

APPENDIX C – WETLAND INFORMATION AND MITIGATION PLAN

Rarity Pointe Mitigation Plan

1. Introduction

The mitigation plan is designed to replace and offset shoreline wetlands and wildlife habitat impacts, to stabilize the shoreline, to provide water quality protection, and, as additional benefits, to establish a diverse native plant community and provide aesthetic interest. The mitigation plan consists of shoreline stabilization and the establishment of a permanent vegetated shoreline buffer zone around the peninsula on Lower Jackson Bend that will contain the Rarity Pointe par-3 golf course. The west boundary of the mitigation area will be on a straight line extending out to the shoreline from the residential lot line between lots 47 and 48. The east boundary will be on a straight line extending out to the shoreline from the residential lot line between lots 40 and 41 (Attachment xx). A minimum 50-foot wide buffer measured from the normal summer pool elevation (813 feet above msl) will be established. In certain locations where changes in the par-3 golf course configuration are feasible, or native herbaceous vegetation can be incorporated into the fairway design, the buffer will be wider than 50 feet, up to a maximum of 150 feet. The buffer adjoining wetland W5 will begin at the wetland boundary instead of the top of the bank.

2. Shoreline Stabilization

Shoreline stabilization will consist of hard-armoring and establishment of native shrub species to prevent further shoreline erosion. From the west buffer zone boundary north along the shoreline to a point to be established by survey, shoreline stabilization will consist of bank reshaping and contouring, and placement of filter fabric and rock rip-rap. This work will require the use of equipment to perform the bank shaping/contouring work and installation of rock rip-rap. From this point to the east buffer zone boundary, shoreline stabilization will consist of hand-placement of rock rip-rap. This work will require the use of a bobcat or similar small equipment to transport the stone. No bank shaping or recontouring will be done in this area. The shoreline stabilization work will be conducted during the Tellico Reservoir winter drawdown period so that all of the heavy equipment work can be done from the bottom of the bank in order to protect the desired existing vegetation in the buffer zone. A TVA representative with expertise in shoreline stabilization will be onsite to provide technical assistance during the shoreline stabilization work.

Shoreline Stabilization Procedure

West Section:

1. Perform bank contouring to produce a stable slope on which to place the rock. Regrade the bank to a uniform, stable slope with a maximum 1.5h : 1v slope, preferably 2h : 1v.

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2. Prepare the subgrade to the required lines and grades.
3. Compact any fill required in the subgrade to a density approximating that of the surrounding undisturbed material.
4. Spread any soil material removed to an upland location at least 150 feet from any surface water. Seed, fertilize, and straw-mulch the spread soil immediately.
5. Excavate a keyway at the toe of the regraded slope to form a stable base for the placement of rock riprap. The bottom of the keyway must be at the 811.5 to the 812 foot elevation.
6. Cover the newly regarded sloped with 10 ounce nonwoven filter fabric from the bottom of the keyway to the top of the bank. Overlap the edges by at least 12 inches, and space anchor pins/pegs every 3 feet along the overlap. Care must be taken not to damage the cloth when placing the riprap. If damage occurs, remove the stone and repair the sheet by adding another layer of filter material with a minimum overlap of 12 inches.
7. Rock class and gradation must be approved by TVA prior to commencement of work.
8. Machine place appropriately sized durable, rock riprap from the keyway to the top of the bank. Place rock riprap so that it forms a dense, well-graded mass of stone with a minimum of voids. Place rock riprap to its full thickness and height in one operation. Do not place stone by dumping through chutes or other methods which cause segregation of stone sizes. The exact distance along the shoreline to perform bank contouring and machine placement of riprap will be marked in the field by TVA, however, it is approximately 650 to 700 feet.
9. The finished slope will be a minimum of 1.5 h to 1v, and will be free of pockets of small stone or clusters of large stones. Hand placing of rock may be necessary to achieve the proper distribution of stone sizes to produce a relatively smooth, uniform surface.
10. Native riparian woody species will be selectively established on the top of the riprap bank (see Buffer Zone Vegetation section).

