

APPENDIX F

ALABAMA NONPOINT SOURCE MANAGEMENT PROGRAM

OTHER CATEGORIES AND SUBCATEGORIES

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Section F.1 Atmospheric NPS Pollutant Transport and Deposition

A relationship between atmospheric transport and deposition of NPS pollutants and impaired water quality is recognized. The ADEM administers Air Programs pursuant [Division 3](#) regulations and laws and delegable provisions of the [Code of Federal Regulations \(Title 40, Vol. 1, Chapter I, Subchapter C \(Air Programs\), Parts 50-96\)](#). The ADEM Air Division has primary jurisdiction over air emission sources statewide, except for emission sources in areas administered by the [Jefferson County Department of Health](#) and the [City of Huntsville Department of Natural Resources](#) as based upon the [State of Alabama Ambient Air Monitoring Consolidated Network Review](#) (2011, or as updated). Some state NPS management air pollution actions are unlikely to result in substantial remedial progress compared to what may be accomplished on national and international levels (e.g. mercury TMDLs). In general, odors, volatiles, dust, smoke, and other airborne pollution issues will be targeted by Section 319 grant funding as indirect derivatives of water quality protection and restoration BMP implementation activities.

Table F.1 Atmospheric NPS Pollutant Transport and Deposition Nonpoint Source Measures

Programmatic Strategies	Outputs	Outcomes
<p>Emphasize the relationship between the causes of air pollution and water pollution.</p> <p>Address NPS air/water pollution threats based upon improvements in processes and controls such as:</p> <ul style="list-style-type: none"> • Equipment, component, and control device evaluation and maintenance • Leak/spill prevention • Emission detection • Identifying unauthorized equipment additions, modifications, or replacements • Maintaining records of monitoring and production • Providing voluntary/non-regulatory compliance assistance <p>Address NPS water quality impairment threats associated with air pollution such as:</p> <ul style="list-style-type: none"> • Particulate matter • Carbon Monoxide • Nitrogen Oxides • Volatile Organic Compounds • Sulfur Dioxide • Hazardous Air Pollutants (organics and metals) • Wood furniture manufacturing (Glues, resin and solvents) • Miscellaneous Surface Coating/Painting • Metal fabrication • Painting/coating motor vehicles and mobile equipment • Paint stripping (e.g., Methylene Chloride) • Plating and Polishing (e.g. materials containing Cd, Cr, Pb, Mn, or Ni) • Degreasing (e.g., Methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, and chloroform) • Dispensing gasoline to motor vehicles 	<p>Facilitate opportunities to provide NPS education and outreach at forums, conferences, meetings, and workshops</p> <p>Produce and distribute topical education and outreach materials (print, CDs, DVDs, videos, websites, etc.)</p> <p>Coordinate point source and NPS atmospheric pollutant management activities among the regulated and non-regulated environmental interest sectors</p>	<p>Statewide actions to address threats to human and environmental health is coordinated and leveraged</p> <p>Public and private sector environmental literacy, knowledge and awareness is improved</p> <p>Net national air pollution challenges are addresses in relationship to TMDL planning and implementation (e.g. mercury)</p> <p>Targets reductions in NPS air pollutant transport and disposition contributing to water quality degradation</p> <p>Environmentally-protective and economically-effective mitigation steps are promptly implemented by the state</p> <p>Provides support for increasing environmental stewardship and strengthening civic responsibility for water resources, infrastructure, habitat protection, and pollution prevention</p> <p>Address net national air pollution challenges</p>

Section F.2 Climate Change

Disagreements continue to exist as to the sources, causes, timing, severity, and rate (e.g., what, where, when, how) greenhouse gases* (carbon dioxide, methane, troposphere ozone, and nitrous oxide) adversely affect human and environmental health. Complexities and uncertainties are politically, socially, and scientifically contentious. While proponents point to evidence that seemingly confirms a current and growing problem; some people outright dismiss the notion, while others are confused or unsure if a problem actually exist. The EPA [National Water Program Strategy: Response to Climate Change](#) (2012) describes the impacts of climate change and its implications for EPA clean surface water and groundwater protection programs.

Statewide and local community management strategies are unlikely to result in substantial remedial progress compared to what may be accomplished on national and international levels; however, the Alabama NPS Management Program supports the following actions (**Table F.2.A**) as practicable and as resources allow:

