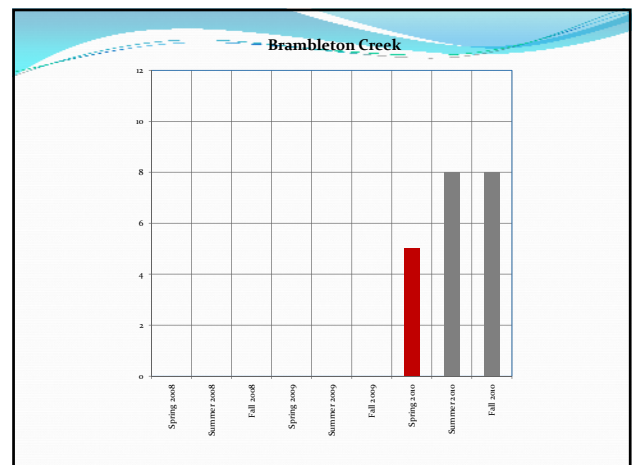
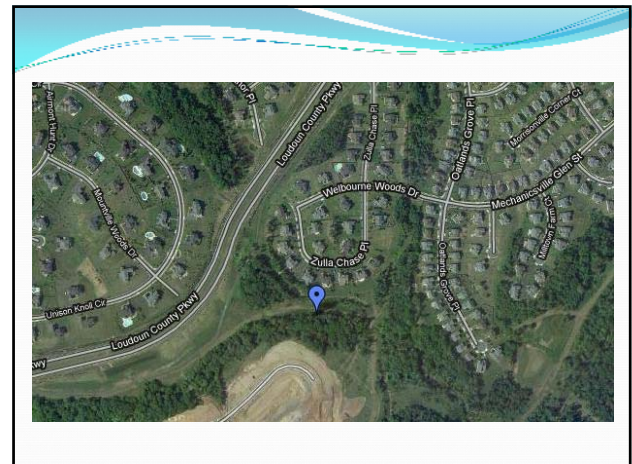
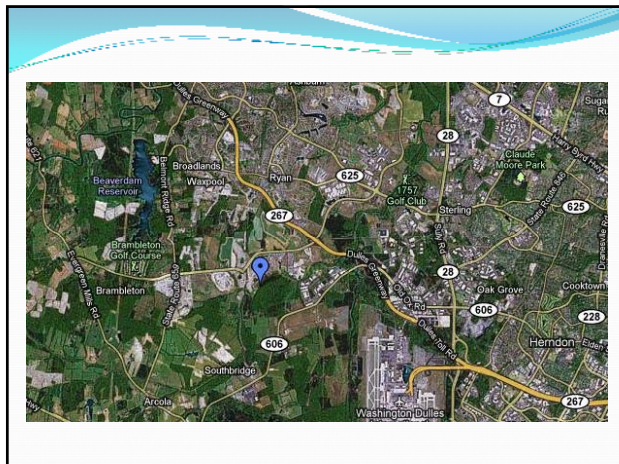
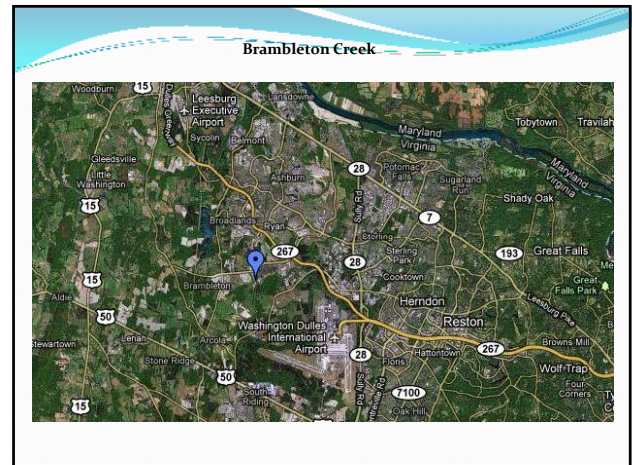
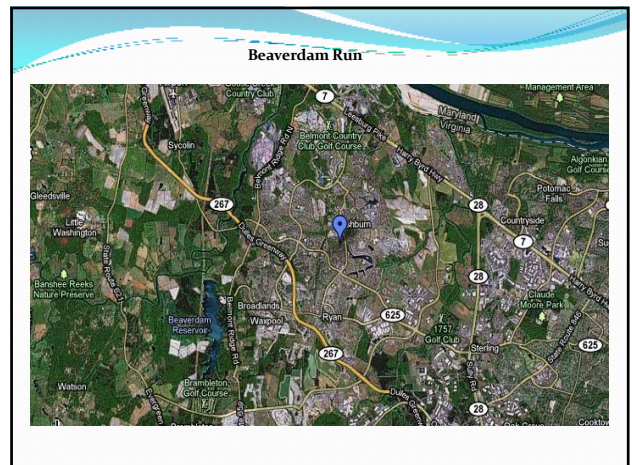
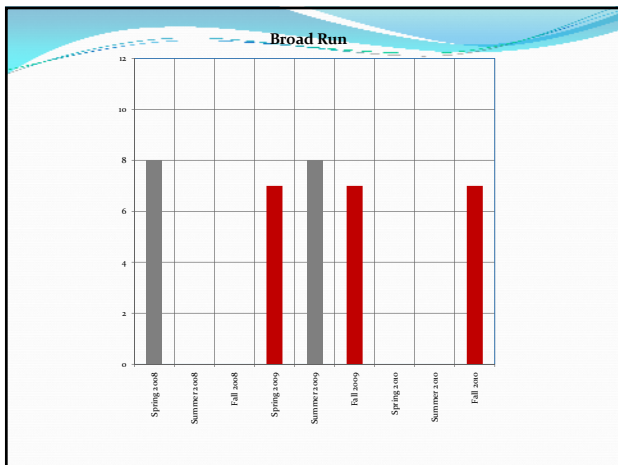
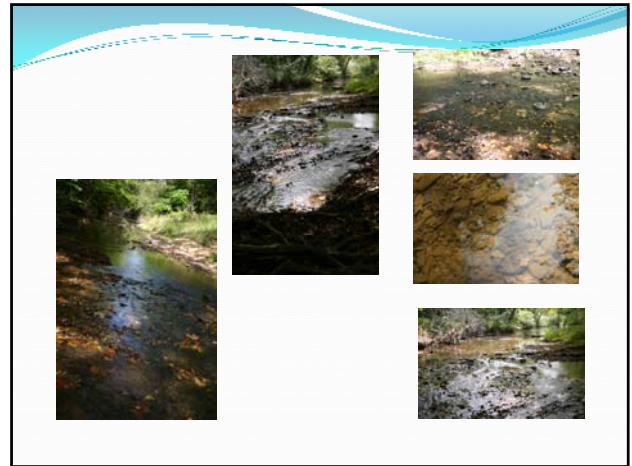
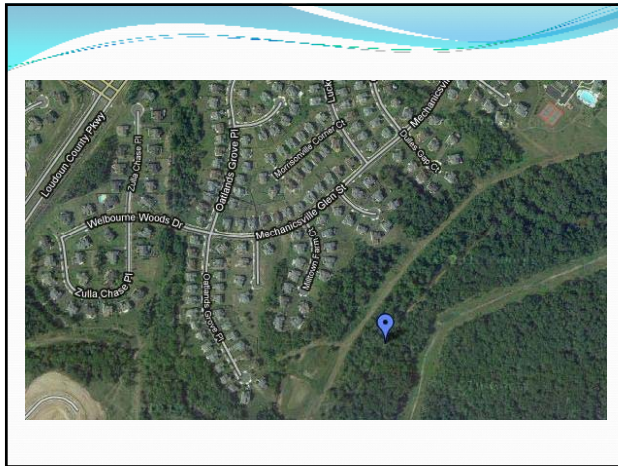
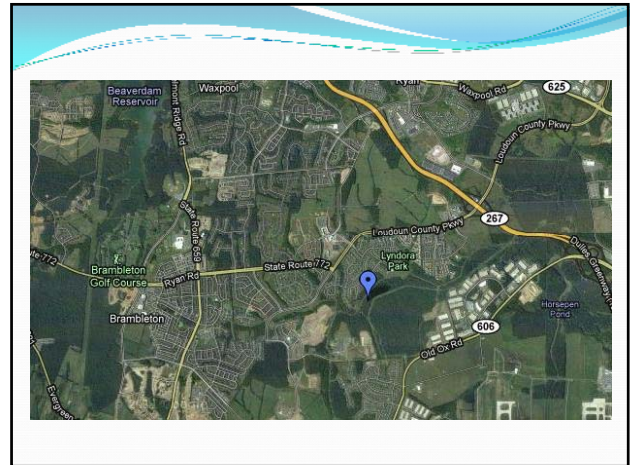
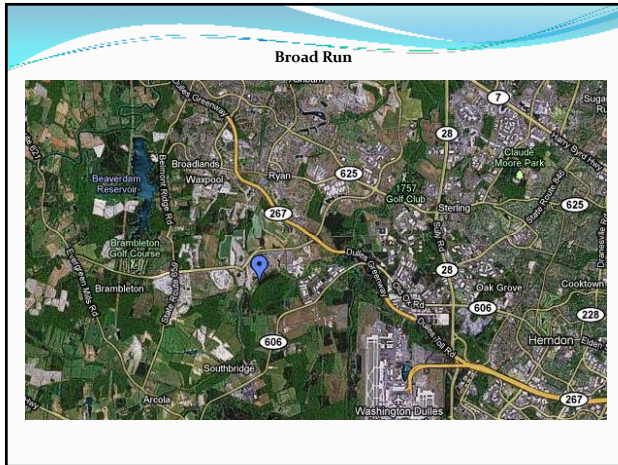