East Section

1. Hand-cut and remove selected woody species from the bank and top of bank. Woody plants that are to remain undisturbed will be marked by TVA. Unmarked woody plants can be removed.
2. Excavate by hand or small machine a keyway at the toe of the bank to form a stable base for the placement of rock riprap. Bottom of the keyway should be at the 812 foot elevation.
3. Hand place appropriately sized durable, rock riprap from the keyway to the top of the bank. Place rock riprap so that it forms a dense, well-graded mass of stone with a minimum of voids. Carefully place rock riprap around the stems of the remaining woody vegetation, making sure that there are a minimum of voids. Place rock riprap to its full thickness and height in one operation.
4. Native, riparian woody species will be selectively established on the top of the riprap bank (see Buffer Zone Vegetation section).

3. Buffer Zone Vegetation Plan

Establishment of the 50-foot vegetated buffer will consist of retention of some of the existing woody species, hand-removal and mechanical removal of selected plants, application of selected EPA-approved herbicides to control invasive exotic plant species; and planting of native shrubs and herbaceous species. Methods for long-term maintenance of the vegetated buffer zone include annual or biannual mowing, selective pruning of shoreline shrubs, and selective use of herbicides to control invasive, exotic species and certain native species such as poison ivy. Any herbicides used must be EPA-approved for use in aquatic areas and be applied according to label directions. Herbicide applications will be conducted only by state-certified pesticide applicators.

Table 1 presents a list of native woody and herbaceous plant species that can be planted or seeded in the buffer zone, the planting location (shoreline, wetland, or upland buffer zone), and the form in which they can be purchased (e.g., container-grown, bare-root seedling, seed). This is not a complete list of species that would be suitable for this area and additions can be made. Any species additions made by the applicant, however, must not be planted in the buffer zone until they are approved by TVA. While not all of these species may be used due to availability and other species may be added, the goal will be to use at least 80% of the listed and approved species in order to provide diversity and increase the likelihood of success of the planting plan (e.g., The impact of the failure of two or three species is of less consequence to overall plan success as the number of species planted/seeded increases).

Shoreline zone:

1. Plant selected woody plant species (shrubs) at the top of the rock riprap and in a ten-foot wide area extending landward from the top of the riprap. The planting stock will be either bare-root or container-grown. The shrubs will be planted in the appropriate numbers and spacing for the species and the planting area.
2. No fertilizers will be used.
3. The shrubs will be planted immediately upon completion of the riprap placement.

Buffer zone:

1. TVA will mark the plants that are to remain undisturbed. Remove unmarked woody plants from the buffer zone through a combination of hand-clearing and mechanical clearing. These plants include the invasive, exotic species, privet (*Ligustrum sinense*), autumn olive (*Eleagnus umbellata*), and mimosa (*Albizia julibrissin*). To control regrowth and stump sprouting, appropriate herbicides may

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be applied to the stumps using hand-held application equipment (backpack or hand-carried sprayers).

Do not disturb the aboveground or belowground parts of woody species that marked to remain.

2. Prepare the site for seeding in late summer with disk harrow or bog harrow, followed by disking and rolling to prepare seedbed. In some areas, it may not be possible to use mechanical means of clearing. In these areas, site preparation will consist of a combination of hand-clearing and herbicide applications.
3. Following mechanical site preparation, apply appropriate herbicides to the remaining herbaceous vegetation and vines in the buffer zone, being careful to avoid getting spray on the leaves of the existing shrubs and trees. A follow-up herbicide treatment in about two weeks may be necessary to control regrowth before seeding.
4. Plant the seed in late fall, after the first killing frost, and when the soil is not wet. Hydroseed or hand seed warm-season grasses and wildflowers. If hand-seeding, the seed should be mixed with a carrier of similar weight (i.e., sawdust, vermiculite). Following the hand-broadcast of seed the field should be lightly worked to cover the seed with 1/4" of soil and the soil packed with a roller harrow or yard roller.
5. Do not fertilize if hand-seeding. If hydroseeding, a low nitrogen content (0.10 – 0.25 lbs/acre) fertilizer may be applied as part of the hydroseed mixture. None of the hydroseeding mixture shall come in contact with surface waters.
6. The buffer zone may be watered during the establishment year. Following the establishment year, no watering is needed, and would tend to encourage undesired species, such as Japanese honeysuckle (*Lonicera japonica*).