Table F2 Nonpoint Source Pollution Measures and Climate Change

Programmatic Strategies	Outputs	Outcomes
<p>Collaborate with EPA to understand the science / and risk factors; develop tools, and implement adaptation actions to respond to potential impacts on human health and state water resources and ecosystems. Partner with EPA assistance programs such as:</p> <ul style="list-style-type: none"> ✓ WaterSense ✓ Climate Ready Water Utilities ✓ Green Infrastructure Climate Ready Estuaries ✓ Climate Ready Estuaries ✓ National Estuary Program ✓ Gulf of Mexico Program <p>Collaborate with other federal agencies acting or preparing to act on environmental, economic, and public health and humanitarian risks. Garner climate change input from state agencies, officials, academia, economists, industry, agricultural and other stakeholders:</p> <ul style="list-style-type: none"> • Facilitate development and updates of an interagency or statewide climate change plan that addresses NPS pollution management challenges and presents policies, plans, and practices needed to respond to impacts • Identify potential state administrative, financial, technological and other resources that may be needed to adapt to or respond to climate change challenges • Ascertain public and private sector interest, knowledge, perceptions, risk deemed acceptable, and motivation to take local or statewide actions in mitigating or adapting to carbon emissions and climate change <p>Collaborate with the academic, economic development and planning, public health, tourism, scientific and business sectors to develop an adaptation plan(s) to address potential risks and resilience to climate change</p> <p>Leverage federal investments and programs with state and local community resources aimed at stimulating the development and implementation of NPS and promotes sound decision-making processes</p> <p>Develop and implement NPS management strategies that work toward breaking the social and economic, culturally-based, geographic isolation of communities that may be disproportionately affected by climate change impacts (e.g., food security, energy efficiency, health, water quality, flooding, etc.)</p>	<p>Provide science-based research and development data and information to citizens and the regulated community at forums, conferences, meetings, and workshops</p> <p>Produce and distribute timely, rational and defensible topical education and outreach materials (print, CDs, DVDs, videos, websites, etc.)</p> <p>Characterize impacts on infrastructure, natural resources (e.g. flora, fauna, habitat, biodiversity; healthy and productive ecosystems); surface and ground waters; human health; and coastal communities and economies</p> <p>Prioritize and implement mutually agreed-upon actions to have systems in-place to monitor and mobilize responses to NPS pollution</p> <p>Promote or install clean energy and energy efficiency technologies, practices, systems, procedures or incentive systems to respond to climate change issues.</p> <p>Facilitate resources to implement innovative conservation technologies and provide technical assistance and financial incentives</p> <p>Sustain partnerships to protect natural resources and ensure clean and safe water for future generations</p>	<p>Coordination and guidance for state actions to address threats to human and environmental health is provided</p> <p>Public and private sector environmental literacy, knowledge and awareness is enhanced</p> <p>Protections for improving human and environmental health and the economy of the state is integrated. Reductions in the magnitude and rate of climate change is promoted</p> <p>Broad-based agreements of environmentally-protective and cost-effective steps to be implemented statewide is identified</p> <p>Net national climate change goals and state NPS pollutant emission recommendation and targets are addressed</p> <p>Environmental stewardship and s partnerships to cooperatively adapt to human and environmental health threats and effects are sustained</p> <p>Human and environmental health and the economy of the state is sustained or protected. Scientific and technical expertise is engaged to build capacity</p> <p>Civic responsibility to protect water resources, infrastructure, and habitats; and conserve energy, reduce carbon emissions, and reduce pollution and waste is strengthened.</p> <p>Investments in efforts to promote NPS research and education related to sustainability; vulnerability, adaptation, mitigation, modeling; and public responses is integrated</p>

Additional Sources of Information:

- U.S. Environmental Protection Agency (EPA): [Climate Change and Water](#); [Climate Change: Basic Information](#); [Climate Ready Water Utilities \(CRWU\)](#)
- National Aeronautics and Space Administration (NASA): [What's in a Name? Global Warming vs. Climate Change](#)
- National Oceanic and Atmospheric Administration (NOAA): [Climate](#)
- National Academy of Sciences (NAS): [Joint science academies' statement: Global response to climate change](#)
- [Alabama Office of the State Climatologist](#)

*The following terms may be useful in distinguishing and understanding greenhouse-gas effect issues:

Climate Change: any distinct change in measures of climate lasting for a long period of time (e.g., decades or longer). This term is growing in preferred use to ‘global warming’ because major changes in rainfall, snow, or wind patterns may be affected and rising sea levels could have a greater human impact than rising temperatures alone. Climate change may be a result of:

- Natural changes in the Sun’s energy or slow changes in the Earth’s orbit around the Sun
- Natural processes such as changes in ocean currents
- Human activities that change the atmosphere’s makeup (e.g., burning fossil fuels) and land use (e.g., deforestation, urban development).

Global Warming: changes in the average increase of temperatures near the Earth’s surface and in the lowest layer of the atmosphere due to rising levels of greenhouse gases. Changes in precipitation levels and storm intensity in the Earth’s atmosphere can contribute to changes in global climate patterns. Global warming and changes in precipitation and sea levels can be considered components of climate change.

Global Change: A broad term that refers to changes in the Earth’s climate or of a region on Earth as a result of ozone depletion and land-use/urban development changes.

