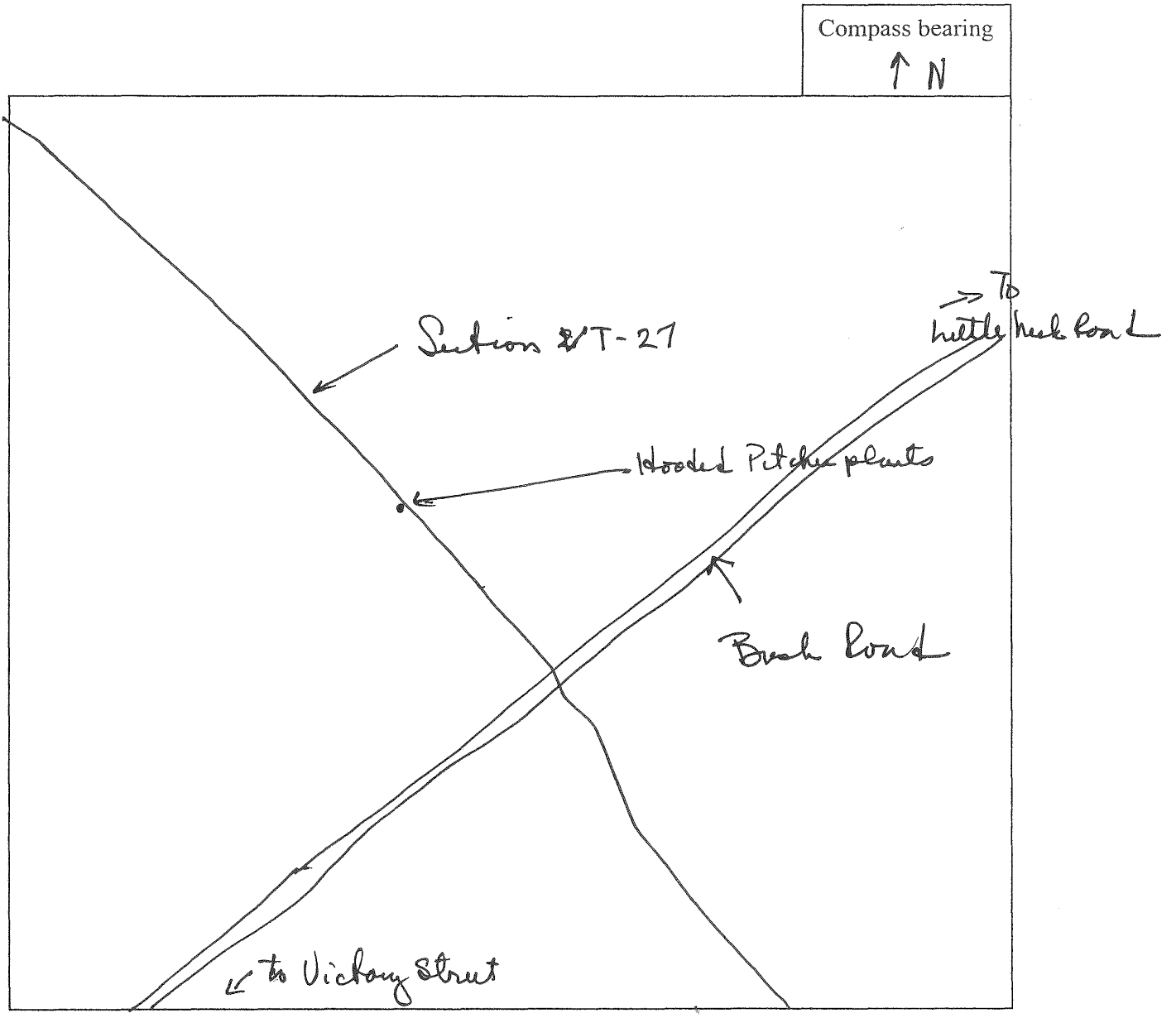
Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Sarracenia minor	Hooded Pitcherplant	1	D	40-50	D	.02 acres

Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

Plants occuring on small rises above standwater and grasses.

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	VT-38		Occurrence ID: 10		USGS quad:	East of Ludlow ICC
Examiner(s):	J. Varner - L. Meade				Date:	4-14-05
Site coordinates:	Lat: 31. 66729				Long:	-81. 50736
GPS used?	Y ✓	N	Accuracy ± feet 8 ft	Photo ID's OC-10-Hooded Pitcher Plant	Tower Number	
Location/directions	North of Jones Road and just south of road to Branson Cem					

Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Sarracenia minor	Hooded Pitcher plant	+	100-150	8-10	A	1/10 acre

Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

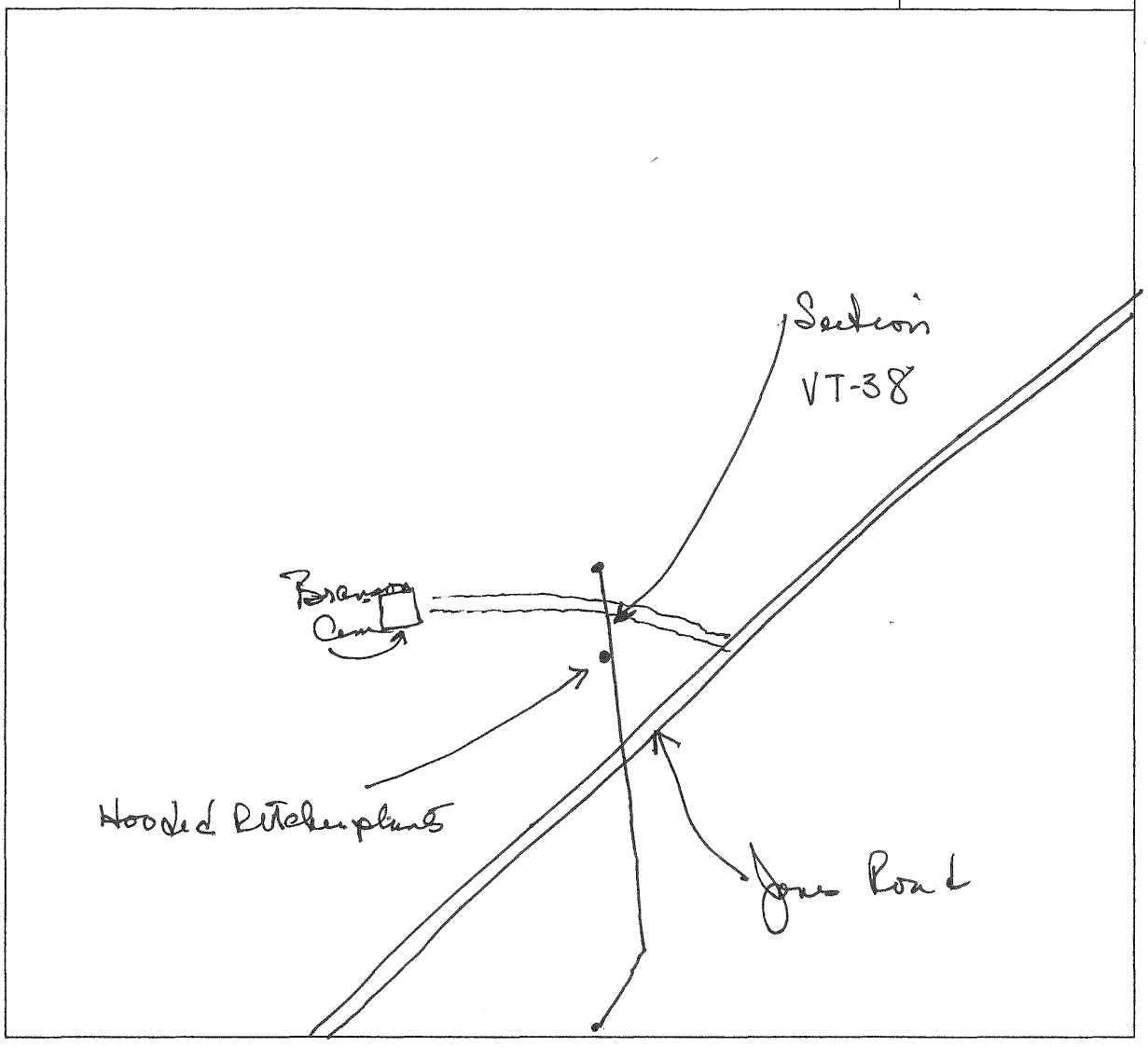
low wet grass area on west side of transmission corridor

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch

Compass bearing

↑ North



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	VT-40		Occurrence ID: 11		USGS quad:	Townsend	
Examiner(s):	J. Varnum - L. Meade				Date:	4-13-05	
Site coordinates:	Lat: 31.580710				Long:	-81.529522	
GPS used?	Y ✓	N	Accuracy ± feet 12 ft.	Photo ID's Oc-11 - Hooded Pitcherplant	Tower Number	569	
Location/directions	Approximately 1500 ft north of Iram Road Canal						

Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Sarracenia minor	Hooded Pitcherplant	+	B	2	A	less than 1 square meter

