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DEPARTMENT OF ENVIRONMENTAL PROTECTION



Office of Water Management

2014 PA Integrated Water Quality Monitoring and Assessment Report and 2013 Assessment Methods

WRAC Meeting

May 14, 2014

2013 Assessment Methods

- Assessment Methods were published for a 60-day comment period beginning Sept. 28 and ending Nov. 27, 2013. Presented draft to WRAC on July 12, 2012.
- Comments received by four commenters:
 - Delaware Riverkeeper Network
 - Stroud Water Research Center
 - Pennsylvania Fish and Boat Commission
 - Pennsylvania Coal Alliance

2013 Assessment Methods

- Comments were requested for 12 new or revised protocols.
- The new and revised protocols included:
 - Riffle/Run Freestone Streams IBI
 - Chemistry – Bacteriological Evaluations
 - Continuous Instream Monitoring (PDF)
 - Periphyton (PDF)
 - Streambed Sediment (PDF)
 - Surface Water Collection (PDF)
 - Semi-Quantitative Fish Sampling protocol (PDF)
 - Appendix A - Sources and Cause Definitions
 - Appendix C1 - Habitat (PDF)
 - Appendix C2 - Benthic Macroinvertebrates (PDF)
 - Appendix C3 - Fish (PDF)
 - Appendix C4 - Taxonomic Reference (PDF)

2013 Assessment Methods

- Most comments dealt with the need to clarify how or in what circumstance the methods are used
- Comments mostly addressed the revised freestone riffle/run IBI and Chemistry Evaluation methods.
- Final 2013 Assessment Methods posted April 19, 2013

2014 Integrated Report



MAY 2, 2013

Clean Water Act

- Requirement of the Federal Clean Water Act (CWA) Sections 303(d) and 305(b)
 - Section 305(b) requires states to report water quality status of all surface waters every two years (even numbered years)
 - Section 303(d) requires states to report from time to time on the status of waters that will not meet water quality standards after application of treatment technology and will require the development of a Total Maximum Daily Load (TMDL) for pollutants

Integrated Report

- Consists of Five Categories
 - Category 1 contains waters attaining all protected uses
 - Category 2 contains waters attaining at least one protected use
 - Category 3 contains waters that have not been assessed or there is insufficient data to make an assessment
 - Category 4 contains waters that are impaired but do not require the development of a TMDL
 - Category 4 has three subsets
 - Category 4A contains impaired waters for which there is an approved TMDL
 - Category 4B contains impaired waters that are expected to attain uses within in a reasonable time frame.
 - Category 4C contains impaired waters not impaired by pollution
 - Category 5 contains waters impaired by a pollutant (303(d) list)

Table 2

Statewide Assessment Summary

A statewide summary of use support status for four water uses in assessed streams

	Aquatic Life Use	Fish Consumption Use	Recreational Use	Potable Water Supply Use
Streams (miles)				
Assessed*	83,438	8,203	4,994	3,358
Supporting	67,556	6,211	3,109	3,275
Impaired	9,031	1,280	1,784	71
Approved TMDL**	6,851	712	20	12
Compliance	72	---	---	---
Pollution***	2,967	---	---	---
Restored****	72	190	22	49

* Database management to remove assessments from stream lines in lakes and impoundments reduced total miles assessed.

** TMDL miles reported here are only those overlapping impaired segments. A TMDL allocation may include an entire watershed, including streams listed as attained.

*** 2,049 miles have both pollution and pollutant problems.

**** Stream miles now attaining and removed from Category 5 and placed in Category 1 or 2.

Impaired Waters

- Waters listed in Category 5 require the development of a TMDL within 13 years
- Waters listed in Category 4B typically receive point source discharges.
 - New permit limits are set to allow for the attainment of designated uses and when attainment is documented the water is moved to Category 1 or 2 (attaining one or more uses, or all uses)

Draft 2014 Integrated Report Webpage

The report is available through the DEP Webpage (www.dep.state.pa.us)

keyword: “water quality” or directly through the following link

[http://www.portal.state.pa.us/portal/server.pt/community/water_quality_standards/10556/Draft Integrated Water Quality Report - 2014/1702856](http://www.portal.state.pa.us/portal/server.pt/community/water_quality_standards/10556/Draft_Integrated_Water_Quality_Report_-_2014/1702856)

