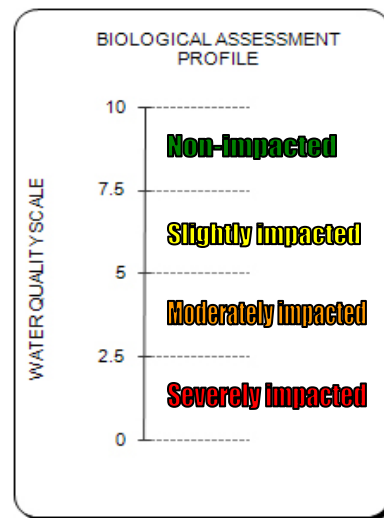


Hudson River Estuary Watershed Assessment & Outreach Project

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 this graph:



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".

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.

Interpreting and Following Up on Water Quality Findings

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.



2006 Watershed Report Card for Plattekill Brook, Ulster County, NY A Hudson Basin River Watch Watershed Assessment & Outreach Project

The purpose of this Watershed Report Card is to identify specific water quality problems and raise public awareness of important watershed issues in local Hudson Valley communities. Hudson Basin River Watch selected locations with input from local stakeholders and assessed water quality impacts (pollution) at six stream stations in the Plattekill Brook Watershed. The Plattekill Brook is a small stream that originates in the town of Plattekill, and flows through the towns of Gardiner and New Paltz before entering the Wallkill River. This stream was studied with the intent that data from its assessment could facilitate intermunicipal cooperation in the protection and management of this small, but important watershed. It is one of the few viable trout streams left in these three towns.



Plattekill Creek tributary Station PL03 just upstream of the Schrieber lane culvert.

Macroinvertebrate samples and basic physical and chemical data were collected in September and October 2006. A map depicting the sampling locations and impact categories is on pages 2-3 of this brochure. More information on methods, terminology and data interpretation is on page four. Stations are listed in order from downstream to upstream locations.

Water quality was slightly impacted at all stations. Non-point source nutrient additions was the most common source of impact, appearing in five of the six sites, and as the primary source in four of the five. Nutrient additions could include agricultural run off, golf course and urban runoff, and treated sewage effluent. It would be useful to include nutrient analyses with any future macroinvertebrate monitoring studies conducted in this watershed.

Plattekill Creek Watershed -- Station Descriptions and Water Quality Findings

Station PL01 (Plattekill Brook), is just upstream of its confluence with the Wallkill. The BAP score of 5.84 fell into the lower half of the slightly impacted category. The Impact Source Determination (ISD) indicated a community affected by impoundment and complex sources. This site is just downstream of a beef farm with a small herd of cows. No impoundment appears on the USGS quadrangle map but it should be confirmed that there is no impoundment on the farm before this is ruled out as a spurious impact. The ISD indication of "complex sources" is also curious, because it refers to industrial sources, wastewater treatment plant discharges, and urban runoff, which are unlikely to occur on this agricultural site. Further evaluation of this site is recommended.

Station PL02 (Plattekill Brook), is at the bottom of the Plattekill Gorge, just upstream of the Route 208 bridge. The BAP score of 6.78 fell into the upper half of the slightly impacted category. The ISD indicated a community affected by nutrient additions. It is not surprising that this site, at the bottom of a steep and forested gorge, received the highest water quality rating.

Station PL03 (Tributary to Plattekill Brook), is just upstream of the Schrieber Lane culvert. The BAP score of 5.63 fell into the lower half of the slightly impacted category. The ISD indicated a community affected by nutrient additions. The Dissolved oxygen was slightly depressed, at 89% saturation.

Station PL04, Plattekill Brook: This site is in the Town of Gardiner, just upstream of the Route 32 bridge on the Huguenot Historical Society's Locust Lawn property. The BAP score of 6.6 fell into the slightly impacted category. The ISD indicated a community impacted by nutrient additions. The dissolved oxygen reading was slightly lower than ideal (86.4% saturation).

Station PL05, Plattekill Brook: This site is in the Town of Plattekill, on the Long Lane Farm property (2207 Route 32), just downstream of a small foot bridge. The BAP score of 5.83 fell into the lower half of the slightly impacted category. The ISD indicated a community affected by nutrient additions.

Station PL06, Un-named Tributary to the Plattekill Brook: This stream is in the Town of Plattekill. It flows along and under Allhusen Road, and flows into the Plattekill between sites PL05 and PL04. This site is on the property of a residence at 41 Allhusen Road. The BAP score of 5.45 fell into the lower half of the slightly impacted category. An argument could be made to increase this rating to non-impacted, because it is a small headwater stream with intolerant species present. Headwater streams often have naturally lower species richness due to reduced upstream community recruitment. The ISD indicated a community affected by nutrient additions and impoundment. There is an impoundment approximately 1 mile upstream on one tributary. Impoundments can also reduce species richness and cause the water quality rating to be depressed. Typically, however, impoundment effects on streams of this size do not persist beyond 0.5 miles, and the impoundment in this case is on a tributary.

