



## MIG 3 Project Operations

December 3, 2009



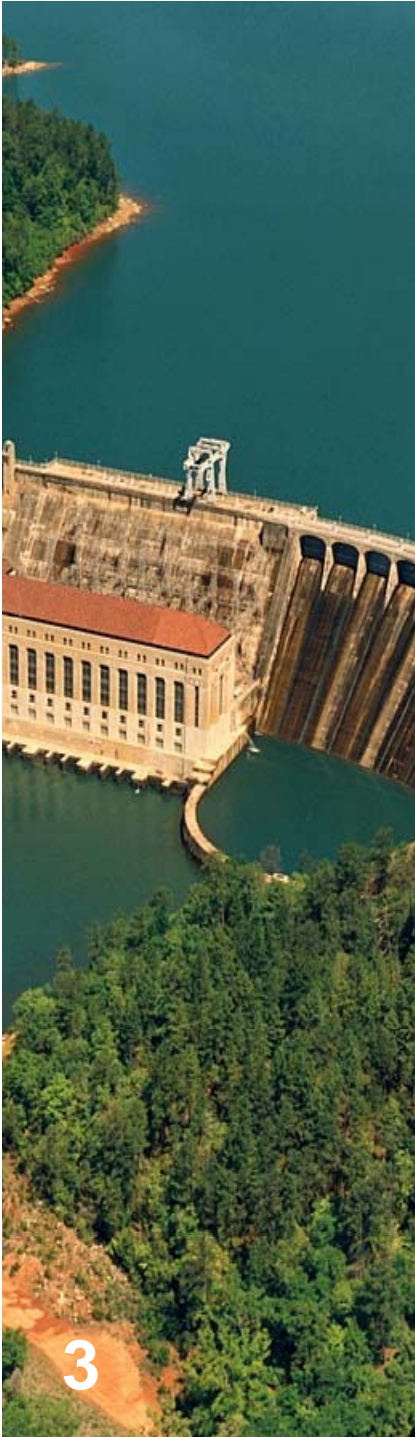


## Study Plan 12a:

# Rule Curve Change Modeling Analysis

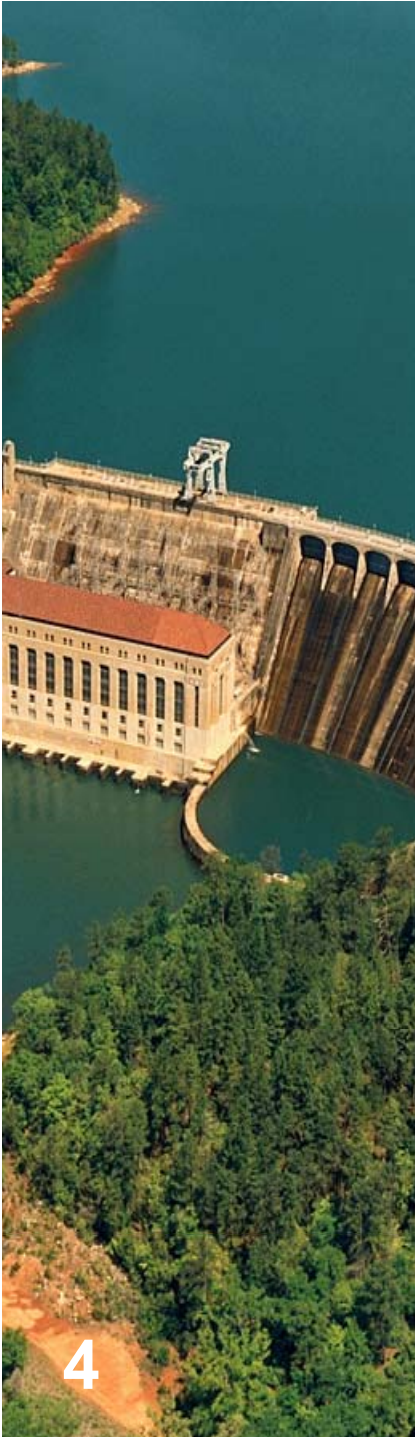
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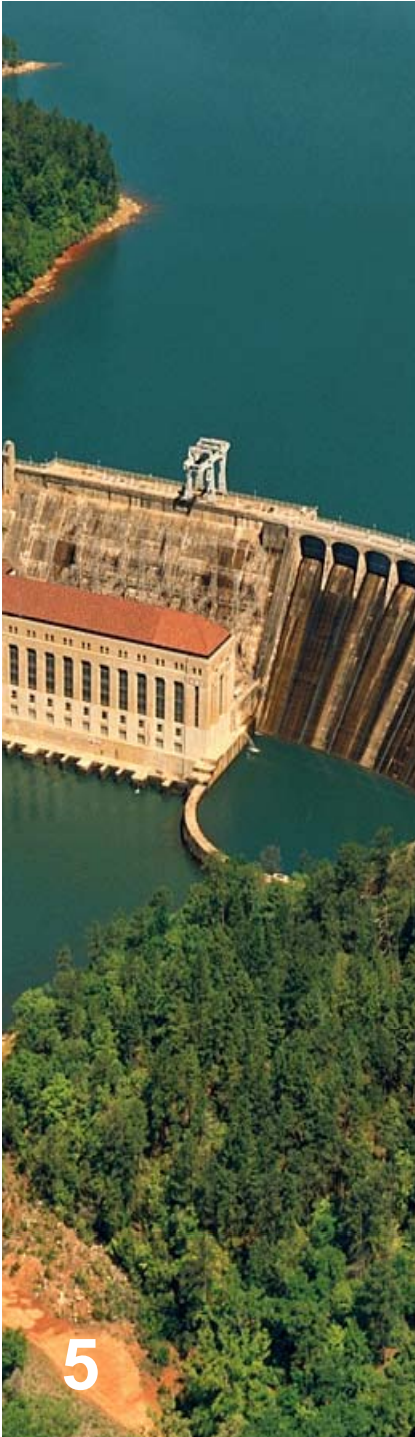
# Study Goals

- Determine the feasibility of revising the Martin rule curve and operating guidelines by modeling changes involving an increase in winter pool elevation in increments of 1 foot from el. 481 ft msl to el. 486 ft msl.



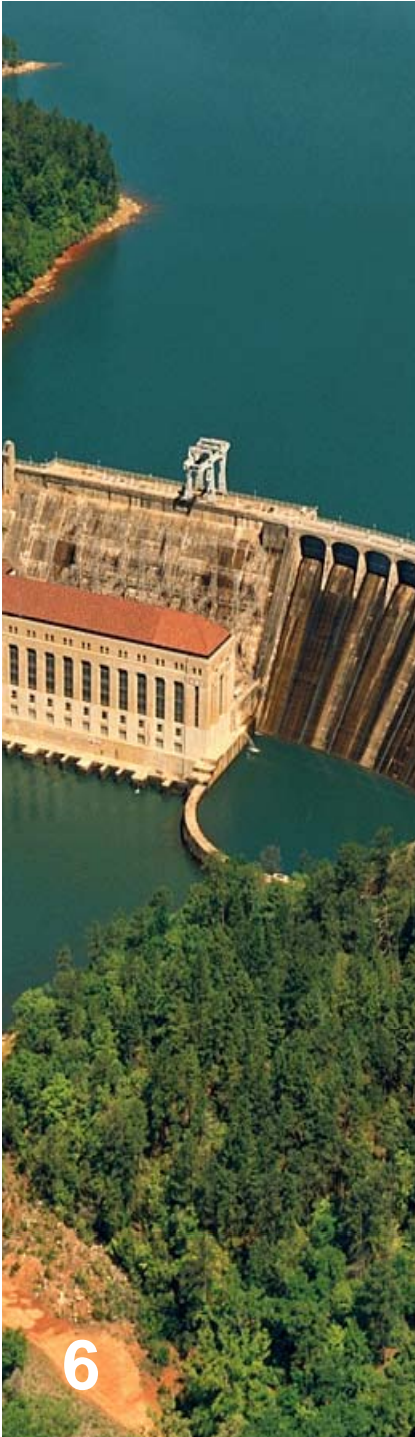
## Study Goals

- Examine the effects of maintaining the summer pool longer in the fall (October) and beginning the refilling of Lake Martin earlier (January 15 to reach full pool by April 1).
- Evaluate impacts to flood control, navigation, minimum flows, and generation.



