

# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
1208-B Main Street  
Daphne, Alabama 36526

OCT 08 2009

IN REPLY REFER TO:

2009-F-0897

Mr. George H. Taylor  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Dear Mr. Taylor:

This document transmits the Fish and Wildlife Service's (Service) biological and conference opinions based on the Service's review of the proposed Lay Lake drawdown located in Shelby, Talladega, Chilton, and Coosa counties, Alabama, and its effects on the tulotoma snail and the rough horn snail in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). The September 22, 2009, request for formal consultation was received on September 25, 2009.

This biological and conference opinion is based on information provided in the September 4, 2009, biological assessment titled *Assessment of Impact to Proposed and Listed Species and Critical Habitat in the Lay Lake Drawdown Area*; the August 24, 2009, project proposal; telephone conversations listed below in the "Consultation History"; field investigations; and other sources of information. A complete administrative record of this consultation is on file in the Alabama Field Office located in Daphne, Alabama.

## Consultation History<sup>1</sup>

- July 28, 2009: Alabama Power Company (APC) hosted a teleconference to discuss the proposed drawdown;
- August 11-12, 2009: Field surveys were conducted by APC, Auburn University, Alabama Department of Conservation and Natural Resources (ADCNR), and the Service to the status of tulotoma and rough horn snail in the Coosa River downstream of Logan Martin Dam, in lower Kelly Creek, and in Yellowleaf Creek;
- August 24, 2009: APC submitted proposal to the Federal Energy Regulatory Commission (FERC) regarding the drawdown and requests to be designated as FERC's non-federal representative for the purpose of informal consultation under section 7 of the ESA;
- August 25, 2009: APC hosted a teleconference to discuss preliminary results of the

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<sup>1</sup> APC continues to be in informal section 7 consultation with the FERC re-licensing of the Coosa River Projects (including the Lay Dam Project)

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- August 11-12, 2009, survey;
- August 26, 2009: FERC designates APC as their non-Federal representative during ESA section 7 consultation;
- September 15, 2009: APC hosted a teleconference to discuss the status of the consultation;
- September 16, 2009: APC submits a Biological Assessment (BA) to FERC with a likely to adversely affect (LAA) for tulotoma and the proposed rough hornsnail;
- September 22, 2009: FERC submits letter to FWS requesting formal consultation on the tulotoma snail, critical habitat in Kelly and Yellowleaf creeks, and a conference report on the rough hornsnail and its proposed critical habitat;
- September 29, 2009: FWS responds to FERC with a concurrence on the LAA for tulotoma and rough hornsnail effects determination, and agrees to prepare a biological and conference opinion for the rough hornsnail and its proposed critical habitat.

**Table 1. Species and critical habitat evaluated for effects and those where the Service has concurred with a “not likely to be adversely affected” determination.**

SPECIES or CRITICAL HABITAT	PRESENT IN ACTION AREA	PRESENT IN ACTION AREA BUT “NOT LIKELY TO BE ADVERSELY AFFECTED”
Painted rocksnail	Yes	Yes
Southern clubshell	Yes	Yes
Critical Habitat for eight freshwater mussels (Kelly Creek Unit - 21)	Yes	Yes
Critical Habitat for eight freshwater mussels (Yellowleaf Creek Unit- 23)	Yes	Yes

## BIOLOGICAL AND CONFERENCE OPINION

### DESCRIPTION OF PROPOSED ACTION<sup>2</sup>

The action evaluated in this consultation is Alabama Power Company’s (APC) proposed drawdown of Lay Lake (FERC No. 2146). For the past 20 years, APC has temporarily lowered the level of Lay Lake during the fall months to facilitate leakage measurements and inspections in the Logan Martin Dam tailrace and maintenance of the project structures. This practice has been coordinated with the Federal Energy Regulatory Commission (FERC), and recently has

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<sup>2</sup> The description of the action of the action was taken in part from Alabama Power’s September 16, 2009, letter to FERC

changed from an annual event to a biennial activity performed in odd-numbered years. Temporarily lowering the lake also allows the Alabama Department of Conservation and Natural Resources (ADCNR) to inspect and maintain its public boat launches, and it allows shoreline property owners to perform maintenance and repairs on their shoreline facilities (i.e., docks, boat ramps, sea walls, etc.). Typically, the lake is lowered about 3 feet, measured at Lay Dam, for a period of 10 to 12 days. The drawdown will tentatively begin on October 14, 2009; reach its lowest point on October 16, 2009; begin refilling on October 28, 2009; and return to normal level on October 30, 2009 (Letter from APC to FERC dated August 24, 2009).

The boundary around Lay Lake (i.e., those lands included in the FERC license) includes the lake (12,000 acres) up to the normal pool elevation of 396 feet (ft) mean sea level (msl) and flood easements between 397 and 410 mean sea level (msl) (APC 2000). The lake extends 48 miles upstream to Logan Martin Dam and has 289 miles of shoreline habitat and a maximum depth of 88 ft. Since Lay is operated as a run-of-river project, daily inflow basically equals its outflow and water levels typically fluctuate within a range of one foot on a daily basis (APC 2000). Therefore, the action area for the proposed drawdown will affect all areas upstream of Lay Dam between approximately the 396 and 393 foot contour lines. This includes areas along the Coosa River as well as the lower reaches of several large tributaries, including Yellowleaf and Kelly creeks (refer to figure 1 for the approximate action area).

