



Water for Florida's Future: A Call for Leadership

**A Briefing Book on
Pressing Water Policy Issues**

Florida Water Coalition

1000 Friends of Florida

Audubon of Florida

Clean Water Network

Defenders of Wildlife

Earthjustice

Florida Conservation Alliance

Florida PIRG

Florida Wildlife Federation

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The Florida Water Coalition is a non-profit, non-partisan organization comprised of many of the leading environmental, public health and public interest organizations in the state. The mission of the Florida Water Coalition is to deliver persistent, result-oriented advocacy and educational outreach that furthers three major themes:

- Water Must Be Clean and Safe
- Waters and Submerged Public Lands Must Not Be Privatized or Misused
- Water Management Must Protect Natural Systems

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For more information on the Florida Water Coalition, please see the directory of member groups and representatives on the inside back cover.

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Introduction: Our Waters At Risk

Fully develop Florida's freshwater resources!" That astonishing statement was recently made by a spokesman for a loose association representing many of the state's water utilities and water developers. They are trying to derail an update of state water rules on conservation, efficiency and protection of fish and wildlife. A parade of lawyers, lobbyists and engineers attacked the rules for limiting their right to squeeze every possible drop of water out Florida's environment. They also vigorously oppose rule improvements that are necessary to protect public health. This is one front of a war on Florida's water.

On other fronts, proposals have been made to privatize water resources and hand over to the market place decisions about water prices and distribution. Taxpayers are asked to underwrite expensive storage and treatment schemes while nature's own storage and cleaning systems are polluted, dredged and paved to make way for sprawling development. Water use efficiency policies that could help meet Florida's water needs are often ignored in favor of proposals that are more expensive and potentially dangerous to public health.

This relentless approach to solving Florida's water problems would make new

supplies more important than conservation and efficiency, and profits for special interests more important than the environment or public health. This runs counter to Florida's historic water policy. Thirty years ago, legislators wisely established a water code to protect the environment while providing clean water for human use. Government has yet to face up to the challenges expressed in those thoughtful policies. The Water Industry has resisted every step forward and has managed to weaken or postpone many core policies.

Against the Water Industry's effort, the state's leading environmental groups, members and allies have formed a counter-effort, the Florida Water Coalition. The Florida Water Coalition is an alliance of the leading environmental, public health and public interest organizations in Florida. Its goals are to educate and communicate with decision-makers; to interpret policies and analyze proposed policies; to educate and mobilize local leaders, groups, allies and constituencies; and to publicize issues, proposals and decisions through the media.

The Florida Water Coalition brings together the citizens concerned with human health and wildlife protection and educates, organizes and lobbies to give

Water brings people together. Early communities formed on the banks of rivers and lakes and near springs. Our laws are based in part on early ideas about sharing the village well and defending against those who would take or foul water supplies. Contemporary struggles over protection and distribution of water are no less important. We simply add the need to sustain the environment and the fish and wildlife that share our reliance on freshwater.

common sense a voice in the debate over the future of Florida's water.

The Florida Water Coalition follows a different set of principles than the Water Industry. The three main policy principles of the Florida Water Coalition are:

- ***Water Must Be Clean and Safe***
- ***Waters and Submerged Public Lands Must Not Be Privatized***
- ***Water Management Must Protect and Restore Natural Systems***

Converting these ideas into public policies is made all the more difficult by the counter acting principles of the Water Industry. From their statements and actions a different set of principles becomes clear. *The Water Industry contends that Florida's lakes, rivers and aquifers should be used for waste disposal; that public water sources, and public submerged lands should be given away so they can be sold back to the government later for billions of dollars; and*

that endangerment of human health and destruction of fish and wildlife are okay if they make money for the Water Industry.

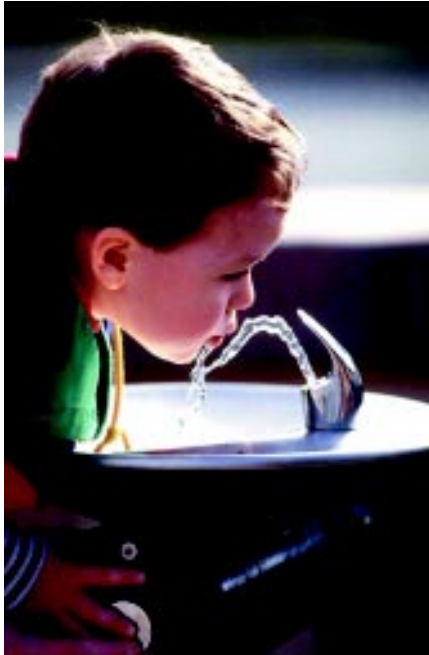
The Florida Water Coalition's goals are to:

- Educate and communicate with decision-makers
- Interpret and propose policies and decisions for the benefit of the public
- Educate and mobilize local leaders, groups, allies and new constituencies
- Publicize issues, proposals and decisions through the media

This briefing book outlines the facts and policy issues now before decision makers in Florida on matters concerning water resources. Each section outlines the problem, includes a summary of the relevant facts, and concludes with solutions and policy recommendations.

The Florida Water Coalition is an adherent to what is scientifically termed "The Precautionary Principle." Before her appointment as Administrator of the Environmental Protection Agency, Governor of New Jersey, Christie Todd Whitman summed up this principle with this excerpt from a speech to the National Academy of Sciences.

