

The Case for Universal Water Fees in Florida  
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Bob Palmer  
Board Member, Florida Springs Institute

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## Introduction

Even though it's one of the rainiest states in the Nation, Florida faces as many water challenges as any state. According to the Natural Resources Defense Council, Florida is one of 14 states predicted to face "high risk" water shortages by the year 2050. The aquifers which supply most of the State's residents and industries have long been over-pumped, compromising both environmental and ecological health and the future sustainability of the resource. And since water quantity and water quality are inextricably linked, falling groundwater levels along with manmade chemical inputs contribute to the increasing pollution of Florida's springs, rivers, and estuaries.

These problems have been widely documented in the press, and are recognized by environmental scientists and a good share of the public. They are also acknowledged by the State's political leaders, who have created and funded an array of "recovery" programs aimed at developing new potable water supplies and at cutting back on nutrient pollution.

As well-intentioned as these programs may be, the reality is that groundwater levels, spring flows, and nutrient pollution concentrations are not going to return to healthy levels in many if not most areas of the State for the foreseeable future. The causes of the problems are so deep-seated, the fixes so under-funded, and growth in the State so inexorable, that these "recovery" programs may never catch up with the ongoing rate of degradation. As one prominent Florida business leader characterizes the water problem in Florida: "We are heading right for a brick wall".

**Given this backdrop, it is almost inconceivable that one of the fairest and most effective means of restoring water supplies is not part of the restoration tool-kit. In fact, it is hardly discussed in the press, and mention of it is anathema to our political leaders. We are referring to water-use fees. It is clearly time for a serious analysis and debate over the merits of these fees.**

## The Case for Water Fees

As Tom Swihart notes in "Florida's Water"<sup>1</sup>, no one pays a nickel for the privilege of extracting water from an aquifer, river, or lake in Florida – unlike many other parts of the country where water fees are common. The State's water management districts already issue water-use permits for large water users in industry, agriculture, and public water supply, so it would not be a significant administrative barrier for the State to collect fees on water use or on the amount of water permitted to be withdrawn. What would be the benefits of instituting these fees?

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<sup>1</sup> "Florida's Water: A Fragile Resource in a Vulnerable State" by Tom Swihart. RFF Press, 2011.

- Incentivize Water Conservation  
Technology exists for water use reduction at relatively low cost but currently there is no economic incentive for implementing water-saving practices.
- Provide market opportunities for re-allocating water from lower-value to higher-value uses  
The discipline of the market is usually the best path toward efficient use of any resource. The American Society of Civil Engineers adopted a Model Water Code in 2004 which notes: “Without requiring fees for the value of the water used, one cannot really hope to achieve real efficiency in the use of water and therefore of ensuring sustainable development”.
- Fund projects to protect and restore water resources  
Depending upon its nature and size, a water-use fee could become a significant source of revenue for water-supply projects, water conservation initiatives, and environmental restoration.
- Economic Fairness  
Water-use fees could be used to reduce *ad valorem* property taxes currently paid to water management districts. It seems highly inequitable that two businesses (or two residences) whose water usage may differ by a factor of 100 should pay the same tax rate to a water management district simply because the properties have the same assessed value. Water-use fees could potentially replace *ad valorem* taxes on a one-to-one basis or in some other ratio determined by the legislature.

**It is important to enumerate what water-use fees are not. They are not a method of privatizing the ownership of Florida’s water or of creating water markets.** Fees would be allocated and collected by the same State agencies that currently administer water-use permits. If water fees were instituted, Florida’s water would continue to be managed, by the agencies of State government, for the people of the State.

### The Water Crisis in Florida

Evidence of stress on Florida’s water can be seen anywhere and everywhere in the State.

Pollution in the Indian River Lagoon has fueled toxic algae blooms blamed for wiping out 40,000 acres of sea grass, not to mention many manatees, dolphins, and pelicans. Further south, the Caloosahatchee River on the west coast and the St. Lucie River on the east coast have borne the brunt of polluted water released from Lake Okeechobee by federal officials trying to lower the water level before it breaches the berm surrounding the lake. The emergency releases have fouled the estuaries of both rivers, damaging sea grass beds, marine life, fishing, and tourism.

