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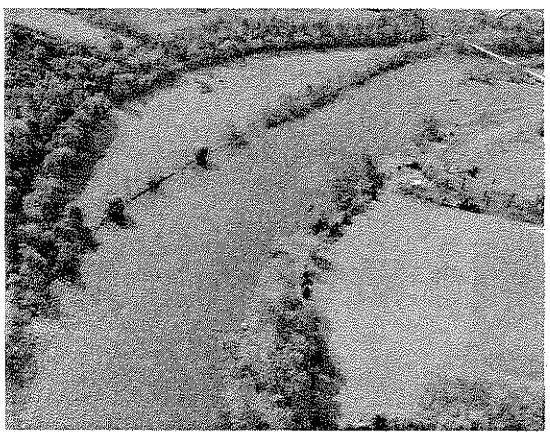
PATRIOT PROJECT
Draft Environmental Impact Statement

East Tennessee Natural Gas Company
Docket No. CP01-415-000

Federal Energy Regulatory Commission
Office of Energy Projects
Washington, DC 20426



wildlife habitat would be minimized by implementing the procedures identified in East Tennessee's E&SCP (see appendix C-1), and the use of our recommended mitigation measures. East Tennessee developed its E&SCP to minimize disturbance to vegetation and waterbodies, and to provide for rapid stabilization of the affected areas.

Site-Specific Impacts

East Tennessee consulted with the FWS, TNDNH, VADGIF, and VADCR and identified no designated wildlife habitats. The NCWRC recommended that disturbed areas be replanted with native species beneficial to wildlife, and East Tennessee has included recommended seed mixtures in their E&SCP (appendix C-1).

Based on the measures planned by East Tennessee to avoid or minimize Project effects on wildlife and associated habitats, we conclude that the construction and operation of the Project would have no significant impact to wildlife resources.

3.7 ENDANGERED AND THREATENED SPECIES

Section 7 of the ESA requires a Federal agency to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of a federally-listed endangered or threatened species, or result in destruction or adverse modification of the designated critical habitat of a federally-listed species. The agency is required to consult with the FWS and/or the NMFS to determine whether any federally-listed or proposed species, or critical or proposed critical habitat may occur in the proposed Project area, and to determine the proposed action's potential effects on these species or critical habitats. If the proposed Project would affect a listed species, the FERC must report its findings to the FWS in a BA. Consultation with the FWS and the appropriate state resource agencies is ongoing.

To comply with the requirements of Section 7 of the ESA, we have conducted informal consultation with the FWS regarding the presence of federally-listed or proposed endangered and threatened species in the vicinity of the proposed Project. In addition, as a non-Federal party, East Tennessee is assisting the Commission in meeting Section 7 requirements by conducting informal consultation with the FWS and by reviewing rare and endangered species databases of the various state agencies. East Tennessee initiated contact with the FWS and various state resource agencies, in Tennessee, Virginia, and North Carolina. Correspondence with the FWS, VADGIF, VADCR, NCDENR, and NCWRC provided information on endangered and threatened species that potentially occur in the Project area.

3.7.1 Federally-Listed or Proposed Endangered or Threatened Species

Based on the consultations described above, we identified 11 federally listed endangered or threatened species that could potentially occur in the proposed Project area. Table 3.7.1-1 provides the status and location of these species. As a result of this consultation, East Tennessee has conducted field surveys for the little-wing pearlymussel, the tan riffleshell, the James River spiny mussel, the smooth coneflower, Price's potato-bean, and Eggert's sunflower. Field surveys for the Indiana bat, the small-anthered bittercress, the small whorled pogonia, and the large-flowered skullcap are scheduled for spring 2002. The FWS is a cooperating agency and their comments on our PDEIS have been incorporated in this document.

East Tennessee filed with the Commission and submitted to the FWS the results of its surveys and assessments of potential impacts on federally-listed endangered and threatened species. We reviewed the information submitted by East Tennessee and developed our analysis of species effects in this DEIS. A description of federally-listed species potentially occurring in the vicinity of the proposed Project and an assessment of potential impact on each species is included below.

