



Alabama Rivers Alliance
Water Is Life

June 18, 2009

Office of Water Services
C/O Lynn Broadway
Water Division
Alabama Department of Environmental Management,
P.O. Box 301463
Montgomery, AL 36130-1463

RE: **2009 Triennial Review of State Water Quality Standards**

Dear Sir or Madam:

The Alabama Rivers Alliance (ARA) is pleased to submit the following comments regarding the 2009 triennial review of Alabama's water quality standards under ADEM regulation chapters 335-6-10 and 11. ARA is a non-profit conservation organization dedicated to the protection of waters in the state of Alabama. We represent over 500 individual members and 70 watershed groups throughout the state.

1. Developments during the current period

ARA commends ADEM and the state of Alabama, for classifying Wolf Bay and all connecting coves and bayous as an Outstanding Alabama Water in accordance with 335-6-10-.09. This bay in Baldwin County is truly a natural treasure. Home to diverse fish and wildlife populations and valued for its recreational opportunities, aesthetic properties, and economic value, this waterbody certainly meets the requirement of "exceptional recreational or ecological significance.

Likewise, ARA would like to express our appreciation for the prompt and indepth response from ADEM to our comments in the 2006 review process. While we had some disagreements with the ultimate outcome of that process, the open dialogue and feedback was refreshing and worked towards ensuring that the public participation process has real meaning. ARA looks forward to assisting ADEM as you continue to develop open communications in all Agency operations.

2. Use of Citizen Data

40 CFR 130.7 provides that:

Each State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the list required by §§130.7(b)(1) and 130.7(b)(2). At a minimum "all existing and readily available water quality-

related data and information” includes but is not limited to all of the existing and readily available data and information about the following categories of waters:

...

(iii) Waters for which water quality problems have been reported by local, state, or federal agencies; *members of the public*; or academic institutions. These organizations and groups should be actively solicited for research they may be conducting or reporting. For example, university researchers, the United States Department of Agriculture, the National Oceanic and Atmospheric Administration, the United States Geological Survey, and the United States Fish and Wildlife Service are good sources of field data; ...

One of the repeatedly key issues in identifying water quality problems and enforcing existing water quality regulations is a lack of resources and data. Currently ADEM has only surveyed less than 20% of Alabama’s 77,000 plus miles of streams and rivers. One repeated excuse for this lack of data has been a lack of resources available to conduct new surveys. However, there is a wealth of knowledge available from the public which would assist ADEM in fulfilling its mandate under Title 22, Section 22-22-9 *et seq.*, Code of Alabama 1975, to “study and investigate all problems concerned with the improvement and conservation of the waters of the state...” and to “...conduct, independently and in cooperation with others, studies, investigation and research and to prepare, or in cooperation with others prepare, a program or programs, any or all of which shall pertain to the purity and conservation of the waters of the state or to the treatment and disposal of pollutants or other wastes, which studies, investigations, research and program or programs shall be intended to result in the reduction of pollution of the waters of the state according to the conditions and particular circumstances existing in the various communities throughout the state.” There are many groups throughout the state which are continually monitoring water quality. Many of these groups have been certified as meeting the standards set out in ADEM’s January 2008 publication Final Water Quality Assessment and Listing Methodology. This requires the consideration and evaluation of citizen provided the data meet the *minimum data requirements specified for each designated use and comply with the quality control and quality assurance requirements discussed in Section 4.9*. ADEM has used such data in the past to remove streams from its 303(d) list but, to my knowledge, has never used citizen data to identify newly impaired streams. ADEM should actively seek out and use data collected by citizens groups which identify impaired streams. At the very least this data can assist ADEM in focusing its limited resources to areas with the greatest need.

Similarly, ADEM has not provided a conduit for the collection of citizen data. ADEM should add a provision in 335-6-10 for the collection of available citizen collected data and provide for the use of such data in the identification of waters under 335-6-11. Included in this, ADEM should provide additional information in 335-6-11 which identifies the most current data, the source of collected data used in the stream classification, current impairments, and changes since the last review. This information should be made on a continually updated basis through an online database similar to that used in other states and the federal government.

3. Critical habitat use classification

ARA once again requests that a new use classification be created in 335-6-10-.03 and -.09 to offer protection to waterbodies designated by the U.S. Fish and Wildlife Service (FWS) as critical habitat for federally protected species under the Endangered Species Act. While we appreciate that Endangered Species Act protection is a federal designation, Alabama has the parallel responsibility to protect its own unique biodiversity. In its response comments from the 2006 triennial review ADEM suggests that, because a species is listed federally as an endangered species, it is therefore subject only to federally established standards. This is a patent abdication of the agency's responsibility to protect Alabama's own natural heritage when federal regulations do not go far enough.

