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SRBC

SUSQUEHANNA RIVER BASIN COMMISSION

Conestoga River Watershed

Total Maximum Daily Loads Development

- An Interim Data Report -

ABOUT TMDLS AND THIS INTERIM DATA REPORT

The Susquehanna River Basin Commission (SRBC), under contract with the Pennsylvania Department of Environmental Protection (PADEP), is developing Total Maximum Daily Loads (TMDLs) for the Conestoga River Watershed. SRBC began this TMDL project in 2005 and is scheduled to complete it by April 2010. A TMDL calculates the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and allocates that amount to the pollutant's sources.

As part of the assessment, SRBC staff conducted water quality sampling in the Conestoga River Watershed (Figure 1) during the 2005 and 2006 summer months to characterize nutrient loads during base flow conditions. This interim data report focuses exclusively on the nutrient data collected and analyzed from samples collected from the water column under these base flow conditions. A separate report will be issued later focusing on the water quality data collected and analyzed from biological samples, such as macroinvertebrates and periphyton, as well as any water quality data collected under different flow regimes.

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Introduction

SRBC was contracted by PADEP to develop a TMDL for the Conestoga River Watershed because several segments – about 330 stream miles – of the Conestoga River and its tributaries have been listed as impaired on the Clean Water Act Section 303(d) List, primarily for nutrients and sediment. PADEP assesses all Pennsylvania waters to determine if water quality standards are being met. Waterbodies not meeting water quality standards are placed on the 303(d) List. The nutrients of concern in the Conestoga River Watershed are nitrogen and phosphorus. Excess nutrients can cause nuisance algal growth, deplete oxygen levels, and decrease aquatic populations. The primary sources of nutrients include agricultural/urban runoff, construction activities, wastewater, septic systems, industrial discharges, and soil (streambank/bed) erosion.

Description of Watershed

The Conestoga River Watershed encompasses 475 square miles in Lancaster County, with small portions of the watershed located in Chester, Lebanon, and Berks Counties. In addition to the mainstem Conestoga River, the watershed can be divided into five subwatersheds: Little Conestoga Creek, Mill Creek, Muddy Creek, Cocalico Creek, and Lititz Run. The Conestoga River originates in Caernarvon Township,

Conestoga River.

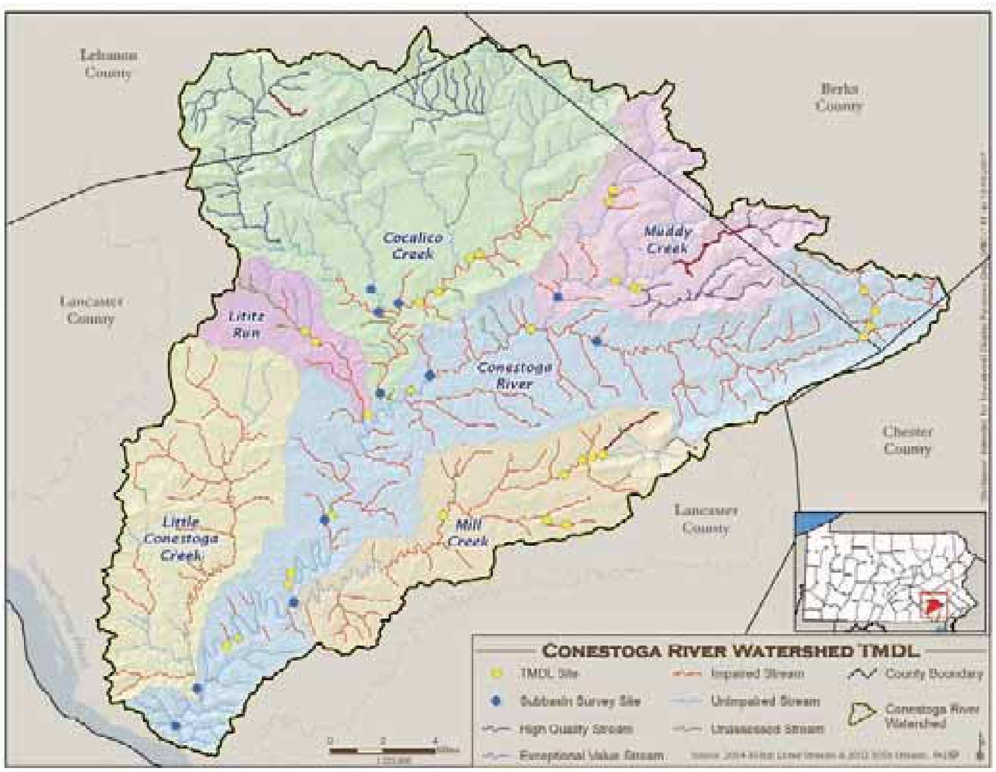

Figure 1. *Conestoga River Watershed*

Berks County, near the PA Turnpike, flows southeast towards New Morgan Borough, and then bends and streams southwest towards the Susquehanna River, flowing about 65 miles.

