

## Attachment 6

### Endangered and Threatened Species (Plants)

**Table 1. Plants of Conservation Concern Reported From Within 5 Miles of the Proposed Project and Federally Listed Species Known From Marion County**

Common Name	Scientific Name	Federal Status	State Status/Rank
Eggert's sunflower	<i>Helianthus eggertii</i>	DM	THR/S3
Featherfoil	<i>Hottonia inflata</i>	--	SPCO/S2
American hart's tongue fern	<i>Asplenium scolopendrum</i> var. <i>americanum</i>	LT	END/S1
Morefield vasevine	<i>Clematis morefieldii</i>	LE	END/S1
Lance-leaf trillium	<i>Trillium lancifolium</i>	--	END/S1
Large-flowered skullcap	<i>Scutellaria montana</i>	LT	THR/S2
Michigan lily	<i>Lilium michiganense</i>	--	THR/S3
Monkey-face orchid	<i>Platanthera integrilabia</i>	C	END/S2S3
Price's potato-bean	<i>Apios priceana</i>	LT	THR/S2

-- = Not applicable

**Federal abbreviations:** LE = Listed Endangered; LT = Listed Threatened; C = Candidate; DM = Delisted-monitoring

**State status abbreviations:** END = Endangered; THR = Threatened; SPCO = Special concern

**State rank abbreviations:** S1 = Critically imperiled with less than five occurrences; S2 = Imperiled with six to 20 occurrences; S3 = Rare or uncommon with 21 to 100 occurrences; S#S#=#Occurrences are uncertain

**Eggert's sunflower**, a member of the sunflower family, is no longer considered to be a federally listed species. This species favors rocky, open, oak-hickory woodlands and barrens. Due to previous disturbance of the site, habitat is unlikely to be present.

**American hart's tongue fern**, a federally listed as threatened fern, is one of Tennessee's rarest plants. It occurs within 5 miles of the project site in Marion County and is restricted to limestone sinks along the slopes of the Cumberland Plateau. This specialized habitat does not exist within the project site.

**Morefield's Vasevine**, a federally listed as endangered species, is restricted to rocky limestone bluffs and boulder fields. Smoke tree is an indicator species. In several locations throughout the Tennessee River Valley, Morefield's vasevine and Price's potato bean have been found growing together. Habitat for Morefield's vasevine does not occur within the project area.

**Large-Flowered Skullcap**, a federally listed as threatened species in the mint family, is common in the Tennessee River gorge. Habitat, rocky outcrops on wooded slopes, is not present on the project site.

**Monkey-Face Orchid**, a federal candidate species and member of the orchid family, grows on acid soils in boggy areas. Even though this species is known to occur in most southern states, due to habitat loss, these plants are not commonly encountered. Habitat for monkey-face orchid does not occur within or adjacent to the project area.

**Price's Potato Bean**, a federally listed as threatened member of the legume family, prefers disturbed areas such as forest openings, wood edges, and where bluffs descend to streams and often associated with limestone. It also grows along highway rights-of-way and power

line corridors. It does not do well in forests with dense canopy such as the ones located on the project site.

**Endangered and Threatened Species (Animals)**

**Table 2. Listed or Protected Terrestrial Animals Reported Within 3 Miles(\*) of the Project Site and Federally Listed Species Known From Marion County**

Common Name	Scientific Name	Federal Status	State Status/Rank
Bald eagle*	<i>Haliaeetus leucocephalus</i>	BGEPA	NMGT/S3
Gray bat	<i>Myotis grisescens</i>	LE	END/S2
Indiana bat	<i>Myotis sodalis</i>	LE	END/S1
Common raven*	<i>Corvus corax</i>	--	THR/S2
Barking treefrog*	<i>Hyla gratiosa</i>	--	NMGT/S3

-- = Not applicable

**Federal abbreviations:** LE = Listed endangered; BGEPA = Protected by the *Bald and Golden Eagle Protection Act*

**State status abbreviations:** END = Endangered; THR = Threatened; NMGT = Deemed in need of management

**State rank abbreviations:** S1 = Critically imperiled; S2 = Imperiled; S3 = Rare or uncommon

**Bald eagles** nest at three localities near the mouth of the Sequatchie River, approximately 2 miles southwest of the project area. Habitat for this species does not occur at the project site.

**Gray bats** are known from Nickajack Cave in Marion County. The species forages throughout Guntersville Reservoir and its tributaries, including Battle Creek.

**Indiana bats** have also been reported from Nickajack Cave in Marion County; however, the species has not been observed there for decades. There is no suitable habitat for Indiana bats within the project site.

**Common ravens** were reported in Marion County in the early 1900s. There are no current records of the species from the county. Suitable habitat for common ravens does not occur within the project site.

**Barking treefrogs** are known from one locality in Marion County, a small pond approximately 3 miles from the project site. The species is rare in East Tennessee. Barking treefrogs do not occur at the project site.

