8. Selected Olentangy River Tributaries

Horseshoe Run

Horseshoe Run enters the Olentangy River at RM 29.74. It drains 13 square miles in Delaware County. The Ohio EPA monitored this tributary in 1999 at RM 0.30. The results are listed in the table below. The effect of nearly every stressor within the basin was likely made more acute by significantly diminished stream flow within the entire catchment (EPA pg. 59). As classified by the Palmer Drought Severity Index, severe to extreme drought conditions were indicated for the period between July and October 1999 (Ohio DNR 1999)

Table 40: Horseshoe Run Monitoring Results (Ohio EPA, 2001)

Chemistry	Sediments	Fish	Macro-invertebrates	Habitat
E.coli- exceedence of maximum secondary recreation use criteria (685 / 100 ml) Dissolved Oxygen- below minimum warm water habitat DO criteria (3.93 ppm) Nutrient levels were moderately elevated. Chemical water quality was somewhat impaired by low DO, elevated bacterial concentrations, and nutrient enrichment.	Highly concentrated levels of aluminum were present in the sediments (24,800 ppm). The high metal concentrations could be a result of leachate from galvanized metal products. There were no significant levels of organic contaminants found in the sediments.	Fish species found were rich and consistent with the Warm Water Habitat Criteria. Horseshoe Run was the only tributary monitored with good fish scores.	The predominant species found were alder flies and midges. Score- Fair rating.	Score- Good to Very Good (63.5) A series of pools connected by subsurface flow was found, indicating that the catchment is minimally disturbed.

Delaware Run

Delaware Run enters the Olentangy River at RM 25.71. It is 6 miles in length and drains 11 square miles in Delaware County and City. The Ohio EPA monitored this tributary in 1999 at two locations: RM 0.2 and 1.2. The results are listed in the table below. This is a perennial stream (flows all year long). The effect of nearly every stressor within the basin was likely made more acute by significantly diminished stream flow within the entire catchment (EPA pg. 59). As classified by the Palmer Drought Severity Index, severe to extreme drought conditions were indicated for the period between July and October 1999 (Ohio DNR 1999). At some locations along the run, sulfurous groundwater seeps occurred, leaving a whitish precipitate and a rotten egg odor. However, this did not seem to impact the run negatively (Ohio EPA, 1999).

Table 41: Delaware Run Monitoring Results (Ohio EPA, 2001)

Chemistry	Sediments	Fish	Macro-invertebrates	Habitat
E.coli: At RM 1.20 there was a single exceedence of the maximum Secondary Contact Recreation criteria (697 / 100 ml). Nutrients: Phosphorus concentrations were elevated in all samples at both locations.	Significant organic contamination was found in the sediments: Severe contamination with the pesticide chlordane, PAH's as well as methoxychlor. Metals: Highly elevated levels of aluminum as well as elevated levels of chromium, copper and zinc were also found in the sediments.	Score- Fair (for both locations) RM 1.2 = 34 and RM 0.2 = 30 Could be related to the urban nature of the catchment (storm runoff, habitat modification, sewage).	Score- Poor (for both locations). River snails were the predominant species found. Toxicity and / or excessive organic enrichment were impacting the stream. Odor of sewage and chlorine was present at RM 0.2. Potential impacts could be breaks in buried sewer lines and urban runoff.	Score- RM 0.2- Habitat Deficient (40.0) RM 1.2- Good (61.0) Gradient- RM 1.2: 13.3 feet per mile. RM 0.2: 3.70 feet per mile Though drought conditions existed, there was still flow present in the channel.

Unnamed Lewis Center Tributary

The Lewis Center tributary enters the Olentangy River at RM 18.19. It drains less than 10 square miles in Delaware County. The Ohio EPA monitored this tributary in 1999 at RM 0.10. The results are listed in the table below. This is a perennial stream (flows all year long). The effect of nearly every stressor within the basin was likely made more acute by significantly diminished stream flow within the entire catchment (EPA pg. 59). As classified by the Palmer Drought Severity Index, severe to extreme drought conditions were indicated for the period between July and October 1999 (Ohio DNR 1999)

Table 42: Unnamed Lewis Center Tributary Monitoring Results (Ohio EPA, 2001)

Chemistry	Sediments	Fish	Macro-invertebrates	Habitat
There were no violations of the Ohio water quality standard criteria except that phosphorus levels were elevated.	There were no significant levels of organic or metal contaminants found in the sediments.	Score- Fair. Could be related to the urban nature of the catchment (?)	Score- Good. Isopods and flat worms were the predominant species found. Indicates good water quality.	Score- Very Good (65.5) Gradient- 25 feet per mile. Though drought conditions existed, there was still flow present in the channel.