Section F3 Environmental Justice

Environmental Justice (EJ) refers to the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The Alabama NPS Management Program seeks to protect people’s health in communities overburdened by NPS pollution using EPA’s [Plan EJ 2014](#) (as revised/updated) as guidance. Plan EJ 2014 is not a rule or regulation, but will help integrate EJ concerns in NPS management decision-making processes presented in **Table F.3** below:

Table F3 Nonpoint Source Pollution Measures and Environmental Justice

Programmatic Strategies	Outputs	Outcomes
<p>Partner with EPA to implement applicable EJ actions pertaining to:</p> <ul style="list-style-type: none"> • National Water Program Guidance (FY2011- 2015 Strategic Plan, and as updated) • Executive Order 12898 (Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations) • EPA’s Crosscutting Fundamental Strategy: Working for Environmental Justice and Children’s Health. (FY2011- 2015, and as updated) <p>Facilitate BMP assessments, lessons learned, and recommendations pertaining to other community-based EJ programs such as Community Action for a Renewed Environment (CARE), EJ Showcase Communities, Partnership for Sustainable Communities, Brownfields and Area-Wide Planning Projects, Urban Waters, etc.</p> <p>Develop and incorporate common EJ indicators, measures, and analyses tools; basing environmental and human health decisions on credible monitoring data:</p> <ul style="list-style-type: none"> • Continue to align and leverage public and private sector partnerships, programs, and resources. • Encourage greater investments and strengthening of NPS programmatic strategies to assure improved water quality and watershed protection and public health benefits. <p>Provide communities with capacity to effectively, efficiently, expeditiously, and economically address critical EJ / NPS pollution management issues.</p>	<p>Include EJ principles in NPS decision-making processes.</p> <p>Include as applicable, EJ strategies in watershed-based management plans</p> <p>Continue to prioritize impaired waters/watersheds in need of EJ-related protection or restoration</p> <p>Promote increased participation in the Alabama Clean Water Partnership</p> <p>Enhance NPS education and outreach to historically underserved, underrepresented, and disproportionately impacted low-income or minority citizens</p> <p>Continue to develop science-based pollutant exposure and health impact measures and indicators to assess improvements in public and environmental health conditions</p> <p>Continue to develop tools and mechanisms to assess multiple pollutant stressors (sources and causes) and risks</p> <p>Continue engagement of local communities to protect local human environmental health</p> <p>Continue to promote “green chemistry” to spur the use of safer chemicals and production processes in EJ areas</p>	<p>Enhances and integrates EJ programs, policies, and activities.</p> <p>Resources are dedicated / leveraged to prevent harmful exposures and health risks in designated EJ areas.</p> <p>Community efforts to build healthy and sustainable green neighborhoods are supported.</p> <p>Enhanced stakeholder awareness and knowledge</p> <p>Incorporation of BMPs from EPA’s multi-media, community-based programs improves EJ strategy efficiency and effectiveness; reduces environmental risks; and promote healthy, sustainable, and livable communities.</p> <p>Improves collective state agency and local community understanding by harmonizing and strengthening the way EPA and other federal agencies supports EJ communities through their grant and technical assistance programs.</p>

Section F4 Solid Waste and Litter Remediation

a) Overview

Although solid waste, litter, scrap tires, and brownfields (**Table F.4**) are generally associated with regulatory processes and “point source” permits programs; unauthorized, undiscovered or “hidden” legacy sites can surreptitiously contribute to water quality impairments. ADEM’s point source and NPS programs continue to work together to evaluate the causes of pollutant runoff. For example, Section 303(d) lists have implicated “unknown toxicity” as a pollutant cause of some impaired waters. Using mutual programmatic point and NPS resources, iterative and focused land use evaluations and site visits are sometimes required to definitively determine the “unknown” causes and sources of pollutant problems. In addition, watershed stakeholders routinely indicate that illegal dumps, litter and improper disposal of scrap tires are important pollutant problems that need to be addressed by watershed-based management plans and mitigation efforts.

Table F.4 Measures to Control Nonpoint Source Pollution from Solid Waste Threats

<ul style="list-style-type: none"> • The ADEM Land Division administers Waste/Remediation Programs pursuant to authorities granted by Alabama Environmental Regulations and Laws, particularly: Division 4 - Scrap Tire, Division 13 - Solid Waste; Division 14 - Hazardous Waste; Division 15 - Brownfield Redevelopment and Voluntary Cleanup, and Division 16 – Drycleaning Trust Fund. • The Hazardous Waste Program regulates generators and transporters of hazardous waste and facilities that treat, store or dispose of hazardous waste and sets forth permitting requirements for corrective action at sites where hazardous wastes may have been disposed of without a permit. Rules are at least as stringent as the federal Resource Conservation and Recovery Act (RCRA) regulations administered by EPA. • The Solid Waste Program regulations contain standards applicable to the design, permitting, compliant resolution, inspections, compliance/enforcement actions, and operation of solid waste landfills and solid waste disposal facilities. Collection and transportation of household solid waste is regulated by the Alabama Department of Public Health. • The Remediation and Cleanup Program addresses sites contaminated with hazardous waste and hazardous substances. ADEM assists EPA with remediation at sites subject to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, known as Superfund or CERCLA. Drycleaning regulations contain standards applicable to the remediation of drycleaner sites utilizing Drycleaner Environmental Trust Fund monies. • ADEM’s Scrap Tire Program regulations contain requirements applicable to the generation, transportation, storage, and processing of scrap tires. Funds collected by the Alabama Department of Revenue for the Scrap Tire Environmental Fee of \$1 per tire are used by ADEM for permitting, compliance inspections, enforcement, and to hire contractors to remediate sites of illegally disposed scrap tires for reuse or disposal. • Brownfields sites are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant and are often located in highly desirable locations. The Brownfields Program utilizes a grant from EPA under Section 128(a) of the federal Small Business Liability Relief and Brownfields Revitalization Act. The Brownfields Program assists local governments and non-profit organizations with assessment, cleanup and redevelopment of brownfields sites. ADEM may perform site assessments at no cost, and also offers training and assistance on applying for EPA grants under Section 128(a). A Directory of Brownfields Sites is available from ADEM. Sites are included in the Directory by permission of the owner, and gives details of sites in Alabama that are ready for redevelopment.
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Section F.5 Pollution Prevention (P2)