"Policy makers need to take a precautionary approach to environmental protection. We must acknowledge that uncertainty is inherent in managing natural resources, recognize it is usually easier to prevent environmental damage than to repair it later, and shift the burden of proof away from those advocating protection toward those proposing an action that may be harmful."



Water Quality: Water Must Be Clean and Safe

“As Florida’s waterbodies become more polluted, the adverse impacts to our economy will be felt by businesses across our state.”

Fact: In recent years there has been a 29% increase in national waterborne disease outbreaks from public water systems supplied by groundwater.

- In 2000, large industrial and municipal facilities discharged at least 9.7 million pounds of toxic chemicals into Florida waterways.
- Portions of the Ocklawaha and Suwannee River basins have nitrate levels that are now 20 times higher than normal. Despite this fact, the Florida Department of Environmental Protection has refused to set a pollution budget for nitrates in the Suwannee River and much of its watershed.
- Two counties in the Suwannee River basin have 45 dairies. Only one of these dairies have permits for their massive discharges of nitrates to the groundwater — which flows through vast underground rivers to springs and the Suwannee River.
- In 2001, Florida beaches were closed or under advisories to not swim for a combined 686 days because of high levels of bacteria.
- Over 2,000 miles of river and 183,000 acres of lakes are under fish consumption advisories due to mercury pollution.

Cleaning Up Polluted Lakes, Rivers and Estuaries

The Problem

The federal Clean Water Act, passed in 1972, is a roadmap for preventing degradation of and restoring our nation's waters. The heart and soul of this law is a section that requires polluted waters to



Photo above: Svenn Lindskold holds one of the Suwannee's algal mats on his river-front dock.

be identified, listed and cleaned up. In essence, this program establishes a "pollution budget" or Total Maximum Daily Load (TMDL) of pollutants for each impaired waterway in the state. Once such a budget is established, water pollution limits can be set for instance, to make waters safe for swimming, and to prevent fish and wildlife from being poisoned.

This part of the Clean Water Act was ignored in Florida for almost 30 years. In the last four years, state legislation and rules have been passed that are inconsistent with the Clean Water Act. The need for better protection and clean-up intensifies as our state's waters become increasingly polluted. Nutrient runoff into our lakes has resulted in high maintenance costs to cities, counties and waterfront owners who continuously try to control

choking growths of scum and algae. In many cases, the lakes even have to be pumped out so that the beds can be scraped clean of polluted muck and sediment. The cost of such projects is millions of dollars, even for a small lake. Delay in dealing with water pollution problems often leads to a ten-fold or more increase in costs.

Florida has built its economy based on its environment. Tourism alone brings in \$32 billion a year. Our fishing industry pumps \$7 billion a year into our economy. As Florida's waterbodies become more polluted, the adverse impacts to our economy will be felt by businesses across our state. Mercury deposition into our waterways has made consumption of certain fish a threat to public health and our tourism industry. Implementation of the TMDL program is vital to our environment and the sustainability of a key part of Florida's economy.

Mercury deposition into our waterways has made consumption of certain fish a threat to public health and our tourism industry.

The Solution

The first and arguably most important step towards cleaning up our polluted waterbodies is to make sure that we have compiled an accurate and complete list of polluted waters across the state. The next step is to then establish and implement pollution budgets in a timely manner for all polluted waters.

Policy Recommendation

- The Florida Watershed Restoration Act and Florida's Impaired Waters Rule should be revised to comply with the federal Clean Water Act. *Only then* should the state create additional funding for restoration of the state's impaired waterbodies.

Protecting Drinking Water

The Problem

Florida needs clean and safe drinking water. Human health must be the first priority for drinking water policymakers. Protecting the quality of Florida's groundwaters is of utmost importance because more than 90% of Floridians get their drinking water from underground sources. Twenty five percent of Floridians drink groundwater from private wells that receive no treatment.

In recent years there has been a 29% increase in national waterborne disease outbreaks from public water systems supplied by groundwater. The likely cause is an increase in human exposure to disease causing chemicals and germs largely due to inadequate testing and safeguards.

Unfortunately, it is not always easy to determine if water is safe to drink. Large public water suppliers routinely test for only 66 dangerous chemicals in our drinking water. However, there are more than 75,000 potentially dangerous chemicals in routine use in the United States and many of them find their way into our waters.

Many people assume that the government is protecting our families from dangerous chemicals and germs when we buy water from our local utility. In fact, state and federal governments are rarely willing to require additional tests, even

Current policies accept a certain number of deaths and disease from contaminated drinking water.

though the threat to public health is serious and growing. Making matters worse, state government has worked to weaken the protections that we now have.

The truth about government programs for protecting public water supplies is that they are limited by concerns over cost rather than focused on human health.



Current policies accept a certain number of deaths and disease from contaminated drinking water. These policies put children, older Floridians and those with compromised immune systems at the highest risk for waterborne illness and do not factor in the costs of health care and loss of work. Some small towns, often the home of Florida's poorest and most vulnerable citizens, are exempted from even these weakened policies.

As Florida grows and competing needs for water intensify, water managers have struggled with ways to store excess water during the rainy season. One solution to Florida's water storage problems is to store water in aquifers. This practice has recently been proposed for storing huge amounts of surface water whether or not it meets drinking water standards. The water would then be added back to surface supplies in times of drought. There are also proposals to "store" sewage wastewater in aquifers to be "recovered" later for use. These processes are referred to as Aquifer Storage and Recovery (ASR).