TABLE 3.7.1-1

Federally-Listed Endangered and Threatened Species Potentially Occurring in the Patriot Project Area

Species	Federal/ State Status	County, State	Facility Location	Project Effect
Mollusks				
Pearlymussel, Little-wing (*Pegias fabula*)	E/E (VA)	Washington and Smyth, VA	Mainline Expansion Line 3300, Loops 5 and 6, Re-lays 1 and B	Not likely to adversely affect
Riffleshell, Tan (*Epioblasma florentina walkeri*)	E/E (VA)	Washington and Smyth, VA	Mainline Expansion Line 3300, Loops 5 and 6, Re-lays 1 and B	Not likely to adversely affect
Spiny Mussel, James River (*Pleurobema collina*)	E/E (NC)	Rockingham, NC; Patrick, Henry, and Pittsylvania, VA	Patriot Extension Segments 2, 3, and 4, HCP Lateral	Not likely to adversely affect
Mammals				
Bat, Gray (*Myotis grisescens*)	E/E (TN)	Sequatchie, Grundy, Marion, Franklin, and Hamilton, TN	Mainline Expansion Line 3200, Loops A, 2, 3B, 3A, and B, Uprates 2 and D	To be determined
Bat, Indiana (*Myotis sodalis*)	E/E (TN)	Fentress, Monroe, Sevier, Franklin, and Marion, TN	Mainline Expansion Line 3100, Uprate B and CS 3108 Line 3200, Loops A, 2 and 3B, Uprate 2 Line 3300, Loop C and Uprate K	To be determined
Vascular Plants				
Bittercress, Small-Anthered (*Cardamine micranthera*)	E/E (VA)	Patrick and Henry, VA	Patriot Extension Segments 2 and 3	To be determined
Coneflower, Smooth (*Echinacea laevigata*)	E/E (NC)	Rockingham, NC	Patriot Extension Segment 4 HCP Lateral	Not likely to adversely affect
Pogonia, Small Whorled (*Isotria medeoloides*)	T/T (TN)	Sequatchie, Hamilton, Franklin, Knox, and Greene, TN	Mainline Expansion Line 3200, Loop 3A, CS 3212	To be determined
Potato-Bean, Price's (*Apios priceana*)	E/E (TN)	Marion, TN	Mainline Expansion Line 3200, Loop 3B	Not likely to adversely affect
Skullcap, Large-Flowered (*Scutellaria montana*)	E/E (TN)	Sequatchie, Hamilton, and Marion, TN	Mainline Expansion Line 3200, Loops 3B, 3A, and B, Uprate D, CS 3212	To be determined
Sunflower, Eggert's (*Helianthus eggertii*)	T/T (TN)	Franklin and Marion, TN	Mainline Expansion Line 3200, Loops A, 2 and 3B, Uprate 2	Not likely to adversely affect

Notes:

CS = Compressor Station
HCP Lateral = Henry County Power Lateral
E = Endangered
NA = Not applicable
T = Threatened
TN = Tennessee
VA = Virginia

Little-Wing Pearlymussel

The little-wing pearlymussel is a federally-listed and state-listed endangered species known to occur in Smyth and Washington Counties, Virginia. Little is known concerning the species' ecology. Ideal habitat for the little-wing pearlymussel is defined as small to medium streams with moderate to high gradient, cool temperatures and low turbidity. Little-wing pearlymussel is found in the Tennessee and Cumberland River basins, generally in transition zones between pools and riffles (FWS 1990). Review of locality records by the VADCR (February 23, 2001) and VADGIF (April 6, 2001) found that this species occurs in several specific locations within the Tennessee River drainage, including the Middle Fork of the Holston River in the vicinity of Loop 6 and Re-lay B in Smyth County, Virginia. Line 3300 would not cross the Middle Fork of the Holston River but would cross several upstream tributaries. The FWS (April 23, 2001) indicated that the little-wing pearlymussel may occur in the proposed Project area and recommended that surveys for freshwater mussels be conducted at the proposed crossings of Hungry Mother Creek and Walker Creek. Five tributaries to the Middle Fork of the Holston River in Smyth County were surveyed for freshwater mussels on September 21-22, 2001: Sulphur Spring Creek (Re-lay B, MP 3311-1+5.81), Walker Creek (Loop 6, MP 3311-2+11.75), Hungry Mother Creek (Loop 6, MP 3311-2+15.75), Bear Creek (Loop 3-A, MP 3312-2+3.43), and Dry Run (Loop 3-A, MP 3312-2+7.88). Mussel surveys were conducted using a combination of visual shoreline surveys and snorkeling or wading with a viewscope in shallow water areas. All streams surveyed contained some suitable habitat for mussels, although no specimens of the little-wing pearlymussel were found during the surveys. Therefore, the FERC staff has determined that the proposed Project would not likely adversely affect the little-wing pearlymussel.