WAVE website



Wave

<http://www.wave.dep.state.pa.us/wave/>

Water Attribute Viewer and Extracts

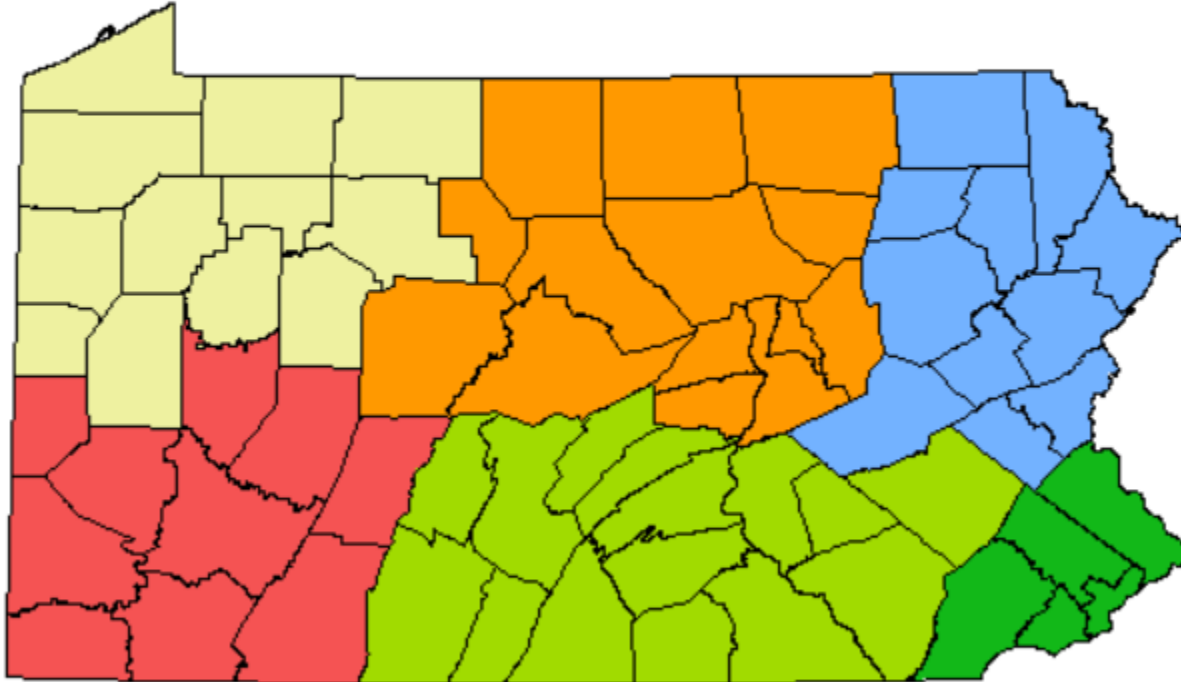
Google Maps **County** Zip Code Subbasin Layers

County

Dauphin

Subject Area

Water Quality



Launch WAVE

WAVE Introduction


Cancel



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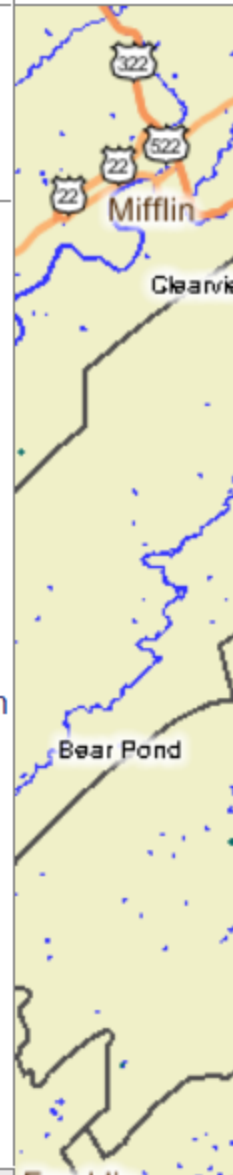
Subject Area Legend

Complaints Custom Floodplain Management
Habitat/Wildlife/Fish Land/Soil Related US EPA
Water Quality Water Related
Water Withdrawal/Use/Discharge

-  **Permanent Layers**
-  **Subject Area Layers**
- Chapter93 Designated Use
- Chapter93 Existing Use
- Chesapeake Bay Watershed
- Fish
- Groundwater Monitoring Network
- Lake Assessments - Attain
- Lake Assessments - Non Attain
- Macro Invertebrate
- SIS Monitoring Points
- SIS Sample Points
- Stream Assessments - Attain
- Stream Assessments - Non Attain
- Stream ReLeaf
- TMDL Lakes
- TMDL Streams
- USGS Groundwater Monitoring
- Stations**
- Water Quality Network - Active
- Water Quality Network - Inactive

[Refresh Map](#)

Map Search



Wave Tool Bar



WAVE Tool Bar

Use the zoom tool to zoom to point of interest.



