Subwatershed: Indian Prairie

Basin: C-40

<table>
<thead>
<tr>
<th>Flow Issues 1:</th>
<th>NO</th>
<th>Water Quality Issues 2:</th>
<th>YES</th>
</tr>
</thead>
</table>

Monitored Structure(s): S-72

Inflow loads: Lake Istokpoga

Acreage: 24,076

Percentage of Subwatershed Acreage: 9%

Percentage of Lake Okeechobee Watershed: 0.7%

1 Flow Issues:
- The proportion of load and flows generated among C-40, C-41, C-41A is not known. It is currently estimated by an algebraic equation.
- Flow has slightly increased (not significantly) between pre and post-protection plan periods.
- Flow has a statistically significant increasing trend in the post-protection plan period.
- Although there has been a slight increase in flow and load, this basin is a small contributor to the subwatershed relative to other basins (6% of flows).
- Flow and load estimates were based on samples and measurements taken at major structures within the regional system.

2 Water Quality Issues:
- The total phosphorus (TP) load has a statistically significant increasing trend in the post-protection plan period.
- The TP flow-weighted mean concentrations (FWMC) was high relative to other areas with little change between pre and post-protection plan periods (494 μg/L to 493 μg/L).
- There was a slight decrease (not statistically significant) in total phosphorus (TP) median flows-weighted mean concentrations (FWMC) between the pre and post-protection plan period.

Pre-Protection Plan Flows

Post-Protection Plan Flows

Pre-Protection Plan Loads

Post-Protection Plan Loads

Prepared by: SFWMD  Y Wang - 4/5/2019 @5:26 PM

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### Summary Statistics

<table>
<thead>
<tr>
<th></th>
<th>Period of Record</th>
<th>Pre-Protection Plan</th>
<th>Post-Protection Plan</th>
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<tbody>
<tr>
<td>Averages</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Avg. Flow (acft/yr)</td>
<td>17,602</td>
<td>17,526</td>
<td>17,679</td>
</tr>
<tr>
<td>Avg. Load (mt/yr)</td>
<td>10.71</td>
<td>10.67</td>
<td>10.74</td>
</tr>
<tr>
<td>FWMC (ug/L)</td>
<td>493</td>
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<tr>
<td>Avg. UAL (lbs/acre/yr)</td>
<td>0.98</td>
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<tr>
<td>Medians</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median Flow (acft/yr)</td>
<td>13,297</td>
<td>16,701</td>
<td>12,458</td>
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<tr>
<td>Median Load (mt/yr)</td>
<td>8.21</td>
<td>10.18</td>
<td>6.51</td>
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<tr>
<td>Median FWMC (ug/L)</td>
<td>527.57</td>
<td>589.5</td>
<td>475</td>
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<td>Median UAL (lbs/acre/yr)</td>
<td>0.75</td>
<td>0.93</td>
<td>0.60</td>
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</table>

Highlighted cells indicate statistical significance.

The Mann-Whitney test is a non-parametric test alternative to the two-sample t-test. It is used to test the equality around the central tendency of two data sets (pre-protection plan period and post-protection plan period). A p-value of less than 0.05 indicates that a significant difference between pre-protection plan period and post-protection plan period exists. A comparison of the median values identifies which period is higher. A median is a value at the mid-point of a distribution of observed data.

### C-40 Basin - Statistics


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<th>Sen Slope</th>
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<td>0.9%</td>
<td>-0.059</td>
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#### Sub-watershed Indian Prairie - Seasonal Kendall τ Results for Total Monthly P Load (kg) by Basin over Three Water Year Ranges 1991-2018, 1991-2004, 2005-2018

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#### Sub-watershed Indian Prairie - Seasonal Kendall τ Results for Monthly FWMC TP (µg/L) by Basin over Three Water Year Ranges 1991-2018, 1991-2004, 2005-2018

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Italic red font cells indicate statistical significance.

Note: The Seasonal Kendall Tau analyzes data for monotonic trends (consistent upward or downward trend) and accounts for seasonality. Typically monthly data are used to identify seasons. Probability values (p-values) are derived from the tau-statistic which identifies the direction of the trend. A p-value less than 0.05 detects statistically significant trends for a period of interest. The Sen Slope provides an indication of the magnitude of the observed trend.

### C-40 Basin - Monthly Data and SKT Trends

[Graph of Total P Load (kg) by Water Year from 1991 to 2018, showing trends and data points marked with data values.]

**Legend:**
- **WY1991-2004 Trend**
- **WY2005-2018 Trend**
- **POR Trend**
- **Monthly Data**