

Preliminary Recreational Usage Estimates and Forecast for the Lewis Smith Project

Background

In the course of researching and reviewing existing information on the Black Warrior River, APC presented EPRO with a study which provides relatively up-to-date information on recreational use. In response to the ongoing ACT/ACF Comprehensive Study, a consortium of representatives from government agencies, interest groups, and private business hired Fishery Information Management Systems, Inc. (FIMS) to develop a recreation study. The study, *Potential Impacts of Water Diversion on Recreational Use and Economic Values Associated with Six Alabama Reservoir Systems*, addresses three reservoirs on the Coosa River, two on the Tallapoosa River, and Lewis Smith on the Black Warrior River. The study includes total recreational use estimates in terms of trips and hours and percentages of use associated with various types of recreational activities.

EPRO has concluded that the existence of this current recreational use data precludes the need to do extensive recreational use monitoring at the developments in order to complete requirements for the Lewis Smith Reservoir FERC relicensing application.

The purpose of this memo is to present the existing preliminary data from the FIMS Study describing recreation usage at the reservoir and tailwaters. In addition, a forecast of future recreational demands is presented.

Recreational Usage

The FIMS report presents recreational data in terms of both recreation hours and trips. While the trip estimates are comparable to those presented as part of the ACT/ACF Comprehensive Study, direct comparisons cannot be made between recreation **hours** presented here (The FIMS Study) and recreation **days** presented for the Coosa River projects (ACT/ACF Study).

Table 1 presents estimated 1995 recreational usage figures.

TABLE 1
Estimated Recreational Usage, by Activity Type, 1995
Alabama Power Company

	Lewis Smith Reservoir	Lewis Smith Tailwater	Total
Total Trips	244,406 (a)	10,700 (b)	255,106
Recreation Hours:			
Boating (c)	461,928	0	461,928
Water Recreation (c)	384,940	0	384,940
Land Recreation (c)	384,940	13,480	398,420
Boat Fishing (c)	261,759	674	262,433
Bank Fishing (c)	46,193	53,244	99,437
Total Recreation Hours	1,539,759	67,398 (b)	1,607,157

(a) Source: *Potential Impacts of Water Diversion on Recreational Use and Economic Values Associated with Six Alabama Reservoir Systems, Volume 4: The Lewis Smith Reservoir System*. Page 12.

(b) Source: *Potential Impacts of Water Diversion on Recreational Use and Economic Values Associated with Six Alabama Reservoir Systems, Volume 4: The Lewis Smith Reservoir System*. Page 13.

(c) Calculated from percentages provided in Table 9.2.1 (page 45) of *Potential Impacts of Water Diversion on Recreational Use and Economic Values Associated with Six Alabama Reservoir Systems, Volume 9: Study Overview*.

The FERC document *Preparing Environmental Assessments: Guidelines for Applicants, Contractors, and Staff* does not outline an approach for projecting recreational usage at the projects it licenses. The US Army Corps of Engineers, however, does cite several different approaches in Chapter 17 of its Policy Digest EP 1165-2-11. This document specifically mentions the use of regional models as a suitable approach to developing recreation projections (17-4a).

The USDA has developed regional recreational growth coefficients that project recreation days by activity (*Projections of Outdoor Recreation Participation to 2050*, published by the USDA Forest Service). This document provides indexed projections of future recreation days across four assessment regions (North, South, Rocky Mountain, and Pacific) in 10-year increments from 2000 through 2050. To develop the growth projections presented in the USDA document, a model of current recreational behavior was developed, using age, real income (effects of inflation have been removed), race, gender, and regional population

growth. For the South, population is projected to increase by 27.1 percent from 1995 to 2020 and by 53.4 percent from 1995 through 2050.

For the purposes of the projections presented here, growth factors were broken down to five-year increments based on the percentage change over the ten-year period. The recreation factors used to develop the projections presented here are from the Southern Region. An important benefit of the Behavior Model approach presented in the USDA document is that it develops usage coefficients for individual activities. Table 2 presents the projection index figures by activity, as identified in the USDA Forest Service report. Since trip length can change over time affecting the growth rate, the growth projection index for recreation days is presented. By using the growth coefficient for days as opposed to trips, the overall growth in recreational usage can be identified without having to make adjustments for future variations in trip length.

TABLE 2
Recreation Projection Index (a)
Southern Region, 2000 through 2050

Activity	FIMS Project Recreation Activities	2000	2005 (b)	2010	2015 (b)
Fishing	Boat Fishing, Bank Fishing	1.02	1.06	1.11	1.15
Motorboating	Boating	0.99	0.99	1.00	1.01
Nonpool Swimming	Water Recreation	0.96	0.99	1.02	1.05
Picnicking/Remote Camping (c)	Land Recreation	1.02	1.05	1.08	1.12

(a) Source: Bowker, J. M., Donald B. K. English, H. Ken Cordell. *Projections of Outdoor Recreation Participation to 2050*, published by the USDA Forest Service, Athens, GA.

