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December 8, 2010

Lesley Bertolotti  
South Florida Water Management SFWMD  
MS 7431  
3301 Gun Club Road  
West Palm Beach, FL  
Via Email: [lbertolo@sfwmd.gov](mailto:lbertolo@sfwmd.gov)

**RE: Lake Okeechobee Protection Plan 2011 Update Recommendations**

Dear Ms. Bertolotti:

This letter constitutes Audubon's comments on the Lake Okeechobee Protection Plan draft update (draft LOPP), released November 9<sup>th</sup>, 2010.<sup>1</sup> While the draft LOPP reflects an impressive amount of agency effort and knowledge, it does not describe a blueprint for the recovery of Lake Okeechobee, its watershed, and the Northern Everglades. The draft LOPP neither articulates the necessary directives, nor supplements such directives with explicit budget proposals and timelines to meet the legislatively mandated phosphorus total maximum daily load (TMDL) by 2015. Therefore, Audubon of Florida offers suggestions regarding source control, water quality treatment, and dispersed water management (DWM) for the draft LOPP update for your consideration.

The accumulation of legacy phosphorus and phosphorus stored within in-lake sediments continues to increase at rates worthy of grave concern. The draft LOPP reports that the net phosphorus imports for improved pastures increased by 15 percent from previous data collected in 2004.<sup>2</sup> Despite reported phosphorus loading decreases attributable to two land use types, which the draft LOPP acknowledges are possibly temporary due to economic conditions, Tables 4-1 and 4-2 demonstrate an alarming rate of total phosphorus import to the sub-watershed, at 6088 metric tons (mt).<sup>3</sup> Urban land uses, while only 12 percent of the watershed, account for 29 percent of the total net phosphorus import.

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<sup>1</sup> See "Draft Lake Okeechobee Protection Plan Update." November 2010 (draft LOPP)

<sup>2</sup> Draft LOPP at 55.

<sup>3</sup> Draft LOPP at 54.

The 2011 update of the Lake Okeechobee Protection Plan should be a course correction that lists policy and spending recommendations to guide the South Florida Water Management District (SFWMD), Florida Department of Agriculture and Consumer Services (FDACS), and Florida Department of Environmental Protection (FDEP), and make recommendations to the Legislature and agencies to craft necessary changes in laws, rules and budgets necessary to implement the plan's goals. The 2007 Lake Okeechobee Protection Plan states, "If actual [Best Management Practices (BMP)] performance does not meet initial expectations, the Lake Okeechobee Protection Act (LOPA) requires that BMPs be appropriately modified to improve their effectiveness. Should there be a significant deviation from the assumptions and performance expectations of this Plan, the plan will be modified accordingly."<sup>4</sup> In light of alarmingly high phosphorus levels, the draft LOPP must, but has not, been modified accordingly.

The comments in this letter were collaboratively developed by Dr. Paul Gray, Science Coordinator of Audubon's Lake Okeechobee Watershed Program, Jane Graham, Esq., Everglades Policy Associate, and Charles Lee, Audubon's Director of Advocacy. Specific recommendations for text insertions are keyed to the line numbering system in the draft LOPP.

### **1. Source Control**

Meeting Lake Okeechobee's phosphorus TMDL by 2015 is mandated by the LOPA and is an essential priority for Everglades restoration. Source control offers the least expensive solution to improve water quality in the Northern Everglades. Audubon makes the following suggestions for the draft LOPP update.

#### ***Nutrient Source Control from Agricultural Sources***

- *Adequate funding for BMP Implementation is essential but missing in the draft LOPP. The current draft LOPP states at line 3628:*

*"Recent funding shortfalls have slowed the pace of implementing the more capital-intensive components of the BMP program, such as rehydration of wetlands, installation of water control structures, and construction of edge-of-farm retention/detention facilities. As funding is made available, these projects will be prioritized and installed, as envisioned."*

*Audubon believes that it is not good public policy to simply write a statement that progress is failing due to lack of funding. Audubon recommends that the draft LOPP be revised as follows:*

**Insert at Line 3628:** A budget will be established that illustrates the necessary funding to fully carry out the BMP program to implement all of the elements of the program necessary to achieve Lake Okeechobee water quality improvement.