Recommendation- Find the direct source of elevated phosphorous levels, find solutions to the nutrient problems and develop strategies to protect the habitat of the stream, floodplain and riparian corridor. In addition, new development within the sub-watershed should have stringent stormwater standards.

Bartholomew Run

Bartholomew Run enters the Olentangy River at RM 14.48. It is 1.3 miles in length and drains approximately 4 square miles in Delaware County. The Ohio EPA monitored this tributary in 1999 at Bennett Rd. (RM 1.0 and 0.70). The results are listed in the table below.

Table 43: Bartholomew Run Monitoring Results (Ohio EPA, 2001)

Chemistry	Sediments	Fish	Macro-invertebrates	Habitat
E.coli: Exceedence of the maximum Secondary Contact Recreation criteria (650,800,809 / 100 ml) F.coliform: High exceedence of the maximum Secondary Contact Recreation criteria (11,818 / 100ml) Nutrients were not a concern. Suspended solid concentrations surpassed the median. Bacteria and suspended solids are indicative of impacts from soil disturbing activities due to development.	Organic contamination: PAHs (above the lowest effect level)	Not sampled.	Score- Fair Hydropsychid caddisflies, isopods were the predominant species found. Potential impacts could be due to the existing and future development within the basin causing alteration of the flow regime resulting in bank erosion. Flashy flows.	Relatively good; however extensive bank erosion evident.

Linworth Run

Linworth Run enters the Olentangy River at RM 9.90 in Franklin County. The Ohio EPA monitored this tributary in 1999 at RM 0.90 (Linworth Rd.) The results are listed in the table below. Water quality in Linworth Run appears threatened (Ohio EPA 1999). As classified by the Palmer Drought Severity Index, severe to extreme drought conditions were indicated for the period between July and October 1999 (Ohio DNR 1999).

Table 44: Linworth Run Monitoring Results (Ohio EPA, 2001)

Chemistry	Sediments	Fish	Macro-invertebrates	Habitat
E.coli: There were two exceedences of the maximum Secondary Contact Recreation criteria (570, 1298 / 100 ml). Nutrients: Phosphorus levels exceeded the 75th and 90th percentile.	Metals: least contaminated. Organic contamination: not present.	Score- Poor Related to nonpoint source pollution.	Score- Fair *Stenonema* mayflies and isopods were the predominant species found.	Score- Marginal 53.5 Gradient- 58.82 feet per mile Lack of surface flow; disconnected pools present. Relatively natural channel present. Urbanized watershed resulted in altered flow regime.

Rush Run

Rush Run enters the Olentangy River at RM 8.75. It is 1.5 miles in length and drains approximately 2 square miles in Franklin County. The Ohio EPA monitored this tributary in 1999 adjacent to Walnut Grove Cemetery (RM 0.4 and 0.3) The results are listed in the table below. Flow was substantial in this stream even during the drought. As classified by the Palmer Drought Severity Index, severe to extreme drought conditions were indicated for the period between July and October 1999 (Ohio DNR 1999).

Table 45: Rush Run Monitoring Results (Ohio EPA, 2001)

Chemistry	Sediments	Fish	Macro-invertebrates	Habitat
E.coli: High exceedence of the maximum Secondary Contact Recreation criteria (1150/ 100 ml). Nutrients were not found at elevated levels, although the stream exhibited signs of nutrient enrichment (algae blooms and supersaturated oxygen conditions)	Metals: Highly elevated levels of copper, aluminum, arsenic, barium, cadmium and elevated levels of chromium and zinc were found as well as slightly elevated levels of mercury, lead and nickel. Organic contamination: Significant concentrations of chlordane and PAHs (above the lowest effect level)	Score- Poor Habitat deficient. Due to channel modification and impervious landscape.	Score- Fair Blackflies and aquatic worms were the predominant species found.	Score- Low 48.5 Gradient- 55.56 feet per mile

Bill Moose Run

Bill Moose Run flows from the commercial area near Sinclair Road and I-71 through the Woodward Park Elementary School and Park and Recreation Center grounds, through the State Schools for the Deaf and Blind, Wesley Glen and Graceland Shopping Center and into Kenny Park where it meets with the Olentangy River at RM 7.82. Several small tributaries enter the stream near I-71 (flowing from just west of Karl Road) and Rush Avenue. Until a portion of its upstream channel was realigned for construction at I-71 near Sinclair, it maintained a basically natural flow.

