

WATER QUALITY & QUANTITY ISSUE SHEET
MARTIN ISSUE GROUP TWO (MIG2)

Determine the effect of future operation on water quality and water quantity in Lake Martin.

DESCRIPTION OF ISSUE

Stakeholders expressed concerns regarding potential sources of effects on water quality within Lake Martin, such as erosion, water withdrawal, wastewater discharges, development, and recreation.

Specific issues or areas of potential effect include:

Erosion

- Evaluate/investigate siltation issues in Sandy Creek and Blue Creek due to timber industry
- Effects of development on siltation and erosion; shoreline protection of vegetation; need for buffer zones

Operations

- Can APC improve the declining water quality in the lake?
- Need to have a hydrodynamic model for Lake Martin to understand flow and water quality in lake (3D model)
- Need to have [water quality] monitoring in the embayments
- How will lake level fluctuations impact water quality and/or erosion?
- Increase dissolved oxygen (DO) in project discharge from 4 to 5 mg/l
- Investigate methods to reduce trash/debris on bottom of lake; extend window of opportunity for collection days
- The lake bed is eroding due to lake level fluctuations on a seasonal basis (plant rye grass)

Municipal/Industrial Discharges/Waste Water Treatment Facilities

- Calpine power plant impacts to Hillabee Creek
- NPDES permits from Alexander City and impact to Wind Creek and Lake Martin water quality
- Effects of Coley Waste Water treatment plant on Lake Martin water quality
- Reduce the amount of permitted and illegal pollution/sewage coming into the lake (point and non-point) sources

- Considering the overflows at Dadeville treatment facility, what are the impacts to Sandy Creek?
- What are the effects of sewage outflows into the reservoir?

Development

- There are changes occurring in the water quality in Sandy Creek, Blue Creek, Upper area which are currently undeveloped - keep undeveloped to protect water quality
- APC should look at control of surface runoff through use of holding areas - water quality, sedimentation, etc. at developments (condos and homes)
- Effects of Best Management Practices (BMP) on the water quality of Lake Martin with regard to development
- New development, re-inspection of systems and impacts to water quality
- Control nutrient loading; address the effects of invasive/exotic species on the Lake
- What is being withdrawn in terms of water and how does it correlate to population?
- Limit future permitted water withdrawals, especially municipalities and new withdrawals
- Accommodate/increase existing permitted withdrawals for riparian use

Recreation

- Impacts of storm water run off, houseboats, and marinas on the water quality of Lake Martin
- Regulate the disposal of holding tanks on boats - require pumping station per "X" number of slips
- Evaluate shoreline erosion and water quality impacts from increased boat traffic
- Evaluate impacts to recreation in Sandy Creek as a result of water quality
- APC should provide greater commitment to increase buffer zone around Lake Martin to improve water quality
- Impacts of unregulated primitive camping/debris/erosion on wildlife and vegetation

ADDITIONAL ISSUES IDENTIFIED FROM PAD QUESTIONNAIRE

- An assessment of the near-term and potential long-term effects of the Alexander City waste water treatment plant effluent on public health and aquatic biota
- An assessment of all other NPDES permitted wastewater treatment plants that discharge into Lake Martin
- An assessment of the contribution of failing septic tanks of shoreline residences to higher increased incidents
- Technical assessment of the feasibility of attaining Outstanding Alabama Water use classification for Lake Martin
- An assessment of the potential effects of a reduction of winter drawdown pool level on nuisance periphyte and macrophyte productivity in shoreline areas, especially in shallower slough areas

GEOGRAPHIC SCOPE

- APC-owned lands within the Project Boundary and specific tributaries as they pertain to water withdrawal, water treatment plant influx, and upstream siltation events that flow into, or otherwise affect, Lake Martin

EXISTING INFORMATION

Anonymous. 1982. Water Resources Data for Alabama, Water Year 1981. USGS-WRD-AL-81-1. U.S. Geological Survey, Water Resources Division, Tuscaloosa, AL. 550 pp.

Anonymous. 1995. Summary of Laboratory Analysis for Surface Water Quality Samples collected on August 30, 1995 from Lake Martin and Elkahatchee Creek and Analyzed for Priority Toxic Pollutants. 10 pp.

Anonymous. 2003. Petition for Review of Orders of the Federal Regulatory Regulation Commission. United States Court of Appeals.