Notes

Evidence of reproduction? no

Stages of development? last years pitcher plants

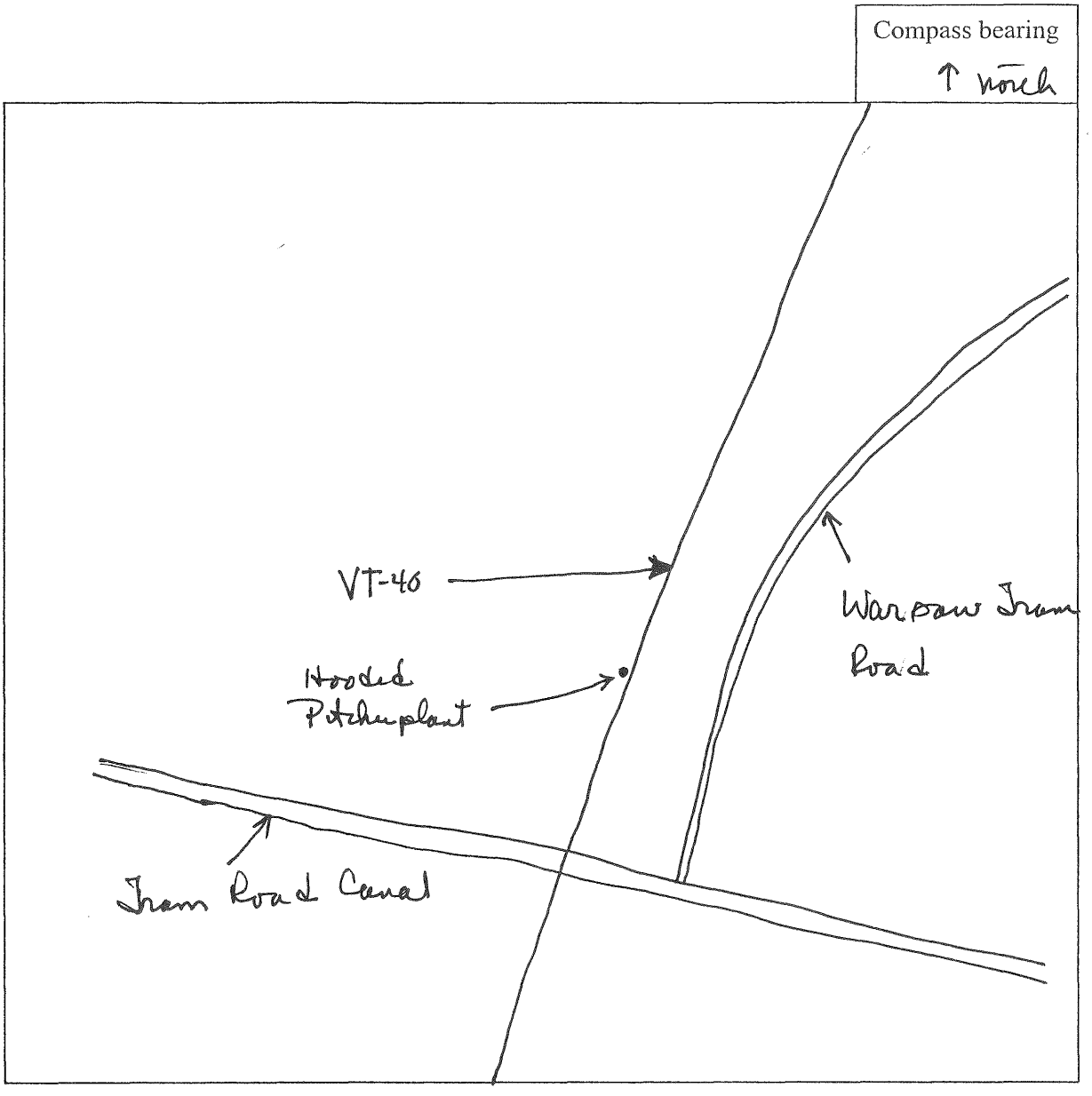
Potential risk to community (envasives)? none

Describe habitat in detail

Open grassy area in transmission corridor on small mound area surrounded by shallow water

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	VT16		Occurrence ID: 12		USGS quad:	
Examiner(s):	Meade & Hartowicz				Date:	8-25-05
Site coordinates:	Lat: 32.579123605				Long:	-81.41025597
GPS used?	Y ✓	N	Accuracy ± feet 22	Photo ID's	Tower Number	201 - 202
Location/directions	Sand Pond	Take unnamed road east off of Springfield (old Augusta Rd) to near powerline, then right on road that parallels the line for some distance where the ~~road~~ turns and crosses under the line to edge of Wildlife Mgt Area.				

Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Gopherus polyphemus	Gopher tortoise					

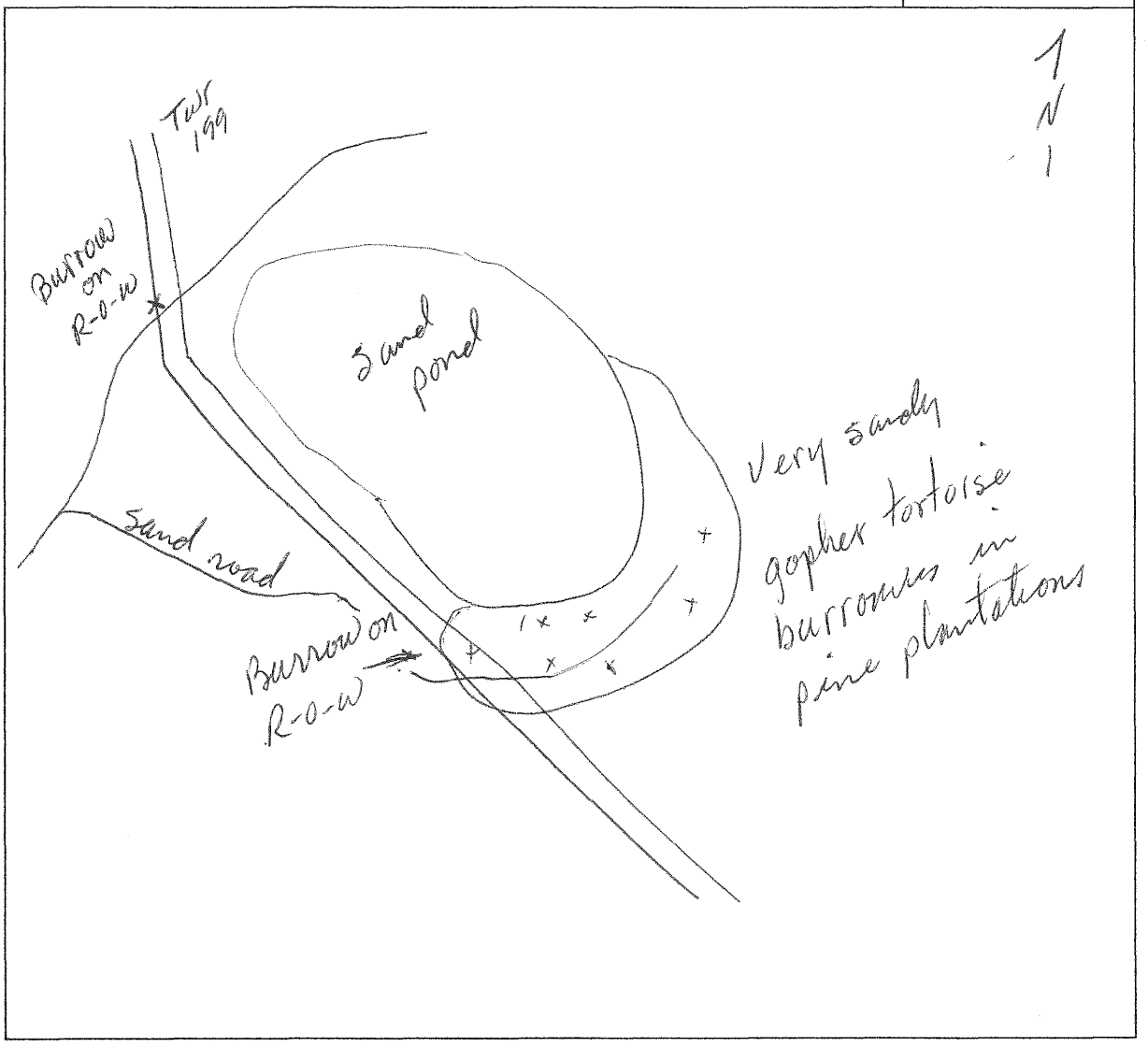
Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

