

**Appendix G – Federally Listed Endangered and Threatened  
Species Reported From Roane County, Tennessee, and Their  
Associated Habitat**

Page intentionally blank

**Table F-1. Federally Listed Species Known From Roane County, Tennessee**

Common Name	Scientific Name	Federal Status <sup>1</sup>
<b>Plants</b>		
American Hart's-tongue fern <sup>2</sup>	<i>Asplenium scolopendrium</i> var. <i>americanum</i>	THR
Cumberland rosemary	<i>Conradina verticillata</i>	THR
Virginia spiraea	<i>Spiraea virginiana</i>	THR
White fringeless orchid	<i>Platanthera integrilabia</i>	CAND
<b>Birds</b>		
Bald eagle	<i>Haliaeetus leucocephalus</i>	DM
<b>Mammals</b>		
Gray bat	<i>Myotis grisescens</i>	END
<b>Fish</b>		
Spotfin chub	<i>Erimonax monachus</i>	THR
<b>Mollusks</b>		
Alabama lampmussel <sup>2</sup>	<i>Lampsilis virescens</i>	END
Fanshell <sup>2</sup>	<i>Cyprogenia stegaria</i>	END
Fine-rayed pigtoe <sup>2</sup>	<i>Fusconaia cuneolus</i>	END
Orange-foot pimpleback <sup>2</sup>	<i>Plethobasus cooperianus</i>	END
Pink mucket	<i>Lampsilis abrupta</i>	END
Purple bean <sup>2</sup>	<i>Villosa perpurpurea</i>	END
Ring pink <sup>2</sup>	<i>Obovaria retusa</i>	END
Sheepnose mussel	<i>Plethobasus cyphyus</i>	PE
Spectaclecase <sup>2</sup>	<i>Cumberlandia monodonta</i>	PE

Source: TVA Regional Natural Heritage database March 2011

<sup>1</sup>Status Codes: CAND = Candidate; DM = Recovered, delisted, and being monitored; END = Endangered; PE = Proposed endangered; THR = Threatened

<sup>2</sup>Historical occurrence, this species is considered "possibly extirpated" due to general habitat loss or degradation of the environment in the area.

## Plants

Cumberland rosemary, a member of the mint family, is a perennial evergreen shrub listed as a federally threatened species. Populations are restricted to boulder/cobble/gravel-bars, sand bars and islands, sandy river banks, flood plains in river gorges, and similar sunny riparian areas where seasonal flooding minimizes competition and creates new gravel-bar habitats for colonization. Threats to this species include habitat destruction due to dam construction, by water pollution from nearby coal mining and from intensive recreational use of the streams where the plants occur.

Virginia spiraea is a shrub growing on rocky flood-scoured riverbanks and gravel bars in gorges or canyons in the central and southern Appalachian Mountains. Populations have been extirpated by impoundments and other threats include riverbank development, habitat changes resulting from altered river flows and the encroachment of exotic invasive species. Sexual reproduction is uncommon and plants rely almost completely on vegetative reproduction, which could also account for the declining health of known populations.

The federal candidate species, white fringeless orchid, grows in swamp forests and sandy stream margins. Even though this species is known to occur in most southern states, these plants are not commonly encountered. Major threats to the species are a result of habitat loss from development, canopy closure, improper timber harvest techniques, and the encroachment of exotic invasive plants such as Chinese privet and Japanese stiltgrass.

### **Birds**

Bald eagles were removed from the endangered species list, but are still protected under the Bald and Golden Eagle Protection Act and the Executive Order for Migratory Birds. Both acts prohibit harm to eagles or their nests. Bald eagles nest in forested areas near large bodies of water, such as rivers and reservoirs, where they forage (Bryan et al. 2005; Thompson et al. 2005). The closest documented active nest is greater than five miles from the proposed project area. Suitable foraging habitat is abundantly available for this species in and immediately adjacent to the project area.