Alabama Clean Water Partnership. Undated. Alabama's 303(d) List: Alabama Waters Not Supporting Their Designated Uses. Alabama Clean Water Partnership.

Alabama Department of Environmental Management, Water Quality Branch, Water Division. 2002. Final TMDL Development for Tallapoosa River, AL/Tallapoosa R_1: Low Dissolved Oxygen/Organic Loading. Alabama Department of Environmental Management, Montgomery, AL.



Alabama Department of Environmental Management. 2002. Alabama's 2002 Water Quality Report to Congress (Clean Water Act §305(b) Report). Alabama Department of Environmental Management, Montgomery, AL.

Alabama Department of Environmental Management, Office of Education and Outreach, Nonpoint Source Unit. 2003. Alabama Nonpoint Source Management Program. Alabama Department of Environmental Management, Montgomery, AL. 403 pp.

Alabama Department of Environmental Management. 2004. Alabama's 2004 Integrated Water Quality Monitoring & Assessment Report. Alabama Department of Environmental Management, Montgomery, AL.

———. 2005. Alabama's Water Quality Assessment and Listing Methodology. Alabama Department of Environmental Management, Montgomery, AL. 187 pp.

———. 2006. 2006 Alabama Integrated Water Quality Monitoring and Assessment Report web page.
<http://www.adem.state.al.us/waterdivision/WQuality/305b/WQ305bReport.htm>, accessed on October 17, 2006. Alabama Department of Environmental Management.

———. Undated. Alabama Nonpoint Source Management Program: 2001 Annual Report. Alabama Department of Environmental Management, Montgomery, AL. 50 pp.

Alabama Power Company. 1978. Application for Rehearing of Order Issuing New License (Major) by Alabama Power Company. Alabama Power Company, Birmingham, AL.

———. 1979. Solid Waste Management Plan. Alabama Power Company, Birmingham, AL. 44 pp.

———. 1991. Martin Dam Water Quality Testing. Alabama Power Company, Birmingham, AL.

———. 2002. River North Marina Project Additional Information. Alabama Power Company, Birmingham, AL.

———. 2003. First Annual Water Quality Monitoring Progress Report For Alabama Power Company's Martin Project (FERC No. 349). Alabama Power Company, Birmingham, AL. 102 pp.

- . 2003. Water Quality Certification Section 401 Lake Martin Project (FERC No. 349). Alabama Power Company, Birmingham, AL. 6 pp.
- . 2004. Water Quality Monitoring Plan for Alabama Power Company's Martin Project (FERC No. 349). Alabama Power Company, Birmingham, AL. 13 pp.
- . 2006. Water Quality Monitoring Assessment For Alabama Power Company's Martin Project (FERC Project No. 349). Alabama Power Company, Birmingham, AL.

Alabama Power Company, Environmental Compliance. 2006. Water Quality Data for the Martin Hydroelectric Project. Draft. Alabama Power Company, Birmingham, AL.

Alabama Power Company. 2006. Martin Project Water Withdrawals.

- . Undated. Alabama Power Company's Aquatic Plant Management Program. Alabama Power Company, Birmingham, AL.
- . Undated. Alabama Nonindigenous Aquatic Plant Control Act. Alabama Power Company, Birmingham, AL.
- . Undated. Report on the Martin Dam Project. Alabama Power Company, Birmingham, AL. 48 pp.

Alabama Rivers Alliance. 1999. The State of Alabama's Rivers: A Blueprint for the Conservation Of Alabama's Freshwater River Ecosystems Through the 21st Century. Draft. Alabama Rivers Alliance, Birmingham, AL. 96 pp.

Alabama Soil and Water Conservation Committee. 1995. Protecting Water Quality on Alabama's Farms. Alabama Soil and Water Conservation Committee, Montgomery, AL. 125 pp.

- . 2002. Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas. Alabama Soil and Water Conservation Committee, Montgomery, AL.
- . 2003. Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas. Alabama Soil and Water Conservation Committee, Montgomery, AL.