Tan Riffleshell

The tan riffleshell is a federally-listed and state-listed endangered species known to occur in Smyth and Washington Counties, Virginia. The tan riffleshell is considered a headwater species and is found in coarse substrates in riffle areas. Review of locality records by the VADCR (February 23, 2001) and VADGIF (April 6, 2001) found that this species occurs in several specific locations within the Tennessee River drainage, including the Middle Fork of the Holston River in the vicinity of Loop 6 in Smyth County, Virginia. Line 3300 would not cross the Middle Fork of the Holston River but would cross several upstream tributaries. The FWS (April 23, 2001) indicated that the tan riffleshell may occur in the proposed Project area and recommended that surveys for freshwater mussels be conducted at the proposed crossings of Hungry Mother Creek and Walker Creek. Five tributaries to the Middle Fork of the Holston River in Smyth County, Virginia were surveyed for freshwater mussels on September 21-22, 2001; Sulphur Spring Creek (Re-lay B, MP 3311-1+5.81), Walker Creek (Loop 6, MP 3311-2+11.75), Hungry Mother Creek (Loop 6, MP 3311-2+15.75), Bear Creek (Loop 3-A, MP 3312-2+3.43), and Dry Run (Loop 3-A, MP 3312-2+7.88). Mussel searches were conducted by visually assessing shorelines and snorkeling or wading with a viewscope in shallow water areas. All streams surveyed contained some suitable habitat for mussels, although no specimens of the tan riffleshell were found during the surveys. We believe that the Project would not likely adversely affect the tan riffleshell.

James River Spiny Mussel

The James River spiny mussel is a federally-listed and state-listed endangered species known to occur in the Dan River system in Rockingham County, North Carolina. This mussel inhabits a variety of habitats in second- and third-order streams. The species is found in streams between approximately 5 and 66 feet wide and approximately 0.1 to 6.6 feet deep with a variety of flow regimes from near stagnancy in some pools to swift water in riffles and runs (Hove and Neves 1994). A new occurrence of a spiny mussel, recently found outside of the proposed Project areas, but within the Dan and Roanoke Rivers watershed in North Carolina, has been tentatively identified as the James River spiny mussel. Review of locality records by the NCDENR (November 29, 2001) found no known occurrences of the James River spiny mussel in the proposed Project vicinity of the Patriot Extension in Rockingham County. However, the NCWRC (July 10, 2001) indicated

that suitable habitat is present at the Patriot Extension's proposed crossings of Dry Creek and Martin Creek and recommended surveys at the two crossings. In addition, VADGIF requested that East Tennessee evaluate the waterbody crossings on the Dan River watershed in Virginia to determine whether appropriate habitat for this species is present and to perform surveys at the identified crossings if suitable habitat is found. Based on this evaluation and NCWRC recommendation, a survey for the James River spiny mussel was conducted on October 22-25, 2001 by a recognized mussel specialist to determine the status of the species at the proposed crossings of the Dan River (Segment 2, MP S2+22.92), Poorhouse Creek (Segment 2, MP S2+29.71), North Fork (Segment 3, MP S3+0.83), North Mayo River (Segment 3, MP S3+17.09), Horse Pasture Creek (Segment 3, MP S3+19.44), Marrowbone Creek (Segment 3, MP S3+25.20), a tributary to Matrimony Creek (Segment 3, MP S3+2.23), Matrimony Creek (Segment 4, MP S4+3.72), Toeclout Branch (Segment 4, MP S4+3.72), Cascade Creek (HCP Lateral, MPs HC+1.80, HC+3.75, and HC+5.23), Dry Creek (Segment 4, MP S4+7.70), and Martin Creek (Segment 4, MP S4+13.70). Mussel searches were conducted using a combination of visual assessment techniques in shoreline areas and snorkeling or wading with a viewscope in shallow water areas. No specimens of the James River spiny mussel were found during this survey. We believe that the Project would not be likely to adversely affect the James River spiny mussel.