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<sup>4</sup> Lake Okeechobee Protection Program, Lake Okeechobee Protection Plan Evaluation Report, February 23, 2007 at 32, available at [https://my.sfwmd.gov/portal/page/portal/pg\\_grp\\_sfwmd\\_koe/portlet\\_northerneverglades/tab2302089/lopp\\_report2007.pdf](https://my.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_koe/portlet_northerneverglades/tab2302089/lopp_report2007.pdf).

- *The premise of BMPs should be changed to base phosphorus application rates on water quality goals for receiving waters. SFWMD should propose specific collaborative work with the FDACS to revise BMPs to reduce phosphorus loading in the basin to meet the TMDL number when implemented. We suggest the following specific changes in the draft LOPP:*

**Insert at Line 3614:** “The SFWMD, FDACS, and FDEP will work together to revise BMPs to reduce phosphorus loading in the basin to meet the applicable TMDL number when implemented. Phosphorus application rates will be based on water quality goals for receiving waters.

**Insert at Line 3837:** “However, due to increasingly stringent water quality and quantity pressures, the driving force behind BMPs must be rethought, and retooled in order to meet the 2015 TMDL goal. Coordinating agencies should base phosphorus application rates on water quality goals for receiving waters, and revise the BMPs to reduce phosphorus loading in the basin to meet the TMDL number.”

- *Restrict the addition of phosphorus in feedstock and fertilizer by working with FDACS to develop nutrient balance methodologies. The pounds in = pounds out formula would allow for the application of phosphorus in fertilizer or feedstock only where the same amount of phosphorus is removed from the basin.*

**Insert at Line 3628:** “New revisions to BMPs will restrict the addition of phosphorus in feedstock and fertilizer by developing nutrient balance methodologies. The pounds in = pounds out formula would allow for the application of phosphorus in fertilizer or feedstock only where the same amount of phosphorus is removed from the basin.”

- *Report the level of BMP implementation in several categories to better reveal progress and results.*

**Insert at Line 3620:** “However, a systematic method of accurately reporting the actual meaningful accomplishments in BMP implementation is needed. The coordinating agencies will develop an amended memorandum of understanding on source control containing a new BMP implementation reporting program that requires reporting the progress of BMP implementation in several categories. The suggested reporting levels are 1) fully implemented and functioning cost-shared BMPs, 2) fully implemented land owner BMPs without functioning cost share for further work and 3) signed letters of intent with incomplete implementation.”

**Insert at Line 3877:** “There will be a new program instituted for reporting of BMP implementation to provide for greater accountability and transparency throughout the BMP program.”

**Insert at Line 3878: “BMP Implementation Reporting Program:**

The coordinating agencies will develop an amended memorandum of understanding on source control containing a new BMP implementation reporting program that requires reporting the progress of BMP implementation in several categories. The suggested levels are 1) fully implemented and functioning cost-shared BMPs, 2) fully implemented land owner BMPs without functioning cost share for further work and 3) signed letters of intent with incomplete implementation. This breakdown will make clear the functional level of BMP implementation that is actually taking place, and the potential for actual phosphorus reduction.”

- *Develop Edge of Farm treatment requirements for landowners implementing BMPs that still fail to achieve appropriate reductions.*

**Insert at Line 3634:** “In the short term, edge-of-farm treatment requirements will be developed for farms operating under BMPs that fail to achieve appropriate phosphorus reductions.”

**Insert at Line 3835: “Water re-use:** Develop models and formulas for requirements for reuse that increase agricultural flexibility while reducing runoff volumes and loads.”

**Insert at Line 3837:** “Require manure spreading from animal operations to follow the same nutrient balance and tissue testing requirements as for human wastes.”

**Insert at Line 3837:** “Nutrient balance methodologies will be developed to restrict the addition of phosphorus in feedstock and fertilizer. A pounds in = pounds out formula will be developed to allow for the application of phosphorus in fertilizer or feedstock only where the same amount of phosphorus is removed from the basin. Manure spreading from animal operations will be required to follow the same nutrient balance and tissue testing requirements as for human wastes.”

