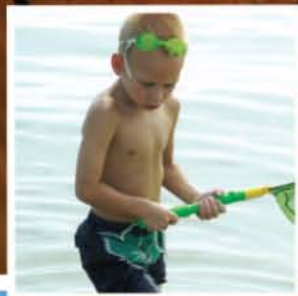
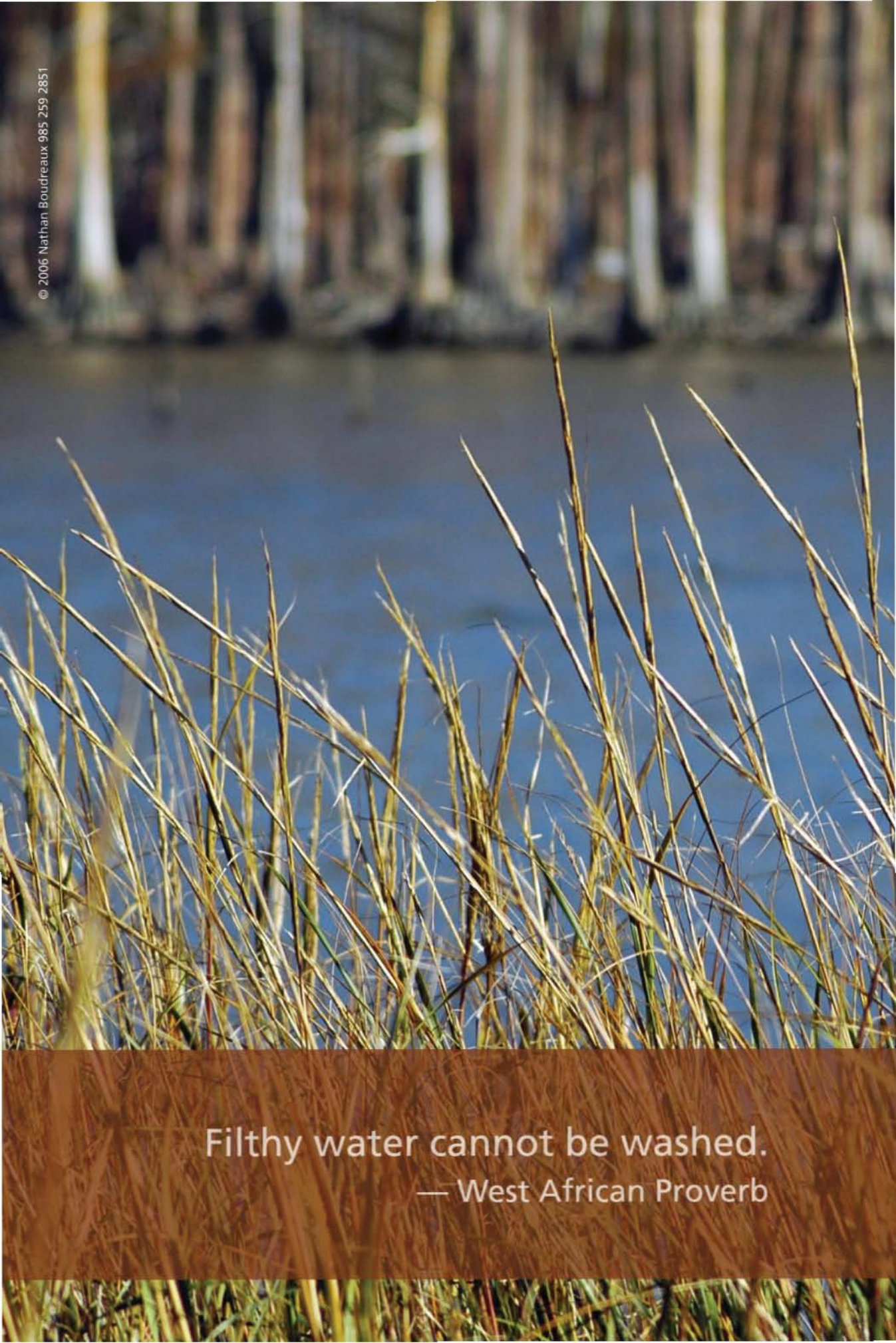


Clean Up Your Act!



A Review of How the Clean
Water Act is Incorporated into
Gulf State Water Regulations



Filthy water cannot be washed.
— West African Proverb

Clean Up Your Act!

**A Review of How the Clean
Water Act is Incorporated into
Gulf State Water Regulations**

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about the gulf restoration network

The Gulf Restoration Network (GRN) is a network of environmental, social justice, and citizens' groups and individuals committed to uniting and empowering people to protect the natural resources of the Gulf Region for future generations. The GRN was formed in 1994 to raise awareness of environmental issues in Gulf States and to increase communication and coordination of member activities across the region. We serve the Gulf community by providing our members and partners with the technical information, Gulf-wide networking opportunities, and communication that empowers local communities to successfully address the environmental threats that they face. GRN has offices in New Orleans, LA, Ridge Manor, FL and Houston, TX.

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executive summary

The Clean Water Act is the chief law that protects the health of rivers, lakes, wetlands, and estuaries in the United States. Passed in 1972, the Act's primary goal is to restore and protect the integrity of the nation's surface waters. The Clean Up Your Act, Gulf State Report Card was designed to assess how the letter and spirit of portions of the Clean Water Act are translated into specific policies and regulations in the Gulf South.

Data collection for the report card began in November 2007 and was completed by July 2009. Information was gathered from each state's water quality standards, federal guidance and regulations, state and federal employees, as well as from experts in water policy in each state. States were graded on four broad categories: water quality standards, public health protection, phosphorus and nitrogen pollution, and public participation.

Each state earned four grades, one per category. Grades for each category were then averaged to form an overall Clean Water Act Grade for each state.

All Gulf States' programs are deficient in many key areas. All states need to improve water quality standards to better support the goals of the Clean Water Act. Every state fails to apply full protection to all water bodies in the state. This means that some water bodies are not fully protected for human contact nor fish and wildlife.

No state has numeric nitrogen and phosphorous criteria statewide and all have failed to accurately follow plans to establish such criteria. Nitrogen and phosphorous pollution have long been a problem in the Gulf States and have caused economic and ecological damage. The most notorious examples are pollution in the Everglades in Florida and the massive Dead Zone in the Gulf of Mexico.

REPORT CARD	
	
Gulf States	D+
FLORIDA	D+
ALABAMA	D+
MISSISSIPPI	D+
LOUISIANA	F
TEXAS	C-

States need to improve public health policies to protect the public from disease-causing bacteria, viruses, and parasites. Most Gulf States fail to use the best indicators to test for pathogen pollution. Only Texas is currently working to fully use EPA-recommended indicators of pathogens in all its waters.

Public participation must be improved. The Clean Water Act requires states to hold public hearings “from time to time,” but at a minimum, every three years to discuss state water quality standards. All states have missed deadlines in implementing this process called the “Triennial Review.” Furthermore, all states could improve transparency by making more agency documents available online and facilitating greater public participation through better utilization of citizen monitoring data.

State budgetary spending on environmental protection in some states has been flat or declining. However, the report suggests that many problems could be solved with minimal resources because many are problems largely in policy, and not in financing.

Due to the various inadequacies in state policies, EPA must exercise better oversight over implementation of the Clean Water Act throughout the Gulf States. The EPA approves all state water quality standards and has the authority to remove the responsibility of the management of the water program from a state if it is not fulfilling the requirements of the Clean Water Act. Unfortunately, the EPA has not fully exercised its authority over states, too often allowing states to ignore or delay implementing regulations that would lead to improvements in water quality.