## Completed To Date

- Developing the models
- Provided two modeling workshops for a subset of MIG 3 stakeholders that volunteered to participate and who possess the technical expertise for modeling



# Proposed Modifications

- Alabama Power proposed to include additional language in Study Plan 12(a) relative to downstream analyses and the use of Alabama Power's Hydro Energy Budget.

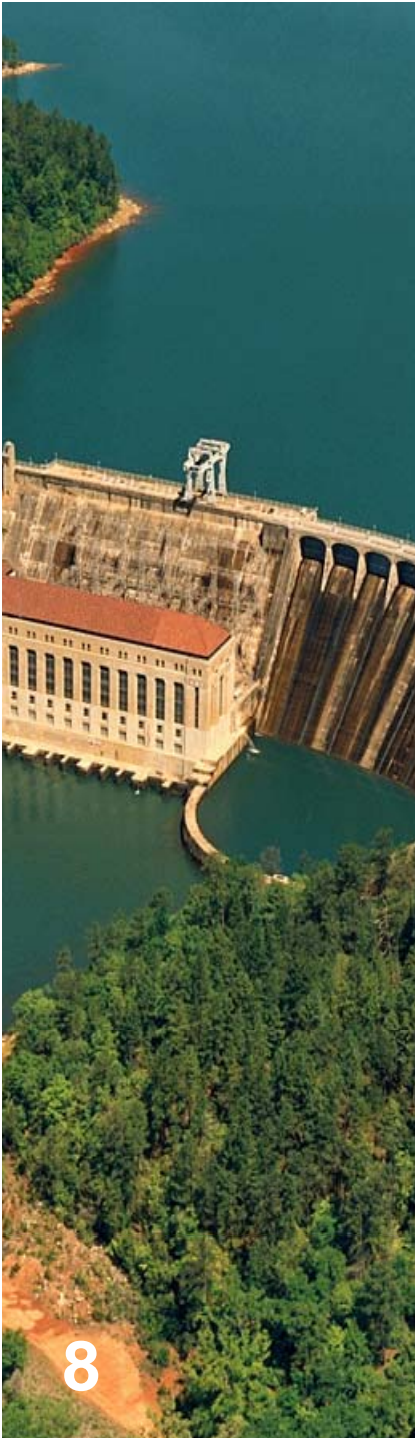


## Study Plan 12b:

# Effects of Rule Curve Change on Sedimentation Rates and Nuisance Aquatic Vegetation

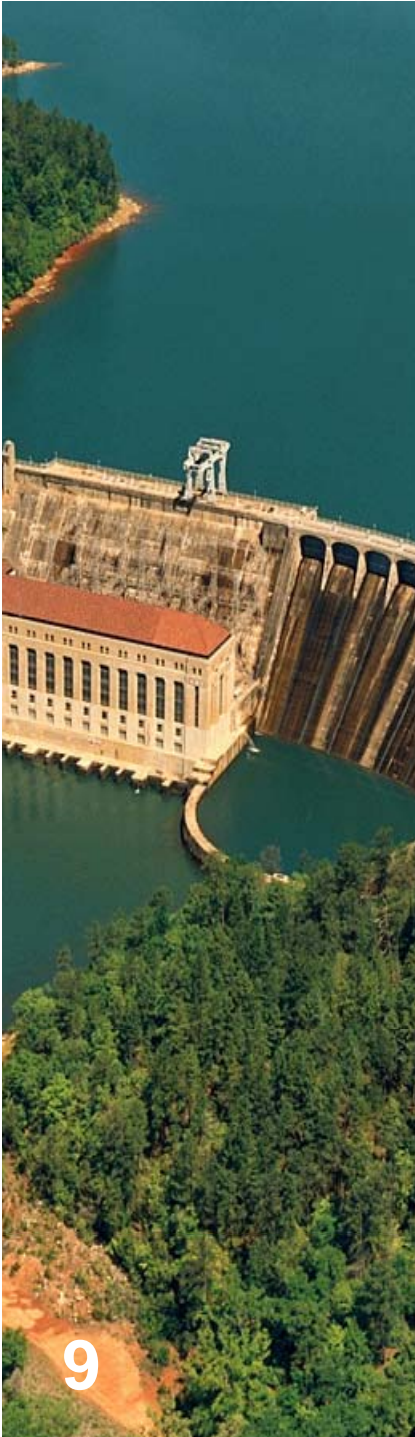
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## Study Goals

- Identify areas susceptible to increased sedimentation and establishment of nuisance aquatic vegetation.
- Develop a ranking system for these areas that describes the probability of increased sedimentation and establishment of nuisance aquatic vegetation at each proposed winter rule curve 1-ft elevation changes.

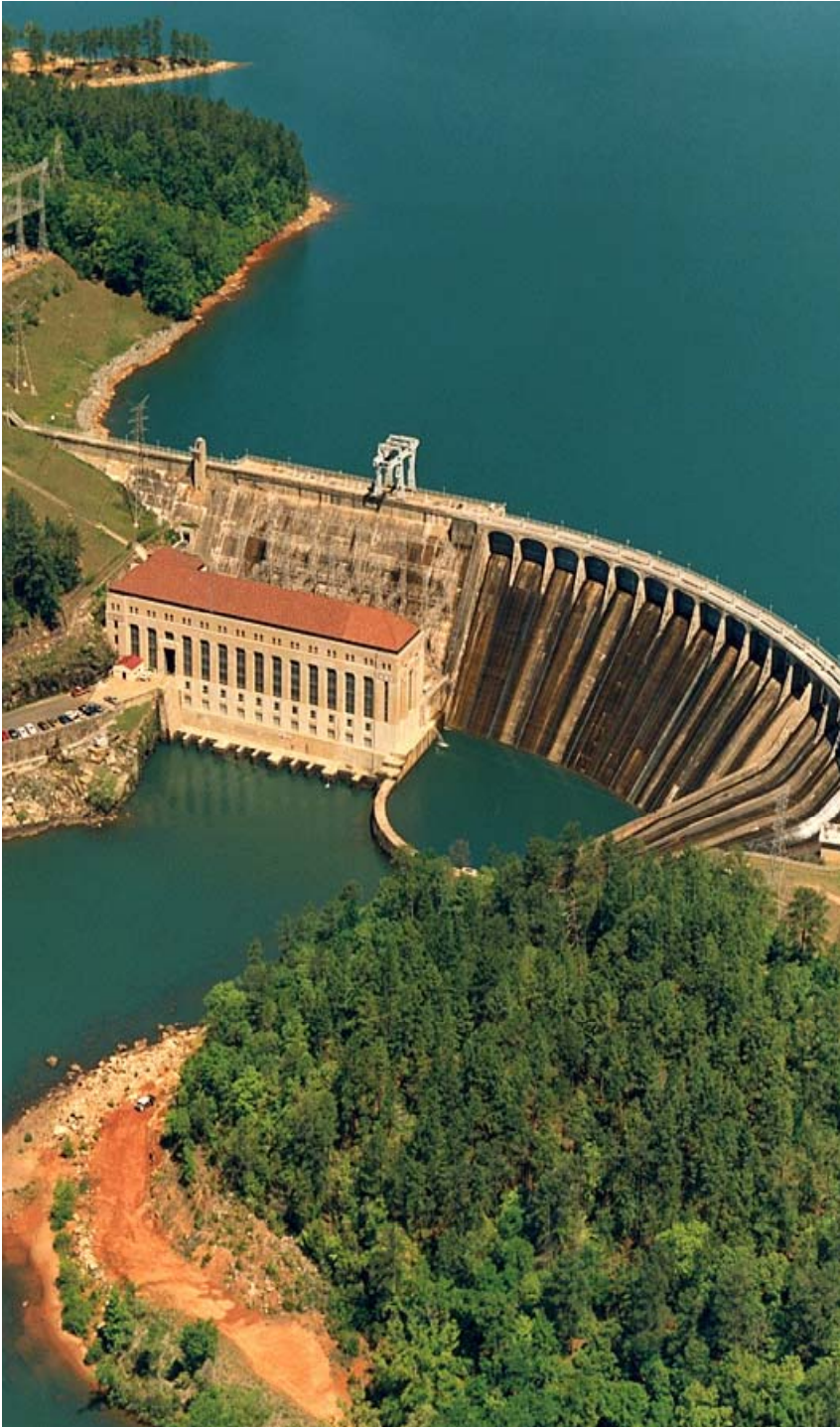


## Completed To Date

- Identifying areas susceptible to increased sedimentation and establishment of nuisance aquatic vegetation
- Developing a process to rank the areas in terms of its probability to experience increased sedimentation and establishment of nuisance aquatic vegetation at each proposed winter rule curve level