## **STATUS OF THE SPECIES/CRITICAL HABITAT**

### **Listed species/critical habitat description**

#### Tulotoma Snail (*Tulotoma magnificia*) - Endangered

The tulotoma snail is endemic to the Alabama River Basin. Historically, it was widespread across the Alabama River Basin, occurring from the Upper Coosa, near the present day location of Weiss Dam, downstream to the mouth of the Alabama River. It was described by Conrad in 1834, and its type locality is the Alabama River near the present-day location of Claiborne Lock and Dam. On January 9, 1991, tulotoma was listed as endangered under the Endangered Species Act (ESA) (56 FR 797). Today, the species is restricted to a few large tributaries in the Middle Coosa, two locations in the mainstem of the Coosa River, and three locations in the Alabama River. Critical habitat has not been designated for this species.

During the mid-twentieth century, habitat for the tulotoma snail was significantly reduced by the construction of several large hydropower dams on the Coosa and Alabama rivers. In fact, until its re-discovery downstream of Jordan Dam in 1988, the species was believed to be extirpated from the Coosa River altogether (Hershler et al. 1990). Within the action area, tulotoma occurs from the mouth of Kelly Creek downstream to the confluence of Yellowleaf Creek.

## **Life history**

Tulotoma is a gill-breathing operculate snail in the family Viviparidae. According to the literature and recent studies, it is restricted to cool, well-oxygenated, clean free-flowing waters of the Coosa River mainstem, the lower reaches of larger tributaries to the Coosa River, and the Alabama River (Christman et al. 1995; DeVries et al. 2003; Garner-ADCNR *in litt.* 2006 and 2008; J Powell, pers. obs.). Optimum habitat is characterized by a substrate with roughness values greater than 2, boulder densities greater than 2 per square meter ( $m^2$ ), rocks of different sizes and currents fast enough to prevent the accumulation of silt. It is also believed that the availability of cracks and crevices in the bedrock and/or boulders may help protect the species from predation (Christman et al. 1995).

Tulotoma are live born during the months of May-July, and at sizes of about 3-5 mm height at the last whorl (Christman et al. 1995). They grow rapidly during their first year reaching sizes of 11 to 14 millimeters (mm). Females become reproductively active during the spring/summer of their second year, producing an average 16 offspring per year. Females that live beyond their second year grow more slowly, and produce an average 28 offspring per year. Christman et al. (1995) found that few tulotoma survived longer than 2 years of life in the lower Coosa River.

