

A circular photograph showing a stream flowing over large, dark, layered rocks. The water is clear and reflects the surrounding green forest. The rocks are stacked and create a natural barrier in the stream. The background is a dense forest of tall trees with green foliage.

Impaired Watersheds and Stream Designations in Adams County

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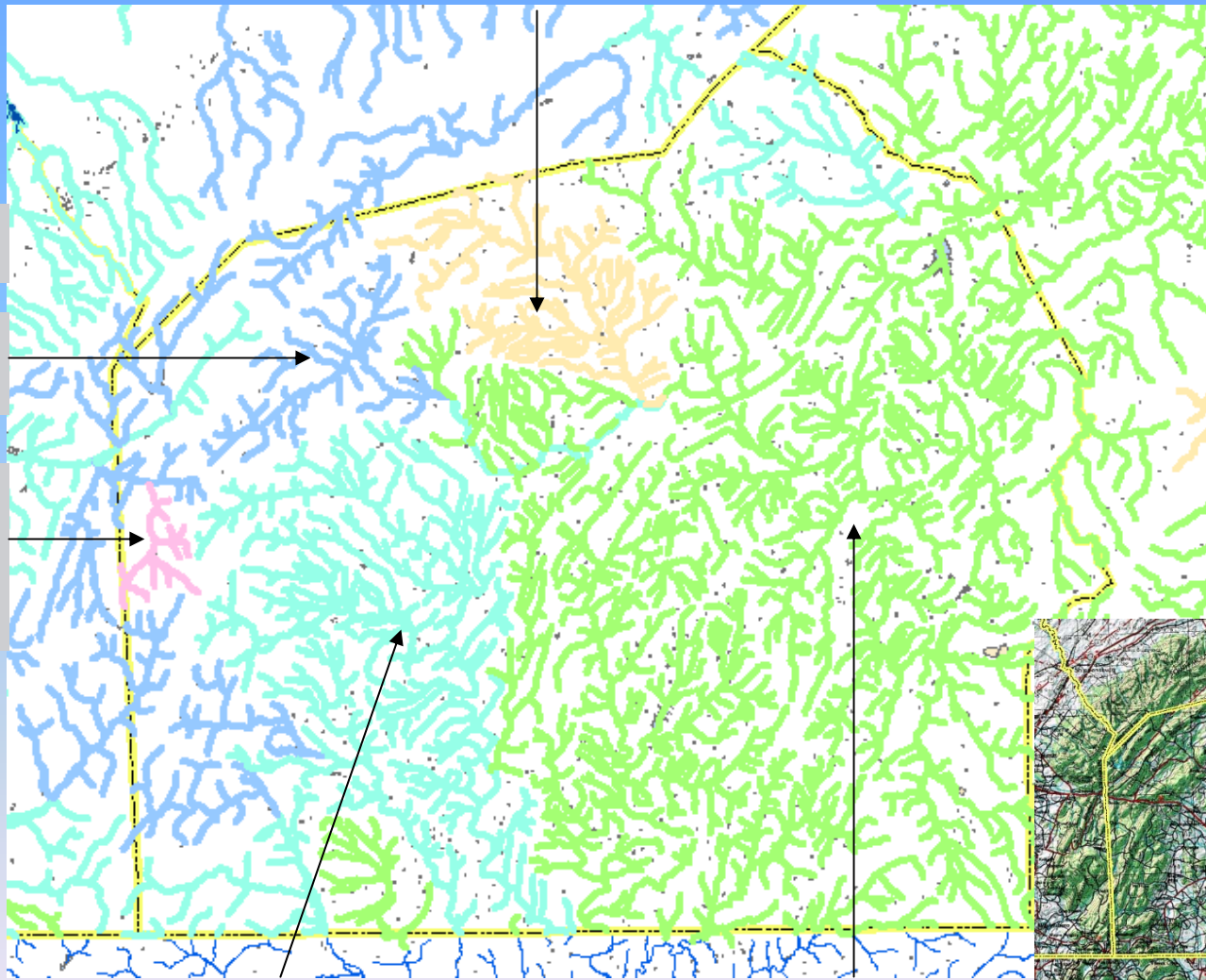
Water Quality Standards

