



Mill Creek, Manatee County

September 9, 1997

Tampa Bay EMA

Purpose

Biological and chemical sampling were performed on Gamble Creek in order to gain further information on the biological health of the watershed for use in Florida's Ecosystem Management and Biocriteria programs. Because this watershed is 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.

Methods

Macroinvertebrate samples were collected for the calculation of the Stream Condition Index¹. Surface water was also sampled for selected chemical analyses, and physicochemical parameters were measured.

Basin Characteristics

Mill Creek is located in northeastern Manatee County. It is a small stream that flows into the Manatee River. The sampling site is shown in Figure 1. At this location, it is a sandy-bottom stream with high banks, sparsely vegetated, indicating a high potential for spates. The riparian zone is natural, not heavily forested, but it has an extensive palmetto plain. Water

velocity is fairly rapid, and there is adequate instream habitat, including leaf mats, snags, and submerged roots. Agriculture is the dominant land use in the basin, primarily citrus and cattle pasture with a small amount of row crops. No permitted domestic or industrial waste discharges occur in the watershed.

Results

At the time of sampling, the stream was quite shallow. The water was clear and its velocity was 0.2 m/s. Dissolved oxygen was 7.46 mg/l. Conductivity was 425 umho/cm. pH was 7.19 SU and temperature was 23.44 °C. The habitat assessment score, 116, was borderline optimal/suboptimal range (Fig. 2). Water chemistry results are shown in Figure 3. Total Nitrogen was low, as compared to typical values statewide². Total phosphorus was elevated, but may be typical of the predominance of phosphate bearing rock in the area. Both total and fecal coliforms were moderately high, but within the state standards for a single day concentration. Turbidity and total suspended solids were relatively low.

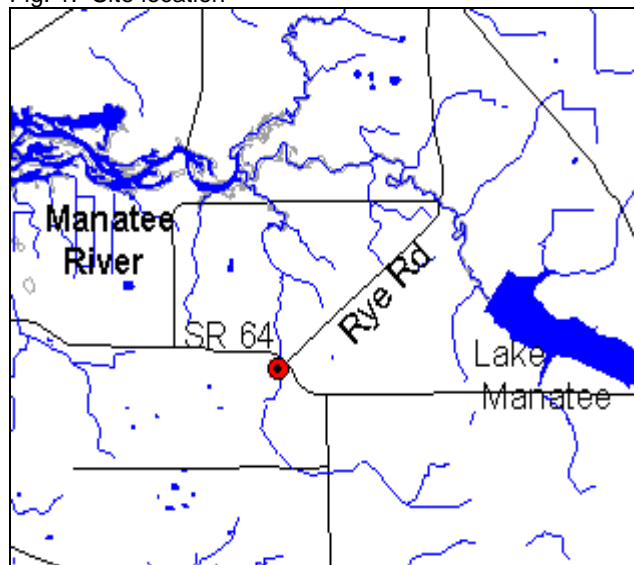
The Stream Condition Index rating was 29 out of a possible 33, in the 'very good' range. This indicates that the stream supported a healthy macroinvertebrate community and met its designated use at the time of sampling.

The measurement identified as parameter of concern in the 303(d) TMDL list was coliforms. **The water chemistry analyses indicate that Mill Creek was not carrying a high pollutant load to the Manatee River at the time of sampling.** Total and fecal coliforms were within state standards.

Significance and Suggestions

There were no excessive pollutants detected in Mill Creek at the time of sampling. Mill Creek may be a candidate for removal from the 303(d) TMDL list.

Fig. 1. Site location



For more information, contact Peggy Morgan, FDEP Southwest District, 3804 Coconut Palm Dr., Tampa, FL 33619; (813) 744 - 6100

Figure 2. Habitat Score

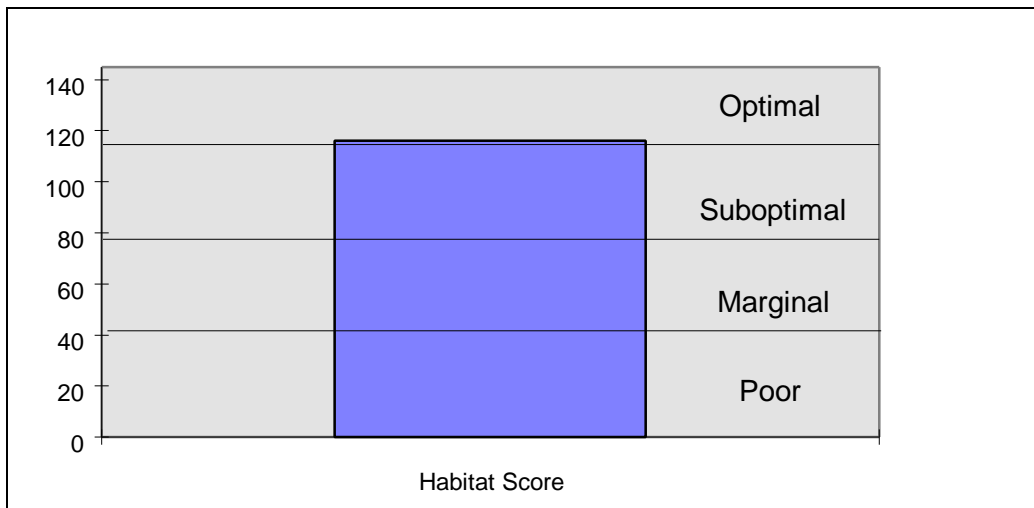


Figure 3. Water Chemistry results

Chloride	Sulfate	Ammonia-N	Nitrate-Nitrite	Kjeldahl Nitrogen	Total Phosphorus
mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
56	62	0.02	0.032	0.84	0.26

Turbidity	Total Suspended Solids	Total Coliforms	Fecal Coliforms
NTU	mg/l	#colonies/100 ml	#colonies/100 ml
3.9	4	1600	150

¹State of Florida Department of Environmental Protection. 1993. Standard Operating Procedures Manual (Draft). Benthic Macroinvertebrate Sampling and Habitat Assessment Methods: 1. Freshwater Streams and Rivers. FDEP Contract No. WM385. EA Engineering, Science and Technology, Inc., Carrollton, Texas.

²State of Florida Department of Environmental Protection. 1989. Friedemann, M. and J. Hand. Typical water quality values for Florida's lakes, streams and Estuaries. Standards and Monitoring Section. Bureau of Surface Water Management.