

Hudson River Estuary Watershed Assessment & Outreach Project

Station RN11, Saunders Kill/Stony Kill, is just below the confluence of these two streams, and just above their confluence with the Rondout, in the Town of Rochester. The BAP score of 7.50 falls just outside the non-impacted category into slightly impacted. The ISD indicated a community structure affected by non-point source nutrient additions.

Station RN12, Rondout Creek, is 100 meters upstream of the Alligerville bridge, in the Town of Rochester. The BAP score of 7.20 fell into the upper half of the slightly impacted category. The ISD indicated a community structure affected by non-point source nutrient additions and sewage effluent and/or animal wastes.

Station RN13, Cottekill Brook, is just downstream of the Lucas Turnpike bridge (County Route 1), near the Marbletown/Rosendale town line. The BAP score of 8.14 fell into the non-impacted category. The ISD indicated a community structure most similar to a natural community.

Station RN14, Rondout Creek, is just downstream of the Rosendale sewage treatment plant, in the Town of Rosendale. The BAP score of 6.20 fell into the slightly impacted category. The ISD indicated a community structure affected by non-point source nutrient additions.

Station RN15, Rondout Creek, is at 895 Creeklacks Road, on the Rosendale/Esopus town line. The BAP score of 4.8 fell into the moderately impacted category. The ISD indicated a community structure affected by sewage effluent and/or animal wastes, complex sources (municipal sewage effluent that also may contain industrial wastes or urban runoff), and non-point source nutrient additions.

General Information

The New York State Department of Environmental Conservation (NYS DEC) provided funding for this project from the state's Environmental Protection Fund through the Hudson River Estuary Program. This information is intended to increase public awareness of water quality conditions in Hudson River tributaries and to support community-based watershed protection and restoration projects. Where problems were found, follow-up monitoring should be conducted to identify specific causes and sources.



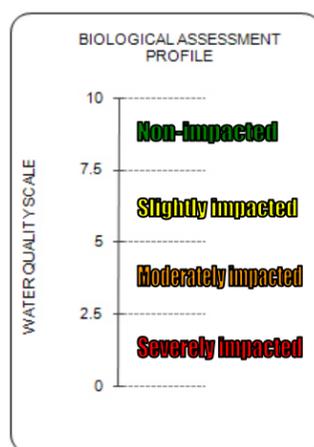
The NYS DEC Stream Biomonitoring Unit's (DEC SBU) methodology was used for all sample collection and analysis tasks. These methods involve collecting, sorting and analyzing a sample of benthic macroinvertebrates - stream bottom-dwelling organisms with no backbone that are visible to the naked eye. These organisms vary in their sensitivity to water quality impacts. DEC SBU's methods use the presence or absence, relative abundance, and diversity of species to obtain an overall water quality score called the Biological Assessment Profile (BAP). BAP is scored 0-10, with 10 indicating the best water quality. The DEC SBU also uses four narrative descriptions of water quality based on the BAP score as illustrated in the graph below:

It's important to note that the term "slightly impacted" can be misleading if it's taken out of context. Sites with water quality at only 5.1 on the BAP scale, or almost "moderately impacted", can be described as only "slightly impacted".

Interpreting and Following Up on Water Quality Findings

Impact Source Determination (ISD) is a ranking of the most likely cause of water quality impacts at each site. The ISD categories are: non point source nutrient enrichment; organic (sewage and animal waste); complex (municipal and industrial inputs); toxic; siltation; impoundment; and natural.

Many factors influence the BAP score. Professional guidance should be sought from HBRW, the NYS DEC SBU, or other qualified sources about data interpretation questions. In general, however, sites with BAP scores below 7.5 usually warrant further investigation. Sites below 5.0 should be subject to detailed study to identify the source(s) of impairment and guide water quality improvement measures.



2007 Watershed Report Card for the Rondout Creek

A Hudson Basin River Watch Watershed Assessment & Outreach Project

In September and October 2007, Hudson Basin River Watch (HBRW) sampled 16 sites in the Rondout Creek Watershed. The Rondout Creek Watershed Council, the NY State Dept. of Environmental Conservation (NYSDEC), and the NY City Dept. of Environmental Protection provided input in site selection. HBRW collected stream bottom macro-invertebrate samples and measured basic physical and chemical parameters at each site. HBRW evaluated the data to assess water quality conditions and impacts using NYSDEC methods. A map depicting the sampling locations and impact results is on pages 2-3 of this report card.