- *Pursue implementation of the Dairy Best Available Technologies Program (DBAT) at all dairies.*

**Insert at Line 3689:** “Dairy phosphorus outflows remain disproportionately high to be compatible with Lake Okeechobee’s phosphorus TMDL. The DBAT Pilot Program was successful and should be pursued on all dairies. The three functional processes to reduce phosphorus loading from dairies were (a) water recycling, (b) water retention on site, and (c) effluent treatment with chemicals. The excellent results, some in the range of 100% reduction of phosphorus loading from individual sites, warrant implementation at all dairies and funding for such is needed. The potential average annual phosphorus load reduction from these

projects that have been constructed is estimated at 26 mt but could be increased if all dairies had DBATs installed.” With proper funding, this could be completed by 2015.”

**Insert at Line 4484:** Category of Cost. At this point insert a proposed budget for the Dairy BAT program.

- *Develop and specify Edge of Farm treatment methods that are appropriate for the commonly occurring agricultural operations in the Northern Everglades not meeting tributary water quality goals.*

**Insert at Line 3634:** “These Edge of Farm treatment methods, threshold criteria, and monitoring methods, will be developed and specified for the commonly occurring agricultural operations in the Northern Everglades that are not meeting tributary water quality goals. The budget and timeline for Edge of Farm Treatment is as follows: (Insert Budget and Timeline).”

- *Utilize the basin nutrient load model. This model was developed by the SFWMD to determine the amount of phosphorus additions allowable in each sub-basin. This will be based on attaining the TMDL that conforms to Lake Okeechobee Operating Permit allowances. Translate the number into an appropriate loading/concentration target number for all tributaries.*

**Insert at Line 3614:** After our insertion ending with “receiving waters,” (see pg 3 of this document), “Furthermore, the basin nutrient load model developed by the SFWMD to determine the amount of phosphorus additions allowable in each basin will be based on attaining the TMDL loading number and accounting for planned regional water quality projects. The number will then be translated into an appropriate loading/concentration target number for all tributaries.”

**Insert at Line 4287:** “The amount of phosphorus reduction is dependent upon how many projects are implemented and at what rate. Thus, the faster these projects are implemented, the higher the reduction of phosphorus within the Lake Okeechobee basin.”

- *Allocate funds in the FY 2011-12 budget to support the development, rulemaking, and implementation of the above suggestions.*

**Insert at Line 3599:** “Funding needs in the FY 2011-12 budget will be specified to support the development, rulemaking, and implementation of the suggestions.”

### ***Biosolid Controls***

- *Work with the FDEP to amend the Biosolids Rule 62-640 FAC to revise BMP criteria for AA biosolids to require fertilization rates to assure TMDL compliance. Establish a balance between basin nutrient inputs and exports.*

- *Require wastewater plant operators shipping AA material to sites within the Okeechobee, Caloosahatchee and St. Lucie Basins to document the proper agronomic soil and plant tissue tests for phosphorus and nitrogen indicating a need for the application of that fertilizer.*
- *Draft an interagency agreement between the SFWMD and the DEP, and work with the DEP to amend 62-640, FAC to train and deploy SFWMD field personnel to help enforce the Class B land spreading prohibition in the Okeechobee, Caloosahatchee and St. Lucie River Basins. Coordinate on tracking the remaining Class B permits.*
- *Document and annually report the amount of Class B biosolids imported to the basin under old permits and the amount of Class AA biosolids imported to the basin.*
- *Improve the tracking mechanism for the limited uses of Class AA allowable in the basin. Report AA use for SFWMD boundaries, and Okeechobee watershed boundaries, rather than county totals.*
- *Revise the Phase II Technical Plan of the Lake Okeechobee Watershed Construction Project (LOWCP) to phase out the use of AA material entirely within the Okeechobee, St. Lucie and Caloosahatchee basins.*

**Insert at Line 3650:** “The amendments regarding monitoring, reporting, and recordkeeping of biosolids will be helpful in tracking compliance. 62-640.650. The coordinating agencies are further discussing these amendments, especially in regards to AA solids. The coordinating agencies will now engage in the interpretation of the new biosolids rule, and craft additional guidance. The goal for the biosolids amendments is to establish a balance between basin nutrient inputs and exports. The new biosolids amendments and guidance will create a framework that mandates the following actions:

1. BMP criteria for AA biosolids will require fertilization rates to assure TMDL compliance.
2. Wastewater plant operators shipping AA material to sites within the Okeechobee, Caloosahatchee and St. Lucie Basins will be required to document the proper agronomic soil and plant tissue tests for phosphorus and nitrogen indicating a need for the application of that fertilizer.
3. Additional staff from the coordinating agencies, including SFWMD field personnel, will be trained and deployed to help enforce the Class B land spreading prohibition in the Okeechobee, Caloosahatchee and St. Lucie River Basins. There will be further coordination on the tracking the remaining Class B permits.
4. Class B biosolids imported to the basin under old permits and the amount of Class AA biosolids imported to the basin will be documented and annually reported.

5. The tracking mechanism for the limited uses of Class AA allowable in the basin will be improved to account for all materials applied. Coordinating agencies will provide further guidance for the amendments appearing in the Biosolids Rule at 62-640.650.
6. Reports will reflect AA use for SFWMD boundaries, and Okeechobee watershed boundaries, rather than county totals.
7. The Phase II Technical Plan of the Lake Okeechobee Watershed Construction Project (LOWCP) will phase out the use of AA material entirely within the Okeechobee, St. Lucie and Caloosahatchee basins.”

### ***Controlling Other Urban Nutrient Sources***

- *Amend the Environmental Resource Permit (ERP) Rule 40E-4, FAC to require the monitoring of phosphorus and nitrogen above certain threshold sizes as an ERP permit condition in the Okeechobee basin. It should also mandate low impact development techniques and use Florida Friendly native landscaping to avoid the need for supplemental irrigation.*
- *Undertake independent rulemaking to establish specific TMDL related stormwater criteria for the Okeechobee basin, requiring nutrient monitoring for both phosphorus and nitrogen in all ERP permits above certain threshold sizes. Provide safe harbor provisions, such as no discharge= no monitoring, or 100% native vegetation & no irrigation = no monitoring. Provide incentives to property owners who construct stormwater systems with a PRE/POST reduction outcome (where PRE is pre-modern impact), to include nutrient reduction credits that can be traded in a stormwater mitigation scenario.*
- *Require that development projects do not add nutrient loading to the system.*
- *Revise Rule 40E-24, FAC, and work with the DEP to amend 62-520, FAC to make special provisions for the use and distribution of reclaimed water in the Okeechobee basin. Discourage the use of reclaimed water for residential and commercial landscape irrigation unless there is an affirmative demonstration that the wastewater will not add nutrients to downstream waters.*
- *Continue providing strategic support and input to the DEP for the development of the Unified Statewide Stormwater Rule, 62-347, FAC, urging them to adopt the above suggestions.*

**Insert at Line 3678:** “Some improvements the guidance memorandum will include are as follows:

1. Specific TMDL related stormwater criteria for the Okeechobee basin will be established through amendments to the ERP Rule.

2. The monitoring of phosphorus and nitrogen above certain threshold sizes will be a requirements for an ERP permit condition in the Okeechobee basin
3. Safe harbor provisions, such as no discharge = no monitoring, or 100% native vegetation & no irrigation = no monitoring.
4. Development projects are required to not add nutrient loading to the system.
5. Special provisions for the use and distribution of reclaimed water in the Okeechobee basin will be developed, discouraging the use of reclaimed water for residential and commercial landscape irrigation unless there is an affirmative demonstration that the wastewater will not add nutrients to downstream waters.

### **Stormwater Mitigation Program**

The new program will provide incentives to property owners who construct stormwater systems with a PRE/POST reduction outcome. Nutrient reduction credits can be traded in a stormwater mitigation scenario.

### **Comprehensive Planning/Land Development Regulations**

In 2009, the FDEP, in collaboration with the SFWMD, finalized the Nutrient Loading Considerations for Planning Decisions in Northern Everglades and Estuaries Protection Program (NEEPP) Watersheds report (a.k.a., “white paper”). The white paper provides guidance to the FDEP and SFWMD when working with local governments to meet the NEEPP requirements. It also explains how existing growth management processes can further the restoration and water quality objectives of the NEEPP. However, as guidance, this current document does not hold much binding authority, and SFWMD staff must persuade, rather than mandate, local governments that the directives of the “white paper” are followed. As a solution, the coordinating agencies will enter into a memorandum of understanding to create binding authority to the ideas expressed. The memorandum will include:

1. Low impact development techniques and use “Florida Friendly” native landscaping will be required throughout the Okeechobee Basin and estuaries to avoid the need for supplemental irrigation.
2. A high-visibility program with representatives from the coordinating agencies will be created to provide advice and recommendations to the Department of Community Affairs (DCA) and local governments on proper methods to minimize nutrient generation by urban developments. The program should produce specific recommendations for local



ordinances and use by DCA in the Comprehensive Plan Amendment and Evaluation Appraisal and Review (EAR) processes. It should be more mandatory than persuasive in authority.”

## **2. Treatment**

*Water quality treatment is an expensive alternative to prevention, consumes land that could be put to other uses, and requires major investments of public and private funds. For example, this year the SFWMD allocated \$111.5 million for the continued construction of stormwater treatment area (STAs), over \$15 million for the Lakeside Ranch Phase III projects, and almost \$27 million for long term operations and maintenance.*

### ***Stormwater Treatment Areas/ Hybrid Wetland Technologies***

- *Include critical decision points and basin prioritization schedule for the design, construction and implementation of additional treatment areas. Pinpoint optimal treatment construction locations through the nutrient loading model.*
- *Pursuant to Fl. Stat. 373.453(6) and Fl. Stat. 373.459(2), contract with private investors/landowners to construct water quality treatment features and pay them for phosphorus removal on a payment for environmental services (PES) basis. The SFWMD should design specifications for water quality feature construction, establish a “price per pound” for phosphorus removal to serve as a basis for private investment, and evaluate results and compare performance/cost basis with known results of SFWMD constructed STAs.*

**Insert at Line 3737:** “Regional projects including STAs and reservoir-assisted stormwater treatment areas (RASTAs) will also be part of the strategies to address the water quality problems. With funding constraints in mind, future plans will include critical decision points and basin prioritization schedule for the design, construction and implementation of additional treatment areas. Optimal treatment construction locations will be re-assessed in light of new and innovative private partnership mechanisms. The SFWMD and FDEP will pursue creation of a PES program for the construction and operation of treatment facilities.

The SFWMD will contract with private investors/landowners to construct water quality treatment features and pay them for phosphorus removal on a PES basis. Design specifications for water quality feature construction will be provided. A market based competitive “price per pound” for phosphorus removal will serve as a basis for private investment. The results will then be evaluated, comparing results against other treatment technologies.”

**Insert at Line 3740:** “The 2,700 acre Lakeside Ranch STA, of which Phase I is nearing completion with projected costs of \$76 million, will remove approximately 19 mt of phosphorus per year. Pre-treatment of these waters with a chemical precipitation process, or other treatment designed to reduce the

phosphorus loading of the STA, working as a treatment train with the STA itself could substantially increase the tons of phosphorus removed. Thus, for the maximization of cost effectiveness and efficiency, efforts to pre-treat the water in this project through chemical precipitation will be expedited. Funds saved will be relocated to a budget increase for the implementation DWM projects, and help expedite efforts to and nutrient removal projects constructed on a pay for performance basis.”

**Insert at Line 3757:** Insert a proposed budget for these projects at this location.

### ***Alternative Treatment***

- *Emphasize technologies to remove phosphorus and nitrogen through chemical precipitation, algal turf scrubbers, physical removal and other mechanisms on a pay for performance basis.*
- *Expedite funding for the evaluation and demonstration of technologies that could harvest algae biomass and suspended sediments from Lake Okeechobee’s water column.*
- *Organize proposals for alternative treatment technologies into separate tracks for 1). existing STAs, 2). in-lake phosphorus laden sediments, and 3). concentrated inflow points of phosphorus discharge to Lake Okeechobee.*

**Insert at Line 3697:** “In addition to promoting further research and development of these technologies, this plan emphasizes technologies to remove phosphorus and nitrogen through chemical precipitation, algal turf scrubbers, physical removal and other mechanisms on a pay for performance basis. In response to the large variety of alternative technology proposals, the coordinating agencies will organize proposals for alternative treatment technologies into separate tracks for 1). Existing STAs 2). In-lake phosphorus laden sediments and 3). Concentrated inflow points of phosphorus discharge to Lake Okeechobee.”

