

## Site Results for Group 3 Streams on the New York-Pennsylvania Border

### Babcock Run (BABC)

#### Group 3



Biological Condition		
Year	Score	Rating
2006	12	Moderately Impaired
2007	26	Slightly Impaired
2008	22	Slightly Impaired
2009	24	Slightly Impaired
2010	28	Slightly Impaired

In May 2010, SRBC staff assessed Babcock Run near Cadis, Pa. Overall physical habitat was rated as excellent with the stream supporting a well-developed channel with ample instream cover, riffle frequency, and a minimal amount of embeddedness and sediment deposition. The macroinvertebrate community was rated as slightly impaired as overall taxonomic richness remained low, although 51 percent of the subsample was represented by the pollution sensitive mayfly family Ephemeroptera. All water quality parameters tested within acceptable limits.

## Bill Hess Creek (BILL)

### Group 3



Biological Condition		
Year	Score	Rating
2006	18	Moderately Impaired
2007	16	Moderately Impaired
2008	16	Moderately Impaired
2009	22	Slightly Impaired
2010	28	Slightly Impaired

Bill Hess Creek near Route 49 in Nelson, Pa., received a classification of slightly impaired in 2010. The macroinvertebrate community showed good diversity with 27 total taxa, of which 21 were in the pollution sensitive EPT orders. Physical habitat was classified as supporting with abundant instream cover but poor bank conditions. Water quality parameters all tested within acceptable limits.

## Bird Creek (BIRD)

### Group 3



<b>Biological Condition</b>		
Year	Score	Rating
2006	34	Nonimpaired
2007	28	Slightly Impaired
2008	28	Slightly Impaired
2009	30	Nonimpaired
2010	30	Nonimpaired

For the second consecutive year, the biological condition of Bird Creek, near Webb Mills, N.Y., was rated as nonimpaired. The stream scored highly in the Shannon Diversity index and the EPT index and had a substantial proportion (57.5 percent) of the subsample represented by members of the order Ephemeroptera. The assessed physical habitat was classified as supporting with ample riffles and minimal sediment deposition. Channel flow status and instream cover were the lowest scoring habitat parameters. Staff noted strongly undercut banks exposing the channel's cobble and boulder substrate. All measured water quality parameters tested within acceptable limits.

## Biscuit Hollow (BISC)

### Group 3



Biological Condition		
Year	Score	Rating
2006	28	Slightly Impaired
2007	22	Slightly Impaired
2008	NA	NA
2009	10	Moderately Impaired
2010	24	Slightly Impaired

Biscuit Hollow was rated as slightly impaired in 2010, showing a significant improvement from 2009. Physical habitat was deemed excellent despite the agricultural use in the surrounding area. Riparian zone width is problematic as well as the lack of instream cover. Measured water quality parameters all fell within accepted limits.

## Briggs Hollow Run (BRIG)

### Group 3



Biological Condition		
Year	Score	Rating
2006	26	Slightly Impaired
2007	24	Slightly Impaired
2008	26	Slightly Impaired
2009	26	Slightly Impaired
2010	30	Nonimpaired

Briggs Hollow Run near Nichols, N.Y., received a nonimpaired rating of its biological community in 2010. The macroinvertebrate sample contained a high percentage of pollution sensitive Ephemeroptera taxa and a low percentage of pollution tolerant Chironomidae taxa. Measured water quality parameters were all within acceptable limits. Physical habitat was rated as partially supporting. Briggs Hollow Run scored poorly due to highly eroded banks and limited instream cover. Channel flow status was also problematic with a significant portion of the available channel being exposed substrate.

## Bulkley Brook (BULK)

### Group 3



Biological Condition		
Year	Score	Rating
2006	28	Slightly Impaired
2007	12	Moderately Impaired
2008	NA	NA
2009	26	Slightly Impaired
2010	32	Nonimpaired

Bulkley Brook, located near Knoxville, Pa., had a nonimpaired biological community when sampled in May 2010. Factors contributing to the nonimpaired rating were a high contribution of Ephemeroptera taxa and high EPT and Shannon-Wiener indices scores. Considerable physical habitat issues were noted at the time of assessment leading to a rating of partially supporting. Staff noted rapidly erosion of strongly undercut banks. Within the last year, significant erosion of the left bank has resulted in the loss of protective vegetation. All field chemistry parameters were within acceptable limits at the time of measurement.