Rondout Creek Site RN14, in the Town of Rosendale

Water quality was non-impacted at 5 sites, slightly impacted at 10 sites and moderately impacted at one site. Of the 5 non-impacted sites, only one was on the Rondout Creek, the first site below the Rondout Reservoir. The other 4 non-impacted sites were tributaries draining relatively undeveloped areas. "Non-point source nutrient additions" was the most common source of impact, appearing in 12 sites. "Sewage effluent and/or animal wastes" appeared in 3 sites, and "Complex sources" (municipal and industrial inputs) appeared in 3 sites. The one moderately impacted site is located downstream from the confluence with the Wallkill River and is also affected by large changes in flow from a hydroelectric dam. More information on methods, terminology, and data interpretation is on page 4.

Rondout Creek - Site Descriptions and Water Quality Findings (from upstream to downstream):

Station RN01, Bear Hole Brook, is 5 meters upstream of the Peekamoose Road bridge, in the Town of Denning. The Biological Assessment Profile (BAP) score, 8.49, fell in the non-impacted water quality category. The Impact Source Determination (ISD) indicated a community structure similar to a natural community.

Station RN02, Sundown Creek, is 25 meters upstream of where this creek enters the Rondout Creek, in the Hamlet of Sundown (Town of Denning). The BAP score of 6.86 fell into the slightly impacted category. The ISD indicated a community structure affected by non-point source nutrient additions and sewage effluent and/or animal wastes.

Station RN03, Rondout Creek, is 20 meters upstream from the Sportsmen's Road bridge, in the Town of Warwarsing. The BAP score of 7.91 fell into the lower half of the non-impacted category. The ISD indicated a community structure affected by non-point source nutrient additions, but still similar to a natural community.

Station RN04, Bear Kill, is 30 meters upstream of the Cape Avenue bridge in the Village of Ellenville. The BAP score of 8.80 fell into the non-impacted category. The ISD indicated a community structure similar to a natural community, with some indication of non-point source nutrient additions.

Station RN05, Sandburg Creek, is 100 meters downstream of the Ellenville Sewage Treatment Plant, in the Village of Ellenville. The BAP score of 6.50 fell into the slightly impacted category. The ISD indicated a community structure affected by non-point source nutrient additions and complex sources (municipal sewage effluent that also may contain industrial wastes or urban runoff).

Station RN06, Fantine Kill, is 30 meters upstream of the Beckley Drive bridge, in the Village of Ellenville. The BAP score of 8.40 fell into the non-impacted category. The ISD indicated a community structure most similar to a natural community.

Station RN07, Rondout Creek, is on the property of the Eastern Correctional Facility, upstream of their Sewage Treatment Plant, in the Town of Warwarsing. The BAP score of 7.20 fell into the upper half of the slightly impacted category. The ISD indicated a community structure most similar to a natural community.

Station RN08, Rondout Creek, is 10 meters downstream of the Port Ben Road bridge, in the Town of Warwarsing. The BAP score of 6.30 fell into the slightly impacted category. The ISD indicated a community structure affected by non-point source nutrient additions.

Station RN09, Rondout Creek, is 70 meters upstream of the State Route 44/55 bridge, in the Town of Warwarsing. The BAP score of 6.20 fell into the slightly impacted category. The ISD indicated a community structure affected by non-point source nutrient additions.

Station RN09A, Rondout Creek, is at the DEC river access site in the Hamlet of Kerhonkson, near the Wawarsing/Rochester town line. The BAP score of 6.20 fell into the slightly impacted category. The ISD indicated a community structure affected by non-point source nutrient additions and complex sources (municipal sewage effluent that also may contain industrial wastes or urban runoff).

Station RN10, Rondout Creek, is at 5011 State Route 209, in the Town of Rochester. The BAP score of 6.10 fell into the slightly impacted category. The ISD indicated a community structure affected by non-point source nutrient additions.

The Rondout Creek Watershed (above the confluence with the Wallkill River) comprises 383 square miles of land, including 14 towns and villages. All of this land within the Rondout Creek Watershed catches and drains water into the Rondout Creek and its tributaries. Therefore, the creek is an important indicator of the health of the communities in the watershed. A study of the bottom-dwelling invertebrates is one of the best ways to assess the health of a creek. Municipalities can use this kind of data to guide their site plan reviews, comprehensive planning processes, and land use policies. But the effects of development in a watershed are cumulative, so municipalities need to work together to protect their shared water resources.