A river is the report card for
its watershed.
— Alan Levere



introduction

The Gulf Region, the coastal area from Texas to Florida, is home to incredible water resources including rivers, lakes, bayous, swamps, marshes, and other waters. The Gulf of Mexico is the end point of the largest network of rivers and streams in the United States. Over 20 major river systems flow into the Gulf, creating a rich network of coastal estuaries essential to support productive fisheries and migratory waterfowl. In fact, Gulf fisheries are some of the most productive in the world. The commercial fishing catch in 2006 accounted for \$689 million. Furthermore, the region's shores and beaches offer a multitude of recreational opportunities that support a \$20 billion tourism industry.¹



The rich resources of the Gulf, however, are threatened by polluted water. In 2007, there were 4,409 days of beach closings or advisories in the five Gulf of Mexico States.² Beach closures occur when unsafe levels of bacteria are detected that are a result of sewage or other forms of polluted runoff. In addition, the Gulf of Mexico is home to the largest dead zone (an area of water that has extremely low levels of oxygen) in North America, and the second largest dead zone in the world, averaging approximately 6,000 square miles.³ Dead zones caused by nitrogen and phosphorus have also been reported in other parts of the Gulf. Additionally, this pollution may be causing or contributing to Florida's red tides.

The Gulf States' failure to protect and restore the nation's waters as guided by the Clean Water Act is the basis for this report. Given these and other water quality issues, the Gulf Restoration Network embarked upon an analysis of how well states have incorporated key aspects of the Clean Water Act into their regulations.

The Clean Water Act

Passed in 1972, the Clean Water Act is one of our Nation's foremost environmental laws. Since its passage, states have made significant progress

in controlling water pollution. Despite these achievements, the Clean Water Act is also a dream deferred. By 1985, the discharge of pollutants into the nation's waters was to have been wholly eliminated. By July 1983, all United States waters were supposed to be clean enough to provide for the protection and propagation of fish and wildlife and provide for safe recreation. These goals remain unmet.

Though the Environmental Protection Agency (EPA) provides oversight of the Clean Water Act, each Gulf State is responsible for implementing the law. Therefore, it is state regulations that form the foundation of Clean Water Act implementation. This report examines whether states have the policies, regulations, and practices in place to achieve these goals. While this report evaluates the incorporation of policies into state law, the implementation and enforcement of these laws is not fully explored. States vary significantly in how water programs are organized, and therefore drawing comparisons between them and measuring enforcement and implementation quantitatively is challenging. This report aims to compare apples to apples.

In order to measure the incorporation of the Clean Water Act into state policy, we graded states on four major categories:

Water Quality Standards: state designation of water bodies, biological monitoring, biological criteria, and anti degradation policies

Public Health Standards: state water quality standards that protect human health from water-borne pathogens

Phosphorous and Nitrogen Pollution Policies: state policies that prevent nitrogen and phosphorous pollution, (which has been especially damaging to Gulf waters)

Public Participation Policies: state policies set in place to support public involvement in water quality standards and permit review

The above four categories were chosen because they encompass some of the essential aspects of the Clean Water Act, and are areas that have not received enough emphasis in Gulf States. Thus, any grade below an "A" demonstrates some level of state failure to follow EPA guidelines or policies of the Clean Water Act. It is important to understand that ultimately, full implementation goes well beyond policy. Once protective policies are incorporated into regulations, they must be adequately implemented and enforced. In order to reach the ultimate goal of restoring the health of our nation's waters, we must first and foremost ensure that state policies reflect the spirit and purpose defined in the Clean Water Act.

The following grades demonstrate that improvements are needed for each state to better incorporate the Clean Water Act into their regulations and policies *(For details on how grades were derived, see Methods).*

When the well is dry, we learn the
worth of water.

— Benjamin Franklin





REPORT CARD

Florida

D+

WATER QUALITY STANDARDS

Florida does not set standards that protect people and wildlife in all of its water bodies, allowing exceptions for the entire Everglades Agricultural Area. In addition, it does not designate any valuable waterbodies as Outstanding Natural Resource Waters, the maximum protection provided by the Clean Water Act.

C

PUBLIC HEALTH STANDARDS

The state's Department of Environmental Protection's regulations do not require bacteria indicators for pathogen pollution that are consistent with EPA recommendations for either marine or fresh waters.

C

NITROGEN AND PHOSPHOROUS POLLUTION STANDARDS

There are no state-wide numeric nitrogen and phosphorus water quality standards that limit pollution and Florida has fallen behind in its responsibility to develop such standards. The state does limit nitrogen and phosphorous pollution discharged from some wastewater treatment facilities; however, these limits need to be more stringent in certain cases.

F

PUBLIC PARTICIPATION

The Florida Department of Environmental Protection does not use citizen water monitoring data due to overly burdensome state requirements. These requirements exceed EPA data requirements and limit the public from participating in an important aspect of water protection.

C

Recommendations

- ☑ Florida should work towards maintaining standards that allow water bodies to support wildlife and swimming and improving the health of all state waters.
- ☑ Florida's water quality regulations should require better indicators for pathogens in water, including adopting enterococci as an indicator in marine waters and E. coli or enterococci for freshwater. Given that Florida is known for its beaches and water tourism, it is troubling that the state is not applying the best science to protect its citizens.
- ☑ Florida must adopt numeric limits on nitrogen and phosphorus pollution that have impaired many waters, including the Everglades.
- ☑ Florida should require more protective limits on nitrogen and phosphorus from sewage treatment plants, basing the limits on the health of the streams to which the plants discharge.
- ☑ Florida could improve public participation by allowing more citizen-gathered data to be incorporated into its decision making process.



REPORT CARD

Alabama

D+

WATER QUALITY STANDARDS

Alabama does not set standards that protect people and wildlife in all of its water bodies. Some water bodies are designated as industrial or agricultural water supply, offering a lower level of protection.

C

PUBLIC HEALTH STANDARDS

There is no consistent adherence to EPA guidelines for indicators used to measure pathogens in fresh water. The Alabama Department of Environmental Management does not have a single sample standard by which waters are deemed too dangerous for human contact.

B

NITROGEN AND PHOSPHOROUS POLLUTION STANDARDS

Alabama has not set state wide numeric limits on nitrogen and phosphorus pollution, and has fallen behind EPA's timeline for the development of such standards.

F

PUBLIC PARTICIPATION

The state is fairly open and transparent in providing public documents. However, Alabama does not hold multiple hearings when the state reviews and updates state-wide water quality standards and does not take steps to engage the public such as holding meetings prior to proposing changes.

C

Recommendations

- ✓ Alabama should set Water Quality Standards that reflect the goals of the Clean Water Act and protect all its waters for human contact and fish and wildlife.
- ✓ Alabama should develop a Single Sample Maximum for its fresh waters in order to notify the public of any short term water risks.
- ✓ Alabama should limit phosphorous and nitrogen pollution from sewage treatment facilities in order to protect water bodies and the Gulf.
- ✓ Alabama should set numeric limits on nitrogen and phosphorous pollution for all state waters.
- ✓ Alabama should enhance public participation by fully utilizing its citizen-monitoring programs, which provide valuable data through the use of community volunteers. Alabama currently does not use information from this program in regulatory decisions.



REPORT CARD

Mississippi

D+

WATER QUALITY STANDARDS

Mississippi has designated almost all waters to support fish and wildlife; however, it does not designate any waters as Outstanding Natural Resource Waters, which would afford the maximum protection provided by the Clean Water Act.