While we are sympathetic to ADEM's previous assertion that species-specific criteria development is a resource-intensive undertaking, we are not convinced that this prohibits the agency from designating a level of protection which meets, at a minimum, those standards already identified for the protection of endangered species which are known (or should be known) to the state. The use classification should also offer protection to imperiled and rare species as designated by FWS or the Alabama Department of Conservation and Natural Resources. Alabama is well known for the freshwater diversity present in our rivers and streams. We are also known for the high number of extinct species that were once native to our state. Good water quality is essential for the protection of federally listed species. The new use classification should require a meaningful consultation with the FWS before any new discharges are permitted to areas designated as critical habitat. Any applicant wishing to receive a permit for a new or expanded discharge should offer evidence that the discharge would not affect the imperiled species. The classification should include the areas of critical habitat developed by FWS as well as areas in upstream reaches and tributaries as needed to maintain water quality levels sufficient to protect the species. In addition to restrictions on new discharges, the classification should include a thorough review of existing discharge permits and revision of effluent limitations as needed within three years of classification.

4. Regulate discharge from Quarry and Mine operations

In its 2006 response letter, ADEM alleged that setting requirements for discharge from quarry operations were outside the scope of Alabama's water quality standards regulations in the ADEM Administrative Code 335-6-10 and 335-6-11. This is an improper interpretation of these documents and makes little practical sense given the purpose of the code. Under 335-6-10.01 (1) and Title 22, Section 22-22-1 *et seq.*, Code of Alabama 1975, ADEM is directed to "protect, maintain, and improve" the quality of water and to provide for "the prevention, abatement and control of new or existing water pollution" in cooperation with other agencies of the state. Paragraph (2) provides for water quality criteria to cover "all legitimate water uses." Likewise, the Antidegradation Policy under 335-6-10.04 requires that "all new and existing point sources [including quarry and mine operations] shall be subject to the highest statutory and regulatory requirements..." Finally, 335-6-10.06(C) requires that all state waters shall be free from substances attributable to...industrial waste or other wastes in concentrations or combinations which are toxic or harmful to human, animal or aquatic life to the extent commensurate with the designated usage of such waters. All of these regulations are in keeping with the protections

provided in the rules established in chapter 335-6-9 (Surface Mining Rules), specifically 335-6-9.03 (1) which provides that “all surface mining operations shall be conducted in such a manner as to minimize their impact on water quality to avoid contravention of applicable water quality standards.” By exempting quarry and mining operations from the WQS discussion, ADEM intentionally overlooks a potentially significant source of pollution making any subsequent TMDL based permit virtually useless. Likewise, any antidegradation policy for waters containing discharges from quarries and mines would be necessarily unmanageable.

In keeping with this policy, the water quality criteria should specifically address the impact from suspended and dissolved solids in quarry and mine operation discharges. Furthermore, ADEM should exercise its inherent authority under the provisions of chapters 335-6-10, 335-6-11, 335-6-9 as well as the Alabama Environmental Management Act, Code of Ala. 1975, §22-22A-1 et seq to regulate quarry and mine activities so that impacts on groundwater levels do not adversely impact water quality standards in nearby waters. This authority exists in concurrence with and apart from any other regulation of groundwater within the state.

5. Regulate Dissolved Oxygen (D.O.) levels in streams impacted by hydroelectric generation impoundments during periods of non generation.

Under the current code, for a diversified warm water biota, including game fish, D.O. concentrations shall not be less than 5 mg/l at all time. Unfortunately, the code then allows for a variance due to *discharges* from hydroelectric generating impoundments. This has been interpreted by impoundment operators to mean that they are responsible for the D.O. levels below their impoundments *only* during periods of discharge due to electricity generation or wasting. While certainly unintended, this creates a situation where D.O. levels often drop to extreme low levels at the tail waters of these impoundments when the impoundment is restricting the flow of the water.

