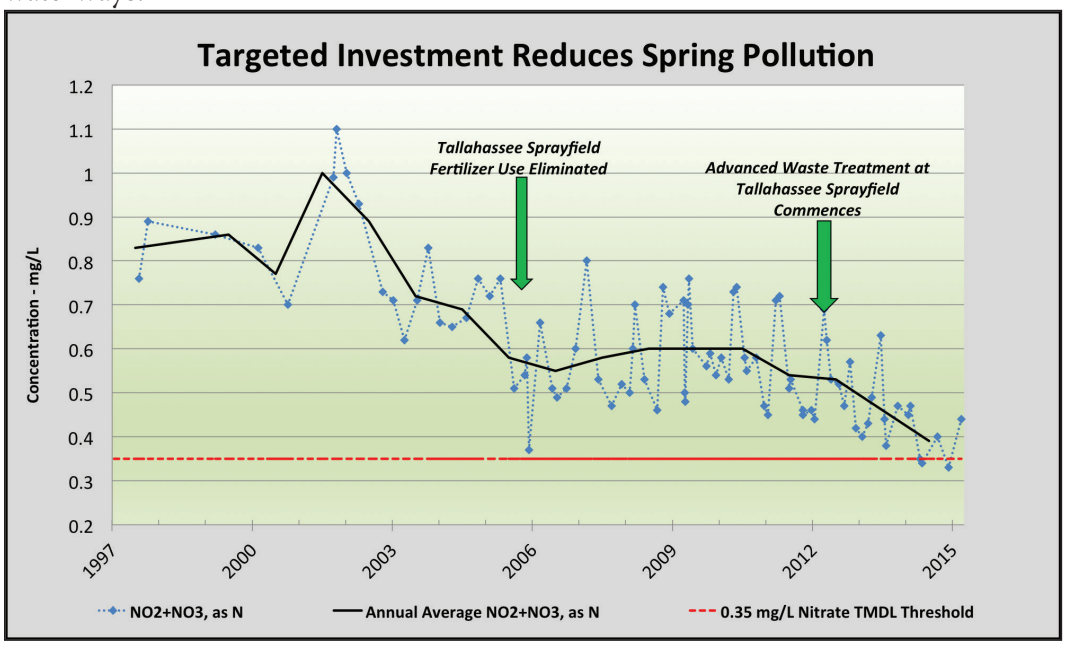
# Florida Department of Environmental Protection

## A Long-Term Commitment to Springs Restoration

**March 2015**

Governor Scott's proposed 2015-16 budget creates a dedicated source of funding that will address major pollution sources impacting our springs. The budget requests a $1.7 billion investment in springs restoration and protection over the next 20 years. This funding is key to reducing nitrate pollution in the state's waterways.

This proposed funding will play a vital role protecting the water quality of Florida's springs through proper wastewater, storm water and nonpoint source pollution control—all key to reducing nitrate loading in the state's waterways.




**Wakulla Main Spring Nitrate Concentrations**

**Importance of Water Quality Improvements** - Nitrate in the groundwater and springs can result in excessive algae growth and degraded habitat. Excess nitrate comes from insufficient treatment at wastewater treatment facilities, densely clustered septic systems, and agricultural operations.

**Funding Springs Restoration** - An estimated **$1.7 billion** is needed to address these nitrate sources in these springsheds, assuming a local match of 40 to 50 percent on all wastewater projects, including municipal facility and septic systems (approx. $1.1B) and 10 years of agricultural cost-share deployment (25 percent match, approx. $0.5B).

The information below, except where noted, is based on analysis of spring areas associated with Wakulla, Silver, Wekiwa-Rock, Lower Santa Fe-Ichetucknee, Volusia Blue, Weeki Wachee, Middle Suwannee River, Jackson Blue, Fanning-Manatee, Kings Bay-Homosassa-Chassahowitzka, and Rainbow springs.

**Septic Tank Systems** – For springs, the scenario that contributes the most problematic nitrates involves densely clustered septic systems (more than 4 per acre) that are within a 10-mile radius of the spring vent and in areas with well-drained soils and a lack of confining geologic layers to impede vertical movement of water. Costs vary widely, but passive septic systems, still largely in development, can be expected to average about $11,400/home.[1] Connecting to central sewer facilities, assuming the treatment facilities are already available, can reasonably be estimated at $14,000 per connection.[2] There are an estimated 153,059 permitted septic systems that lie within the above scenario of the 11 spring systems. These account for about 25 percent of the estimated total number of permitted systems within the springsheds.[3]

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[1]Average based on the following data, converted to 2012 dollars: $8,000 - $15,000 (DOH, Ursin, 2012); $11,364 - $15,910 (NitrexTM technology, Lombardo, 2006); $8,938 (from a report on the patented Bold and GoldTM system). [2] Low end per connection cost estimated at $5,200 (Florida Government Utilities Authority, 2009); high end per connection estimated at $17,900 (Jacksonville, 2003), which is consistent with data from the DEP State Revolving Fund loan program. [3]Based on GIS data layers of permitting information provided to DEP by DOH.

