



## South Florida Ecosystem Restoration Working Group

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March 13, 2000

Mary Doyle  
Chairperson  
South Florida Ecosystem Restoration Task Force  
US Department of Interior  
1849 C Street, NW, Room 8880  
Washington, DC 20240

Re: Transmittal of Working Group's Lake Okeechobee Action Plan

Dear Chairperson Doyle:

I am pleased to transmit to you the Lake Okeechobee Action Plan, developed by the Lake Okeechobee Issue Team for the South Florida Ecosystem Restoration Working Group. In May 1998, the Working Group formed the Lake Okeechobee Issue Team and charged them with the development of an Action Plan to protect and enhance the ecological and societal values of Lake Okeechobee. The primary focus of the Action Plan is on reducing in-lake total phosphorus concentrations to 40 ppb, a restoration goal developed to implement the State of Florida's 1997 Surface Water Improvement and Management Act.

The major components of the Action Plan were developed in the context of the following key factors: A) Phosphorus loads to the lake greatly exceed the total maximum load considered acceptable by the scientific community for sustaining a healthy ecosystem; B) The excessive phosphorus loads are attributable to human activities in the watershed, in particular animal agriculture; C) If the sources of these loads are controlled, residual phosphorus in the watershed may considerably delay reductions in tributary loads; and D) It is estimated that substantial reductions in tributary loads will not result in reductions of phosphorus in the lake for many decades because of high internal loading from lake's sediments.

In recognition of the fact that Lake Okeechobee's internal and external phosphorus loads are integrally linked, and lake management practices must be modified to restore and enhance its ecological health, the Action Plan contains five major recommendations:

1. Construct Regional Reservoir-Assisted Stormwater Treatment Areas (RaSta's) to Reduce Phosphorus Loads.
2. Intensify Control of Phosphorus Sources.
3. Control Internal Phosphorus Loading.
4. Conduct Programs to Control Exotic and Native Plants
5. Minimize the Occurrence of Damaging High Water Levels

The Issue team was co-chaired by Dr. Karl Havens of the South Florida Water Management District and Richard Harvey and met repeatedly over approximately 12 months to draft an Action Plan to submit to the Working Group for consideration. The Working Group was briefed on the Action Plan status at the October 1999, meeting, and the draft Action Plan was presented to the November 1999, meeting for discussion and comment. A revised, final Action Plan was presented in December. The Action Plan represents a consensus view of, and includes input from, more than 40 individuals, including resource managers, scientists, representatives of the agricultural industry, federal and state agency staff, and private citizens representing environmental organizations.

The Action Plan recognizes that phosphorus loading to the Lake is far in excess of the amount considered acceptable for a healthy lake ecosystem. The Action Plan also recognizes that even if surface water phosphorus inputs are reduced at their sources, residual phosphorus in watershed soils and sediments will considerably delay reductions in phosphorus inputs to the lake from its tributaries.

Agricultural development and urban land use changes north of Lake Okeechobee over the last century, particularly dairy and beef cattle operations, and construction of the Central and South Florida Flood Control Project, have resulted in more than doubling of in-lake total phosphorus concentrations. This increase has caused shifts in the lake's biological community, most drastically illustrated by the massive blue-green algal blooms that covered more than one-half of the lake's surface in the 1980s. In addition to excessive surface water inputs of phosphorus to the lake, internal cycling/loading of phosphorus is occurring from the lake's sediments to the overlying water column. This is a direct result of decades of accumulation of phosphorus-rich mud sediments over an extensive area of the lake bottom.

The native littoral vegetation community in Lake Okeechobee, primarily along the western and northern shores, has been heavily impacted in recent years by high water levels, and by the expansion of exotic and nuisance plants. In particular, the exotic plant, torpedograss, is aggressively colonizing the littoral zone, along with the ongoing problems of melaleuca expansion. The lake's littoral zone functions as a high-quality habitat for fish and wildlife species, including some that are threatened or endangered. Also, the region is an important nursery habitat for commercially and recreationally significant fisheries.

Recognizing the decades-long history of impacts to the lake, and that the lake's surface water and internal phosphorus loads are integrally linked, the Action Plan recommends the construction of regional, reservoir-assisted stormwater treatment areas (RaSTAs) to reduce phosphorus concentrations. The highest priority locations for the RaSTAs are in those tributary basins with the greatest levels of phosphorus loading (S-191, S-154, and pools D and E of the Lower Kissimmee River). In addition, the Action Plan recommends the intensification of management strategies and programs designed to reduce phosphorus inputs from all agricultural, urban, and residential areas, sludge and animal waste disposal sites, and from the Upper Kissimmee Chain-of-Lakes and Lake Istokpoga.