Pollution prevention is defined in the [Pollution Prevention Act](#) (Oct. 25, 1990) as “source reduction.” Under Section 6602(b) of the Act, Congress established a national policy that:

- pollution should be prevented or *reduced* at the source whenever feasible
- pollution that cannot be prevented should be *recycled* in an environmentally safe manner whenever feasible
- pollution that cannot be prevented or recycled should be *treated* (reused) in an environmentally safe manner whenever feasible, and
- *disposal or other release* into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner

The P2 concepts in **Table F.5** to reduce, reuse and recycle are equally important to air, water, and land environmental media. The Alabama NPS Management Program endorses the following P2 actions as practicable and as resources allows:

Table F.5 Pollution Prevention Strategies

Programmatic Strategies	Outputs	Outcomes
Coordinate the Alabama NPS Management Program with the ADEM	Partner with state and local	Actions to address net state and

<p>Air Division P2 Strategy</p> <p>Align ADEM P2 activities with the USEPA 2010-2014 Pollution Prevention (P2) Program Strategic Plan (as updated)</p> <p>Communicate cost-effective steps that can be taken to protect water quality and human health such as the voluntary Energy Star program, Alabama Recycling Coalition, or EPA P2 Tips for You activities</p> <p>Facilitate education and outreach to target specific audiences such as:</p> <ul style="list-style-type: none"> • Automotive Refinishing Shops • Offset Printing • Printing Industry • Screen Printing - BMP and Water Based Ink & Cleaners • Service Stations & Automotive Repair Shops • Source Reduction • Vapor Degreasing - Add On Controls • Vapor Degreasing - Trichloroethylene Solvent Substitution 	<p>agencies; municipalities, industry, businesses, environmental and civic organizations, commodity and trade groups, and others</p> <p>Communicate P2 environmental, social, and financial benefits</p> <p>Provide P2 data and information to citizens and the regulated community at forums, conferences, meetings, and workshops</p> <p>Produce and distribute education and outreach materials (print, CDs, DVDs, videos, websites, etc.)</p> <p>Emphasize the relationship between air and water P2 and NPS pollution sources and causes</p>	<p>federal P2 threats to human and environmental health are integrated</p> <p>Public and private sector environmental literacy, knowledge and awareness is enhanced to reduce, recycle and reuse</p> <p>Source reduction efforts are promoted and/or implemented to reduce the potential for pollutants to enter a waste stream</p> <p>Environmentally-protective and cost-effective steps are implemented to address water resources, infrastructure, habitat protection and other stewardship and civic responsibilities</p> <p>Resources are preserved, waste is reduced, and the environmental footprint of the materials we use is reduced</p>
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Additional P2 Information:

- [ADEM Pollution Prevention Program](#) (Air Division)
- [EPA Pollution Prevention](#)
- [Composting](#)
- [Earth911](#)

Section F.6 Onsite Septage and Treatment Systems (Septic Tanks)

Watershed-based management plans and stakeholder survey comments often relate to concerns about household wastewater treatment and disposal systems (e.g. water quality impairments associated with nutrients and pathogen sources). The AL NPS Management Program and Section 319 program continue to support statewide and coastal efforts to demonstrate/implement new technologies, enhance inspections and develop and implement inspection tracking systems (e.g. statewide, county, watershed-level), secure dedicated sources of program funding for septage system replacement, maintenance/pump outs, or installing systems where they do not exist, especially denitrifying systems in nitrogen sensitive waters/watersheds. Programs and activities address household septage in Alabama are presented in **Table F.6**, below:

