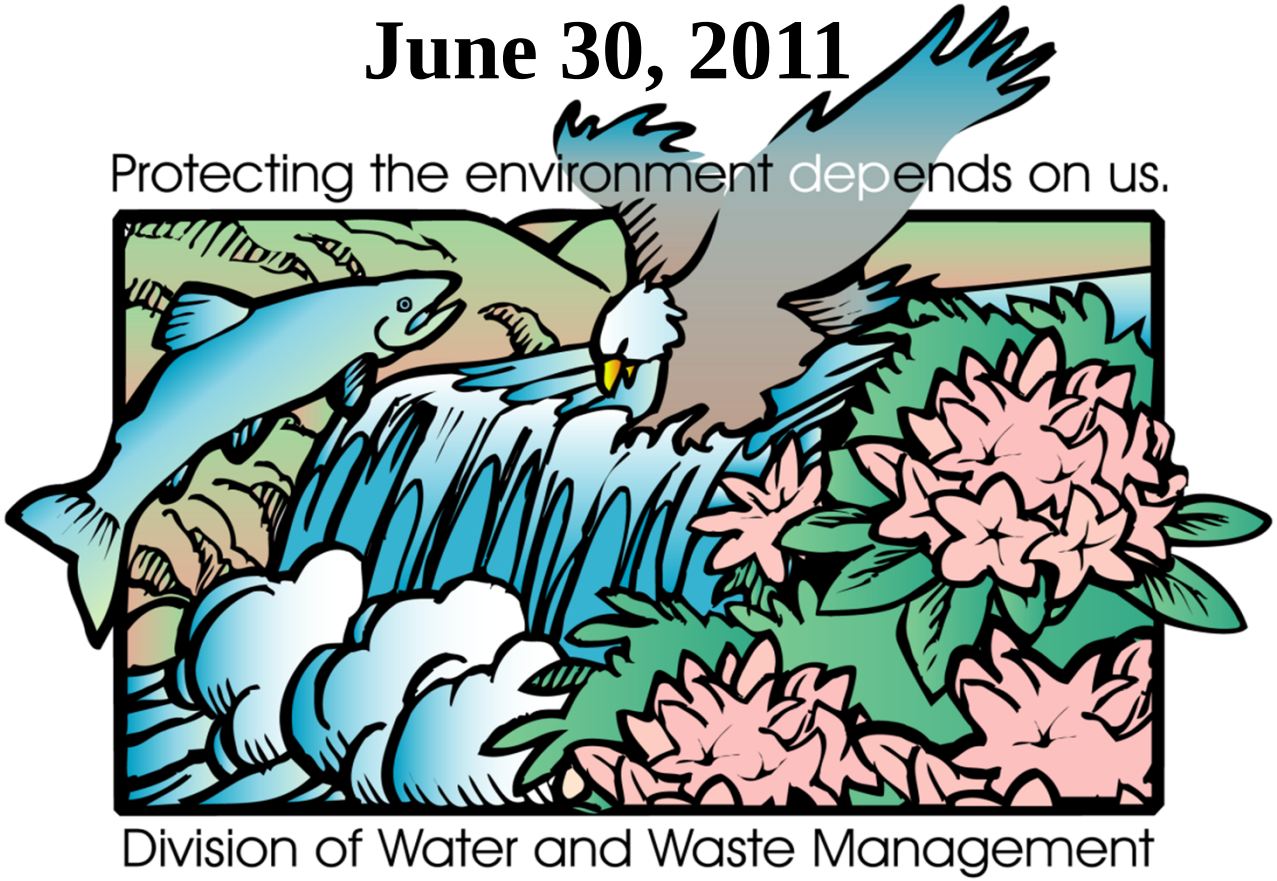
DEP Water Quality Standards Program
Quarterly Public Meeting
June 30, 2011



Meeting Agenda/Overview

- Intro/WQS meeting purpose/goals
- DEP WQ online database web-tool
- ORSANCO Tech Committee review
- WQS Program news/updates
- Other agency news/updates
- Open forum/adjournment

Meeting Purpose/Goals

- Previous feedback:
  - Need more outreach for WQS Program
- Public Meetings:
  - Informal format
  - Not bound by formal hearing procedures
  - Present information/gain feedback

Meeting Purpose/Goals (cont.)

- Information/Topics:
  - WQS Program related (47CSR2)
  - DWWM news/info
  - Other agency info (EPA, ORSANCO)
  - Other news/announcements
- No formal decisions/commitments

Meeting Purpose/Goals (cont.)

- Proposed 2011 schedule:
  - Quarterly*:
    - ***March***
    - ***June***
    - September (~9/29/11)
    - December

*Will revisit schedule in December

Public Access to WV Water Quality Data

John Wirts
Watershed Assessment Branch
Water Quality Standards Public Meeting
6/30/2011