To accelerate the reduction of in-lake phosphorus concentrations to 40 ppb, the Action Plan recommends the removal (if feasible) of phosphorus-rich mud sediments to the maximum extent that is practical. Without such action, or other actions to reduce the accessibility of phosphorus to the water column from the sediments, it may take decades or longer for the lake ecosystem to respond to phosphorus control programs. A detailed feasibility study assessing a multitude of options, followed by pilot tests, is recommended as the best strategy for addressing the internal

phosphorus load problem.

Finally, the Action Plan recommends that programs be conducted to control exotic and nuisance plants, and to minimize the occurrence of damaging high water levels. In particular, an aggressive effort must be mounted to eliminate torpedograss from the littoral zone, and melaleuca eradication efforts must continue. The lake level operational flexibility provided by the recently developed WSE lake regulation schedule, and by the construction of ASR wells and other regional water storage facilities, should help reduce impacts from high water levels. Implementation of the WSE lake regulation schedule and construction and operation of the ASR wells and regional water storage facilities recommended in the RESTUDY would also significantly reduce, if not eliminate, the damaging releases of Lake Okeechobee waters to the St. Lucie and Caloosahatchee estuaries.

In addition to the input from Issue Team participants and comments received during the drafting of the Action Plan, the Issue Team received additional comments from the Seminole Tribe of Florida, and from the Miccosukee Tribe of Indians of Florida. Both Tribes strongly support the Working Group's efforts to restore Lake Okeechobee, and all of the South Florida ecosystem. However, the Miccosukee Tribe opposes the implementation of the WSE (Water Supply Environment) Regulation Schedule before any additional water discharged south from Lake Okeechobee is of adequate quality to protect Tribal lands in WCA 3A (see attached letter to the Corps from the Miccosukee Tribe).

The Seminole Tribe provided a number of comments related to a full evaluation of the 40 ppb total phosphorus goal, the prioritization of RaSTAs, sizing of RaSTAs, water supply to the Seminole Tribe Brighton Reservation, and other issues. Specific recommendations provided by the Seminole Tribe include the following:

The Tribe urged the Issue Team to emphasize the importance of fully evaluating the 40 ppb in-lake concentration goal, since future decisions will be based on that concentration.

The Tribe recommended that evaluation of the effectiveness of the RaSta's be conducted before expanding their use beyond the identified priority basins.

While not objecting to the implementation of the WSE lake regulation schedule, the Tribe expressed concerns regarding the impacts of the regulation schedule on the South Florida Water Management District's obligation to provide water to the their Brighton Reservation.

The Tribe encouraged the Issue Team to prioritize identification of uncontrolled sources of phosphorus and to develop appropriate remedies to limit phosphorus loading to the lake.

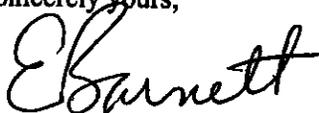
The Tribe recommended the prohibition of the importation into the watershed of residuals (sludge) and animal manure (both of which contain high levels of phosphorus) generated outside the watershed.

On January 20-21, 1999, the Working Group reviewed this letter, and voted to transmit it and the Lake Okeechobee Action Plan to the South Florida Ecosystem Restoration Task Force. We believe that this plan is a major step forward in addressing South Florida restoration in a holistic, ecosystem manner. The Action Plan is based on a sound scientific foundation, and specific and clear recommendations are provided to further the protection and restoration of a valuable ecosystem.

Finally, the Working Group recommends our continued involvement with the restoration of the water quality and ecological health of Lake Okeechobee through the establishment of a standing "Lake Okeechobee Issue Team."

If you or any members of the Task Force have any questions or require additional information, please do not hesitate to contact either Rock Salt at 305/348-1665, or me at 850/488-4892.

Sincerely yours,

A handwritten signature in cursive script that reads "Ernie Barnett".