Gopher tortoise colony adjacent to power-line with on burrow actually on power-line. Eleven active burrows east of line in sandy border of "Sand Pond". Observed two live tortoises. Unique white sand area of pine, blueberry, palmetto and prickly pear at the southend of Sand Pond.

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch

Compass bearing



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	VT. 82 41		Occurrence ID: 13		USGS quad:	
Examiner(s):	Meade + Hartowicz				Date:	8-23-05
Site coordinates:	Lat: 31.46892993				Long:	-81.59439951
GPS used?	Y ✓	N	Accuracy ± feet	Photo ID's yes	Tower Number	
Location/directions	less than 100 yds north of Barrington Ferry Rd on east side of R-o-W in standing water wetland.					

Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Litsea aestivalis	Pond Spice		15-20	2		

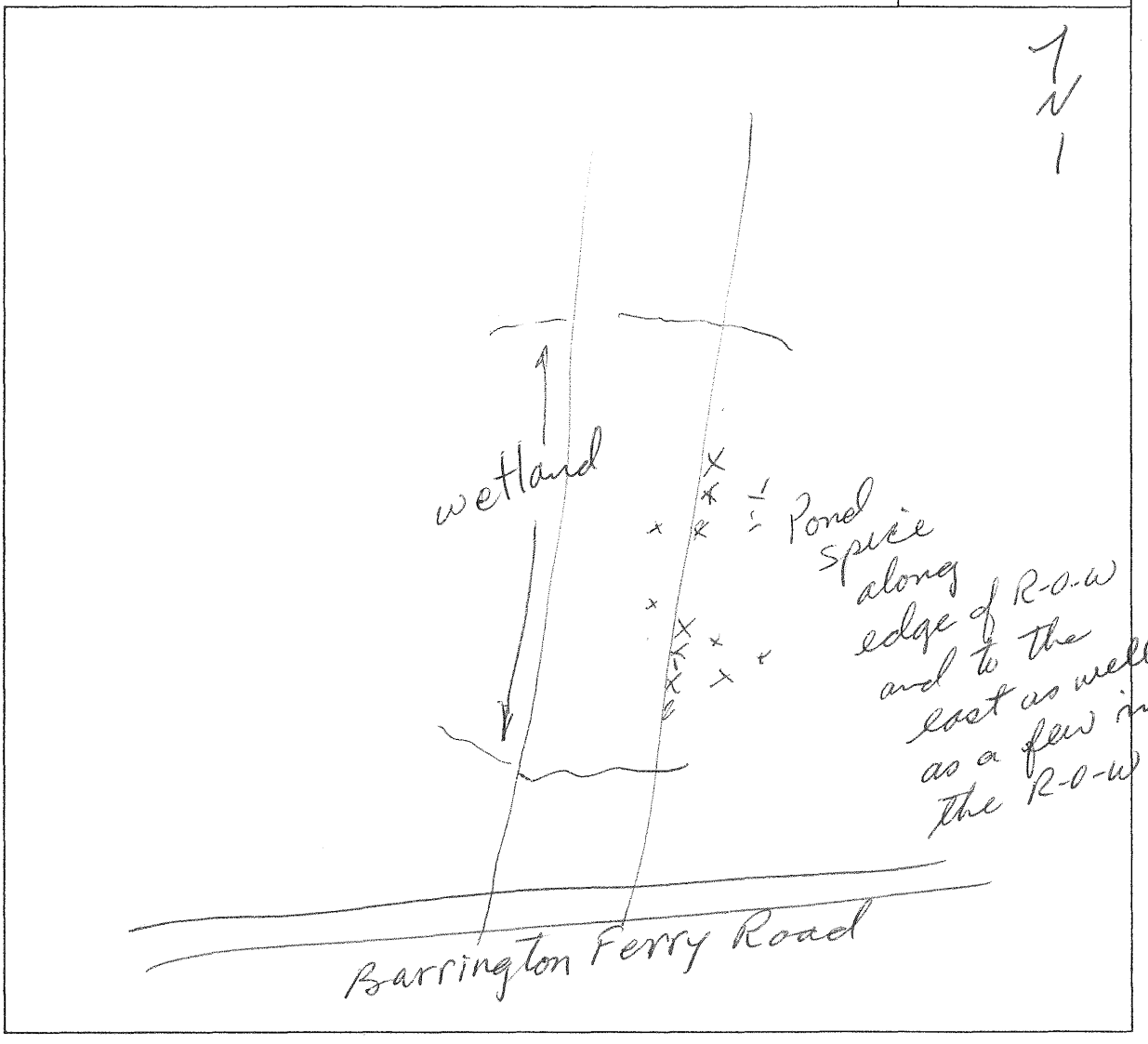
Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

