ENVIRONMENTAL Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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Sustainability of Ground Water Resources in Southeastern New Hampshire

Background

Population growth and accompanied development over the past 20 years have led to an increase in ground-water use from surficial and fractured-bedroc aquifers in southeastern New Hampshire. New roads, parking lots, buildings, homes, and other development-related changes have created impervious surfaces that decrease recharge to aquifers. The combined effects of the recharge losses and increased withdrawals raise serious questions about the sustainability of the ground-water resources in the region. This study being completed by the State of NH Department of Environmental Services, NH Geologic Survey, NH Coastal Program, and the United States Geological Survey to provide southeastern New Hampshire communities with new tools and data needed to make informed decisions about water supply and use and to plan for future growth in their towns.

Approach and Products

Results from this study will benefit planners at the local, regional and state level by contributing to a better understanding of the regional hydrology and assisting in developing and managing a sustainable water supply for the region. Over the three-year study, the project will provide several products to all 42 communities in the coastal watershed, including:

- Compilation of existing data on wells, surficial deposits, and aquifer systems that has been generated by various Federal, state, and local agencies and the private sector. This data will be geo-referenced and incorporated into geographic information system (GIS) databases suitable for computer-based analyses. This "data-mining" component has already discovered over 1,000 existing wells that could provide historic water level information.
- Development of a regional, long-term water-resources monitoring program by activating a comprehensive network of ground-water observation wells and streamgages.
- Collection of detailed water-use data, including information on withdrawals, returns, transfers and uses by different types of users in each community so that accurate water budgets and trends can be calculated.
- Development of estimates of ground-water availability within each community. This will be done using the data mentioned above and simplified analytical approaches.
- A groundwater flow simulation model will be tested on a portion of the study area. This pilot effort will be used to refine ground-water availability estimates and evaluate the effects of projected development scenarios and alternative water-management practices. An evaluation of the modeling approach will be conducted to assess its suitability for

future application at larger and smaller scales. Throughout the study, close coordination will be maintained between the participating agencies, communities in the study area, regional planning agencies, public water suppliers, and others to identify problems, collect data, evaluate future growth, and identify realistic management options.

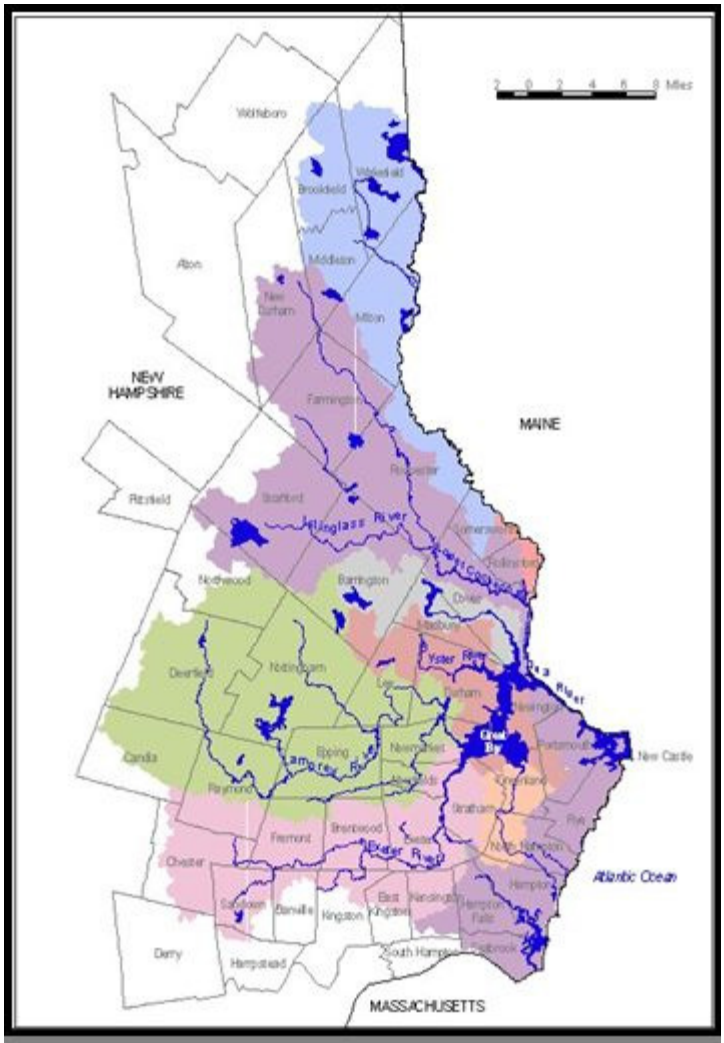
- Surficial geology maps and data for the study area.
- Access to data developed for their community on historic water use and supply

Partner Roles

The New Hampshire Coastal Program serves as banker, coordinator, facilitator and referee on the Sustainability project. NH Geological Survey is developing the background information for the project. This includes the data-mining, surficial geology maps and traditional water availability estimates. The USGS will use its vast technical knowledge and expertise to conduct much of the project including the water use and modeling components. Each of the 42 communities in the study area have been asked to help support the project financially. To date, about 50 percent of the communities have stepped forward with pledges for funding (totally $80,000).

Budget and Funding

The budget for this project is approximately $1.5 million. Funding for the project is coming primarily from Federal grants, in-kind match from USGS and NHGS, and donations from the watershed communities. A direct Congressional appropriation, requested by Senators Sununu and Gregg, was approved in 2003. Administered by NOAA, this appropriation is now being used to fund the project. Over 21 watershed communities have pledged their financial support for the project. The project will take about three years to complete with certain products available as early as May 2004.



New Hampshire Coastal Zone Management Area

Advisory Team

A Groundwater Project Advisory Team (GPAT) is being set up to provide long-term guidance to the project. This will be a subset of those who participated in the previous advisory and task force meetings. The GPAT will meet quarterly for three years and help to ensure that the project stays on track and useful products are created.

Project Limitations

This is a large-scale study designed to support water-resources planning at state, regional and town-wide levels. It will not be sufficiently detailed to evaluate the localized impact of a single large groundwater withdrawals or individual proposed subdivisions. The ground-water flow model, developed as a pilot effort in this study may be have a use in such evaluations if supplemented with additional site-specific data collection and analyses.

For More Information

Visit the USGS website at **nh.water.usgs.gov/CurrentProjects/seacoast**. Or call Ted Diers, NHCP, (603) 559-0027, Marilee Horn, USGS, (603) 226-7806, or Rick Chormann, NHGS, (603) 271-1975.