Ernie Barnett  
Chairman  
South Florida Ecosystem Restoration Working Group

Enclosures

cc: Task Force members  
Working Group members

**LEWIS, LONGMAN & WALKER, P.A.**

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REPLY TO: WEST PALM BEACH

November 17, 1999

Richard Harvey  
Director  
USEPA South Florida Office  
400 N. Congress Avenue, Suite 120  
West Palm Beach, FL 34401

Re: Draft Lake Okeechobee Action Plan

Dear Mr. Harvey:

On behalf of the Seminole Tribe (Tribe), I have been authorized to submit the following comments on the Draft Lake Okeechobee Action Plan developed by the Lake Okeechobee Issue Team for the South Florida Ecosystem Restoration Working Group dated November 1, 1999 (Draft Action Plan). As a Working Group member, the Tribe strongly supports the group's efforts to restore the South Florida ecosystem and improve the environmental health of Lake Okeechobee (Lake). However, the Tribe generally believes that the problems these ecosystems are facing are not of its making. While the Tribe will endorse and support initiatives to improve these ecosystems, it is not willing to bear a disproportionate share of these initiatives.

Following are comments on the Tribe's areas of concern:

**I. Setting the In Lake Concentration Standard for Phosphorous and Developing Phosphorous Loading Targets**

The Tribe is concerned that the most accurate data be used to select the in lake concentration target for Phosphorous (P) to restore health of the Lake. Accurately establishing this level is essential because it serves as the target around which the regulatory structure for management of P loadings to the Lake are developed. Appendix 1 to the Draft Report (Appendix) recognizes the importance of accuracy by stating that "a critical issue is whether the targeted reductions of external phosphorous loads and in-lake phosphorous specified in existing

December 3, 1999

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statutes, and the methods used to determine them, are appropriate..." Appendix at 40. It notes that research on these issues is not complete. The Appendix cites a 1997 report published in the *Journal of Lake and Reservoir Management* at pages 292-301 by Karl E. Havens and R. Thomas James entitled, "A Critical Evaluation of Phosphorous Management Goals for Lake Okeechobee, Florida, USA" (Report) which reevaluates the in lake goal for P. It found that using different approaches, the in lake concentration could range from as low as 26 ppb to as high as 90 ppb. The Appendix discusses only one of the approaches evaluated in the Report - analysis of historical data - which shows that an in lake concentration of between 30 and 50 ppb is consistent with restoring the Lake's nutrient status to the least impacted condition. However, use of the historical approach to establish a concentration goal is the least rigorous approach considered by the Report. Report at 295. The Tribe urges the Issue Team to amend the Draft Action Plan to emphasize the importance of fully evaluating the 40 ppb in lake concentration goal, since future regulatory decisions (including establishment of the Total Maximum Daily Load for the Lake) will be developed based on the figure.

The Tribe supports the recommendation contained in Appendix I(B) to develop an updated model for establishing the P loading targets to the Lake. The Tribe believes that it is important to spend time developing the most accurate model at the beginning of the process, since it will produce information on loadings that will more effectively achieve restoration of the Lake.

## **II. Construction of Regional Reservoir-Assisted Stormwater Treatment Areas (RaSTAs)**

The Tribe agrees that construction of RaSTAs may be an appropriate method for reducing P loadings to the Lake. It supports the Draft Action Plan's recommendation to construct RaSTAs in Basins S-191, S-154 and the lower pools of the Kissimmee River, where exceedances of the current SWIM Plan targets are high. However, the Tribe is concerned with the recommendation to construct RaSTAs in the S-71 and Fisheating Creek Basins as the next step to maximize the P load reduction to the Lake. Draft Action Plan at 16-18. The Tribe believes that it is important to evaluate the effectiveness of the RaSTAs before expanding their use into additional basins. Additionally, the Tribe believes that the Draft Action Plan should focus on those areas where the SWIM plan targets are being highly exceeded. The Tribe notes that the loadings from Fisheating Creek have been below the SWIM Plan Targets for the 1990-1998 timeframe. Regarding S-71, the Tribe notes that backpumping from the Lake occurs in this basin. The Tribe would like to know if any studies have been undertaken to determine the effects of this backpumping on the P load to the Lake. Overall, the Tribe requests that the Draft Action Plan be amended to give priority consideration to those basins where high exceedances of the SWIM Plan targets are occurring.