The state's 1000+ iconic springs – many of them in State parks – suffer from increased nitrate pollution and a severe loss of flow caused in large measure by over-pumping of the aquifer by agriculture, development interests, and a burgeoning population. Dr. Robert Knight, who has

studied Florida's springs longer than just about anyone, estimates that cumulative spring flow across the State is down over 30 percent from the pre-development era. The same goes for spring-fed rivers like the Suwannee and the St. Johns. Sadly, many formerly robust Florida springs no longer flow at all (Kissingen and White), or have recently experienced first-ever cessation of flow (Poe).

In some Florida springs, dissolved nitrate levels may be 100 times greater than natural levels, due mainly to runoff from fertilizers and septic tanks. In other springs and spring-fed rivers, like Ginnie Springs and the Santa Fe River, all of the natural submerged vegetation is gone, and no one seems to be quite sure why.

Excessive groundwater pumping affects not only springs but also rivers and lakes (like those in Keystone Heights), and may shrink wetlands vital in filtering pollutants from the water that reaches these rivers and lakes. Groundwater extractions may also lead to land subsidence and sinkholes. In 2010, strawberry farmers in Plant City pumped extra groundwater to protect their crops from unusually cold temperatures, lowering the groundwater table by up to 60 feet and birthing over 80 sinkholes that shut down area roads and rendered dozens of homes uninhabitable.

In many areas of the State, current levels of groundwater withdrawals have reached and surpassed the limits of sustainability. The Central Florida Water Initiative, near Orlando, aims to provide sustainability by developing alternative water sources for the region – a tall task given growth projections for the next 30 years. Unfortunately, these alternatives are generally very expensive, or they come with attendant environmental dangers, or both. For example, proposals have surfaced to pump massive amounts of water from the St. Johns and Ocklawaha Rivers. Flow rates in both of these rivers are already significantly reduced from historical levels, and increased withdrawals will only cause further ecological stress.

Along with sea levels rise, these massive withdrawals would enhance salt-water intrusion creeping further up coastal rivers like the St. Johns. As aquifer levels run low, they make way for coastal waters to flow inland, or for saltwater underlying the freshwater aquifer lens to migrate upward. Saltwater intrusion can make fresh water undrinkable, increase the presence of minerals and nutrients in bodies of freshwater and harm crops. Numerous coastal cities in Florida have already had to close and re-locate drinking water wells due to saltwater intrusion.

The Orlando area is hardly the only portion of the state facing water shortages. **Water resource caution areas** (WRCA), as designated under the State's Water Resource Implementation Rule, are areas that have critical water supply problems or are projected to have critical water supply problems within the next 20 years. The current map of WRCA's covers nearly the entire State. The St. Johns River Water Management District designated the entire district as a WRCA. The Southwest Florida Water Management District designated four areas (Northern Tampa Bay, Eastern Tampa Bay, Highlands Ridge, and Southern). South Florida Water Management District designated approximately 90 percent of the district, and the Suwannee River District designated four WRCA's in 2011.

It seems inevitable that fights over water availability in Florida will only become more contentious and litigious. Concerned citizens are taking more aggressive steps to challenge State environmental regulators on rules specifying the amount of water flow needed to maintain healthy rivers and springs. They are also beginning to challenge water-use permit applications in sensitive ecological areas, like the permits sought by the Sleepy Creek cattle operation near Silver Springs.

Groundwater withdrawals – currently totaling about 4.2 billion gallons per day in Florida – are already the source of significant ecological damage. As growth in the State continues, they constitute a continuing threat to the environment, to the economy, and to the quality-of-life of Florida's citizens.

### Why Do We Need a New Approach?

The State's current strategy for addressing these water challenges has two components.<sup>2</sup> First, water management districts are statutorily required to plan for water supply needs for the next 20 years and to develop programs to ensure sustainable supplies. Second, Minimum Flows and Levels (MFL) define for individual water bodies the minimum water flows and/or levels which ensure that permitted water withdrawals don't cause significant harm to the water resources or ecology.