Injecting polluted water in aquifers raises many serious public health concerns. Polluted water from urban run-off, treated sewage, agricultural run-off or rainwater contains hundreds of chemicals, as well as germs, pharmaceuticals, and other contaminants. Polluted waters that are injected in or near underground drinking water supplies can contaminate them forever. The cost of restoring this now contaminated aquifer would be enormous. In recent years, some government officials have attempted to weaken laws that protect aquifers and human health from injected pollutants. Florida's experiment in using aquifers to dispose or store waste has shown the perils of basing water policy more on wishful thinking than good science.

The Solution

Policy decisions regarding drinking water and human health must be based on peer-reviewed, scientific consensus. As a society, we should never sacrifice public health. When it comes to drinking water, human health must be the number one priority. Sewage wastewater should never be injected into our aquifers and only potable water should be injected underground. In any event, any fluid injected must be carefully monitored for pollution before and after injection. Planning, conservation and efficiency measures should be used

When it comes to drinking water, human health must be the number one priority.

instead of injecting polluted water underground. Opportunities for safe reuse of sewage wastewater without aquifer "storage" should be exhausted to eliminate the need for expensive and potentially dangerous injection of polluted fluids into our aquifers. Surface storage in swamps, floodplains and surface reservoirs is far superior to ASRs.

Policy Recommendations

- Policymakers should oppose any weakening of laws that protect underground drinking water supplies.
- Policymakers should fully enforce the federal Safe Drinking Water Act and oppose any weakening of drinking water standards.
- We need to immediately adopt protections for drinking water and drinking water sources against dangerous chemicals and germs not currently regulated. Existing rules should be reformed to make human health the first priority.
- When public health is threatened, immediate interim measures should be adopted instead of delaying any action until all the facts are clearly evident.
- Aquifer Storage and Recovery should be recognized as unnecessary when compared to the benefits of above-ground water storage.

Sewage and Water Quality

The Problem

Florida's homes and businesses generate about one billion gallons of sewage every day. This sewage is treated to varying degrees and then reused or disposed of as waste. In a misguided attempt to "solve" Florida's looming water shortage, many Florida officials are promoting risky "reuse" of sewage wastewater in ways that expose people to dangerous pollutants in sewage.

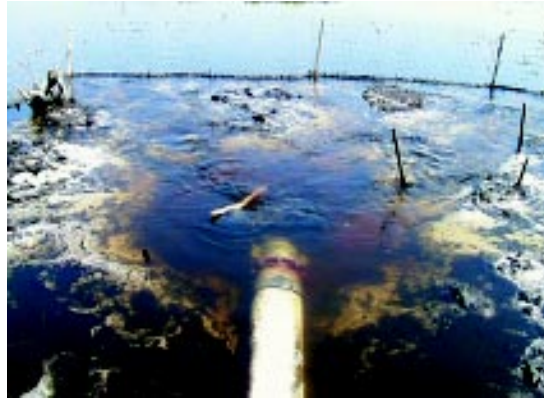
Over half of Florida's sewage wastewater is now reused. It is sprayed on parks, school play-yards, ball fields, golf courses, and residential yards. Reuse also involves injection of sewage wastewater in or near underground drinking water supplies. Many Floridians are exposed to sewage wastewater everyday but often remain

Many Floridians are exposed to sewage wastewater everyday but often remain unaware that they may face significant health risks

unaware that they may face significant health risks as a result.

Sewage itself is now laden with a dangerous mix of pollutants that can cause serious illness or death. In addition to dangerous chemicals and germs from household sewage, treatment plants receive other harmful chemicals from households (e.g., prescription drugs, toxic chemicals from household cleaners), industrial chemicals, and urban/agricultural runoff (e.g., pesticides, metals). If we are to truly "reclaim" sewage for uses that involve public exposure, the "reclaimed" wastewater must first be treated to remove pollutants that endanger public health. The sewage wastewater Florida now reuses does not meet this goal.

Protective standards for reused sewage wastewater are an immediate public health priority. Recent sewage utility



reports show the sewage wastewater reused in Florida contains dangerously high levels of the types of germs that can make people sick. The state rules designed to protect public health, incorrectly assumed that the sewage wastewater would not contain these dangerous levels of germs.

Efficiency and conservation measures could reduce water consumption at a lower cost than virtually any water supply alternative, including measures like reuse of inadequately treated sewage wastewater. Common sense dictates that efficiency measures be widely used—to lower both water supply and wastewater treatment costs. Officials have recognized the potential for conservation and efficiency to meet Florida's growing water needs, but have been slow to do more than discuss or simply encourage action.

The Solution

In the rush to make "reuse" of sewage wastewater a priority, Florida must avoid quick fixes that give only superficial consideration to human health. Florida's reuse laws should be reformed to ensure people are not exposed to inadequately treated sewage wastewater. Until public health protections are in place, Florida should halt, not expand, reuse practices that expose people to sewage wastewater. Whenever efficiency costs less than developing new water supplies, it should be Florida's resource of choice.

Florida homes and businesses generate about one billion gallons of sewage every day.