Table F.6 Management of Household Septage Treatment and Disposal

<p>The ADEM Groundwater Branch administers programs to protect groundwaters, provides technical assistance, and responds to citizen complaints relative to subsurface injection of pollutants. Alabama’s Underground Injection Control (UIC) program was established under provisions of the Safe Drinking Water Act (1974). Groundwater is a major source of drinking water in Alabama. The UIC program is designed to prevent contamination of Underground Sources of Drinking Water (USDW) resulting from the operation of injection wells. Most injection wells regulated by ADEM are designed much like the gravity flow field lines used to dispose of domestic wastewater from a home. Common uses are for treated discharges from small car washes and laundromats that are located in an area where a public sewer system is not available; treated discharges from small wastewater collection and treatment systems for residential areas; and discharges of treated groundwater from systems designed to cleanup groundwater contamination. When properly sited, constructed and operated, injection wells can be an effective and environmentally safe means of fluid waste disposal. The different types of injection wells listed below are all similar in their basic function:</p> <p>Class I Wells: Injection of pollutants below an USDW (prohibited by Alabama regulations)</p> <p>Class II Wells: Injection of wastes from oil & gas productions (regulated by the Alabama Oil & Gas Board)</p> <p>Class III Wells: Solution mining of certain minerals such as salt</p> <p>Class IV Wells: Injection of Hazardous Waste above an USDW (banned nationally by Federal regulations)</p> <p>Class V Wells: All other types of wells (These make up about 90% of permitted injection wells in Alabama).</p> <p>Onsite septic systems are generally regarded as Class V underground injection wells. Alabama has about 728,690 onsite systems (about 47% of the state) and about 31,000 households with no treatment (EPA Fact Sheet of 1990 US Census Data). 1990). Alabama does not have loan or grant programs for onsite betterment programs.</p>
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The [Alabama Department of Public Health](#) conducts programs to minimize the adverse effects of disposal of sewage and high-strength sewage on human health. Proper siting, design, construction, installation, operation, and maintenance requirements for conventional and engineered septage systems (Class V Wells) are prescribed in the [Onsite Sewage Treatment and Disposal](#) (Administrative Code - Chapter 420-3-1) (as amended).

An Alabama Onsite Sewage Management Committee was formed in 1995 to develop an Onsite Sewage Management Plan (2008, as amended) to reduce nonpoint source pollution from septic systems in Alabama. In 1999, the [Alabama Onsite Wastewater Board](#) was created to establish qualification levels and licensing of persons working in the onsite industry in Alabama. Continuing education, training, and certification are provided at the [Alabama Onsite Training Center](#), University of West Alabama in Livingston, Alabama.

A partnership between ADEM, the Mobile Soil and Conservation District, Alabama Power Company, and the Mobile Department of Public Health completed a Coastal Alabama Onsite Sewage and Disposal System Inventory for Mobile County that uses GIS layers to locate residential septic tanks in support CZARA 6217 program final approval and other coastal resource management programs.

For onsite systems, enforcement is limited to inspections during the permitting process. Local health departments are empowered by Code of Alabama, Title 22, Chapter 26, to investigate reports of failing or inadequate onsite sewage systems. The local Department may require the owner or responsible entity to mitigate an unsanitary condition caused by a failing onsite system OSS or unapproved sewage discharge. Health departments do not have administrative penalty authority, but use the local judicial system to enforce regulations.

A variety of management entities, including cooperatives, municipal utilities, and private utilities are active in Alabama. Alabama rules mandate the fiscal parameters under which privately owned decentralized wastewater Rural Electric Cooperatives must operate, but do not necessarily grant other rights.

An education and outreach program was established by ADEM and ADPH to provide financial incentives and technical assistance to address water quality issues relative to onsite treatment and disposal systems in targeted watersheds in Alabama. A *12-Step Users Guide and Checklist* is publically available from ADEM to assist stakeholders in conducting a workshop and voucher project in a county, watershed, or other area.

Section F.7 Marina and Recreational Boating Nonpoint Source Management

Localized NPS pollutant discharges to waters of the state from over one million watercraft owned by households in Alabama can be significant. Nonpoint source pollution includes petroleum hydrocarbons (fueling, bilge discharge, oil changing), nutrients, metals, endocrine disrupters, solvents, surfactants, spray paint and antifoulants, acids, antifreeze, metals, debris and litter. In addition, some boating activities can stress aquatic habitat and cause bank erosion. Waterborne pathogens from the dumping of raw and poorly treated sewage can increase risks to human health, lower dissolved oxygen, and contaminate the water column and sediments in which fish, shellfish, and other aquatic organisms live. Sewage discharges can have potentially wide-ranging impacts on all aquatic environments, particularly in marinas, slow moving rivers, lakes, and other bodies of water with low flushing rates. A summary of federal and state laws and regulations applicable to marinas and recreational boating is presented in **Table F.7.1** below. The AL NPS Management Program, ADEM Coastal Programs, CZARA 6217 NPS program and Section 319 resources and funding will continue to facilitate, leverage resources, and support implementation of the following activities as allowable, appropriate, and practicable to address nonpoint sources of pollution in Alabama.