**Insert at Line 3735:** “Funding should be expedited for the evaluation and demonstration of technologies that could harvest algae biomass and suspended sediments from Lake Okeechobee’s water column.”

### **3. Dispersed Water Management (DWM)**

*LOPP revisions should substantially increase the use of DWM using PES, easements, or other incentives.*

**Insert at Line 3916:** “The coordinating agencies will emphasize DWM as the primary program to achieve water storage in the Northern Everglades.”

- *For future DWM project planning, the SFWMD should assess the water storage capacity needed to meet the TMDL in order to determine an appropriate storage target. The plan to create 450, 000 acre feet of DWM projects is impressive and ambitious, and should be implemented in the next 5 years.*

**Insert at Line 3913:** “The LOPP goal is to have 450,000 ac-ft of dispersed water management projects implemented within five years. However, the 450-575k ac-ft storage target also omitted consideration of water storage capacity needed to meet the TMDL, and could change significantly once strategies for this important factor are added.”

- *A payment platform for the PES approach should be determined, considering acre feet of water impounded within projects, pounds of phosphorus sequestered in projects, or both.*

**Insert at Line 3972:** “The SFWMD will implement a PES approach that considers acre feet of water impounded within projects, pounds of phosphorus sequestered in projects, or both as a payment platform.”

- *Prioritize the Kissimmee watershed for project. This watershed provides approximately half of inflows to Lake Okeechobee and is under the greatest threat from new development pressure.*

**Insert at Line 3998:** “The SFWMD will prioritize the Kissimmee watershed for projects. It provides approximately half of inflows to Lake Okeechobee and is under the greatest threat from new development pressure.” A table should be included in this section to show the timeline for implementation of projects and a budget showing anticipated funding needed.

“The Fisheating Creek basin will be targeted for intense implementation and monitoring, including lands recently subject to projects under the United States Department of Agriculture (USDA) program, as well as other suitable lands in the basin with willing landowner participants.”

**Insert at Line 4123:** “Because this sub-basin is relatively small and not under immediate development pressure, planning will be postponed until after the Kissimmee River Valley is addressed.”

- *For the budget planning process for FY 2011-12, shift emphasis previously placed on funding regional reservoirs or STAs (notably, Phase II of Lakeside Ranch) to funding the implementation of DWM projects. Provide for yearly incremental increases in funding. We deeply appreciate your staff’s efforts increasing the FY 2010-11 budget for DWM projects from \$4.2 million to \$8,752,297, as seen on FY 2011 Annual Work Plan, pg. 39, and encourage the SFWMD to increase funding to at least \$20 million annually starting in FY 2011-12.*

**Insert at Line 4021:** “In response to the positive support, during the budget planning process for FY 2011-12, the SFWMD will shift emphasis previously placed on funding regional constructed projects to funding the implementation of DWM projects, and provide for yearly incremental increases in funding.” A budget should be inserted at this point in the LOPP which proposes a schedule

for achieving the proposed 450,000 acre feet of dispersed storage. The budget should redirect funds from Phase II Lakeside Ranch project construction as one of its immediate sources. Fund research on the phosphorus release phenomenon observed at some locations when DWM projects newly flood previously phosphorus enriched soils. Analyze soil types and situation parameters to isolate the circumstances where this effect occurs and provide guidance for design and management of projects to avoid or minimize the effect.”

**Insert at Line 4311:** “New research will be also funded on the phosphorus release phenomenon observed at some locations when DWM projects newly flood previously phosphorus enriched soils. For greater effectiveness, soil types and situation parameters to isolate the circumstances where this effect occurs will be analyzed and used to provide guidance for design and management of projects to avoid or minimize the effect.”

- *Fund monitoring of projects to document performance and compliance. Performance measures must be developed to ensure accountability and transparency.*

**Insert at Line 3942:** “There will be additional funds allocated toward the monitoring of projects to document performance and compliance.”