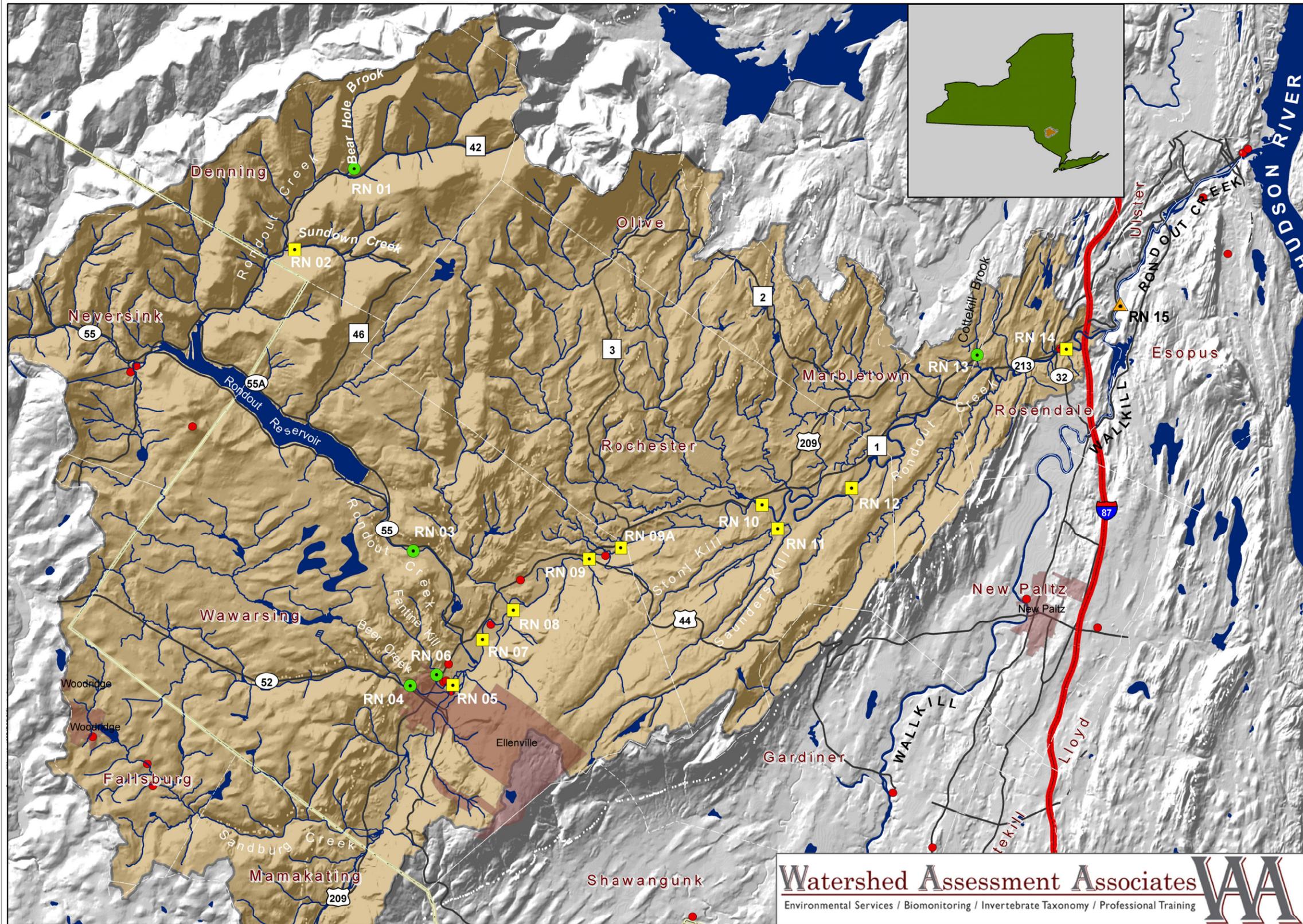
For More Information

NYS DEC Stream Biomonitoring Unit: go to <http://www.dec.ny.gov/chemical/23847.html> and download the Quality Assurance Work Plan (methodology) and 30 Year Trends in Water Quality (summary of statewide findings).

Hudson River Estuary Program: go to <http://www.dec.ny.gov/lands/4920.html> to download the Action Agenda, view the Top 12 Things Your Community Can Do to Protect Water Resources, and find other resources.

Hudson Basin River Watch: go to <http://www.hudsonbasin.org/> for a workshop schedule or to download the Guidance Document and other documents.

Hudson Basin River Watch, Cambridge NY, 12865. 518-677-5029



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- Legend**
- Sampling Locations**
- BAP**
- Non impacted
 - Slightly impacted
 - ▲ Moderately impacted
 - ⬠ Severely impacted
- Roads
 - Rivers and Streams
 - Surface Waters
 - Municipal Boundaries

- Rondout Creek Watershed**
- Rondout Creek Watershed (above the Wallkill tributary)

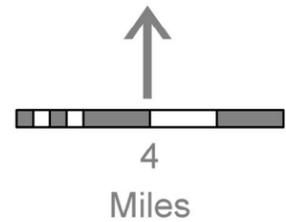


Figure 1
Rondout Creek
2007 Biomonitoring Study
Base Map

Source:
NYS GIS Clearinghouse and CUGIR;
Sampling locations were assessed
by Hudson Basin River Watch
GIS mapping and taxonomy services
provided by WAA

Watershed Assessment Associates
Environmental Services / Biomonitoring / Invertebrate Taxonomy / Professional Training