Policy Recommendations

- Florida should improve the efficient use of resources by adopting incentive programs, conservation rate structures, and efficiency-first water planning practices.
- Sewage wastewater should never be injected in or near Florida's underground water supplies.
- Florida should adopt protective standards for sewage wastewater targeted for reuse where human exposure is possible.
- Florida should adopt improved monitoring for pollutants that endanger human health.
- The Legislature should restore legal protections for people who become ill from exposure to dangerous chemicals and germs in reused sewage wastewater.
- Florida should create a task force to identify effective ways to minimize dangerous chemicals and germs in sewage wastewater and recommend measures to implement and fund those policies.
- Target public funds for wastewater facilities for additional research and projects that will implement truly sustainable water use efficiency and wastewater collection, treatment, disposal and reuse methods.

Photo above: In 1997, spilled pollution from a phosphate mine caused a major fish kill in Florida's Alafia River.



More than 1/3 of Florida households rely on individual wastewater treatment systems known as septic tanks. These 2.3 million septic tanks rely on soils around them to neutralize the pathogens and nutrients that pass through their filter fields. But older systems in need of repair or with less sophisticated design standards, systems placed in poor filtering soils, and ones located where the water table is high, are passing many of these pollutants into the groundwater or adjacent water bodies. With more than 90% of all Florida's drinking water coming from groundwater sources, we cannot continue to allow this correctable problem to add to other nutrient pollution sources such as lawn and agricultural fertilizer runoff.



Water as a Public Resource: Waters and Submerged Public Lands Must Not Be Privatized or Misused

“Once they get a stranglehold on water supply, these speculators will dictate the public’s price for water—selling back at a premium what was ours to begin with.”

Fact: In 1999, an Enron subsidiary heavily lobbied Florida’s government for water privatization.

Privatization of Water Resources

The Problem

John Locke, the philosopher who inspired America's founding fathers, wrote that private property is created when we work on an object to improve it. But in Florida some want to secure an unearned fortune by getting the legislature to grant them private ownership of a precious gift of nature: Florida's public water supply. Privatizing water could lead to a gold rush giveaway to multinational corporate speculators. For Florida's citizens and municipalities, it would be a fiscal, environmental and quality of life disaster.

Privatizing water could lead to a goldrush giveaway to multinational corporate speculators, but for Florida's citizens and municipalities it would be a fiscal, environmental and quality of life disaster.

Privatizing water would violate Florida's fundamental values and traditions. In Florida, water has always been a public resource. For generations, the state's crystal-clear springs, lakes and streams have been the source of pure drinking water and the home for a bounty of fish and wildlife. The traditional water law of the Eastern states, including that of Florida, requires that water be used in a reasonable, un wasteful manner and for a purpose that ultimately serves the public. As Florida citizens, each of us is entitled to use a reasonable amount of this public resource.

Now some profiteers and speculators want to import the water laws of the Western states, which reflect a waste-oriented "use-it-or-lose-it" ethos. This failed scheme, which has triggered water-supply crises up and down the California coast, would allow multinational corporations to snatch up huge quantities of Florida water. Once they get a stranglehold on water supply, these speculators will dictate the public's price

for water—selling back at a premium what was ours to begin with.

South Florida narrowly averted just such a fiasco in the late 1990s. In 1999, an Enron subsidiary heavily lobbied Florida's government for water privatization. One proposal would have sold off the vast water supply achieved through proposed Everglades restoration projects. In exchange, the water division of Enron would have been granted a 30-year monopoly license to sell water to South Florida's 6-million-plus residents, tying their fate to a collapsing corporation.

Some corporations have been even shrewder, attempting a back-door purchase by tinkering with the statute books. Florida law allows the government to create water reservations "for the protection of fish and wildlife or public health and safety," but profiteers and speculators want to get water reservations for themselves. Others are trying to get the government to issue "mega" water-use permits, which would allow them to use massive amounts of the public's water in any way they want. More subtle water give away proposals are for 20 or 25 year renewable permits—permits that might become perpetual—coupled with proposals to sell permits. If the government allows these schemes to go through, Florida's towns and cities will have to pay permit holders billions of dollars to buy back the water rights.

Privatizing water also causes water waste. When corporations and large agricultural operations are not limited to the reasonable use of the public's water supply, they have no incentive to conserve it. In the West, privatized water has yielded extreme examples of water waste, such as the Bellagio Fountains in Las Vegas, Nevada. Florida can't afford such indulgence. Agriculture thrives in Florida because of natural blessings—sunshine and water. If large-scale farming operations and corporate speculators are no longer limited to the reasonable use of

the public's water, they will quickly deplete Florida's water supply.

The impact would not only hit us in the pocketbook when the water bill comes, it would be felt by every person in Florida, as privatization would ignite a latter-day gold rush to obtain water permits. Privatization would cause incalculable damage to Florida's environment. Dipping their straws into Florida's pristine waters, speculators and large-scale users would quickly lay claim to Florida's springs and aquifers.

The Solution

Florida law prescribes five-year permits for most uses and requires new applicants and those renewing applications to meet a three-part test: Use must

- Be reasonable and beneficial
- Not interfere with another legal use
- Be in the public interest

These standards for water use permitting should be better enforced and above all, ownership rights, including the right to sell or resell water to any water, must not be conveyed to a private person.

Policy Recommendations

- Water management districts should make permit renewals conditional on science-based assessment of the sources of water and issue only five-year permits for quantities that are reasonably necessary.
- The Legislature should enact a specific prohibition on privatizing water and the right to withdraw water.
- Legislative proposals to weaken the current law on reservations of water for the protection of fish and wildlife should be rejected.