Watershed Assessment Section

Availability of WV Water Quality Data

WVDEP Watershed Assessment Section

- Monitoring Programs
- New and developing Web Tools

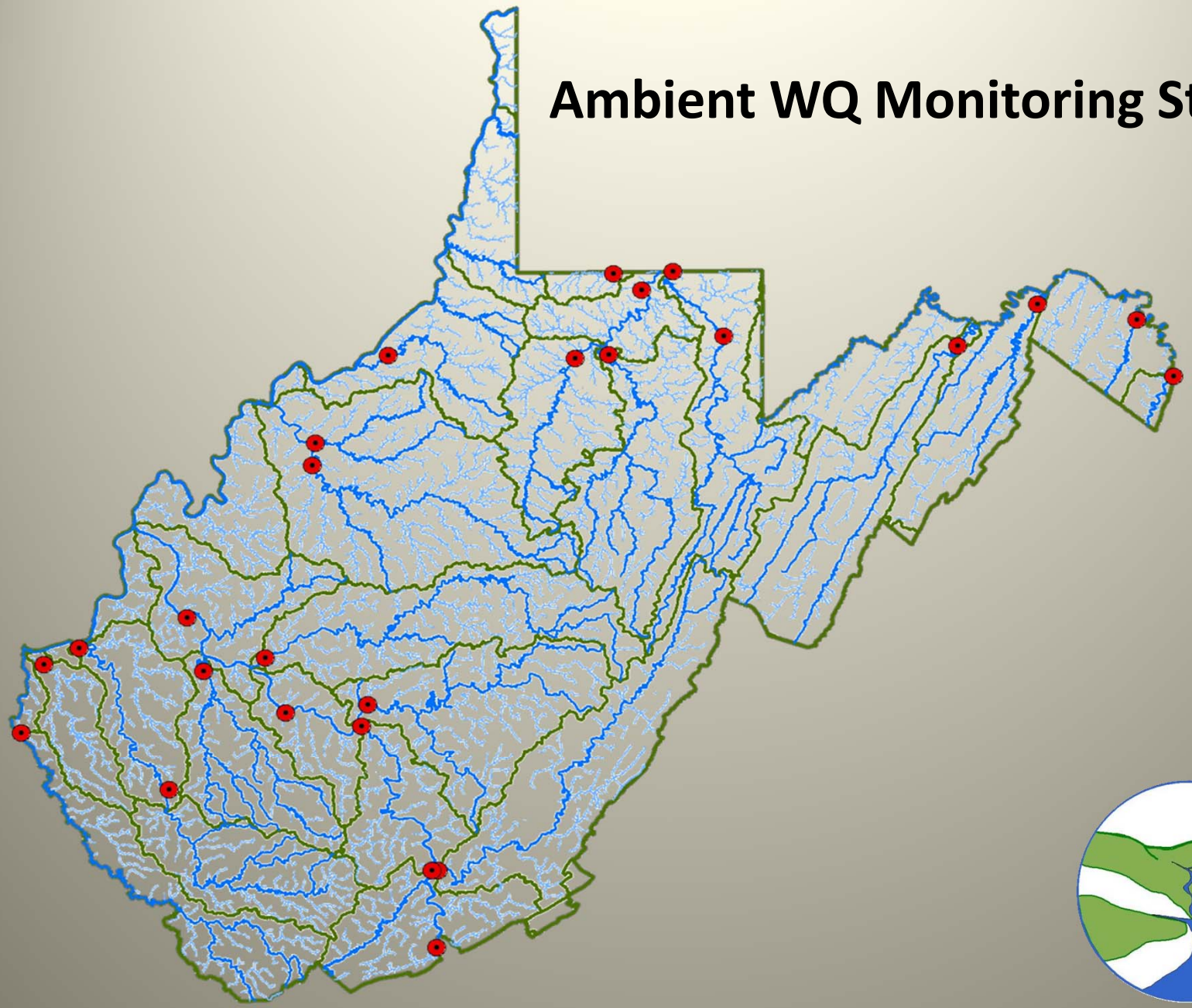
Other Section / Agency WQ Data

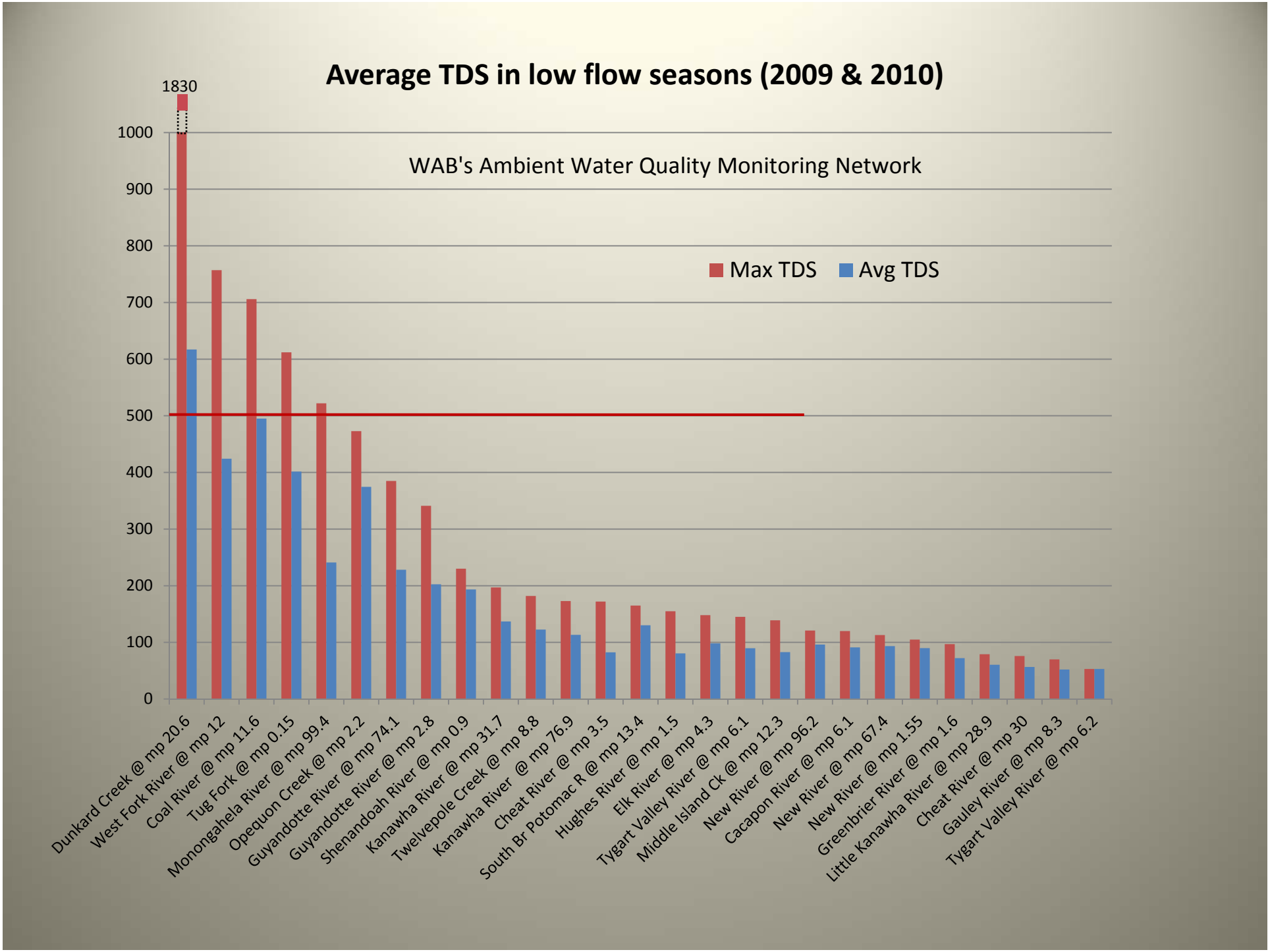
- USGS
- EPA
- SOS - Volunteer Collected Data