C

PUBLIC HEALTH STANDARDS

Mississippi does not consistently follow EPA guidelines for indicators used to measure pathogens in fresh waters. The state does not have a single sample standard by which waters are deemed too dangerous for human contact.

B

NITROGEN AND PHOSPHOROUS POLLUTION STANDARDS

Mississippi has not set numeric limits on nitrogen and phosphorus pollution, and has fallen behind EPA's timeline for the development of these standards. In addition, the state does not regulate nitrogen and phosphorus pollution from sewage treatment plants.

F

PUBLIC PARTICIPATION

Mississippi makes most documents available to the public online, however, discharge monitoring reports and compliance orders are only available through a public records request. The state has a volunteer monitoring program, but needs to better integrate volunteer data into its overall water program.

C

Recommendations

- ☑ Mississippi should create an Outstanding Natural Resource Water designation and begin to identify waters that qualify for such protection. This category of protection would prevent degradation of special waters, lakes, bayous, or bays, and afford the highest protection available.
- ☑ Mississippi should develop a Single Sample Maximum for its fresh waters in order to notify the public of any short term water risks.
- ☑ Mississippi should adopt numeric limits on nitrogen and phosphorus pollution that have impaired many state waters and are a significant problem in the Delta and coastal regions.
- ☑ While Mississippi has a stream monitoring program that works with non-governmental organizations, the state should use volunteer monitoring data in its decision-making, such as the listing of impaired waters.



REPORT CARD

Louisiana

F

WATER QUALITY STANDARDS

Louisiana is the only Gulf State that does not conduct biological monitoring of streams using macroinvertebrates, which provide a better representation of the health of waters. It is also the only state that does not conduct antidegradation reviews, designed to protect waters from degradation when they meet or exceed standards.

D

PUBLIC HEALTH STANDARDS

Louisiana scored lower than any other state in this category. The state's Department of Environmental Quality does not follow EPA guidance for bacteria indicators of pathogens, average bacteria levels safe for human use, or single sample maximums. Furthermore, the standards Louisiana has are not fully applied all year.

F

NITROGEN AND PHOSPHOROUS POLLUTION STANDARDS

Louisiana has not set numeric limits on nitrogen and phosphorus pollution, and has fallen behind EPA's timeline for the development of these standards. In addition, the state does not regulate nitrogen and phosphorus pollution discharged by sewage treatment plants.

F

PUBLIC PARTICIPATION

The Louisiana Department of Environmental Quality does not utilize citizen water monitoring programs. In addition, the state was four years late in conducting its last Triennial Review process.

C

Recommendations

- ✓ Louisiana should institute Biological Monitoring Programs in order to understand the long-term health of the state's waters. These programs should include surveys of macroinvertebrates and other species particularly sensitive to pollution.
- ✓ Louisiana should begin conducting antidegradation reviews in order to determine whether lowering water quality is necessary and socially and economically justified for new and expanded pollution discharges.
- ✓ Louisiana should follow EPA guidance for monitoring pathogen pollutants and creating bacteria water quality criteria.
- ✓ Louisiana should take a leadership role in limiting nitrogen and phosphorous pollution as part of the permitting process. The Dead Zone off its coast, one of the largest of its kind, should provide incentive for this change.
- ✓ Louisiana should strengthen relationships with the public and be more proactive in gathering monitoring data from the public and academic community in order to develop water monitoring programs.



REPORT CARD

Texas

C-

WATER QUALITY STANDARDS

Texas is noteworthy among the Gulf States because it has both a biological monitoring program and biological criteria by which to judge the health of waters. Unfortunately, it does not classify all of its waters to support swimming and fish and wildlife, leaving many waters more vulnerable to pollution. No waters in the largest state in the Gulf have been designated as "Outstanding Natural Resource Waters" thus denying them the highest level of protection under the Clean Water Act.

C

PUBLIC HEALTH STANDARDS

Texas follows EPA guidelines for bacteria indicators of pathogens more closely than any other Gulf State. It is the only state that uses the EPA recommended indicators for bacteria in both fresh and marine waters.

A

NITROGEN AND PHOSPHOROUS POLLUTION STANDARDS

Texas has not set numeric limits on nitrogen and phosphorus pollution, and has fallen behind EPA's timeline for the development of these standards. In addition, the state does not consistently regulate nitrogen and phosphorus pollution discharged by sewage treatment plants.

F

PUBLIC PARTICIPATION

Texas is six years late in completing a Clean Water Act mandated Triennial Review, which is the only real opportunity for the public to examine state water quality standards as a whole. Furthermore, it fails to make many of the documents we examined publicly available online.

D

Recommendations

- ✓ Texas should designate all of its water bodies to support wildlife and recreation.
- ✓ Texas should study which waters deserve the fullest level of protection and designate them as Outstanding National Resource Waters.
- ✓ Texas should adopt numeric limits on nitrogen and phosphorus pollution that have impaired many state waters and contribute to dead zones that have been witnessed off its coast.
- ✓ Texas should require limits on nitrogen and phosphorus pollution from sewage treatment facilities.
- ✓ Texas should conduct regular Triennial Reviews. Texas is 9 years late in completing a Triennial Review, one of the most important aspects of public participation in the Clean Water Act.
- ✓ Texas should improve efforts to involve the public, starting with making more public documents available online.

overview of categories and findings

Category 1: Water Quality Standards

Table 1: Water Quality Standards Grades for Gulf States

Water Quality Standards					
Water Quality Sub-Category	Florida	Alabama	Mississippi	Louisiana	Texas
All Waters are Designated as Fish and Wildlife and Primary Contact Recreation	F	F	C	C	F
Biological Monitoring Programs Utilized	A	A	A	F	A
Numeric Biological Criteria Used	A	F	F	F	A
Antidegradation Review Conducted	A	A	A	F	A
Outstanding Natural Resource Waters (ONRW) Designated	F	A	F	A	F
Final Water Quality Grade	C	C	C	D	C

Water quality standards are the framework upon which implementation of the Clean Water Act rests. There are two main goals of the CWA: “(1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985; (2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983.”⁴ In order to support the CWA, states must designate which water bodies are able to attain these goals and then define water quality criteria appropriately. Such criteria are specified for every water body by each state. Water quality criteria enable states to identify which waters are not meeting the goals of the CWA. In addition to properly classifying all of their waters, states also must have antidegradation policies that ensure that water bodies are protected from future pollution. In this first category of the Report Card, we examined water designated uses, biological water quality monitoring and criteria, and antidegradation policies of all Gulf States.

Sub-Category 1: All Waters Are Designated to Support Swimming and Wildlife

The first step in protecting a water body is to determine its appropriate water body use. The EPA requires states to classify water bodies consistent with their use, such as recreation, agriculture, navigation, or fish and wildlife. The designated use for each body of water determines what criteria apply to support that use. For example, water bodies designated only for navigation or agriculture are not necessarily protective for fish and wildlife, or human contact.