# Proposed Schedule Modifications

- Distribute the draft report in May 2010

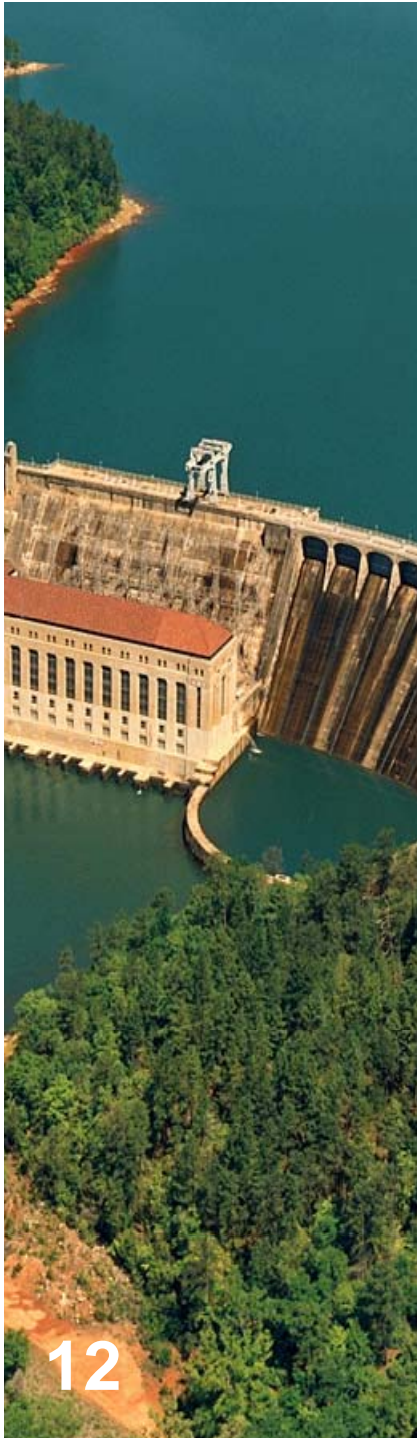


## Study Plan 12c:

# Effects of Rule Curve Change on Water Quality

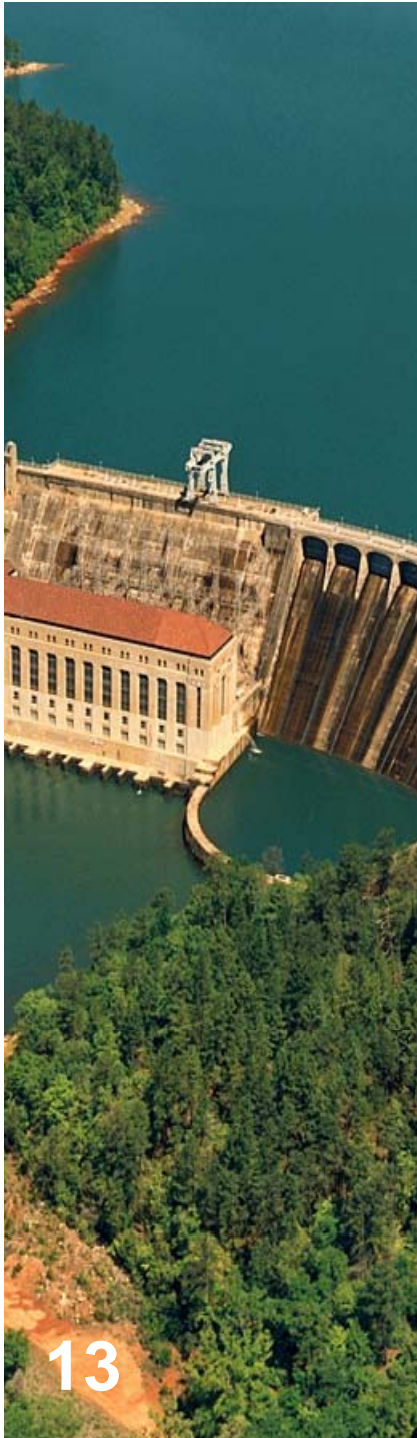
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## Study Goals

- Provide ADEM with sufficient data, to the extent possible, to examine the potential effects on water quality as a result of changing the winter rule curve elevation and/or extending the duration of the summer pool
- Determine the probability that water quality will change (improve or degrade) with each change to lake level from existing conditions using the above data