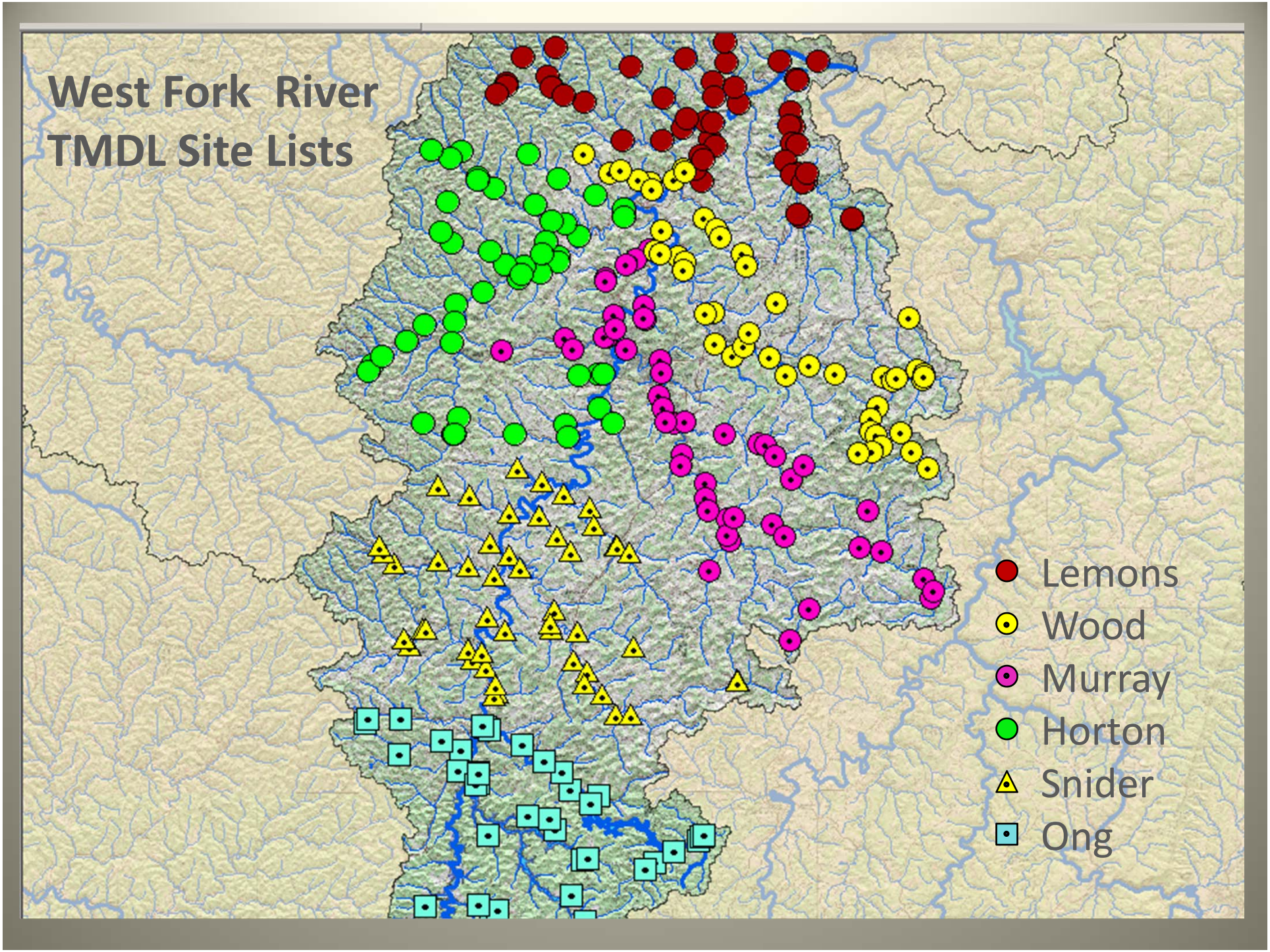
Water Quality Monitoring Programs

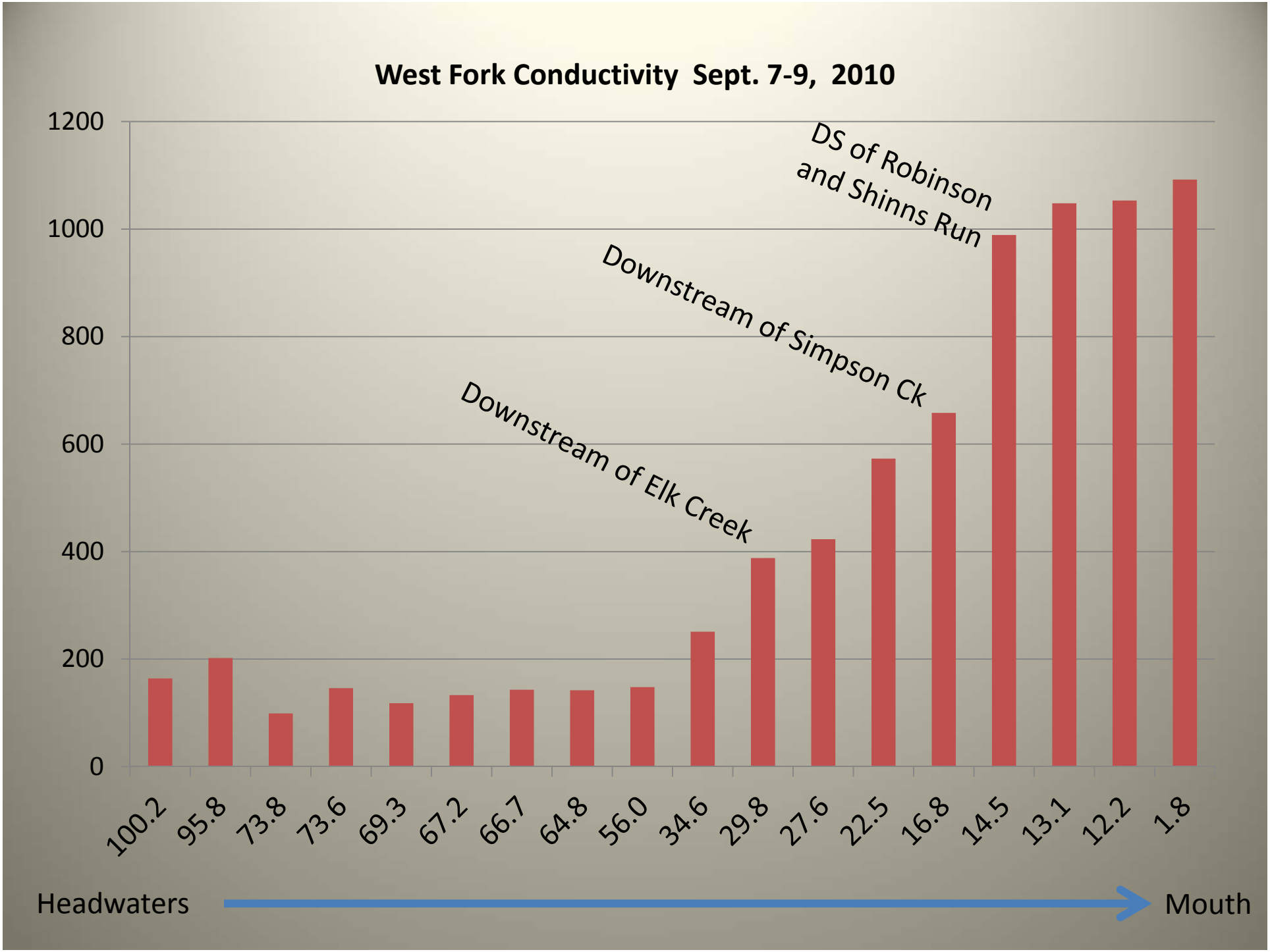
Ambient Water Quality Monitoring (AWQM) Network
Pre-TMDL Development Monitoring
Probabilistic (Random) Monitoring Program
Deployable or 'Continuous Monitoring'
Special Studies
Targeted Monitoring
Benthic Macroinvertebrate and Fish Information
Lakes Monitoring

