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 impact
- 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
Red Bug Slough Study

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
Red Bug Slough Study

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).
Red Bug Slough Study

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
Red Bug Slough Sample Basins and Stations
Red Bug Slough Study

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
Total N versus Total P

Mirror Lake
Clark Lake East
Clark Lake West
Red Bug Slough Lake
Total N versus Chl-a

Chlorophyll a

Total Nitrogen

- Mirror Lake
- Clark Lake East
- Clark Lake West
- Red Bug Slough Lake
Total P versus Chl-a

Chlorophyll A

Total Phosphorus

Mirror Lake
Clark Lake East
Clark Lake West
Red Bug Slough Lake