3. Maintenance

Shoreline Shrub Zone:

Maintenance should be required in the shoreline shrub zone only to remove tall growth and to remove certain invasive, exotic species.

- a. Some of the shrubs may eventually reach heights that restrict the view of Tellico Reservoir from the par-3 golf course. In this eventuality, these shrubs may be selectively pruned using hand equipment. At no time, however, will any of the shrubs be pruned to below the height of five feet
- b. Certain, invasive, exotic species are to be discouraged as they will outcompete the existing and planted species, and will further contribute to the spread of these species in the Tellico Reservoir area. These plant species are listed in Table 2. These species may be removed by hand-removal (digging out the plant by hand), by hand-cutting and stump application of an approved herbicide, or

by very careful foliage application of herbicides using hand-held equipment. Any herbicide applications in the buffer zone must be approved in writing by TVA and performed by certified applicators.

Warm Season Grass – Wildflower Zone:

During the first two years when the warm season grasses and wildflowers are becoming established, undesired species may grow in the buffer zone. Management of undesired species may require hand-pulling, mowing, and/or herbicide applications. If mowing is used, mow just above the tops of the desired plant, and no lower. Only herbicides appropriate for the area should be used to avoid killing the planted grasses and wildflowers. The person in charge of maintenance of this area must call a TVA Watershed Team biologist prior to mowing or applying herbicide in the first year to determine the appropriate height of the mowing blade to avoid cutting the desired plants and to select the appropriate herbicide.

After the first year, it is only necessary to mow once every other year to keep woody species in check. Mowing should only be done after a hard killing frost in the fall because early mowing will destroy flowering stalks or flower buds. Do not mow the area lower than 8 inches. Mowing too low will destroy the ability of the plant to store adequate nutrients for subsequent bloom.

Common name	Scientific name	Growth form	Planting zone	Planting form
Buttonbush	<i>Cephalanthus occidentalis</i>	Shrub	Shoreline top of riprap; Wetland	Bare-root; container
Bushy St. John's wort	<i>Hypericum densiflorum</i>	Shrub	Shoreline top of riprap; Wetland	Container
Silky dogwood	<i>Cornus amomum</i>	Shrub	Shoreline top of riprap; Wetland	Bare-root; container
Rose mallow	<i>Hibiscus moscheutos</i>	Shrub	Shoreline top of riprap; Wetland	Container
Virginia willow	<i>Itea virginica</i>	Shrub	Shoreline top of riprap; Wetland	Container
American beauty berry	<i>Callicarpa americana</i>	Shrub	Shoreline – upland edge	Container
Carolina rose	<i>Rosa carolina</i>	Shrub	Shoreline – upland edge	Container
Fragrant sumac	<i>Rhus aromatica</i>	Shrub	Shoreline-upland edge	Container
Dwarf sumac	<i>Rhus copallina</i>	Shrub	Shoreline – upland edge	Container
Red buckeye	<i>Aesculus parva</i>	Shrub	Shoreline – upland edge	Container
Hydrangea	<i>Hydrangea arborescens</i>	Shrub	Shoreline – upland edge	Container