# Completed To Date

- Collected baseline water quality data in accordance with Study Plan 8

# Proposed Schedule Modifications

- Draft report in September 2010
- Final report in December 2010

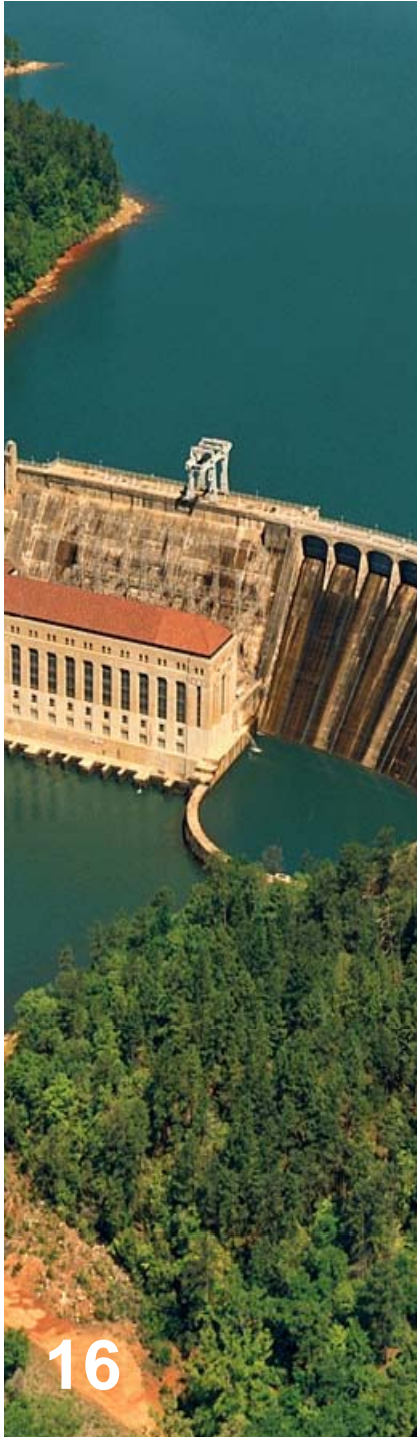


## Study Plan 12d:

# Effects of Rule Curve Change on Lake and Downstream Erosion

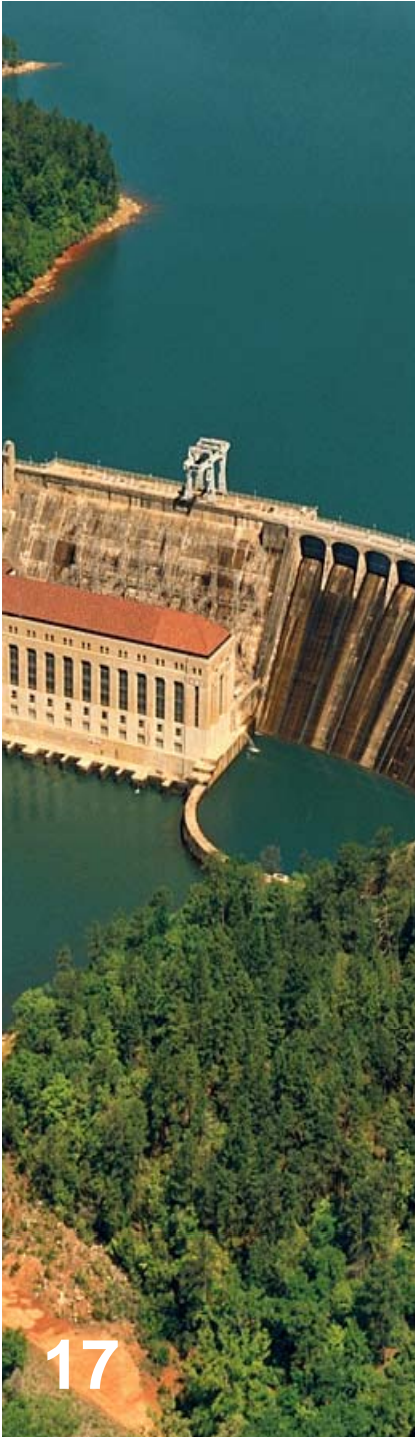
December 3, 2009





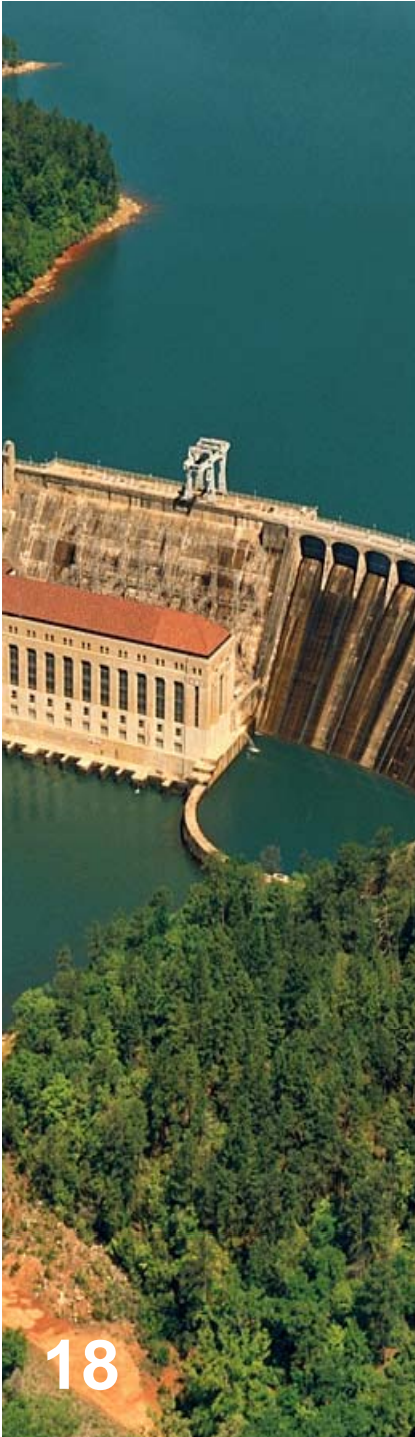
# Study Goals

- Identify the effect that increased flooding may have on the number of shoreline erosion sites that may occur in the Martin tailrace and Tallapoosa River downstream of Thurlow Dam.
- Evaluate the potential for increased or decreased erosion at the current erosion sites identified on Lake Martin in Study Plan 10.



## Completed to Date

- Stakeholders and Alabama Power contractors have identified erosion hotspot areas on Lake Martin and in the Martin Dam tailrace.
- Sedimentation areas are being identified through LIDAR and lake photography available for the project.



# No Proposed Modifications

- High lake levels have prevented Alabama Power from beginning field surveys to date; however, sampling will be conducted as soon as Lake Martin is dropped to elevation 481 msl.
- Alabama Power anticipates that the sampling can be completed in accordance with the schedule.

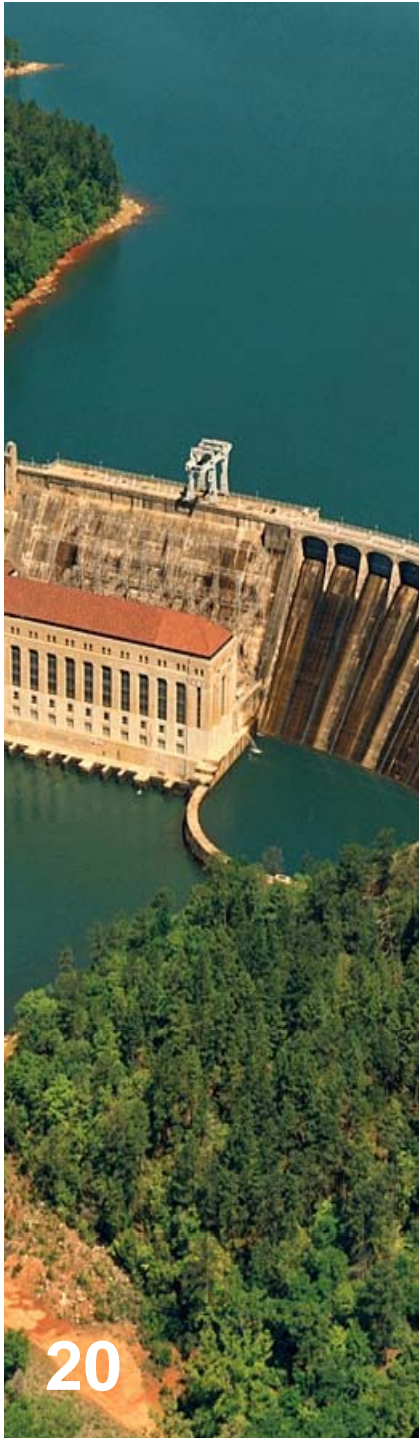


## Study Plan 12e:

# Effects of Rule Curve Change on Federally Threatened and Endangered Species at the Martin Project and In the Tallapoosa River Below Thurlow Dam

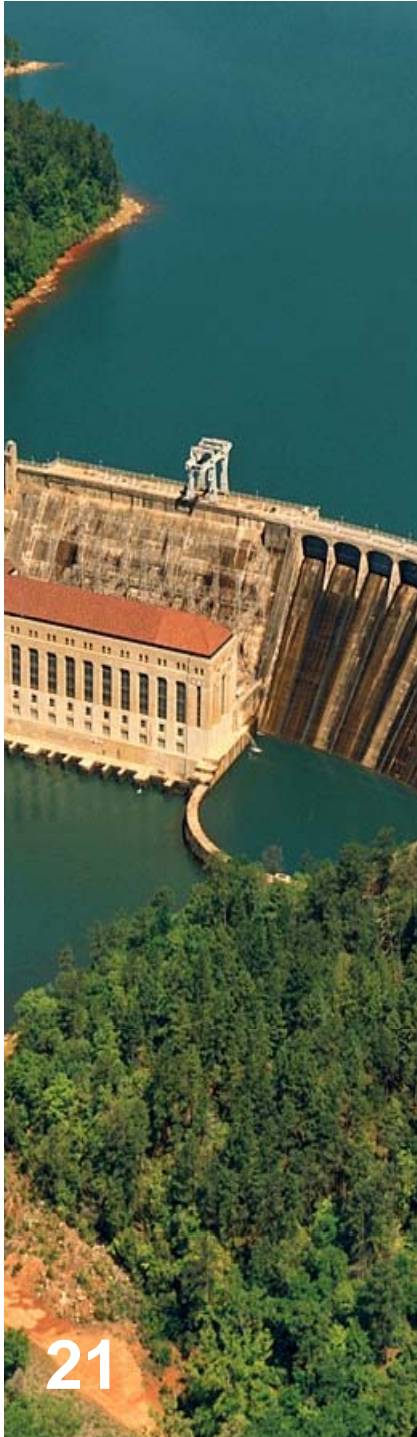
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## Study Goals

- Determine if increased flooding would affect existing aquatic and terrestrial populations of federally threatened and endangered species in the lower Tallapoosa River.
- Determine if a higher Martin lake level during the winter would potentially impact any existing aquatic and terrestrial populations of federally threatened and endangered species in the Martin Project boundary.



## Completed To Date

- Field surveys were performed by qualified investigators.
- No federally listed fish species were collected.
- No federally or state listed snail or mussel species were collected.
- Dr. David Whetstone (Jacksonville State University) has completed the final version The Lake Martin Vegetation Report.