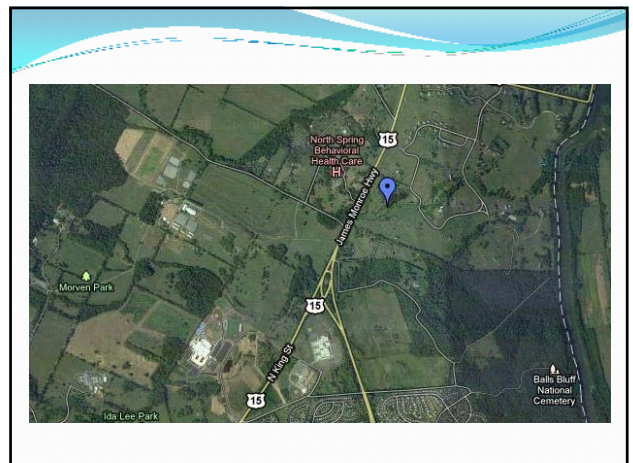
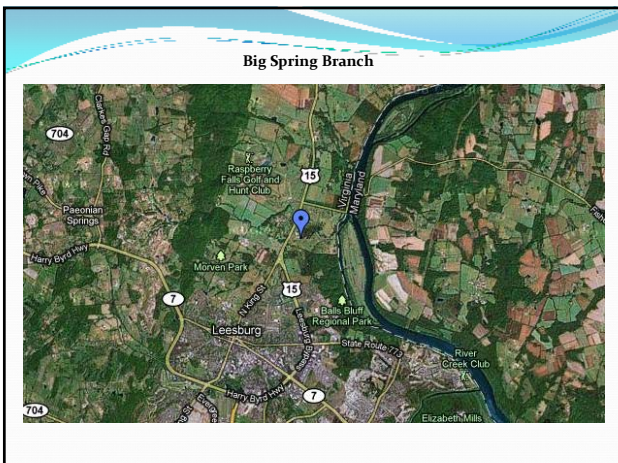
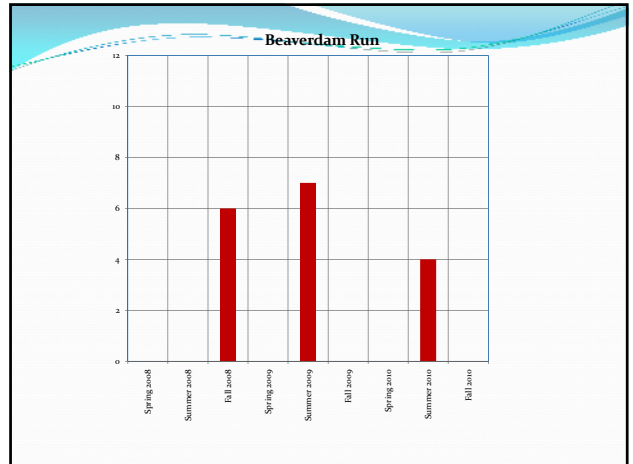
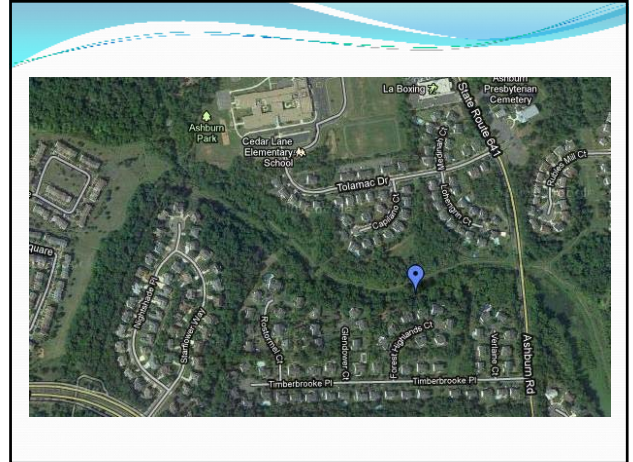
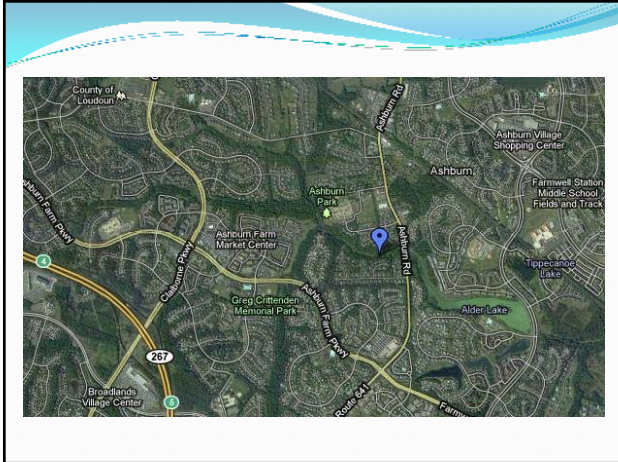
Loudoun Wildlife Conservancy