State threatened, federal candidate. Most of the plants are along the east edge of the R-o-W but a few small plants are out in the east edge of the R-o-W. Wetland is knee deep + but has been mowed in the past and several small pond spice have resprouted in the R-o-W

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch

Compass bearing



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	VT 42		Occurrence ID: 8a		USGS quad:	
Examiner(s):	Meade + Hartowicz				Date:	8-23-05
Site coordinates:	Lat: 31.468116				Long:	-81.59548
GPS used?	Y ✓	N	Accuracy ± feet in March	Photo ID's	Tower Number	
Location/directions	adjacent to and south of Barrington Ferry Road on large sand knoll.					

Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Gopherus polyphemus	Gopher tortoise					

Notes
Evidence of reproduction? Four active gopher tortoise burrows. One tortoise observed
Stages of development? and remains of three nests with shell
Potential risk to community (envasives)? remains in a few square feet around nest
Describe habitat in detail hole.

2nd occurence sheet for this site

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch

Compass bearing

- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	I/T 40		Occurrence ID:	14	USGS quad:	
Examiner(s):	Meade & Hartsuiker				Date:	8-23-05
Site coordinates:	Lat: 31.58499691				Long:	-81.52850577
GPS used?	Y ✓	N	Accuracy ± feet 26'	Photo ID's	Tower Number	S of 573 to N of 570
Location/directions	W. of Gator Tail Rd S2 is 100yds S of CC cut rd. 15' from edge of power line					

Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Sarr. minor	Hooded pitcher plant		300	32		

Notes
Evidence of reproduction? S2 and S3 = S. minor Two locations
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

S. minor 2 - 2 clusters 15-20 plants/cluster

S. minor 3 - 6 clumps of plants, total 50+ plants over a 20' area on W. side of line

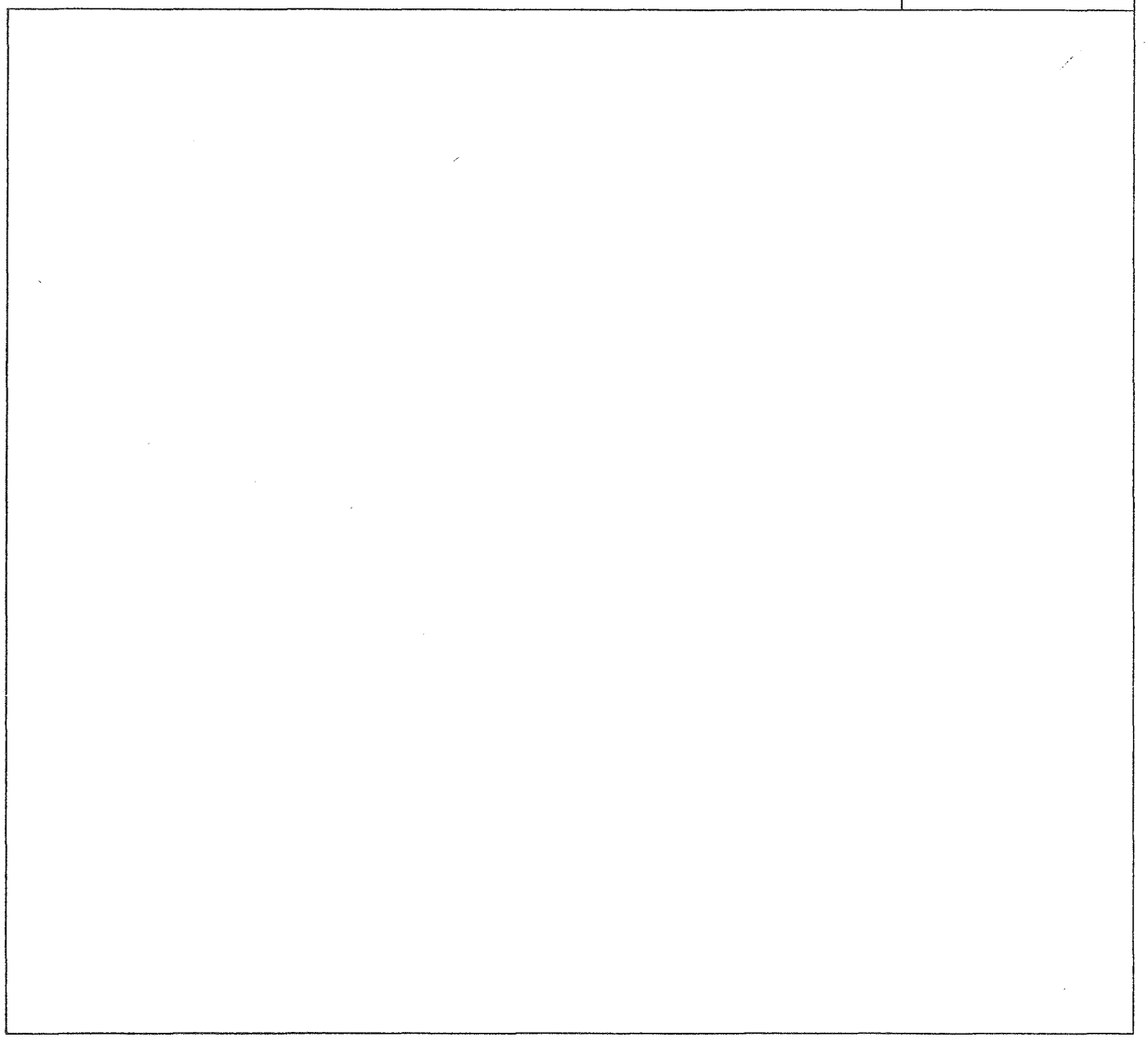
S. minor 4 - 22 clumps scattered over 1/2 acre of R-O-W average 10 plants/clump