# Proposed Schedule Modifications

- Mussel and snail sampling originally scheduled for late summer/early fall 2009 will be moved to April – June 2010 (assuming river flows return to normal conditions).
- Modify schedule
  - Draft report in July 2010
  - Final report in September 2010

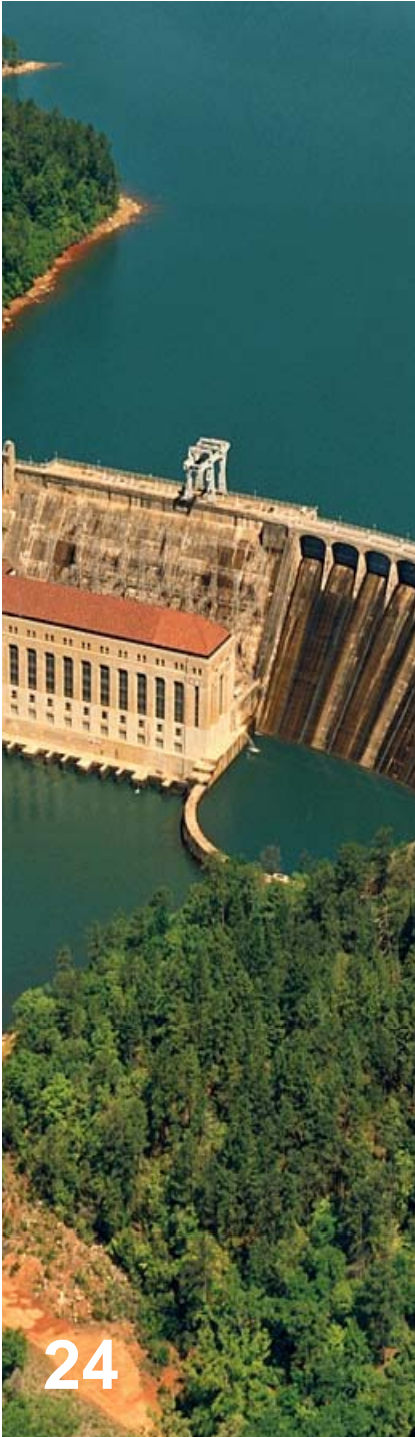


## Study Plan 12f:

# Effects of Rule Curve Change on Downstream Recreation

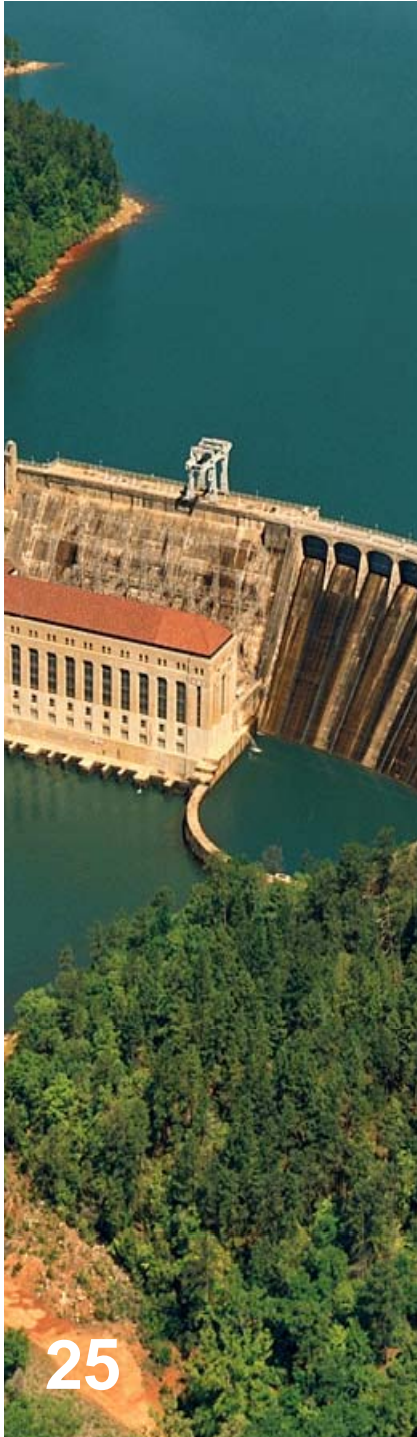
December 3, 2009





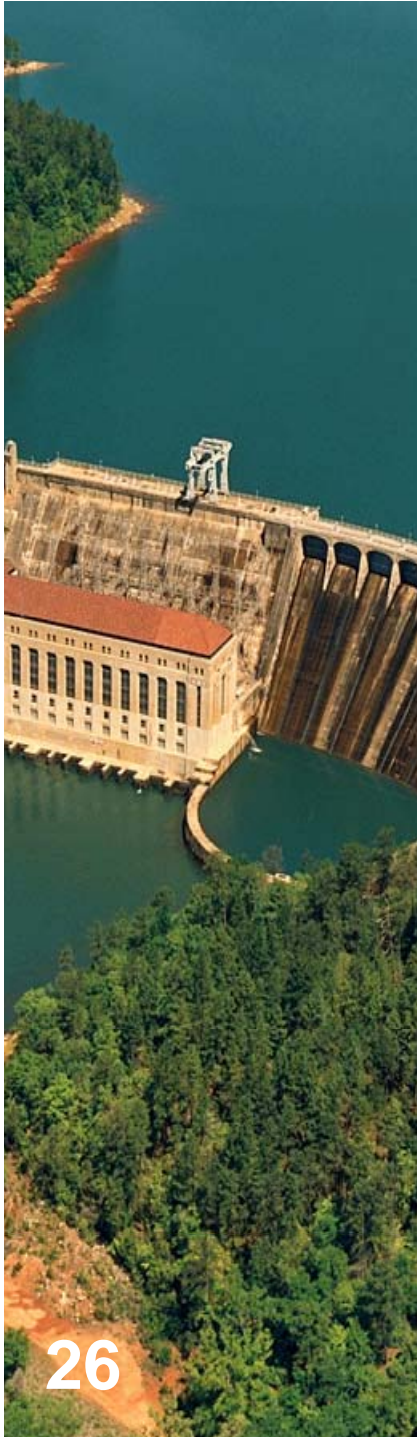
# Study Goal

- Determine the effects of the proposed rule curve changes on downstream recreation resources.



## Completed To Date

- At this time, Alabama Power is still conducting the hydrologic analyses associated with the proposed rule curve changes (12 a).
- Once the hydrologic analyses are nearing completion, Alabama Power will conduct this study as proposed.



# Proposed Modifications

- Draft report in July 2010.
- Final report in September 2010.