The Environmental Protection Agency (EPA) recommends a target dissolved oxygen concentration of 6.0 mg/l to have "no production impairment" to existing fisheries and 8.0 mg/l invertebrates.¹ Alabama Department of Environmental Management's standard dissolved oxygen criterion for a diversified warm water biota, including game fish is 5.0 mg/l. Based on the potential biological effects of sub-5.0 mg/l dissolved oxygen concentrations to fishes and aquatic invertebrates, it seems clear that low dissolved oxygen concentrations in many of the facilities' tailwaters during non-generation periods impact the ability of fishes, mussels, snails, and other aquatic animals from using these habitats. The very fact that the dam exists changes the hydrology of the river by holding water back and not allowing it to flow so that there is a chance, with water movement, that DO could be increased. This is an unreasonable disturbance given the fact that the waters should serve multiple purposes, including enhancing fish and wildlife. This unintended consequence can easily be overcome by adopting the majority rule in southeastern states which requires those responsible for an impoundment to maintain the baseline standard (in Alabama that of 5mg/l) at all times regardless of generation activity.

¹ See U.S. Environmental Protection Agency (EPA). 1986. Ambient Water Quality Criteria for Dissolved Oxygen. EPA 440/5-86-003. . Washington, D.C..

6. Include upgrades to existing Hydroelectric Generating Impoundment as new facilities for purposes of D.O. requirements.

A hydropower “unit” consists of several components, including the turbine, generator, and penstock. The turbine itself is comprised of several components, and is subject to frequent upgrades. When a turbine is upgraded, many of the components are replaced, often leading to increased capacity or efficiency. While the number of units often remains the same during these upgrades, the technology of the units is being improved, thus leading to increased benefits to the operator often at considerable cost. These types of upgrades should not be included in the grand-fathered criteria and should be subject to the standard dissolved oxygen limit. *If an operator is willing to spend the money for new components to increase capacity and efficiency, the financial protections available through the grand-fathered standard are no longer applicable.* If new components are to be installed, ADEM should require the operator to use the opportunity to also install equipment to meet water quality standards.

Therefore we propose the following changes to dissolved oxygen criteria in 335-6-10-.09, and should be applied to all use classifications as appropriate:

- (i) For a diversified warm water biota, including game fish, daily dissolved oxygen concentrations shall not be less than 5 mg/l at all times; except under extreme conditions due to natural causes, it may range between 5 mg/l and 4 mg/l, provided that the water quality is favorable in all other parameters. The normal seasonal and daily fluctuations shall be maintained above these levels. Hydroelectric generation impoundments shall operate in such a manner as to maintain dissolved oxygen concentrations of not less than 5 mg/l during periods of non-generation and in no event shall the dissolved oxygen level be less than 4 mg/l due to discharges from existing hydroelectric generation impoundments. All new hydroelectric generation impoundments, including addition of new hydroelectric generation units to existing impoundments as well as the modification of existing generation units with new turbines, shall be designed so that the discharge will contain at least 5 mg/l dissolved oxygen where practicable and technologically possible. The Environmental Protection Agency, in cooperation with the State of Alabama and parties responsible for impoundments, shall develop a program to improve the design of existing facilities.

7. Instream flow

The maintenance of a scientifically established instream flow, specific to each individual water course is absolutely essential to maintaining the water quality of our state waters. The reason for this is based on simple mass transport concepts. A flow of pollutants entering a waterbody at average flow will not impact water quality as much as the same flow of pollutants entering the waterbody at low flow. When we have less quantity we have more pollution because a higher concentration of contaminants results when less water is available in the receiving stream. As our understanding of the interrelation between the quantity and quality of water increases it becomes ever more apparent that any attempt by ADEM to influence the quality of a water course must address the quantity of water within such watercourse. The

authority to regulate the quantity of water, while not specifically mandated in Title 22, Section 22-22-1 *et seq.*, Code of Alabama 1975, is easily found in the Alabama Water Pollution Control Act's statement of intent found in section 22-22-2 which provides in part that the "public policy of this state and the purpose of this chapter to conserve the waters of the state and to protect, maintain and improve the quality thereof..." ADEM cannot meet this intent without a scientific consideration of the quantity of water in regulated streams. This responsibility is therefore inherent in ADEM's responsibility to "adopt rules establishing water quality standards and stream classifications for all waters of the State as the Department sees fit..." under Chapter 335-6-1.02 (1) and demonstrated by ADEM's adoption of 7-day 10-year low flow and the 1-day 10-year low flow as the basis for applying chronic aquatic life criteria and acute aquatic life criteria, respectively, ("7Q10") under 335-10.07 (c).