#### **4. Legacy Phosphorus**

- *The continued accumulation of legacy phosphorus may be one of the most important indicators of the health of the Okeechobee watershed. The release of these legacy phosphorus deposits will eventually surpass annual reductions of phosphorus imports unless more decisive action is taken, beginning with more aggressive source controls. The graph below<sup>5</sup>, prepared by Dr. Paul Gray, Science Coordinator of Audubon of Florida’s Lake Okeechobee Watershed Program, shows the history and continued accumulation of legacy phosphorus. This is happening regardless of the efforts that the SFWMD and other agencies have undertaken.*

**Insert at Line 3807:** “At this rate, the legacy loads have roughly doubled since initiation of the Surface Water Improvement and Management Act (SWIM) in 1989, and risen from about 150,000 mt tons when the LOPA passed in 2000, to about 200,000 mt in 2010, a 33% increase (Fig.1).”

**Insert at Line 3810:** “Research also is needed to find ways to slow the rapid increase in legacy loads (i.e., reduce new imports to the maximum extent possible).”

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<sup>5</sup> This graph uses Soil and Water Engineering Technology’s (SWET) 2007 estimate of 190,000 mt of legacy phosphorus and backdated likely legacy loads using Mock Roos import numbers, as well as SWET’s revised numbers for the past three years. The fact that the legacy load drops below zero in the 1970s shows some inaccuracies in the estimates, but does not change the general trend.

### Legacy Phosphorus in Okeechobee's watershed

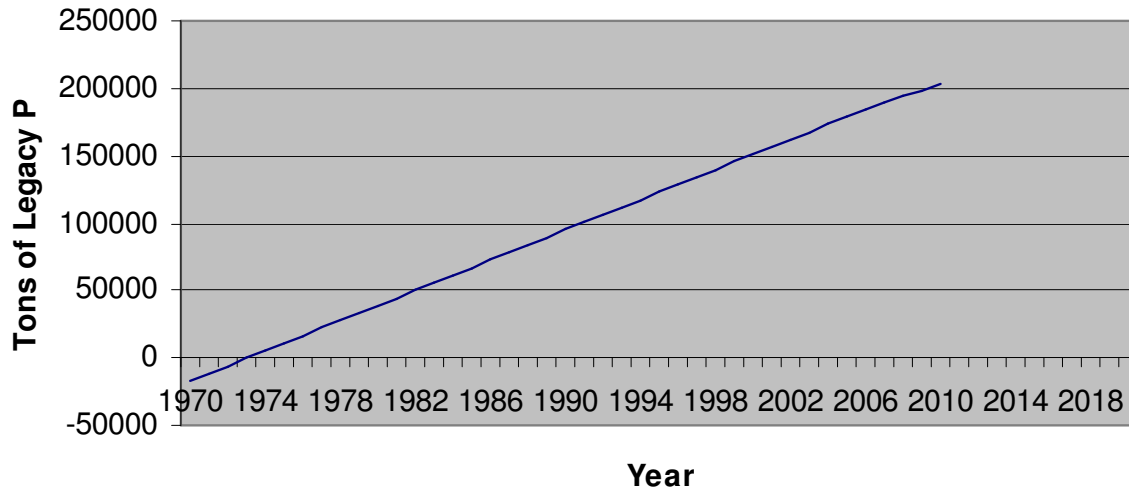


Figure 1. Legacy loads are increasing rapidly. [The draft LOPP should include a graph like this backdating SWET's 190,000 mt in 2007 using SWET, Mock Roos, and Hiscock estimates of previous annual imports]

**Insert at line 3756:** "A charter mission for the Water Quality Center of Excellence will be finding ways to reduce the on-going addition of new nutrients to Florida's legacy loads."

**Insert at Line 4229:** "Phosphorus levels in these lakes have roughly doubled in the past 10 years, indicating saturation effects and portending nutrient problems in the lakes themselves, and greater nutrient levels from these watersheds than in the past. Present nutrient control plans that are based upon past periods of record are inadequate to address an increasing load scenario, and reinforce the need to work upstream of these lakes before the problems become too advanced (expensive)."

## **5. Crops**

- *Certain crops may require so much water or nutrients as to be fatally incompatible with south Florida conditions. Alternative crops will be developed. Once designated, incompatible crops should be phased out.*

**Insert at Line 3868:** "Crop compatibility. Certain crops may require so much water or nutrient as to be fatally incompatible with south Florida conditions. Alternative crops will be developed and once designated, incompatible crops phased out."