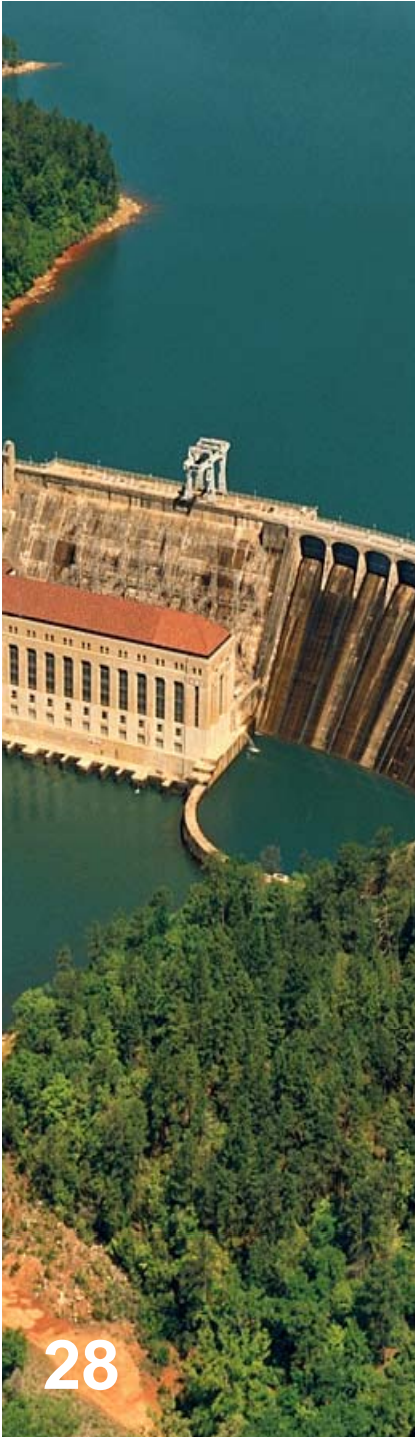


## Study Plan 12g:

# Effects of Raising Winter Pool Level and Increasing the Duration of Summer Pool on Lake Martin Recreation Use

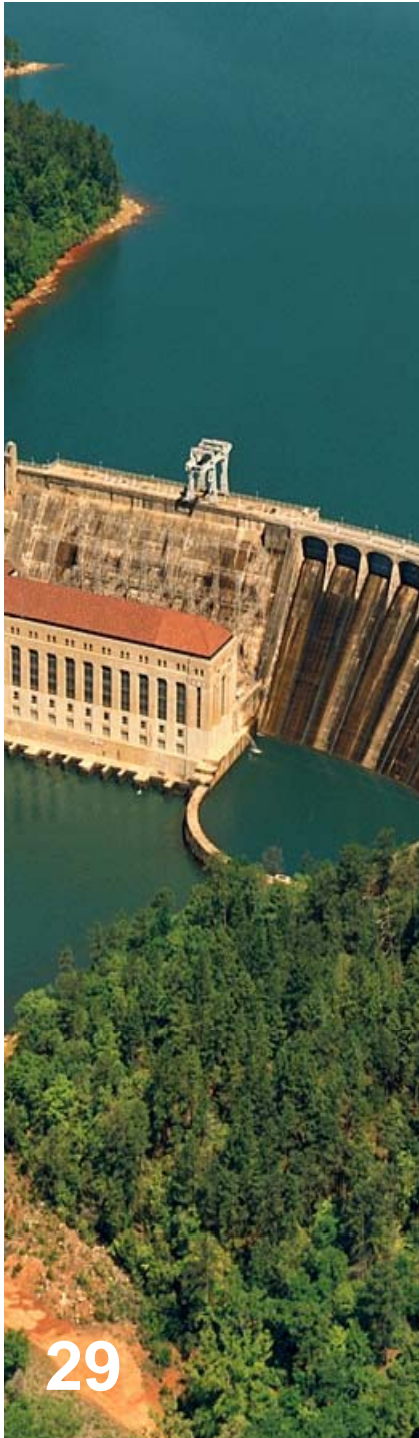
December 3, 2009





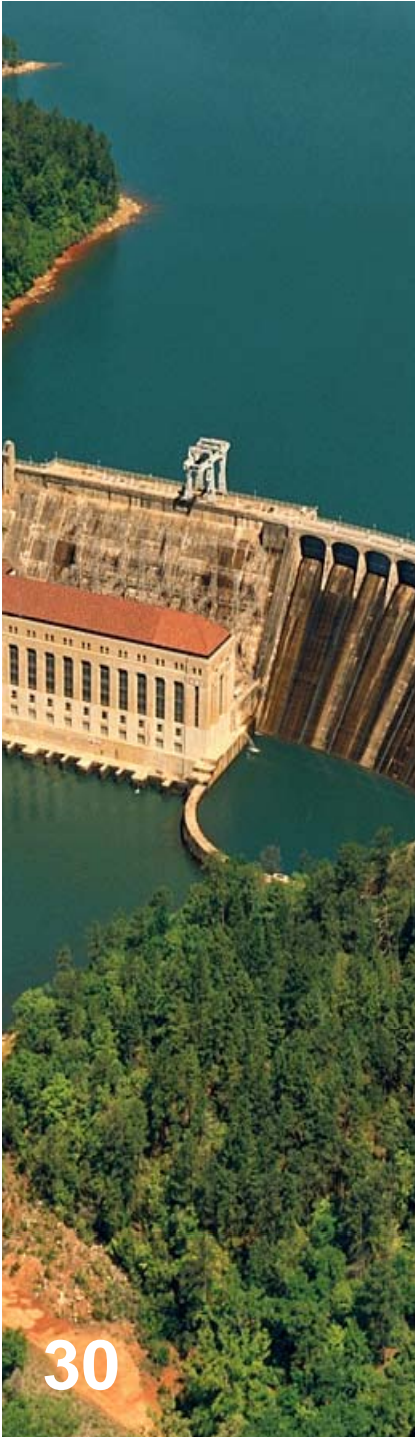
# Study Goals

- Alabama Power is examining the effects on recreation use at Lake Martin if rule curve changes are implemented.
  - estimate total recreational use of the lake, by month and by day type (weekday, weekend, holiday)
  - estimate recreational user characteristics (county of residence, activity participated in, shoreline property owner, etc.)
  - estimate the effects of increasing the duration of the summer pool and increasing the elevation of winter pool on recreational use



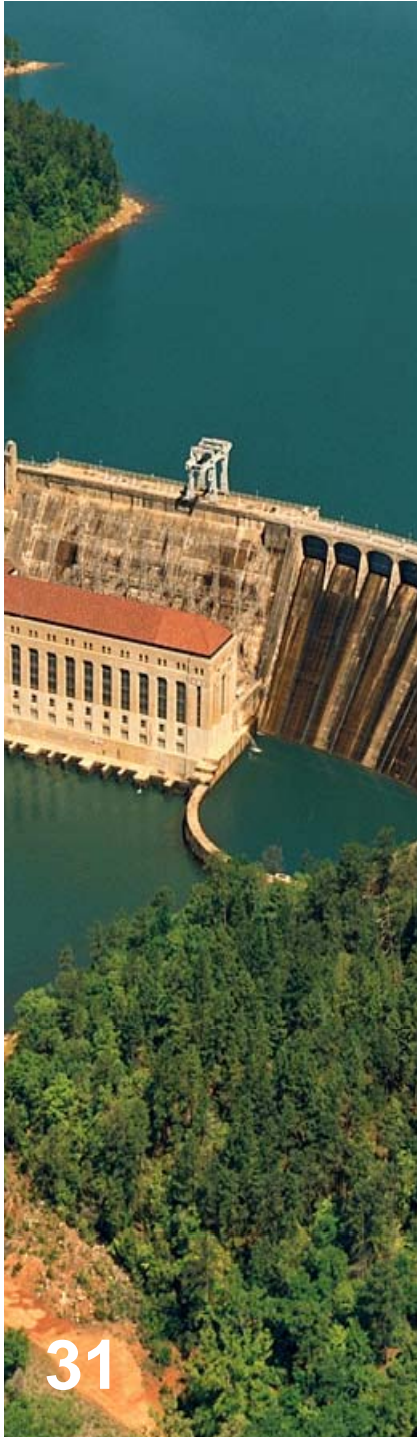
## Completed to Date

- As of November 1, 2009:
  - survey clerks have completed 72 sampling days of the proposed 168 sampling days on the reservoir
  - 21 sampling days of the proposed 42 sampling days at public boat ramps
  - 17 sampling days of the proposed 42 sampling days on the tailwater.



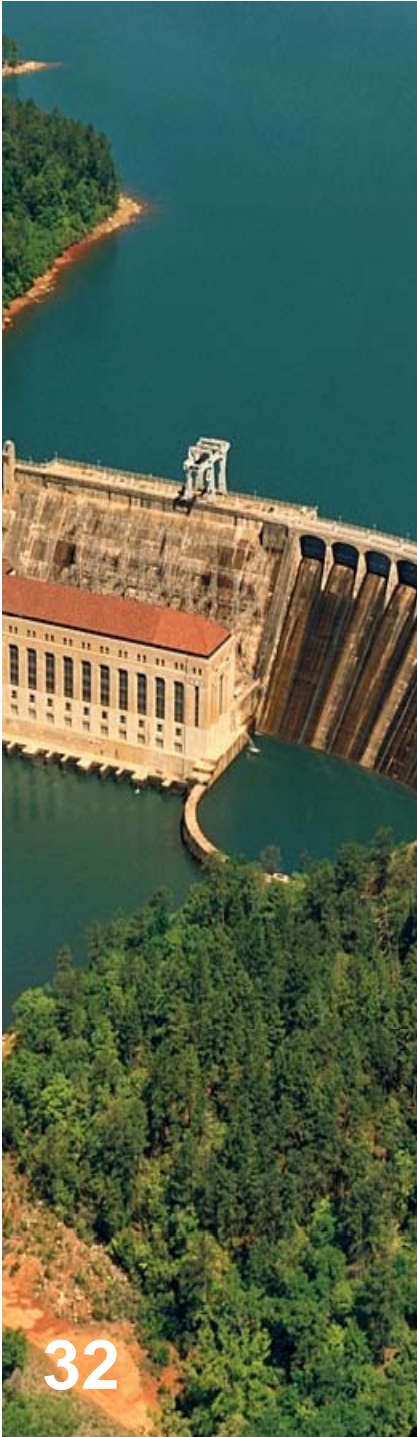
## Completed to Date

- As of November 1, 2009, survey clerks have completed:
  - 444 interviews with recreationists on Lake Martin.
- Survey clerks have completed:
  - additional 52 interviews at public boat ramps.