The Tribe also believes that including total size calculations for the proposed RaSTAs in the Draft Action Plan is premature. This recommendation is supported by language in the Draft Action Plan stating that the sizes of the RaSTAs are only rough estimates, and detailed analysis will have to be performed to determine the actual size needed for each basin. This will not occur until the recalculation of P loading from the basins has been completed. The Tribe therefore recommends that the Draft Action Plan be amended to state that the size of the RaSTAs will need to be determined based on detailed evaluation that is beyond the scope of the Plan.

### **III. Reduction in High Water Levels through adoption of the WSE Regulation Schedule**

The Draft Action Plan recommends adoption of the WSE Schedule as a strategy for improving restoration of native littoral vegetation in the Lake. Draft Action Plan at 27. The Tribe does not object to adoption of the WSE schedule where implementation will provide positive benefits to the Lake's littoral zone. However, the Tribe is concerned that the South Florida Water Management District (SFWMD) consider the impacts of the WSE schedule on its obligations to provide water to the Brighton Reservation in accordance with the terms of the Agreement Between the South Florida Water Management District and the Seminole Tribe of Florida and Water Supply Plan for the Brighton Reservation Implementing Section VI.B of the Water Rights Compact and Subparagraph 3.3.3.2.A.3 of the Criteria Manual dated November 30, 1992 (Agreement). A copy of the Agreement is attached at Tab 1.

A key feature of the WSE Schedule is lower operational zone D (with a range of 13.5-15.5 feet NVGD in contrast to the 15.65-16.75 feet NVGD under the current schedule). Draft Integrated Feasibility Report and Environmental Impact Statement for the Lake Okeechobee Regulation Schedule Study at Section 5.2.1. Implementation of the WSE Schedule may cause potential increases in water shortage conditions for the Lake. The Tribe wants to ensure that the SFWMD's obligations to the Tribe under the Agreement will be accounted for should the WSE Schedule be implemented.

Specifically, the Agreement states that the SFWMD agrees to provide the Tribe's entitlement for the Brighton Reservation by supplying water from the Lake through pumps locate at S-71 and S-72 when necessary. Should water shortage conditions occur in the Lake, however, the pumping will cease. Agreement at paragraph 3. Additionally, the Agreement guarantees that a minimum volume of water will be set aside for use by the Brighton Reservation to satisfy the Tribe's entitlement. Agreement at paragraph 4. The Tribe would like to know what steps the SFWMD will take to ensure these obligations are met if the WSE Schedule is adopted.

#### **IV. Uncontrolled Sources of P Loadings to the Lake**

The Tribe believes that a primary goal of the Draft Action Plan should be to control "uncontrolled" sources of P loading to the Lake. According to the data presented in Table 3 on page 15 of the Draft Action Plan, the average P loading from Lake Kissimmee alone from 1994-1998 was 119.4 tons. This load is larger than any load from the controllable sources within the Lake's watershed (the largest was S-191 at 94.2 tons) for the same time frame. The Tribe encourages the Issue Team to prioritize identification of these sources and development of appropriate remedies to limit the loading to the Lake.

#### **V. Residual Disposal in the Lake Okeechobee Watershed**

The Tribe recommends that the Draft Action Plan prioritize prohibiting import of residuals (sludge) and animal manure from outside the Lake Okeechobee watershed. Draft Action Plan at 5 and 20. The Tribe further believes that the Draft Action Plan should recommend prohibiting the import of these by products into any area where run off from land application operations could cause an increase in P loadings to the Lake, and subsequently increase the downstream effects of P loading on the Everglades ecosystem.

The Tribe further encourages the Issues Team to add in additional language concerning land application of residuals generated within the watershed. Specifically, the Tribe believes that land application of residuals should not be used as a disposal method. Residuals should be applied only at the agronomic rate for P uptake based on the specific characteristics of land within each basin.

#### **VI. Missing Data**

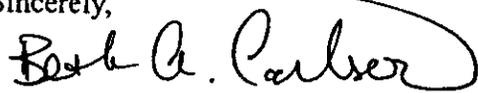
The Tribe would like to know why no data was collected for Basins L-59E, L-59W, L-60E, L-60W, L-61E, L-61W for the period from 1994-1998. Draft Action Plan, Table 3 at 15. The Tribe notes that these basins produced very low P loading to the Lake for the years 1990-1994 (an average of 6.4 tons for all 6 basins combined). The Tribe would like to know why the decision was made to stop collecting data in these basins, and what this decision means for P management in these basins.