In the West, privatized water has yielded extreme examples of water waste, such as the Bellagio Fountains in Las Vegas, Nevada. This 27 million gallon tank loses over 1 million gallons of water per day—but that doesn't stop the Bellagio Hotel from running its fountain show hundreds of times a week.



Navigable lakes and streams are irreplaceable treasures that must be preserved for future generations, not given away to waterfront landowners or speculators.

Submerged Public Lands

The Problem

Like the waters above them, the beds of navigable lakes and streams are also public property. This principle derives from longstanding law predating even the founding of the state, and is embedded in the Florida constitution. However, the last twenty years have witnessed several attempts to give away these publicly owned lands to the private waterfront landowners. Navigable lakes and streams are irreplaceable treasures that must be preserved for future generations, not given away to waterfront landowners or speculators.

The public status of “navigable waters” is an American legal principle dating back to George Washington, Thomas Jefferson and the founding of the United States. That principle is that waterways useful for trade and travel are public highways. During the settler period, small skiffs and canoes were the primary means of travel because railways did not exist and roads were commonly impassable. Indeed, an early Florida statute required that tree stumps in public roads had to be less than 12 inches high and that bridges could not be impassable for more than 15 days unless repairs were hindered by extremely bad weather. In that era, streams and lakes were the highways of commerce because most travel was by water in watercraft large and small.

This public status includes large waterways like Lake Okeechobee and the Apalachicola, Suwannee and St. Johns rivers. Steamboats were common on those waterways until as recently as the 1920's. Smaller waterways like Fisheating Creek and Payne's Creek were arteries of local commerce that carried alligator hides to trading posts in small cypress skiffs and dugout canoes. Like all other highways, navigable lakes and streams are indelibly public. This principle is even

embedded in the Florida Constitution, which holds that navigable waters are held by the state in a perpetual public trust.

Public ownership of these lakes and streams includes the bed and the shore—the zone between the ordinary high and ordinary low water lines. The purpose for this rule is to allow people using the lake or stream to use the shore for fishing, bathing, and camping and other appropriate uses. On some waterways, the shore is steep and can even be too steep to walk on. In many other cases, the shore is flat and covered with extensive growths of water vegetation such as water grasses and cypress trees. During the high water season, those areas function as nurseries for fish and other freshwater life and are highly prized by Florida fishermen. The reach of ordinary high water is the normal reach of water during the rainy season, and does not include any land that is submerged only during floods or other unusual temporary periods of high water.

The surveys of Florida in the mid-1800s generally did not indicate that a lake or stream was navigable. Only about one sixth of the approximately one million acres of navigable lakes and streams in Florida were noted as navigable in those surveys. The swamp lands of the state were sold in vast bulk sales during the reconstruction era, in single transactions as large as four million acres. One land dealer, Hamilton Disston, actually acquired 7 million acres in Florida land through these swamp deeds.

Navigable lakes and rivers—including large parts of the Kissimmee and St. Johns Rivers and all of Fisheating Creek—that were encompassed in these deeds, did not become private property because the purchasers of swamp deeds knew that they were not intended to convert public waterways into private property. For that

reason, long-standing Florida Supreme Court decisions hold that swamp deeds do not form a valid basis to claim private ownership over navigable waterways. Many large land tracts in Florida derive from these swamp deeds and still encompass parts of public lakes and streams. For example, large parts of the St. Johns and Kissimmee rivers are still included in the deeds held by large landholders.

Some of these landholders have sought administrative rules or legislation that would convert most navigable waterways into private property. A variant on these schemes seeks to have the state transfer the shore of lakes and streams into private ownership, thereby making fishermen, swimmers, campers and other traditional recreational users into criminal trespassers.

The Solution

Our heritage should be preserved for future generations, not given away to powerful landowners. Public officials and landowners should take a “hands off” approach to proposals to rewrite the rules to privatize river bottoms, lake bottoms and shores.

Policy Recommendation

- State policy makers should oppose any efforts to give away publicly owned lakeshore and riverbank properties to private landowners and developers.

... long-standing Florida Supreme Court decisions hold that swamp deeds do not form a valid basis to claim private ownership over navigable waterways.



Managing our Water: Water Management Must Protect Natural Systems

“There comes a point when the combined impacts surpass a natural system’s capacity to function fully and effectively.”

Fact: Between 1982 and 1997, 1.9 million acres of land were developed in Florida—more than one-third of all the land that has been developed in the state’s history.

In 1972, Florida enacted the Florida Water Resources Act (FWRA). The FWRA established a comprehensive permitting program to allocate water for “consumptive uses.” The FWRA divided the state into five water management districts along watershed lines. It delegated to each water management district the authority to require and issue permits for all consumptive uses of water except for private wells serving households. An applicant for a consumptive use permit must establish that the proposed use of water: (a) is a reasonable-beneficial use; (b) will not interfere with any presently existing legal use of water; and (c) is consistent with the public interest.

The FWRA defines “reasonable-beneficial use” as the quantity of water that is “necessary for economic and efficient utilization for a purpose and in a manner which is both reasonable and consistent with the public interest.” The statute does not define the term “public interest.” How each district interprets and applies these terms is crucial to long-term protection of our environment and quality of life.