# Modifications to Work Scope

- The number of sampling days for the reservoir was **increased** from 84 days to 168 days
- The number of sampling days for the tailwater was decreased from 84 days to 42 days.
- The final scope of work also includes an increase in the number of sampling days (from 30 days to 42 days) for the intercept surveys at public launch sites.



# Proposed Modifications

No proposed modifications to this study

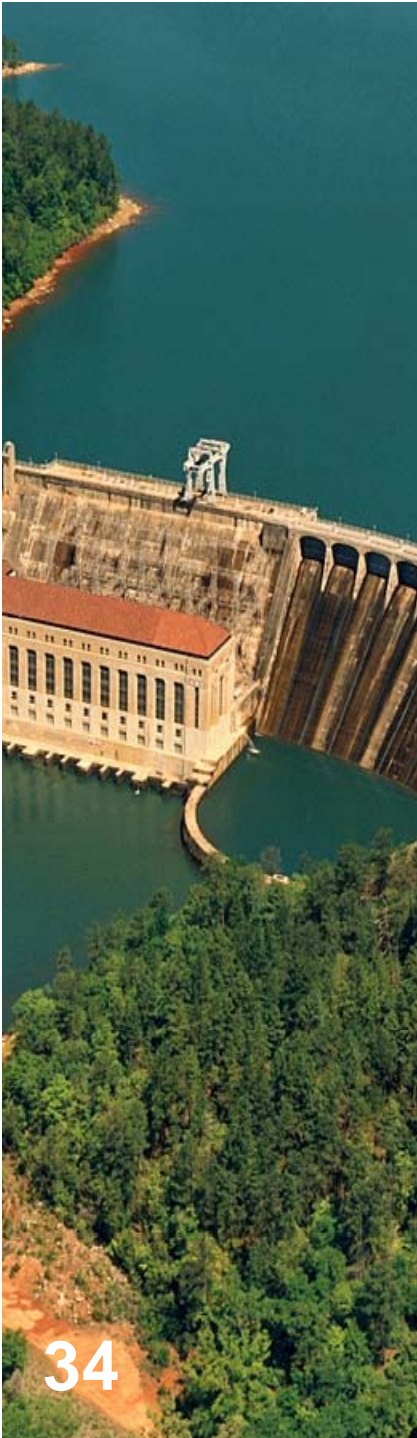


## Study Plan 12h:

# Effects of Raising Winter Pool Level and Increasing the Duration of Summer Pool on Economic Indicators

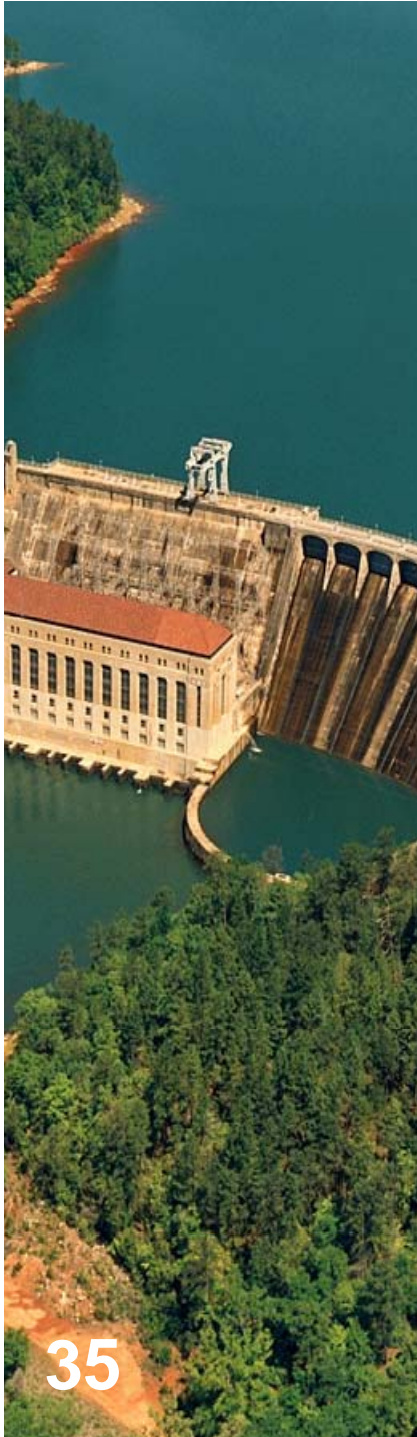
December 3, 2009





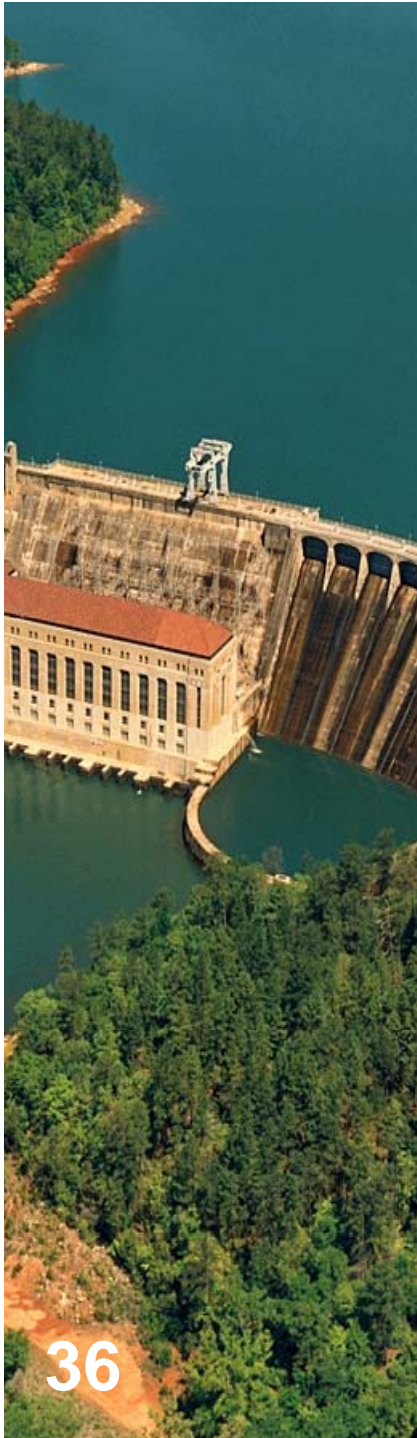
# Study Goal

- The objectives regarding recreation-related economics are to:
  - estimate trip cost by various categories
  - estimate economic impacts of recreational use.