November 17, 1999

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Thank you for the opportunity to comment on the Draft Action Plan. The Tribe reiterates its commitment to partnering with those entities who are working to restore the South Florida ecosystem. If you have any questions regarding the Tribe's concerns, please contact me at (561) 640-0820 or Craig Tepper at (954) 967-3401.

Sincerely,



Beth A. Carlson

BAC/mg

cc: Karl Havens, South Florida Water Management District  
Craig Tepper, Seminole Tribe of Florida  
John Folkes, Florida Department of Agriculture and Consumer Affairs  
Stephen A. Walker, Esq.

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LEHTINEN O'DONNELL  
ATTORNEYS AT LAW  
A PROFESSIONAL ASSOCIATION  
VARGAS & REINER

September 22, 1999

COL Joe R. Miller  
District Engineer  
400 West Bay Street  
Jacksonville, Florida 32232-0019

Dear COL Miller:

The Miccosukee Tribe of Indians of Florida (the "Tribe") has reviewed the Draft Integrated Feasibility Report and Environmental Impact Statement for Lake Okeechobee Regulation Schedule Study, dated June 1999. The Tribe is very concerned about the implementation of the WSE Regulation Schedule, which we are told is on a fast track and is scheduled for the spring of 2000.

This EIS clearly indicates that the WSE Regulation Schedule will cause additional loading of phosphorous into the Water Conservation Areas, where Tribal lands are located. The following quotes illustrate why the Tribe is so concerned:

Excessive phosphorous loading to the WCAs will continue until such time as the proposed STA 3/4 recommended by the Everglades Construction project is completed in late 2003. This loading will likely result in continued impacts to these areas in the form of cattail expansion into historical sawgrass areas, and unknown impacts to important periphyton communities throughout a much larger area. More importantly, these impacts may be irreversible, at least in the short term, as nutrients deposited into the Everglades marsh sediment will not, in all likelihood, be economically recoverable in such a fragile and sensitive ecosystem without recovery efforts themselves causing equivalent damage.

(Page DEIS - iv)

In all likelihood, the additional loading to the WCAs due to WSE, would contribute to an already existing cattail problem in the northern WCAs, expanding the range wherein cattail have out competed sawgrass by an unknown, but relative to the area affected, modest number of acres. Possible impacts to periphyton may also occur over a larger area, although the ability to quantify with any precision the number of acres of either periphyton or cattail spread is rather imprecise.

(Page DEIS - 104)

Lake waters discharged into the WCAs are currently estimated to contain between 70 and 100 ppb phosphorous concentration, which is considerably above that present in the receiving waters. . . . In the long term, such additional loading of phosphorous would be expected to have significant and long lasting adverse affects on the fish and wildlife habitat of the area. Existing cattail stands would probably expand rapidly into areas currently and historically occupied by sawgrass, displacing one cover type for another.

(Page DEIS - 107)

The increased phosphorous loading into northern WCA 3A is predicted to result in a vegetative change from sawgrass to cattail in at least 3 and at most 13 acres (depending on [P] in-flow assumptions) and

from 9 to 31 acres in WCA 2A. Furthermore, this additional loading is predicted to result in an area of over 2100 acres in WCA 3A and about 790 acres in WCA 2A which is expected to exceed 10 ppb [P] a concentration which has been determined may affect periphyton communities (Appendix B). These values are over and above what would be predicted for the future without project condition (alternative 25, 2010 base). As these numbers are based on numerous assumptions, and are subject to a wide variety of environmental factors unrelated to the LORSS, they should be interpreted with some caution. It is reasonable to conclude that the additional loading of phosphorous to WCAs 2A and 3A as a result of the proposed action, will contribute to the spread of cattail that already exists, further exacerbating, albeit to a limited and relatively minor extent, an existing ecological problem.

(Page DEIS - 113)

Conversion of a minimum of 12 and a maximum of 44 total acres of existing sawgrass to cattail due to an increase, albeit temporary, in phosphorous loading to northern WCA 3A and WCA 2A may be considered an irreversible impact, at least in the short term, as there are currently no cost effective means to "reverse" an established community change of this nature without incurring significant environmental and financial costs.