### **Mammals**

Gray bats roost in caves year-round, migrating between caves used in winter for hibernacula and caves used in summer for roosting or establishing maternity colonies. This species typically forages over streams, rivers, and reservoirs (Tuttle 1976). The nearest gray bat record occurs more than five miles from the project area and was collected during audio survey efforts in 2008. No recorded caves are within three miles of the project area, however potential foraging habitat is found in and immediately adjacent to the project area along Emory River and Watts Bar Reservoir.

### **Fish**

The spotfin chub inhabits clear upland rivers in swift currents over boulder substrates. Spawning occurs May through August.

### **Mollusks**

The Alabama lampmussel is restricted to the Tennessee River drainage, northern Alabama, and East Tennessee. Very little is known about this species. Adults rarely exceed 2.56 to 2.75 inches. They inhabit small to medium-sized rivers and are believed to live in sand and gravel shoals. Other species of the same genus are bradyctictic, suggesting the Alabama lampmussel may be the same. This fish host for the glochida, the larva of a freshwater mussel (Unionidae family) that develops as an external parasite on fish, is unknown.

Fanshell adults reach a maximum length of 70 mm. All viable populations are restricted to unimpounded stretches of the Clinch River on substrate of coarse sand gravel in strong flowing waters. It is bradyctictic, a descriptor of malacological reproductive biology, where spawning

takes place in summer; glochidia overwinter in females and are expelled the following spring. with the glochidia host unknown. However, goldfish have served as host under laboratory conditions.

The fine-rayed pigtoe occurs in the Tennessee River drainage from Clinch and Powell River in southwestern Virginia to Muscle Shoals, Alabama. Large adults can reach 3.15 inches in length. It usually inhabits ford and shoal areas of rivers with moderate gradient. The fine-rayed pigtoe is tachytictic, a descriptor of malacological reproductive biology, where spawning takes place in spring; glochidia overwinter in females and are expelled the following spring. with several fish being shown under laboratory conditions to act as the glochidia host.

The orange-foot pimpleback can be found primarily in big rivers. Individuals have been found at depths of 12 to 18 feet in sand and coarse gravel substrate. It is considered tachytictic, but host fish for glochidia is currently unknown.

The 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 three feet of water.

The purple bean commonly inhabits streams with substrate of coarse sand and gravel with some silt in moderate to strong current at depths of less than three feet. The species is bradytictic and suitable glochidia host include sculpin, greenside darter, and fantail darter.

The ring pink is typically found in large rivers with gravel bars. The glochidia host is unknown.

The sheepsnose can be found in the Ohio, Cumberland, and Tennessee River systems as well as the upper Mississippi River north to Minnesota. Adults can reach up to 4.33 to 4.72 inches in length. The species prefers substrate of mixed coarse sand and gravel. It is tachytictic with most reproductive activity occurring in the summer. The glochidia host fish has been identified as sauger.

The spectaclecase has been documented in various types of substrate, including gravel, sand, and mud, in medium-sized to large rivers. Glochidia host are undetermined.

**Literature Cited:**

- Bryan, A. L., L. B. Hopkins, C. S. Eldridge, I. L. Brisbin, Jr., and C. H. Jagoe. 2005. Behavior and Food Habits at a Bald Eagle Nest in Inland South Carolina. *Southeastern Naturalist* 4(3):459–468.
- Etnier, D. A. and W. C. Starnes. 1993. *The Fishes of Tennessee*. University of Tennessee Press, Knoxville, Tennessee.
- Parmalee, P.W. and A.E. Bogan. 1998. *The Freshwater Mussels of Tennessee*. The University of Tennessee Press, Knoxville, Tennessee.
- Thompson, C. M., P. E. Nye, G. A. Schmidt, D. K. Garcelon. 2005. Foraging Ecology of Bald Eagles in a Freshwater Tidal System. *Journal of Wildlife Management* 69(2):609–617
- Tuttle, M. D. 1976. Population ecology of the gray bat (*Myotis grisescens*): philopatry, timing, and patterns of movement, weight loss during migration, and seasonal adaptive strategies. *Occasional Papers of the Museum of Natural History, University of Kansas*, 54:1-38.