Gray Bat

The gray bat is a federally-listed and state-listed endangered species known to occur in Grundy, Franklin, Hamilton, Marion, and Sequatchie Counties, Tennessee. Gray bat colonies are restricted entirely to caves or cave-like habitats. During summer, the gray bat is highly selective in choosing caves that provide specific temperature and roost conditions. Generally, the caves are located within 0.5 mile of a river, lake, or reservoir. In winter, they inhabit only deep, vertical caves with a specific temperature regime (FWS 1991a). Little is known about the feeding habits of this bat. Limited observations indicate that the majority of insects eaten are aquatic insects such as mayflies and caddisflies. Review of the TNDNH database for locality records revealed that this species occurs in several specific locations in the vicinity of proposed Loops 2, 3B, 3A, and B, and Uprates 2 and D along the Mainline Expansion Line 3200 in Franklin, Grundy, Marion, Sequatchie, and Hamilton Counties in Tennessee. All of these occurrences are associated with specific features, such as caves, or similar man-made structures, such as dam floodgates. FWS (August 7, 2001) requested a database search to determine whether habitat for the gray bat (i.e., caves) occurs within 0.5 mile of proposed construction activities and expressed concern for the potential negative impact of blasting and drilling on this species. FWS has requested the use of BMPs within gray bat foraging habitat. East Tennessee has not provided any additional information on the potential occurrence of this species, or the BMPs it would incorporate into its E&SCP to minimize impacts to the gray bat. Therefore, we recommend that:

- **East Tennessee should consult with the FWS and the appropriate state agencies, to determine the appropriate BMPs, and the need for additional mitigation measures to minimize adverse impacts to the federally-listed gray bat. The results of the consultation, including correspondences, should be filed with the Secretary for review and written approval by the Director of OEP, prior to construction.**

The potential impact on this species cannot be analyzed at this time until we have completed our consultation with the FWS.

Indiana Bat

The Indiana bat is a federally-listed and state-listed endangered species known to occur in Fentress, Franklin, Marion, Monroe, and Sevier Counties, Tennessee. During summer, maternity colonies can be found along streams in riparian habitats. Females roost in groups in hollow trees or underneath the loose bark of trees. Foraging occurs along forested streams; the bat feeds exclusively on insects. Foraging habitats average 11.2 acres per bat in midsummer. Foraging does not typically occur along waterbodies devoid of riparian

in all areas of suitable habitat along Line 3200 and Loop 3B, from MP 3211-2+0.00 to 3211-2+3.93. No specimens of Eggert's sunflower were found during the surveys. Therefore, we believe that construction of the Project is not likely to adversely affect Eggert's sunflower.

Summary of Potential Effects on Federally-Listed or Proposed Endangered or Threatened Species

Eleven species federally listed as endangered or threatened were reported to potentially occur in the Project area. Surveys were conducted for the little-wing pearlymussel, the tan riffleshell, the James River spiny mussel, the smooth coneflower, Price's potato-bean, and Eggert's sunflower in coordination with FWS and state resource agencies. The surveys found no individuals of federally-listed species in the proposed Project area that was surveyed. Additional surveys are scheduled in 2002 for the Indiana bat, the small-anthered bittercress, the small whorled pogonia, and the large-flowered skullcap to evaluate their potential occurrence in the proposed Project area.

The final determination of the impact of the proposed Project on all the above federally-listed species can not be reached until East Tennessee completes its surveys and we have reviewed FWS comments. Therefore, we recommend that:

- **East Tennessee should not begin any construction or conservation measures until:**

  a. **East Tennessee has filed all survey reports for the Indiana bat, the small-anthered bittercress, the small whorled pogonia, and the large-flowered skullcap.**

  b. **We receive formal comments from the FWS regarding the effects of the Project on federally-listed endangered and threatened species specified in Section 3.7.1 of this DEIS.**

  c. **We complete consultation with the FWS in accordance with Section 7 of the ESA; and**

  d. **East Tennessee has received written notification from the Director of OEP that construction or use of mitigation may begin.**

3.7.2 State-Listed Threatened or Endangered Species

East Tennessee identified 10 additional state-listed species that could potentially occur in the vicinity of the Project (see table 3.7.2-1). These species were identified from the same sources used to identify federally-listed species, and some species also are classified as Federal species of concern. Each species, its potential to occur along the proposed facilities, results of any field surveys, and potential impacts and proposed conservation measures are discussed below.