Ambient WQ Monitoring Stations

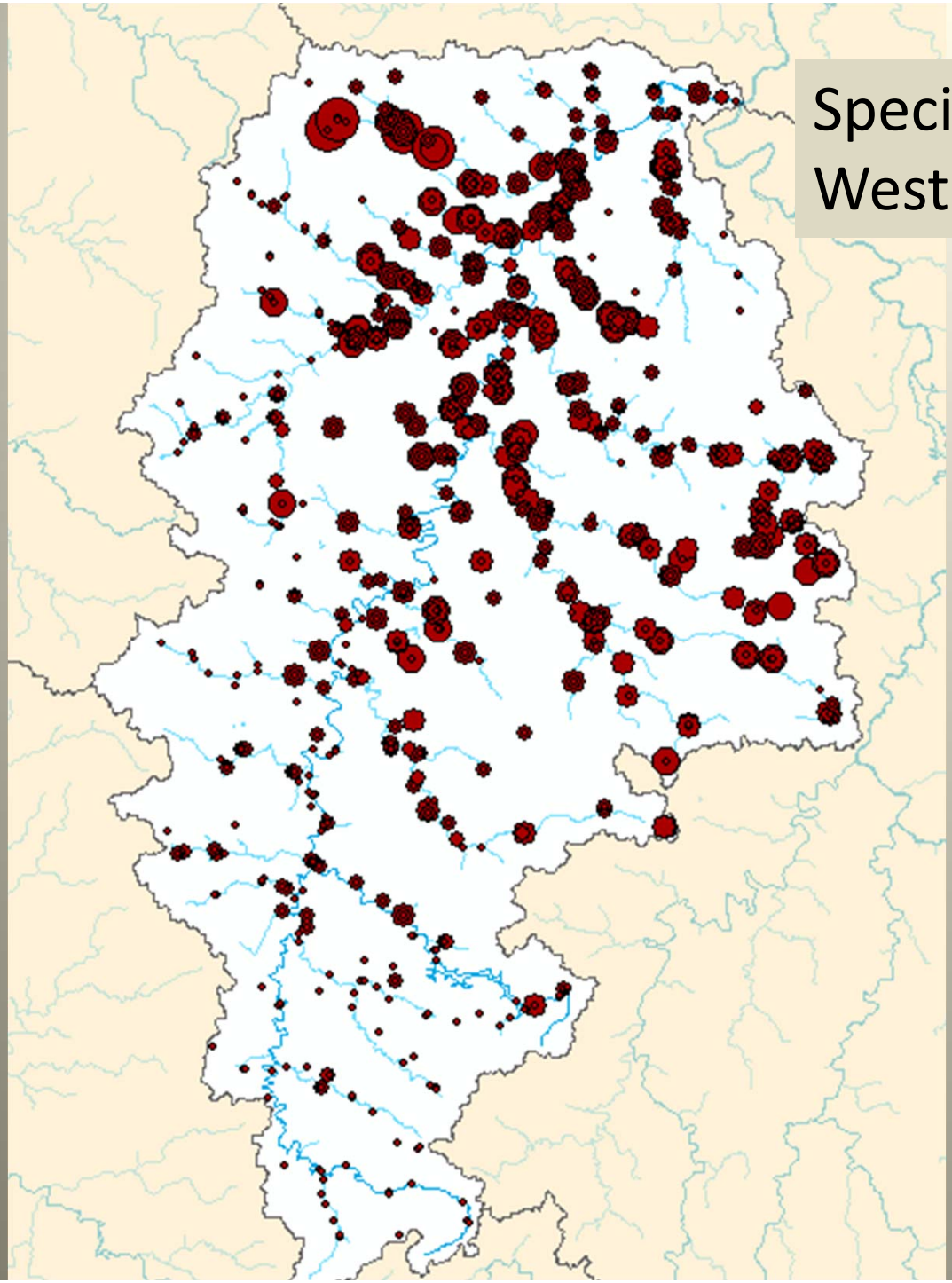



Average TDS in low flow seasons (2009 & 2010)
WAB's Ambient Water Quality Monitoring Network
Max TDS
Avg TDS
1830
1000
900
800
700
600
500
400
300
200
100
0
Dunkard Creek @ mp 20.6
West Fork River @ mp 12
Coal River @ mp 11.6
Tug Fork @ mp 0.15
Monongahela River @ mp 99.4
Opequon Creek @ mp 2.2
Guyandotte River @ mp 74.1
Guyandotte River @ mp 2.8
Shenandoah River @ mp 0.9
Kanawha River @ mp 31.7
Twelvepole Creek @ mp 8.8
Kanawha River @ mp 76.9
Cheat River @ mp 3.5
South Br Potomac R @ mp 13.4
Hughes River @ mp 1.5
Elk River @ mp 4.3
Tygart Valley River @ mp 6.1
Middle Island Ck @ mp 12.3
New River @ mp 96.2
Cacapon River @ mp 6.1
New River @ mp 67.4
New River @ mp 1.55
Greenbrier River @ mp 1.6
Little Kanawha River @ mp 28.9
Cheat River @ mp 30
Gauley River @ mp 8.3
Tygart Valley River @ mp 6.2


West Fork River
TMDL Site Lists
Lemons
Wood
Murray
Horton
Snider
Ong

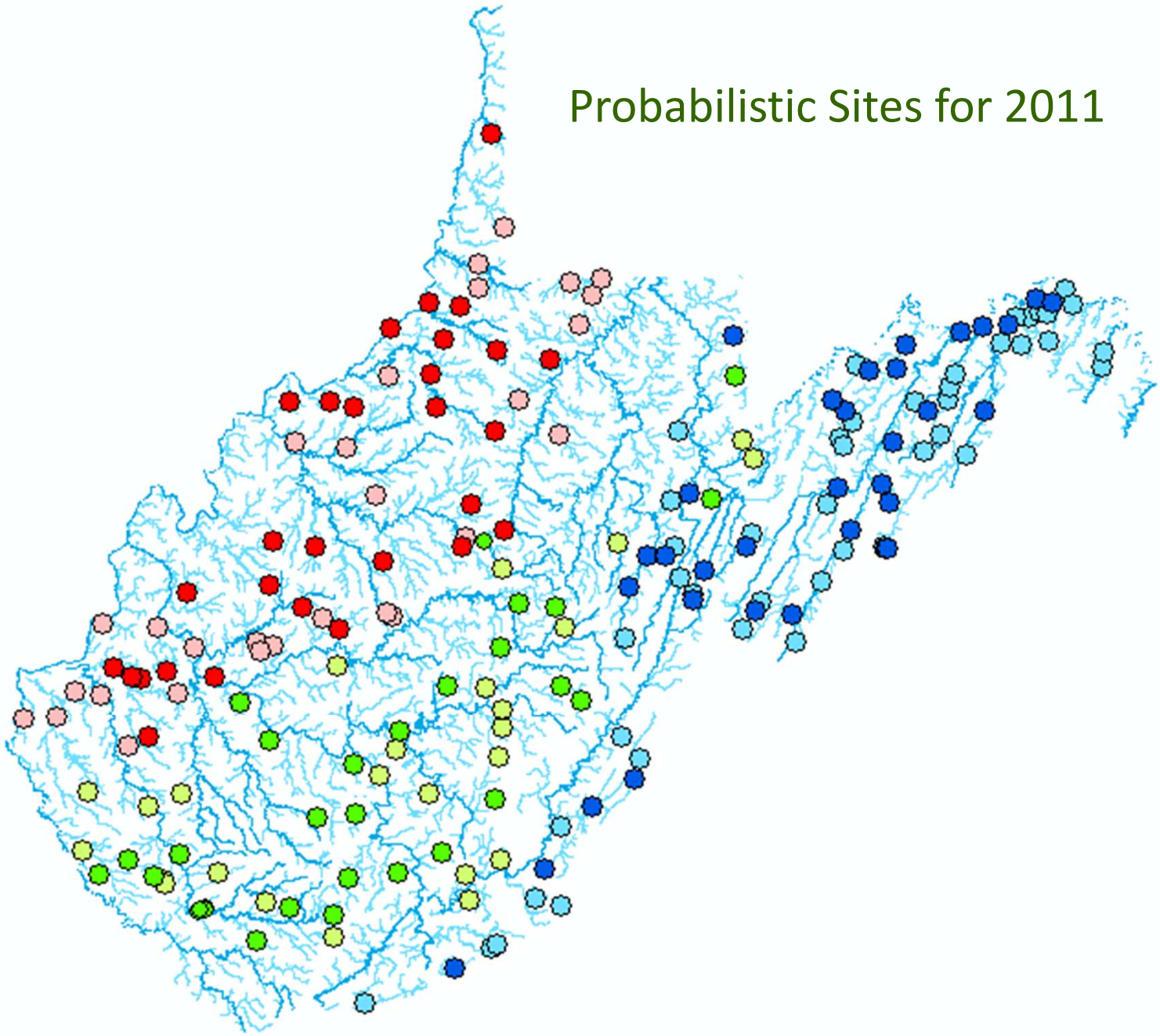

West Fork Conductivity Sept. 7-9, 2010
1200
1000
800
600
400
200
0
DS of Robinson and Shinns Run
Downstream of Simpson Ck
Downstream of Elk Creek
100.2
95.8
73.8
73.6
69.3
67.2
66.7
64.8
56.0
34.6
29.8
27.6
22.5
16.8
14.5
13.1
12.2
1.8
Headwaters
Mouth

