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December 6, 2006

Ms. Sandy Tucker
U. S. Fish and Wildlife Service
Westpark Center, Suite D
105 Westpark Drive
Athens, Georgia 30606

Dear Ms. Tucker:

You will find enclosed a summary of the conservation actions conducted during 2006 for the Candidate Conservation Agreement with Assurances for the Robust Redhorse, *Moxostoma robustum*, Ocmulgee River, Georgia, (CCAA) as described in Agreement Number 1448-40181-01-K-005. This report summarizes activities conducted during 2006 in fulfilling the first phase of the CCAA. Specific activities addressed include stocking the project site (Conservation Action 1) and studying the movement of introduced juvenile robust redhorse (Conservation Action 2).

Please contact Michael Abney at 404-799-2159 if you have further questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Nichols".
Mike Nichols
Environmental Laboratory Manager
Georgia Power Company

MAA

December 6, 2006
CCAA 2006 Progress Report
1448-40181-01-K-005

XC:

With 2006 progress report

Jimmy Evans, Georgia Department of Natural Resources

Richard Gooch, US Fish and Wildlife Service

Dave Coughlan, Chairman Robust Redhorse Conservation Committee

Eileen Moorehead, Troutman Sanders

John Biagi, Georgia Department of Natural Resources

Mike Harris, Georgia Department of Natural Resources

Chuck Huling, Georgia Power

Doug Jones, Georgia Power

Jimmy Helms, Georgia Power

Wanda Greene, Georgia Power

2006 Progress Report: Candidate Conservation Agreement with Assurances for the Robust Redhorse, *Moxostoma robustum*, Ocmulgee River, Georgia

Agreement Number 1448-40181-01-K-005

Conservation Action 1. *Georgia DNR will stock the Project Site with approximately 4,000 hatchery-reared robust redhorse fingerlings each year for five years.*

In November, Georgia DNR stocked 92 phase I robust redhorse at the Lloyd Shoals boat ramp. This number was not near the goal of 4000 due to extremely low hatchling survival at Walton and Richmond Hill hatcheries (J. Evans, personnel communication). To date 13,187 from 9 year classes have been stocked into the Ocmulgee River.

Conservation Action 2. *Georgia Power will fund two surveys, one in year 1 (2002) and one in year 3 (2004) on the movement of introduced juvenile robust redhorse.*

The second scheduled telemetry study, funded by Georgia Power for \$165,000, was implemented in 2006 by Dr. Tim Grabowski and Dr. Cecil Jennings of the University of Georgia (UGA). After being delayed due to a lack of juvenile specimens in 2004 and 2005, adult and subadult specimens were used under the adaptive management provisions of the CCAA and with the support of the Robust Redhorse Conservation Committee and the U.S. Fish & Wildlife Service (see letter dated August 18, 2006). A total of 37 robust redhorse were captured from stocked populations in the Broad River ($n=13$; TL=513-573 mm) and Ogeechee River ($n=24$; TL=316-502 mm) in late March and early April. These fish were transported to and held at UGA facilities, where 30 (20 Ogeechee River fish; 10 Broad River fish) were implanted with frequency coded radio transmitters. These radio transmitters have a manufacturer guaranteed battery life of approximately 350 days. These fish were held eight days post-op and were released at the boat ramp immediately downstream of Lloyd Shoals Dam on the morning of 19 April 2006. Fish were relocated several times a week for the first month post release. However, this became impossible as the fish dispersed downstream and thus radio-tagged robust redhorse have been relocated once a week since mid-May 2006. Tracking is conducted by boat between Lloyd Shoals Dam and Abbeville, Georgia. However, some stretches of the Ocmulgee River below Highway 16 and Juliette dam are accessible only by canoe. These river segments are tracked 1-2 times a month. Additional stretches of the Ocmulgee and Altamaha Rivers are tracked as time and conditions allow. A GPS waypoint, temperature, dissolved oxygen (DO), depth, current velocity, and turbidity measurements are recorded upon relocation of a radio-tagged robust redhorse. A qualitative habitat assessment also is conducted by categorizing available cover and substrate.

Initially, most of the fish remained within the river segmented bounded by Lloyd Shoals Dam and Juliette Dam. However, eleven individuals passed downstream of Juliette Dam in their first month at large. Three of these fish have not been relocated since April 2006 and are presumed to have either been captured by anglers or to have left the Ocmulgee. The fish remaining above Juliette Dam are active, regularly moving from the Lloyd Shoals Dam tailrace to shoal areas below Highway 16. Some fish regularly move

between the two dams. While most of the movements do not seem related to flows or other environmental variables, low DO levels in mid July 2006 prompted radio-tagged robust redhorse to abandon all habitats above Highway 16 for approximately two weeks. Individuals that have passed Juliette Dam appear to be more sedentary and generally make only short distance, irregular movements. Radio-tagged robust redhorse appear to differ in the types of habitat used depending on their position relative to Juliette Dam. Fishes below Juliette Dam are found in deeper water with higher levels of DO and turbidity than counterparts above Juliette Dam. They also are more likely to be associated with woody debris and sandy or muddy substrates. However, this is likely a reflection of differences in habitat availability above and below Juliette Dam.

Radio-tagged robust redhorse will continue to be tracked throughout the duration of the transmitter life. Of particular interest is determining if these fish will indicate the locations of spawning aggregations of resident robust redhorse in the Ocmulgee River. As the transmitters near failure, these fish will also be used to assess the efficiency of boat electrofishing on the detection probability of this species.

Conservation Action 3. Georgia Power will conduct or fund six surveys in order to monitor abundance and distribution of juvenile and adult robust redhorse within Project Site.

The third of five status surveys, performed in alternating years, under Conservation Action 3 is scheduled for 2007.

Conservation Action 4. Following the establishment of an adult refugial population in the Project Site, Georgia Power will fund three surveys to measure population size utilizing the mark-recapture methods used to estimate the population size of the Oconee River robust redhorse population.

Studies under Conservation Action 4 are not scheduled to begin until year 7 (2008).

Mike Nichols
Environmental Laboratory Manager
Georgia Power Company