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Water Resource Management/Environmental Assessment & Restoration

Wekiva Nitrate Sourcing

In the 2006-07 General Appropriations Act, line item 1798, the Florida Legislature established the following requirement for the department:

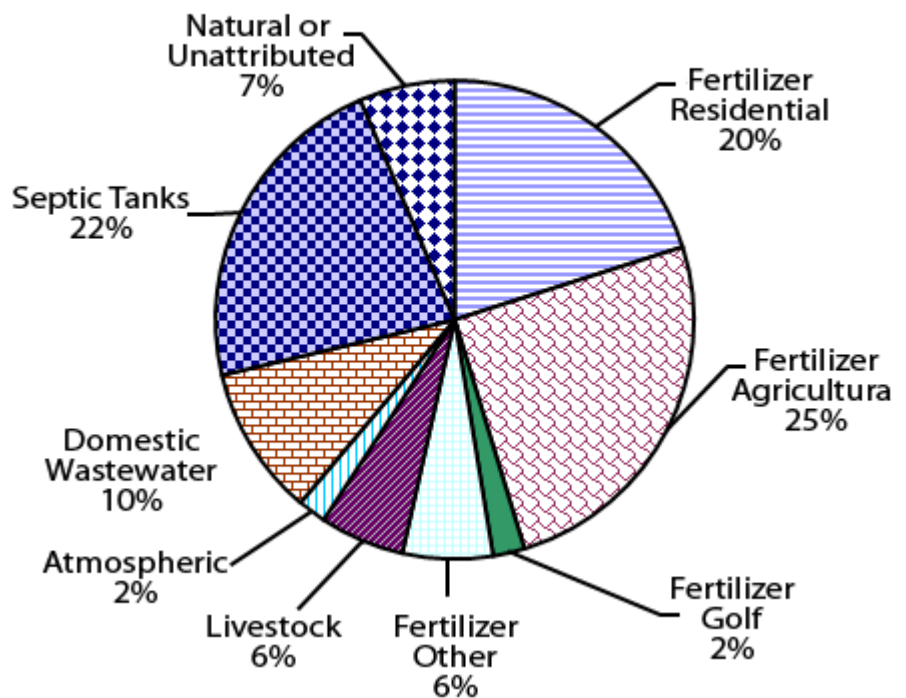
"From the funds in Specific Appropriation 1798, \$250,000 from the General Revenue Fund is provided to conduct a Wekiva River and Florida Aquifer study to determine nitrate impacts to the system."

The Divisions of Water Resource Management and Environmental Assessment & Restoration have undertaken the required study in conjunction with the St. Johns River Water Management District. It was divided into two phases.

Phase I

Phase I of the study involved an assessment of available data on nitrate impacts to the Wekiva River and Floridan aquifer system, preliminary identification of relative nitrate contributions to water resources in the area and an identification of data gaps to be filled. The work was performed under contract by MACTEC, Inc., a large consulting company that specializes in a