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Azalea sp.	Rhododendron sp.	Shrub	Shoreline – upland edge	Container
Eastern gamagrass	Tripsacum dactyloides	Grass	Upland buffer	Seed
Little bluestem	Schizachyrium scoparium	Grass	Upland buffer	Seed
False boneset	Brickellia eupatorioides	Herbaceous wildflower	Upland buffer	Seed
Butterfly weed	Asclepias tuberosa	Herbaceous wildflower	Upland buffer	Seed
Lance-leaved coreopsis	Coreopsis lanceolata	Herbaceous wildflower	Upland buffer	Seed
Black-eyed susan (perennial)	Rudbeckia hirta	Herbaceous wildflower	Upland buffer	Seed
Purple coneflower	Echinacea purpurea	Herbaceous wildflower	Upland buffer	Seed
Bergamot	Monarda didyma and/or Monarda fistulosa	Herbaceous wildflower	Upland buffer	Seed
Dense blazing-star	Liatris spicata	Herbaceous wildflower	Upland buffer	Seed
Smooth penstemon	Penstemon sp.	Herbaceous wildflower	Upland buffer	Seed
Beardtongue	Penstemon digitalis	Herbaceous wildflower	Upland buffer	Seed
Smooth aster	Aster laevis	Herbaceous wildflower	Upland buffer	Seed
Asters	Aster spp.	Herbaceous wildflower	Upland buffer	Seed
Showy goldenrod	Solidago speciosa	Herbaceous wildflower	Upland buffer	Seed
Cup plant	Silphium perfoliatum	Herbaceous wildflower	Upland buffer	Seed
Summer phlox	Phlox paniculata	Herbaceous wildflower	Upland buffer	Seed
Sunflowers	Helianthus spp.	Herbaceous wildflower	Upland buffer	Seed
Primrose	Oenothera sp.	Herbaceous wildflower	Upland buffer	Seed
Mistflower	Eupatorium coelestinum	Herbaceous wildflower	Buffer – wetland edge	Seed
Swamp milkweed	Asclepias incarnata	Herbaceous wildflower	Buffer – wetland edge	Seed

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SOILS

Map Unit Name (Series and Phase):	Emory Silt Loam (Em)	Drainage Class:	Well-Drained		
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes _____ No _____		
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8		10YR 5/2	10YR 5/3	25%	silt loam, concretions
			10YR 4/4	5%	
			10YR 3/3	5%	
8-12+		7.5YR 4/4	7.5YR 5/6	10%	silt loam, fine gravel
			10YR 5/2	20%	
			7.5YR 4/3	10%	
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol		<input checked="" type="checkbox"/>	Concretions	
<input type="checkbox"/>	Histic Epipedon		<input type="checkbox"/>	High Organic Content in Surface Layer in Sandy Soils	
<input type="checkbox"/>	Sulfidic Odor		<input type="checkbox"/>	Organic Streaking in Sandy Soils	
<input type="checkbox"/>	Aquic Moisture Regime		<input type="checkbox"/>	Listed on Local Hydric Soils List	
<input checked="" type="checkbox"/>	Reducing Conditions		<input type="checkbox"/>	Listed on National Hydric Soils List	
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors		<input type="checkbox"/>	Other (Explain in Remarks)	
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					<input type="checkbox"/>
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					<input type="checkbox"/>
Remarks: Small palustrine scrub/shrub wetland (60 x 35 ft) hydrologically associated with Tellico Lake.									

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SOILS

Map Unit Name (Series and Phase):	Waynesboro Loam (WID2)	Drainage Class:	Well-Drained		
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes	No	
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 4/2			silt, oxidized rhizospheres
2-12+		7.5YR 4/2	10YR 4/2	30%	silt loam, fine gravel, concretions
			10YR 3/2	10%	
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol		<input type="checkbox"/>	Concretions	
<input type="checkbox"/>	Histic Epipedon		<input type="checkbox"/>	High Organic Content in Surface Layer in Sandy Soils	
<input type="checkbox"/>	Sulfidic Odor		<input type="checkbox"/>	Organic Streaking in Sandy Soils	
<input type="checkbox"/>	Aquic Moisture Regime		<input type="checkbox"/>	Listed on Local Hydric Soils List	
<input checked="" type="checkbox"/>	Reducing Conditions		<input type="checkbox"/>	Listed on National Hydric Soils List	
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors		<input type="checkbox"/>	Other (Explain in Remarks)	
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/>	No		Is this Sampling Point Within a Wetland?	Yes	<input checked="" type="checkbox"/>	No	
Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No						
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No						
Remarks: Small palustrine scrub/shrub wetland (30 ft x 30 ft) hydrologically associated with Tellico Lake.									