Use the pan tool to move map to point of interest.



Use the identify tool to identify stream information.



Wave Tool

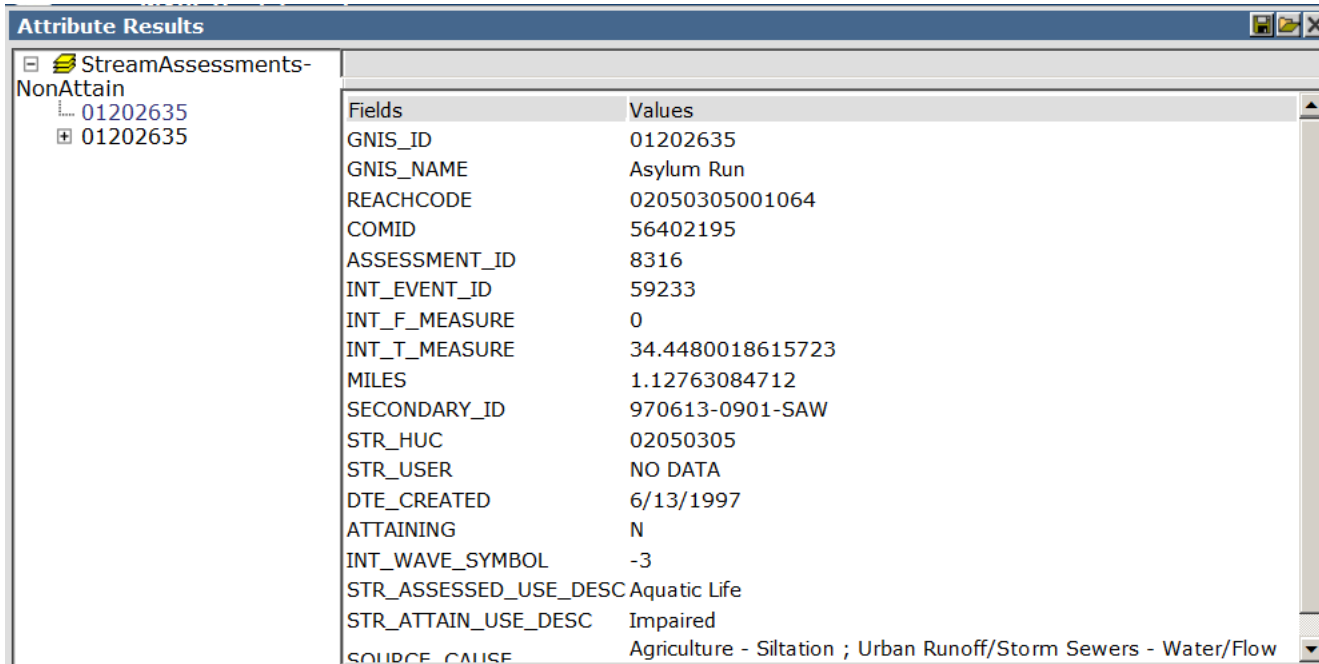
To find information on a stream – in this example it is Asylum Run in Harrisburg – zoom map to the stream.



Then select the  identify icon and click on the stream line.

Wave Tool

A pop up table appears with the stream information and in this example Asylum Run has two records.



