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## News Release

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# Water Study Yields a Few Surprises for New England

New England's legacy of urban and industrial activities, together with recent development in forested areas, has affected the quality of rivers and ground water in cities and rural areas. The impact is reflected more quickly than expected as development begins to take hold. These are a few of the findings the U.S. Geological Survey (USGS) announced today that are part of the USGS National Water Quality Assessment Program study of the 23,000 square mile New England Coastal Basins during 1999-2001. The area includes western Maine, Eastern New Hampshire and Massachusetts, and most of Rhode Island (see insert map).

Elevated levels of arsenic, mercury, zinc, lead, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs) were apparent in river sediments in highly urbanized areas, such as Boston, Mass. and Providence RI. All of these contaminants were detected at concentrations exceeding guidelines for the protection of aquatic life. Levels of organic compounds, such as the gasoline additive MTBE and solvents used in industrial cleaners, were below drinking water standards and guidelines, but were still frequently found in ground waters used for drinking.



## Major Findings on River Quality and Ecosystems

“We were surprised to find that the quality of streams begin to degrade earlier than we thought as watersheds develop. Because of this finding, stream protection measures need to be in place even in the more rural areas of New England where development is beginning to occur,” said Keith Robinson, USGS Hydrologist and principal investigator of the study. Study results indicated that:

- Streams draining rural watersheds with as little as 3-5 percent urban lands showed signs of degradation such as the reduction in populations of pollutant-sensitive insects and fish. Some of the watersheds studied with only 20 percent urban lands had severe degradation of aquatic life.
- Although the highest mercury levels in sediments were in urban settings, the fish surveyed from urban waters contained less mercury. Surprisingly, fish found in streams draining more forested and wetland-rich watersheds in the outlying suburban areas had the highest levels of mercury

accumulated in their bodies. Because recreational fisherman tend to fish in these more rural streams, it is important for people to become aware of any fish consumption advisories prior to eating fish from these streams.

### **Major Findings in Ground Water**

In addition to natural contaminants in ground water, many manmade contaminants, such as the gasoline additive MTBE, routinely were found in ground waters used for drinking.

- In the area of Eastern New England studied, nearly one in five household wells drilled into bedrock contained arsenic above the U.S. Environmental Protection Agency (USEPA) standard of 10 micrograms per liter for public drinking water. Increasing numbers of bedrock wells are being drilled to supply household and public water supplies.
- Ground waters of the area also contain high amounts of radon. All but one of the nearly 120 wells sampled in the area had radon levels that exceeded the proposed USEPA drinking-water standard of 300 picocuries per liter.
- The gasoline additive MTBE and chloroform, a chemical that forms from the chlorination of drinking water, were found in most well water samples. These chemicals were much more common in wells in eastern New England than in wells sampled in other parts of the country. This is likely due to the extensive use of MTBE in gasoline and chlorination of city water supplies in this region.

“These results indicate the need for regular testing of ground water supplies, especially those from private water wells used by individual homes, since these contaminants were often found,” said Robinson.

The USGS assessment is part of a national program currently releasing results on streams and ground water in 14 additional major river basins and aquifer systems. Findings of regional and national interest are highlighted in a separate report "Water Quality in the Nation's Streams and Aquifers--Overview of Selected Findings, 1991-2001." Check the status and availability of these reports on the NAWQA Web site, <http://water.usgs.gov/nawqa/> as well as accessibility to other publications and national data sets and maps.

Copies of the USGS report, "Water Quality in the New England Coastal Basins," published as USGS Circular 1226, are available at no cost by writing the USGS Branch of Information Services, Box 25286, Denver Federal Center, Denver, CO 80225 (or by calling 1-888-ask-usgs). The report also can be accessed on the World Wide Web at [http://water.usgs.gov/nawqa/nawqa\\_sumr.html](http://water.usgs.gov/nawqa/nawqa_sumr.html)

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