Bill Moose Run has remained a natural stream for part of its course, meandering through alternating cobbles, shale, concretions, and sandy islands on the Deaf and Blind Schools' properties between Indianola and the Worthington Gardens Apartments. During spring, the area is carpeted with trillium, Virginia Bluebells, Mayapple, and Trout Lilies. On a warm spring evening the steep banks welcome nesting kingfishers and echo the songs of wood thrush and white-throated sparrows. A mature beech-maple forest towers overhead. Deer, groundhog, and raccoon share the wealth. Another important attribute of this stream is that it maintains flow all year (perennial flow).

In 1996, the Sharon Heights Community Association formed a Ravine Committee (now the Environment Committee) in response to a number of concerns about this ravine. The committee has made a number of significant strides in protecting and improving their stream. The first was to develop a name for this unique resource. The committee believed that a name could be a powerful means of developing a sense of identity, pride, and heightened personal and community responsibility. Proposed names were solicited from residents, the business community and local schools. Several schools agreed to conduct class projects through which the children would learn about the process and the resource. Six names were submitted. The Environment Committee selected the name Bill Moose Run to honor the man called the "Last of the Wyandots."

Bill Moose is known to have been the last of the Wyandot Indians who dwelt in Central Ohio. He was born in 1837 in northwest Ohio and moved to the Columbus area with his family when most of his tribe was displaced to Kansas and later to Oklahoma. He was known to have wandered this area around the Olentangy and Scioto rivers, living off the land. He later lived in a small shack at the corner of Indianola and Morse Roads. Bill Moose is still remembered fondly today by some Clintonville residents, who, as young children, listened to his stories. He died the age 100 in 1937, and attributed his long life to his practice of living close to nature.

After the Ohio EPA conducted its study in 1999, Bill Moose Run was designated as a WWH, previously it was undesignated. However, Ohio EPA found that it was not meeting the WWH designation due to exceedences of Secondary Contact Recreational Use criterion for Fecal Coliform and *E.coli*. This could be due to the Sanitary Sewer Overflow (SSO) at the manhole south of Rathbone & east of Delawanda (Ref #360 City of Columbus Division of Sewerage and Drains). This could also be due to the 369 dwellings that are not hooked into the City's sewer system in Sharon Township. These include residences along Rosslyn Avenue, Kanawha Ave. W., Islandview Ave, Westview Ave., Riverside Dr, Milton Ave.,

Emerson Ave and Olentangy Blvd. There have been 25 sewage related investigations in this neighborhood over the last 5 years (Franklin County Health Department).

Sediments in Bill Moose Run were the least contaminated by metals of all the tributaries sampled. However, organic sediment contamination was noticeable. PCB-1254 was found (only in this tributary was it found) at 131 mg/kg (above the lowest effect level) and chlordane and PAHs were also found, but at low levels.

The habitat Bill Moose Run provides ranked good (57.0 QHEI). This is due to minimal hydromodification of the channel, moderate to high sinuosity and low embeddedness of the substrates.

The macroinvertebrates and fish scored low, giving Bill Moose Run a rating of Fair. Though Bill Moose Run is the least impacted by runoff or CSO/SSO discharges of all the tributaries sampled throughout Franklin County, the low diversity of species found indicates the impact of an altered flow regime caused by increase of impervious surfaces.

Data sampled more recently (July 21st and 22nd 2001) by FLOW Hellgrammite monitors, Ellie Nowels and Kathy Reuter using the Leaf Pack experiment kit by LaMotte show this same FAIR rating.

Table 46: Bill Moose Run Monitoring Results

Location of Sampling Site	**Temp; Biotic Index Value = Water Quality**
Ohio School for the Deaf near Indianola	22 C; 5.6 Biotic Index = Fair Condition
Olentangy Village Apts., Blind School Border	24 C; 5.9 Biotic Index = Fair Condition
Behind Fenway Condos (end of Fenway Blvd)	24 C; 6.1 Biotic Index = Fair Condition

Kempton Run

Kempton Run enters the Olentangy River at RM 7.74. It drains 1.5 square miles in Franklin County. The Ohio EPA monitored this tributary in 1999 at RM 0.9 (Linworth Rd.) The results are listed in the table below. This is a perennial stream (flows all year long). As classified by the Palmer Drought Severity Index, severe to extreme drought conditions were indicated for the period between July and October 1999 (Ohio DNR 1999).