- What are Water Quality Standards?
 - Protected water uses
 - Ex: Aquatic Life, Water Supply, Recreation
 - Water quality criteria necessary to protect those uses
 - Ex: pH – 6.0 to 9.0 inclusive
 - Antidegradation Policy to protect existing and designated uses

Water Quality Standards ≠ NPDES effluent limits

Adams County Stream Uses

Trout Stocking Fishes (TSF)



Antidegradation
Streams

High Quality
(HQ)

Exceptional
Value (EV)
Carbaugh
Run

Cold Water Fishes (CWF)

Warm Water Fishes (WWF)

Stream Listing

- **Streams are listed based on the results of assessments conducted including:**
 - Aquatic Life
 - Fish Consumption
 - Potable Water Supply
 - Recreation
- **Assessment and Listing Methodology**
 - Describes acceptable methods and procedures for assessing waters.
 - Revised/updated as needed and subjected to public comment.

Aquatic Life Use Assessment

- Macroinvertebrates
 - Collect 6 D-frame net kick samples from best available riffle / run habitat
 - Subsample to 160-240 bugs
 - Subsamples are identified to genus level
 - Data are used to calculate a biological condition score
- Fish
 - Backpack or tow boat shocking
 - Fish are identified to species when appropriate
 - Fish thermal tolerances are used to evaluate for WWF/CWF assessments



The attainment status of aquatic life use is best determined by collection of long-term physical/chemical data or macroinvertebrate/fish assemblage data.

Water Supply Use Assessment

- Minimum of 8 grab samples collected upstream of water withdrawal of community water supplies over one year.
- What it's tested for:
 - Total Arsenic
 - Chloride
 - Color
 - Total Fluoride
 - Total Iron
 - Total Manganese
 - Total Nitrite and Nitrate
 - Total Dissolved Solids
 - Sulfate
- To date we have assessed 148 sources/
1935 miles of streams/ 31 Lakes
- 7 impaired water sources statewide
- All Adams County sources are Attained