Table F.7.1 Resources, Laws and Regulations Applicable to Marinas and Recreational Boating

- The [National Oceanic and Atmospheric Administration](#) (NOAA) provides funding to administer the [Alabama-Mississippi Sea Grant Consortium - Clean Marina Program](#). This federal/state partnership program provides resources for marina, boatyard, and yacht club operators to voluntarily apply operational and management measures to reduce pollution from marinas and recreational boats. Marinas that adopt such practices may be designated as an environmentally-responsible, “Clean Marina.”
- The [Clean Vessel Act](#) (CVA) was passed by Congress in 1992 (Subtitle (V)(F) of P.L. 102-587) to help reduce pollution from vessel sewage discharges. The CVA can provide financial assistance to marinas statewide for the construction, renovation, operation and maintenance of recreational boater waste pump-out stations. The [U.S. Fish and Wildlife Service](#) works with ADEM to jointly administer the Alabama Clean Boating Act (1993) to distribute education and outreach materials to [marina owners](#) and [boaters](#) on the use of pumpout and portable toilet dump stations, and with the [Alabama Department of Conservation and Natural Resources](#) to conduct inspections of marine sanitary devices on all recreational and residence vessels that carry an on-board sewage system. As a result of the Act, the [Alabama Clean Waters Initiative](#) was developed to require all marinas with boat customers that use marine sanitary devices with holding tanks to install a boat sewage pump-out system for handling boating wastes at their facility. Marinas without pump-out or waste reception capability are prohibited from docking vessels with on-board holding tanks containing untreated waste. The TVA implements the [Clean Marina and Clean Boating](#) initiative in the Tennessee River basin to minimize pollution, provide [education and outreach](#), and certify [clean marinas](#).

- Congress enacted the [Coastal Zone Act Reauthorization Amendments](#) (CZARA) in 1990 to address the impacts of nonpoint source pollution on coastal water quality. [Section 6217](#) “Protecting Coastal Waters” of CZARA (16 U.S.C. Section 1455b), requires states with an approved Coastal Zone Management Program to develop and submit a Coastal Nonpoint Pollution Control Program to EPA and the National Oceanic and Atmospheric Administration (NOAA) for approval. Section 6217 is designed to strengthen federal and state coastal zone management and water quality program and partnerships and enhance state and local efforts to manage land use activities that degrade coastal waters and habitats. CZARA management measures and BMPs for marinas and recreational boating are defined and described in, [Guidance Specifying Management Measures for Sources of Nonpoint Source Pollution in Coastal Waters](#) (EPA 1993). The Alabama Coastal Area Management Program authorized by the Alabama Coastal Area Act of 1976 (Act 534) was approved by NOAA in 1979. It is administered by two state agencies: The [Alabama Department of Conservation and Natural Resources](#) is responsible for planning, fiscal management, public education and research management; and the [Alabama Department of Environmental Management](#) carries out permitting, regulatory, and enforcement functions. The [Coastal Zone](#) in Alabama extends inland to the continuous 10-foot contour in Mobile and Baldwin Counties.
- Congress passed the [Clean Boating Act](#) (CBA) in 2008 as an amendment to the Clean Water Act that directed EPA to mitigate the adverse impacts of incidental pollutant discharges in the normal operation of recreational vessels (e.g. vessels manufactured or used primarily for pleasure and not for commercial use or transport of paying passengers; includes canoes, kayaks, in/outboard motor boats, personal watercraft, yachts and sailboats) in inland and coastal waters and waters out to 12 nautical miles from shore. The CBA does not regulate marina sewage pump-out facilities.
- Additional federal laws regarding associated with marina and recreational boating include National Pollutant Discharge Elimination System (NPDES) permit programs established by CWA Section 402 (construction activities, discharge of equipment wash water, stormwater runoff from boat maintenance areas, and non-contact cooling water, condensate sewage and gray water discharges’ oil or oil waste that causes a film or sheen); CWA Section 312 (f) (4) (B), U.S.C Title 33, Section 312, Section 1322, 40 CFR Part 140, 140.4 and 159 (to prevent discharge of untreated marine vessel sewage); CWA 33CFR 153.305 (cleaning boats using soaps or other agents to dissipate oils); Rivers and Harbors Act of 1899 - Section 10 and CWA Section 404 (dredge and fill material, destroying/removing vegetation in nontidal wetlands or its buffers); Clean Air Act Section 110 (paint spray and air quality); Organotin Antifoulant Paint Control Act of 1988 (applies to restricted use of paints containing tributyl tin); RCRA Section 3010 and 40 CFR 262.12, 263.11, and 264.11 (applies to generation and disposal of hazardous waste); Federal Endangered Species Act P.L. 93-205 and the National Marine Fisheries Service regulations at 50 CFR Parts 217-227 and 50 CFR Parts 402 and 424-453 (protects threatened and endangered species and habitat); Oil Pollution Prevention Regulation at 40 CFR Part 112 (requires spill prevention, containment, and countermeasure plans); Oil Pollution Act of 1990 P.L 101-380 (targets oil discharge from boats and clean-up responses); Marine Plastic Pollution Research and Control Act of 1987 - P.L. 100-220, U.S.C. Title 33, Chapter 33 (restricts sea-dumping of plastics/garbage within 25 miles of land); and the Marine Protection Research and Sanctuaries Act of 1992, 33 U.S. C. 1441-1445, Title II of P.L. 92-532, as amended (supports ocean dumping research).
- The International Convention for the Prevention of Pollution from Ships (“MARPOL” for Marine Pollution) is an international treaty that covers intentional and accidental discharges of wastes of all kinds from vessels and applies to ports, terminals, and marinas as well. The United States is signatory to MARPOL 73/78 and Annexes I, II, III, and V. MARPOL 73/78 is implemented in the US through the 1980 Act Prevent Pollution from Ships of 1980, as amended. The U.S. Coast Guard promulgates regulations and enforces the treaty. Regulations are included in 33 CFR Part 151 (ships) and 33 CFR Part 158 (ports). MARPOL 73/78 Annex V, implemented in the United States by the Marine Plastic Pollution Research and Control Act 1987 (Title II of Public Law 100-220) prohibits the disposal of plastics and restricts other vessel-generated trash dumping at sea. It also requires proper disposal of plastics and other trash brought to shore.