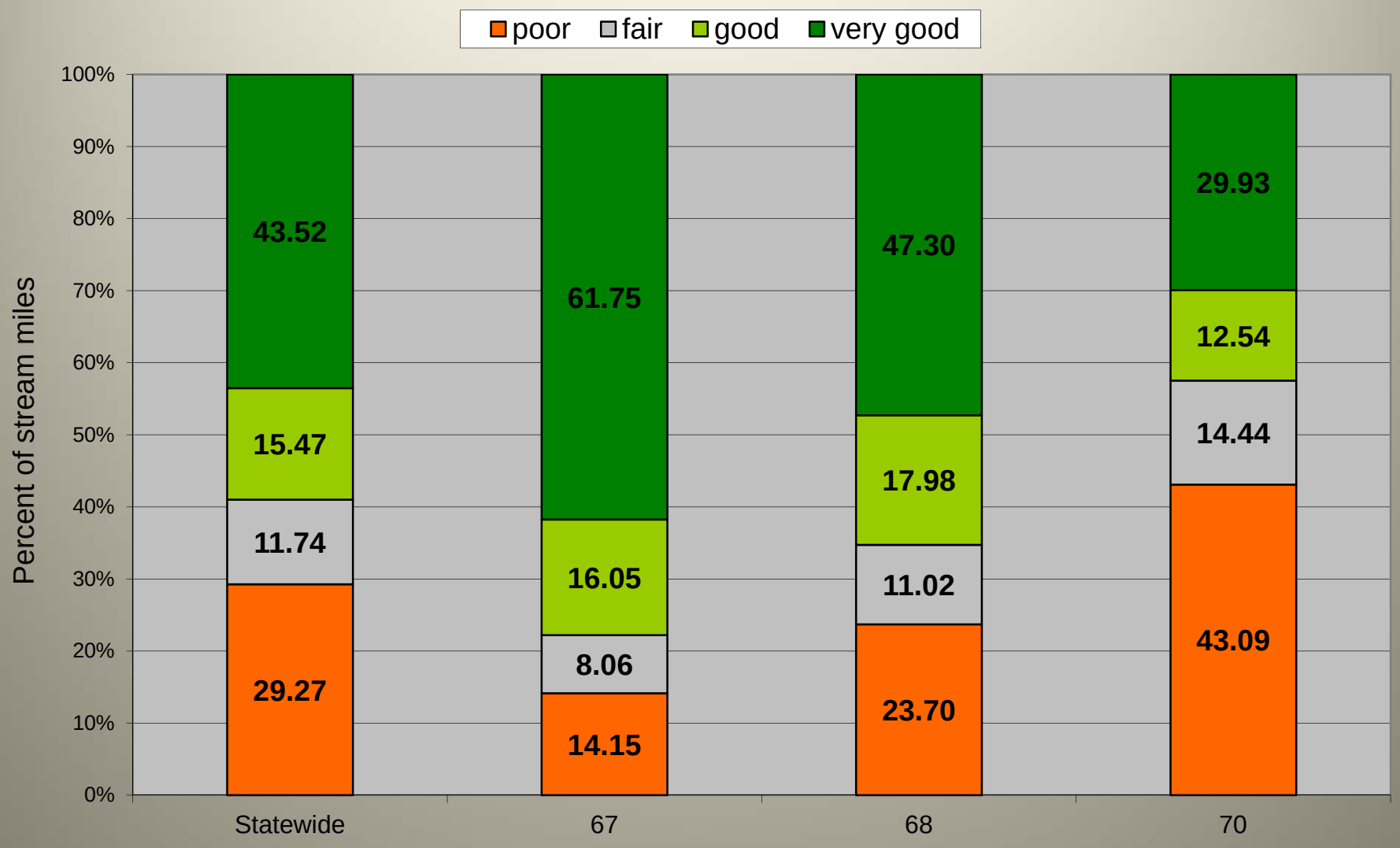
Specific Conductance in the West Fork River Watershed

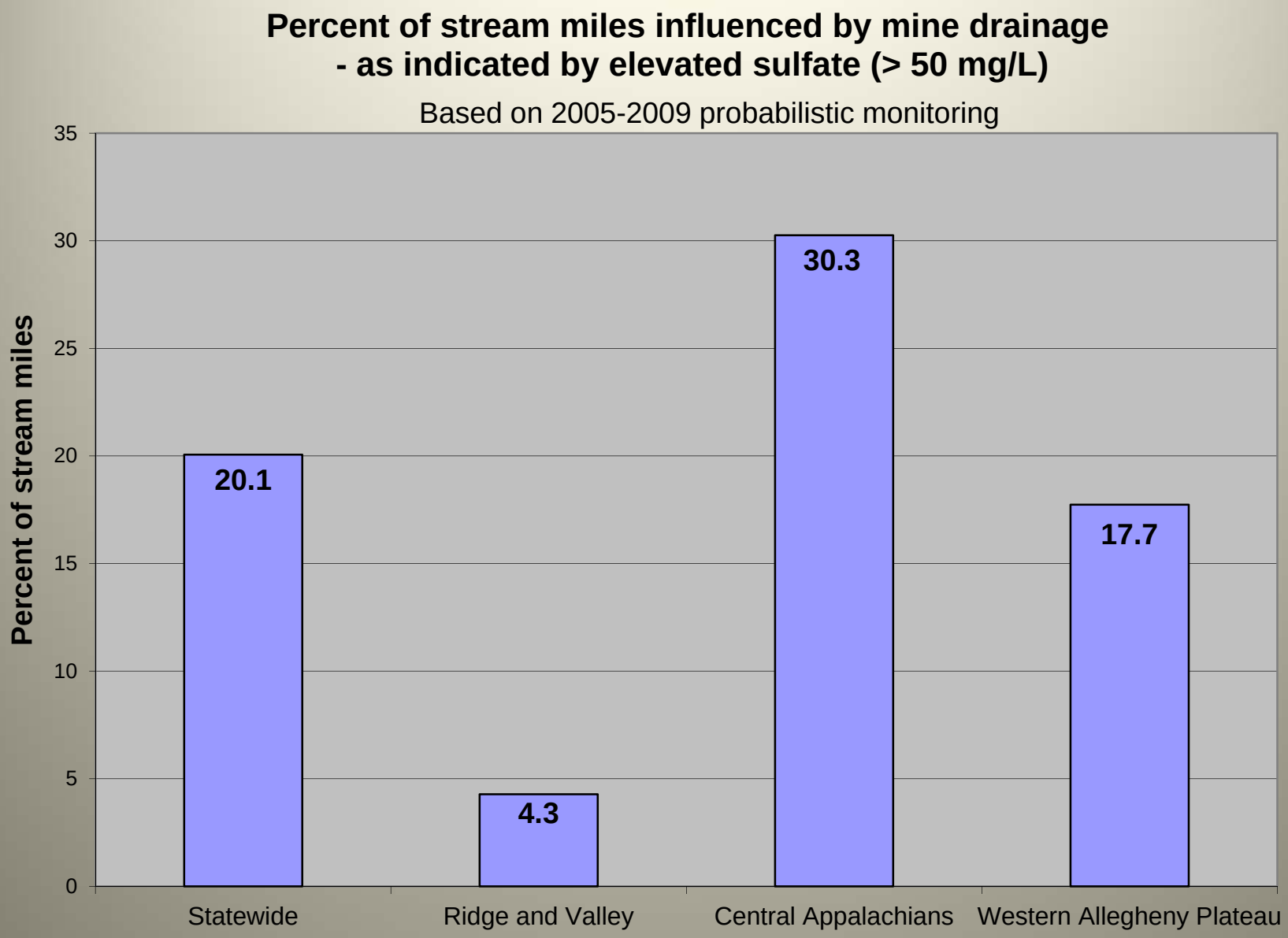


Specific_C
- < 300
- 300 -750
- 750 - 1500
- 1500 - 3000
- > 3000

Probabilistic Sites for 2011




Stream Biological Condition Scoring Categories
poor
fair
good
very good
Percent of stream miles
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
43.52
15.47
11.74
29.27
61.75
16.05
8.06
14.15
47.30
17.98
11.02
23.70
29.93
12.54
14.44
43.09
Statewide
67
68
70

