

Hydrology - SCWRC Administrative Report 16

Water Resources of the Piedmont Region, South Carolina

By
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SUMMARY

The S. C. Water Resources Commission is responsible for addressing the needs for water development, utilization, and conservation in the State. In order to accomplish this task, information must be collected on where the water is located, how much is available, the quality of the resource, and its current and future use. Much of this information is currently unavailable in the Piedmont region of the State. The S.C. Water Resources Commission is therefore proposing to undertake a concentrated inventory of the water resources of this region.

The Piedmont region of South Carolina is an 11,000 square mile area composed of four river sub-basins, the Upper Savannah, Saluda, Broad, and Catawba-Wateree, and a small portion of the Lynches and Pee Dee River sub-basins. One of the major industrial centers of the South, the "Interstate-85 Industrial Corridor," traverses the headwaters of the northwestern portion of the region and contributed \$5.3 billion to the income of the two Carolinas and Georgia in 1980. This region represents about 37 percent of South Carolina's total land area and almost 45 percent of the State's population.

Over the past decade, several major water problems have evolved which are beginning to alarm local decision-makers. These problems either stem from increasing demand on the headwater reservoirs and streams of the region or affect the search for alternative sources. (1) Present surface water-supply sources are not adequate, nor can they be expanded, to meet projected demands. (2) Adequate information is not available to evaluate the potential of ground water as an alternative supply source on a regional scale. (3) Serious surface-water quality problems resulting from municipal and industrial wastewater discharges, urban run-off and decreased in-stream flows, plague several areas of the region. (4) Excessive concentrations of potentially harmful radionuclides have been identified in the rock aquifers in several parts of the region, as well as many instances of bacterial contamination. These problems have been documented in the *State Water Assessment*, recently completed by the S. C. Water Resources Commission, and the Second National Water Assessment. The State 208 Water Quality Management Plan, as well as various instate reports, also document these and other water resource problems.

A major goal of the proposed project is to integrate surface-and ground-water investigations by developing a critically needed technical foundation on which to base water availability decisions. A secondary goal is to disseminate this information to private and public water use decision-makers throughout the region. Specific objectives of the project include: (1)

conducting a water use inventory; (2) identifying problem areas and the research and technical data needed to solve these problems; (3) identifying and mapping regional hydrogeologic units (aquifers) based on hydraulic and water-quality criteria; (4) identifying significant existing and potential water-quality problems and evaluating the impact of these problems on water resource utilization; (5) providing technical assistance and technology-transfer programs throughout the project; (6) determining the relationship between streamflow and ground-water discharge; (7) upgrading existing ground- and surface-water availability programs conducted cooperatively with the U. S. Geological Survey; and (8) evaluating water supply source alternatives.

Initial project costs are estimated at \$184,000, including five new positions. A five-year program has been developed which identifies the need for a permanent field office in the Mauldin area of Greenville County during the second year. Fifth-year costs are projected to be approximately \$416,000.

Copies of this report are available in the SCDNR's Columbia office.