## Camp Brook (CAMP)

### Group 3



Biological Condition		
Year	Score	Rating
2006	38	Nonimpaired
2007	26	Slightly Impaired
2008	24	Slightly Impaired
2009	8	Moderately Impaired
2010	12	Moderately Impaired

Camp Brook, in the vicinity of Osceola, Pa., received a moderately impaired rating of its biological community in 2010. Camp Brook was one of two Group 3 streams to receive this rating in 2010. The macroinvertebrate sample was dominated by pollution tolerant Chironomidae taxa and scored poorly in the Hilsenhoff and EPT indices. Physical habitat was assessed as supporting with good velocity/depth regimes and a well-developed channel. SRBC staff noted abundant alga growth. All field chemistry parameters were within acceptable limits though dissolved oxygen was measured at 7.23 mg/L, approaching the state lower threshold of 6.0 mg/L.

## Cook Hollow (COOK)

### Group 3



<b>Biological Condition</b>		
Year	Score	Rating
2006	20	Slightly Impaired
2007	28	Slightly Impaired
2008	26	Slightly Impaired
2009	24	Slightly Impaired
2010	28	Slightly Impaired

Camp Hollow Brook, near Austinburg, Pa., had a slightly impaired biological community when sampled in May 2010. Overall taxa richness scored very well with 29 groups being represented, of which 21 were EPT taxa. Camp Hollow Brook had one of the highest EPT indices of all Group 3 streams assessed. Conversely, it also had one of the poorest scoring Hilsenhoff indices, suggesting excessive organic pollution within the watershed. Physical habitat was rated as excellent with ample instream cover and well-developed riffle areas. All field chemistry parameters measured within acceptable limits.

## Deep Hollow Brook (DEEP)

### Group 3



Biological Condition		
Year	Score	Rating
2006	34	Nonimpaired
2007	40	Nonimpaired
2008	26	Slightly Impaired
2009	30	Nonimpaired
2010	30	Nonimpaired

Deep Hollow Brook received a nonimpaired biological condition rating for the fourth time in the last five years it has been assessed. The macroinvertebrate community had the greatest taxa richness of all Group 3 streams in 2010 with 35 different groups being identified. Deep Hollow Brook also received a physical habitat rating of excellent due in part to its undisturbed channel and broad riparian vegetative zone widths on both banks. Field chemistry measurements revealed pH and alkalinity to be outside of acceptable limits. Alkalinity was measured to be 8 mg/L and the recorded pH value was 6.0. Pennsylvania's alkalinity threshold requires at least 20 mg/L while New York has an acceptable pH range of 6.5 to 8.5.

## Denton Creek (DENT)

### Group 3



Biological Condition		
Year	Score	Rating
2006	12	Moderately Impaired
2007	20	Moderately Impaired
2008	22	Slightly Impaired
2009	18	Slightly Impaired
2010	14	Moderately Impaired

Denton Creek near Hickory Grove, Pa., had a moderately impaired biological community in 2010. Both the Hilsenhoff and EPT indices scored poorly as did percentage contribution of Chironomidae individuals. Physical habitat was deemed as supporting. An upstream impoundment limits the impact of high water events on the instream habitat. Denton Creek had two field chemistry parameters measure outside of acceptable limits. A pH value of 6.05 and an alkalinity reading of 8 mg/L exceeded the New York state pH standard and Pennsylvania alkalinity standard of 6.5-8.5 and <20 mg/L, respectively.

## Dry Brook (DRYB)

### Group 3



Biological Condition		
Year	Score	Rating
2006	8	Moderately Impaired
2007	2	Severely Impaired
2008	8	Severely Impaired
2009	10	Moderately Impaired
2010	26	Slightly Impaired

Dry Brook, sampled in Waverly, Pa., exhibited a slightly impaired biological community in 2010. Heavily influenced by urban development, Dry Brook has consistently scored poorly in both biological and physical habitat conditions. All measured field chemistry parameters were within acceptable limits. Dry Brook was the lone Group 3 interstate stream to receive a physical habitat classification of nonsupporting. A significantly altered channel and an absence of instream cover were two notable habitat limitations. Also negatively contributing to the condition of the stream were narrow riparian vegetative zones consisting mainly of the invasive plant Japanese knotweed.