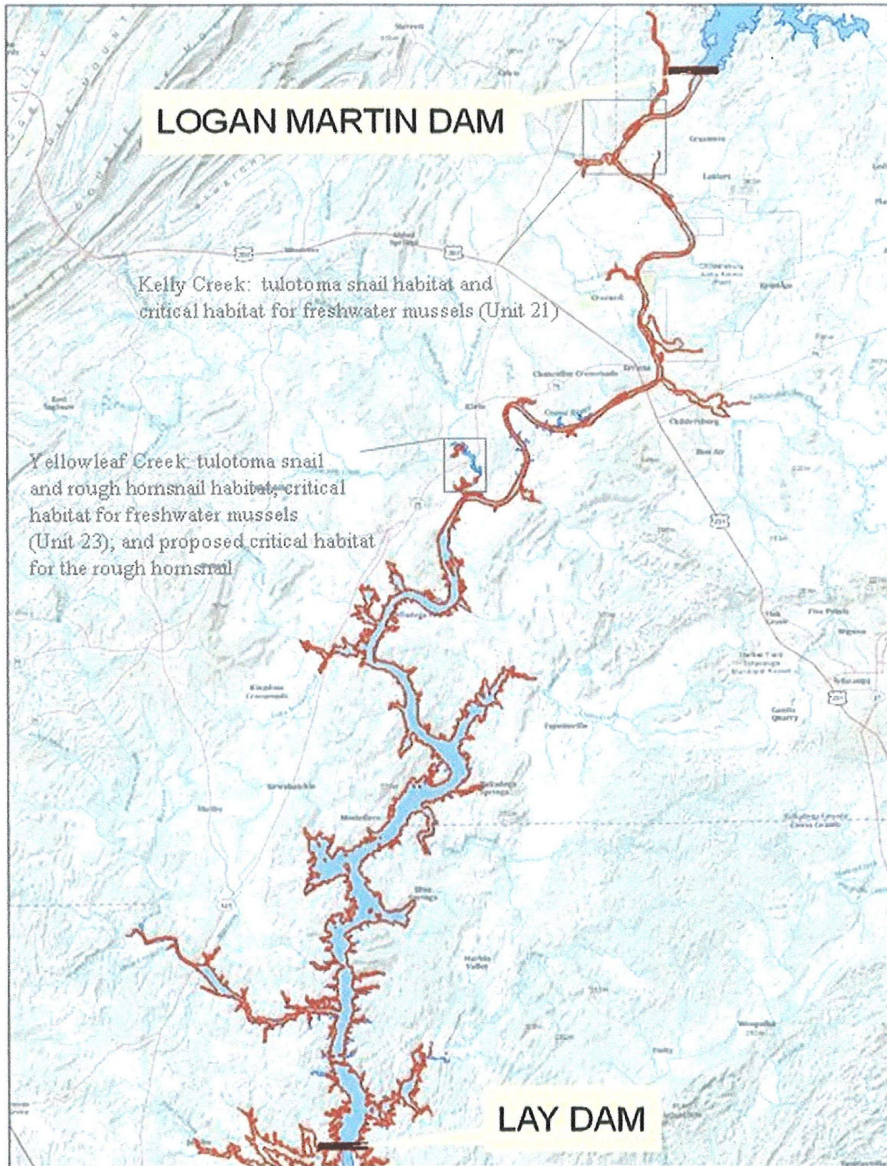
## **Population dynamics**

Recent surveys in the Coosa River downstream of Logan Martin Dam estimated a population size of approximately 5,780 in select marginal habitats (APC 2009). Although tulotoma is known in low numbers from deeper sections of the Coosa River in this area, population sizes were not estimated in this report.

According to Christman et al. (1995), tulotoma abundance appears to be highest in the Coosa River below Jordan Dam, with minimum densities of 86 snails per square meter ( $m^2$ ). Total population numbers below Jordan Dam were estimated to be over 109 million snails in 1995, with annual recruitment estimated at 163 million tulotoma. During 1992-1994, population surveys of the tulotoma in Kelly Creek found average densities of 17.9 snails/ $m^2$  with maximum density of 193 snails/ $m^2$ ; while average densities in Hatchet Creek averaged 10.5 snails/ $m^2$  with maximum density of 262 snails/ $m^2$  (Christman et al. 1995).

DeVries et al. (2003) looked at genetics of the tulotoma snail. Tissue samples were compared from the Coosa River below Jordan Dam, Choccolocco, Kelly, Hatchet, and Weogufka Creeks using electrophoretic analysis. It was determined that the Coosa River population was the most variable and distinctive with highest mean number of alleles per locus, percentage of polymorphic loci, and mean heterozygosity. The Coosa River main stem population also had three alleles not found in the other populations. Genetic similarity ranged from 0.88-0.97, and the populations clustered into one of two major groups: Hatchet Creek and Coosa River; and Weogufka, Choccolocco, and Kelly Creeks.





**Figure 1. Generalized map of the Lay Lake project boundaries (in red), locations of tulotoma snail, the rough hornsail, and designated and proposed critical habitat.**

**Status and distribution**

The primary threats to tulotoma remain the same as it was when it listed; habitat fragmentation and population isolation and elimination of habitat from the construction of large dams in the Alabama River system.

When listed, the tulotoma snail was known from five small, localized and isolated populations

that included, the Coosa River below Jordan Dam, and Ohatchee, Weogufka, Hatchet, and Kelly creeks. In recent years, populations have been discovered in Choccolocco Creek, Yellowleaf Creek, Weoka Creek, and most recently, in the Alabama River below R.F Henry, Millers Ferry, and Claiborne lock and dams (DeVries 2005 and 2008; Garner *in litt.* 2006 and 2008, J Powell, pers obs.). Since its listing, the population in Kelly Creek has been extended down to its confluence with the Coosa River (Garner *in litt.* 2003, Lochamy *in litt.* 2005). Although densities have not been estimated, they are believed to occur in the “hundreds” at some locations (Lochamy *in litt.* 2005). The lower Coosa River population, downstream of Jordan Dam is found throughout a 4.4 mile reach, and is considered stable or increasing (DeVries 2005, 2008). Christman et al. (1995) estimated the population here to be greater than 109 million. Tulotoma colonies also appear to be stable in an 8.5 mile reach of Weogufka Creek, an 8.8 mile reach of Hatchet Creek, and a 3.6 mile reach of Kelly Creek. The Ohatchee Creek population may have been extirpated (DeVries 2005, 2008). After more than a twenty year absence, a small colony of tulotoma were rediscovered during the summer of 2006 in the lower Alabama River downstream of Claiborne Lock and Dam (Garner *in litt.* 2006). Since this re-discovery, populations have also been found downstream of R.F. Henry and Millers Ferry lock and dams (Garner *in litt.* 2008, J. Powell, pers. obs.).

### **Proposed species/critical habitat description**

#### Rough Hornsnail (*Pleurocera foremani*)<sup>3</sup>

On June 29, 2009, the rough hornsnail was proposed for listing under the Endangered Species Act as Endangered, and Yellowleaf Creek was proposed as critical habitat from the confluence of Morgan Creek, downstream to 1 mile below Alabama Highway 25 (74 FR 31114). Refer to Figure 2, for a map of the proposed designation.

Critical habitat is defined as those areas that are essential for the conservation of the species and contain one or more primary constituent element's (PCE's), where the PCE's are defined as the physical and biological factors essential for the conservation of the species. A generalized list of the PCE's for the rough hornsnail include; stable stream channels; a flow pattern that is seasonably variable; adequate water quality; and a mixture of sand, gravel, and cobble substrates, with minimal amounts of fine sediments and algae<sup>4</sup>.

