



EcoSummary

Trout Lake near Eustis, Lake County
October 28, 1996



Lake Condition Index: A developmental biological assessment tool used by FDEP biologists to indicate ecosystem health and identify impairment in Florida Lakes.

Introduction

Trout Lake lies in Lake County just north of the city of Eustis. It is connected via a canal at its southwest corner with the substantially larger Lake Eustis. The Trout Lake drainage basin is much larger than the lake itself. It includes portions of the cities of Eustis and Umatilla, commercial developments, and natural wetlands and small lakes. The immediate vicinity of the lake is about equally split between commercial and residential development to the west and undeveloped wetlands to the east. This lake was placed on the 303(d) list due to elevated nutrient levels. Waterbodies on the 303(d) list are required to undergo a Total Maximum Daily Load (TMDL) study. The purpose of the TMDL is to determine the amount of pollution reduction needed to restore the system to a condition suitable for its designated use. In this case, the designated use is for recreation and maintenance of a healthy, well-balance aquatic community. DEP's Central District Surface Water Monitoring staff was requested to assess the status of selected waterbodies on the TMDL list that were placed on the list with "limited data". "Limited data" waterbodies were those with less than 10 observations in the STORET database, with the most recent observations occurring prior to 1990, or those with qualitative, non-point source survey data only.

Results and Discussion

Benthic macroinvertebrate communities, physical/chemical parameters, and nutrients were sampled on October 28, 1996. Macroinvertebrate communities were sampled by taking petite Ponar grabs at twelve different locations radially distributed throughout the lake. The ponar grabs were then composited, and the composite sample subsampled until a 100-organism minimum was reached. Only eight macroinvertebrate taxa were collected from Trout Lake. Diptera (fly larvae) accounted for 91% of the total number of organisms sampled. The phantom midge *Chaoborus punctipennis* alone made up 72% of the sample. The diversity index calculated for this lake was low: 1.43. Coliform bacteria counts and the various forms of nitrogen were found to be at normal levels. However, total phosphorus and orthophosphate were quite high; 0.14 mg/L and 0.068 mg/L, respectively.

Conclusions

Our results suggest that the macroinvertebrate community at Trout Lake is in poor shape, with few macroinvertebrate taxa and a large dominance by a single species (*Chaoborus punctipennis*). The various forms of phosphorus in the lake are quite high, roughly in the 90th percentile when compared to other Florida lakes. For these reasons, we recommend that Trout Lake remain on the 303(d) list.

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