EcoSummary

DEER PRAIRIE SLOUGH@ I-75 EAST OF VENICE

August 17, 1999

ECOREG REF STREAMS

EXCELLENT

Stream Condition Index (SCI): The standardized biological assessment tool used by FDEP biologist to indicate ecosystem health and identify impairment as compared to reference (natural) conditions of streams within the various ecoregions of Florida

For samples collected before June 8, 2004
All field and laboratory methods followed FDEP Standard Operating Procedures and met FDEP quality assurance/quality control standards.
For samples collected on or after June 8, 2004
All field and laboratory methods followed FDEP Standard Operating Procedures (SOPs) and met DEP quality assurance/quality control standards.

Purpose



Biological and chemical sampling were performed on Deer Prairie Slough in order to gain further information on the biological health of the watershed for use in Florida's Watershed Management and Biocriteria programs. Because this watershed was on the 1998/99 303(d) list for Total Maximum Daily Loading (TMDL) determination, the results may also be used in determination of TMDL needs and priorities.

Watershed Characteristics

Deer Prairie Slough flows through central Sarasota County. It is a fairly large tributary to the Myakka River, entering the estuarine portion of the Myakka just west of Northport. The sampling site was located further upstream east of the I 75 road crossing, where the system is strictly fresh water. At this location, it is a sandy-bottom, tannic stream that was channelized for drainage purposes, but has exhibited modest recovery of natural sinuousity. The banks of the stream have very little riparian buffer. It is evident that the rapidly flowing current frequently scours the banks, causing erosion and sediment loading, particularly in the rainy season when the slough is subject to extreme rises in water level. Agriculture is the dominant land use in the basin, primarily cattle pasture and a small amount of citrus. However, a large portion of the watershed is now owned by State and County governments and cattle ranging no longer dominates. No permitted domestic or industrial waste discharges occur in the

watershed.

Results

At the time of sampling, the stream was nearly chest deep. The water was clear, but very tannic, flowing with a velocity of 0.5 m/s. Dissolved oxygen was 3.27 mg/l. Conductivity was 80 umho/cm. pH was 6.26 SU and temperature was 29.07 deg. C. The low dissolved oxygen and conductivity, as well as the relative acidity of the water suggests that recent rainfall was influencing the chemistry of the stream. Total Nitrogen was at median values (1.54 mg/l) as compared to surface waters statewide. Total Phosphorus was relatively low for southwest Florida, at 0.084 mg/l. Both total and fecal coliforms were well below the State standards for asingle day sample event (800 and 120 colonies/100 ml, respectively). Turbidity and total suspended solids were within ambient ranges. The habitat assessment score, 87, was in the suboptimal range, due to the lack of instream diversity and riparian zone and the potential for bank scouring and sediment loading.

The Stream Condition Index rating was 29 out of a possible 33, in the "excellent" range. This indicates that the stream supported a healthy macroinvertebrate community at the time of sampling.

The FDEP's Impaired Waters Rule identified the parameter of concern for Deer Prairie Slough to be dissolved oxygen (DO). The DO reading on the day of sampling was well below the State Standard of 5.0 mg/l. However, the biological community was assessed as healthy, indicating that the low DO measured is likely a natural feature of south Florida streams during the summer months. Additionally, the water chemistry analyses indicated that Deer Prairie Slough was carrying a low nutrient and coliform load at the time of sampling.

Suggestions

Deer Praire Slough is currently included in a Site Specific Alternative Criteria study for DO, as part of the EPA's TMDL determination for the Myakka River watershed. Biological methods will be included to ascertain if low DO levels are indicative of natural conditions in the basin. If the aquatic community is not impaired, it may be concluded that low DO levels do not adversely effect the health of the system.

The hydrology of Deer Prairie Slough has been altered drastically by channelization. Bank erosion and sediment loading are severe problems. Since much of the upstream watershed is now owned by public agencies, much opportunity exists for restoration activities that restore natural hydrology and riparian zone buffer.

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