The watershed contains a varied landscape including large tracts of forested, urban, and rural land (Figure 2). From 1990 to 2000, the population in the Conestoga River Watershed increased by more than 11 percent (U.S. Census Bureau, 2000). Between 1994 and 2002, 11,100 acres of land were developed, with the greatest development concentration taking place in the central Lancaster County area. The largest acreage converted to development during that time frame took place in Warwick Township (Lancaster County Planning Commission, 2004). Today, more than 13 percent of the Conestoga River Watershed is developed.

While the area's population continues to grow, agriculture remains the dominant land use at 60 percent. Lancaster County's soils are among the most productive in the country. These rich soils sustain traditional farming in many areas. However, agricultural land use has led to higher amounts of soil and nutrients running off and reaching the waterways (WRAS, 2001). In addition to agricultural runoff, the mainstem Conestoga River receives nutrients from point-source discharges, urban runoff, groundwater, and its tributaries.

Subwatersheds

Muddy Creek is the first major tributary to enter the Conestoga River. Muddy Creek begins in State Game Land No. 52, Berks County, and flows 12 miles southwest to its confluence with the Conestoga River near Hinkletown, Lancaster County. Two notable tributaries entering Muddy Creek include Little Muddy Creek and Black Creek. The watershed is dominated by agriculture and forested land (50 and 43 percent, respectively).

Cocalico Creek enters the Conestoga River near Talmage, Lancaster County. Cocalico Creek flows through the population center of Ephrata Borough and drains about 139 square miles. Agriculture dominates the land use in the Cocalico Creek Watershed (55 percent), with the majority of this land situated in the middle of the watershed. Forests cover about 35 percent of the area and are located in the northern portion of the watershed. The Middle Creek Wildlife Refuge is located along the Lancaster/Lebanon County line, protecting a large area of natural vegetation. Seven percent of the Cocalico Creek Watershed is developed land, with the heaviest concentration being around Ephrata Borough.

The next tributary to enter the Conestoga River is Lititz Run. Lititz Run begins near the town of Lititz, Lancaster County. A large tributary, Santo Domingo Creek, flows into Lititz Run in Lititz Borough. A TMDL for the Lititz Run Watershed was completed and approved by the U.S. Environmental Protection Agency (USEPA) in 2005. The Lititz Run Watershed is dominated by agriculture, but is heavily developed around the Lititz area.

Mill Creek flows into the Conestoga River south of the City of Lancaster. The watershed comprises the southern side of the Conestoga River Watershed and flows through open farmland and receives nutrient inputs from several discharges. A TMDL was completed and approved by USEPA for Muddy Run in 2001. Several unnamed tributaries to Mill Creek also have a TMDL completed and approved (2005) by USEPA.

The land use in the Mill Creek Watershed is distributed between agriculture, forested land, and developed areas. Agriculture covers more than 75 percent of the watershed. Forested areas comprise more than 11 percent of the watershed, and developed land makes up almost 10 percent of