- Alabama Water Watch. 2002. Citizen Guide to Alabama Rivers: Alabama, Coosa and Tallapoosa. Volume 2. Alabama Water Watch Program, Montgomery, AL.
- . Undated. A Program Dedicated to Developing Citizen Volunteer Monitoring of Alabama's Lakes, Streams and Coasts. Alabama Water Watch Program.
- Ashby, S. L., R. H. Kennedy, L. P. Dove, H. Boswell, J. B. Waide, L. S. Johnson, R. P. Barbiero, and G. Buell. 1996. Identification, Compilation, and Analysis of Water Quality Data for the Apalachicola-Chattahoochee-Flint/Alabama-Coosa-Tallapoosa (ACF/ACT) Comprehensive Basin Study. U.S. Army Corps of Engineers, Mobile, AL.
- Atkins, J. B., H. Zappia, J. L. Robinson, A. K. McPherson, R. S. Moreland, D. A. Harned, B. F. Johnston, and J. S. Harvill. 2004. Water Quality in the Mobile River Basin, Alabama, Georgia, Mississippi, and Tennessee, 1999-2001. Circular 1231. U.S. Geological Survey, Reston, VA. 40 pp.
- Auburn University. 2004. Tallapoosa Watershed Project web page. <http://www.twp.auburn.edu/Default.aspx>, accessed on June 25, 2007. Auburn University.
- . 2006. Alabama Water Watch web page. <https://aww.auburn.edu/>, updated October 13, accessed on October 17, 2006. Auburn University.
- Balch and Bingham. 2000. Water Withdrawals from Alabama Power Company Reservoirs. Balch and Bingham, Birmingham, AL. 23 pp.
- Bayne, D. R., W. C. Seesock, E. C. Webber, and E. Reutebuch. 1995. Limnological Study of Selected Embayments of Lake Martin in Tallapoosa County, Alabama: 1994. Department of Fisheries and Allied Aquacultures, Auburn University, Auburn, AL.
- Bryan, C. H. and S. Rose. 2006. Stakeholders and Issues in the ACT and ACF Systems. In *Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models*, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 30-48.

- Buckner, M. M., W. Smith, and J. A. Takats. 2002. Tennessee, Cumberland and Mobile River Basins at Risk: A Biological Assessment and Vision for the World Wildlife Fund's Southeast Rivers and Streams Project. World Wildlife Fund, Nashville, TN. 50 pp.
- CH2MHILL. 2005. Tallapoosa River Basin Management Plan. Alabama Clean Water Partnership, Montgomery, AL.
- Cross, T. 1998. Auburn Project. Goodwyn, Mills & Cawood, Inc., Montgomery, AL. 20 pp.
- Davis, M. M. 1997. Tri-State Comprehensive Study Riparian Wetland Element; Report 1: "Relationships Between Flow and Habitat Value in the Alabama-Coosa-Tallapoosa/Apalachicola-Chattahoochee-Flint (ACT/ACF) River Basins". Miscellaneous Paper EL-97-2. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Davis, C. M. and J. L. Jordan. 2006. Waters Of Plenty: The Apalachicola-Chattahoochee-Flint and Alabama-Coosa-Tallapoosa Rivers. In Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 3-19.
- Dellapenna, J. W. 2006. The Law, Interstate Compacts, and the Southeastern Water Compact. In Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 51-77.
- Dellapenna, J. W., J. L. Jordan, S. Leitman, and A. T. Wolf. 2006. Conclusions: Outcomes, Updates, and Lessons Learned. In Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 233-248.
- Dickey, R. J. 2006. Oligotrophication Effects Following Diversion of Waste Effluent from an Embayment of Lake Martin, Alabama. Thesis. Auburn University, Auburn, AL. 116 pp.
- EDAW, Inc. 1991. Martin Reservoir Land Management Plan. Alabama Power Company, Birmingham, AL. 98 pp.