Recreation & Fish Consumption Use Assessment

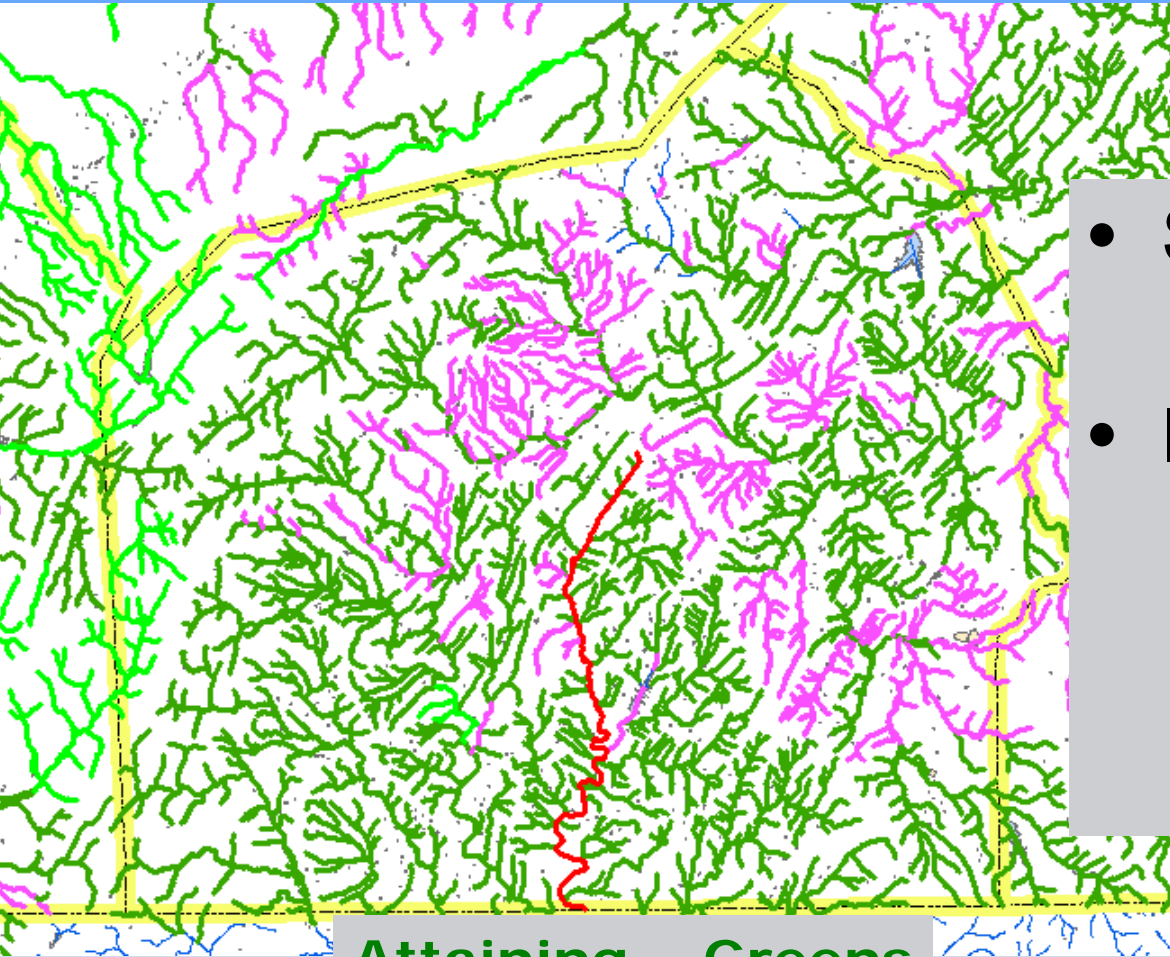
Recreation

- Assessed by collecting 5 bacteria (fecal coliform) samples in a 1 month period at upstream and downstream sites, to define assessed segment.

Fish Consumption

- Begun in 1976 to determine PCB levels
- Today the Department collects approximately 100 samples per year, statewide to analyze for PCBs, metals, and pesticides.
- Typically comprised of game fish species like trout, bass, and channel catfish.
- Results are reviewed by an interagency committee comprised of DEP, PFBC, Department of Health, and Department of Agriculture, which recommends fish consumption advisories.

Adams County Stream Assessments



Attaining - Greens
Impaired - Reds

- Stream Miles
 - Attaining: 1004 mi
- Impaired: 277 mi
 - Largest source / cause
 - Agriculture / Siltation
 - 202 mi

305(b) and 303(d)

- Periodic reports on quality of waters in PA are required under section 305(b) of the federal Clean Water Act
- Section 303(d) of the Act requires a list of all impaired waters not supporting uses
- Report consists of a five category list & a narrative describing the status/progress of water quality management in PA over a two year period.

305(b) Report

- Five part categorization of waters according to use attainment status
 - **Category 1:** Waters attaining all designated uses
 - **Category 2:** Waters where some, but not all designated uses are met
 - **Category 3:** Waters for which there are insufficient or no data to determine use attainment
 - **Category 4:** Waters impaired for one or more designated uses but **not** requiring a TMDL or have an approved TMDL
 - **Category 5:** Waters impaired for one or more designated uses by any pollutant and requiring a TMDL. (List must be approved by EPA)

303(d) List

- DEP maintains a public Web site (eMapPa) that uses a map to visually summarize the stream information listed on Category 5 of the Report.
 - <http://www.emappa.dep.state.pa.us/emappa/viewer.htm>

Stream Delisting

- Waters remain in Category 5 until a TMDL is completed and then are moved to Category 4a
- A water that was impaired but now is attaining uses can be “delisted” by moving it to Category 2 or 1

Typical delisting methods

- Biological assessment using the Instream Comprehensive Evaluation Protocol (ICE) survey
- Chemistry survey taking multiple samples at several sites over an extended time
- Fish consumption advisory is lifted
- Pollutant is removed (i.e. closing or major improvement to a wastewater treatment facility)

Chesapeake Bay

- Assessment of the tidal portions of the Bay has documented Aquatic Life Use impairment.
- A TMDL is being developed to correct that situation.
 - Dischargers to waters tributary to the Bay will be required to reduce nutrient/sediment loads in accordance with that TMDL.
 - The requirement will apply regardless of the impairment status of the receiving stream.
- Until the TMDL is completed, Pennsylvania will include limits designed to meet WQ targets in Maryland in permits being renewed.