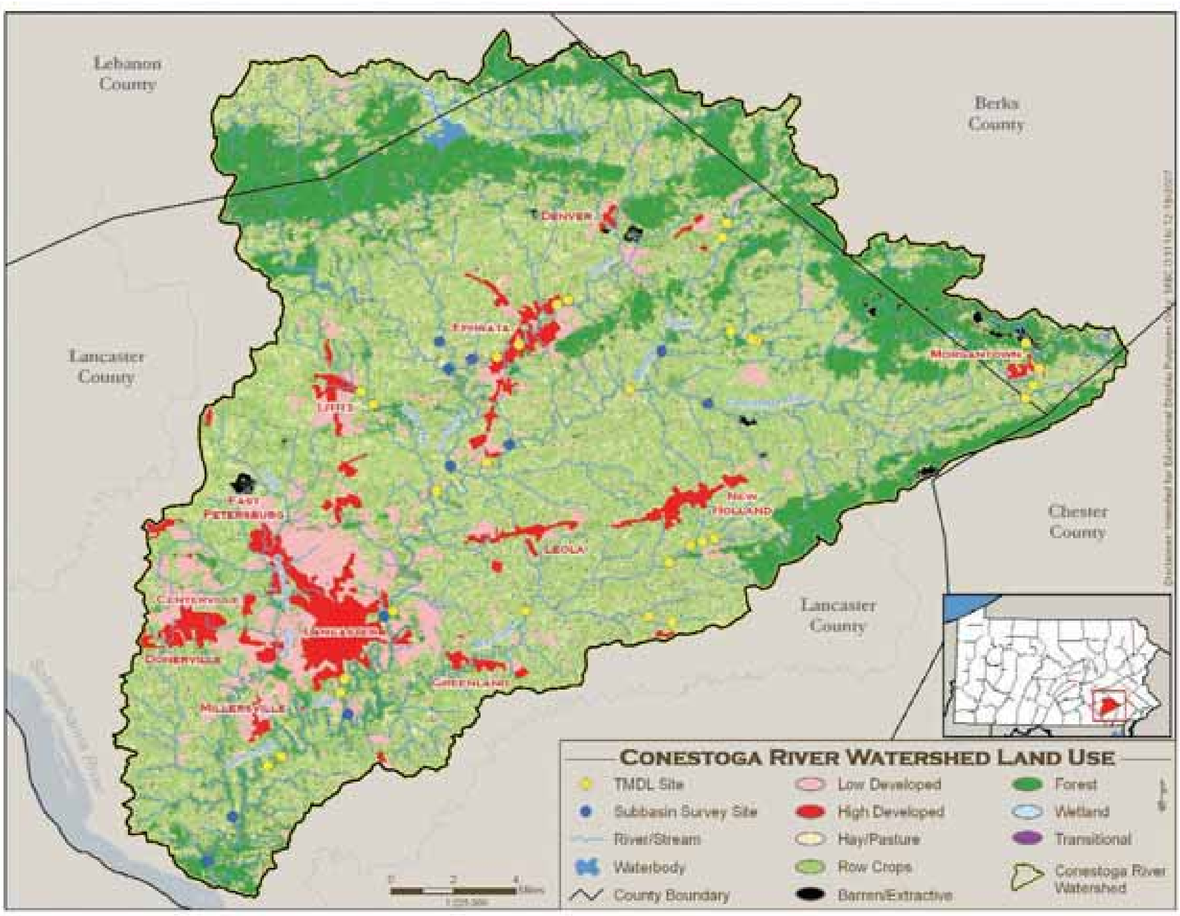

Figure 2. *Land Cover in the Conestoga River Watershed*

the watershed. The Mill Creek Watershed is dominated by traditional farming practices, with the majority of the stream channel bordered with open farm fields. The watershed has one of the highest dairy cow densities in Pennsylvania (WRAS, 2001).

Intense agriculture also characterizes the upper portion of the Little Conestoga Creek Watershed. Overall, more than 56 percent of the Little Conestoga Creek Watershed is used for agricultural purposes. The middle section of the watershed is densely populated, with only a little more than eight percent of the watershed forested. In 1997, the U.S. Geological Survey (USGS) and the Alliance for the Chesapeake Bay conducted a stream quality snapshot and found that the most stressed areas of stream in the Little Conestoga Creek Watershed were directly correlated to the agricultural dominated land uses (WRAS, 2001).

Little Conestoga Creek.

Background on TMDL Development

Section 303(d) of the 1972 Clean Water Act requires states, territories, and authorized tribes to establish water quality standards. Water quality standards identify the scientific criteria needed to support a designated use. Designated uses provide support for drinking water supply, contact recreation (swimming), and aquatic life. Minimum goals set by the Clean Water Act require all waters to be "fishable" and "swimmable."

PADEP uses the Unassessed Waters Protocol, a modification of the USEPA Rapid Bioassessment Protocol II (RPB-II), as the primary mechanism to assess Pennsylvania's waters. All the biological surveys include kick-screen sampling of benthic macroinvertebrates, habitat surveys, and measurements of field chemistry. After the survey is completed, the status of the stream segment is determined. If the stream is determined to be impaired, the source and cause of the impairment are documented on the state's Section 303(d) List.

Each of the subwatersheds and the mainstem Conestoga River contain stream segments listed on the Clean Water Act Section 303(d) List. Within the Conestoga River Watershed, approximately 330 stream miles have been listed as impaired, and the main sources of impairment include siltation and nutrients.

Sources of Impairment

Based on the varied land uses in the watershed, sources of siltation and nutrients include point-source discharges, urban runoff, agricultural runoff, small residential runoff, and groundwater. In the Conestoga River Watershed, there are more than 50 point-source nutrient dischargers permitted to discharge more than 48 million gallons per day. Also, nutrients are provided by nonpoint sources, primarily during storm events. Stormwater flows across all types of land carrying sediment, fertilizers, metals, and other pollutants into waterways.

> **"*In the Conestoga River Watershed, there are more than 50 point-source nutrient dischargers permitted to discharge more than 48 million gallons per day.*"**

Point-source discharge on the Conestoga River.

The surficial geology in the Conestoga River Watershed allows groundwater to influence surface water quality conditions quickly in a significant portion of the watershed. Almost 60 percent of the watershed is underlain with carbonate rock. Carbonate rock is primarily composed of limestone and dolomite, which can be dissolved over time by water to form surface depressions, fractures, and subsurface conduits. These areas are generally susceptible to sinkhole formation under certain conditions. Within this type of terrain, pollutants on the surface of the ground can be introduced more easily into groundwater. During base flow conditions, groundwater contributes a significant amount of the streamflow, potentially carrying pollutants back to the surface water.