TABLE 3.7.2-1

State-Listed and Special Status Species PotentiallyOccurring in the Patriot Project Area

Species	Federal/State Status	County, State	Project Location
Insects			
Clubtail Dragonfly, Cherokee (*Gomphus consanguis*)	–/E (TN)	Sullivan, TN	Mainline Expansion Line 3300
Mollusks			
Floater, Green (*Lasmigona subviridis*)	–/E (NC)	Rockingham, NC	Patriot Extension
Heelsplitter, Tennessee (*Lasmigona holstonia*)	SC/E (VA)	Washington and Smyth, VA	Mainline Expansion Line 3300, Re-lay B, Loop 3A
Pearlymussel, Slabside (*Lexingtonia dolabelloides*)	SC/T (VA)	Washington and Smyth, VA	Mainline Expansion Line 3300, Re-lay B, Loop 3A
Pigtoe, Atlantic (*Fusconaia masoni*)	–/E (NC)	Rockingham, NC	Patriot Extension
Reptiles			
Turtle, Bog (*Clemmys muhlenbergii*) Southern population	–/E (VA)	Carroll and Patrick, VA	Patriot Extension Segments 1 and 2
Fish			
Dace, Tennessee (*Phoxinus tennesseensis*)	SC/E (VA)	Smyth, VA	Mainline Expansion 3300
Madtom, Orangefin (*Noturus gilberti*)	SC/T (VA)	Patrick, VA	Patriot Extension
Birds			
Shrike, Loggerhead (*Lanius ludovicianus*)	–/T (VA)	Smyth, VA	Mainline Expansion Line 3300, Loop 6
Vascular Plants			
Orchid, White Fringeless (*Platanthera integrilabia*)	SC/E (TN)	Grundy, TN	Mainline Expansion Line 3200

Notes:

– = Not applicable.
E = Endangered.
NC = North Carolina.
SC = Species of concern.
T = Threatened.
TN = Tennessee.
VA = Virginia.

Green Floater

The green floater is a North Carolina state-listed endangered species known to occur in the Dan River system in Rockingham County, North Carolina. The green floater inhabits small to medium size streams. It is intolerant of very strong currents and often is found in quiet pools and eddies with gravel and sand substrate (Ortmann 1919). Review of locality records by the NCDENR (November 29, 2001) found no known records of the green floater in the vicinity of the Patriot Extension in Rockingham County. However, the NCWRC (July 10, 2001) indicated that suitable mussel habitat is present at the Patriot Extension's proposed crossings of Dry Creek and Martin Creek and recommended surveys at the two crossings. Based on NCWRC recommendation, a mussel survey was conducted October 22-25, 2001 by East Tennessee's consultant at the proposed crossings of Dry Creek (Segment 4, MP S4+7.70) and Martin Creek (Segment 4, MP S4+13.70). Mussel searches were conducted using a combination of visual assessment in shoreline areas and snorkeling or wading with a viewscope in shallow water areas. No specimens of the green floater were found during the surveys. Therefore, we believe that the proposed Project is not likely to adversely affect the green floater.

Tennessee Heelsplitter

The Tennessee heelsplitter is a Federal species of concern and a state-listed endangered species known to occur in Smyth and Washington Counties, Virginia. This species is generally found imbedded in fine sediments such as mud within beds of vegetation or boulder cracks in relatively quiet waters. The FWS (April 23, 2001) reported that the Tennessee heelsplitter has been documented downstream from the crossings of tributaries to the Middle Fork of the Holston River and recommended that surveys for freshwater mussels be conducted at the proposed crossings of Hungry Mother Creek, Walker Creek, and Dry Run. In addition, VADCR (February 23, 2001) reported that the Tennessee heelsplitter has been documented to occur in the vicinity of Line 3300's Loop 6 and Re-lay B on Sulphur Spring Creek and the Middle Fork of the Holston River. Five tributaries to the Middle Fork of the Holston River in Smyth County were surveyed for freshwater mussels on September 21-22, 2001: Sulphur Spring Creek (Re-lay B, MP 3311-1+5.81), Walker Creek (Loop 6, MP 3311-2+11.75), Hungry Mother Creek (Loop 6, MP 3311-2+15.75), Bear Creek (Loop 6, MP 3312-2+3.43), and Dry Run (MP 3312-2+7.88). Mussel searches were conducted using a combination of visual assessment in shoreline areas and snorkeling or wading with a viewscope in shallow water areas. All streams surveyed contained some suitable habitat for mussels, although no specimens of the Tennessee heelsplitter were found during the surveys. Therefore, we believe that the proposed Project is not likely to adversely affect the Tennessee heelsplitter.