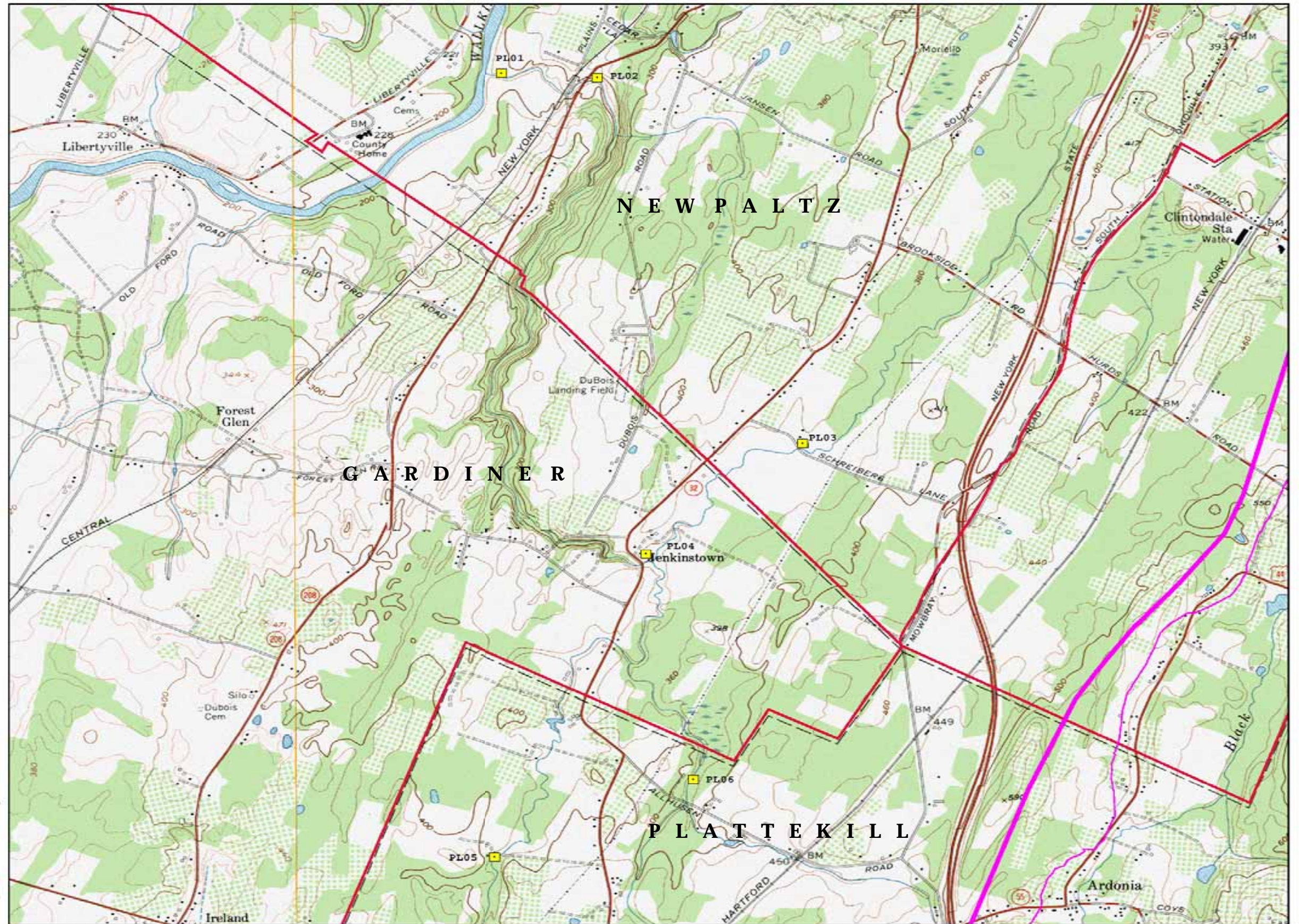
The Town of New Paltz has adopted "Habitat Assessment Guidelines" for subdivision and site plan reviews. The habitat assessments evaluate existing environmental conditions, areas of ecological sensitivity, and probable impacts of development. The New Paltz Habitat Assessment Guidelines are unique in that they specifically recommend assessment of stream water quality, using macroinvertebrates. This report card provides an example of information that could be used in the stream portion of each site's habitat assessment.

For More Information

Hudson Basin River Watch: go to www.hudsonbasin.org/ for survey reports and to download watershed report cards and other documents.

NYS DEC Stream Biomonitoring Unit: go to 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 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.



Platte Kill Creek Watershed
Hudson River Estuary Watershed Assessment

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