2nd occurence sheet for this segment

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch

Compass bearing



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	VT 17		Occurrence ID: ~~#105~~ 7a		USGS quad:	
Examiner(s):	Meade + Hartowicz				Date:	8-25-05
Site coordinates:	Lat: 32.55161265				Long:	-81.38664532
GPS used?	Y	N	Accuracy ± feet	Photo ID's	Tower Number	207 - 208
Location/directions	North of Alvien (Clyo) - Kildare Road and southeast of Edwards Loop Road P. 47 in DeLorme GA atlas					

Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Mycteria americana	Wood stork					

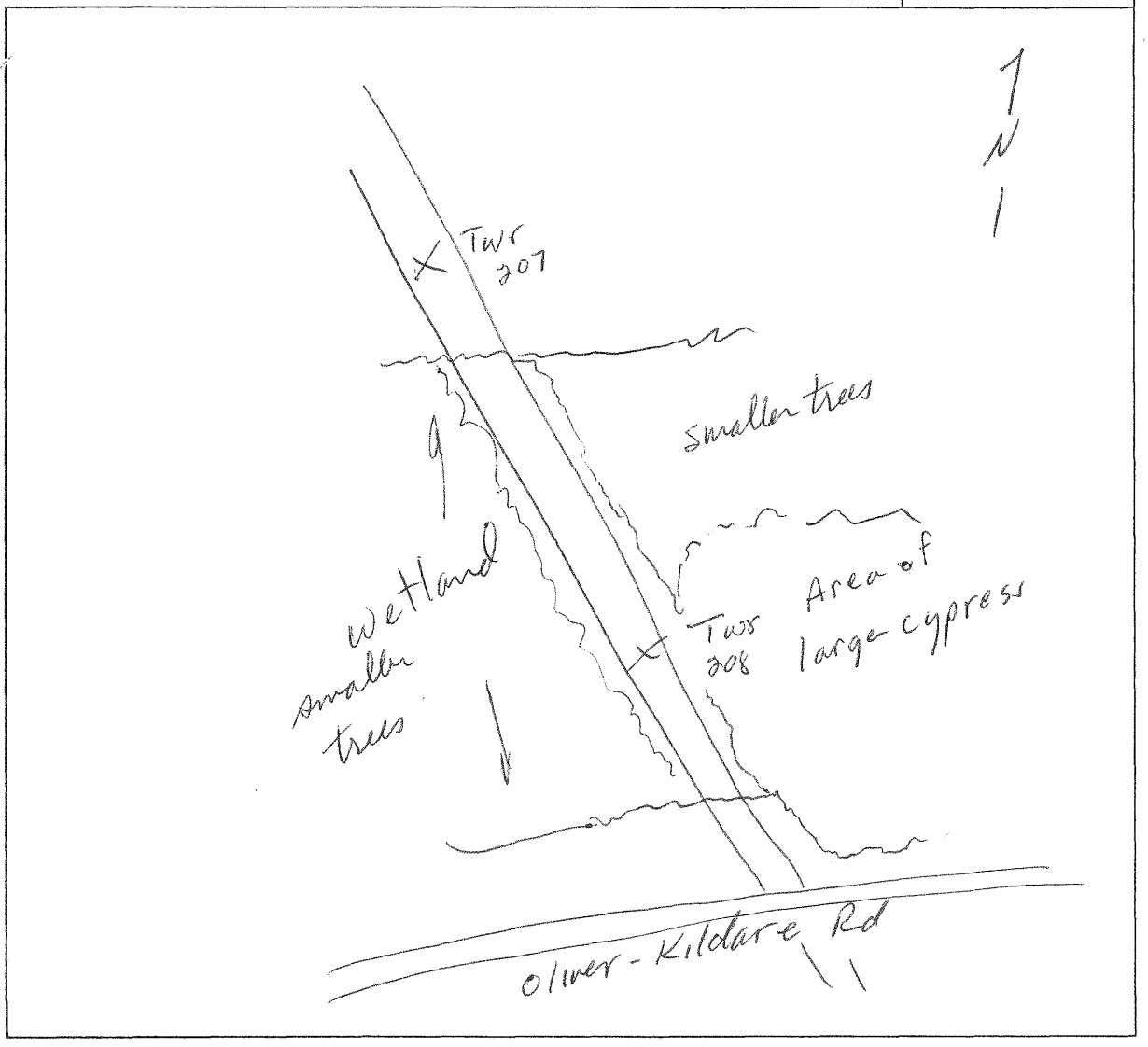
Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