**Threatened and Endangered Species (Aquatic)**

**Table 3. Federally and State-listed Aquatic Species Known From Marion County and/or Within a 10-Mile Radius of the Project Area**

Common Name	Scientific Name	State Status <sup>1</sup> (Rank) <sup>2</sup>		Federal Status
		Tennessee	Alabama	
<b>Fish</b>				
Flame chub <sup>3</sup>	<i>Hemitremia flammea</i>	NMGT (S3)	-	-
Golden darter	<i>Etheostoma denoncourti</i>	NMGT (S2)	-	-
Highfin carpsucker	<i>Carpiodes velifer</i>	NMGT (S2S3)	-	-
Snail darter	<i>Percina tanasi</i>	THR (S2S3)	-	THR
Southern cavefish <sup>3,4</sup>	<i>Typhlichthys subterraneus</i>	NMGT (S3)	-	-
<b>Macroinvertebrate</b>				
Owen spring limnephilid caddisfly	<i>Glyphopsyche sequatchie</i>	POTL	-	CAND
<b>Mussels</b>				
Fanshell <sup>3</sup>	<i>Cyrogenia stegaria</i>	END (S1)	-	END
Kidneyshell <sup>3</sup>	<i>Ptychobranchnus fasciolaris</i>	-	TRKD (S1)	-
Orange-foot pimpleback <sup>3</sup>	<i>Plethobasus cooperianus</i>	-	PROT (S1)	END
Pale lilliput <sup>3</sup>	<i>Toxolasma cylindrellus</i>	END (S1)	-	END
Pink mucket	<i>Lampsilis abrupta</i>	END (S2)	-	END
Rabbitsfoot <sup>3</sup>	<i>Quadrula cylindrica cylindrica</i>	-	PROT (S1)	-
Slabside pearlymussel <sup>3</sup>	<i>Lexingtonia dolabelloides</i>	-	PROT (S1)	CAND
Snuffbox <sup>3</sup>	<i>Epioblasma triquetra</i>	-	TRKD (S1)	-
Spectaclecase <sup>3</sup>	<i>Cumberlandia monodonta</i>	TRKD (S2S3)	-	CAND
Tennessee heelsplitter <sup>3</sup>	<i>Lasmigona holstonia</i>	-	TRKD (S1S2)	-
<b>Snails</b>				
Anthony's riversnail	<i>Athearnia anthonyi</i>	-	PROT (S1)	END
Armored rocksnail	<i>Lithasia armigera</i>	TRKD (S1S2)	-	-
Corpulent hornsnail	<i>Pleurocera corpulenta</i>	TRKD (S1)	-	-
Royal marstonia	<i>Pyrgulopsis ogmorhappe</i>	END (S1)	-	END
Smooth mudalia	<i>Leptoxis virgata</i>	TRKD (S1)	-	-
Spiny riversnail	<i>Io fluvialis</i>	TRKD (S2)	-	-
Varicose rocksnail	<i>Lithasia verrucosa</i>	-	TRKD (S3)	-
Warty rocksnail	<i>Lithasia lima</i>	TRKD (S2)	-	-

<sup>1</sup>**Status codes:** END = Listed endangered; THR = Listed threatened; CAND = Candidate for federal listing;

TRKD = Tracked as sensitive but has no legal status; POTL = ;PROT = State protected

<sup>2</sup>**State ranks:** S1 = Critically imperiled; S2 = Imperiled; S3 = Vulnerable

<sup>3</sup>There is a lack of recent field information verifying the continued existence of the species, and it is considered possibly extirpated due to general habitat loss or degradation of the environment in the area.

<sup>4</sup>Species occurs above Nickajack Dam and would not be impacted from the proposed actions.

A brief description of species found within the affected watershed can be found below. Species historically known to occur within the affected watershed are considered extirpated due to general habitat loss and are not discussed.

**Golden darter** occurs in medium rivers to large creeks with medium gradient and riffles/runs that are composed of gravel substrate (Nature Serve 2009).

**Highfin carpsucker** still occurs in parts of the Mississippi River basin, in various rivers along the Gulf Coast to the Choctawhatchee River, and in the Santee and Cape Fear rivers in the Atlantic drainage of North Carolina (Etnier and Starnes 1993). This fish prefers a habitat of gravel substrate in relatively clear, medium to large rivers.

The **snail darter** occurs in large creeks where it prefers sand and gravel shoal areas. It is also known to occur in deeper rivers and reservoirs where current is present. Larvae drift long distances downstream to deeper areas and migrate back to spawning habitat during late summer (Etnier and Starnes 1993).

**Pink mucket** is typically a big river species, but occasionally individuals become established in small to medium-sized tributaries of large rivers. It inhabits rocky bottoms with swift current usually in less than 3 feet of water (Parmalee and Bogan 1998).

**Anthony's riversnail** prefers large rivers with cobble/boulder substrate near riffles (NatureServe 2009).

**Armored rocksnail** is historically known in the Tennessee River and Shoal Creek near Florence, Alabama. It prefers creeks with fallen logs and debris and has been reported from the Cumberland River on partially buried wood, gravel, and submerged rock outcrops (NatureServe 2009).

**Corpulent hornsnail** can only be found in the Tennessee River and only between Bridgeport and Florence, Alabama, and Battle Creek at Ketchall, Marion County, Tennessee. Only five occurrences have been documented to date, thus leaving much unknown about the life history of this species (NatureServe 2009).

**Smooth mudalia** is endemic to the Tennessee River drainage (NatureServe 2009). Currently, very little is known about the life history of the smooth mudalia.

**Spiny riversnail** prefers medium rivers with shallow shoals that are well oxygenated by rapid water (NatureServe 2009).

**Varicose rocksnail** inhabits rocky shoals and riffles with moderate current in depths from near the water surface to several feet (NatureServe 2009).

**Warty rocksnail** inhabits big to medium-sized rivers with a moderate gradient. It is believed to prefer rocky substrates in riffle systems (NatureServe 2009).