Loading by Source Type - Phase I



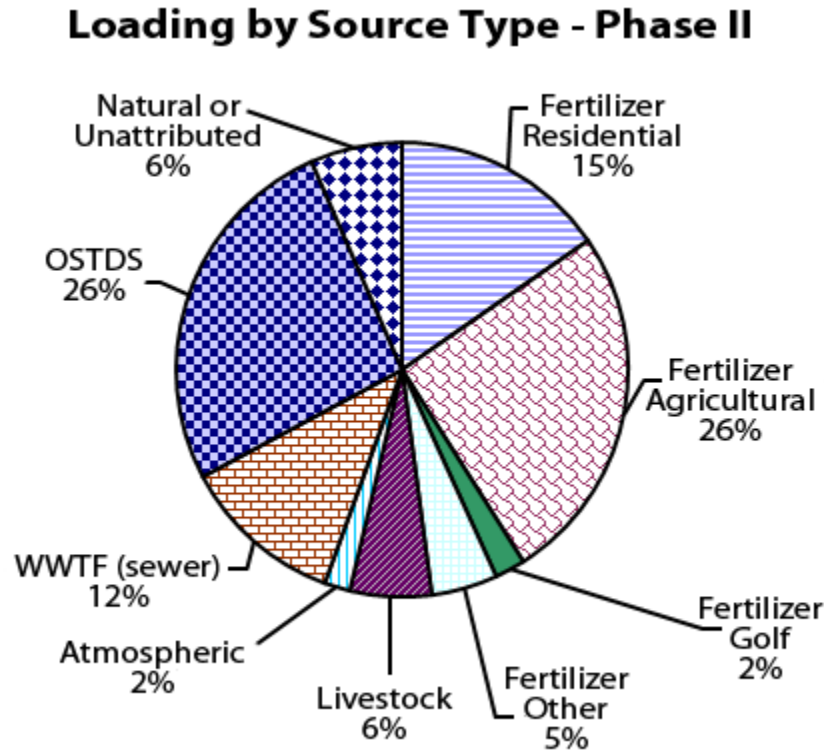
wide variety of scientific and engineering disciplines. MACTEC's findings on the preliminary issues it was contracted to investigate are available in the [Phase I Report, Wekiva River Basin Nitrate Sourcing Study](#), prepared for the department and the St. Johns River Water Management District. (The document is large, with 183 pages of text, graphs, charts and maps, and it will take time to download.)

As noted, the Phase 1 MACTEC report represents a preliminary investigation based on existing data. It is not a final accounting of nitrate impacts in the Wekiva area nor does it reflect final conclusions or recommendations associated with the study the department was charged with conducting. Phase I estimates of nitrate loadings to the Wekiva Basin,

partitioned by source, are shown in the figure to the right.

Phase II

Phase II of the department's study tested and supplemented the work MACTEC did in Phase I in order to provide an effective assessment of nutrient impacts on water quality in the Wekiva area and inform future public policy decisions at the state, regional and local levels. [The final Phase II report can now be downloaded.](#)



Phase II revisited an important area of uncertainty identified by the Phase I study - the effects of residential fertilizer. To reduce uncertainty associated with this source type, FDEP funded the [University of Central Florida to survey residential fertilizer practices](#) and lawn management activities in the Wekiva Study Area (WSA). In addition, the [St. Johns River Water Management District \(SJRWMD\) conducted field studies](#) of nitrate concentrations in shallow ground water from fertilizer application in residential areas with the Wekiva Springs springshed.

[St. Johns River Water Management District \(SJRWMD\) conducted field studies](#) of nitrate concentrations in shallow ground water from fertilizer application in residential areas with the Wekiva Springs springshed.

[Links to additional reports](#)

Consider the following:

Nitrate loading from septic tanks has been documented in several parts of Florida, including the Wekiva Study Area. The findings of DEP's Phase I study are generally consistent with the Department of Health Final Project Report, Nitrogen Impact of Onsite Sewage Treatment and Disposal Systems in the Wekiva Study Area, dated June 30, 2007. As well as the more recent [Florida Department of Health companion studies in 2008](#), including groundwater monitoring in the WSA.

Domestic wastewater, a DEP-regulated source, is routinely monitored against specific pollutant limits and therefore has a well known and documentable source contribution.

Agricultural fertilizers have been well studied and reliable data describing nitrate loadings from various agricultural activities is readily available.

The Phase I estimate for source contribution for residential fertilizer changed (compare Phase I chart above to Phase II chart below) as a result of the Phase II study, and the relative impact of other source contributions were adjusted. This Final Report presents a best estimate of inputs of nitrogen to the Wekiva Basin and nitrate loadings to the River, incorporating findings from recent state-funded studies within the study area and related

technical information. The report also addresses stakeholder comments on the Phase I study.

If you have questions about the Phase II study, please contact Bonnie Hall at bonnie.hall@dep.state.fl.us.

Domestic Wastewater Treatment in the Wekiva Study Area

DEP's original 2004 study, [A Strategy for Water Quality Protection: Wastewater Treatment in the Wekiva Study Area](#), is also available. This led to development of DEP's specific Wekiva wastewater rules, [62-600.550, Florida Administrative Code](#).

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