## Little Wappasening Creek (LWAP)

### Group 3



<b>Biological Condition</b>		
Year	Score	Rating
2006	30	Nonimpaired
2007	NA	NA
2008	30	Slightly Impaired
2009	28	Nonimpaired
2010	36	Nonimpaired

Little Wappasening Creek near Nichols, N.Y., received a biological condition rating of nonimpaired for 2010. The stream had an excellent macroinvertebrate community that scored equivalent to the reference stream for this group. The EPT, Hilsenhoff, and Shannon Diversity indices all scored highly for the stream. Physical habitat was again rated as excellent due in part to the abundance of forested area in watershed. At the time of assessment, Little Wappasening Creek had wide riparian vegetative zones and an undisturbed channel with ample riffle habitat. This high gradient stream lacked all velocity/depth regimes and had exposed substrate in the channel. All field chemistry parameters tested within acceptable limits.

## Parks Creek (PARK)

### Group 3



Biological Condition		
Year	Score	Rating
2006	26	Slightly Impaired
2007	24	Slightly Impaired
2008	26	Slightly Impaired
2009	26	Slightly Impaired
2010	24	Slightly Impaired

Parks Creek near Litchfield, N.Y., was designated as having a slightly impaired biological community for the sixth consecutive year. Parks Creek's biological community received a good Hilsenhoff index score and had a high percentage of Ephemeroptera taxa present. Physical habitat was rated as supporting with good frequency of riffles and minimal sediment deposition. Evidence of high water impacts are clearly shown in the degraded state of both banks and the significant portion of bare channel exposed. All measured field chemistry parameters were within acceptable limits.

## Prince Hollow Run (PRIN)

### Group 3



Biological Condition		
Year	Score	Rating
2006	22	Slightly Impaired
2007	8	Moderately Impaired
2008	14	Moderately Impaired
2009	16	Moderately Impaired
2010	20	Slightly Impaired

Prince Hollow Run near Cadis, Pa., received a biological condition rating slightly impaired when sampled in May 2010. The stream scored poorly in the Hilsenhoff index, suggesting organic pollution impacting the macroinvertebrate community. SRBC staff noted active farming occurring immediately adjacent to the streambank. Physical habitat was rated as supporting. As evident in the site photo, a significant portion of the channel was exposed leaving large cobble bars to divide the channel. Bank condition was also noted as problematic. The right bank abuts active cropland while the left bank is eroded and unstable. A pH value of 6.4 was recorded on May 5, 2010. New York's aquatic life use criteria for pH ranges from 6.5 to 8.5 units.

## Redhouse Run/Beagle Hollow (REDH)

### Group 3



Biological Condition		
Year	Score	Rating
2006	26	Slightly Impaired
2007	22	Slightly Impaired
2008	NA	NA
2009	22	Slightly Impaired
2010	34	Nonimpaired

Redhouse Run (Beagle Hollow) located near Osceola, Pa., received a biological condition rating of nonimpaired in 2010. All metrics scored well except the Hilsenhoff index, which indicated organic pollution impacts. SRBC staff previously noted poor Hilsenhoff index scores and excessive brown alga growth. Physical habitat was classified as supporting with good riffle frequency and adequate epifaunal substrate. Limiting habitat conditions include a left bank supported by rip rap to protect the adjacent roadbed from erosion. All field chemistry parameters were within acceptable limits at the time of measurement.

## Russell Run (RUSS)

### Group 3



Biological Condition		
Year	Score	Rating
2006	30	Nonimpaired
2007	22	Slightly Impaired
2008	28	Slightly Impaired
2009	24	Slightly Impaired
2010	24	Slightly Impaired

Russell Run near Windham, Pa., had a slightly impaired biological community when sampled in May 2010. The macroinvertebrate community had a strong proportion of Ephemeroptera taxa but a relatively low taxonomic diversity overall. Russell Run also scored poorly in the Hilsenhoff index, a common indicator of organic pollutants. Overall physical habitat was assessed as being supporting. Poor velocity/depth regimes and channel flow status were noted at the time of assessment. Additionally, the right bank showed evidence of destabilization. SRBC staff measured alkalinity at a level of 8 mg/L, under the Pennsylvania aquatic life threshold of 20 mg/L.