These concepts sound good on paper. But their application is messy and often ineffective, and increasingly litigation has been the result. Legal challenges to an MFL or a water-use permit end up before an administrative law judge or a State agency, where experts on both sides argue about arcane details of hydrological or ecological modeling. The burden of proof is on those objecting to the MFL or permit, and judges faced with technical complexity tend to give deference to the State.

When the State is faced with a water shortage or when a water body is not meeting its MFL, it has relied on one overriding strategy – namely, to increase water supply through pricey capital projects. This might involve construction of reservoirs, or expanding purple water-reuse pipes, or building desalinization plants, or tapping alternative sources like river or deep aquifers. This is not to say that the State has no programs for water conservation, but, in terms of subsidies and attention, conservation clearly plays second-fiddle to projects.

As mentioned above, this project-heavy approach is very expensive and may lead to unintended environmental problems. For example, expanding water re-use for irrigating residential lawns may be helpful if it supplants potable water, but if re-use water enables landscape irrigation that wouldn't have happened otherwise, it will not improve replenishment of the aquifer. Tapping

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<sup>2</sup> Although water quantity and water quality are closely related, this paper will not address two regulatory tools aimed at improving water quality – Total Maximum Daily Loads (TMDLs) and Basin Management Action Plans (BMAPs) – which are controversial in their own right.

deeper layers of the aquifer is neither a comprehensive nor long-term solution, and will almost certainly cause saltwater intrusion and degradation of sustainable supplies.

The reality is that, unless citizens are willing to subsidize the enormous expense involved in numerous large water projects, the water supply situation in Florida is only going to get worse. For starters, agricultural water use in the State will almost certainly increase. In July 2015, the Department of Agriculture and Consumer Services released its “Florida Statewide Agricultural Irrigation Demand Report”, projecting that by the year 2035, State-wide agricultural water use will increase 17% to about 2.5 billion gallons per day. Much of this increase will occur in the springs region of Florida, with increases of 41% and 28% projected for the Suwannee River and Northwest Florida Water Management Districts, respectively.

Other trends are equally discouraging. JEA and GRU, public water suppliers for Jacksonville and Gainesville, have about 20 years remaining on their water-use permits. Despite the utilities’ ongoing conservation efforts and tiered pricing<sup>3</sup>, both expect increased water demand through the life of these permits due to projected population growth.

Another complication is water banking. Many current permit-holders are not using their full permitted water allocation. In the Suwannee River Water Management District alone, as much of one-half of the permitted withdrawals are not currently utilized. Large agricultural operations from the West Coast<sup>4</sup> and South Florida are increasingly moving into North Florida, often inheriting water-use permits along with their newly acquired farm lands. What would the impact be if a significant fraction of this unused allocation was tapped? This is exactly what happened in the recent legal fight over a permit in Marion County, where the new land owners (Sleepy Creek Farms) inherited a permit for their cattle operation and won the right to triple the amount of water that had been withdrawn by the previous owner.

Floridians need to face reality. The current approach of weak regulation, accompanied by taxpayer-supported subsidies to the biggest polluters and users<sup>5</sup>, will not restore Florida’s waterways in the long run. Or, if it does manage to restore a spring or two, it will be at an enormous cost<sup>6</sup>. The most cost-effective strategy for reducing water use, and the one that has been employed the least in Florida, is conservation. There are many facets of water conservation but water-use fees is likely to be the most effective and the most fair to Florida’s taxpayers.

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<sup>3</sup> Both utilities confirm that tiered pricing has cut water use over the past decade. In other words, water fees do work.

<sup>4</sup> For example, Lakeland Sands, a subsidiary of Bill Gates’ investment arm, now controls at least 13 water-use permits in the Suwannee River Water Management District, totaling at least 20 mgd.

<sup>5</sup> See: <http://springsforever.org/wp-content/uploads/2015/02/2015.07-06-FSC-requests-transparent-and-consistent-process-for-State-funding-of-springs-restoration-projects.pdf>

<sup>6</sup> Among State springs in violation of its MFL standards, we know of none with a credible schedule for restoration of full flow. State officials talk about funding projects to restore 10 cubic feet per second of water flow to Volusia Blue Spring, but even if the funding materializes, the cost would be so high (\$150 million) as to rule out such strategies Statewide.