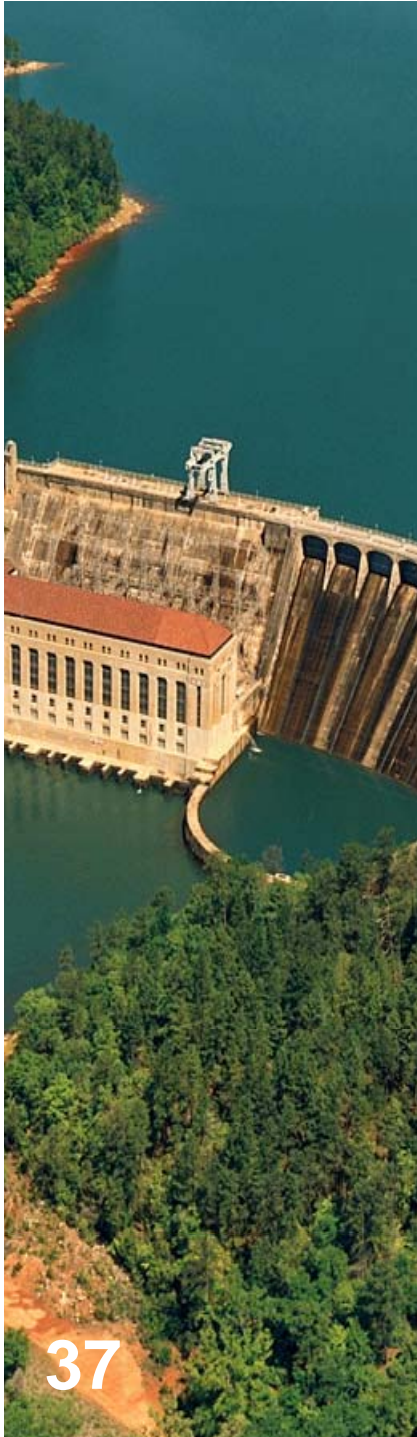
# Study Goals

- The objectives regarding property values are to:
  - estimate characteristics of shoreline property owners and their property
  - estimate usability of shoreline structures at various water levels
  - estimate total value of shoreline property
  - estimate costs associated with construction and/or maintenance of houses and any shoreline structures
  - estimate economic impact of construction and/or maintenance costs
  - estimate the effects of increasing the duration of the summer pool and increasing the elevation of winter pool on shoreline property values.



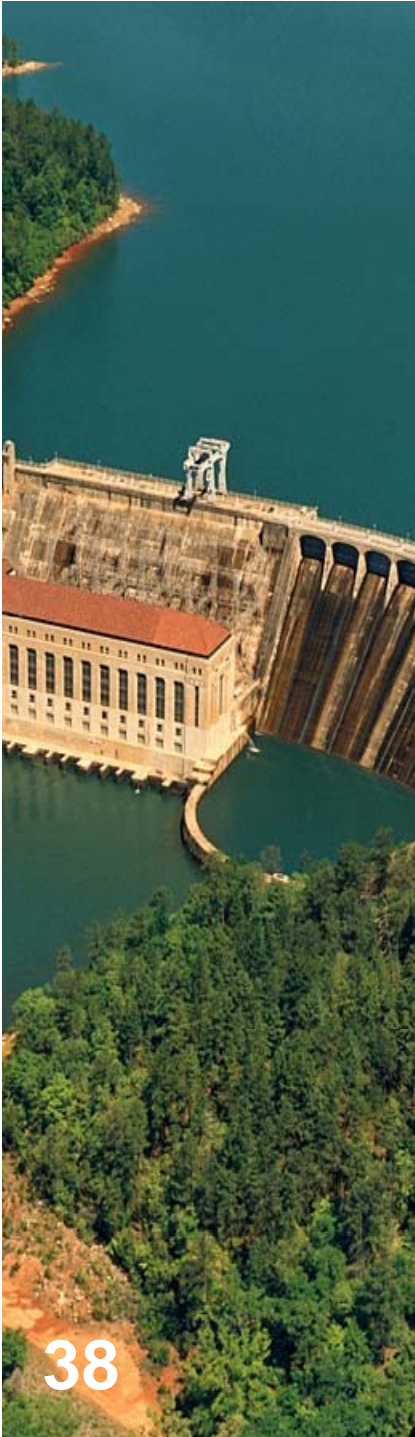
# Study Goals

- The objectives regarding lake-related business sales are to:
  - estimate characteristics of business and business activity
  - estimate effects of increasing the duration of the summer pool and increasing the elevation of winter pool on business activity.



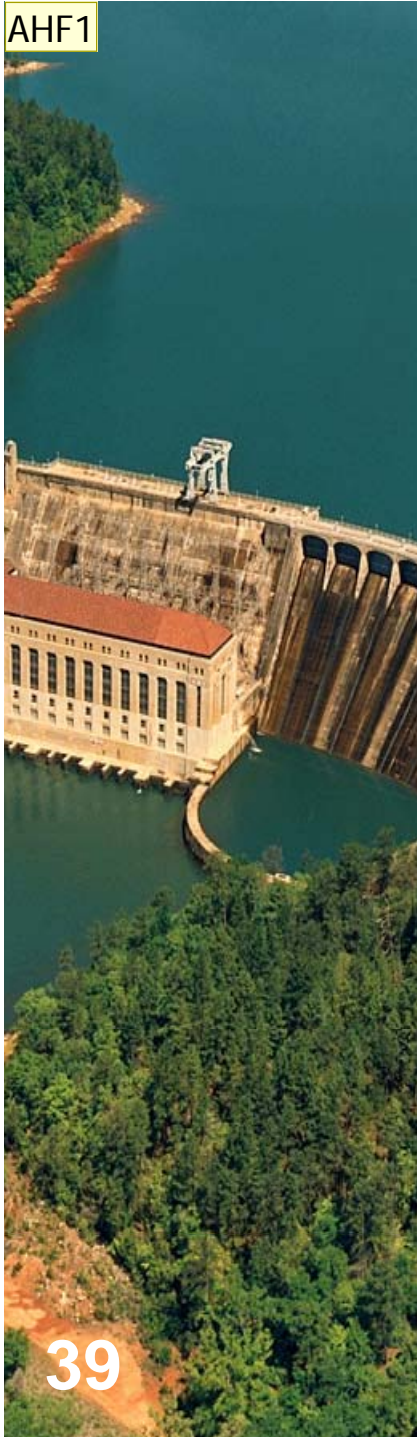
## Completed to Date

- Survey clerks have completed:
  - 72 sampling days of the proposed 168 sampling days and
  - 21 sampling days of the proposed 42 sampling days at public boat ramps.
- Survey clerks have completed 444 interviews with recreationists on Lake Martin.
- Survey clerks have completed an additional 52 interviews at public boat ramps.



# Completed to Date

- The property owner questionnaire has been finalized and mailed to the sample.



# Modifications to Study Schedule

- The property owner questionnaires originally scheduled to be mailed in August 2009, were delayed to November 2009
  - Delay due to the questionnaire review process, pre-testing the questionnaire, and problems with the web-based version of the survey.
- This delay will not affect study results or the approved schedule.

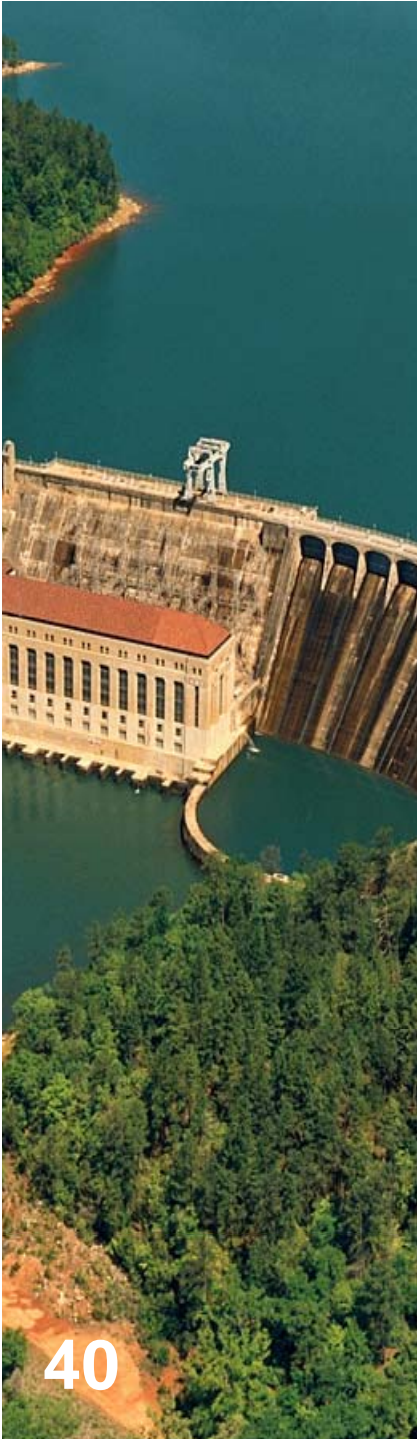
**Slide 39**

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**AHF1**

Not sure if you wanted to include these- they were not in the summary table but they were in the document. I included a No proposed changes slide also just in case.

Amanda Fleming, 11/25/2009



# Proposed Modifications

No proposed modifications to this study