## Sackett Creek (SACK)

### Group 3



<b>Biological Condition</b>		
Year	Score	Rating
2006	20	Slightly Impaired
2007	28	Slightly Impaired
2008	28	Slightly Impaired
2009	32	Nonimpaired
2010	26	Slightly Impaired

Sackett Creek near Nichols, N.Y., was designated as having a slightly impaired biological community in 2010. Macroinvertebrate analysis revealed low percentages of pollution tolerant Chironomidae taxa and high proportions of members of the mayfly order, Ephemeroptera. The sample scored poorly in the EPT and Hilsenhoff indices as well as overall taxa richness. Physical habitat was assessed as being supporting. The lowest scoring habitat parameters were instream cover and channel flow status. Sediment deposition and wide riparian vegetative zone widths were parameters scoring in the highest classification. All field chemistry parameters were within acceptable limits at the time of measurement.

## Smith Creek (SMIT)

### Group 3



<b>Biological Condition</b>		
Year	Score	Rating
2006	38	Nonimpaired
2007	34	Nonimpaired
2008	38	Nonimpaired
2009	26	Slightly Impaired
2010	36	Nonimpaired

Smith Creek near East Lawrence, Pa., had an unimpaired biological community when sampled in May 2010. Smith Creek also served as the reference site to which all other Group 3 streams were compared. Smith exhibited the best combination of biological, physical, and water quality conditions. EPT and Shannon Diversity indices were the best scoring of all Group 3 streams assessed in 2010. Overall taxonomic richness placed second among all streams in the group. Physical habitat was rated excellent with stable banks, abundant instream cover, and frequent riffle habitat. No measured field chemistry parameter tested outside of accepted limits.

## Strait Creek (STRA)

### Group 3



<b>Biological Condition</b>		
Year	Score	Rating
2006	36	Nonimpaired
2007	26	Slightly Impaired
2008	30	Slightly Impaired
2009	18	Slightly Impaired
2010	30	Nonimpaired

Strait Creek near Nelson, Pa., had a nonimpaired biological community when sampled in May 2010. The macroinvertebrate community scored well with a high percentage of Ephemeroptera taxa and good overall taxa diversity. Physical habitat was rated as partially supporting, mainly due to channel alteration issues. Staff noted a lack of varied velocity/depth regimes and insufficient instream cover. All field chemistry parameters were within acceptable limits at the time of measurement.

## White Branch Cowanesque River (WBCO)

### Group 3



Biological Condition		
Year	Score	Rating
2006	10	Moderately Impaired
2007	2	Severely Impaired
2008	6	Severely Impaired
2009	8	Moderately Impaired
2010	0	Severely Impaired

The White Branch Cowanesque River possessed a severely impaired biological community when sampled in May 2010. The sampling location is located immediately downstream of a flood control dam which has been undergoing a rehabilitation project since 2005. The biological community was dominated by Chironomidae taxa (83 percent) and absent of any Ephemeroptera taxa. While physical habitat was rated as excellent, the biological community was believed to be impaired by upstream activities. SRBC staff noted higher than normal flow conditions as the upstream reservoir was being drawn down at the time of sampling. All measured field chemistry parameters were within acceptable limits.

## White Hollow (WHIT)

### Group 3



Biological Condition		
Year	Score	Rating
2006	26	Slightly Impaired
2007	36	Nonimpaired
2008	23	Slightly Impaired
2009	24	Slightly Impaired
2010	22	Slightly Impaired

White Hollow near Wellsburg, N.Y., received a biological condition rating of slightly impaired when sampled in May 2010. White Hollow possessed the best Hilsenhoff index score of all Group 3 sites yet scored very low in the EPT index. Overall taxonomic richness scored poorly as well. Physical habitat was rated as excellent, receiving the second highest score of all Group 3 sites assessed in 2010. Measured water quality parameters were all within acceptable limits.