## History of Water Use Fees in Florida<sup>7</sup>

Water-use fees are not part of the contemporary political debate in Florida, but that was not always the case. The 1971 Model Water Code documented the usefulness of water fees, and in 1983 a governing board committee of the Northwest Florida Water Management District recommended a water use surcharge in lieu of property tax funding.

But the most significant milestone came in 1989, when Governor Bob Martinez's Water Resource Commission recommended a water-use fee, along with suggestions on how to spend the revenue:

*“Recommendation 18: Collect a fee from all users based on water used. Credits should be given for aquifer recharge, use of reclaimed water, reverse osmosis, desalination, or other alternative technologies. Funds shall be accrued in a Water Resource Trust Fund to be used for the following purposes: alternative sources development, promoting of area-wide water supply authorities, resource protection activities, water quality testing, Infrastructure improvement, and incentives for conservation for all users.”*

The recommendations from the Governor's Commission were vetted in a 1991 study by Chase Securities<sup>8</sup>, which studied the impacts of potential fee levels on the Florida economy and on water usage. **Chase concluded that a fee on public water supply and the agricultural and industrial sectors was feasible and would have minimal adverse economic effects.**

Water-use fees have been part of the State political discussion only intermittently since 1991. A bill on water-use fees was introduced in the legislature during the Chiles administration but failed. Other entities since have proposed or endorsed fees, including the South Florida Water Management District, Partners for a Better Florida Advisory Council, the Florida legislature's Office of Program Policy Analysis, the Conservation Committee of the Florida section of the American Water Works Association, and the aforementioned American Society of Civil Engineers.

Although the concept of fees on State-owned natural resources may sound foreign to some, Swihart points out that such fees are already common in Florida. Mining operations pay tonnage fees to the State for extracting phosphate rock, titanium ore, limerock, and sand, while per-barrel fees are levied on oil extraction.

## Water Conservation and Water Use Fees Outside Florida

Water managers in Florida have in fact instituted some water conservation programs. Examples include tiered pricing by utilities and best management practices for agricultural irrigation. But

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<sup>7</sup> This section draws heavily on Chapter 12 of Swihart's "Florida's Water".

<sup>8</sup> "Capitalizing a Water Resources Trust Fund with Water Use Fee Revenues: Feasibility and Effects". Chase Securities Inc. February 1991.

where Florida will eventually need to go in terms of water conservation is presaged by some of the extraordinary measures currently being taken to conserve water in the Western U.S.

Austin, Texas for example levies a \$475 fine for anyone caught watering landscape irrigation during daylight hours. Los Angeles pays residents \$2 per square-foot to rip out grass and install native plantings requiring no irrigation. Long Beach, California pays \$3 per square-foot. Most remarkably, Las Vegas has shelled out \$200 million over the past decade to residents willing to replace lawns with desert-scape. As a result, even with a growing population, Las Vegas's water use has declined by one-third over this period. Given the extent of landscape irrigation in Florida, these measures could be effective here as well. But so could water-use fees, which are charged in many states, including New Jersey, Kansas, Iowa, Minnesota, Kentucky, and California.

California's experience with water fees offers some interesting lessons for Florida. In the Golden State, for example, Swihart notes that in 2007 the Niagara Bottling Company paid more than \$320,000 for the use of 1106 acre-feet of water supplied by the Chino Basin Water District. On the other hand, none of Niagara's facilities in Florida, nor those of the many other water bottling companies operating in the state, pay a dime for the water that they extract from the aquifer. If Niagara can make a profit in California, it could doubtless make a profit in Florida while operating under a similar water fee.

The same logic holds for California agriculture, which provides about one-half of all the fruit, vegetables, and nuts consumed in the U.S. Agriculture is apparently profitable in California even though virtually all growers there pay substantial fees<sup>9</sup> for their water – fees which in the current drought have skyrocketed to as much as \$2000 per acre-foot. Florida agricultural interests have been active in the past in opposing water-use fees. But one might legitimately wonder – if California farmers can thrive paying water fees, why can't Florida farmers? Water fees in Florida might even serve to dampen the current trend of California farmers fleeing the drought and re-establishing themselves atop the already stressed Floridan aquifer.