The AL NPS Management Program and Section 319 grant program endorses implementation of the following NPS pollution strategies within both freshwater and marine /coastal areas as presented in the, [National Management Measures to Control Nonpoint Source Pollution from Marinas and Recreational Boating](#) (EPA 841-B-05-005, November 2001) and as presented in **Table F.7.2** below.

Table F.7.2 Coastal Area Management Measures for Marinas and Recreational Boating

- Flushing - site and design marinas such that tides and/or currents will aid in flushing of the site or renew its water regularly
- Water Quality Assessment - assess water quality as part of marina siting and design
- Habitat Assessment - site and design marinas to protect against adverse effects on shellfish resources, wetlands, submerged aquatic vegetation, or other important riparian and aquatic habitat areas as designed by local, state, or federal governments
- Shoreline Stabilization - where shoreline or streambank erosion is a nonpoint source pollution problem, shorelines and streambanks should be stabilized. Vegetative methods are strongly preferred unless structural methods are more cost-effective, considering the severity of wave and wind erosion, offshore bathymetry, and the potential adverse impact on other shorelines, streambanks, and offshore areas. Protect shorelines and streambanks from erosion due to uses of either the shorelands or adjacent surface waters.
- Storm water runoff - implement effective runoff control strategies that include the use of pollution prevention activities and the proper design of hull maintenance areas. Reduce the average annual loadings of total suspended solids (TSS) in runoff from hull maintenance areas by 80 percent. For the purposes of this measure, an 80 percent reduction of TSS is to be determined on an average annual basis.
- Fueling Station Design - design fueling stations to allow for ease in cleanup of spills.
- Petroleum Control - reduce the amount of fuel and oil from boat bilges and fuel tank air vents entering marina and surface waters.
- Liquid Material Management - provide and maintain appropriate storage, transfer, containment, and disposal facilities for liquid material, such as oil, harmful solvents, antifreeze, and paints, and encourage recycling of these materials.

- Solid Waste Management - properly dispose of solid wastes produced by the operation, cleaning, maintenance, and repair of boats to limit entry of solid wastes to surface waters.
- Fish Waste Management - properly dispose of solid wastes produced by the operation, cleaning, maintenance, and repair of boats to limit entry of solid wastes to surface waters.
- Sewage Facilities - install pumpout, dump station, and adequate restroom facilities at marinas to reduce the release of sewage to surface waters. Design these facilities to allow ease of access, and post signage to promote use by the boating public
- Maintenance of Sewage Facilities - ensure that sewage pumpout facilities are maintained in operational condition and encourage their use.
- Boat Cleaning - for boats that are in the water, perform cleaning operations to minimize, to the extent practicable, the release to surface waters of (a) harmful cleaners and solvents and (b) paint from in-water hull cleaning
- Boat Operation - manage boating activities where necessary to decrease turbidity and physical destruction of shallow water habitat.
- Public Education - public education, outreach, and training programs should be instituted for boaters, as well as marina owners and operators, to prevent improper disposal of polluting material.

The following [Clean Boating Tips](#) presented in **Table F.7.3** below, are suggested [ADEM](#) recommendations to help freshwater and marine facility managers and vessel owners identify potential sources of nonpoint source pollution and offers potential solutions:

Table F.7.3 Best Management Practices for Marinas and Recreational Boating

- Vessels with an onboard toilet are required to install and use a USCG certified marine sanitation device and use designated holding tank pumpout stations.
- After use, only rinse boats with fresh water to reduce the need for cleansers and heavy-duty products.
- Use old-fashioned cleaning methods, including baking soda, vinegar, lemon juice, borax and “elbow grease”.
- Take precautions not to overfill the fuel tank. If fuel spills onto the boat or dock, wipe up the spill with a rag; do not hose it into the water. If fuel or oil is spilled into the water, do not disperse it with detergent or soap.
- Attempting to motor a boat out after it becomes grounded can cause serious damage to the water bottom and local marine organisms.
- Stow all loose items, plastic bags, drink cans, and other articles properly so they do not blow overboard. Never discard of garbage overboard.