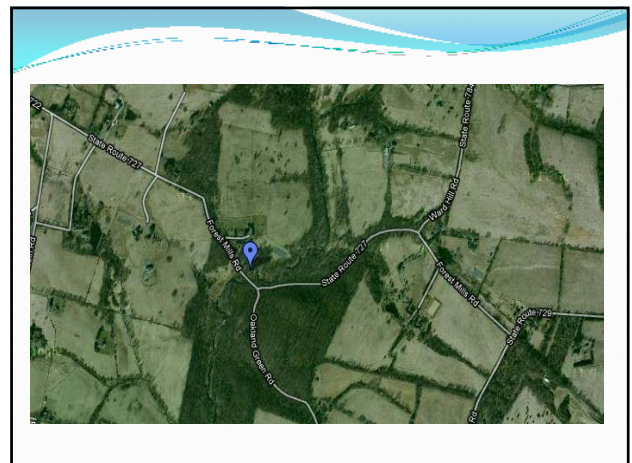
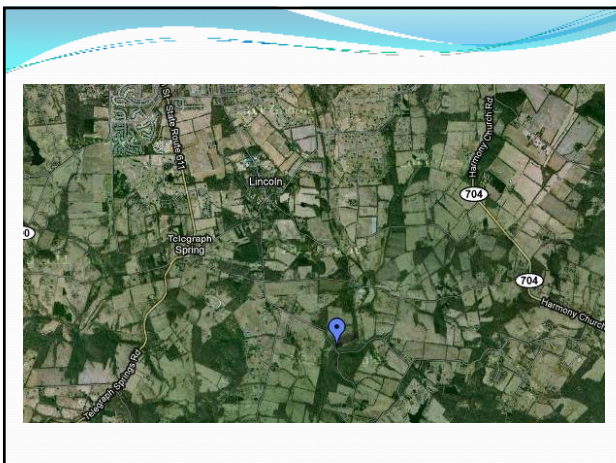
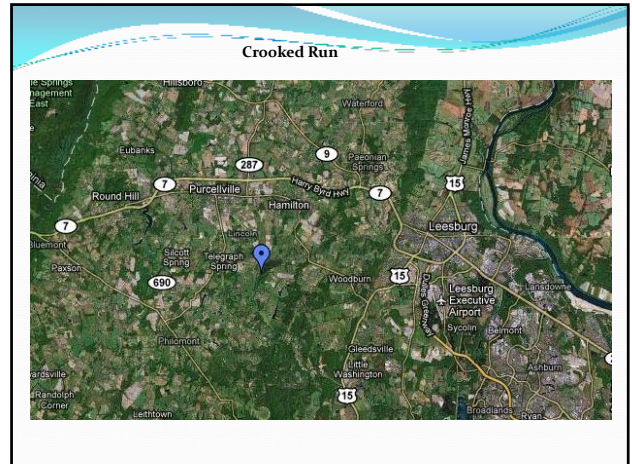
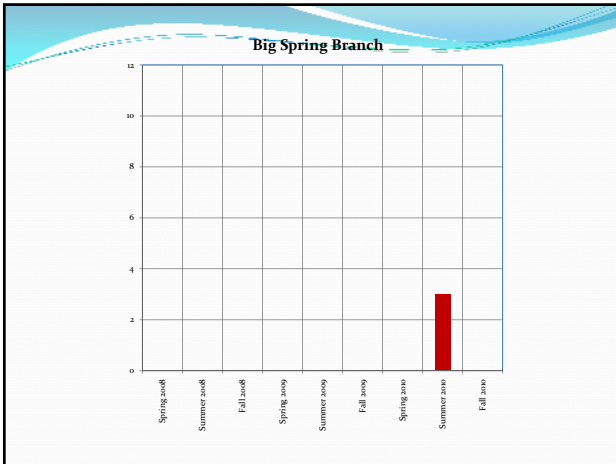
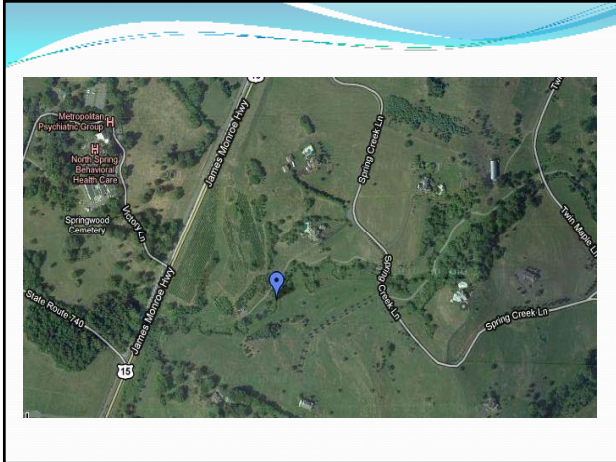
2008-2010
Stream Monitoring Locations