In order to fully comply with the CWA, all states should have designated every body of water to support swimming, fish and wildlife by 1983. A designation does not imply that a water body meets the applicable criteria, but can serve as a goal. All Gulf States have a designated use for every water body that flows year-round, generally all unclassified waters are designated to protect wildlife by default. For example, in Texas, “perennial streams, rivers, lakes, bays, estuaries ... are presumed to have a high aquatic life use and corresponding dissolved oxygen criteria ...” and “contact recreation is presumed as a use for all water bodies.”⁵ Alabama uses a similar default: all bodies without a specific designation are assumed to support wildlife unless otherwise demonstrated.⁶

Despite the fact that Gulf States have designated most water bodies for fish and wildlife habitat, every state has some sort of exemption or exception to this designation. In Mississippi, some streams are designated as ephemeral (a water body that flows only at certain times, usually after a rain event), which does not provide protection for fish and wildlife under the assumption that the streams are dry during parts of the year.⁷ However, some of these streams contain continuous wastewater discharges, meaning that there is likely to be a water flow in these streams at all times. When there is water in these streams, the fish and wildlife that inhabit the streams deserve full protection. Mississippi earned a C in this category for not providing full protection for these water bodies.

All other states placed some water bodies in categories that do not have good criteria for fully supporting wildlife. In Alabama, there are water bodies designated for agricultural or industrial use only, such as Hurtsboro Creek (Chattahoochee), portions of the Mobile River, and the Industrial Canal (Mobile).⁸ Texas also designates some water bodies as noncontact recreation, arguing that commercial ships and barges make recreation dangerous.⁹ Such waters are more vulnerable to pollution because of their less protective designated use. Louisiana classifies some water bodies as “limited aquatic use,” which is not specific enough to ensure that all potential aquatic life for this type of water is protected.¹⁰

There are no doubt challenges in attaining high water quality standards that support wildlife, but these standards should remain a state-wide goal for every water body. Most, if not all, water bodies are being used by humans and wildlife regardless of whether they have been designated to support such uses. In

addition, such standards would move states forward in fulfilling the goals of the Clean Water Act, as previously mentioned. If all waters are not designated to support fish and wildlife as well as full recreation, the goals of the Clean Water Act are undermined and are unlikely to ever be realized.

Sub-Category 2 and 3: Biological Monitoring Programs and Numeric Biological Criteria

The Clean Water Act requires states to describe the chemical, physical, and biological conditions necessary for all water bodies through water quality criteria.¹¹ While many states have done a satisfactory job describing the chemical and physical conditions necessary, only some states utilize both biological criteria and biological monitoring programs. Biological monitoring programs are important because they measure the health of environmental conditions by looking at indicator species, such as macroinvertebrates and other organisms that are sensitive to pollution. This method generally provides a better long-term look at the health of a stream because chemical sampling can miss short-term spikes in some pollutants.¹² Alabama, Florida, Mississippi, and Texas all engage in biological monitoring, while Louisiana falls behind in this important step.

For states that have a biological monitoring program in place, the next step is to develop biological criteria by which to compare and assess water body health. Biological criteria look at the presence of certain fish, invertebrate, and algae species to determine the health of a water body. These criteria are an important measurement standard since short-lived pollution can escape chemical sampling but can have drastic effects on local ecosystems. Only Florida and Texas have developed numeric biological criteria that are included in their water quality standards.

Sub-Category 4: Antidegradation Reviews

One of the best defenses against declining water quality under the Clean Water Act is antidegradation. A major tenet of antidegradation is that deterioration of healthy waters should be avoided, and only allowed when a state demonstrates that degradation is required in order to meet a compelling social or economic purpose.¹³ For new or expanding pollution discharges, states should conduct antidegradation reviews. These reviews enable states to determine if the increased or new discharge is necessary, and require that states consider less degrading options than the proposed discharge. Alabama, Florida, Mississippi, and Texas all require these reviews for at least some new or expanded discharges. Louisiana, however, does not conduct antidegradation reviews for new or expanded discharges, leaving healthy waters at risk.

Sub-Category 5: Outstanding Natural Resource Waters

Water bodies that have exceptionally high value can be designated as Outstanding Natural Resource Waters (ONRWs).¹⁴ Degradation of these waters

is strictly prohibited. Mississippi, Florida, and Texas do not label any waters as ONRWs, preventing their waters from being offered such high quality protection (Table 2).

Some states have developed their own standards for listing high quality under designations such as “Outstanding Florida Waters” or “Outstanding Alabama Waters.”¹⁵ While such designations allow for some protection, they still do not protect waters as well as the ONRW designation. For example, the Outstanding Florida Waters is not supposed to allow significant degradation, however, Florida’s permit regulations do offer many exceptions for discharges into these water bodies that would not be allowed under the federal ONRW designation.

Table 2: Number of Waters Designated as Outstanding Natural Resource Water Bodies in Gulf States.

State	Number of Water Bodies Designated as Outstanding Natural Resource Water Bodies
Florida	0
Alabama	3
Mississippi	0
Louisiana	59
Texas	0

Category 2: Public Health Standards

Table 3: Public Health Standard Grades for Gulf States

Public Health Grades					
Public Health Sub-Categories	Florida	Alabama	Mississippi	Louisiana	Texas
EPA Recommended Indicator Bacteria in Water Quality Regulations	F	C	C	F	A
Primary Contact Maximum Geometric Mean (MGM)	C	A	A	F	A
Primary Contact Single Sample Maximum (SSM)	A	C	C	F	A
Primary Contact Protection All Year	A	A	A	F	A
Final Public Health Grade	C	B	B	F	A

The public health category measures how well each state incorporates EPA recommendations designed to protect human health by limiting exposure to pathogens such as salmonella, giardia, and cryptosporidium. Most states performed reasonably well in the public health category because they have the policies in place that are necessary to protect human health. However, the fact that state agencies have the right tools at their disposal does not guarantee public health protection in practice. In order to safeguard human health, states need to ensure that policies are implemented and well enforced.

Sub-Category 1: Use of EPA Recommended Indicator Bacteria

In 2000, the Clean Water Act was amended by the Beaches Environmental Assessment and Coastal Health (BEACH) Act, further bolstering requirements to protect the public from waterborne pathogens.¹⁶ The BEACH Act requires that states adopt water quality standards and conduct monitoring that will protect people while swimming, bathing, surfing, or otherwise engaging in recreational activities in coastal waters. The law also allows for revision of the current standards as new scientific information becomes available or better testing technology develops. Despite the goals of this amendment, 32% of all coastal beaches had at least one advisory or closing in 2007.¹⁷

States protect citizens from polluted swimming waters by monitoring them regularly. Because some biological pathogens are difficult and expensive to

detect, states use indicator bacteria to determine if state waters have been contaminated with human waste and consequently, disease-causing organisms. Indicator bacteria are easy and inexpensive to test for, and have characteristics that make them suitable as good proxy measures for fecal contamination and harmful pathogens. Since 1986, the EPA has recommended using *E. coli* and enterococci as indicators for fresh water pathogen contamination and enterococci for marine water.¹⁸ However, fecal coliform remains the most common indicator bacteria still in use in Gulf State water quality standards.

The EPA has recommended using *E. coli* and enterococci because these indicators have a stronger correlation with swimming-related gastrointestinal disease than fecal coliform bacteria.¹⁹ Enterococci is more resilient in salt water than the other indicator bacteria such as fecal coliform and *E. coli* is only found in warm blooded mammals, making it a better proxy measure for the presence of dangerous pathogens.

Unfortunately, the outdated indicator choice, fecal coliform, has been used as the standard for fresh water in all five Gulf States for the past 20 years (Table 4). Texas uses *E. coli* and enterococci in addition to fecal coliform but has plans to phase out the use of fecal coliform.

Sub-Categories 2, 3, and 4: Primary Contact Bacteria Standards

Primary contact recreation generally refers to swimming or full-body immersion in water. We graded states on bacteria standards used to protect these swimmers. There are two monitoring techniques used in bacteria standards in fresh and marine primary contact waters: (1) a maximum geometric mean (MGM), and (2) a single sample maximum (SSM).

