

Bureau of Watershed Restoration

During the Lake Munson Drawdown...

June 30, 2011

Year 2011, Quarter 2

The Watershed Evaluation and TMDL Section conducted a sediment biogeochemical study to quantify temporal and spatial changes in nutrient composition (i.e., leachable phosphorus and nitrogen, organic carbon, total phosphorus and total nitrogen) of Lake Munson sediments in response to the recent lake drawdown. Sediment and water quality sampling began on 2/21/11 and continued monthly through 5/24/11. Surface (top 2 cm) and core sediments were retrieved at selected sites within the lake, whereas surface water quality samples were collected from upstream, downstream, and in-lake for each sampling event. Biogeochemical oxidation/reduction in sediment was

of particular interest, to gain an understanding of the importance of in-situ nutrient regeneration during the drawdown. Thus, sediment pore water was extracted from sliced sediment cores under a nitrogen atmosphere in a homemade oxygen-free chamber. Although only a very small volume (< 15 mL) of pore water was extracted, nutrients and major ions in the pore water were successfully analyzed in our laboratory. Preliminary results obtained from pore water and surface water quality

data indicate that the organic-rich sediments resulted in elevated levels of NH₄ and PO₄ in the pore water, possibly as a result of bacterial degradation during the lake drawdown. More specific information will be gathered as sediment samples are analyzed. Our current efforts offer a unique opportunity to use this information to inform the BMAP process and local governments that are responsible for the protection of Lake Munson and downstream waters. For more details, contact [Woo Jun Kang](#) or [Douglas Gilbert](#).



QA Management Plan

Each section has been tasked with developing Quality Assurance (QA) Plans for procedures, data management, and sampling in order to ensure compliance with the QA Management Plan accepted by EPA in 2009. Sections should have their draft QA Plans completed by June 30 in order to be reviewed and finalized by the end of August. Please see the [QA Assessment and Restoration Support website](#) for more information or contact [Devan Cobb](#) with any questions.



Fertilizer Ordinances Passing Throughout the State

Following the 2009 legislative session, the urban fertilizer use ordinance in the *Florida-Friendly Guidance Models for Ordinances, Covenants, and Restrictions* was made a mandatory minimum standard in impaired watersheds and the model ordinance was encouraged in communities throughout the state. The statute provides that local governments may be more stringent than the model ordinance if they demonstrate that more stringent measures are necessary, based on science,

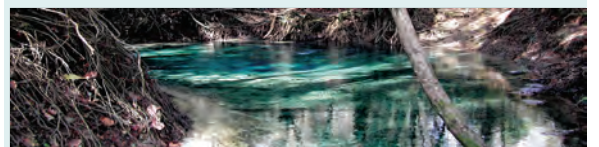
economics, and technology, to address nonpoint sources of pollution. As a result of this provision, many communities instituted a summer fertilization black-out period; that is, a ban on application and, in some cases, retail sales, during summer months. In 2011, the legislature banned blackout periods in ordinances passed after July 1. DEP presently funds two studies to investigate leaching and runoff of nutrients from turfgrass, which should provide invaluable

information about runoff rates and rainfall. Additionally, the Nonpoint Source Section has been busy reviewing and providing comment on communities' ordinances. In its review, DEP provides scientific comment on certain provisions and notes whether the proposed local ordinance is more or less stringent, or otherwise not consistent with the 2010 model ordinance. Want more information? Contact [Mike Thomas](#).

Documenting New Springs

The Ground Water and Springs Protection Section (GWSPS) has maintained a statewide springs database for 7 years and is still logging new springs. When GWSPS first began this process there were approximately 700 springs in the database and much of the information for many of them was questionable. GWSPS has added more than 250 spring vents in the past couple of years and now have over 1014 springs catalogued. The information for the spring stations has been assembled as the FDEP Springs Masterlist, which is routinely distributed to the public and other agencies. Recently, this information has been published as the

[Springs \(2011\)](#) GIS layer that you can now access through Data Miner on the SDE. This [Springs \(2011\)](#) layer will also be available for those who use Map Direct. Important features include the standardized spring names that distinguish springs with similar names, magnitude for individual spring vents, and dependable locations. This dataset provides a solid foundation for all spring assessment work done by FDEP and others. GWSPS owes its existence to the hard work of Debra Harrington, Jing Wang, and its data providers.



