THE ATLANTA REGIONAL COMMISSION'S URBAN STREAM DEMONSTRATION PROGRAM

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INTRODUCTION

During the years 1986, 1987, and 1988, the Atlanta Regional Commission (ARC) has taken part in five urban stream monitoring projects, together with five local governments: Cobb County, DeKalb County, and the cities of Atlanta, Chamblee, and Marietta. The objectives of each project were: (1) to walk and sample a stream section and its adjacent area in order to identify apparent pollution sources; (2) to institute corrective actions to eliminate the problems; (3) to assess the water quality of each stream; and (4) to use the information to help other governments develop stream monitoring programs.

OUTLINE OF FIVE-STEP PROCESS

Generally, the projects involved five steps: stream selection, conducting the stream survey, correcting problems, evaluating water quality, and publishing a report on the project.

Stream Selection

The streams were selected on the basis of reconnaissance and the need to set priorities within the framework of a systematic monitoring program. Among the selection criteria were: (1) the stream should have a history of water quality violations or complaints, and (2) the watershed should include a considerable number of activities associated with nonpoint source pollution, such as industrial or commercial land uses. The streams selected, and ARC's reports on the work on each stream, were a tributary of Proctor Creek in an old, largely commercial and industrial section of northwest Atlanta (ARC, 1986a); several branches of a tributary of Sope Creek that flow through an industrial park in the City of Marietta (ARC, 1986b); the headwaters of Rottenwood Creek, originating a short distance south of downtown Marietta (ARC, 1987a); two tributaries of Nancy Creek with headwaters in the commercial and industrial parts of the City of Chamblee (ARC, 1987b); and Arrow Creek, a tributary of the North Fork of Peachtree Creek whose headwaters include the southern part of the City of Chamblee and the DeKalb Peachtree Airport (ARC, 1988).

Field Survey

Field observations generally were of three kinds: water quality sampling, field observations, and macroinvertebrate collecting. The number and kind of samples and analyses varied with project needs and laboratory schedules, but always included routine chemical analyses of several baseline samples. Field observations by ARC and local government staffs usually required walking most of the stream and its branches. Macroinvertebrates were collected and analyzed through the volunteer help of the Georgia State University Biology Department.

Investigating and Remedying Problems

Problems found included water quality problems and administrative problems. The most prevalent water quality problems included cracked sewer pipes, erosion and sedimentation, soap washoff from auto dealers, oil and grease washoff due to bad storage and houskeeping practices, and only rarely, illegal discharges. Administrative problems involved lack of coordination between governments and lack of interfunctional, interdepartmental coordination within a government, specifically involving erosion control.

Local governments had primary investigation and remedial responsibility. Most property owners were cooperative. Local governments can use local ordinances such as those regulating sewer use, stormwater, solid waste, and general nuisances to require clean-up. If necessary, the Environmental Protection Division (EPD) can also assist under the authority of the State water quality law.

Evaluation of Water Quality

In two projects, some samples showed both bacteriological and chemical degradation. In one of them, high fecal coliform samples led to an ultimately successful search for a broken sewer line. But in the other three streams, the only violations of water quality standards were several instances of elevated fecal coliform levels in two streams. Yet macroinvertebrate numbers and diversity were consistently very low, suggesting habitat destruction.

CONCLUSIONS

The ARC experiences suggest the following:

1. Urban stream protection needs to be improved.
2. More and better local government sampling and monitoring programs are needed.
3. Local ordinances and State laws should be reviewed and should clearly provide for local enforcement of nonpoint source pollution control.
4. Erosion and sediment control programs need to be intensified.
5. Stream habitat destruction consistently accompanies urbanization.

LITERATURE CITED

Atlanta Regional Committee (ARC), 1986a. Urban Stream Demonstration Project: Proctor Creek Tributary.

Ibid., 1986b. Urban Stream Demonstration Project: Sope Creek Tributary Area.

Ibid., 1987a. Urban Stream Demonstration Project: Rottenwood Creek Headwaters, City of Marietta and Cobb County, Georgia.

Ibid., 1987b. Urban Stream Demonstration Project: Two Nancy Creek Tributaries.

Ibid., 1988. Urban Stream Demonstration Project: Arrow Creek.