### **Life history**

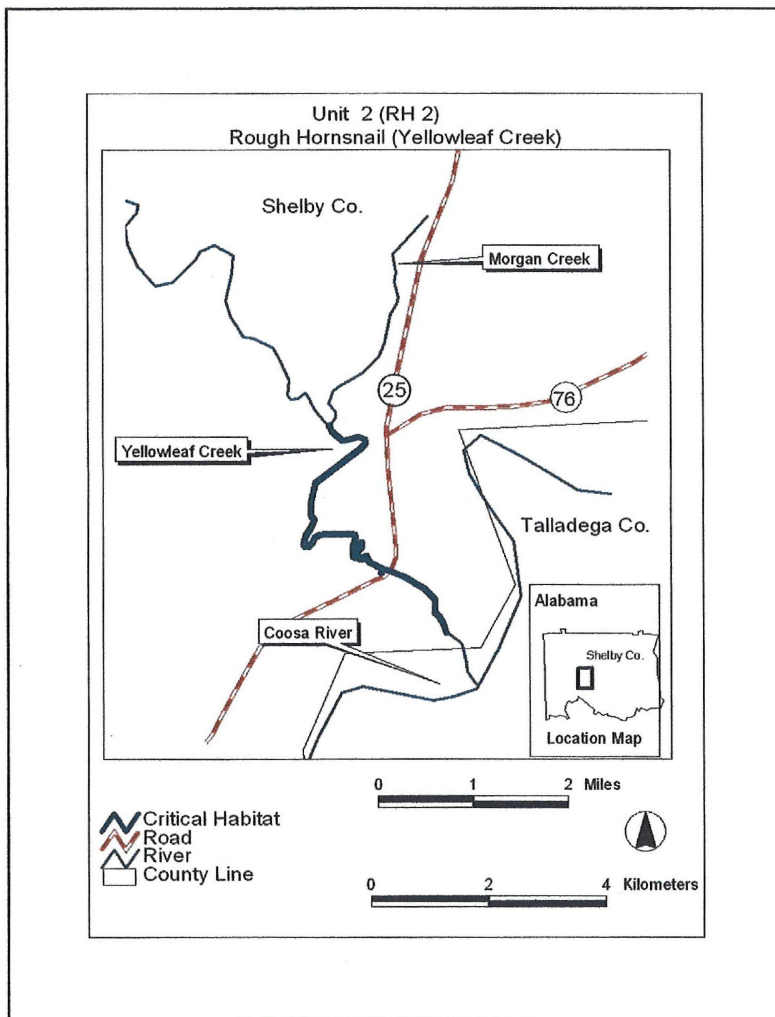
The rough hornsnail is a freshwater snail in the family Pleuroceridae. The shell is elongated, pyramid-shaped, and thick, and has two distinct rows of nodules or tubercles found along the anterior margin of the shell. According to Tryon (1873), these characters separate the rough

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3 For additional information on the rough hornsnail (*Pleurocera foremani*) refer to the proposed listing rule (74 FR 31114)

4 For additional information on the rough hornsnail and its proposed critical habitat, refer to the *Federal Register* (74 FR 31114)

hornsnail from all other hornsnails. It is endemic to the Coosa River where it was reported by Goodrich (1944) to occur, “in the Etowah River of Georgia downstream, and at the mouths of a few side streams.” However, no museum records are available for the species from the Etowah River to validate it ever occurred there (P. Johnson *in litt.* 2009). Therefore, it is questionable as to whether or not the species ever occurred in the Upper Coosa Basin, in Georgia. Credible records do exist from several Coosa River tributaries in Alabama, including, Big Wills, Kelly, Big Canoe, Beaver, Ohatchee, Choccolocco, Peckerwood, and Yellowleaf creeks in Etowah, St. Clair, Shelby, Talladega, and Elmore counties, in Alabama (P. Johnson *in litt.* 2009). Little to no information is available on its life history requirements. However, the lifespan of rough hornsnail is presumably 2-3 years based on information from other hornsnail species (P. Johnson *in litt.* 2009). According to the *Federal Register* (74 FR 31116) the preferred habitat for the hornsnail is gravel, cobble, and bedrock in moderate currents; however, in Yellowleaf Creek, it was found it along the shorelines in 1-5 feet of water associated fine substrate and areas of dense aquatic vegetation (J. Powell, pers. obs.).



**Figure 2. Proposed critical habitat for the rough hornsnail in Yellowleaf Creek.**



## Population dynamics

There is little information available on the population size, variability, and stability of the species other than the population in the lower Coosa and in Yellowleaf Creek appear to be stable (P. Hartfield *in litt.* 2009; J. Powell, pers. obs.).