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SOILS

Map Unit Name (Series and Phase):	Emory Silt Loam (Em)	Drainage Class:	Well-Drained		
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes _____ No _____		
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 4/2			silt, oxidized rhizospheres
2-12+		7.5YR 4/2	10YR 4/2	30%	silt loam, fine gravel, concretions
			10YR 3/2	10%	
Hydric Soil Indicators:					
_____	Histosol	_____	x	Concretions	
_____	Histic Epipedon	_____		High Organic Content in Surface Layer in Sandy Soils	
_____	Sulfidic Odor	_____		Organic Streaking in Sandy Soils	
_____	Aquic Moisture Regime	_____		Listed on Local Hydric Soils List	
x	Reducing Conditions	_____		Listed on National Hydric Soils List	
x	Gleyed or Low-Chroma Colors	_____		Other (Explain in Remarks)	
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No		Is this Sampling Point Within a Wetland?	Yes	x	No	
Wetland Hydrology Present?	Yes	x	No						
Hydric Soils Present?	Yes	x	No						
Remarks: This is largely a capillary fringe wetland associated with Tellico Lake. It includes an area of 75 ft x 15 ft.									

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SOILS

Map Unit Name (Series and Phase):	Cumberland silty clay loam*	Drainage Class:	
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-2	O	10 YR3/2			sand
2-8	A	10 YR6/2	7.5 YR5/6	10%	sandy loam
8-12+	B	7.5 YR5/6	10 YR6/1 10 YR3/1	30% 15%	sandy clay loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p>_____ Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p>_____ x Gleyed or Low-Chroma Colors</p>	<p>_____ x Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ Listed on Local Hydric Soils List</p> <p>_____ Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks: The Loudon County soil survey was published before construction of Tellico Dam. The location of the wetland could not be accurately determined.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No	_____	Is this Sampling Point Within a Wetland? Yes _____ No _____
Wetland Hydrology Present?	Yes	x	No	_____	
Hydric Soils Present?	Yes	x	No	_____	

Remarks: This is a capillary fringe wetland on the Tellico Lake shoreline. It is approximately 800 ft long and from 6 to 40 ft wide.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Rarity Pointe / Tellico Lake	Date: 5 Sept 2002
Applicant/Owner: TVA	County: Loudon
Investigator: B. Rosensteel,	State: TN
Do normal circumstances exist on the site? Yes <u> x </u> No <u> </u>	Community ID: PSS1E
Is the site significantly disturbed (Atypical Situation)? Yes <u> </u> No <u> x </u>	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse) Yes No <u> x </u>	Plot ID: W5

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix nigra	shrub	Obl	9. Carex frankii	herb	Obl
2. Cornus amomum	shrub	Facw+	10. Impatiens capensis	herb	Facw+
3. Alnus serrulata	shrub	Facw+	11. Juncus effusus	herb	Facw+
4. Cephalanthus occidentalis	shrub	Obl	12. Boehmeria cylindrica	herb	Facw+
5. Hibiscus moscheutos	shrub	Obl	13. Polygonum punctatum	herb	Facw+
6. Carex crinita	herb	Facw+	14.		
7. Carex tribuloides	herb	Facw+	15.		
8. Carex lurida	herb	Obl	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 13 / 13 = 100%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p>_____ Stream, Lake, or Tide Gauge</p> <p>_____ Aerial Photographs</p> <p>_____ Other</p> <p><u> x </u> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p>_____ Inundated</p> <p><u> x </u> Saturated in Upper 12 Inches</p> <p>_____ Water Marks</p> <p>_____ Drift Lines</p> <p><u> x </u> Sediment Deposits</p> <p><u> X </u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>_____ Oxidized Root Channels in Upper 12 Inches</p> <p><u> x </u> Water-Stained Leaves</p> <p>_____ Local Soil Survey Data</p> <p>_____ FAC-Neutral Test</p> <p>_____ Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: _____ (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: <u> 0 </u> (in.)</p>	
<p>Remarks: This is a capillary fringe wetland on the Tellico Lake shoreline. Hydrology is primarily influenced by lake levels.</p>	

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SOILS

Map Unit Name (Series and Phase):	See remarks	Drainage Class:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-6	A	10 YR5/1	7.5 YR4/6	5%	silt loam
6-10	B	10 YR5/2	10 YR4/6	15%	clay loam
10-12		10 YR5/1	7.5 YR5/6	10%	clay