Table 47: Kempton Run Monitoring Results (Ohio EPA, 2001)

Chemistry	Sediments	Fish	Macro-invertebrates	Habitat
E.coli: There were two exceedences of the maximum Secondary Contact Recreation criteria (775, 3100 / 100 ml). F.Coliform: Extremely high exceedence of the maximum Secondary Contact Recreation criteria (17,000 / 100 ml) Nutrients: Phosphorus levels exceeded the 75th percentile. Organic nitrogen was also present in concentrations greater than the median.	Not sampled.	Score- Poor Related to nonpoint source pollution.	Not sampled.	Score- Marginal 54.5 Gradient- 76.92 feet per mile Though drought conditions existed, there was still flow present in the channel and many positive features. Lack of diverse physical features may be due to its small size & drainage area.

Adena Brook

Adena Brook begins behind Brookhaven High School and meanders its way to the Glenmont School and through Whetstone Park (Whetstone Library and the Park of Roses), where it empties into the Olentangy River (RM 6.00)

Adena Brook was once called Big Run (1895). Due to the commonality of the name "Big Run" and local residents' desire to recognize the historical importance of their creek, the Columbus City Council Members and Franklin County Commissioners passed resolutions to change the name to Adena Brook after the mound-building Indians who lived by the creek as early as 300 B.C. (1954).

In the early 1960's workmen conducting excavations for new streets unearthed an old Adena burial mound containing two skeletons and the remains of tools at what is now the corner of Yaronia and Wynding Drives.

In the early 1800's, President John Adams granted John Rathbone 4,000 acres of land in the Adena Brook watershed for services in the Revolutionary War. Congress authorized land grants on June 1, 1796. John Rathbone sold most of it off in parcels.

Adena Brook is an intermittent stream and has been since area residents can remember. However, it used to sustain deep pools where schools of fish survived during periods of dry weather.

Adena Brook is over 2 miles long and has a drainage area of 3.5 square miles. It drops 69 feet per mile. In a study conducted by the Ohio EPA in 1999, the brook was not meeting its water quality standards (WWH) due to exceedences of bacterial standards and low dissolved oxygen levels. This is due to food-grade oil spills, sanitary sewer overflows, and the urbanized landscape of this watershed.

<u>Sanitary Sewer Overflows present in Adena Brook:</u>
Manholes at Pauline and Atwood Terrace and Northridge and Atwood Terrace, east of Indianola Ave., discharge occurs when the manhole fills to a certain elevation.

Table 48: Adena Brook Past Pollution Incident Reports Received by Ohio EPA

River Mile	Date	Fish Kills (if any)	Source
n/a	03-17-01		T. Marzetti Co.- equalization tanks backed up, washing on property resulting in 5 gallons of salad dressing- Questionable
n/a	03-17-01		Unknown- water line leak from housing development north of Cooke Rd.
n/a	01-15-01		T. Marzetti Co. 4,500 gallons of vinegar to sanitary sewer which leaked into separate storm sewer
n/a	02-15-00		T. Marzetti Co- salad dressing oil spill.
0.9	7-15-93	59 Fish Killed	Unknown
0.4	7-05-96	60 Fish Killed	Sewer line broke in Whetstone Park
n/a	02-96		Midwest Farms/ Chubby Chicken (chicken guts)
n/a	05-96		City of Columbus- Sewage
n/a	06-96		Unknown- petroleum sheen/odor
n/a	06-96		Unknown- bright green discoloration
n/a	07-96		City of Columbus- Sewage
n/a	08-96		Unknown- orange substance
n/a	10-96		City of Columbus-Sewage (sewer pipe vandalized)
n/a	11-96		Unknown- white substance
n/a	11-96		Unknown- brown/gray substance
n/a	12-96		City of Columbus- sewage
n/a	04-97		Unknown- orange substance
n/a	04-97		City of Columbus- WWTP Lime Sludge
n/a	10-97		T. Marzetti Co.- high pH/O&G WW
n/a	01-98		Unknown- green/gray discoloration
n/a	02-98	Crawfish kill	Unknown
n/a	03-98		City of Columbus- Sewage
n/a	03-98		T.Marzetti Co (suspected only)- black discharge
n/a	03-98		T. Marzetti Co. – salad dressing
n/a	04-98		Unknown- muddy brown discoloration
n/a	04-98		Unknown- white goo
n/a	05-98		T. Marzetti Co.- brown, high pH/O&G WW
n/a	05-98		City of Columbus- fluorescein dye
n/a	06-98		T. Marzetti Co.- milky-white wastewater discharge.