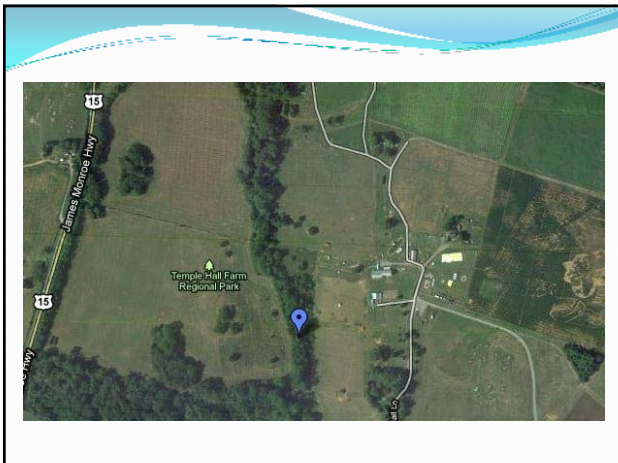
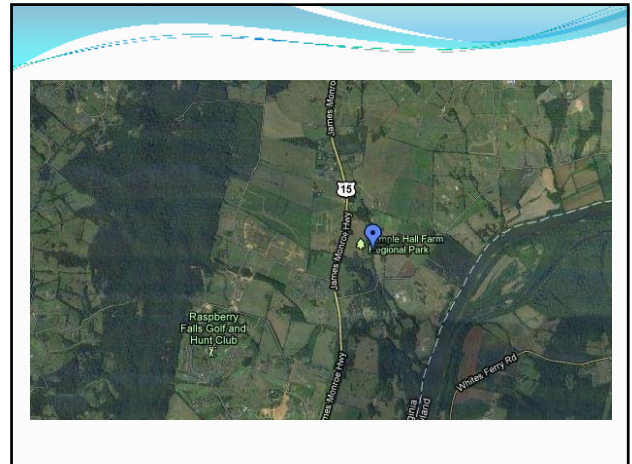
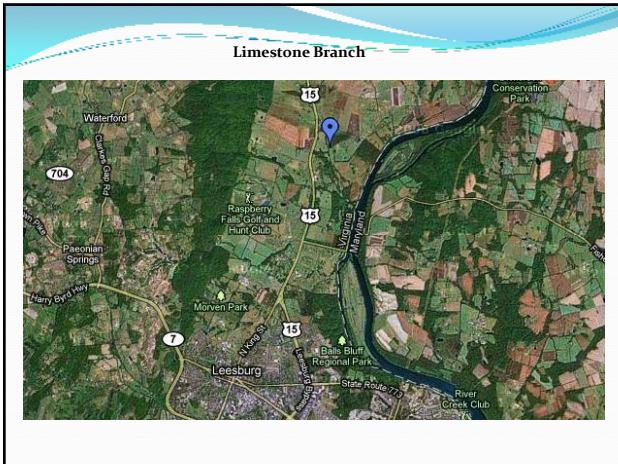
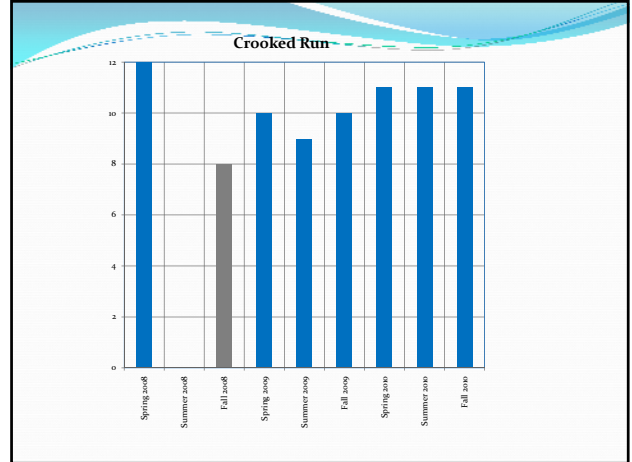
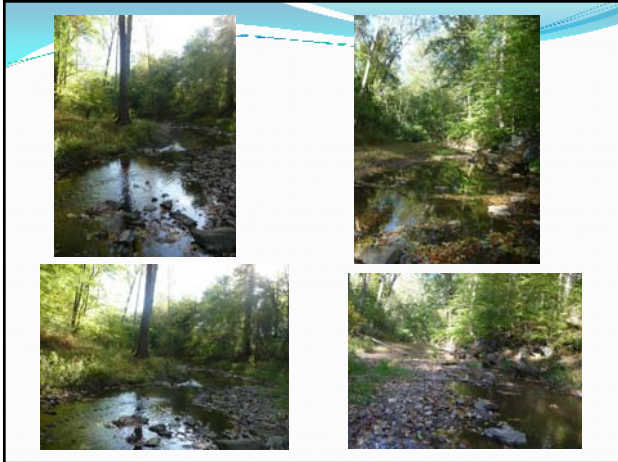
March 6, 2011
Banshee Reeks

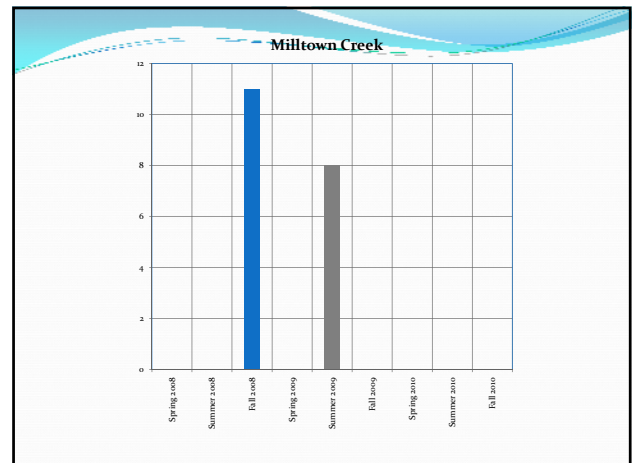
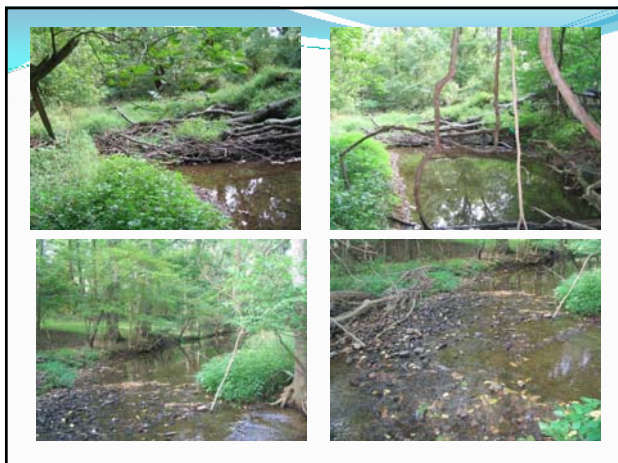
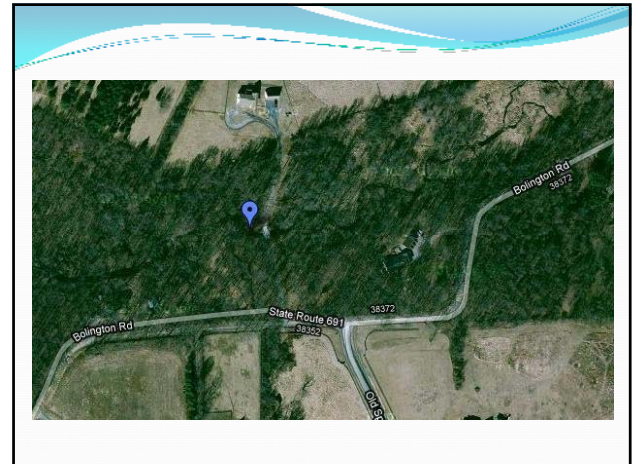
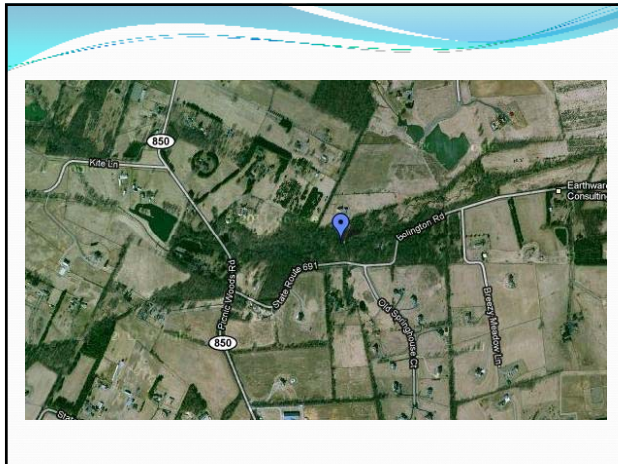
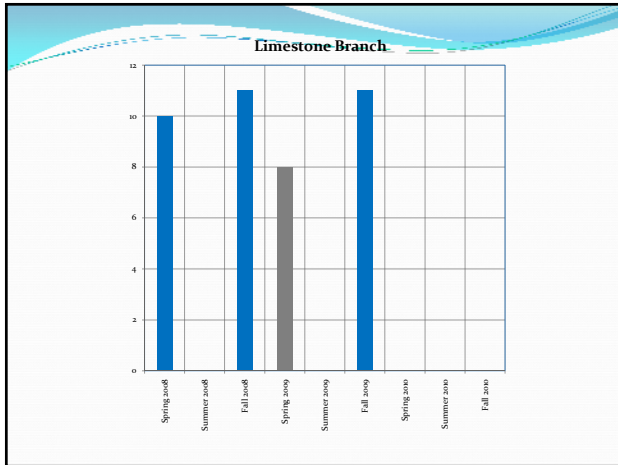