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p>_____ Aquic Moisture Regime</p> <p>_____ x Reducing Conditions</p> <p>_____ x Gleyed or Low-Chroma Colors</p>	<p>_____ x Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ Listed on Local Hydric Soils List</p> <p>_____ Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks: The Loudon County soil survey was published before construction of Tellico Dam. The location of the wetland could not be accurately determined.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No	_____	Is this Sampling Point Within a Wetland? Yes x No _____
Wetland Hydrology Present?	Yes	x	No	_____	
Hydric Soils Present?	Yes	x	No	_____	

Remarks: This is a capillary fringe wetland on the shoreline of Tellico Lake. It is approximately ___ ft long and from 8 ft to 25 ft wide.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Rarity Pointe / Tellico Lake	Date: 5 Sept 2002
Applicant/Owner: TVA	County: Loudon
Investigator: B. Rosensteel, E. Keene	State: TN
Do normal circumstances exist on the site? Yes <u> x </u> No <u> </u>	Community ID: PSS1E
Is the site significantly disturbed (Atypical Situation)? Yes <u> </u> No <u> x </u>	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse) Yes No <u> x </u>	Plot ID: W6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cornus amomum	shrub	Facw+	9. Lycopus virginicus	herb	Obl
2. Cephalanthus occidentalis	shrub	Obl	10. Carex sp.	herb	Facw to Obl depending on species
3. Cornus foemina	shrub	Facw-	11.		
4. Ligustrum sinense	shrub	Fac+	12.		
5. Campsis radicans	vine	Fac	13.		
6. Boehmeria cylindrica	herb	Facw+	14.		
7. Microstegium vimineum	herb	Fac+	15.		
8. Carex crinita	herb	Facw+	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 10/10 = 100%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><u> </u> Stream, Lake, or Tide Gauge</p> <p><u> </u> Aerial Photographs</p> <p><u> </u> Other</p> <p><u> x </u> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><u> x </u> Inundated</p> <p><u> </u> Saturated in Upper 12 Inches</p> <p><u> </u> Water Marks</p> <p><u> x </u> Drift Lines</p> <p><u> x </u> Sediment Deposits</p> <p><u> </u> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><u> </u> Oxidized Root Channels in Upper 12 Inches</p> <p><u> x </u> Water-Stained Leaves</p> <p><u> </u> Local Soil Survey Data</p> <p><u> </u> FAC-Neutral Test</p> <p><u> </u> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u> </u> (in.)</p> <p>Depth to Free Water in Pit: <u> 9 </u> (in.)</p> <p>Depth to Saturated Soil: <u> 0 </u> (in.)</p>	
<p>Remarks: This is a capillary fringe wetland on the shoreline of Tellico Lake. The hydrology is primarily influenced by lake levels.</p>	

Rarity Pointe Commercial Recreation and Residential Development on Tellico Reservoir

SOILS

Map Unit Name (Series and Phase):	See remarks	Drainage Class:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-2	O	10 YR4/2			silty sand; many fine roots
2-6	A	10 YR5/1			silty sand; many fine roots
6-12+	B	10 YR5/1	10 YR4/6 7.5 YR4/4	5% 5%	sandy silt loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p>_____ Aquic Moisture Regime</p> <p><u> x </u> Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ Listed on Local Hydric Soils List</p> <p>_____ Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks: The Loudon County soil survey was published before construction of Tellico Dam. The location of the wetland could not be accurately determined.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <u> x </u>	No _____	Is this Sampling Point Within a Wetland? Yes <u> x </u> No _____
Wetland Hydrology Present?	Yes <u> x </u>	No _____	
Hydric Soils Present?	Yes <u> x </u>	No _____	

Remarks: This is a capillary fringe wetland in a shallow cove on the shoreline of Tellico Lake. It is approximately 0.04 acres in size.