(b) Interpolated.

(c) Growth coefficients are averaged to reflect the dominant land-based recreational activities at the Smith Reservoir.

Because of the variety of factors that can impact recreational participation, such as health trends and the economy, it is difficult to develop reliable projections beyond a 20-year period. Therefore, it is reasonable to present projections through 2015, 20 years beyond the 1995 estimates. Table 3 below presents the recommended recreational use projections by activity type through 2015.

TABLE 3
 Estimated and Projected Usage, by Activity Type (a)
 Alabama Power Company

	1995	2000	2005	2010	2015
Lewis Smith Reservoir					
Total Trips	244,406 (b)	243,428	250,577	260,523	274,090
Recreation Hours					
Boating	461,928 (c)	457,308	459,612	461,928	466,524
Water Recreation	384,940 (c)	369,542	380,915	392,639	404,022
Land Recreation	384,940 (c)	392,639	403,880	415,735	429,836
Boat Fishing	261,759 (c)	266,994	284,095	315,345	362,428
Bank Fishing	46,193 (c)	47,117	50,134	55,649	63,958
Total Recreation Hours	1,539,759 (b)	1,533,600	1,578,637	1,641,296	1,726,768
Average Growth Coefficient		1.00	1.03	1.07	1.12
Lewis Smith Tailwater					
Total Trips	10,700 (d)	10,914	11,354	11,813	12,228
Recreation Hours					
Bank Fishing	53,244 (c)	54,309	56,655	59,101	61,194
Land Recreation	13,480 (c)	13,749	14,143	14,558	15,052
Boat Fishing	674 (c)	687	717	748	775
Total Recreation Hours	67,398 (d)	68,746	71,515	74,407	77,020
Average Growth Coefficient		1.02	1.06	1.10	1.14

- (a) Projections were calculated from growth coefficients presented in Table 2 above.
- (b) Source: *Potential Impacts of Water Diversion on Recreational Use and Economic Values Associated with Six Alabama Reservoir Systems, Volume 4: The Lewis Smith Reservoir System*. Page 12.
- (c) Calculated from percentages provided in Table 9.2.1 (page 45) of *Potential Impacts of Water Diversion on Recreational Use and Economic Values Associated with Six Alabama Reservoir Systems, Volume 9: Study Overview*.
- (d) Source: *Potential Impacts of Water Diversion on Recreational Use and Economic Values Associated with Six Alabama Reservoir Systems, Volume 4: The Lewis Smith Reservoir System*. Page 13.

Conclusions/Recommendations

The existing FIMS study of recreational usage at the Smith Reservoir and Tailwaters addresses total recreation hours and trips. It also provides data on the types of recreational activities enjoyed at the project sites. It was estimated that in 1995, which was considered to be a typical year in terms of weather, that 244,406 trips were made to the Lewis Smith Reservoir, with an additional 10,700 made to the tailwaters. These trips represented more than 1.5 million recreation hours at the reservoir and roughly 67,000 hours at the tailwaters. At the reservoir, recreational usage is divided fairly evenly between boating (30 percent), water recreation (25 percent), and land recreation (25 percent). Less time was devoted to boat fishing (17 percent) and bank fishing (3 percent). At the tailwater, however, bank fishing is the most popular activity (79 percent). Other tailwater activity types are land

recreation (20 percent) and boat fishing (1 percent). EPRO recommends that this FIMS information be used to establish baseline recreational usage statistics for the Smith Project.

Using the growth coefficients presented in *Projections of Outdoor Recreation Participation to 2050*, it is projected that by 2015 recreational use at the Lewis Smith Reservoir will have increased 12 percent from the 1995 level. Total recreational usage at the tailwaters are projected to increase by 14 percent. Growth is projected to be strongest for fishing (15 percent) and weakest for boating (1 percent). The growth coefficients presented in *Projections of Outdoor Recreation Participation to 2050* were developed for individual activities within a region based on multiple explanatory variables. Therefore, it is recommended that the Smith IAG's use these activity-based growth coefficients in projecting future recreation use at the Lewis Smith project.

FERC FORM 80

The FIMS Study is presented in Trips and Recreation Hours. For FERC FORM 80 recreation hours cannot be converted to recreation days. However, EPRO believes it possible to convert total trips into recreation days by utilizing original survey information to determine average number of days per trip in order to convert trips to recreation days.

This process will require additional investigation and study of data presented in Appendix B and C of Volume 4 of the FIMS Study. The same information can be included in the FERC application to clarify the number of recreation days included in the FIMS listed recreation trips.