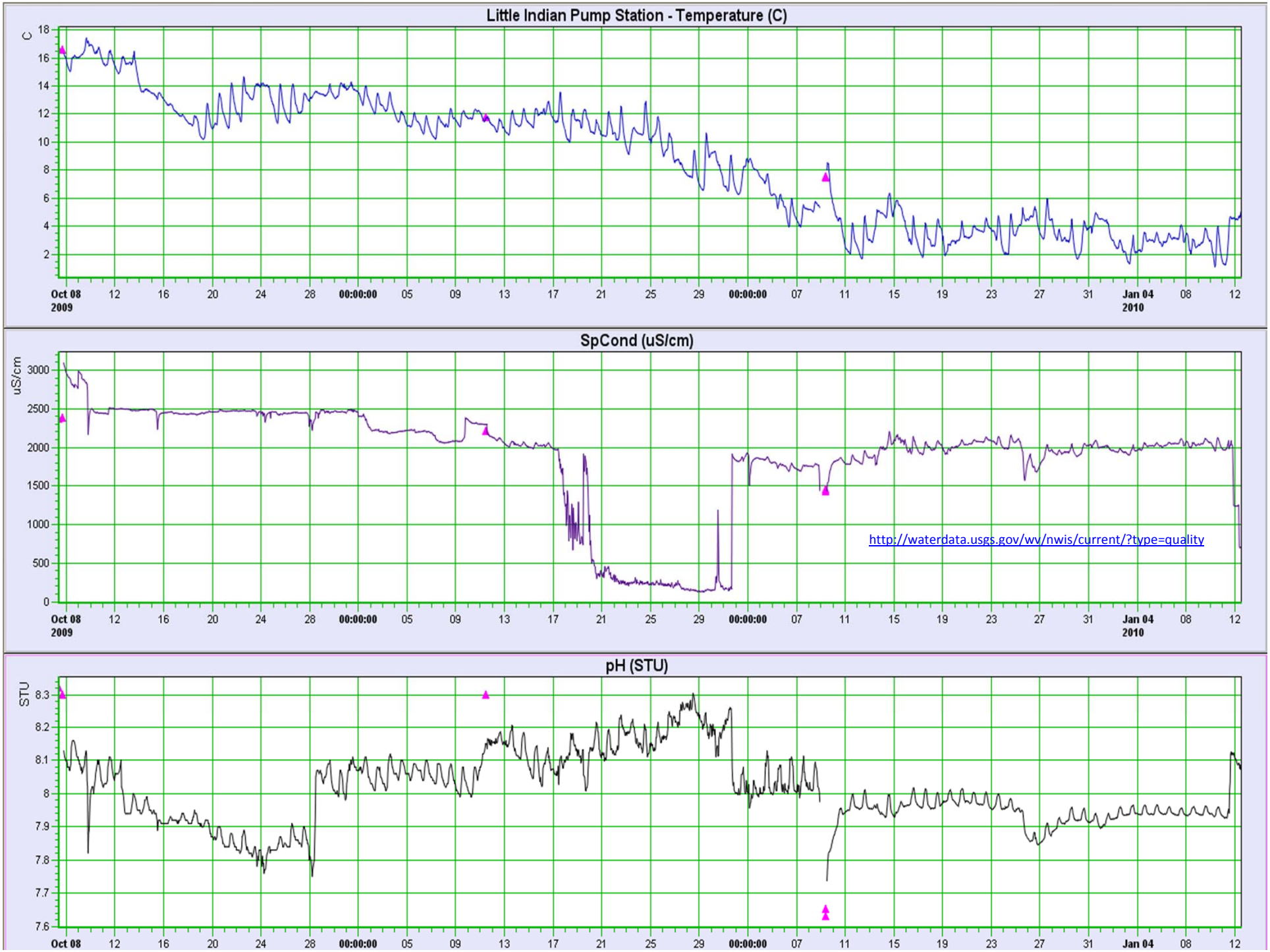

Percent of stream miles influenced by mine drainage
- as indicated by elevated sulfate (> 50 mg/L)
Based on 2005-2009 probabilistic monitoring
Percent of stream miles
35
30
25
20
15
10
5
0
20.1
4.3
30.3
17.7
Statewide
Ridge and Valley
Central Appalachians
Western Allegheny Plateau

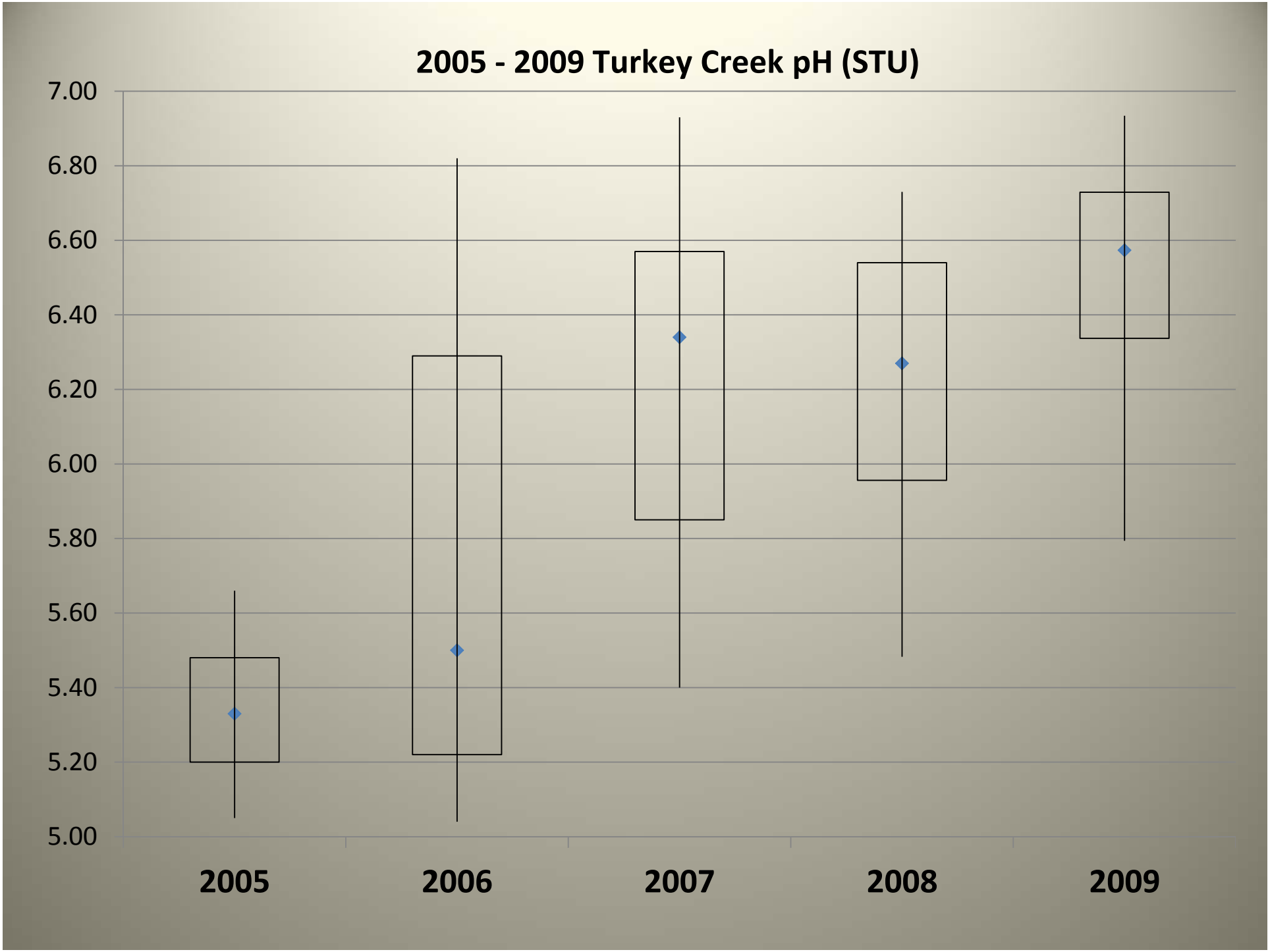
Deployables / Continuous Monitoring

2010 Deployable Stations

- **AML**
  - Abram Creek (3 sites)
  - Three Fork Creek (2 sites)
- **South Branch Fish Kill**
  - South Branch Potomac (Petersburg and Old Fields)
  - North Fork/South Branch Potomac
  - South Fork/South Branch Potomac
  - Lunice Creek
- **TDS**
  - Coal River
  - Little Coal River
  - Big Coal River
  - Tug Fork River
- **Mon TDS**
  - Dunkard Creek
  - West Virginia Fork/Dunkard Creek (2 sites)
  - Miracle Run
  - Buffalo Creek
  - Laurel/Whiteday Creek
  - Whiteday Creek

