

# WATER QUALITY IN KENDUSKEAG STREAM

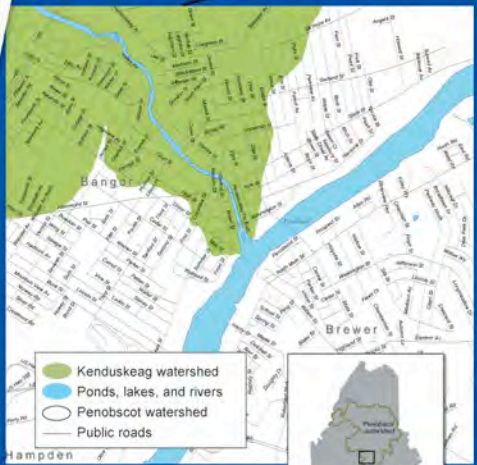
*Students monitor the Kenduskeag and its tributaries. Kenduskeag Stream and four tributaries are located close to several schools, providing a natural research site and extension of the classroom. Students at Central High School in Corinth spent two years sampling the streams and looking at laboratory results of water chemistry under the direction of teacher Ed Lindsey.*



*Despite some problems, overall water quality is good. The upper Kenduskeag and its tributaries are slightly enriched with nutrients, sulfur, and road salt, which are carried into the stream by runoff during and after rainstorms and snowmelt. The students also found some high bacteria levels. Despite these problems, the upper Kenduskeag Stream meets the state's highest water quality criteria; below the Bulls Eye Bridge in Bangor, the river is rated as Class C due to problems with wastewater and stormwater runoff. However, water quality has been improving, and the river has plenty of oxygen and healthy insect communities. Kenduskeag Stream supports many species of fish, including Atlantic salmon, American eel, and brook trout.*



*Kenduskeag Stream has unusual water chemistry. The Kenduskeag and its upper tributaries are less acidic and have high buffering capacity (alkalinity), characteristics that place these streams among only 4% of Maine's surface waters. The high buffering capacity is adequate to protect the river from acid rain, and the calcium levels are close to ideal for fish nutrition. The chemistry is influenced by bedrock formations in the watershed that contain limestone (Waterville Formation).*



pH is a measurement of the concentration of hydrogen ions in water, which determines whether the water is basic or acidic. pH is measured on a scale of 0 -14; a pH of 7 is neutral (neither acidic or basic). A pH below 7 is acidic and above 7 is basic, also called alkaline. A pH of 6 is ten times more acidic than a pH of 7. Most Maine waters are naturally slightly acidic.

Alkalinity is the ability of the water to buffer or resist acidity; geology influences alkalinity. Limestone, carbonate rocks, silicates, and phosphates may add to the buffering capacity of water.



Funding and support for the project was provided by the What Kids Can Do Foundation, Maine Department of Environmental Protection (Mark Whiting), West Enfield Fund, National Fish and Wildlife Foundation Maine Atlantic Salmon Conservation Fund, Professor Stephen Norton and the Sawyer Environmental Research Laboratory at the University of Maine, the Penobscot Indian Nation, NOAA-National Marine Fisheries Service, and the Maine Department of Inland Fisheries and Wildlife.

Poster produced by Maine Sea Grant in partnership with NOAA-National Marine Fisheries Service, Orono, ME. Photos courtesy Ed Lindsey and Mark Whiting. Map produced by S. Nelson, Senator George J. Mitchell Center for Environmental and Watershed Research, University of Maine. Map data courtesy of Maine Office of GIS. Projection information: UTM zone 19N NAD 1983.