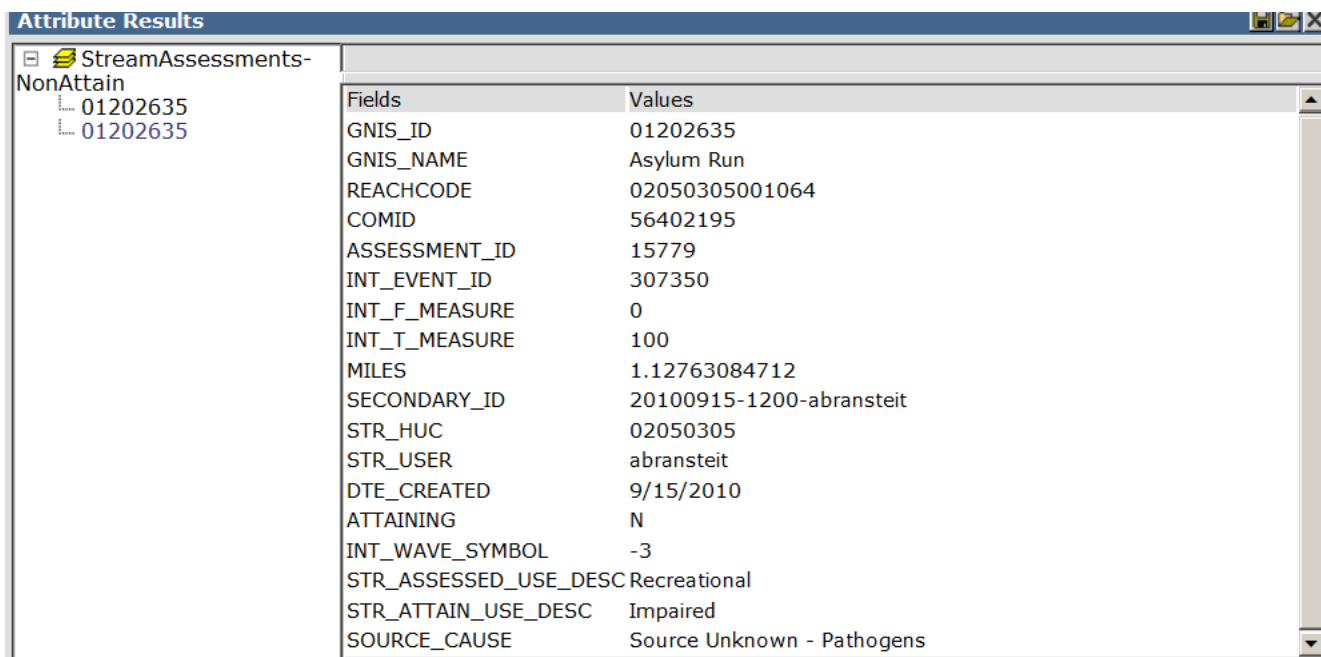
The screenshot shows a window titled "Attribute Results" with a tree view on the left and a table on the right. The tree view shows a folder "StreamAssessments-NonAttain" containing a sub-folder "01202635" and a file "01202635". The table displays the following data:

Fields	Values
GNIS_ID	01202635
GNIS_NAME	Asylum Run
REACHCODE	02050305001064
COMID	56402195
ASSESSMENT_ID	8316
INT_EVENT_ID	59233
INT_F_MEASURE	0
INT_T_MEASURE	34.4480018615723
MILES	1.12763084712
SECONDARY_ID	970613-0901-SAW
STR_HUC	02050305
STR_USER	NO DATA
DTE_CREATED	6/13/1997
ATTAINING	N
INT_WAVE_SYMBOL	-3
STR_ASSESSED_USE_DESC	Aquatic Life
STR_ATTAIN_USE_DESC	Impaired
SOURCE_CAUSE	Agriculture - Siltation ; Urban Runoff/Storm Sewers - Water/Flow

This record indicates that Aquatic Life use was assessed and is impaired. To match this to the Integrated Report use the Assessment_ID, which is 8316 to the Category 5 Report, or in this case Category 4a as there is an approved TMDL for Paxton Creek.

Wave Tool

This record shows that Asylum Creek was also assessed for Recreational Use and it was impaired due to Pathogens.



The screenshot shows a window titled "Attribute Results" with a tree view on the left and a table of fields and values on the right. The tree view shows a folder "StreamAssessments-NonAttain" containing two sub-items, both labeled "01202635". The table lists various attributes and their corresponding values.

Fields	Values
GNIS_ID	01202635
GNIS_NAME	Asylum Run
REACHCODE	02050305001064
COMID	56402195
ASSESSMENT_ID	15779
INT_EVENT_ID	307350
INT_F_MEASURE	0
INT_T_MEASURE	100
MILES	1.12763084712
SECONDARY_ID	20100915-1200-abransteit
STR_HUC	02050305
STR_USER	abransteit
DTE_CREATED	9/15/2010
ATTAINING	N
INT_WAVE_SYMBOL	-3
STR_ASSESSED_USE_DESC	Recreational
STR_ATTAIN_USE_DESC	Impaired
SOURCE_CAUSE	Source Unknown - Pathogens

Waters Impaired by Pollution

- Category 4C
- CWA defines pollution vs. pollutant
 - Pollutants are chemicals like metals, nutrients, organic compounds (PCBs, DDT, etc.), sediment or thermal discharges
 - Pollution is defined as alterations of flow, habitat alterations, etc.
- Impairment is not addressed through a TMDL, rather the impairment is addressed through implementation of remediation/restoration plans.

Waters with approved TMDLs

- Category 4A
- TMDL = Waste Load Allocation (WLA) + Load Allocation (LA) + Margin of Safety
 - WLA = point source discharges
 - LA = non-point sources
- These waters have a TMDL(s) for a pollutant of concern.
- If point sources are present, permit limits must be consistent with TMDL



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