Water for Fish and Wildlife

The Problem

Drainage and water withdrawals have combined to make droughts worse and more prolonged to the detriment of natural systems. Agriculture and urban development in modern Florida, with its nearly 17 million people, was made possible by drainage of much of the peninsula. But drainage, in spite of its benefits, has had tremendous costs. Draining water into the sea reduces the common pool of water available



Outdoor recreation such as birding, camping, boating, hunting and fishing supports businesses and jobs.

for agriculture, industrial and domestic needs. It also reduces the amount of water available to sustain natural systems. In Florida, water is often plentiful, but drought, drainage and overuse are stressing natural systems with increasing frequency. The benefits of water supply and drainage are then in conflict with each other and with the protection of natural systems.

Drainage and consumptive uses remove water from natural areas and degrade their ecological functions. The cumulative effect is that lakes, streams, floodplains and springs dry more frequently and are replenished less frequently; wetlands are diminished in area and quality and may disappear altogether.

Florida law offers two tools for water managers to deal with the problem of impacts to natural systems and sources of water. Minimum Flows and Levels (MFLs) are to be established by rule for water bodies and for sections of the aquifer. Minimum flows are, as the name implies, a minimalist approach to preventing a source of water from experiencing serious or significant harm. An MFL is often little more than a trigger for drought related water conservation measures. It

does not guarantee or even pretend to assure the ecological health of the source water or the wildlife that depends on that water.

Florida law offers a complementary tool to MFLs, *reservations of water for fish and wildlife*. Unlike an MFL, a reservation can effectively protect fish, wildlife and recreational values. Reservations may be the most effective tool for ensuring that water diversion does not destroy the natural portions of Florida that require maintaining the cycles of drought or flood for which most of our native species are adapted. Reservations are a required part of the state/federal agreement on Everglades restoration. They ensure that “new” water captured and stored by restoration is reserved for the natural system and not permitted away for consumptive use.

As demand for domestic, industrial and irrigation water increases, the result of so many consumptive users puts stress on Florida’s water resources. It is important that the water management districts use the tools of MFLs and reservations to prioritize ecosystem health.

Natural areas make important, and frequently unrecognized, contributions to our tourism and real estate based economy. They are a part of the ‘quality of life’ considerations of those choosing to visit, move to, or relocate their businesses to Florida. Outdoor recreation such as birding, camping, boating, hunting and fishing supports businesses and jobs. The residents and visitors engaging in these activities believe they have the same right to recreation as users of Florida’s heavily irrigated golf courses. The contrast is one of more than values. The golf course becomes a legal user of water. The estuary, lake or river upon which fish and birds depend is only entitled to water if that water is specifically reserved. By way of these complicated rules, we seem willing as a society to deny someone their ‘right’ to fish or see birds so that someone else can enjoy their

‘right’ to make more money by managing a landscape. In contrast, many individuals see themselves and their government as responsible for our common stewardship of natural areas and the creatures that depend upon it.

A final tool that water management districts may use is a willingness to look closely at consumptive use permits. There is recent evidence that districts are gaining the political will to say no to permit applicants in order to protect natural systems.

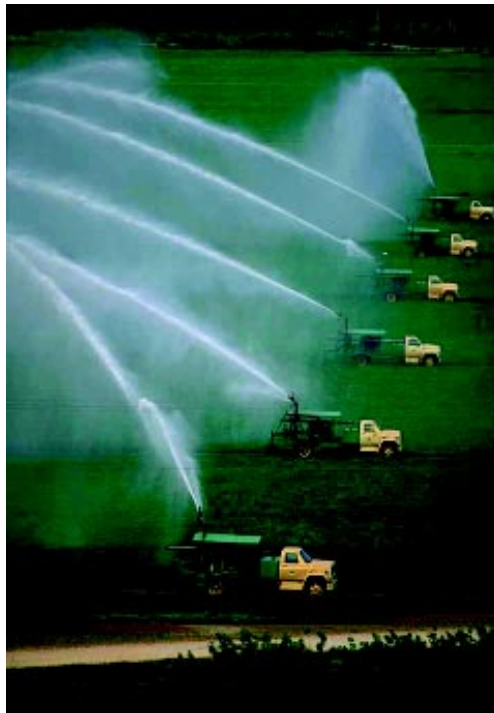
The Solution

The water management districts are required by law to prevent conflicts arising from consumptive use. The balancing of needs for consumptive users must be extended to natural systems. The districts must move beyond a limited water supply mission to the broader public interest mission reflected in the conditions for a consumptive use permit. An explicit public interest test for consumptive use permitting could be the basis for fairly sharing the state’s water resources and protecting natural areas.

Policy Recommendations

- Water management districts should begin an aggressive program to reserve water for the native habitat upon which fish and wildlife depend.
- Water management districts should consider regional water supply plans and natural system conservation and restoration plans as competing uses when approving or modifying applications. In other words, every application that affects regional uses should be considered a competing use.

- The Legislature should resist any weakening of the law on water reservations for fish and wildlife, and should avoid preempting currently proposed rules that clarify and give direction to the water management districts for MFLs and Reservations.
- The Legislature should add the phrase “will protect public health and safety as well as fish and wildlife” to the reasonable-beneficial use test and require districts to consider this when considering new or renewed permits.



As demand for domestic, industrial and irrigation water increases, the result of so many users puts stress on Florida’s water resource. It is important that the water management districts use the tools of Minimum Flows and Levels (MFLs) and reservations to prioritize ecosystem health.