## **6. Regional Water Storage Projects**

- *Large regional water storage projects are dependent on large sums of money from uncertain sources. Therefore, the draft LOPP should reflect this economic reality in its assessment and evaluation of these projects.*

**Insert at Line 4028:** “However, it must be made clear that completion of this project is dependent on the receipt of three billion dollars. As such, the emphasis will be moved away from large regional storage projects such as the CERP LOWP, and moved towards the DWM projects, as described in 6.3.1.”

**Insert at Line 4239:** “It is important to note that the expediency of their implementation is dependent on the uncertain receipt large amounts of funds from outside sources.”

**Insert at Line 4347:** “, which is dependent on the receipt of funding from an uncertain source.”

**Insert at Line 4080:** “Because in-lake sediment removal will not be fully effective until inflow loads decrease, and such decrease appears far in the future, available funds would be best spent primarily on upstream watershed activities that achieve nutrient reductions and full-scale implementation of in-lake removal projects be postponed. Pilot projects that demonstrate and perfect in-lake sediment removal should be pursued.”

**Insert at Line 4097:** “, and the cost to scale it up to meaningful levels for Snail Kite recovery are prohibitive. Attention should focus on recovering habitat to benefit snail recovery.”

## **7. Relationship to River of Grass initiative**

- *Discussion of this issue should also consider water storage available to aid in meeting the TMDL.*

**Insert at Line 4192:** “This estimate also omits consideration of water storage needed to meet the TMDL, which could significantly change estimated final storage needs.”

## **8. Accuracy of 6.7.1 Watershed Water Quality Evaluation**

- *The 2007 LOPP update stated that the phosphorus reductions predicted in the 2004 LOPP had not materialized. The 2007 update then made its own predictions about future phosphorus reductions, specifically Table 3 estimated load reductions from “current activities” of 146 tons. This prediction also has not materialized, as demonstrated by the lack of significant reductions reported in Section 3.2 of the 2010 draft LOPP update.*

**Insert at Line 4194:** The agencies should explain in detail why the estimated load reductions again failed to occur. More importantly, the agencies must state what adjustments have been made to improve the reader's faith that the estimates in Section 6.7 of the 2010 report are reasonable.

## **9. Funding**

- *Pursuant to Fl. Stat. 373.4595(1)(k), "a continuing source of funding is needed to effectively implement the programs (LOPP)." It is the SFWMD's duty to clearly articulate to the legislature budgets, actions, and policy changes that must be undertaken if the Lake Okeechobee watershed is to be rescued from eutrophic collapse.*

**Insert at Line 4474:** "The following is a proposed budget that would adequately provide for the implementations of these projects." Insert detailed budget proposal here, with timeline of implementation.

In conclusion, we believe that the draft LOPP remains seriously deficient. It lacks key policy recommendations, functional program elements, timelines, and budget proposals to build, initiate, or complete the necessary steps to reduce phosphorus loading and store water in the Northern Everglades. We fully understand that economic conditions may impose budgetary constraints on future implementation. Nonetheless, the LOPA required the agencies to "...conduct an evaluation of any further phosphorus load reductions necessary to achieve compliance with the LOPA total maximum daily load established pursuant to Fl. Stat. 403.067." This draft update does not fulfill this mandate.

In most cases, we believe that the recommendations made by Audubon for revisions to the draft LOPP can be accomplished within existing legislative authority. In the event that SFWMD takes the position that any of these recommendations exceed current legislative authority, Audubon asks that recommendations for legislative amendments to accomplish the policy changes proposed in these comments be included in the final LOPP update. We strongly urge the staff of SFWMD to correct these deficiencies prior to presenting this plan to the Governing Board for final approval.

Sincerely,



Charles Lee,  
Director of Advocacy  
Audubon of Florida

A handwritten signature in black ink that reads "Paul N. Gray". The signature is written in a cursive style with a large initial 'P'.

Dr. Paul Gray  
Science Coordinator, Lake Okeechobee Watershed Protection Program  
Audubon of Florida

A handwritten signature in blue ink that reads "Jane Graham". The signature is written in a cursive style with a large initial 'J'.

Jane Graham, Esq.  
Everglades Policy Associate  
Audubon of Florida