- **Acid Deposition**
  - Barrenshe
  - Middle Fork /Williams River (2 sites)
  - Otter Creek
  - North Fork/Cranberry River
  - Hunter Run
- **Upper Kanawha Ionic Stress TMDL**
  - Pointlick Fork (Campbells Creek)
  - Eightmile Fork
  - Wet Branch (Cabin Creek)
  - Longbottom Creek
  - Left Fork/Longbottom Creek
  - UNT/Coal Fork
  - Laurel Fork/Coal Fork (2 sites)
  - Coal Fork
  - Upper Creek (Upper Creek)
- **Pump Stations**
  - Rockcamp
  - Tenmile
  - Robinson


Little Indian Pump Station - Temperature (C)
C
18
16
14
12
10
8
6
4
2
Oct 08 2009
12
16
20
24
28
00:00:00
05
09
13
17
21
25
29
00:00:00
07
11
15
19
23
27
31
Jan 04 2010
08
12
SpCond (uS/cm)
uS/cm
3000
2500
2000
1500
1000
500
0
http://waterdata.usgs.gov/wv/nwis/current/?type=quality
pH (STU)
STU
8.3
8.2
8.1
8
7.9
7.8
7.7
7.6


2005 - 2009 Turkey Creek pH (STU)
7.00
6.80
6.60
6.40
6.20
6.00
5.80
5.60
5.40
5.20
5.00
2005
2006
2007
2008
2009

USGS Water-Quality Information: Water-Quality Data - Windows Internet Explorer

http://water.usgs.gov/owq/data.html

http://water.usgs.gov/owq/data.html or http://waterdata.usgs.gov/nwis/qw

USGS science for a changing world

USGS Home
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USGS Water-Quality Information

Home | Data | Methods | Labs | Publications | Topics | Programs | Contact Us

USGS collects data at the Birds Point-New Madrid Floodway

Search the USGS Water sites:

Google™ Custom Search | Search

Noteworthy

National & Regional Science:

- Mississippi Flood Waters:
  - NEW Major Flooding on the Mississippi River Likely to Cause Large Gulf of Mexico Dead Zone
  - USGS Water-Quality Sampling of the Mississippi Flood Waters – May 2011

Local Science Features:

- NEW Determining Potential Effects of Fayetteville Shale Gas Extraction on Water Resources
- Congressional Briefing: PAHs Increasing in Urban U.S. Lakes — Fact Sheet | Presentation/Video | More Information

Water-Quality Data

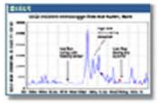
SHARE

- USGS Water-Quality Data
- Additional USGS Water-Resources Data
- Other Sources of Water-Quality and Related Data

USGS Water-Quality Data

USGS Online Water-Quality Data (NWIS)

The USGS collects and analyzes chemical, physical, and biological properties of water, sediment and tissue samples from across the Nation. The National Water Information System (NWIS) includes current and historical water-quality data and related summary statistics.



WaterQuality Watch

Water-Quality Watch provides continuous real-time water-quality measurements from USGS surface-water monitoring locations.

Water-Quality Web Services

Web services automate the sharing of USGS and U.S. Environmental Protection Agency water-quality monitoring data.

WaterAlert

The USGS WaterAlert service sends e-mail or text messages when certain parameters measured by a USGS data-collection station exceed thresholds set by the user. Alerts are available for selected USGS groundwater, surface-water, water-quality, and precipitation data-collection stations that are part of the National Water Information System (NWIS).

National Water-Quality Assessment (NAWQA)

| STORET| US EPA - Windows Internet Explorer

http://www.epa.gov/STORET/

U.S. ENVIRONMENTAL PROTECTION AGENCY

STORET/ WQX

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- About STORET/ WQX
- Data download
- Online Tutorials
- Data Submittal
- Useful Internet Links
- Support
- Tools/ Web Services
- Frequent Questions

Welcome to STORET and WQX, EPA's repository and framework for sharing water monitoring data.

The STORET (short for STOrage and RETrieval) Data Warehouse is a repository for water quality, biological, and physical data and is used by state environmental agencies, EPA and other federal agencies, universities, private citizens, and many others. Take a minute to browse around our site or click on the water drop to retrieve monitoring data!

Features

- Download Data
- Watershed Summary
- WQX and WQX Web
- Fact Sheets
- STORET Web Services
- WQX Web Tutorial Videos
- Distributed STORET Archives

About STORET/ WQX | Support for Data Owners | Obtaining Water Quality Data | Useful Links | Commonly Asked Questions

If you have a question or comments on this website or on the STORET system, please call STORET User Assistance at 1-800-424-9067, or send us an email at STORET@epa.gov.

http://www.dep.wv.gov/WWE/getinvolved/sos/Pages/VAD.aspx

west virginia department of environmental protection

DEP Offices | News | Outlook Web Access | Text size A A A

Updates

Home > Water and Waste Management > Resources and Education > West Virginia Save Our Streams > Volunteer Assessment Database

Volunteer Assessment Database

The Volunteer Assessment Database (**VAD**) contains hundreds of volunteer surveys from accross WV. It is mostly a tool to provide public access to this information. In the near future we hope to update the system to the extent possible. Send your suggestions to the Coordinator.

In order for your stream survey data to be included, you must submit a legible copy or the original so that a quality assurance review can be completed by the Coordinator. You may submit the full-survey or use the programs' summary data sheets (see below). No matter which format you choose, always keep a copy for your records. Choose one of the selections below to get started, if you have questions E-mail the Database Administrator.

NEW USERS MUST CREATE AN ACCOUNT TO GET STARTED. The account must be **APPROVED** before data can be entered. Data can only be entered by the database administrator or certified volunteer monitors approved by the coordinator.

IMPORTANT UPDATES CHANGES IN THE VAD

Several sections of the survey data sheets have been revised since the development of the VAD. In order to satify the requirements of the database simply type in the integrity ratings of Optimal, Suboptimal, Marginal, or Poor for all level-one surveys. The VAD will automatically assign the correct values. Note: The **macro-invertebrate list** section is experiencing errors, which do not allow data entry. We are working on the problem and expect to have a resolution in the near future.

What would you like to do?

- View stream surveys (Registration is not necessary)
- Register a new user account
- Log-into an exsisting account

west virginia State Agency Directory | Online Services

Search WV DEP

dep west virginia department of environmental protection

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Air

- Division of Air Quality Home
- Air Quality Index
- Open Burning Regulations
- Air Monitoring Data
- Permit Application Forms
- Policies

See More

Land

- REAP
- Abandoned Mine Lands and Reclamation
- Division of Mining and Reclamation
- Office of Oil and Gas
- Special Reclamation of Industrial Lands

See More

Water and Waste

- Water and Waste Home http://www.dep.wv.gov/WWE/Pages/default.aspx
- Water Withdrawal Guidance Tool
- Permitting
- Stream Information
- Water Use
- Special Studies

See More

Inside DEP

- West Virginia Energy Efficient Appliance Rebate Program
- Environmental Advocate
- Contact the Executive Office
- Environmental Enforcement
- Youth Environmental Program
- Public Information Office

See More

Permitting

Narrative Water Quality

How Do I...?