Growth Management and Water

The Problem

Direct links exist between impacts to our water resources and local land use decisions. Those links are most commonly seen in approvals for commercial and residential development which usually require drainage, stormwater, fill and water withdrawal permits from the water management district. Land development approvals are typically associated with impacts caused by activities necessary to accommodate roads, utilities, schools,

parks, and other facilities. Experience shows that locating development in areas best able to accommodate these impacts makes it much easier to issue permits that allow development

while protecting water resources. Poor land use decisions place development in areas where permit programs are challenged to protect water and other natural resources from runoff, habitat alteration, groundwater pollution, water table drawdowns, exotic vegetation, and floodplain encroachment.

Years of neglect have caused the effects of community growth on water supply to become disconnected from the ability to provide water for people, agriculture and the environment. Some local governments have authorized more future development than can be supplied with water at a reasonable cost. In some parts of Florida, water management districts have already authorized more water withdrawals than our aquifers can now safely accommodate so that there is no reserve for future growth. These conflicts will

result in increasingly frequent water shortages, salt water intrusion and damage to natural areas. There is an urgent need to improve the linkage between the development decisions made by Florida's more than 475 independent local governments, which affect both the future supply of water and the future need for water, and the water use decisions made by the water management districts, which affect the future availability of water.

The Solution

Policy makers should coordinate these linkages and close the gap that exists today between regulatory programs at the state and district levels, and local land use planning efforts, none of which is able, in isolation, to protect water resources. Shared programs linking land acquisition, water conservation, water reuse, and better wastewater treatment should be part of the solution. The overall answer is to forge even closer working relationships among all complementary programs so that water resources are protected now and into the future. As recently as 2002, the Legislature recognized the need to improve these linkages in our growth management laws, but much more needs to be done.

Policy Recommendations

- Policy makers should take steps to ensure that the initial authorization for development explicitly considers the development's effects on water availability for itself and other competing uses, including natural resource protection. This consideration should take place prior to beginning the expensive process of detailed planning to accommodate Environmental Resource Permitting and other Growth Management requirements.



Several decades of uncontrolled growth and lack of planning have transformed Florida.

Protecting the Land Around Water

The Problem

People like to live near water. That is why our coasts, rivers, lakes and even springs attract development. In many cases proximity leads to degradation of the very waterfront that is so attractive. Some of the land around Florida's springs and streams has been purchased through the Save our Rivers program. However, the buying power for this important effort has been shrinking as land costs go up and water management districts shift focus to water supply and restoration projects.

The Solution

Protecting Florida's remaining natural lands through conservation land acquisition and restoration programs provides important benefits to the state's water resources and reduces the costs of water management. Preserving undeveloped landscapes such as sand hills on the Crescent City Ridge, sinkholes and caves near Wakulla Springs or large wetland basins like the Green Swamp or Corkscrew Marsh, ensures safe, reliable water supplies by protecting the natural "reservoirs" that store and recharge our surface and groundwater. Protecting intact floodplain forests and swamps, such as those along the Apalachicola River and Tates Hell Swamp, helps filter pollutants and improves the water quality of Apalachicola Bay, which is essential to sustaining the economic viability of the bay's famous fishing and oyster industry. Preserving existing wetlands and restoring drained wetlands in the Kissimmee Prairie of central Florida allows for more water to be held on the landscape in a natural manner, reducing the need for expensive flood control and water storage facilities. And preserving natural

landscapes and rural lands in the Wekiva River basin prevents conversion to more intensive forms of land use, reducing demand for new sources of water supply or increased water allocations in a system where water resources are already limited.

Policy Recommendation:

- The Legislature should increase and target funds for protecting landscapes along waterways.



St. Lucie River is the environmental and economic lifeblood of Martin and St. Lucie counties. This historic, scenic river attracts a variety of commercial, recreational and educational activities like fishing, crab trapping, photography, painting, environmental studies and eco-tourism.

Cumulative Impacts

The Problem

“Death by a thousand cuts” is a well known adage for situations in which a small injury becomes significantly harmful if repeated or continued. Changes that seem small, perhaps appearing of negligible importance, can add up to crucial cumulative impacts. As Florida’s population grows, sprawling development patterns and increasing consumption of resources result in intensive use and conversion of our natural systems. Permits are granted for a series of mitigation projects that substitute some but not all functions of a natural system. Increasing numbers of consumptive use permits siphon off shares of our common water resources to dangerously low levels, and valuable wetland systems are eliminated.

There comes a point when the combined impacts surpass a natural system’s capacity to function fully and effectively. The ecological services that we rely on from drinking water to recreational opportunities are diminished. Fish and wildlife decrease in abundance and range, sometimes to the brink of extinction.

**Defining
“Consumptive Use”**
A “consumptive use” moves water from a place where it sustains natural systems to a place where it serves human purposes. For example, water that naturally keeps wetlands wet or moderates the saltiness of estuaries may be removed to irrigate a crop or convey domestic waste to a sewage treatment plant.