Turkey Run

Turkey Run enters the Olentangy River at RM 5.82. It is 1.5 miles in length and drains 2.4 square miles in Franklin County. The Ohio EPA monitored this tributary in 1999 at Shattuck Avenue (RM 0.7). The results are listed in the table below. When this stream was sampled, it had interstitial flow. The effect of nearly every stressor within the basin was likely made more acute by significantly diminished stream flow within the entire catchment (EPA pg. 59). As classified by the Palmer Drought Severity Index, severe to extreme drought conditions were indicated for the period between July and October 1999 (Ohio DNR 1999).

Table 49: Turkey Run Monitoring Results (Ohio EPA, 2001)

Chemistry	Sediments	Fish	Macro-invertebrates	Habitat
E.coli: Extremely high exceedence of the maximum Secondary Contact Recreation criteria (6800 / 100 ml). Fecal Coliform: Extremely high exceedence of the maximum Secondary Contact Recreation criteria (59,000 / 100 ml) Dieldrin (pesticide): Exceedence of the Ohio River drainage basin water quality criteria for the protection of aquatic life (0.011 mg/l) Nutrient concentrations were noticeable, but not exceptional (potentially the golf course)	Organic contamination: Significant concentrations of chlordane and PAHs (above the lowest effect level) Metals: Highly elevated levels of copper and elevated levels of cadmium were found.	Score- Poor. Could be related to the diffuse urban nonpoint sources of pollution.	Score- Poor Flatworms, blackflies and aquatic worms were the predominant species found. Potential impacts could be excessive nutrients and toxicity associated with urban runoff and SSO discharges in addition to altered flow patterns (dam at OSU golf course).	Score- High (66.0) Gradient- 55.56 feet / mile

Glen Echo Tributary

The Glen Echo Tributary flows in a ravine from I-71 under the railroad tracks through Glen Echo Park, by residential homes, small-scale retail and two schools. It enters the Olentangy River at RM 4.0 in Franklin County, City of Columbus upstream from the Dodridge Street Dam.

The ravine is home to many birds such as Pileated Woodpeckers, Great Horned Owls, Coopers Hawks, Sharp-Shinned Hawks, and Ringnecked Pheasants as well as many mammals and wildflowers. There is a large wooded area within the Glen Echo Park that provides habitat for many of these creatures.

However, Glen Echo is in horrible condition. It often smells of sewage due to the old failing sewer lines that run under and alongside its bottom. There is litter scattered within the channel despite neighborhood clean up efforts. The water levels rise rapidly after rain events and because of this, the banks of the channel are eroding. Paint has been found in the stream which indicates there may be dumping to area storm drains. It appears that the stream has been dewatered possibly from the sewer line. You can watch water come out of a pipe under the railroad tracks and see it disappear under the stream bottom.

Residents living on or near the Ravine care for it deeply. In fact, they have asked the City of Columbus to develop a comprehensive plan for its preservation as a natural area. Many residents visit the Ravine; this is evident from the amount of walking paths present. There is a path alongside the Calumet Bridge, near the Rax and Big Bear parking lots, and at the Olentangy Village Apartments in addition to the paths at the Glen Echo Park.

There is a citizens group that has formed, Friends of the Ravines; Glen Echo (FORGE).

Plans are underway to repair the sewer line that runs under and along the stream. Contact the City of Columbus c/o Laura Young Mohr 645-2123 for more information.

Iuka Ravine

The Campus Partners University Neighborhoods Redevelopment Master Plan calls for the "development of an Iuka Ravine Master Plan for conservation, rehabilitation and management of the University District's most unique resource."

An intermittent stream courses through Iuka Ravine. Water is present in the stream only after heavy rain events. It runs through the Historic University District, through The Ohio State University, Indianola Middle and Elementary Schools, small scale retail, Iuka Park and Indianola Presbyterian Church.

Iuka Avenue runs through the ravine, providing access to vehicles and pedestrians.

The riparian corridor is good throughout the park, by single and multi-family housing and along area roadways, but more trees may be desired in Iuka Park.

Banks of the stream are eroding due to nearby pavement runoff. The accumulation of litter is present and trashcans are lacking. Graffiti is present on the bridges. A neighborhood clean up of this area may be desired.

The Summit Ave. Bridge and housing throughout the area make this a Columbus Historic District.

No water quality data has been collected to date.