Rarity Pointe Commercial Recreation and Residential Development on Tellico Reservoir

SOILS

Map Unit Name (Series and Phase):	See remarks	Drainage Class:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-7	A	10 YR5/2	7.5 YR4/6 7.5 YR4/4	20% 10%	silty clay loam
7-12	B	10 YR5/2	10 YR4/4 7.5 YR4/4	20% 20%	sandy clay loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p>_____ Aquic Moisture Regime</p> <p><u> x </u> Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p><u> x </u> Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ Listed on Local Hydric Soils List</p> <p>_____ Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks: The Loudon County soil survey was published before construction of Tellico Dam. The location of the wetland could not be accurately determined.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <u> x </u>	No _____	Is this Sampling Point Within a Wetland?	Yes <u> x </u>	No _____
Wetland Hydrology Present?	Yes <u> x </u>	No _____			
Hydric Soils Present?	Yes <u> x </u>	No _____			

Remarks: This wetland is on the southern end of a small island at the tip of Jackson Bend. It is approximately _____ acre.

Rarity Pointe Commercial Recreation and Residential Development on Tellico Reservoir

SOILS

Map Unit Name (Series and Phase):	See remarks	Drainage Class:
Taxonomy (Subgroup):	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-10	A	10 YR5/2	7.5 YR4/6	5%	fine gravelly silt loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p>_____ Aquic Moisture Regime</p> <p>_____ x Reducing Conditions</p> <p>_____ x Gleyed or Low-Chroma Colors</p>	<p>_____ x Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ Listed on Local Hydric Soils List</p> <p>_____ Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks: The Loudon County soil survey was published before construction of Tellico Dam. The location of the wetland could not be accurately determined.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No	_____	Is this Sampling Point Within a Wetland? Yes x No _____
Wetland Hydrology Present?	Yes	x	No	_____	
Hydric Soils Present?	Yes	x	No	_____	

Remarks: This is a capillary fringe wetland on the shoreline of Tellico Lake. It is less than 0.05 acre in size.

Rarity Pointe Commercial Recreation and Residential Development on Tellico Reservoir

SOILS

Map Unit Name (Series and Phase):	Fullerton silty clay loam, severely eroded steep phase	Drainage Class:	Well-drained		
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes _____	No _____	x _____
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0 - 4		10 YR4/2	7.5 YR4;6	3%	Sandy silt loam, fine gravel
4					Resistance to auger; hard layer, possibly hard gravel
Hydric Soil Indicators:					
_____	Histosol	_____	Concretions		
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils		
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soils		
_____	Aquic Moisture Regime	_____	Listed on Local Hydric Soils List		
x _____	Reducing Conditions	_____	Listed on National Hydric Soils List		
x _____	Gleyed or Low-Chroma Colors	_____	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No		Is this Sampling Point Within a Wetland?	Yes	x	No	
Wetland Hydrology Present?	Yes	x	No						
Hydric Soils Present?	Yes	x	No						
Remarks: This is a capillary fringe emergent wetland that has developed on the margins of a small (~70 x 30') man-made pond in an area that is currently forested. This wetland has a surface connection with a wet-weather conveyance probably only during periods of high precipitation when water overtops the berm. The wet-weather conveyance drains into an intermittent stream that drains to Tellico Lake.									

Rarity Pointe Commercial Recreation and Residential Development on Tellico Reservoir

SOILS

Map Unit Name (Series and Phase):		Drainage Class:			
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?		Yes	No
				_____	_____
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0 - 0.5		5YR 5/4			Silt loam
0.5 - 10+		2.5YR 4/8			Clay
Hydric Soil Indicators:					
_____	Histosol		_____	Concretions	
_____	Histic Epipedon		_____	High Organic Content in Surface Layer in Sandy Soils	
_____	Sulfidic Odor		_____	Organic Streaking in Sandy Soils	
_____	Aquic Moisture Regime		_____	Listed on Local Hydric Soils List	
_____	Reducing Conditions		_____	Listed on National Hydric Soils List	
_____	Gleyed or Low-Chroma Colors		_____	Other (Explain in Remarks)	
Remarks: The soil is red clay used in constructing the pond and berm. There has been insufficient time for development of hydric characteristics in this soil.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No		Is this Sampling Point Within a Wetland?	Yes	x	No	
Wetland Hydrology Present?	Yes	x	No						
Hydric Soils Present?	Yes		No	x					
Remarks: This is a capillary fringe emergent wetland on the edge of a small (~90' x 50') manmade pond. This is an atypical situation because there has not been sufficient time for the red clay soil used in the construction of the pond and berm to develop hydric characteristics. This wetland has a surface connection with a									