Red Bug Slough



Sarasota County Water Resources

Red Bug Slough Basin

- Sub-basin of the Phillippi Creek Basin
- Drainage area covers 1925 acres (3 square miles)
- System consists of Mirror Lake (headwaters); Clark Lake East; Clark Lake West; Red Bug Slough Preserve, and Red Bug Slough Canal
- > Highly developed (94%)
- Primarily residential (83%); commercial (8%); preserve (6%); road/highway (3%)
- > 996 acres serviced by OSTDS (51%)
- 836 acres (43%) of acres serviced by OSTDS are included in PCSSRP project

Red Bug Slough Basin (cont'd)

PCSSRP Phases: Phase N – scheduled for 2007 Phase P – scheduled for 2012

Phase Q – scheduled for 2012

- Two sewage package plants in basin no probable inpact
- No permitted AWWTP discharges to the basin
- Mirror Lake bird rookery possible non-anthropogenic nutrient load source
- Bird rookery FDOT mitigation site for Clark Rd. improvements

RBS Basin within Phillippi Creek Basin



Red Bug Slough Basin Boundary



Phillippi Creek PCSSRP Phases



Clark Lake West TMDL

- Class III Fresh Waterbody
- June 24, 2005 Verified List of Impaired Waters for Group Three
- Impaired by nutrients based on Trophic State Index >60 in 2003
- TSI measure of eutrophication
- > 2003 Chlorophyll annual average 43.66 mg/L
- > 2003 Total Nitrogen annual average 1.70 mg/L
- > 2003 Total Phosphorus annual average 0.23 mg/L
- > 2003 annual average TSI 69.35

Why Monitor?

- Gather data to verify the TMDL
- If agree refine the TMDL
- Enable County staff to pinpoint possible nutrient sources
- Enable County staff to design projects and/or employ BMPs to reduce nutrient loads to meet TMDL
- Establish legitimate measure of impairment and improvement trends as proposed stormwater improvements are implemented through Basin Management Action Plan (BMAP).

Parameters

- TKN, Nitrite+Nitrate, TN, TP, PO4, NH4, Chlorophyll, Color, TSS, Turbidity, and BOD
- Temperature, % DO Saturation, DO mg/L, Conductivity, Salinity, and pH
- Trophic State Index (TSI) calculated for all 4 lakes

Aerial of Four Lakes



Red Bug Slough Sample Basins and Stations



Red Bug Area TSI









Where Do We Go From Here?

- Continue monthly monitoring
- Add flow data to nutrient data to calculate actual stormwater load
- Conduct seasonal bird counts
- Work with FDOT other stakeholder
- Participate in development of BMAP
- Design and implement projects proposed in BMAP to reduce nutrient loads.

Thank You

Red Bug Area Chlorophyll



Red Bug Area Nitrogen



Red Bug Area Phosphorus



Total N versus Total P



Total N versus Chl-a



Total P versus Chl-a



Total N versus TSI



Total P versus TSI



Chlorophyll versus TSI