These infrastructure projects are traditionally funded through local-state partnerships. Local contributions typically range from 20-70 percent.

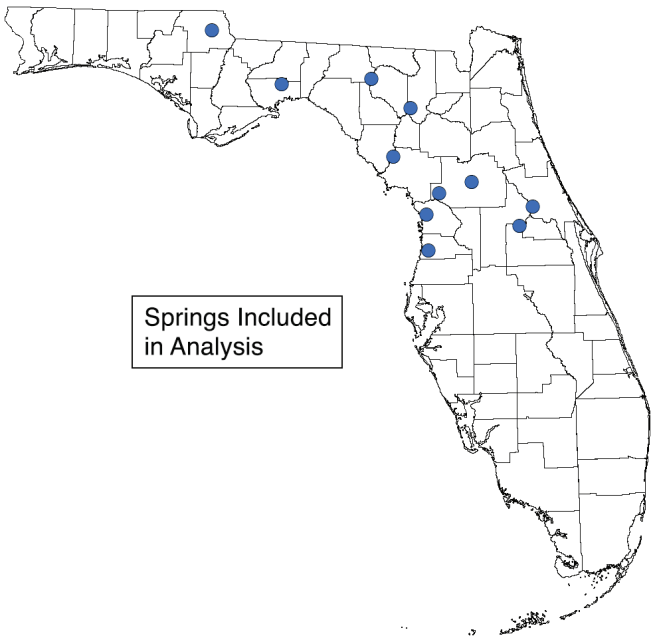
**Domestic Wastewater Facilities** – Insufficient nutrient removal during wastewater treatment also contributes to nitrogen loading to springs. In the areas of these 11 spring systems, there are 45 treatment facilities larger than 100,000 gallons per day. Assuming all facilities would be upgraded to advanced nitrogen reduction (ANR), the estimated capital cost is $155,950,080.

| Estimated Cost with Local Contribution to Reduce Nitrogen from Domestic Wastewater | | |
|---|---|---|
| **Percent Local Contribution** | **Retrofit plus Upgrade to ANR** | **Connect to Sewer plus Upgrade to ANR** |
| **20%** | **$1,520,658,144** | **$1,839,020,864** |
| **30%** | **$1,330,575,876** | **$1,609,143,256** |
| **40%** | **$1,140,493,608** | **$1,379,265,648** |
| **50%** | **$950,411,340** | **$1,149,388,040** |
| **60%** | **$760,329,072** | **$919,510,432** |
| **70%** | **$570,246,804** | **$689,632,824** |

**Agricultural Operations** – As a result of conventional fertilization practices, animal management, and water use, agricultural operations can also contribute nitrogen loading to spring systems. Best management practices (BMPs) are cost-effective, practical means by which agricultural operators can reduce nitrogen loading and better protect water quality while maintaining or even enhancing production.

Basic BMPs for owners that enroll in the Department of Agriculture and Consumer Services (DACS) program are paid by the owner entirely, and generally save owners money over the long term.

More advanced BMPs are implemented through cost-share programs with state and federal contributions of up to 75 percent and owner contributions of 25 percent. DACS has calculated an average cost per acre for typical BMP implementation for different production types.[4] These costs are applied to the statewide "Springs Protection Areas," the area DACS used for its calculations and which is broader than the areas of the 11 spring systems.[5] As of late 2013, an estimated 22 percent of growers were enrolled in the BMP program within the Springs Protection Areas and are required to implement owner-only BMPs.[6] To implement the more advanced cost-share BMPs across the Springs Protection Area, the estimated cost, including owner contributions, would be $68,832,880.




[4]Information from DACS Office of Water Policy, R. Budell, 8.29.13. [5]Florida Geological Survey Open File Map Series No. 95, 2005 available at www.dep.state.fl.us/geology/publications/LOP-webPages/LOP_maps.htm#ofms_list. [6]Information on agricultural BMPs in general is available from DACS at www.freshfromflorida.com/Divisions-Offices/Agricultural-Water-Policy/BMP-Implementation.