In 2005, SRBC completed a groundwater study in the northern section of the Conestoga River Watershed (Edwards, 2005). This study examined nitrate levels in both groundwater and surface water in portions of the Cocalico Creek and Lititz Run Watersheds. The study area encompassed approximately 30 groundwater sample sites with nearly 50 percent of the sites recording concentrations exceeding PADEP's 10 milligrams per liter (mg/l) drinking water quality standard (Commonwealth of Pennsylvania, 2005).

Methods

Water chemistry samples and flow measurements were collected on the Conestoga River mainstem and its tributaries in August through September 2005 and August 2006 during base flow conditions. Data were collected at 41 stream sites; 30 of these sites were new sites chosen for the project and 11 sites were established SRBC subbasin survey sites. SRBC conducts subbasin surveys on a rotational basis in each of its six subbasins. Of the 41 sites, 16 were located on the mainstem Conestoga River, eight in each of Mill Creek and Cocalico Creek Watersheds, six in the Muddy Creek Watershed, two on Lititz Run, and one on Little Conestoga Creek (Table 1). The 30 new sites were positioned in the watershed to best capture nutrient impacts from point sources and isolate nutrient loads from tributaries. The majority of the sites bracket nutrient dischargers while the remaining sites are located on the mainstem Conestoga River upstream of major tributaries.

At each site, water chemistry samples for total nitrogen, total phosphorus, alkalinity, and dissolved phosphorus were collected. At the 11 subbasin sites, additional nutrient parameters such as nitrate/nitrite were collected. Water samples were collected using a hand-held depth integrated sampler at six verticals across the stream channel. The water was composited in a churn-splitter and mixed, then split into a 500 ml bottle for total nitrogen and alkalinity, and a 125 ml bottle fixed with H_2SO_4 for total phosphorus. A filter pump with a 45 mm filter was used to filter enough of the water sample to fill a second 125 ml bottle that was fixed with H_2SO_4. The filtered sample bottle was used to measure dissolved phosphorus. All three bottles were placed on ice and taken to the PADEP Lab for analysis. Using the additional water sample, field chemistry analyses were completed. Temperature (˚C) and dissolved oxygen were measured with a YSI 55 meter. Conductivity was measured with a Cole-Parmer Model 1481 meter and pH was measured with a Cole-Parmer Model 5996 meter.

In addition, flow measurements were taken at each site using a Scientific Instruments pygmy or AA meter according to the USGS methods, or if a USGS gage station was located at the site, the real-time flow measurement was recorded.

Also, biological and habitat data were collected at each sampling site. Periphyton were collected according to the Periphyton Standing Crop and Assemblages protocol established by PADEP and sent to Penn State University for analysis. The periphyton samples were identified and analyzed for chlorophyll-a, cellular carbon, nitrogen, and cellular phosphorus. Basic habitat data (canopy cover, substrate characteristics, etc.) were recorded at each site. During the first sampling round (2005), macroinvertebrates were collected at the 11 subbasin sites, and more intense habitat assessments were conducted. These data will be presented in a separate data report.

Flow measurement in Lititz Run.