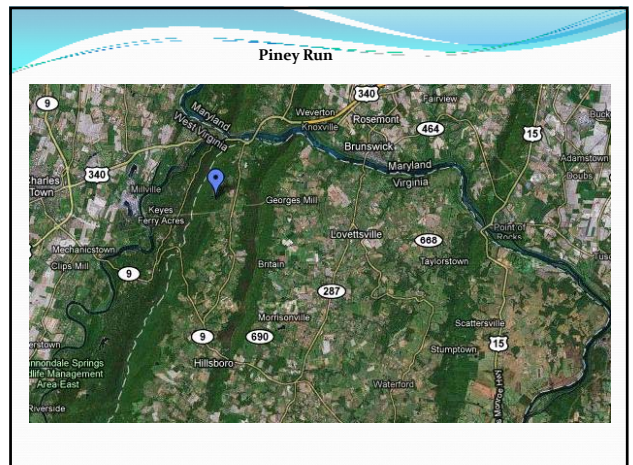
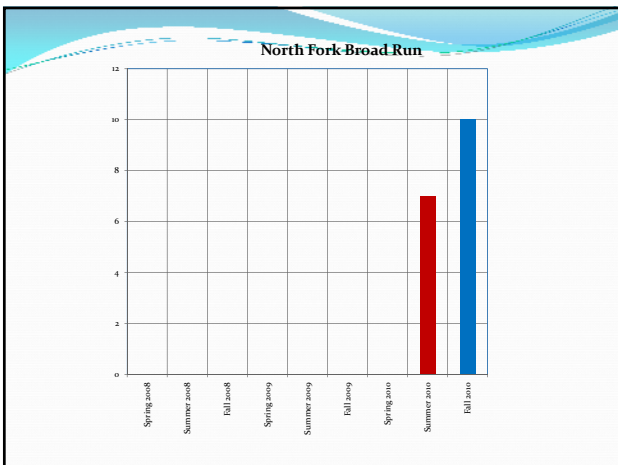
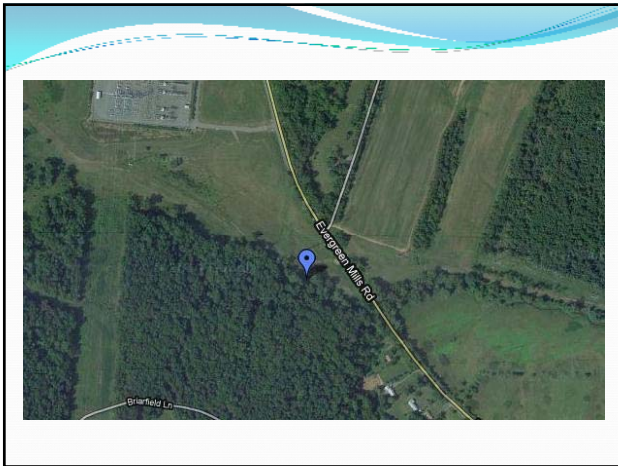
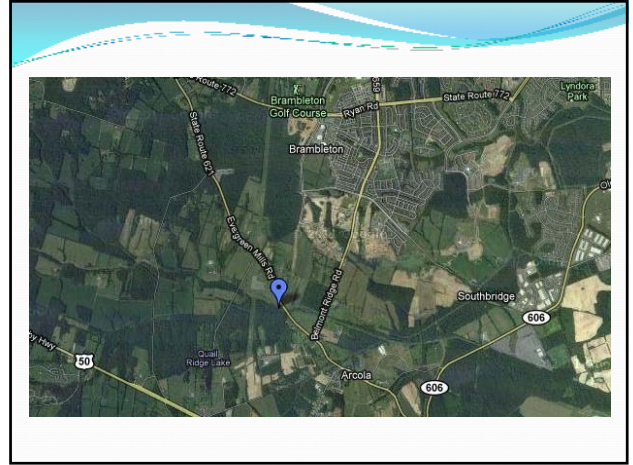
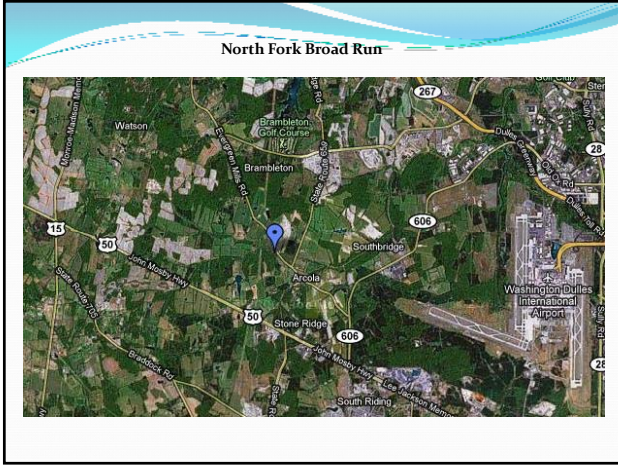