## Status and distribution

The primary cause for the decline in the rough hornsnail has been habitat loss from the construction of large dams throughout the Coosa River system. The loss of habitat have fragmented populations and eliminated the species from more than 99 percent of its historic range. It is currently known from only two locations; the lower reaches of Yellowleaf Creek, in Shelby County, Alabama; and the lower Coosa River below Wetumpka, in Elmore County, Alabama. Recent surveys in the lower reaches of Yellowleaf Creek, reported the species from approximately the lower three miles of the creek (J. Powell, pers. obs.). It was last reported from the Coosa River below Wetumpka in 2008 (C. Crow *in litt.* 2009).

**Table 2. Biological Opinions within the Alabama Field Office boundaries that have been issued for adverse impact to tulotoma snail**

OPINIONS <sup>1</sup>	SPECIES	NUMBERS <sup>2</sup>	HABITAT <sup>3</sup>	
			Critical Habitat	Habitat
1993/1	Tulotoma snail	500	NA	NA
1994/1	Tulotoma snail	5,000	NA	NA
1995/1	Tulotoma snail	50,000	NA	NA
2008/1	Tulotoma snail	73,443	NA	NA

1 Year/Number of Opinions

2 The number of individuals of the species that will be lost

3 Acres, miles of stream or shoreline, of critical habitat and non-critical habitat that would be lost or modified

## ENVIRONMENTAL BASELINE

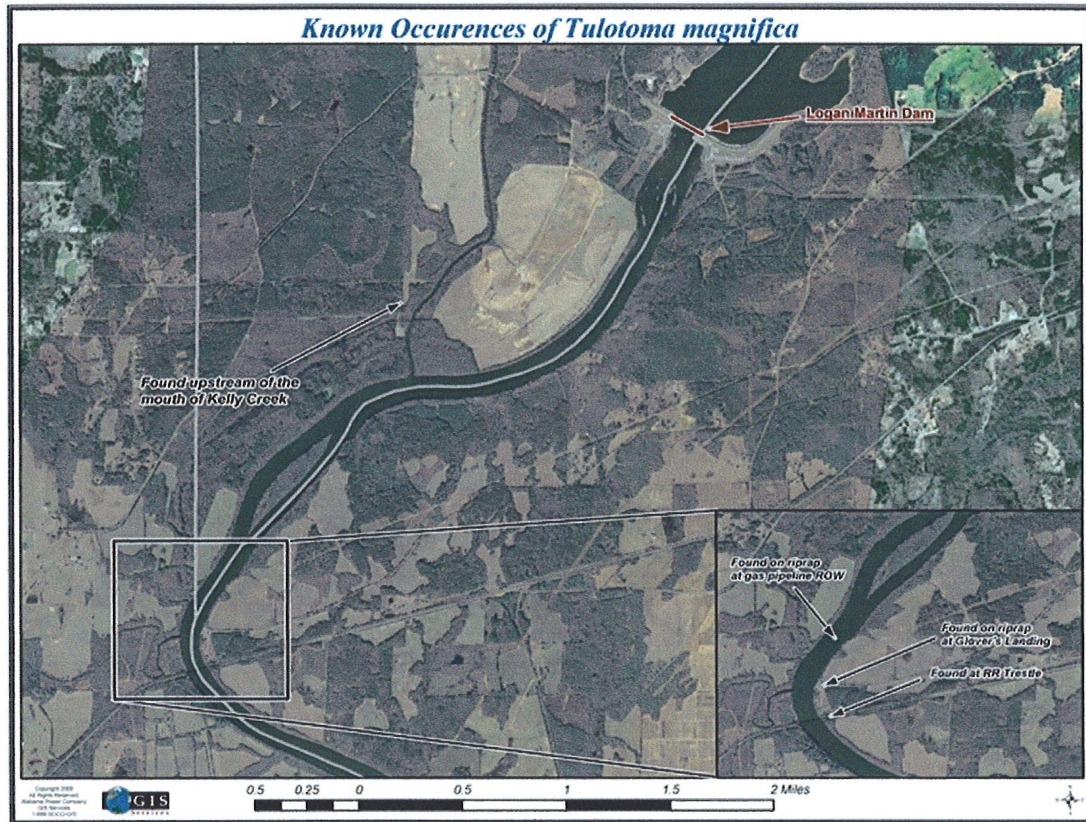
### Status of the species within the action area

#### Tulotoma Snail (*Tulotoma magnificia*) – Endangered

Within the action area, tulotoma has been reported from the lower reaches of Kelly Creek downstream to the railroad bridge (refer to Figure 3). Based on personal observations and the results of the BA, tulotoma was not present in the shallow, marginal, areas (less than three feet deep) of Kelly or Yellowleaf creeks, including the rip-rap at the Kelly Creek boat ramp. However, it does occur in the deeper sections of Kelly and Yellowleaf creeks and in the mainstem of the Coosa River. It is also present in the mainstem of the Coosa River in the shallower areas (less than three feet deep) at the pipeline right-of-way, at the railroad trestle, and



along the bank at Glover's Boat Ramp (Refer to Figure 3). Although tulotoma is present in the shallower areas at these locations, densities generally increased at depths greater than three feet (J. Powell, pers. obs.).