Station Name	Latitude	Longitude	Description
Conestoga River			
TMDL 31	40.170833	-75.884722	Conestoga River off Route 10 in Industrial Park.
TMDL 30	40.158611	-76.875944	Conestoga River along Morgan Way, near PA Turnpike.
TMDL 14	40.150833	-75.880833	Conestoga River upstream of Caernarvon Twp WWTP. Access from plant.
TMDL 13	40.145278	-75.885833	Conestoga River downstream of Caernarvon Twp WWTP. Access from plant.
CNTG 43.9	40.145833	-76.078333	Conestoga River upstream of Muddy Creek.
TMDL 24	40.153611	-76.125556	Conestoga River on Martindale Road at intersection with Route 322.
CNTG 32.7	40.128611	-76.199722	Conestoga River upstream of Cocalico Creek.
TMDL 18	40.120833	-76.212500	Conestoga River at Route 772 bridge.
TMDL 15	40.107778	-76.244444	Conestoga River at Pinetown Road bridge (covered bridge).
TMDL 5	40.052222	-76.272222	Conestoga River downstream of Lancaster City WTP damon Route 23.
CNTG 22.6	40.050000	-76.277500	Conestoga River at gage in Lancaster City, PA.
TMDL 4	40.021111	-76.302778	Conestoga River upstream of Lancaster City WWTP on Route 324, near 324/222 split.
TMDL 3	40.014722	-76.305000	Conestoga River downstream of Lancaster City WWTP on Route 324.
TMDL 2	39.985556	-76.341667	Conestoga River upstream of Millersville WWTP.
TMDL 1	39.981111	-76.350000	Conestoga River downstream of Millersville WWTP.
CNTG 0.9	39.937222	-76.387500	Conestoga River at River Road bridge.
Muddy Creek			
TMDL 27	40.175000	-76.047778	Black Creek at Brubaker Park near mouth.
TMDL 26	40.176389	-76.050556	Muddy Creek at Route 897 bridge.
TMDL 25	40.180000	-76.063611	Muddy Creek near Beam Road.
TMDL 29	40.230000	-76.065000	Little Muddy Creek upstream of Adamstown WWTP. Access from plant.
TMDL 28	40.223333	-76.067778	Little Muddy Creek downstream of Adamstown WWTP. Access from plant.
MUDD 0.2	40.170833	-76.105833	Muddy Creek at the mouth.
Cocalico Creek			
TMDL 23	40.195556	-76.161944	Cocalico Creek off E. Trout Run Road. Access site from Ephrata WWTP #2.
TMDL 22	40.193889	-76.169167	Cocalico Creek at Mohler Church Road.
TMDL 20	40.175556	-76.192778	Cocalico Creek at Old Mill Road; near library.
TMDL 19	40.170000	-76.205000	Cocalico Creek at neighborhood park off Bellevue Avenue.
CCLC 12.2	40.169167	-76.221111	Cocalico Creek at Garden Spot Road.
MIDD 0.2	40.177222	-76.240833	Middle Creek at Middle Creek Road bridge.
HAMM0.2	40.164722	-76.235833	Hammer Creek at mouth.
CCLC 0.4	40.119444	-76.235556	Cocalico Creek upstream of the Conestoga River.
Lititz Run			
TMDL 17	40.154722	-76.289167	Lititz Run at Lititz Run Road bridge.
TMDL 16	40.149167	-76.281667	Lititz Run along Route 772 at the Riparian Restoration Park.
Mill Creek			
TMDL 12	40.083056	-76.075833	Mill Creek at New Holland Road bridge.
TMDL 11	40.081944	-76.083611	Mill Creek at Custer Road bridge.
TMDL 10	40.080000	-76.090278	Mill Creek downstream of Tyson discharge on Meadow Road.
TMDL 9	40.072222	-76.104444	Mill Creek at N. Hollander Road bridge.
TMDL 8	40.044444	-76.103333	Muddy Run upstream of Leacock Twp WWTP on West Newport Road.
TMDL 7	40.047500	-76.117222	Muddy Run downstream of Leacock Twp WWTP on West Newport Road.
TMDL 6	40.051111	-76.192222	Mill Creek at Gibbons Road bridge.
MILL 0.3	40.004722	-76.300833	Mill Creek at Elkman Road bridge.
Little Conestoga Creek			
LCNT 1.7	39.957778	-76.371667	Little Conestoga Creek near mouth.

Table 1. *Sample Sites in the Conestoga River Watershed*

Results/Discussion

Total phosphorus (TP) and dissolved phosphorus (DP) and total nitrogen (TN) contributions were calculated for the entire Conestoga River Watershed and for each subwatershed. The highest TN concentrations were observed at sites TMDL 16 and TMDL 17, both on Lititz Run. The average TN concentrations for TMDL 16 and TMDL 17 were 16.76 mg/l and 18.13 mg/l, respectively. Mill Creek included the sites with the highest TP and DP concentrations. TMDL 11, near New Holland, had the highest TP and DP concentrations, 0.81 mg/l and 0.81 mg/l, respectively. The second highest concentrations were found at TMDL 10, also near New Holland, with the average TP and DP concentrations measured at 0.58 mg/l and 0.56 mg/l, respectively.

The pounds of TN in the watershed were separated by major subwatershed using the sample sites (Figure 3). Nearly 50 percent of the TN enters the mainstem Conestoga River directly, while the Cocalico Creek tributary contributes the second highest amount of TN (22 percent) to the system. The Conestoga River Watershed, on average, contributes nearly 30,000 pounds of nitrogen daily into the Susquehanna River (McGonigal, 2007). Total nitrogen loads were calculated between sample sites in the watershed (Figure 4). Increases in total nitrogen can be attributed to point and nonpoint sources and groundwater.

Total phosphorus loads were tracked between sample sites in the Conestoga River Watershed (Figure 5).