a large permanently flooded slough that begins just north of the highway and lies between towers 207-209. The area was cleared for the powerline but a stand of very large cypress and tupelo is adjacent to the line on the northeast side. Counted 17 birds, some feeding some loafing on logs or perched in large cypress. 2nd occurence sheet for this site

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch

Compass bearing



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	Vogtle Plant		Occurrence ID: 16		USGS quad:	Girard NW
Examiner(s):	Varner + Hartowicz				Date:	10-25-05
Site coordinates:	Lat: 33.12985				Long:	-81.75305
GPS used?	Y	N	Accuracy ± feet	Photo ID's	Tower Number	
Location/directions						

Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Schisandra glabra	Bay starvine		3	3		

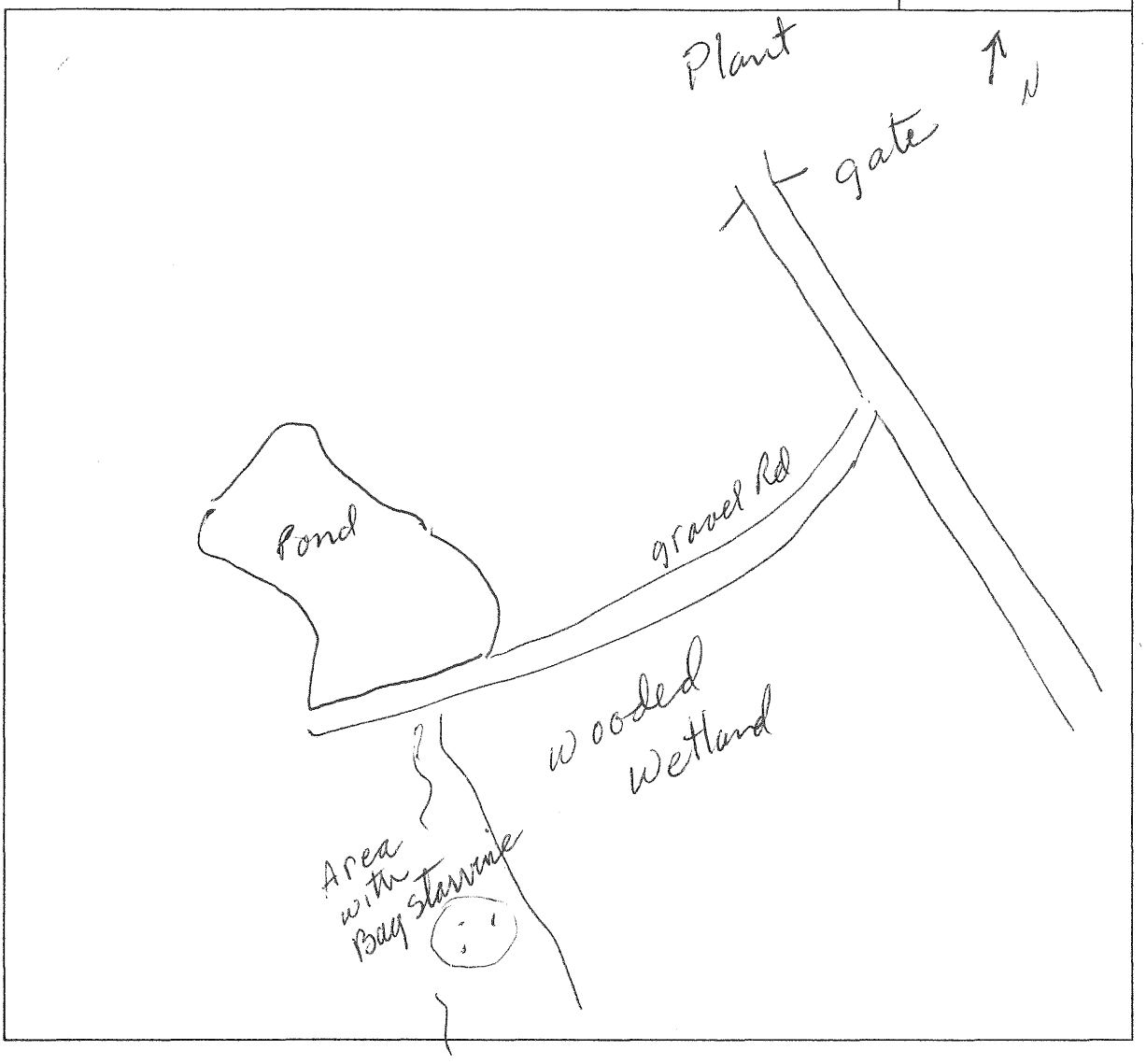
Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail

Several vines on different trees in a 1/4 acre area

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch

Compass bearing



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

SPECIES OCCURRENCE DATA SHEET

Segment ID	Random		Occurrence ID: 17		USGS quad:	
Examiner(s):	Varner + Hartowicz				Date:	10-29-05
Site coordinates:	Lat: 37.88155				Long:	-81.45973
GPS used?	Y ✓	N	Accuracy ± feet	Photo ID's	Tower Number	VT 481
Location/directions	120 yds N. of Hunting Club Road					

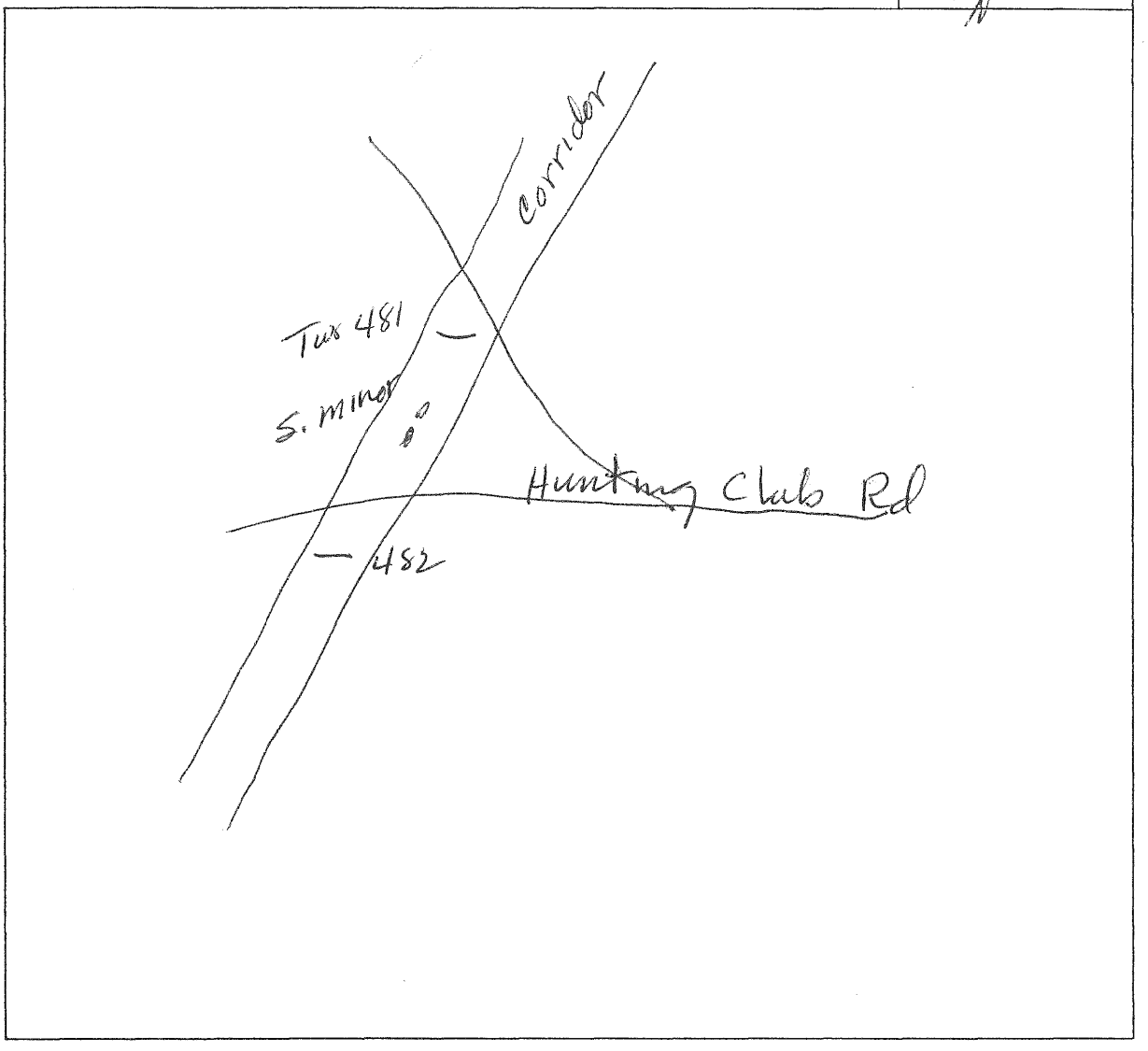
Scientific Name	Common Name	Cover Class	No. Plants	No. Patches	Distribution	Gross Area (acres)
Saracenea minor	Hooded pitcherplnt		25	2		

Notes
Evidence of reproduction?
Stages of development?
Potential risk to community (envasives)?
Describe habitat in detail 2 small clumps approximately halfway between 481 - 482

Cover class		Distribution	No. Plants
- = Absent	3 = 25-50%	A - infrequent	A - single plant
+ = <1%	4 = 50-75%	B - evenly	B- <20
1 = 1-5%	5 = 75-95%	C - localized	C - 20-99
2 = 5-25%	6 = 95-100%	D - frequent	D - 100-999
NS = not surveyed for		E - dense	E - > 1,000

Occurrence Sketch

Compass bearing



- Show distance to nearest tower and tower number
- Show location of ROW boundary
- Show the location of occurrence boundary
- Show scale relationships

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