The maximum geometric mean is a type of average that is based on five samples of a water body over a 30-day period. This method of determining water quality provides a more accurate picture of water quality over the long term. States scored high if they followed EPA guidelines from the 1986 Ambient Water Quality Criteria document by using MGMs for each type of indicator bacteria in both fresh and marine primary contact waters all year round.

Most states follow EPA guidelines when calculating MGMs for primary contact waters (Table 4). Alabama, Florida, Mississippi, and Texas use the EPA recommended geometric mean which essentially measures the average monthly presence of fecal coliforms (200 colonies per 100 milliliters of water). These states use the same maximum year round.

Louisiana does not use a geometric mean but rather uses a formula that offers less protection for those utilizing its waters, stating that “no more than 25% of the total samples collected on a monthly or near-monthly basis shall exceed a fecal coliform density of 400 colonies per 100 milliliters” for primary contact

recreation.²⁰ Furthermore, this criterion only applies to the months considered “recreational,” which is May 1st through October 31st despite the fact that swimming is possible well into the fall and spring in this southern state. We gave the highest grades to states whose water quality standards protect for recreation all year long.

Each state can further protect their citizens by having a single sample maximum (SSM) for fresh and marine water, which is a maximum level of bacteria acceptable at any given time. The single sample maximum measurement is helpful for monitoring waters and quickly notifying the public if a river, lake, or coastal beach is not safe, instead of waiting to use an average measurement over time. While this type of monitoring is not required by law, it is recommended by the EPA and more importantly, provides the public with better health protection. Louisiana, Alabama and Mississippi do not employ a single sample maximum, thus providing a weaker level of protection (Table 4).

Table 4: Bacteria Standards for Primary Contact Recreational Waters.

[*Italics* = Indicators Used, **Bold** = Indicators recommended by the EPA, MGM = Maximum Geometric Mean, SSM = Single Sample Maximum]

Bacteria Water Quality Criteria for Primary Contact				
Agency	Freshwater		Marine Water	
	MGM (X/100mL)	SSM (X/100mL)	MGM (X/100mL)	SSM (X/100mL)
EPA Guidelines ²¹	<i>Fecal Coliform:</i> 200 <i>E. Coli:</i> 126 <i>Enterococci:</i> 33	<i>E. Coli:</i> 235* (designated beaches) <i>Enterococci:</i> 61	<i>Enterococci:</i> 35	<i>Enterococci:</i> 104*
Florida ²²	<i>Fecal coliform:</i> 200	<i>Fecal coliform:</i> 800	<i>Fecal coliform:</i> 200	<i>Fecal coliform:</i> 800
Alabama ²³	<i>Fecal coliform:</i> 200	None	<i>Enterococci:</i> 35	<i>Enterococci:</i> 104
Mississippi ²⁴	<i>Fecal Coliform:</i> 200	None	<i>Enterococci:</i> 35	<i>Enterococci:</i> 104
Louisiana* ²⁵	No MGM**	No SSM**	No MGM**	No SSM**
Texas ²⁶	<i>Fecal coliform:</i> 200 <i>E. Coli:</i> 126	<i>Fecal coliform:</i> 400 <i>E. Coli:</i> 394	<i>Enterococci:</i> 35 <i>Fecal coliform:</i> 200	<i>Enterococci:</i> 89 <i>Fecal coliform:</i> 400

* Numbers apply to designated beaches only
**Louisiana does have bacteria standards; however, the standards are not in the form of an MGM or SSM as recommended by the EPA.

Category 3: Nitrogen and Phosphorous Pollution

Table 5: Nitrogen and Phosphorous Pollution Grades for Gulf States

Nitrogen and Phosphorous Pollution Grades					
Nitrogen and Phosphorous Pollution Sub-Categories	Florida	Alabama	Mississippi	Louisiana	Texas
Numeric Nitrogen and Phosphorous Criteria	F	F	F	F	F
Followed EPA Timeline to Set Standards	F	F	F	F	F
Nitrogen and Phosphorous Limits in Sewage Permits	C	F	F	F	F
Overall Grade	F	F	F	F	F

Nitrogen and phosphorus pollution is quite prevalent in our nation’s waters, the end result being harmful algal blooms and dead zones in many parts of the Gulf region.²⁷ Nitrogen and phosphorus are nutrients that promote algae growth. Large amounts of this pollution result in algae blooms. When the algae die, the process of decomposition removes oxygen from the water and creates conditions hostile to aquatic life. In 1996, the EPA reported to Congress that 40% of rivers, 51% of lakes, and 57% of estuaries listed nitrogen and phosphorus pollution as a primary cause of impairment.

Recognizing the importance of regulating nitrogen and phosphorous pollution, the EPA stated that (1) by the end of 2001, each state should complete a plan for developing and adopting nitrogen and phosphorous criteria, and (2) by the end of 2004, states and authorized Tribes should adopt nitrogen and phosphorous criteria.²⁸ Despite the deadline that passed four years ago, no Gulf State has developed numeric water quality criteria for nitrogen and phosphorous pollution. Managing nitrogen and phosphorous pollution has become an essential, yet unrealized goal throughout the Gulf and the nation as a whole.

Sub-Category 1: Numeric Nutrient Criteria

Currently, no Gulf state has state-wide numeric criteria for both nitrogen and phosphorous, and thus all states fail this standard. Given that the EPA already provides recommended nitrogen and phosphorous criteria for every water type and region in the United States, it is remarkable that states continue to lag throughout the Gulf in developing their own numeric criteria. Many state agencies argue that the EPA criteria for nitrogen and phosphorous need further refinement, based on more data. However, given how late all the states are in

developing criteria, a lack of data is no excuse to delay action to address one of the most serious water quality problems. States should implement the standards recommended by the EPA and collect more data to refine the standards later.

There are several steps in the criteria development process, including data collection, data analysis and criteria development, criteria screening, and then rulemaking. In some cases, states are developing other criteria related to algal impairments, such as standards for chlorophyll and turbidity. While these parameters are important, they should be combined with nitrogen and phosphorus criteria. In addition, nitrogen and phosphorus criteria could be much easier to implement and enforce with proper pollution monitoring and permitting. The Gulf region at large is still only collecting and analyzing data, with the exception of Florida which has some approved criteria, e.g. long-term phosphorus criterion of 10µg/L in the Everglades. It is important to note that due to a legal challenge, Florida is planning on releasing numeric nitrogen and phosphorus criteria for lakes and streams in the fall of 2009. Failing this, EPA is to promulgate its own criteria in Florida at the end of 2009. While we applaud this progress, it did not change Florida's grade due to the fact that they were not promulgated at the time of this report. However, this EPA action does not provide a mandated timeline for such standards to be set and implemented in other Gulf States.

Sub-Category 2:
Numeric Criteria Development Plan Timeline

No state followed the directives of the EPA and submitted a Numeric Criteria Plan by 2001 (Table 6). Florida, Louisiana, and Texas all missed the deadline by five years or more. Such long delays are unacceptable, and the consequence is represented by the fact that so many of the Gulf's waters are polluted with excess nitrogen and phosphorus. Numeric nitrogen and phosphorus criteria are important because most states will not place limitations for these pollutants in permits without first having numeric criteria.