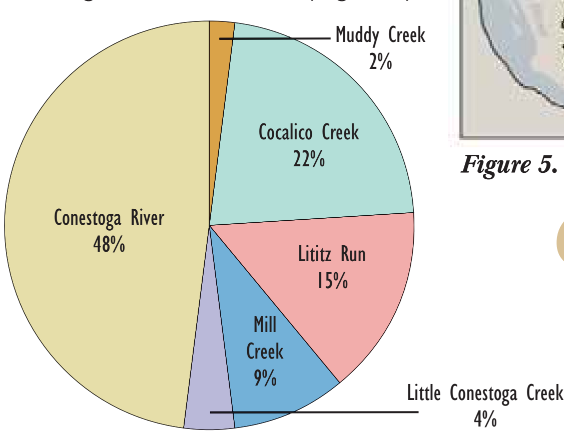

Figure 3. Total Nitrogen by Subwatershed

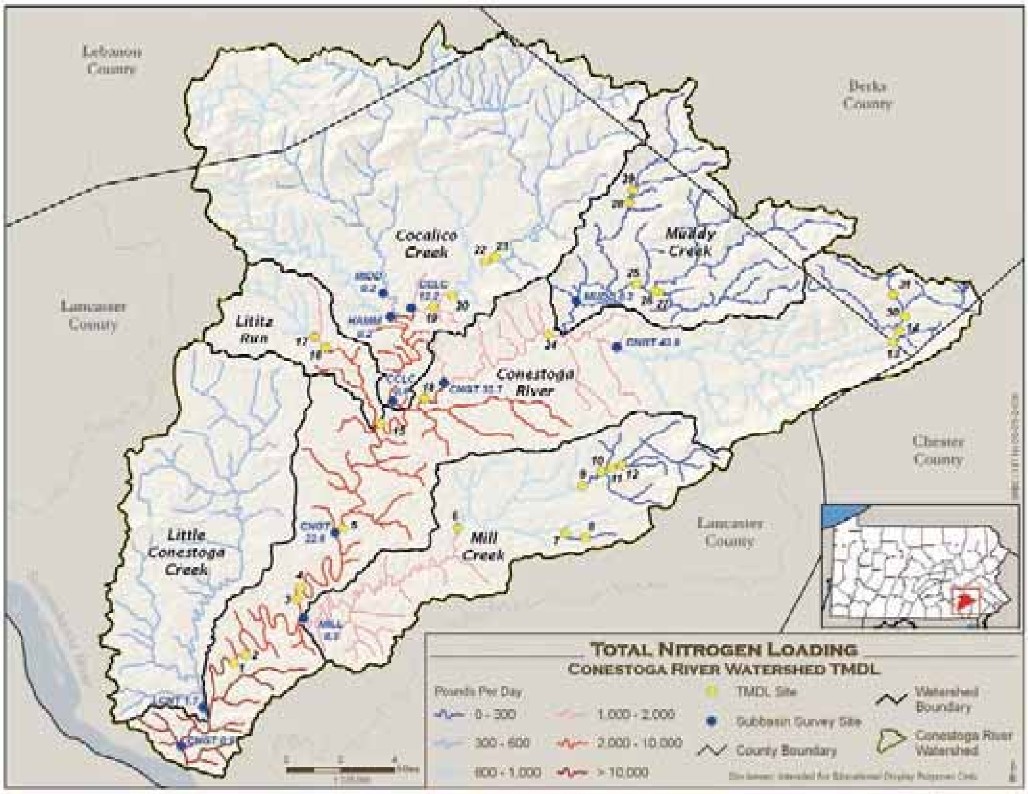

***Figure 4.** Total Nitrogen Loads*

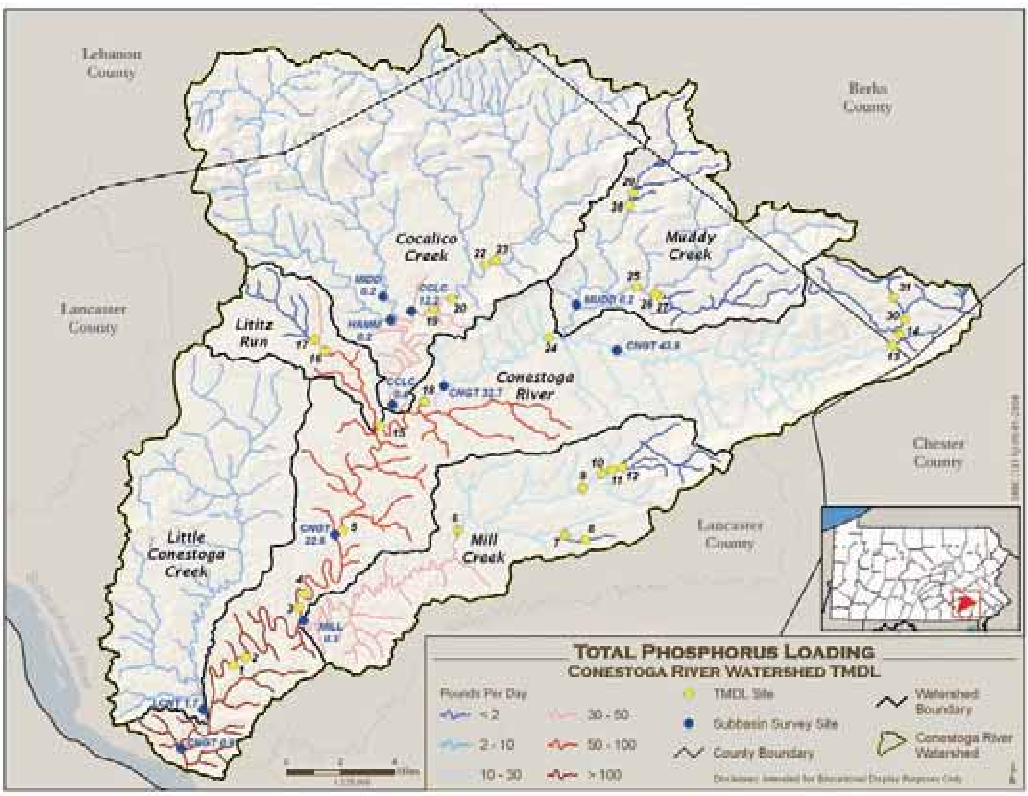

***Figure 5.** Total Phosphorus Loads*

> ***"The Conestoga River Watershed, on average, contributes nearly 30,000 pounds of nitrogen daily into the Susquehanna River (McGonigal, 2007)."***