**Figure 3** Locations of tulotoma snail within the action area

Rough Hornsnail (*Pleurocera foremani*) – Proposed

Yellowleaf Creek potentially supports the strongest and most stable population of rough hornsnail. On August 12, 2009, biologists from the ADCNR, APC, and the Service assessed the extent of the rough hornsnail in the shallow marginal habitat (less than three feet deep) in lower Yellowleaf Creek. Deeper habitats were not assessed at this time. According to survey results, the hornsnail was present from approximately 1 mile downstream of Hwy 25, upstream to near the confluence of Morgan Creek, which is a total of approximately 3.5 miles. The species was fairly common in most areas where suitable habitat was present, and the highest densities occurred along the right descending bank at the Hwy 25 Bridge. The species was associated with stands of fairly dense aquatic vegetation including, water willow (*Justicia americana*) and milfoil (*Myriophyllum* sp.). Other mollusk species present at these sites included, *Campeloma regulare*, *Pleurocera prasinata*, *Elimia modesta*, *Physella* sp., numerous hydrobiid species, *Lampsilis*

*teres*, *Utterbackia imbecillis*, *Toxolasma parvum*, and *Quadrula apiculata*.

## **Factors affecting species environment within the action area**

### Tulotoma Snail and Rough Hornsnail

The tulotoma snail and rough hornsnail are generally affected by the same suite of multiple factors within the action area. However, many of these factors originate outside (i.e., upstream) of the action area, yet could still have a significant impact on the species within the action area. For example, in Kelly and Yellowleaf creeks, both species can be affected by natural factors such as, drought, but also by anthropogenic factors such as, nonpoint source pollution and habitat degradation, random spills, violation of permitted discharges, all of which would typically originate upstream. The primary factors, originating within the action area, are rapid changes in water quality and water levels from hydropower-peaking operations at Logan Martin Dam. Also, because both lower Kelly and Yellowleaf creeks are within the influence of the Lay Lake operational pool, fish communities have been substantially altered from their natural state. Therefore, the presence of reservoir-tolerant fishes, especially those that feed on mollusk (e.g., freshwater drum – *Aplodinotus grunniens*), tend to dominant the community and can have a significant impact on tulotoma and hornsnail populations sizes.

## **EFFECTS OF THE ACTION**

### **Factors to be considered**

The primary effect of this action on tulotoma and rough hornsnail, and its proposed critical habitat, is the temporary reduction in water level (from 396 to 393 msl).

### **Analysis for the effects of the action**

The effects of the proposed drawdown directly involve the reduction of water levels in Lay Lake by approximately three feet and the resulting exposure and dewatering of habitat. For tulotoma, this includes exposure of habitats at several marginal locations as indicated in Figure 3. These areas are not very large due to the steep gradient along the river margins. For the proposed rough hornsnail and its critical habitat, it involves a much broader area. The Yellowleaf Creek embayment is relatively shallow and wide and the proposed drawdown will likely affect an area at a scale in tens of acres.

### **Species' response to the proposed action**

#### Tulotoma Snail

All aquatic organisms, to some extent, utilize a behavior called rheotaxis (Fraenkel and Gunn 1940). This simply means that they use the current to orient themselves. Since tulotoma prefers

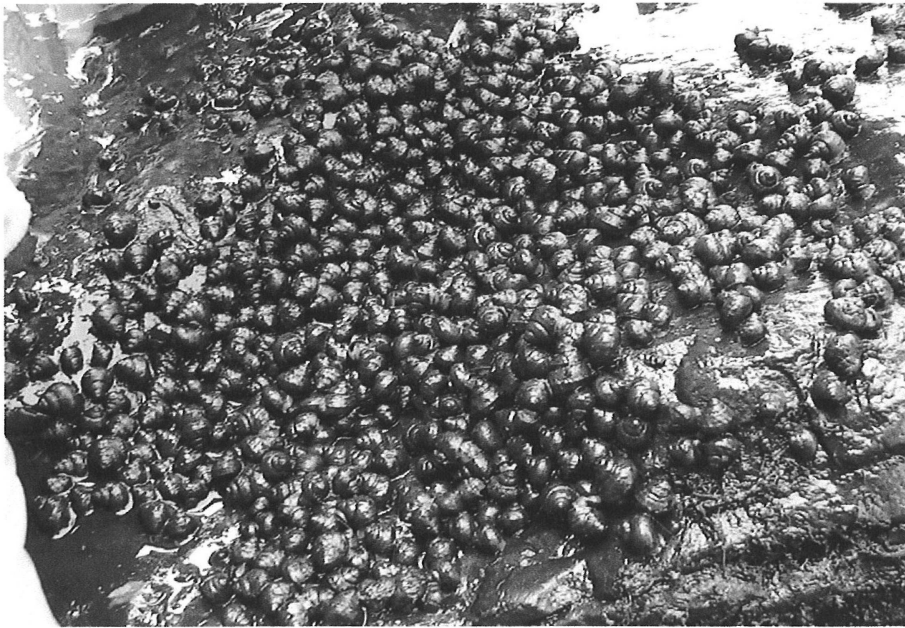
the swifter flowing habitats, a rheotactic behavior allows them to hold their position rather than being swept away by the current. This behavior in the water column could be further strengthened by the clustered formations that tulotoma creates under large rocks (see Figure 4).

