EcoSummary

TMDL STUDIES

Anclote River - headwaters in Starky Wilderness Park

May 11, 2005

FAIR

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



Macroinvertebrate samples were collected for a Stream Condition Index (SCI) bioassessment of the Anclote River in order to gain further information on the biological health of the watershed for use in the administration of Florida's Ecosystem Management Water Quality Assessment and Total Maximum Daily Loads programs. Because this watershed is on the State of Florida's Impaired Water Rule's List for Total Maximum Daily Loading (TMDL) development, the results may also be used in determination of TMDL needs and priorities. The verified parameter of impairment is dissolved oxygen. Biological methods are particularly useful in order to ascertain if low DO levels are indicative of natural conditions. 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 SCI is based on ten measurements that assess the ecological integrity of the aquatic macrioinvertebrate community. If the Index score falls between 73 and 100, it is considered good; if it falls between 46 and 72, fair; between 19 and 45, poor; and between 0 and 18, severely degraded

Watershed Characteristics

The Anclote River's headwaters are in the Starkey Wilderness area in southwestern Pasco County. The Starkey Wilderness area is owned by SWFWMD, who issues ground water withdrawal permits to Tampa Bay Water. The area is open for public recreation use and managed as such by Pasco County. The Anclote flows from the Starkey wetlands through Tarpon Springs where it empties into the Gulf . The watershed is heavily urbanized, particularly in the tidal reaches of Tarpon Springs, and recently all the way up to the Starkey boundary. The location map in this report does not show the new development in the Seven Springs Area.

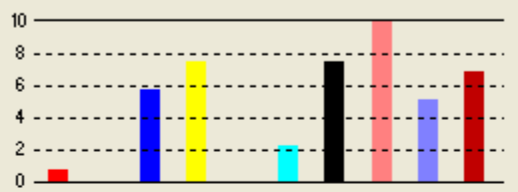
The sampling site is located downstream of the power line right of way on the Wilderness property. The stream is rapidly flowing and very tannic. The riparian zone is entirely natural. During years of low rainfall, the stream can go entirely dry at this location. Long-term water quality trends have shown the dissolved oxygen levels in the Anclote River to drop below the State Standard of 5.0 mg/l, particularly in the summer months. The aquatic macroinvertebrate community was sampled six times at various locations since 1995. It has always been relatively healthy.

Results

At the time of sampling, the stream was about 0.4 m deep (with deeper pools) and water velocity was 0.3 m/sec. The habitat assessment score was 134 out of 160, which places it in the optimal category for habitat characterization. Dissolved oxygen was 8.31 mg/l, conductivity was 149 umho/cm, pH was 7.17 SU and temperature was 20.93 deg. C.

The SCI score was 51 out of 100, falling in the "fair" category. This means that the aquatic macroinvertebrate community was fairly healthy and the stream was meeting designated uses for a Class III waterbody, which include the maintainence of a viable biological community. The score, however, was at the low end of the fair category range, largely because there were no Ephemeroptera (mayfly) taxa or long-lived taxa collected. This suggests that the stream may not have been flowing at this location all year round.

ANCLOTE RIVER - HEADWATERS IN STARKY WILDERNESS PARK



BioRegion : **Peninsula**

Sample Date : **May 11, 2005**

Good	73 - 100
Fair	46 - 72
Poor	19 - 45
Very Poor	0 - 18

Core Metrics	Value	0 - 10 Points	Metric Score
# TOTAL TAXA	18	16 - 41	0.8
# EPHEMEROPTERA TAXA	0	0 - 5	0
# TRICHOPTERA TAXA	4	0 - 7	5.71
# CLINGER TAXA	6	0 - 8	7.5
# LONG-LIVED TAXA	0	0 - 4	0
# SENSITIVE TAXA	2	0 - 9	2.22
% DOMINANT TAXON	21.24	54 - 10	7.45
% SUSPENSION FEEDERS / FILTERERS	58.41	1 - 40	10
% TANYTARSINI	4.42	0 - 26	5.12
% VERY TOLERANT	2.65	59 - 0	6.84
	TOTAL METRIC SCORE :		45.64
	/ Correction Factor :		0.9
	= SCI FINAL SCORE :		51

Macroinvertebrate Dip Net (20 sweeps, emphasizing most productive substrates)

Significance

The FDEP's Impaired Waters Rule has identified dissolved oxygen as a parameter of concern for the Anclote River. The DO measurement taken on 5/11/05 was above the State Standard of 5.0 mg/l. Biological sampling at this site showed that the aquatic invertebrate community was relatively healthy, as it has been when assessed in the past. It may be concluded that the biological community at this location has not been adversely impaired by DO fluctuations, and that these fluctuations are largely natural.

Suggestions

The headwaters of the Anclote River are largely preserved in the Starkey Wilderness Area. However, increasing residential development in the Seven Springs area and all the way downstream to the mouth at Tarpon Springs will result in increased polluted stormwater runoff. The pollutants include oil, and other automobile fluids, paint and construction debris, yard and pet wastes, pesticides and litter. Urban runoff contaminates streams, rivers and bays, harms aquatic life and increases the risk of flooding by clogging storm drains and catch basins. Stormwater runoff Best Management Practices (BMPs) need to be expanded by the private sector as well as public agencies. These improvements include engineering retrofits, riparian zone stabilization vegetative swales, and created wetlands. Home owners can also reduce stormwater runoff pollution by limiting lawn fertilization and removing yard waste so that it does not enter the stream with stormwater runoff.

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