- Federal Energy Regulatory Commission. 1978. Order Granting in Part and Denying in Part Application for Rehearing. Federal Energy Regulatory Commission, Washington, D.C.
- . 1978. FERC Relicenses Alabama Power's Martin Dam Hydro Project with Added Capacity. Press Release. Federal Energy Regulatory Commission, Washington, D.C.
- . 1991. Order Approving and Modifying Water Quality Monitoring Plan. Federal Energy Regulatory Commission, Washington, D.C.
- . 1996. Order Approving Application for Non-Project Use of Project Lands and Waters and Referring Compensation Issue to Settlement Judge. Federal Energy Regulatory Commission, Washington, D.C. 23 pp.
- . 1996. Notice of Availability of Final Environmental Assessment. Federal Energy Regulatory Commission, Washington, D.C. 7 pp.
- . 1996. Order Denying Rehearing. Federal Energy Regulatory Commission, Washington, D.C. 1 pp.
- . 1997. Order Approving Erosion and Sediment Control Plan. Federal Energy Regulatory Commission, Washington, D.C. 1 pp.
- . 2001. Land Conveyance for Sewage Outfall Pipe; Article 58. Federal Energy Regulatory Commission, Washington, D.C.
- . 2002. Order Modifying and Approving Dissolved Oxygen Monitoring Plan Under Article 56. Federal Energy Regulatory Commission, Washington, D.C. 1 pp.
- . 2002. Order Modifying and Approving Dissolved Oxygen Monitoring Plan under Amended Article 43. Federal Energy Regulatory Commission, Washington, D.C. 4 pp.
- . 2002. Order Approving Schedules for Turbine Upgrade, Dissolves Oxygen Monitoring and Reporting under May 24, 2002 Order. Federal Energy Regulatory Commission, Washington, D.C. 3 pp.
- . 2003. Order Amending License. Federal Energy Regulatory Commission, Washington, D.C. 16 pp.
- . 2004. Order Modifying and Approving Water Quality Monitoring Plan under Article 56. Federal Energy Regulatory Commission, Washington, D.C. 1 pp.

- . Undated. Application for Amendment of License. Washington, D.C. 7 pp.
- Firestone, J. M. 2001. Hydropower Relicensing: Opportunities for and Obstacles to Environmental Quality Improvements and Recreational Enhancements on Southeastern Rivers. Environmental Finance Center at the University of North Carolina, Chapel Hill, Chapel Hill, NC.
- Freeman, M. C., J. M. Nestler, and P. N. Johnson. 1997. Riverine Resources: Water Needs and Environmental Effects Analyses in the Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint River Basins. Final Report to the Technical Coordinating Group of the ACT-ACF Comprehensive Study. U.S. Geological Survey, Biological Resources Division, Patuxent Wildlife Research Center, Athens, GA.
- Gentzler, K. and J. T. Hines. 2006. Delaware, Susquehanna, and Potomac: Three Federal Compact Commissions of the Northeast United States. In *Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models*, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 78-101.
- Georgia Department of Natural Resources, Environmental Protection Division. 1998. Tallapoosa River Basin Management Plan 1998. Georgia Department of Natural Resources, Environmental Protection Division, Atlanta, GA.
- Johnson, G. C., R. E. Kidd, C. A. Journey, H. Zappia, and J. B. Atkins. 2002. Environmental Setting and Water-Quality Issues of the Mobile River Basin, Alabama, Georgia, Mississippi, and Tennessee. Water-Resources Investigations Report 02-4162. U.S. Geological Survey, National Water-Quality Assessment Program, Montgomery, AL. 62 pp.
- Jordan, J. L. 2006. Conflict Comes to the Humid East: The Tri-state Water Wars. In *Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models*, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 20-29.

- Kidd, R. E. 1989. Geohydrology and Susceptibility of Aquifers to Surface Contamination in Alabama; Area 5. Water-Resources Investigations Report 88-4083. U.S. Geological Survey, Tuscaloosa, AL.
- Kiker, C., S. Leitman, and D. Carter. 2006. Adaptive Learning in Ecological Policy and Management. In Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 180-201.
- Kleinschmidt Associates and Alabama Power Company. 2006. Martin Hydroelectric Project: Preliminary Information Document. Alabama Power Company, Birmingham, AL.
- Kopaska-Merkel, D. C. and J. D. Moore. 2000. Water In Alabama (including basic water data for 1996). Circular 122N. Geological Survey of Alabama, Hydrogeology Division, Tuscaloosa, AL. 133 pp.
- Lewis, L. Y. 2006. Interstate River Compacts of the West. In Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 102-130.
- McPherson, A. K., R. S. Moreland, and J. B. Atkins. 2003. Occurrence and Distribution of Nutrients, Suspended Sediment, and Pesticides in the Mobile River Basin, Alabama, Georgia, Mississippi, and Tennessee, 1999-2001. Water-Resources Investigations Report 03-4203. U.S. Geological Survey, Montgomery, AL. 101 pp.
- MCW Development, Inc. 1994. Comment Letter: Comprehensive Recreation Plan. MCW Development, Inc., Birmingham, AL.
- Pearman, J. L., V. E. Stricklin, and W. L. Psinakis. 1998. Water Resources Data - Alabama - Water Year 1997. USGS-WDR-AL-97-1. U.S. Geological Survey, Water Resources Division, Montgomery, AL. 482 pp.
- . 2003. Water Resources Data - Alabama - Water Year 2002. USGS-WDR-AL-02-1. U.S. Geological Survey, Water Resources Division, Montgomery, AL. 522 pp.