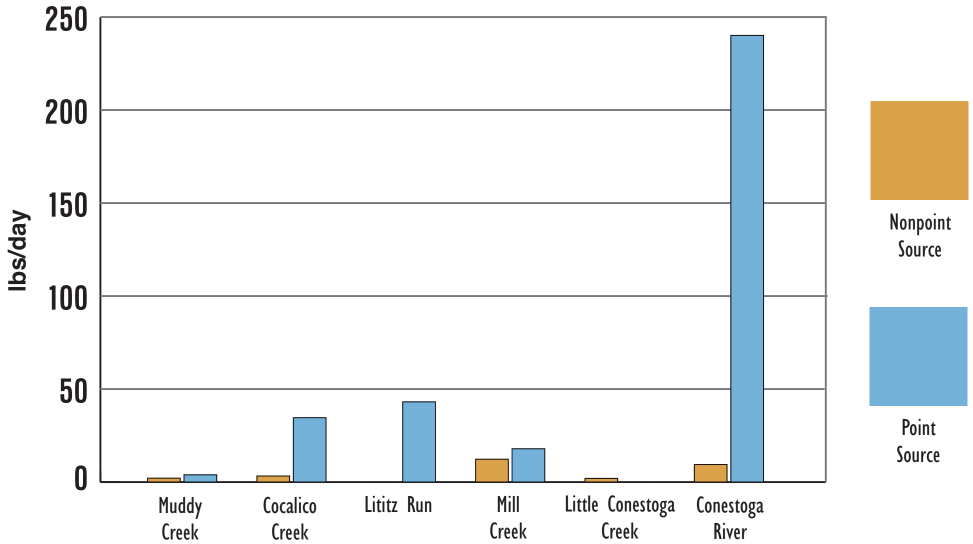

Figure 6. *Total Phosphorus Contributions Divided by Point and Nonpoint Source*
** Point source total phosphorus data from 14 nutrient discharges*

Load origins were categorized as either nonpoint or point source based on the sample collection design. During base flow conditions, the majority of TP loads originate from the sample locations chosen to characterize influences from point sources; these discharges dominate the flow regime in some portions of the watershed (Figure 6). In the upper reaches of Mill Creek, more than 50 percent of streamflow is comprised of effluent, or flow, from nutrient dischargers. On the mainstem Conestoga River below the City of Lancaster, approximately 25 percent of the streamflow is comprised of effluent from nutrient discharges. Approximately 1,900 pounds of phosphorus per day, on average, enter the Susquehanna River from the Conestoga River (McGonigal, 2007).

As shown in Figures 5 and 6, point-source discharges contribute significant phosphorus loads to the watershed during base flow conditions. The highest increase in total phosphorus loads occurs between sample sites TMDL 3 and TMDL 4 (145.24 pounds).

Figure 6 illustrates the division of total phosphorus loads between subwatersheds and separates subwatershed loads by point-source and nonpoint-source origins. Muddy and Little Conestoga Creeks provide very small volumes of total phosphorus from point and nonpoint sources. The mainstem Conestoga River contributes the highest amount of total phosphorus to the system.

Overall, the majority of the nitrogen and phosphorus directly enters the mainstem Conestoga River with significant contributions from Cocalico Creek, Lititz Run, and Mill Creek. The watershed is dominated by agricultural land uses, and more than 70 dischargers contribute wastewater to the river system. Since sampling was conducted during low flow conditions, point sources had considerable influence on the nutrient concentrations in the Conestoga River Watershed. Several areas in the watershed are not listed as impaired. These segments are found in the Cocalico Creek and Muddy Creek Watersheds near the headwaters and are predominantly surrounded by forests.

Cocalico Creek.

Muddy Creek

The first significant tributary to enter the Conestoga River is Muddy Creek. It provided three percent of the total flow in the river and contributed two percent of the total and dissolved phosphorus loads (6.08 and 5.32 pounds, respectively). The sample sites in the Muddy Creek Watershed recorded some of the lowest total nitrogen concentrations, and the watershed contributes the least amount of nitrogen to the system of all the major tributaries (247.12 pounds).

Cocalico Creek

Twenty-four percent of the flow in the Conestoga River came from Cocalico Creek. While almost a quarter of the flow originated in Cocalico Creek, only 15 percent of the total and dissolved phosphorus loads and 22 percent of the total nitrogen load entered from this tributary. Cocalico Creek carried 37.94 pounds of total phosphorus, 34.81 pounds of dissolved phosphorus, and 2,634.11 pounds of total nitrogen into the Conestoga River. The lowest phosphorus concentrations in the watershed were located at the mouths of Hammer and Middle Creeks. These two tributaries drain mostly forested land and do not contain any nutrient dischargers.