While ADEM's water quality standards include criteria for several chemical and physical parameters, the 7Q10 standard does not scientifically address water quality issues associated with reduced water quantity. ADEM acknowledges as much when they issue discharge permits with limits that vary with the flow in the receiving stream. ADEM must acknowledge the relationship between water quality and quantity in its water quality standards. We strongly encourage the agency to adopt a stream by stream analysis of instream flow and at the very minimum adopt a sub-watershed quantity criteria which is modeled on the natural flow variability, aquatic habitat, and water demands specific to each region

8. Rescind or significantly revise the Limited Warm-Waters Fisheries Classification

Under 335-6-10.05 (5), the general conditions applicable to all water quality criteria requires that "all waters, where attainable, shall be suitable for recreation in and on the waters during the months of June through September. The Warm-Waters Fisheries violates this provision by allowing levels of e coli bacteria levels to 1000 colonies/ 100 ml. Additionally, while this provision purports to apply to waters used for Warm Waters Fisheries, the suitable uses listed in 335-6-10.05 (6)(c)(1) only allow for "agricultural irrigation, livestock, watering, and industrial cooling waters." In fact the classification actually forbids "fishing" as suitable use. This classification is not in keeping with Alabama's water quality policy, is unnecessary given the already existing classifications of "Agricultural and Industrial" and "Fish and Wildlife," and, without significant revision, appears to be a disingenuous attempt to provide a classification lower than that necessary for fish and wildlife in order to allow discharge of inadequately treated pollution into small streams at the expense of the natural ecosystem.

9. Nutrients and Turbidity

While ADEM has provided excellent lake specific criteria for several reservoirs, Alabama still does not have numerical criteria to protect our rivers and streams from the impacts associated with excessive nutrients and stormwater runoff. In 2004, ADEM's published its *Nutrient Criteria Implementation Plan* describing how nutrient criteria will be developed for rivers and streams in the coming years. To date there has been very little advancement on this front. ADEM should revise 335-6-10.11 to include basin specific criteria similar to its treatment of specified lakes. With the understanding that this is a resource intensive proposition, we recommend that ADEM immediately adopt EPA's published regional standards as ADEM conducts the studies necessary to identify scientifically based standards at the individual basin level. Furthermore, we request that as part of this revision ADEM develop and publish a realistic schedule for implementation of these criteria and identify quantifiable benchmarks for periodic evaluation.

10. Special Use Classification

ARA wholeheartedly concurs with the Southern Environmental Law Center's ("SELC") recommendation that all waters within U.S. National Forests, Parks, and monuments be considered for Outstanding National Resource Waters ("ONRW") under 335-6-10.10(1)(a). These waters certainly meet the "exceptional recreational and ecological significance" and deserve prompt recognition from the state. Similarly, Alabama should provide the highest protection available to the waters on and traversing state lands. In keeping with this, we recommend that ADEM designate all waters within State Parks and Forests as Outstanding Alabama Waters under 335-6-10.09(1) or provide a detailed explanation why these waters do not meet the standard. For those waters that ADEM finds do not meet the OAW, we request that ADEM, in cooperation with the Alabama Department of Conservation and Natural Resources ("DCNR") and the Alabama Office of Water Resources ("OWR"), develop a comprehensive and measurable plan for repairing these waters to the OAW standard.

We support the proposed use classification of the Magnolia River to Outstanding Alabama Water in 335-6-11. This river in Baldwin County is truly a natural treasure. As the headwaters to the Weeks Bay National Estuarine Research Reserve and is home to diverse fish and wildlife populations and valued for its recreational opportunities, aesthetic properties, and economic value, this waterbody certainly meets the requirement of "exceptional recreational or ecological significance" as described in 335-6-10-.09(1)(b). We ask that ADEM expedite this process in order to avoid the protracted 7 year delay experienced with the Wolf Bay consideration.

Additionally, we join with SELC in its proposal that segments of the Locust Fork be given OAW designation because of the presence of imperiled species and the high quality of this portion of the Black Warrior River Basin. We ask that ADEM address all proposed segments of the Locust Fork, or tributaries, which are currently attaining their uses and would be appropriate candidates for OAW designations, and if applicable provide specific reasons why they should not be reclassified to OAW.

Finally, we request that ADEM implement a proactive system of identifying and assessing those other waters of the state that have not been designated as OAW yet nonetheless have the potential for OAW classification and that our previous recommendations for OAW classification, on which ADEM has yet to take action, be given appropriate consideration.