### How Would Water Fees Work?

Water-use fees could yield multiple benefits to Florida's water resources, but there are many issues related to their implementation. Not all of these issues were addressed in the 1991 Chase Securities report.

The Chase study focused on three areas: (1) Projected water usage in the State and potential revenues from that usage, factoring in price elasticity (decrease in use expected for a given price increase) and various credits; (2) Operating assumptions for a Water Resources Trust Fund, including the mix of loans and grants, interest rates, leverage, and capitalization requirements; and (3) Impact of various fee levels, by County, on three major sectors: residential use, industry, and agriculture.

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<sup>9</sup> Many California growers obtain their irrigation water from long-term agreements with the U.S. Bureau of Reclamation. In the Imperial Valley rates are about \$20 per acre-foot. But many other growers depend on State-supplied water or water from privately run companies whose rates may be significantly higher.



**The Chase report is 25-years old and in the interim Florida’s water resources have become increasingly stressed. Given the potential for water fees to make a real difference for sustainability, an updated report should be funded by the Florida legislature.** The new report would cover the basics from the Chase study, plus other issues not addressed in that report, such as: (1) How to ensure that water fees are applied universally (if not identically); (2) Priority uses for revenues deposited into a Water Resources Trust Fund; (3) A review of water-conservation technologies in agriculture and industry and how their deployment might be affected by various fee levels<sup>10</sup>; (4) how to insure that residents in poverty would not be disadvantaged by water fees; (5) recommendations on how pricing might vary by region or type of usage; (6) how fees might be collected from residential self-supply wells; and (7) how to ensure universal metering; and (8) metering and billing options.

## Conclusion

Water may be replacing oil as the flashpoint for future political conflicts. In a 2015 report from the World Economic Forum, water crises were deemed the world’s biggest risk in terms of global impact, beating pandemics, weapons of mass destruction, and interstate conflicts. According to the International Monetary Fund, the solution is to use the price of water to subdue demand, and to stop allowing public subsidies to distort the market. “Water should not be a free good – the laws of demand and supply tell us that underpricing leads to overuse and under-supply. [There is] a role for price signals to rationalize water consumption.”

Nestle, the biggest food company in the world, has been aggressively cutting its water consumption, targeting a 40% reduction by this year. Chairman Peter Brabeck-Letmathe says, “The more you use, the higher the price. For rare resources, the economy of scale is the biggest mistake you can have.” Gregory Elders, an analyst at Bloomberg Intelligences reckons that “it’s just a matter of time before companies operating in California will have to pay for groundwater, as they already do in Australia”.

Water fees can work to reduce water consumption far more efficiently and fairly than the current strategies employed in Florida. As one of Florida’s most prominent business leaders notes: “In any situation where demand exceeds supply, the pricing mechanism is the most valuable tool available<sup>11</sup>”.

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<sup>10</sup> One example is food processing. We were told of a wine producer in California who formerly used 12 gallons of water to produce one gallon of product. Twelve gallons was the amount used in the plant once the grapes were delivered, not the amount used to irrigate or produce the grapes. That producer has reduced the ratio from 12:1 to 6:1 and is aiming at 3:1. These water-saving investments wouldn’t be economically sensible without a price signal in the form of water fees.

<sup>11</sup> The quote is from Preston Haskell, founder and CEO of the Design-Build Haskell Corporation. See Haskell’s opinion piece from the March 17, 2015 Jacksonville Times Union: <http://jacksonville.com/business/columnists/2015-03-17/story/guest-column-preston-haskell-calls-fees-aquifer-withdrawals>

**Florida faces many water challenges and by and large they are not being solved; they are being kicked down the road for the next crop of politicians and future generations to deal with. It is clearly time to re-consider a policy that hasn't been part of the political discussion for over two decades. Water fees need to be put back on that agenda, and the best place to start is with a serious update and expansion of the 1991 Chase study. Florida's political leaders in the past, including a Republican Governor, have had the courage to put this issue before the public. Who has the courage to do that today?**