Table 6: State Compliance with EPA Nitrogen and Phosphorous Criteria Timeline

State Compliance with EPA Timeline			
State	Nitrogen and Phosphorus (Nutrient) Criteria Development Plan Finalized	Years Delinquent in Creating Plan (Due 2001)	Complied with EPA Timeline
Florida ²⁹	September 2007	6 Years	No
Alabama ³⁰	December 2004	3 Years	No
Mississippi ³¹	February 2004	3 Years	No
Louisiana ³²	June 2006	5 Years	No
Texas ³³	November 2006	5 Years	No

Sub-Category 3:

Nitrogen and Phosphorous Limits in Sewage Permits

As a major source of this pollution, sewage treatment plants should utilize technology available to reduce nitrogen and phosphorus pollution. Sewage discharge limits are one of the main ways states can prevent nitrogen and phosphorus pollution from entering Gulf waters. While some states do place nitrogen and phosphorus limits in some of their sewage treatment plant permits, no states require adequate nitrogen and phosphorus limitations, i.e. limits that will keep the receiving water bodies healthy. While Florida does place limits on some sewage treatment plants, these limits do not necessarily protect water quality or require any meaningful treatment of nitrogen and phosphorus.

Category 4: Public Participation

Table 7: Public Participation Grade for Gulf States

Public Participation Grades					
	Florida	Alabama	Mississippi	Louisiana	Texas
Public Document Availability	D	B	C	A	F
Volunteer Monitoring Utilized	F	C	D	F	D
Triennial Reviews Completed on Time	B	B	C	F	F
Length of Triennial Review Comment Period	D	A	C	A	A
Citizen Participation Utilized Before Triennial Review Hearings	A	F	A	A	A
Multiple Public Triennial Review Hearing Locations Provided	A	F	F	F	F
Responsiveness to Written Public Comments	C	A	A	A	A
Final Public Participation Grade	C	C	C	C	D

Public participation is necessary in order to successfully incorporate and implement the Clean Water Act. Not only does the public aid in the monitoring of our waters, but the public also contributes to water protection through pollution prevention and the review of state policies. This category measures how well the state involves the public in the important decisions guided by the Clean Water Act.

Sub-Category 1: Public Document Availability

Government openness and transparency is what enables public participation and is required by law. According to public records request requirements and state sunshine laws, documents generated by the state should be available to the public. It is up to each state to develop a system for providing public information, resulting in a wide range of methodologies. Some states make most of their records available on the internet, while other states require that citizens travel to their main office to view documents in a library or records office. Because citizens should easily be able to access documents dealing with pollution discharges in their local lakes and streams, each Gulf State pollution control agency was assessed as to how the public might obtain public notices, anti-degradation reviews, permit rationales/fact sheets, draft permits, completed permits, discharge monitoring reports, and compliance orders. These specific types of documents were selected for their usefulness to the public. Concerned citizens might consider these documents among the most important for research efforts that they would pursue. The Public Document Availability table below shows how each state provides public documents.

Table 8: Gulf State Document Availability to the Public State

Increasing Transparency 			
State	Available through Public Relations Requests or at the State Agency Office	Mailed, Faxed, or Emailed, Upon Citizen Request	Available Online
Florida		Draft Permits, Completed Permits, Permit Fact Sheets/Rationales, Antidegradation Review, Discharge Monitoring Reports (DMRs), Public Notice	Compliance Orders
Alabama		Completed Permits and DMRs	Public Notice, Draft Permits, Permit Fact Sheets/Rationales, Antidegradation Review, Compliance Orders
Mississippi	DMRs and Compliance Orders	Antidegradation Review	Public Notice, Draft Permits, completed Permits, Permit Fact Sheets/Rationales
Louisiana			Public Notice, Draft Permits, Completed Permits, Permit Fact Sheets/Rationales, DMRs, Compliance Orders
Texas	Draft Permits, Completed Permits, Permit Fact Sheets/Rationales, Antidegradation Review, Compliance Orders, DMRs		Public Notice

For the purposes of the report, states that make documents available online are considered the most transparent. Online document systems put the lowest burden on the public and make it more likely that the public will actually be able to review documents. It is still important for states to provide documents through other means, since not everyone has access to the Internet. However, when states make routine and public documents available only through a special records request, there is a chilling effect on public participation, as many citizens are unfamiliar with record request laws or do not have money to pay the fees that states often charge. Texas scores lowest in public document availability among all Gulf States because it requires records requests in order to view almost all of the assessed documents.

Sub-Category 2: Volunteer Monitoring Utilized

Given the enormous need for data and research on our lakes, streams, and estuaries, another important aspect of public participation is volunteer monitoring. Most states either lack the resources or do not choose to allocate the necessary resources to conduct comprehensive monitoring of waters. Volunteer monitoring can help alleviate this problem in two ways. First, volunteer monitoring programs cost very little compared with the cost of sending state employees throughout the state to conduct monitoring and the result is an army of trained monitors. Second, having a large number of volunteers can help monitor a state's water bodies more thoroughly. Volunteers could be assigned a single water body to record multiple samples over long periods of time. This would give volunteer staff the opportunity to notice intermittent pollution sources that could be missed in just one or a few visits by agency staff. Furthermore, volunteer monitoring programs can help create a more educated and involved public that cares about clean water.

Some states have very active and successful volunteer monitoring programs. For example, Alabama Water Watch is an organization that is partially funded by the Alabama Department of Environmental Management and has trained thousands of volunteers over a 16-year period and collected samples in more than 800 different water bodies. Another example of a state program is the Texas Stream Team, which is a cooperative partnership between Texas A&M University, the Texas Commission on Environmental Quality (TCEQ), and the EPA. This program has over 1,400 volunteers that collect water quality data on Texas streams, bays, wetlands, and bayous.³⁴

The great success and cost savings of volunteer monitoring can be undermined by how states use the data produced. For example, the Alabama Department of Environmental Management only uses volunteer collected data to decide where the state should conduct more monitoring even though the volunteer data is collected using EPA-approved methods. Additionally, the state does not use the data in its listing of impaired waters or to enforce violations of the Clean Water Act.

Another example of where citizen monitoring is undermined is in Florida. The Department of Environmental Protection has such strict requirements under the state's Impaired Waters Rule that it is extremely difficult for citizen organizations or any outside source (including sister state agencies and those utilizing EPA-approved methods) to contribute water monitoring data or even prove that a water body is polluted. These data standards for the listing and clean-up of polluted water bodies include excessive requirements such as how old the data can be, how many samples have been collected, and in what database the information is located.³⁵ Florida DEP's excessive data requirements can eliminate data which would be admissible under EPA guidelines, resulting in removal of waters from the impaired waters list due to lack of data, even when other data suggest that the water body remains polluted. All states must make it possible for outside agencies, certified volunteers, and academicians to provide water monitoring data to increase the effectiveness of his process.

Sub-Category 3-7: Public Involvement in the Triennial Review

In order to ensure public involvement, the Clean Water Act also requires every state "from time to time, but at least once every three years, hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards." This process, called the "Triennial Review," is the only opportunity for citizens to comprehensively comment on all of the water quality standards in a state. Serving as the main source of structured, public engagement on water quality regulations, states' handling of Triennial Reviews are extremely important and play a large role in determining public participation grades.

We graded Gulf States on their ability to implement the Triennial Review every three years. The Triennial Review dates table below shows that every Gulf State's most recent review was late.