(Page DEIS - 113)

COL Miller, the Tribe requests that you consider the following points carefully:

1. WSE Regulation Schedule will violate the Miccosukee Water Quality Standards

The Tribe's Alligator Alley Reservation is located in the northern portion of Water Conservation Area 3A and is very close to the point of discharge. The Tribe has adopted water quality standards, which have been approved by the United States Environmental Protection Agency. These water quality standards require a numeric criterion for total phosphorous of 10 parts per billion (ppb), or less in many locations. The proposed WSE Regulation Schedule will violate this 10 ppb criterion by as much as 10 times. If Lake Okeechobee water were being treated prior to discharge into the WCAs, perhaps a benefit could be derived; however, the WSE Regulation Schedule is an operational change only and does not afford any water quality treatment benefits. The Tribe objects to any plan that discharges water to the Everglades without a treatment technology that makes certain that water meets all applicable water quality standards. Further, the EIS is inadequate to the extent that it does not address all reasonable alternatives.

2. WSE Regulation Schedule will violate the federal Settlement Agreement and Consent Decree.

The Settlement Agreement and Consent Decree require a 80% and 85% load reduction be achieved for waters entering the Everglades Protection Area regardless of where the water originally came from. The WSE Regulation schedule will not achieve the 80% load reduction required under the Consent Decree. In fact, phosphorous loading to WCA 3-A is expected to increase under the WSE Regulation Schedule. Page DEIS 120 says "the proposed WSE regulation schedule for Lake Okeechobee will not cause a violation of the phosphorus load provisions of the proposed modifications to the consent decree." However, the shifting of pollution contemplated by the WSE, polluting one area of the Everglades to aid other portions of the Everglades, does not meet the letter

or intent of the Settlement Agreement, with or without modification. Furthermore, the proposed modification to the consent decree has not been accepted by the Federal District Court, at this time. The Tribe has objected repeatedly, including objections to the court, to the premature implementation of WSE and warned the court of its impacts.

3. WSE Regulation schedule will violate the 404 Dredge and Fill Permit for the Everglades Construction Project.

The WSE Regulation schedule would violate your agencies' own permit. The Corps of Engineers 404 Dredge and Fill Permit clearly prohibits additional water quality degradation in the guise of "hydropattern restoration."

The works authorized by this permit, alone or in combination with other works, shall not be caused to be operated at any time (including any incremental increase of flows toward the 28% increase provided by law) in a manner that would result in the total load of phosphorus exceeding the limits in paragraph 8.A. (80% to the EPA and 85% to the Refuge) of the Settlement Agreement between the United States of America and the South Florida Water Management District et al., Case Number 88-1886-CIV-HOEVELER (Southern District of Florida), as it may be amended.

4. The United States Environmental Protection Agency has determined that the discharge contemplated by the WSE Regulation Schedule will forever damage the receiving waterbody. The Water Conservation Areas are Class III waters and the United States Environmental Protection Agency determined:

The Everglades marsh system is naturally extremely oligotrophic. Un-impacted interior portions of the Everglades marsh have long-term average water column phosphorus concentrations of approximately 10 ppb or even less. The native plant and animal communities in the Everglades marsh developed under and are adapted to these very low phosphorus conditions. Phosphorus is the primary limiting nutrient in the oligotrophic Everglades marsh system. Microbial processes are important in controlling nutrient cycling in wetlands and they play an important role in determining water quality and maintaining an ecosystem's normal productivity. Elevated water column or soil phosphorus concentrations in the Everglades have been implicated as cause for disruption of various microbial processes. Periphyton communities are an important defining characteristic of the Everglades marsh ecosystem. According to the scientific literature, Everglades periphyton accounts for much of marsh primary productivity in wet prairies and sloughs; provides habitat for aquatic animals such as invertebrates; along with macrophyte detritus, forms the base of the Everglades aquatic food web; is the major source of oxygen for fish and other animal life in sloughs and wet prairies; maintains low water TP concentrations; plays a role in cycling of nitrogen, phosphorus, carbon and oxygen; and affects formation of marl soils. Periphyton communities are extremely sensitive to phosphorus enrichment. Phosphorus enrichment at levels above 10 ppb TP has been shown to cause a loss of Everglades native periphyton communities. Surface water dissolved oxygen in pristine Everglades wet prairie and slough communities often exhibits a strong diel cycle, with concentration at a particular location ranging from 0 mg/l in early morning to over 12 mg/l in late afternoon. Everglades fish are adapted to these conditions. In contrast, oxygen levels in nutrient-rich locations within WCA2A have been shown to often be undetectable and rarely exceed 2 mg/l, with protracted periods of oxygen depletion. Unenriched portions of the Everglades are reported to have some of the lowest rates of phosphorus accumulation in peatlands in North America. Increased surface water phosphorus has caused elevated soil phosphorus concentrations. Over 51 % of WCA2A has been reported as having increased soil phosphorus. The oligotrophic Everglades marsh system contains a mosaic of macrophyte