In the Coosa River downstream of Jordan Dam, Christman et al. (1995) found that tulotoma did not respond favorably to receding water levels. Prior to the scheduled flow reductions at Jordan Dam in 1992, 1993, and 1994, they marked a total of 652 individuals in shallow habitats less than 0.5 meters deep to determine dispersal and stranding rates. Of the 652 snails that were marked during this study, 240 were recovered after the flow reduction and mortality was estimated at 93 percent.

Tulotoma presumably orients itself in a positive, upstream direction, similar to that of *Campeloma decisum* (Bovbjerg 1952). This is particularly important when evaluating the numerous rocky islands and shoals downstream of Jordan Dam. However, these types of habitats no longer exist in the Lay Lake pool because of inundation by the reservoir. The only suitable habitat for tulotoma in this reach (in the drawdown zone) is artificially-placed rip rap found along the margins (refer to Figure 3). From observations made during the August 2009 surveys, it is our opinion that many of the rocks that held tulotoma will remain wet at the end of the drawdown (J. Powell, pers. obs.), primarily because of rock size and gradient along the banks. The habitat Christman et al. (1995) evaluated along the margins at Jordan is quite different (lower gradient and smaller rocks) than the habitat found along the banks at Lay. Rocks are larger and the gradient at which they are placed is steeper. Also, very few tulotoma were found in the upper one foot of the water column. Therefore, when the proposed levels at Lay Lake begin to recede, tulotoma may be able to orient themselves upstream, crawl down the rock to its lowest point, and minimize the stranding effect that was observed in the Coosa River below Jordan Dam by Christman et al. (1995).

Based on recent survey data provided in the BA, there are approximately 5,780 tulotoma occupying the shallow marginal areas within the action area. Once water levels begin to recede, tulotoma have a couple of options; they can either remain in the same location, or they can follow the waterline down as levels recede. If they do not move, mortality or predation will inevitably occur. If they are able to follow the waterline, they will likely survive and then re-populate the area once water levels resume.





**Figure 4. Cluster of tulotoma snails in the Coosa River**

Rough Hornsnail and proposed critical habitat

We do not have population data for the rough hornsnail within the action area. However, during qualitative surveys in August 2009, the species was widely distributed along the margins of Yellowleaf Creek. The width and gradient of the occupied habitat will determine the likelihood if hornsnails will be able to follow the waterline as levels decline. In the broad, flat areas of Yellowleaf Creek, it is unlikely that the snails will be able to move fast enough to follow the waterline resulting in high mortality and/or predation. In the higher gradient areas, where habitats are located closer to the creek channel, snails will likely be able to follow the waterline and survive.

In regard to critical habitat, this biological and conference opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat in 50 C.F.R. §402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.

As a result of this action, only two of the PCE’s would likely be affected. The first PCE states that stream and river channels and banks should be geomorphically stable (e.g., channels that maintain lateral dimensions, longitudinal profiles, and sinuosity patterns over time without an aggrading or degrading bed elevation). Although the nature of this action is temporary, previously wetted streambeds will undoubtedly be degraded by the dewatering, and longitudinal and lateral profiles will be modified substantially. The second PCE states that flows should reflect seasonal variability necessary to maintain benthic habitats. Again, the rapid reduction in wetted shoreline will produce an unnatural change in the flow regime.



## **CUMULATIVE EFFECTS**

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological and conference opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Due to the short term nature of this action, we do not anticipate any cumulative effects between the period of October 11-28, 2009, outside of what has been proposed.

## **CONCLUSION**

After reviewing the current status of the tulotoma snail and rough hornsnail and the proposed critical habitat for the rough hornsnail, the environmental baseline for the action area, the effects of the proposed Lay Lake drawdown, and the cumulative effects, it is the Service's biological and conference opinion that the Lay Lake drawdown, as proposed, is not likely to jeopardize the continued existence of the tulotoma snail or the proposed rough hornsnail, and it is not likely to destroy or adversely modify the proposed critical habitat for the rough hornsnail.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary for listed species, and must be undertaken by the FERC so that they become binding conditions of any grant or permit issued to the APC, as appropriate, for the exemption in section 7(o)(2) to apply. For proposed species, the prohibitions against taking the species found in section 9 of the Act do not apply until the species is listed. However, the Service advises the FERC to consider implementing the following reasonable and prudent measures. If this conference opinion is adopted as a biological opinion following a listing or designation, these measures, with their implementing terms and conditions, will be non-discretionary, and must be undertaken by the FERC so that they become binding conditions

of any grant or permit issued to the APC, as appropriate, for the exemption in section 7(o)(2) to apply. The FERC has a continuing duty to regulate the activity covered by this incidental take statement. If the FERC (1) fails to assume and implement the terms and conditions or (2) fails to require the APC to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the FERC or APC must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(I)(3)]

### **AMOUNT OR EXTENT OF TAKE ANTICIPATED**

The Service expects that as many as 5,780 individuals of tulotoma could be taken as a result of this proposed action. The incidental take is expected to be in the form of harassment and kill. Based on the previous studies (Christman et al. 1995) and a worst case scenario, it is reasonable to expect that 7 percent of the take will be in the form of harassment and as much as 93 percent will be in the form of kill. Because of the difficulty in measuring the level of harassment and kill, it is estimated that approximately 405 individuals will be harassed and 5,375 individuals will be killed along the margins of the Coosa River in the Lay Lake operational zone.