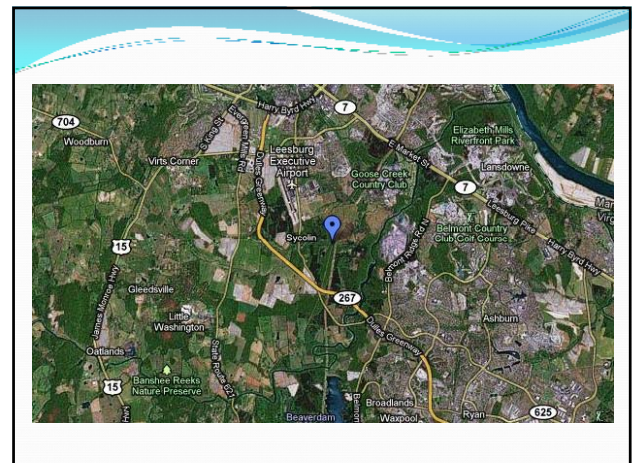
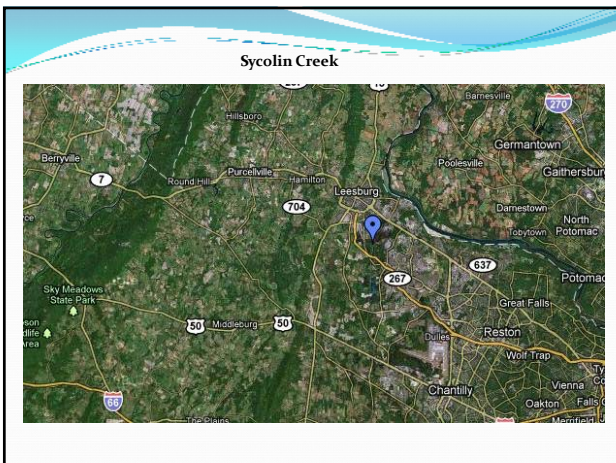
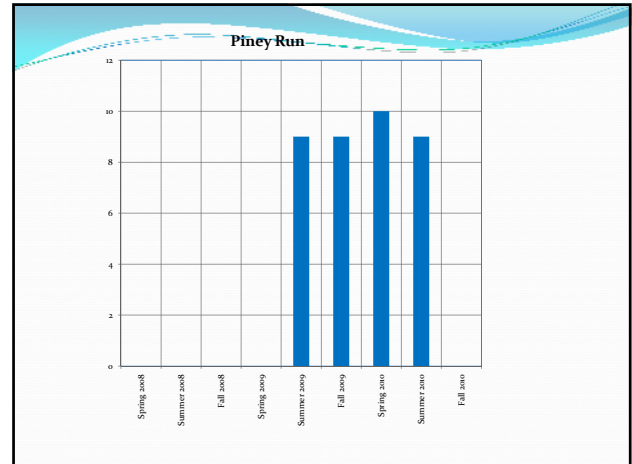
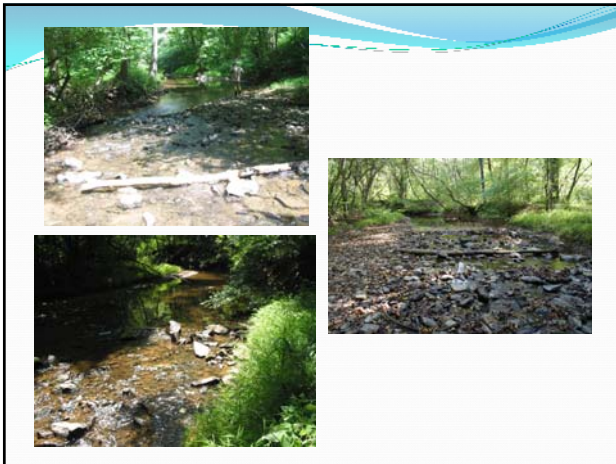
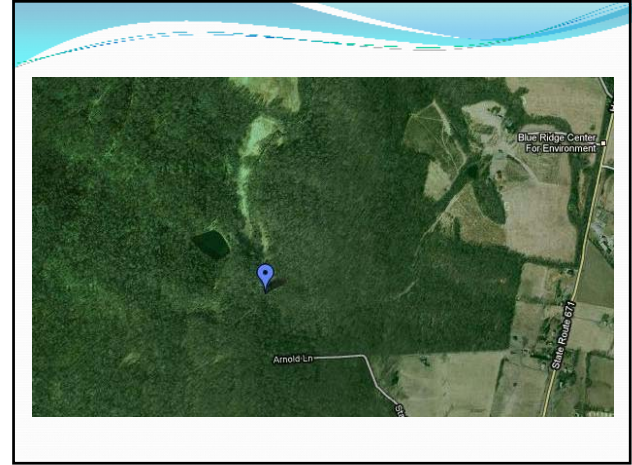
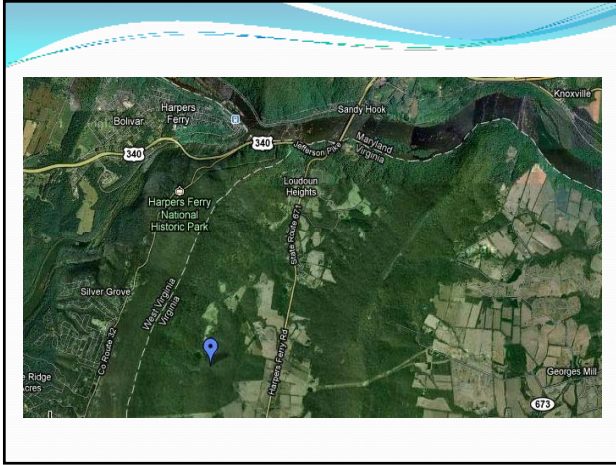