Lititz Run

The third tributary to enter the Conestoga River is Lititz Run, and it provided seven percent of the total flow in the system. Considering its relatively small flow contribution, Lititz Run contributed a significant amount of nutrients to the Conestoga River. It was responsible for 17 percent of the total phosphorus (42.42 pounds) and 14 percent of the dissolved phosphorus (31.82 pounds) loads present in the Conestoga River. Lititz Run also provided 15 percent of the total nitrogen load (1,747.92 pounds) found in the Conestoga River.

Mill Creek

The Mill Creek Watershed contributed 10 percent of the total flow to the Conestoga River. Of the nutrient loads in the Conestoga River, 12 percent of the total and dissolved phosphorus loads (30.26 and 28.01 pounds, respectively) and nine percent of the total nitrogen load (1,065.83 pounds) were attributed to Mill Creek. The upper reach of Mill Creek contains four nutrient dischargers in close proximity to each other. The highest nutrient concentrations occurred during base flow conditions, when point source effluent dominated the streamflow.

Little Conestoga Creek

The Little Conestoga Creek, the last major tributary to enter the Conestoga River, contributed four percent of the total flow to the Conestoga River. It comprised just one percent of the total and dissolved phosphorus loads (2.00 and 2.43 pounds, respectively) and four percent of the total nitrogen load (525.03 pounds). There are no permitted continuous nutrient dischargers in the Little Conestoga Creek Watershed.

> “*Based on the data collected during base flow conditions, additional sources of impairment may be identified.*”

Next Steps

Currently, the Conestoga River Watershed has numerous stream segments – about 330 stream miles – listed on the 303(d) List for nutrients from agriculture, urban runoff/storm sewers, small residential runoff, and other sources. Based on the data collected during base flow conditions, additional sources of impairment may be identified. Elevated nitrogen and phosphorus concentrations were observed downstream from many of the dischargers.

With both sampling events occurring during baseflow conditions, the next steps in the TMDL development include:

- Completing analyses of biological data collected during baseflow conditions;
- Conducting water quality sampling during different flow regimes to document nonpoint source contributions;
- Selecting an appropriate model for determining the TMDL instream endpoints; and
- Determining any needed reductions from all sources of nutrients.

SRBC is working with PADEP to encourage stakeholder participation as the TMDL process continues.

References

Buda, S.L. 2006. Lower Susquehanna Subbasin Survey: A Water Quality and Biological Assessment, June-November 2005. Susquehanna River Basin Commission (Publication No. 247), Harrisburg, Pa.

Commonwealth of Pennsylvania. 2005. Pennsylvania Code, Title 25. Environmental Protection, Department of Environmental Protection, Chapter 93. Water Quality Standards.

____. 2006. Assessment and Listing Methodology for Integrated Water Quality Monitoring and Assessment Reporting. http://www.depweb.state.pa.us/watersupply/lib/watersupply/AssessmentMethodology.pdf.

Edwards, R.E., and R.D. Pody. 2005. Northern Lancaster County Groundwater Study: A Resource Evaluation of the Manheim-Lititz and Ephrata Area Groundwater Basins. Susquehanna River Basin Commission (Publication No. 235), Harrisburg, Pa.

Lancaster County Planning Commission. 2004. A Decade of Smart Growth Management: Lancaster County Growth Tracking Report 1993-2003.

McGonigal, K.H. 2007. Nutrients and Suspended Sediment Transported in the Susquehanna River Basin, 2006, and Trends, January 1985 through December 2006. Susquehanna River Basin Commission (Publication No. 252), Harrisburg, Pa.

Pennsylvania Department of Environmental Protection. 2008. 2006 Pennsylvania Integrated Water Quality Monitoring and Assessment Report. http://www.depweb.state.pa.us/watersupply/cwp/view.asp?a=1261&q=480056.

United States Census Bureau. 2000. Census.

United States Environmental Protection Agency. 2008. Approved TMDLs by Year. http://iaspub.epa.gov/waters/state_rept.control?p_state=PA#APRTMDLS.

Watershed Restoration Action Strategy (WRAS). 2001. State Water Plan Subbasin 07J Conestoga River. Department of Environmental Protection, Harrisburg, Pa.

Hammer Creek.

In 1971, the Susquehanna River Basin Commission was created as an independent agency by a federal-interstate compact among the states of Maryland, New York, and the Commonwealth of Pennsylvania, and the federal government. In creating the Commission, the Congress and state legislatures formally recognized the water resources of the Susquehanna River Basin as a regional asset vested with local, state, and national interests for which all the parties share responsibility. As the single federal-interstate water resources agency with basinwide authority, the Commission's goal is to coordinate the planning, conservation, management, utilization, development and control of the basin's water resources among the public and private sectors.

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