Table 9: Gulf State Triennial Review Date

State Compliance with Triennial Review Timeline		
State	Most Recent Review Date	Time Period by Which Recent Review was Late
Florida	September 2006	6 Months
Alabama	February 2006	1 Month
Mississippi	November 2006	1 Year, 1 Month*
Louisiana	January 2007	4 Years, 3 Months
Texas	2000	Texas has not held a Triennial Review since 2000, making the next review 9 years late and counting

** Mississippi's date was pushed back due to Hurricane Katrina*

Louisiana and Texas particularly failed to follow federal law in regard to the timing of the Triennial Review. Louisiana's last Triennial Review was over four years late and nine years have passed since Texas' last Triennial Review in 2000. This failure is a huge disservice to the citizens of these states because they have been denied the opportunity to review, comment, and potentially improve the regulations in their states. In addition, failure to update regulations every three years means that the latest scientific knowledge of pollution and aquatic ecology is not being incorporated in a timely manner. It is important to note that, while Texas is extremely delinquent in finalizing its 2000 Triennial Review, EPA has approved significant portions. However, since it was not completed at the time of this report, Texas failed this sub-category.

With each Triennial Review, there is an official comment period as well as a public hearing to give citizens the chance to communicate their concerns and comments. Citizens have a certain amount of time to submit comments to the state; the longer the comment period allowed, the greater the opportunity for the public to have time to review technical documents and submit well-reasoned comments. For the last Triennial Review each state allowed the following review comment periods:

- Florida: 21 days (3 weeks)
- Alabama: 60 days (10 weeks)
- Mississippi: 30 days (4 weeks)
- Louisiana: 57 days (9 weeks)
- Texas: 45 days (6 weeks)

Some states have made efforts to encourage public participation in the Triennial Review process before the official comment period opens. Florida, Mississippi, Louisiana, and Texas each engage the public before the comment period. In Florida, for example, the Department sends out draft rule language before public workshops, allowing the public to contact the Department in advance. Additionally, depending on the extent and nature of the public comments received, subsequent public workshops (with associated public comment period) may be scheduled. Alabama does not offer this opportunity to their citizens.

Public hearings associated with the Triennial Review allow citizens to voice their concerns directly to their state agency in a way that is more accessible for people who do not have the time or expertise to write effective comments. Public hearings are more effective when they are held in multiple locations around the state and on different dates and times to give citizens throughout the state the opportunity to attend. Unfortunately, only Florida offered multiple opportunities for participation to its citizens by having two public workshops in addition to a public hearing (earning Florida an A in this sub-category).

Finally, the public may participate in the Triennial Review by sending in written responses to public hearings. Every Gulf State communicates with the public by responding to comments in writing. However, Florida requires that a request for a response be made in writing first, meaning that some members of the public may not receive any response to their concerns or comments.

The Public Participation category is perhaps the simplest to implement. State transparency involves making public documents available. Four out of the five Gulf States scored unnecessarily low in this sub-category, the exception being Louisiana. Gulf States also have a poor record in using volunteer or citizen monitoring data. Finally, states must complete a Triennial Review by law to provide the public opportunity to comment on all of the state's water quality standards. States varied in their ability to solicit public involvement before these hearings and in providing adequate awareness and opportunities for commenting during the Triennial Review process.

Children of a culture born in a water-rich environment, we have never really learned how important water is to us. We understand it, but we do not respect it.

— William Ashworth, *Nor Any Drop to Drink*, 1982



conclusion

Ultimately, Gulf States have fallen short on realizing the goals of the Clean Water Act, given the many water bodies that remain polluted. Every state in the Gulf of Mexico Region must improve its regulations and policies to better reflect the intent of the Clean Water Act. Without improvement, we will not reach the goal of ensuring healthy waters for both people and wildlife throughout the nation. While some states appear to be further along than others, it is important to consider that states should be scoring near perfect grades in this report because it measures basic consistency with policy requirements, EPA guidance, and goals of the Clean Water Act. While we did examine policies and public involvement, we did not grade states on their implementation of the Clean Water Act. However, in examining policies alone, we found that all five states failed at least one category graded in this report.

In order to reach the goals of the Clean Water Act, all Gulf States must improve their water quality standards. None of the states designate all water bodies to fully support Fish and Wildlife, the ultimate goal of the Clean Water Act. In order for states to ensure waters are meeting standards, they must monitor the physical, chemical, and biological characteristics of all water bodies; Louisiana does not fully utilize biological indicators in its monitoring despite the fact that these indicators are often considered to provide a better long-term look at the health of the streams in the state. Florida, Alabama, and Mississippi fail to use their biological monitoring programs to create biological criteria for all water bodies.

Many of the Gulf States are also missing opportunities to ensure that high quality, clean waters are protected. Louisiana is the only state that does not conduct an antidegradation review for new or expanded pollution discharges, a key requirement in ensuring that waters are not unnecessarily degraded. Florida, Mississippi, and Texas have also failed to afford any waters with the highest form of protection possible that comes with being an Outstanding Natural Resource Water.

States must also improve their public health policies to ensure that the public is protected from disease causing organisms. Waterborne illnesses caused by bacteria, viruses, and protozoa often occur as a result of inadequately treated sewage or drinking water. Without stringent standards that apply to bacteria levels, public health is unnecessarily put at risk. All of the states scored low on this very important category. Louisiana in particular has a standard that is far less protective than EPA recommendations. Equally troubling is the failure of states to use the best indicators for bacteria, *E. coli* and enterococci, rather than fecal coliform. Only Texas is currently working to fully use *E. coli* and enterococci as indicators in all its waters.

Preventing nitrogen and phosphorus pollution is another area in which all states are behind. Every Gulf State missed the EPA deadline to develop numeric criteria for nitrogen and phosphorus pollution and still does not have numeric standards for both of these very prevalent pollutants that cause dead zones and algal blooms. The EPA has already developed recommended nitrogen and phosphorus criteria for all the states, yet states continue to insist that they develop their own standards and have consistently pushed back timelines for reaching this goal. The EPA must enforce their requirement that all states establish nitrogen and phosphorus

limitations. If states will not adopt standards, the EPA has the authority to apply its own standards and should exercise that authority.

Public Participation is the one area in the report where we looked at how states were implementing the Clean Water Act goals for public involvement and transparency in decision-making. Without an engaged public, we do not believe that the goal of clean water will be possible. States struggle to monitor all water bodies regularly; utilizing water data gathered by EPA approved volunteer programs could significantly enhance agency effectiveness. In Florida, data requirements are so restrictive that not only are citizens excluded, but other government agencies are also unable to submit data that could be used by the state. Louisiana scored the highest in making documents available to the public, while Florida and Texas, despite the voluminous amount of information on their websites, offer almost no documents related to water discharges and monitoring for public view online and require that the public directly contact their agencies. Another troubling fact is that Louisiana and Texas have not historically opened up their state regulations for public review and comment every three years as required under the Clean Water Act. In fact, if Texas holds a planned review of its standards in 2009, it will have been nine years since the last one.

While there is much room for improvement in all Gulf States, it is clear that it is not just the states that have failed in some areas. While we did not grade the EPA in this report, oversight has not been consistent across the Gulf States. The EPA has a unique role in that all states must get approval from the EPA when they draft new regulations to implement the Clean Water Act. In addition, if a State's regulations are inconsistent with the Act, the EPA has the authority to promulgate regulations for the States. For example, the reason any Gulf States are now using enterococci as an indicator for bacteria in coastal recreational waters is because the EPA forced States to do so under the BEACH Act.

When states fall short in meeting the requirements of the Clean Water Act, the EPA has a duty to ensure that public health and the environment are fully protected. For example, while it is inexcusable that Louisiana has no implementation policy to prevent degradation of state waters, the EPA is equally to blame for allowing Louisiana to exclude this critical part of the Clean Water Act from their regulations. The EPA must also make expectations clearer to the states and follow through on those expectations. All states were required to have numeric standards for nitrogen and phosphorus pollution by 2004. Instead of following through on its requirement, the EPA simply allowed the deadline to lapse, with the result that no Gulf State currently has these standards.