- Pearman, J. L., F. C. Sedberry, V. E. Stricklin, and P. W. Cole. 1990. Water Resources Data for Alabama, Water Year 1989. USGS-WDR-AL-89-1. U.S. Geological Survey, Water Resources Division, Tuscaloosa, AL. 385 pp.
- . 1991. Water Resources Data for Alabama, Water Year 1990. USGS-WDR-AL-90-1. U.S. Geological Survey, Water Resources Division, Tuscaloosa, AL. 415 pp.
- . 1992. Water Resources Data for Alabama, Water Year 1991. USGS-WDR-AL-91-1. U.S. Geological Survey, Water Resources Division, Tuscaloosa, AL. 483 pp.
- Peterson, S. T. and R. Wallick. 2006. Water Allocation during Scarcity: Reservoir Modeling and Drought Protection in the ACT Basin. In Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 202-232.
- Ploskey, G. R. and T. R. Reinert. 1996. Assessing Impacts of Water Management on Reservoir Fish Reproductive Success in the Alabama-Coosa-Tallapoosa/Apalachicola-Chattahoochee-Flint River Basins. U.S. Army Corps of Engineers, Mobile, AL. 51 pp.
- Resource Management Associates, Inc. 1999. HEC-5Q Simulation of Water Quality in the Alabama-Coosa-Tallapoosa (ACT) and Apalachicola-Chattahoochee-Flint (ACF) River Basins. U.S. Army Corps of Engineers, Mobile, AL.
- Robinson, J. L. 2002. Ground-Water Quality Beneath an Urban Residential and Commercial Area, Montgomery, Alabama, 1999-2000. Water-Resources Investigations Report 02-4052. U.S. Geological Survey, Montgomery, AL.
- . 2003. Comparison Between Agricultural and Urban Ground-Water Quality in the Mobile River Basin, 1999-2001. Water-Resources Investigations Report 03-4182. U.S. Geological Survey, Montgomery, AL. 38 pp.
- Rollins, H. C., F. C. Sedberry, E. G. Ming, and I. A. Giles. 1983. Water Resources Data for Alabama, Water Year 1982. USGS-WDR-AL-82. U.S. Geological Survey, Water Resources Division, Tuscaloosa, AL. 477 pp.

- Rollins, H. C., F. C. Sedberry, E. G. Ming, and J. W. Tucker. 1984. Water Resources Data for Alabama, Water Year 1983. USGS-WRD-AL-83. U.S. Geological Survey, Water Resources Division, Tuscaloosa, AL. 468 pp.
- Rollins, H. C., E. G. Ming, F. C. Sedberry, and I. A. Giles. 1985. Water Resources Data for Alabama, Water Year 1984. USGS-WRD-AL-84. U.S. Geological Survey, Water Resources Division, Tuscaloosa, AL. 338 pp.
- Rollins, H. C., F. C. Sedberry, T. R. Duvall, and F. D. Byrd. 1986. Water Resources Data for Alabama, Water Year 1985. USGS-WDR-AL-85. U.S. Geological Survey, Water Resources Division, Tuscaloosa, AL. 294 pp.
- Rollins, H. C., F. C. Sedberry, J. L. Pearman, and T. R. Duvall. 1987. Water Resources Data for Alabama, Water Year 1986. USGS-WDR-AL-86-1. U.S. Geological Survey, Water Resources Division, Tuscaloosa, AL. 315 pp.
- . 1988. Water Resources Data for Alabama, Water Year 1987. USGS-WDR-AL-87-1. U.S. Geological Survey, Water Resources Division, Tuscaloosa, AL. 345 pp.
- Rollins, H. C., J. L. Pearman, F. C. Sedberry, and P. W. Cole. 1989. Water Resources Data for Alabama, Water Year 1988. USGS-WDR-AL-88-1. U.S. Geological Survey, Water Resources Division, Montgomery, AL. 332 pp.
- Rose, S. and C. H. Bryan. 2006. Stakeholder Analysis and Social Impacts of Water Reallocation in the ACT and ACF River Systems. In Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 159-179.
- Ryder, S., J. Taylor, and J. H. Crance. 1995. Relations Between Reservoir Surface Water Elevations and Reservoir Fisheries Completion Report. Completion Report MIPR FC-94-0051. U.S. Army Corps of Engineers, Mobile, AL. 202 pp.
- Soil Conservation Service, United States Department of Agriculture. 1994. Appendices, Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint Cooperative Study: Agricultural Water Demand. Auburn University, Auburn, AL.