11. Establish Riparian Buffer requirements for OAW and Critical Habitat use classifications.

EPA currently recommends aquatic buffers, otherwise known as “riparian buffers”, as natural boundaries between local waterways and existing development. These buffers help protect water quality by filtering pollutants such as sediment, nitrogen, phosphorous, pesticides, etc. The vegetation found in a riparian area helps to slow down floodwaters and prevent stream bank erosion. These buffers also provide for wildlife habitats for deer, birds and other wild animals. Trees and other plants found along a river or stream bank provide shaded areas that help regulate temperature and keep the water from becoming too hot for the aquatic wildlife, and they provide food sources for certain animal species. Other benefits of buffers include flood control, stream bank stabilization, stream temperature control, and room for lateral movement of the stream channel.

In Alabama, the Little River, Cahaba River, parts of the Alabama River, and other unique waters are designated as either ONRW or OAW. To protect these valuable water bodies, ADEM should provide for the establishment and protection of riparian buffers under 335-6-10.04 and 09. These buffers are essential to maintaining water quality, for they help to prevent sediment, nitrogen, phosphorous, pesticides and other non-point pollutants from reaching the water. When a riparian area is degraded then the adjacent water body also becomes degraded. A protected water can only maintain its specified designation if the riparian area adjacent to it is protected as well.

In recommending riparian buffers, the EPA suggests that good aquatic buffer regulations specify the size and management of the stream buffer as a specific planning tool to protect stream quality and aquatic habitat. According to the EPA, “[e]ffective buffer ordinances provide guidelines for buffer creation and maintenance and should require:

- buffer boundaries to be clearly marked on local planning maps
- maintenance language that restricts vegetation and soil disturbance
- tables that illustrate buffer width adjustment by percent slope and type of stream
- direction on allowable uses and public education”²

ARA recommends that ADEM adopt, as part of its water quality criteria, specific language from Baltimore County, Maryland’s “Environmental Protection and Resource Management” regulations which provide in part:

² EPA, “Aquatic Buffers” available at <http://www.epa.gov/nps/ordinance/buffers.htm>.

The forest buffer, including wetlands and floodplains, shall be managed to enhance and maximize the unique value of these resources. Management includes specific limitations on alteration of the natural conditions of these resources. The following practices and activities are restricted within the forest buffer, except as provided for [by federal or state law, or other state regulatory agencies] in accordance with a soil conservation and water quality plan approved by the [the state]:

- (1) The existing vegetation within the forest buffer shall not be disturbed except as provided [otherwise]. This includes, but is not limited to, disturbance by tree removal, shrub removal, clearing, mowing, burning, spraying, and grazing.
- (2) Soil disturbance shall not take place within the forest buffer by grading, stripping of topsoil, plowing, cultivating, or other practices.
- (3) Filling or dumping shall not occur within the forest buffer.
- (4) Except as permitted by the department, the forest buffer shall not be drained by ditching, underdrains, or other drainage systems.
- (5) Pesticides shall not be stored, used, or applied within the forest buffer, except for the spot spraying of noxious weeds consistent with the recommendations of [an appropriate state agency or extension service].
- (6) Animals shall not be housed, grazed, or otherwise maintained within the forest buffer.
- (7) Motorized vehicles shall not be stored or operated within the forest buffer, except for maintenance and emergency use approved by the department.
- (8) Materials shall not be stored within the forest buffer.³

12. Previous Comments

The Alabama Rivers Alliance submitted comments during three previous triennial review processes in 2000, 2003, and 2006. We urge you to reconsider the comments and suggestions provided in those previous submittals. While a few of our recommendations have been considered by ADEM, no action has been taken on many of our suggestions. Our previous comments regarding turbidity criteria, dissolved oxygen, wetlands, waters in need of classification upgrade to Swimming and Other Whole-Body Contact Sports, and mixing zones should be incorporated into Alabama's water quality standards. Rather than repeat the previous comments, we have attached our previous submittals for your review.

³ Baltimore County, MD, BUFFER PROTECTION AND MANAGEMENT ORDINANCE, Section 14-341 et seq., available at <http://www.epa.gov/nps/ordinance/documents/A2a-Baltimore.pdf>

13. Conclusion

We appreciate the opportunity to submit these comments on Alabama's water quality standards. We request a response to these comments and look forward to hearing from you. In an effort to ensure a timely response, if ADEM prefers to have these comments presented as a query rather than in a narrative format, please advise and we will be happy to resubmit them.

Sincerely,

Mitchell Reid
Program Director
Alabama Rivers Alliance

Attachments 1) 2006 Comments by Alabama Rivers Alliance
 2) 2002-2003 Comments by Alabama Rivers Alliance
 3) 1999 Comments by Alabama Rivers Alliance

cc: Members of the Alabama Environmental Management Commission