The Gulf of Mexico, as much as any other place in the country, deserves clean water. The first step to achieve clean waters throughout Gulf States is to have appropriate policies and regulations. Unfortunately, the Gulf States and EPA regions have too often failed to take a leadership role. We hope that this report will not only highlight areas for improvement, but also help spur action in Gulf States to realize the long awaited goals of the Clean Water Act. We have valuable and irreplaceable water resources in the Gulf, and we hope that these resources will receive the full protection they deserve.

methods

Given that a clean and healthy Gulf remains an unrealized goal, select state policies and regulations are essential in implementing sections of the Clean Water Act. We have assessed these areas for improvement needed by each state to incorporate the law and spirit of the Clean Water Act into state regulations and policy.

A preliminary survey was circulated by GRN to assess state policies that reflect the goals of the Clean Water Act in November of 2007. These surveys were completed by organizations working on water policy issues through direct knowledge and through contact with state and federal agencies. Additional information was gathered using information from state and federal websites and public documents. Based on the data we collected, we determined four major categories for which to grade states: water quality standards, public health criteria, nitrogen and phosphorous pollution policies, and public health policies.

Many of the assessed standards and categories were graded on a scale from A to F using a point system. The point system is based on a simple 4.0 scale (4 = A, 3 = B, 2 = C, 1 = D, 0 = F). However, all aspects could not be graded on a scale, and were instead graded on a pass/fail basis. For example, under the Nitrogen and Phosphorous Pollution Policies Category, states were graded on whether they have complied with the EPA timeline for developing nutrient criteria. In such a scenario, we would give States that had complied with the timeline an “A” and those that were late, an “F”. The specific methods for grading standards in each category are described in the tables below.

Each Gulf State earned grades for every standard within the four categories measured in this Report Card. The standard grades for each category were then averaged to form a final categorical grade for each State. Categorical grades are based on a 4.0 system (A = 3.9-4.0, B = 3.0-3.8, C = 2.0-2.9, D = 1.0-1.9, F = <1.0). Finally, the grades for each category were then totaled and divided by 4 (the number of categories) to form an overall grade for each State. In order to provide more distinction between the states, the state grades include a letter, plus/minus system. (A = 4.0, A- = 3.9, B+ = 3.6-3.8, B = 3.3-3.5, B- = 3.0-3.2, C+ = 2.7-2.9, C = 2.3-2.6, C- = 2.0-2.2, D+ = 1.7-1.9, D = 1.3-1.6, D- = 1.0-1.2, F = <1.0)

A nation that fails to plan intelligently for the development and protection of its precious waters will be condemned to wither because of its shortsightedness. The hard lessons of history are clear, written on the deserted sands and ruins of once proud civilizations.

— Lyndon B. Johnson



Table 10: Water Quality Standards Grading System for Gulf States

Sub-Catagories	Grading System
All Waters are Designated Fish and Wildlife and Primary Contact Recreation	A = 100% of all water bodies designated to support Swimming and Wildlife, as guided by the CWA. C = All waters designated to support Fish and Wildlife with the exception of ephemeral waters and/or “limited” wildlife use. F = Some water bodies designated to only support Agriculture and/or Industrial purposes
Biological Monitoring Program Utilized	A = State conducts comprehensive Biological Monitoring of waters, including fish, macroinvertebrates, and other sensitive species. F = State does not conduct comprehensive biological monitoring
Numeric Biological Criteria Used	A = Numeric Biological Criteria used. F = No numeric Biological Criteria used.
Antidegradation Review Conducted	A = State conducts Antidegradation Review for new or expanding discharge. F = No Antidegradation Review conducted.
Outstanding Natural Resource Waters (ONRW) Exist	A = Water bodies designated as Outstanding Natural Resource Waters (ONRW). F = No state waters designated to have the protection of ONRW.

Table 11: Public Health Standards Grading System for Gulf States

Sub-Catagories	Grading System
EPA Recommended Indicator Bacteria in Water Quality Regulations	A = EPA’s recommended bacteria indicators are used for both marine and freshwater, and are in state water quality regulations. C = EPA’s recommended bacteria indicator is used for either marine or freshwater, but not both. F = EPA’s recommended bacteria indicators not incorporated into state water quality regulations.
Primary Contact Maximum Geometric Mean (MGM)	A = EPA guidelines for fresh and marine water used. C = EPA guidelines used for either fresh or marine water used. F = EPA guidelines not utilized for fresh or salt water.
Primary Contact Single Sample Maximum (SSM)	A = SSM for freshwater and marine water. C = SSM for either freshwater or marine water. F = No SSM.
Primary Contact Protection All Year Round	A = Protection offered all year long to Fresh and Marine Water. C = Protection offered all year to either Fresh or Marine Water. F = Protection only offered seasonally to all water bodies.

Table 12: Nitrogen and Phosphorous Pollution Standards Grading System for Gulf States

Sub-Catagories	Grading System
Numeric Nitrogen and Phosporous Criteria	A = Numeric criteria exists for nitrogen and phosphorus in all water bodies. F = No nitrogen and phosphorous criteria exist for the majority of all water bodies.
Followed EPA Timeline to Set Standards	A = State followed the EPA timeline to develop nitrogen and phosphorous criteria F = States did not follow the EPA timeline to develop nitrogen and phosphorous criteria.
Nitrogen and Phosphorous Limits in Sewage Permits	A = Nitrogen and phosphorous pollution limits exist for the majority of sewage treatment permits. C = Nitrogen and phosphorus pollution limits exist for some sewage treatment plants. F = Nitrogen and phosphorous pollution limits do not apply to the vast majority of sewage treatment plant permits.

Table 13: Public Participation Grading System for Gulf States

Sub-Catagories	Grading System
Public Document Availability	A = Selected public documents are available online. B = All documents are available through email or mail request (don't require public records request). C = The majority (four or more) documents are available through online. D = The majority (four or more) documents are available through email or mail. F = The majority of documents are only available through Public Records Request.
Volunteer Monitoring Utilized	A = Volunteer monitoring programs used for permitting, impaired water body listing, and TMDL development. B = Volunteer monitoring programs used to develop impaired water body listing and TMDLs. C = Volunteer monitoring programs used only to develop impaired water body listings. D = Volunteer monitoring programs are supported but the data is not used as part of the state regulatory process. F= No support provided for volunteer monitoring programs or volunteer data qualifications are so high that volunteer data will never be used.
Triennial Review Completed on Time	A = The most recent Triennial Review was completed on time. B = The most recent Triennial Review was less than a year late. C = The most recent Triennial Review was less than 2 years late. D = The most recent Triennial Review is less than 3 years late. F = The most recent Triennial Review is more than 3 years late.
Length of Triennial Review Comment Period	A = Comment period 6 weeks or longer B = Comment period at least 5 weeks C = Comment period at least 4 weeks D = Comment period at least 3 weeks F = Comment period less than 3 weeks
Citizen Participation Utilized Before Triennial Review Hearings	A = Public participation utilized before public hearings. F = No outreach to the public in anticipation of public hearings.
Multiple Public Triennial Review Hearing Locations Provided	A = Triennial Review public hearings held in more than one location. F = Triennial Review public hearings held in only one location.
Responsiveness to Written Public Comments	A = Respond in writing to all public comments submitted in a public comment period C = Respond in writing only if requested F = Do not respond in writing

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