The Solution

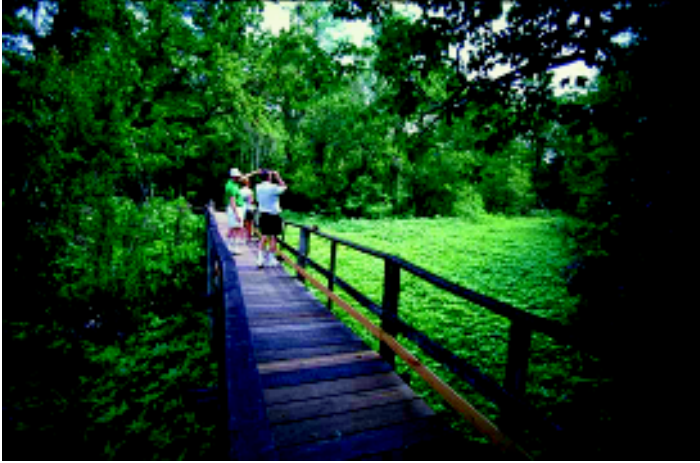
Although the Water Management Districts’ rules refer to consideration of cumulative impacts, in reality, the scope of their evaluations, monitoring, and authority they assert to prevent such impacts is narrow and weak.

There is a need to improve cumulative impact policy in Florida. Also, we must ensure the use of public interest tests, and planning and permit decisions that are consistent with sound science. We must establish reservations of water that meet optimal conditions for the ecosystems that sustain us and support a vibrant economy that is so dependent on clean, available water.

Policy Recommendation

- Florida’s Water Management Districts should include cumulative impacts to ecosystems in their water supply planning and water use permitting.

In 1995, Tropical Storm Jerry caused freshwater flooding on Florida’s southwest coast. Property damage in Florida totalled \$1.5 million and damage to agriculture was estimated to be \$19 million.



A Prescription for Protecting Florida's Water Resources

Public Policy Recommendations of the Florida Water Coalition

The Florida Water Coalition follows a different set of principles than the Water Industry. The three main policy principles of the Florida Water Coalition are:

- Water Must Be Clean and Safe
- Waters and Submerged Public Lands Must Not Be Privatized
- Water Management Must Protect and Restore Natural Systems



Water Quality: Water Must Be Clean and Safe

- The Florida Watershed Restoration Act and Florida's Impaired Waters Rule should be revised to comply with the federal Clean Water Act. *Only then* should the state create additional funding for restoration of the state's impaired waterbodies.
- Policymakers should oppose any weakening of laws that protect underground drinking water supplies.
- Policymakers should fully enforce the federal Safe Drinking Water Act and oppose any weakening of drinking water standards.
- We need to immediately adopt protections for drinking water and drinking water sources against dangerous chemicals and germs not currently regulated. Existing rules should be reformed to make human health the first priority.
- When public health is threatened, immediate interim measures should be adopted instead of delaying any action until all the facts are clearly evident.
- Aquifer Storage and Recovery should be recognized as unnecessary when compared to the benefits of above-ground water storage.
- Florida should improve the efficient use of resources by adopting incentive programs, conservation rate structures, and efficiency-first water planning practices.
- Sewage wastewater should never be injected in or near Florida's underground water supplies.
- Florida should adopt protective standards for sewage wastewater targeted for reuse where human exposure is possible.
- Florida should adopt improved monitoring for pollutants that endanger human health.
- The Legislature should restore legal protections for people who become ill from exposure to dangerous chemicals and germs in reused sewage wastewater.
- Florida should create a task force to identify effective ways to minimize dangerous chemicals and germs in sewage wastewater and recommend measures to implement and fund those policies.
- Target public funds for wastewater facilities for additional research and projects that will implement truly sustainable water use efficiency and wastewater collection, treatment, disposal and reuse methods.

Water as a Public Resource: Waters and Submerged Public Lands Must Not Be Privatized or Misused

- Water management districts should make permit renewals conditional on science-based assessment of the sources of water and issue only five-year permits for quantities that are reasonably necessary.
- The Legislature should enact a specific prohibition on privatizing water and the right to withdraw water.
- Legislative proposals to weaken the current law on reservations of water for the protection of fish and wildlife should be rejected.
- State policy makers should oppose any efforts to give away publicly owned lakeshore and riverbank properties to private landowners and developers.



Managing our Water: Water Management Must Protect Natural Systems

- Water management districts should begin an aggressive program to reserve water for the native habitat upon which fish and wildlife depend.
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- Florida’s Water Management Districts should include cumulative impacts to ecosystems in their water supply planning and water use permitting.

An Index of Water Related Online Resources

Environmental Defense Scorecard
<http://www.scorecard.org>

Clean Water Network - Florida
<http://www.cwn-se.org>

Natural Resource Defense Council's
Reports on Clean Water
<http://www.nrdc.org/water/default.asp>

Guide to Drinking Water Quality
<http://www.waterqualityreports.org>

USGS Water Resources of Florida
<http://fl.water.usgs.gov>

Florida DEP: Water Resource
Management
<http://www.dep.state.fl.us/water>

Florida Fish and Wildlife
Conservation Commission
<http://www.floridaconservation.org>

Stormwater Resources
<http://www.stormwater-resources.com/links.htm>

Water Conservation
<http://www.floridaswater.com>

EPA's Website on Florida Water
<http://www.epa.gov/ow/states/fl>

South Florida Water
Management District
<http://www.sfwmd.gov>

St. Johns River Water
Management District
<http://sjr.state.fl.us>

Suwannee River Water
Management District
<http://www.srwmd.state.fl.us>

Northwest Florida Water
Management District
<http://www.state.fl.us/nwfwmd>

Southwest Florida Water
Management District
<http://www.swfwmd.state.fl.us>

Florida's Water Policy
<http://www.dep.state.fl.us/water/waterpolicy>

Toxics Release Inventory
<http://www.epa.gov/tri>