Best management practices continue to be designed, modified and retrofitted as a result of implementation and innovation experience of marina owners and operators. Nonpoint source measures should consider site-specific design constraints and pollution control effectiveness factors and conditions such as: ensuring that the site has good flushing and water circulation characteristics, avoiding encroachment on vital aquatic habitats, improving habitat quality in and around the marina, and reducing the potential for water quality problems in the marina basin. Pollution prevention and source reduction measures can help protect and improve marina water quality, keep operational costs low, and improve customer satisfaction. It is highly recommended by the AL NPS Management Program and Section 319 grant program that marina owners/operators and boating enthusiast use the [Best Management Practices Checklist for Marinas and Recreational Boating –Appendix A](#) of the [National Management Measures to Control Nonpoint Source Pollution from Marinas and Recreational Boating](#) (EPA 841-B-05-005, November 2001) as guidance on the best practicable means of reducing NPS pollution of surface waters.



Section F.8 Memorandum of Agreement (MOA) / Memorandum of Understanding (MOU)

The Alabama Department of Environmental Management has established substantive agreements (**Table F.8**) between various federal and state agencies and/or the private sector that express measures and principles to effectively and efficiently coordinate implementation of mutually beneficial program and project goals and objectives. A summary of MOAs / MOU relative to AL NPS Management Program water quality protection and restoration goals and objectives are presented below:

Table F.8 ADEM Memorandum of Agreements (MOA) / Memorandum of Understanding (MOU)

- **MOA Signatories:** Alabama Forestry Commission; U.S. Department of Agriculture - Forest Service; U.S. Department of Agriculture - Natural Resources and Conservation Service; Alabama Department of Conservation and Natural Resources; Alabama Department of Environmental Management; Auburn University School of Forestry and Wildlife Sciences; and the Alabama Cooperative Extension System
- Overview of Purpose:** Provides a framework for an on-going comprehensive approach where all stakeholder groups can identify opportunities and address threats facing the state’s forest using the *Alabama’s Forest Assessment and Resources Strategy* document as a guide. The framework ensures greater awareness, builds a consensus toward common goals, and improves sharing of resources, learning, and

knowledge and supports applicable forest resource and management considerations of the 2008 Food, Conservation, and Energy Act (Farm Bill).

- **MOA Signatories:** Alabama Cooperative Extension System; Alabama Department of Agriculture and Industries; Alabama Department of Environmental Management; Alabama Department of Public Health, Alabama Soil and Water Conservation Committee; College of Agriculture - Auburn University; and the U.S. Department of Agriculture - Natural Resources and Conservation Service.
Overview of Purpose: Clarify, leverage, and utilize the expertise of the signature partners to address Animals Feeding Operations (AFOs) and Confined Feeding Animal Operations (CAFOs) including education and outreach, technical assistance, registration, compliance, animal waste management plans, reporting and database tracking, and inspections and certifications to protect, maintain, and restore the chemical, biological, and physical characteristics of waters of the State of Alabama.
- **MOA Signatories:** Alabama Forestry Commission; Alabama Department of Environmental Management
Overview of Purpose: Prevent and abate NPS water quality impairments during forestry operations; coordinate efforts to promote implementation of Best Management Practices, assess BMP effectiveness in mitigating water quality impairments and meeting requirements of federal and state water quality regulations and objectives; and provides processes to mutually coordinate citizen-compliant resolution.
- **MOA Signatories:** Alabama Department of Environmental Management; Alabama Surface Mining Commission
Overview of Purpose: protect, maintain, and improve the quality of waters of the State through development and implementation of adequate measures designed to reduce the adverse effects of surface coal mining operations; consultation and cooperation in reclaiming surface mined areas, and properly treating surface mining waste runoff including pollution prevention.
- **MOU Signatories:** U.S. Environmental Protection Agency (Region 4); Alabama Department of Environmental Management; Auburn University
Overview of Purpose: designates Auburn University as a *Center of Excellence for Watershed Management* to provide watershed planning and management technical assistance and to train and build capacity of local governments and stakeholder associations committed to improving and maintaining natural and economic resources of their watersheds.
- **MOA Signatories:** Alabama Department of Environmental Management; Auburn University Center for Governmental Services
Overview of Purpose: implement the “*Alabama Road to Restoration – Integrated Recovery Strategies for the Gulf Coast*” relative to Deepwater Horizon oil spill economic, environmental, and community restoration and recovery.
- **MOA Signatories:** Alabama Department of Environmental Management; Mobile District - Army Corps of Engineers
Overview of Purpose: water quality and coastal resources protection in Alabama relative to the administration of CWA Section 404, Section 10 of the River and Harbors Act (1899), and the Coastal Zone Management Act (1972 as amended), and procedures for CWA Section 401 water quality certification and CWA 307 consistency.
- **MOA Signatories:** Alabama Department of Environmental Management; U.S Environmental Protection Agency Region 4
Overview of Purpose: sets policies, responsibilities, and procedures to ensure successful and effective cooperation and coordination of the National Pollutant Discharge Elimination System (NPDES) program in accordance with the Clean Water Act and the Alabama Water Pollution Control Act