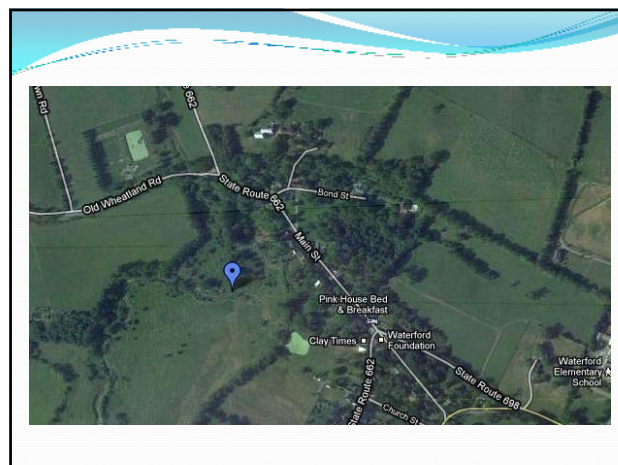
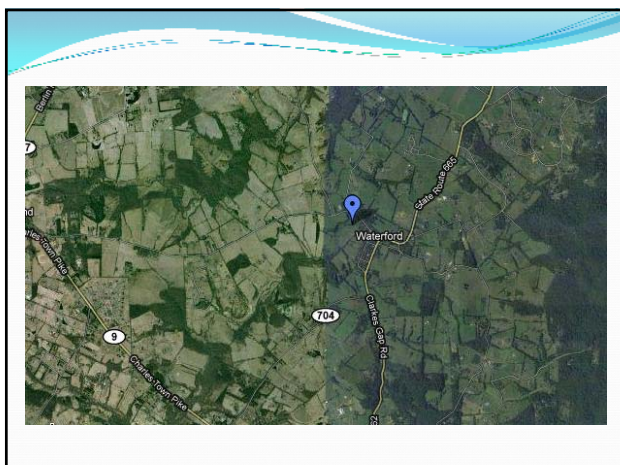
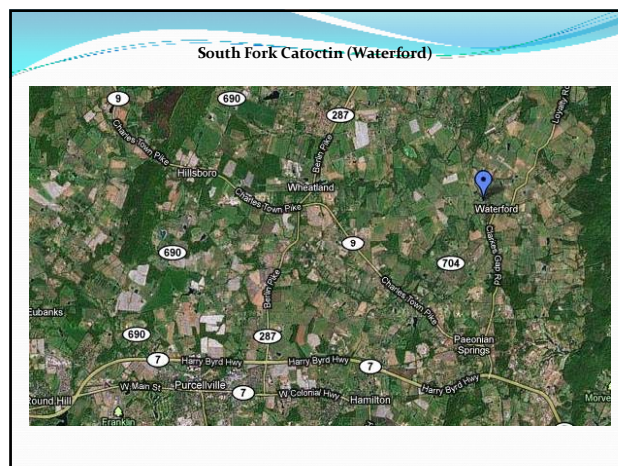
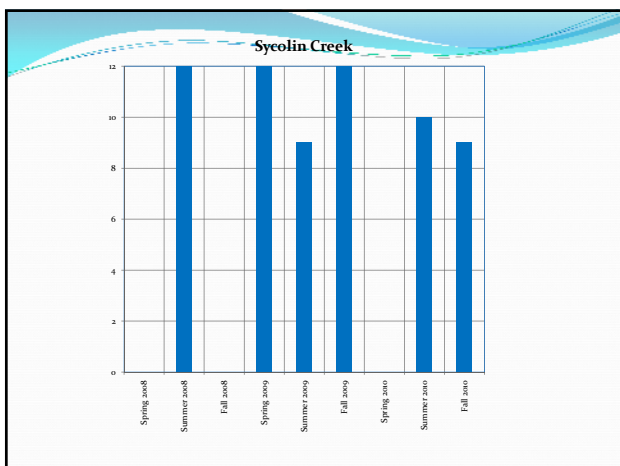
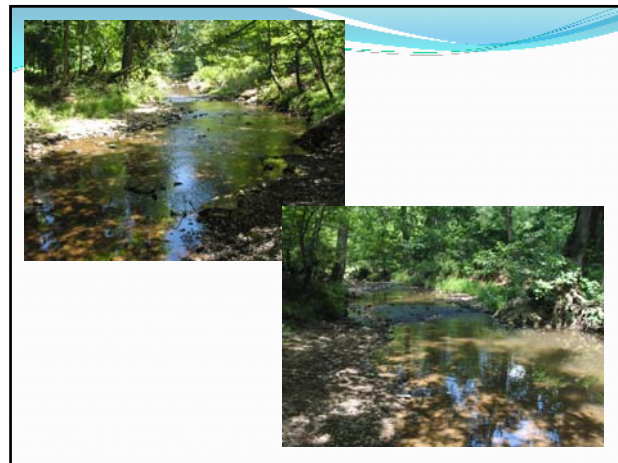


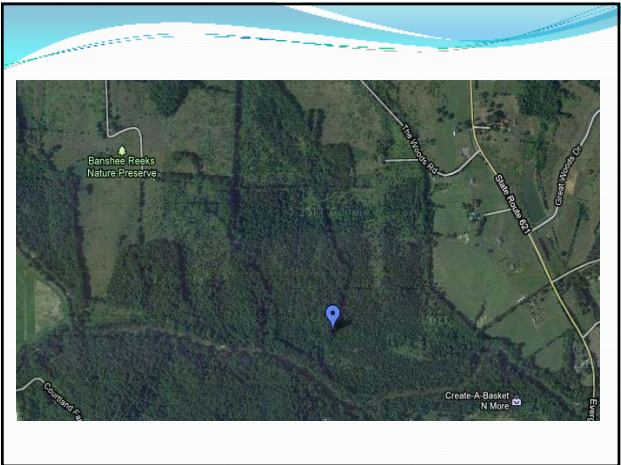
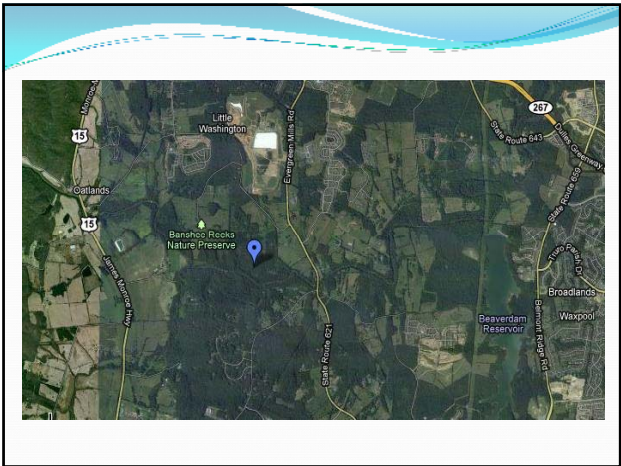
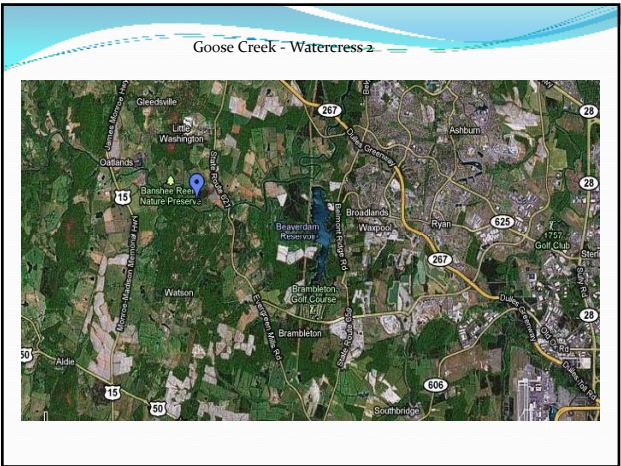
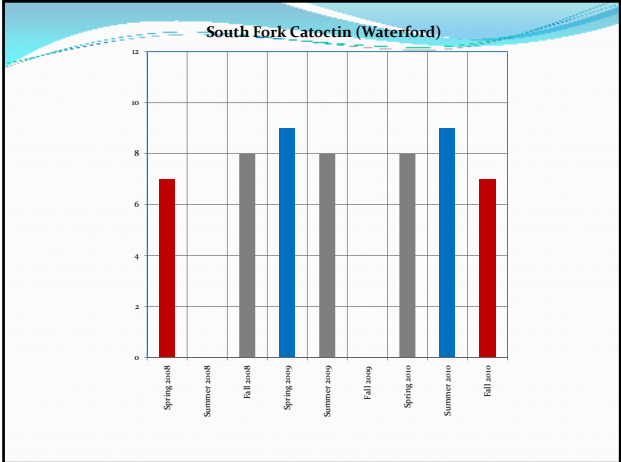