Slabside Pearlymussel

The slabside pearlymussel is a Federal species of concern and a state-listed threatened species known to occur in Smyth and Washington Counties, Virginia. This species prefers sand, fine gravel, and cobble substrates within relatively shallow riffles and shoals of large creeks to moderately sized rivers with moderate current. The FWS (April 23, 2001) reported that the slabside pearlymussel has been documented downstream from the crossings of tributaries to the Middle Fork of the Holston River. In addition, VADCR (February 23, 2001) reported that the slabside pearlymussel has been documented to occur in the vicinity of Line 3300's Loop 6 and Re-lay B. Five tributaries to the Middle Fork of the Holston River in Smyth County were surveyed for freshwater mussels on September 21-22, 2001: Sulphur Spring Creek (Re-lay B, MP 3311-1+5.81), Walker Creek (Loop 6, MP 3311-2+11.75), Hungry Mother Creek (Loop 6, MP 3311-2+15.75), Bear Creek (Loop 3-A, MP 3312-2+3.43), and Dry Run (Loop 3-A, MP 3312-2+7.88). Mussel searches were conducted using a combination of visual assessment in shoreline areas and snorkeling and/or wading with a viewscope in shallow water areas. All streams surveyed contained some suitable habitat for mussels, although no specimens of the slabside pearlymussel were found during the surveys. Therefore, we believe that the proposed Project is not likely to adversely affect the slabside pearlymussel.

Atlantic Pigtoe

The Atlantic pigtoe is a North Carolina state-listed endangered species known to occur in the Roanoke River drainage in North Carolina. The Atlantic pigtoe inhabits mostly medium to large streams. It prefers clean, swift waters with stable gravel or sand and gravel substrate. It often is found at the downstream edge of riffle areas. The Dan River, the river system in which the Dry Creek and Martin Creek are tributaries, is a major tributary to the Roanoke River. Based on NCWRC recommendation, a survey for the Atlantic pigtoe was conducted on October 22-25, 2001 by a recognized mussel specialist to determine its status at the proposed crossings of Dry Creek (Segment 4, MP S4+7.70) and Martin Creek (Segment 4, MP S4+13.70). Mussel searches were conducted using a combination of visual assessment in shoreline areas and snorkeling or wading with a viewscope in shallow water areas. No specimens of the Atlantic pigtoe were found during the surveys. Therefore, we believe that the proposed Project is not likely to adversely affect the Atlantic pigtoe.

Bog Turtle, Southern Population

The bog turtle is a state-listed endangered species known to occur in Carroll and Patrick Counties, Virginia. The bog turtle is a semi-aquatic reptile. The species is sparsely distributed over a range that extends from southern New England south to northern Georgia and includes two distinct populations, the northern and southern populations. The northern population is a federally-listed threatened population. The southern population is not federally listed. The proposed Project area occurs within the range of the southern population of the bog turtle. The southern population occurs in the Appalachian mountains from southwestern Virginia to northern Georgia. This species is typically found in a variety of wetland habitats that include sphagnum bogs; spring-fed fens; marshy sedge meadows; and pastures with soft, muddy bottoms. Bog turtles also may be found in small streams with clear, cool, slow-flowing water. Bog turtles prefer habitats that lack woody vegetation and provide an open wetland habitat. The bog turtle has been documented in the mountainous areas of Carroll and Patrick Counties, Virginia in the vicinity of the Patriot Extension (FWS 1997). Focused field surveys are scheduled to occur between April 1 and June 30, 2002, in appropriate wetland habitats in Carroll County along portions of Segment 1, and in Patrick County along portions of Segment 2. The timeframe for surveys was determined based on this species being difficult to survey from July to September due to its inactivity during hot weather and from October through April during its period of hibernation. East Tennessee would consult with the FWS concerning the surveys and recommended methodology. Therefore, impact on the species can not be analyzed until the surveys are conducted and we complete agency consultation.