- Tillman, D. H., T. M. Cole, and B. W. Bunch. 1999. Detailed Reservoir Water Quality Modeling (CE-QUAL-W2), Alabama-Coosa-Tallapoosa/Apalachicola-Chattahoochee-Flint (ACT-ACF) Comprehensive Water Resource Study. Technical Report EL-99-XXX. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- U.S. Army Corps of Engineers, Mobile District. 1998. Water Allocation for the Apalachicola-Chattahoochee-Flint (ACF) River Basin: Alabama, Florida, and Georgia. Draft Environmental Impact Statement. U.S. Army Corps of Engineers, Mobile, AL.
- . 1998. Water Allocation for the Alabama-Coosa-Tallapoosa River Basin: Alabama and Georgia. Draft Environmental Impact Statement. U.S. Army Corps of Engineers, Mobile, AL.
- . 1998. Water Allocation for the Alabama-Coosa-Tallapoosa River Basin: Alabama and Georgia: Appendix F, Draft Economic Analysis. U.S. Army Corps of Engineers, Mobile, AL.
- U.S. Department of Agriculture, Soil Conservation Service, Water Resource Planning Staff. 1994. Comprehensive Study, Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint River Basins: Agricultural Water Demand Technical Report. Auburn University, Auburn, AL.
- U.S. Department of Agriculture. 2006. Southern Regional Water Program: Water Quantity and Policy web page. <http://srwqis.tamu.edu/waterquantity.aspx>, accessed on October 13, 2006. U.S. Department of Agriculture.
- U.S. Department of Agriculture, Soil Conservation Service, Economic Research Service, and Forest Service. 1977. Alabama River Basin Cooperative Study.
- U.S. Geological Survey. 2006. National Water Information System web page. <http://waterdata.usgs.gov/al/nwis/nwis>, accessed on October 13, 2006. U.S. Geological Survey.
- Watters, G. T. 1999. Freshwater Mussels and Water Quality: A Review of the Effects of Hydrologic and Instream Habitat Alterations. Proceedings of the First Freshwater Mollusk Conservation Society Symposium:261-274.

- Wolf, A. T. 2006. International Water Agreements: Implications for the ACT and ACF. In Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 131-156.
- Wolf, A. T. and J. L. Jordan. 2006. New Models for Water Allocation in the Southeast. In Interstate Water Allocation in Alabama, Florida, and Georgia: New Issues, New Methods, New Models, edited by Jordan, J. L. and A. T. Wolf. University Press of Florida: Gainesville, FL. Pp. 249-256.
- Zappia, H. 2002. Organochlorine Compounds and Trace Elements in Fish Tissue and Streambed Sediment in the Mobile River Basin, Alabama, Mississippi, and Georgia, 1998. Water Resources Investigations Report 02-4160. U.S. Geological Survey, Montgomery, AL.
- Ziewitz, J. W. and G. A. Carmody. 1997. Environmental Scope of Work Summary Report for the Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint River Basins Comprehensive Water Management Study. U.S. Fish and Wildlife Service, Panama City, FL.
- Ziewitz, J. W., L. Andreasen, and G. A. Carmody. 1998. Environmental Scope of Work Summary Report for the Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint River Basins Comprehensive Water Management Study. U.S. Fish and Wildlife Service, Panama City, FL.

CURRENT STUDY/ANALYSIS

- Prepare a complete list of all NPDES sources
- Water withdrawals white paper

ADDITIONAL INFO/STUDY

- Hot spot erosion study, possibly using the LIDAR data for the reservoir
- Investigate effects on water quality as a result of potential increased consumptive demands, increased wastewater loadings, and effect of rule curve changes; include Aquatic Vegetation Distribution Study
- Additional water quality monitoring of eutrophication in upper lake embayments most affected by nutrient enrichment



- Develop a Water Quality Adaptive Management Sampling Plan for gathering baseline and monitoring data for comparison of changes in Lake Martin water quality due to potential changes in rule curve