Update on Nitrogen Water Quality Conditions in the South Florida Water Management District

February 4, 2016

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November 2015 WRAC presentation focused on phosphorus water quality conditions

1. Comments on phosphorus slides resulted in refined presentation posted to WRAC Meetings website (11/5/15 Meeting Date)

2. Questions about nitrogen to and from Lake Okeechobee and in Estuary watersheds resulted in today’s presentation, including:
   - Average annual TN levels WY2011-2015
   - Percent contribution of water and nitrogen from each sub-watershed relative to the watershed
Total Nitrogen Conditions

**Northern Everglades Watersheds**

- **Kissimmee / Lake Okeechobee**
  - No TMDL for nitrogen

- **St Lucie Estuary**
  - TMDL Estuary TN Target: 0.72 mg/L
  - BMAP June 2013

- **Caloosahatchee Estuary**
  - TMDL Estuary TN Target: ~4,121 mtons (~9 million lbs) TN/yr
  - BMAP November 2012
Northern Everglades Lake Okeechobee Inflow
WY2011-WY2015
Nitrogen

**LAKE ISTOKPOGA**
13% Water; 13% TN Load
- TN Load: 530 mt
- TN FWMC: 1.54 ppm

**INDIAN PRAIRIE**
13% Water; 18% TN Load
- TN Load: 728 mt
- TN FWMC: 2.16 ppm

**FISHEATING CREEK**
9% Water; 10% TN Load
- TN Load: 401 mt
- TN FWMC: 1.71 ppm

**WEST LAKE O.**
2% Water; 2% TN Load
- TN Load: 89 mt
- TN FWMC: 1.61 ppm

**UPPER KISSIMMEE**
34% Water; 25% TN Load
- TN Load: 1,048 mt
- TN FWMC: 1.16 ppm

**LOWER KISSIMMEE**
16% Water; 13% TN Load
- TN Load: 554 mt
- TN FWMC: 1.29 ppm

**TC-NS**
6% Water; 8% TN Load
- TN Load: 329 mt
- TN FWMC: 1.94 ppm

**EAST LAKE O.**
4% Water; 5% TN Load
- TN Load: 198 mt
- TN FWMC: 1.90 ppm

**SOUTH LAKE O.**
3% Water; 6% TN Load
- TN Load: 265 mt
- TN FWMC: 3.80 ppm

Northern watershed contributes:
~ 91% of flow and
~ 87% TN load

**Lake Okeechobee**
Northern watershed contributes:
~ 91% of flow and
~ 87% TN load
Local Basin Runoff accounted for about 79% of flow and 79% of TN load to Estuary.

**TEN MILE CREEK**
10% Water; 8% TN Load

<table>
<thead>
<tr>
<th>TN Load</th>
<th>TN FWMC</th>
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<tbody>
<tr>
<td>96 mt</td>
<td>0.99 ppm</td>
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</tbody>
</table>

**C-24**
13% Water; 17% TN Load

<table>
<thead>
<tr>
<th>TN Load</th>
<th>TN FWMC</th>
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</thead>
<tbody>
<tr>
<td>195 mt</td>
<td>1.62 ppm</td>
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</tbody>
</table>

**C-23**
12% Water; 16% TN Load

<table>
<thead>
<tr>
<th>TN Load</th>
<th>TN FWMC</th>
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</thead>
<tbody>
<tr>
<td>186 mt</td>
<td>1.66 ppm</td>
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</table>

**LAKE OKEECHOBEE**
21% Water; 21% TN Load

<table>
<thead>
<tr>
<th>TN Load</th>
<th>TN FWMC</th>
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<tbody>
<tr>
<td>249 mt</td>
<td>1.29 ppm</td>
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**C-44**
13% Water; 16% TN Load

<table>
<thead>
<tr>
<th>TN Load</th>
<th>TN FWMC</th>
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</thead>
<tbody>
<tr>
<td>191 mt</td>
<td>1.54 ppm</td>
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**TIDAL BASINS (ESTIMATED)**
31% Water; 22% TN Load

<table>
<thead>
<tr>
<th>TN Load</th>
<th>TN FWMC</th>
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<tbody>
<tr>
<td>257 mt</td>
<td>0.90 ppm</td>
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</table>
Northern Everglades
Caloosahatchee Estuary Inflows WY2011-15
Nitrogen

Local Basin Runoff accounted for about 69% of flow and 68% of TN load to Estuary

TIDAL BASIN (ESTIMATED)
21% Water; 20% TN Load

<table>
<thead>
<tr>
<th>TN Load</th>
<th>TN FWMC</th>
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<tbody>
<tr>
<td>568 mt</td>
<td>1.29 ppm</td>
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</table>

LAKE OKEECHOBEE
31% Water; 32% TN Load

<table>
<thead>
<tr>
<th>TN Load</th>
<th>TN FWMC</th>
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<tbody>
<tr>
<td>874 mt</td>
<td>1.36 ppm</td>
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</table>

C-43 AND S-4 BASINS TO ESTUARY
48% Water; 48% TN Load

<table>
<thead>
<tr>
<th>TN Load</th>
<th>TN FWMC</th>
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</thead>
<tbody>
<tr>
<td>1,342 mt</td>
<td>1.35 ppm</td>
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Note: Coastal Basin runoff (west of Shell Point) is not included as Estuary contribution.
Discussion