Tennessee Dace

The Tennessee dace is a Federal species of concern and a state-listed endangered species known to occur in Smyth County, Virginia. This fish species prefers a habitat of gravel, sand, or silt-bottomed pools of spring-fed headwaters (Page and Burr 1991). The FWS (April 23, 2001) reported that the Tennessee dace has been documented downstream from the crossings of tributaries to the Middle Fork of the Holston River and in Bear Creek. According to East Tennessee, FWS did not recommend surveys for the Tennessee dace. We believe that impacts to this species can be reduced by restricting construction timing. We recommend that:

- **East Tennessee should consult with FWS and the appropriate state agencies, to determine the need for any additional mitigation measures to reduce impact to the Tennessee dace, and file comments with the Secretary for review and written approval by the Director of OEP, prior to construction.**

Orangefin Madtom

The orangefin madtom is a Federal species of concern and a state-listed threatened species known to occur in Patrick County, Virginia. The orangefin madtom inhabits rocky riffles and runs of clear, swift, small rivers. The species is an intersticine dweller, found in or near cavities formed by rubble and boulders (Page and Burr 1991). FWS (April 23, 2001) reported that the orangefin madtom has been documented to occur in Poorhouse Creek, North Fork, and the South Mayo River in the vicinity of Segment 2 of the Patriot Extension. Field surveys for the orangefin madtom are not proposed. To minimize impacts on this species, East Tennessee proposes to follow the mitigation measures outlined in its E&SCP (appendix C-1) to protect the orangefin madtom and its habitat along the proposed Project. In addition, East Tennessee would adhere to construction timing restrictions of March 15 to May 31 on waterbodies within Patrick County, Virginia that provide suitable habitat for the orangefin madtom. We believe impacts to this species will be reduced with incorporation of appropriate construction timing restrictions and East Tennessee's E&SCP as modified in Section 3.3.

Loggerhead Shrike

The loggerhead shrike is a state-listed threatened species known to occur in Smyth County, Virginia. This species inhabits open country with scattered trees and shrubs, savanna, desert scrub and, occasionally, open woodland—often perching on poles, wires, or fenceposts (American Ornithologist's Union 1983). Suitable hunting perches are an important part of the habitat (Yosef and Grubb 1994). Loggerhead shrike generally nest in shortgrass pastures but also will use a variety of similar habitats (Telfer 1989). Field surveys are scheduled to occur between May and June 2002 in nesting habitat along portions of Loop 6 and Re-lay B of Line 3300. Therefore, the potential impact of the proposed Project on this species can not be determined until surveys are conducted, and we complete our consultation with the appropriate state agencies.

White Fringeless Orchid

The white fringeless orchid is a Federal species of concern and a state-listed endangered species known to occur in Grundy County, Tennessee. The white fringeless orchid is typically found in red maple-black gum swamps and along damp, sandy stream margins. It also can be found on seepy, rocky, thinly vegetated slopes in association with other orchids (FWS 1991). Review of the TNDNH database for locality records revealed that the white fringeless orchid is known to occur only in proximity of Uprate 2 along Mainline Expansion Line 3200. Surveys were conducted by East Tennessee's consultant on August 27-29, 2001, during the white fringeless orchid's flowering period—in all areas of suitable habitat along Uprate 2. No specimens of white fringeless orchid were found during this survey. The results of this survey indicate that the proposed Project is not likely to adversely affect this listed species.

Summary of Potential Effects on State-Listed Endangered or Threatened Species

Of the 10 state-listed endangered or threatened species, surveys were conducted for five state-listed species: the green floater, the Tennessee heelsplitter, the slabside pearlymussel, the Atlantic pigtoe, and the white fringeless orchid in coordination with FWS and state resource agencies. The results of the surveys indicate that these species do not occur in the proposed Project area. Surveys are scheduled in 2002 for the southern bog turtle and the loggerhead shrike. The potential impacts on the Cherokee clubtail dragonfly, the orangefin madtom, and the Tennessee dace could be reduced or avoided by incorporating appropriate construction timing restrictions and by implementing East Tennessee's E&SCP (appendix C-1) including the recommendations for modification described in Section 3.3. Additional consultation with FWS and state resource agencies is warranted to minimize impacts to the Tennessee dace.