File a FOIA Request

GIS and Maps

GIS Server 1

Events

Water Quality Standards

Watershed Map
Water Quality Monitoring
Biologic and Fish Information
Water Quality and Impaired Streams
Total Maximum Daily Loads (TMDL)
Reports
Special Studies
Nonpoint Source Program
Water Quality Standards

Water Quality Monitoring Efforts

Assessment and reporting of our State's stream water quality is performed by the Watershed Assessment Branch of DEP. Teams of biologists and environmental specialists measure water quality and habitat information on-site; collect waters samples for laboratory analysis; and collect benthic macroinvertebrate and fish from streams and lakes throughout the state. A report documenting the Watershed Assessment Branch's Water Quality Monitoring Strategies was last updated in 2007.

Biological and water quality data are collected throughout the year for a variety of purposes. Below is a listing and description of many of the data collection efforts performed.

http://wwwdev.dep.wv.gov/dwwm/wqdata/

A listing of our stream codes and names can be found by clicking here.

Ambient Water Quality Monitoring (AWQM) Network

The network currently consists of 26 fixed (long-term) stations which are sampled bi-monthly. Sampling stations are located at the mouths of the state's larger streams and rivers. Currently (2009-2011), all Monongahela River Basin sites are being sampled monthly, during the summer and fall.

> Map of Ambient Stations http://wwwdev.dep.wv.gov/dwwm/wqdatac/

Pre-TMDL Development Monitoring

The objective of this intensive monitoring effort is to collect sufficient data for TMDL modelers to develop stream restoration plans.

> TMDL Development Cycle Map

ORSANCO
Pollution Control Standards

Authority: Ohio River Valley Water Sanitation Compact

- The Compact is incorporated in the laws of each of the member states.
- The Compact is also incorporated in Federal law.
- Article VI authorizes the Commission to adopt rules, regulations and standards.

Guiding Principle:

Wastes discharged in one state shall not harm the waters of another state.

Content of Standards

- Authority and Purpose
- Definitions
- Designated Uses
- Water Quality Criteria
- Waste Water Discharge Requirements
- Mixing Zone Designation
- Limitation
- Variance
- Analytical Methods
- Severability Clause
- Appendices

Why Review the Standards?

- Update information.
- Incorporate new science.
- Address newly identified problems.
- Maintain consistency with States and US EPA.

Recent Reviews

- Regular review concluded in October, 2009.
- Expedited review completed in October, 2010.
  - Outstanding issues remain
    - Total Dissolved Solids
    - Procedure for evaluating variance requests.

ORSANCO Standards Review Process

- **Initial Comment Period (March 1 – May 20, 2011)**
- Consideration of comments received; development of proposed revisions. (June – December, 2011)
- Public review of proposed revisions. (spring, 2012)
- Commission adoption of revised Standards. (October, 2012)

What is under Review?

- Selenium – if EPA finalizes criteria
- Bromides
- Temperature
- Design Stream Flow
- Ammonia
- Nutrients
- Mercury
- Manganese

Selenium

- Current criteria considered out of date.
- US EPA has issued draft criteria but has delayed final adoption.
- States prefer to retain current criteria until EPA adopts new criteria.

Bromides

- Component of TDS
- Can contribute to THM formation in drinking water treatment
- Drinking water utilities report increasing concentrations in the Ohio River.

Temperature

- Review of aquatic life information indicated that minor adjustments to current criteria might be justified.
- There were questions as to implementing new criteria within permitting context.
- Request to revisit findings of Temperature Criteria Workgroup.

- Maximum temperature to protect human health within the mixing zone will also be considered.

Design Stream Flow

- Standards do not clearly state design river flows to be used in applying criteria for aquatic life protection.
- There may be other instances where the Standards document lacks clarity and cohesiveness.

Ammonia

- US EPA has proposed new criteria for aquatic life protection based on protection of sensitive mussel species.
- The 1.0 mg/L criterion adopted to protect drinking water use would still be more stringent for much of the year.

Nutrients

- ORSANCO has been working on development of numerical nutrient criteria for almost 10 years.
- No clear cause/effect relationship has been identified.
- Current discussions involve identification of new approaches.

Mercury

- Current ambient water quality criterion of 12 PPT may not be necessary since adoption of 0.3 mg/kg fish tissue criterion.
- Will be forming special work group to consider.

Manganese

- Secondary MCL is 50 ug/L.
- “Blackwater” complaints can occur at 20 ug/L.
- Conflicting treatment processes for bromide & manganese.

Carryover Issues from 2010 Review

- Total Dissolved Solids
  - 500 mg/L criterion at drinking water intake adopted at June Commission meeting.
  - There is an open question as to whether appropriate protocol/rules of procedure were followed.
  - This issue is currently being addressed.

- Procedure for evaluating variance requests.

Schedule

- Feb, 2012 – Proposed revisions authorized for public review.
- Spring, 2012 – Public comment period.
- Oct, 2012 - Adoption

Questions?

WQS Program Update

- Critical Design Flow/Harmonic Mean Amendment
  - Completed 2011 Session
  - Comment period/Hearing*

    *Extended comment period
  - 6 comments received, responses to be posted

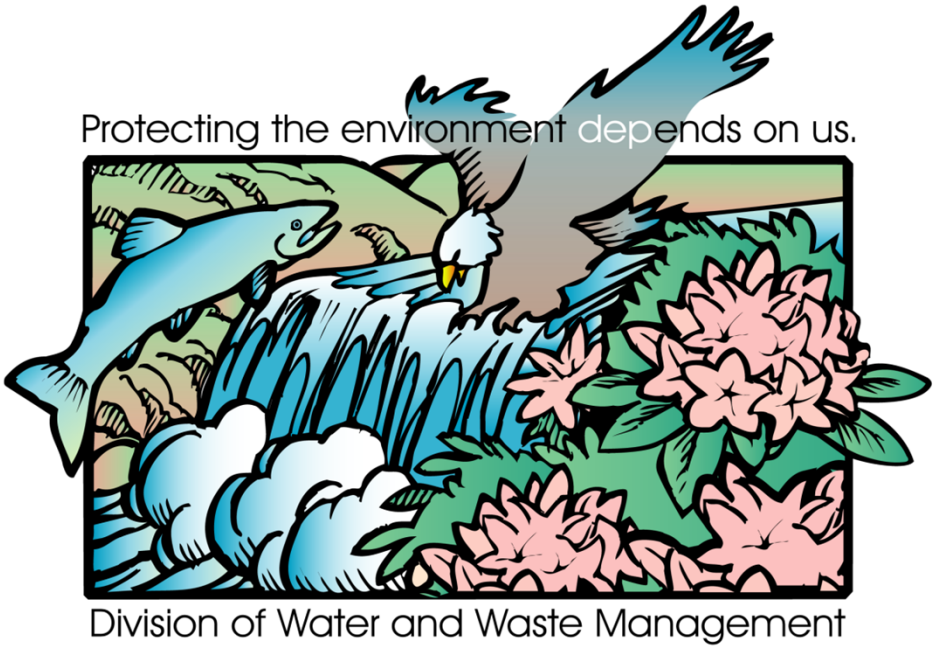
WQS Program Update (cont.)

- 47CSR2
  - Filed with SOS
  - Preparing submittal to EPA
- Reviewing 46CSR6 - Procedural Rule
  - Needs updating - reflect DEP oversight
- Reviewing numerous applications
  - Use Removal & Site-specific requests
  - Increased EPA involvement/ consultation

DEP - DWWM
Update

- Dunkard Creek
  - June 9th - elevated levels of Golden Algae detected (Pond in PA)
  - Both WV/PA notified - conducted field visits
  - Continued monitoring of Algae and TDS levels - request input/reporting from residents
  - WV (&PA) continue to monitor situation

Agency Updates
EPA

- Bacteria/Rec Use Stakeholder meeting (June, 2011)
  - New/Revised Criteria Presented
    - *Geo Mean & Statistical Threshold Value (SVT) - Entero./E. coli*
- Nutrients
  - June 24 - US House Transportation and Infrastructure Committee Hearing - testimony posted

Thank you
Next meeting - Late September, 2011
Questions?