The Service also anticipates incidental take of the proposed rough hornsnail as a result of the proposed action. The incidental take is expected to be in the form of harassment and kill. However, it will be difficult to detect for the following reason(s): we do not have density estimates of the number of rough hornsnails present in the impact zone; due to its small body size, finding a dead or impaired specimen is unlikely; some individuals will likely be consumed by mollusk-eating predators; and some individuals will presumably follow the waterline as the stage decreases. Therefore, the level of kill cannot be determined at this time, but will include all shoreline habitats in Yellowleaf Creek exposed from the drawdown.

### **EFFECT OF THE TAKE**

In the accompanying biological and conference opinion, the Service determined that this level of expected take is not likely to result in jeopardy to the tulotoma snail or the proposed rough hornsnail, or destruction or adverse modification of proposed critical habitat.

### **REASONABLE AND PRUDENT MEASURES**

The Service believes the following reasonable and prudent measure(s) are necessary and appropriate to minimize take of tulotoma and rough hornsnail:

- Increase the time at which tulotoma and the rough hornsnail will have to follow the waterline as water levels recede;
- Reduce the stranding/mortality rate of tulotoma and rough hornsnail;
- Determine the amount of habitat exposed at the lowest point of the drawdown

(presumably at 393 foot).

The prohibitions against taking the rough hornsnail found in section 9 of the Act do not apply until the species is listed. However, the Service advises FERC to consider implementing the following reasonable and prudent measures. If this conference opinion is adopted as a biological opinion following a listing or designation, these measures, with their implementing terms and conditions, will be non-discretionary.

## **TERMS AND CONDITIONS**

In order to be exempt from the prohibitions of section 9 of the Act, the FERC must comply with the following terms and conditions, which carry out the reasonable and prudent measures, described above and outline required reporting/monitoring requirements. For the rough hornsnail, this conference opinion is adopted as a biological opinion following a listing or designation, and these terms and conditions will be non-discretionary. For the tulotoma snail, these terms and conditions are non-discretionary.

- Increase the drawdown rate from two days to three days. This should provide an approximate drawdown rate of less than 12 inches per day, which should provide tulotoma and rough hornsnail a better chance at following the waterline as reservoir levels decline;
- Efforts should be made daily, during the drawdown period and one day following the lowest point, to salvage any exposed individuals. All salvaged individuals should be translocated to an area safe from drawdown levels and the number of individuals should be recorded and reported to the Service following the completion of the action;
- Shoreline surveys should be conducted at all areas occupied by tulotoma (refer to Figure 3 for specific locations) and the rough hornsnail prior to and at the lowest point of the drawdown to determine the amount (e.g., acres) of exposed habitat.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. The Service believes that no more than 5,375 of tulotoma and an undetermined acreage of shoreline habitat for the rough hornsnail will be incidentally taken. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The FERC must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

## **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse

effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- Coordinate with the Service to design and implement studies to determine the approximate movement of tulotoma and rough hornsnail during future actions of this nature;
- Re-evaluate the need to conduct future drawdowns of this nature at Lay Lake, as well as other projects;

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of conservation recommendations carried out.

### **REINITIATION NOTICE**

This concludes formal consultation on the action outlined in the September 25, 2009 request. As written in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary FERC involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the FERC action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the FERC action is later modified in a manner that causes an effect to the listed or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease until reinitiation.

You may ask the Service to confirm the conference opinion as a biological opinion issued through formal consultation if the rough hornsnail is listed and critical habitat is designated. The request must be in writing. If the Service reviews the proposed action and finds that there have been no significant changes in the action as planned or in the information used during the conference, the Service will confirm the conference opinion as the biological opinion on the project and no further section 7 consultation will be necessary.


The incidental take statement provided in this conference opinion does not become effective until the species is listed and the conference opinion is adopted as the biological opinion issued through formal consultation. At that time, the project will be reviewed to determine whether any take of the rough hornsnail has occurred. Modifications of the opinion and incidental take statement may be appropriate to reflect that take. No take of the rough hornsnail may occur between the listing of the rough hornsnail and the adoption of the conference opinion through formal consultation, or the completion of a subsequent formal consultation.

For this biological opinion the incidental take would be exceeded when the take exceeds 5,375 for tulotoma which is what has been exempted from the prohibitions of section 9 by this opinion.



The Service appreciates the cooperation of the FERC during this consultation. We would like to continue working with you and your staff regarding the Lay Lake Drawdown Project. For further coordination please contact Jeff Powell at (251) 441-5858.

Sincerely,



William J. Pearson  
Field Supervisor  
Alabama Ecological Services Field Office

cc: John Grogan, APC, Birmingham, AL  
Pete Yarrington, FERC, Washington D.C.  
Stan Cook, ADCNR, Montgomery, AL  
Paul Hartfield, FWS, Jackson, MS

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