communities, such as sloughs, wet prairies and sawgrass marshes, all of which are adapted to low nutrient conditions. This mosaic is an important defining characteristic of the Everglades. Wet prairies and sloughs in particular provide critical habitat for animals and provide cover, nesting, and feeding sites for all animal groups. Elevated water phosphorus concentrations or elevated soil phosphorus concentrations in the Everglades are associated with elimination of submerged vegetation species including the important *Utricularia*-periphyton complex and expansion of nutrient-tolerant macrophytes such as cattail or *Sagittaria* into areas previously dominated by sawgrass, sloughs or wet prairies. Shallow, open water areas with scattered to moderately dense emergent macrophytes are the preferred foraging habitat for Everglades wading birds. Conversion of these areas to dense emergent macrophytes due to phosphorus enrichment constitutes a loss of wading bird foraging habitat. Phosphorus enrichment initiates a succession of changes within the marsh system. Initial changes, such as those that occur at the microbial level, are not visible. Visible impacts eventually occur, such as loss of native flora or fauna. The oligotrophic Everglades marsh system has very low assimilative capacity, or tolerance, for phosphorus before changes in ecosystem structure and function occur. The well-documented phosphorus impacts in WCA2A have taken place since the discharge of phosphorus-rich water through the S-10 structures beginning about 1960 (a period of about four decades). There is no information available concerning low-level additions of excess phosphorus for a century or more. The nutrient dosing studies and observational studies described below indicate that total phosphorus concentrations above 10 ppb have been shown to cause impacts to native Everglades periphyton and macrophytes such as *Utricularia purpurea* that are adapted to low phosphorus conditions. The best available scientific information indicates that average TP concentrations greater than 10 ppb, in general, can be expected to be inadequate for long-term protection of the Class III-A designated use. Therefore the Tribe's adopted numeric phosphorus criterion of 10 ppb is not overly protective. Currently available scientific information reviewed also indicates that the Tribe's proposed numeric criterion of 10 ppb is protective of the Class III-A use and the native Everglades periphyton and macrophytes. Although some data have identified long-term phosphorus concentrations within the Everglades as low as 5.0 ppb, EPA's review identified no currently available published scientific information documenting changes in the natural flora or fauna resulting from total phosphorus concentrations in the 5 ppb to 10 ppb range. If new data or information are presented in the future that demonstrate that 10 ppb is not protective of the Class III-A use, the Tribe should revise the criterion accordingly. Therefore, USEPA has determined that the 10 ppb total phosphorus criterion is protective of the Class III-A designated use, is reasonable, and is scientifically defensible.

5. It is the understanding of the Tribe that with some minor operational adjustments the WSE Regulation Schedule could be implemented in such a way that there would be no additional phosphorus diverted into WCA 3A. This understanding is based on presentations by SFWMD technical personnel. However, this EIS clearly contemplates additional pollution of Tribal lands.

As currently written, the Lake Okeechobee Regulation Schedule DEIS, unfortunately, shifts pollution from one area to another, unnecessarily pitting Everglades Restoration efforts against one another. The failure to propose or evaluate a phosphorus clean-up alternative simply offers Everglades advocates a choice of which part of the system they prefer to destroy. The Tribe will not allow its lands to be further degraded.

Please advise the Tribe regarding your agencies' intentions with regard to the WSE Regulation Schedule implementation. Will permits be issued? Will COE regulations be amended? What opportunities exist for the Tribe to influence the outcome of the decision? On a positive note, the Tribe will fully support the WSE as soon as the water quality concerns are addressed and is willing to cooperate to address these concerns.

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If you have questions or comments concerning this letter, please direct them to Mr. Gene Duncan, Tribal Water Resources Director, at (305) 223-8380, extension 2240. Please respond to the questions in the above paragraph to Ms. Dionè Carroll, Tribal Attorney, at (305) 279-1474.

Sincerely yours,

A handwritten signature in cursive script that reads "Dionè Carroll". The signature is written in black ink and is positioned to the right of the typed name.

Dionè Carroll, Esq.

c: Mark Ziminske