BMAP Annual Reports Document Successes

It is one great accomplishment to get a BMAP adopted; it is another great accomplishment to see the results of the BMAP come to fruition. Annually, BMAP stakeholders meet to review accomplishments and goals. The annual reports summarize load reductions achieved by projects implemented in the past year as well as the status of current projects and upcoming activities for the following year. The table below demonstrates the accomplishments for the Lower St. Johns River which, for 2010, was in its second year of the

BMAP. The load for agriculture could not be estimated in KG/YR; however, the annual report provides a narrative summary of what producers have done to improve water quality. BMAP annual reports are posted on the BMAP [web page](#). These reports document how our Bureau works to identify the problems with state water quality, formulates solutions, and follows through with implementation. Good job, everyone!

Progress Towards the TN TMDL in the Freshwater Section

SOURCE	% OF CONTROL-LABLE LOAD	STARTING LOAD (KG/YR)	2010 LOAD (KG/YR)	ALLOCATION (KG/YR)	REMAINING REDUCTIONS (KG/YR)	% COMPLETE
WWTF	47%	364,650	227,045	227,239	-194	100%
MS4	1%	9,731	8,685	8,685	0	100%
Non-MS4	17%	88,705	77,317	74,119	3,198	78%
Agriculture*	40%	310,700	310,700	194,336	116,364	0%
Total	100%	773,786	623,747	504,378	119,369	56%

*Note: Reductions associated with BMPs implemented by producers has not yet been estimated.

“All you need is a plan, [a] map, and the courage to press on to your destination.”

~Earl Nightingale

From the Watershed Data Services Section...

STORET

FDEP continues to lead the nation in data submittals to the U.S. EPA Water Quality Exchange (WQX). To date, the STORET team has uploaded over 2 million records to WQX, with 725,000 records uploaded this quarter. U.S. EPA has heartily commended our STORET team for this achievement – and so do we! Also during this quarter, in coordination with our data providers, 450,000 water quality records were uploaded to Florida STORET, bringing the total to 23.4 million records. Want more info? Click [here](#) or see the [H2O Drop newsletter!](#)

GIS

Amidst some of their “other” works, the GIS team provided a large volume of maps, data and support to the DEAR Division Office to be used in Numeric Nutrient Criteria communications and reporting with U.S. EPA and the public. Also during this quarter, our Land Use



The 2011 Springs GIS layer is now available via Data Miner!

Land Cover (LULC) team completed the photointerpretation edits for Northwest Florida (2009-2010 LULC cover, ~7.6 million acres).

NHD

Our NHD team is ahead of schedule to complete a preliminary data review including a first round of edits on all 55 sub basins in the state by December, 2011 – work remains on only 6 sub basins. The Florida NHD GIS layer was updated to reflect the completed sub basin work and made available through Data Miner in June. See [DEP's NHD website](#) for additional information.



Potter Creek Spring: Algae in the spring run very close to vent. (Taken 3/17/11 by Laura Hester)

Springs Coast Assessment for Verified Listing

The Ground Water and Springs Protection Section (GWSPS) provides assistance to the Watershed Assessment Section (WAS) in the assessment of springs for impairment. The recent Springs Coast Group 5 assessment provided a major challenge with 93 springs in 27 WBIDs. The GWSPS collected data at over 85 stations, identified springs with elevated nitrate, and compiled a shorter list of 31 springs that required documentation of imbalance of flora and fauna. Each of these 31 springs was visited and received an algal site assessment that consisted of photo-documentation and a sketch of the extent of algae if impairment was observed. Once this field information was obtained, the GWSPS provided a

springs report for each WBID to WAS staff in order to assist them in the decision about the Verified List. These very specific springs reports included a variety of information about nitrate levels, vegetation studies, algae or diatom taxonomy, ground water flow directions and divides, springshed boundaries, maps, and photographs. The GWSPS also made recommendations about the WBID boundaries and ultimately whether those spring WBIDs should be placed on the Verified List for nutrients (per Rule 62-302 narrative criteria based on algal mats). Of the 27 WBIDs that were assessed, 15 WBIDs (which included 62 springs) were placed on the Draft Verified List for nutrients.