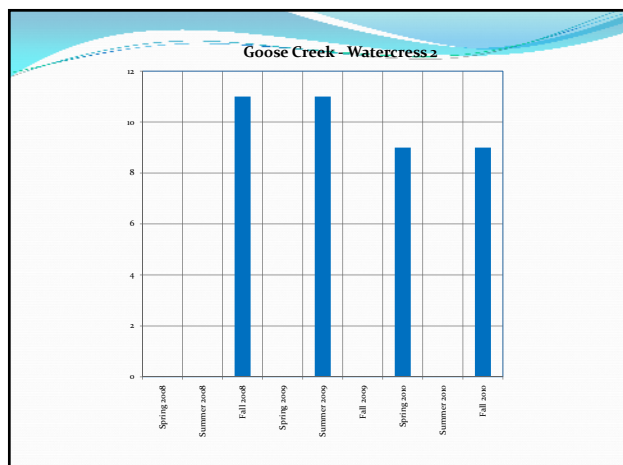








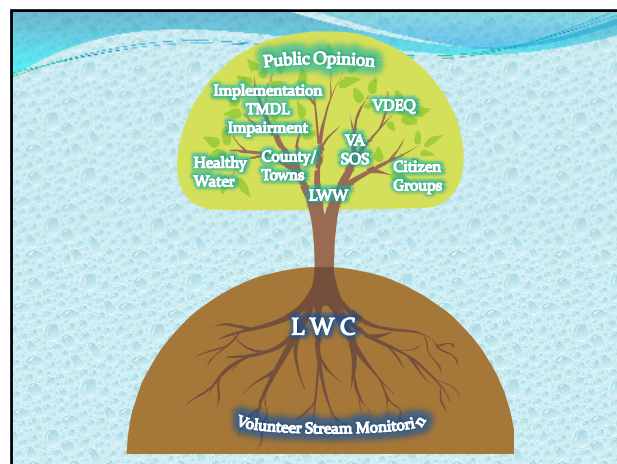




Loudoun Wildlife Conservancy Stream Monitoring Review 2010

March 2010
Bamshad Brooks

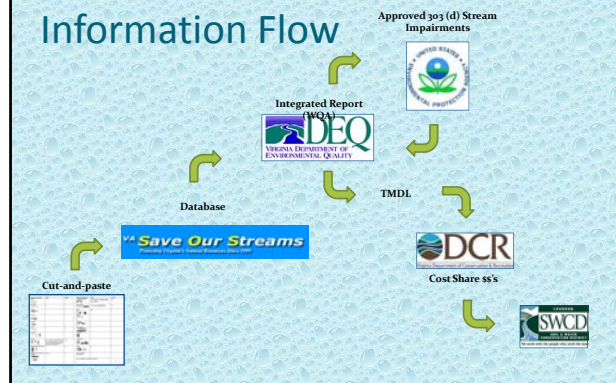
Where the stream monitoring data
is sent and how it is used



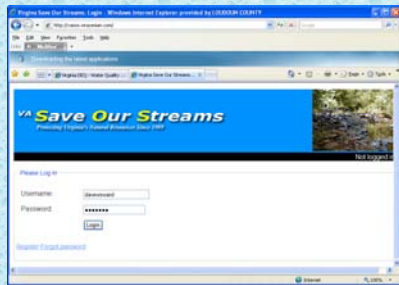
Data Transfers

- Field sheets and photos are scanned and added to Excel file and posted at Loudoun Watershed Watch website
- Benthic and habitat uploaded to VA SOS site (record-by-record copy)
- VA SOS forwards data to VA DEQ
- Bacteria data uploaded to VA DEQ Citizen Monitoring website (batch mode)

Information Flow

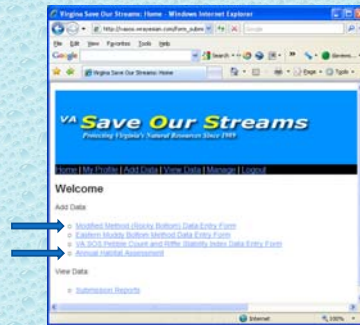


Upload to VA SOS



Data administrator login security

Upload to VA SOS



Add data or view previous submissions by LWC

Administrator View

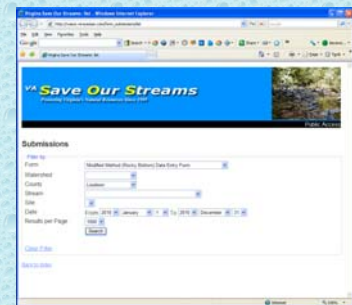
- Data submission uploads are verified to ensure integrity of upload process
- Use "My Submissions"
- Query on "Loudoun"



http://vasos.wrayeslan.com/form_submissions/list

Public Access View

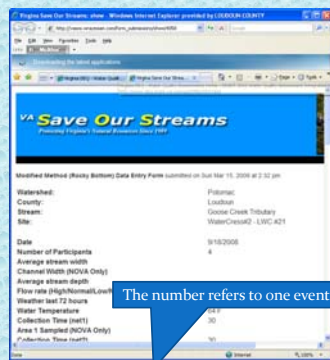
- Similar query on "Loudoun"
- Results can not be exported to Excel



http://vasos.wrayeslan.com/form_submissions/list

Upload Verification

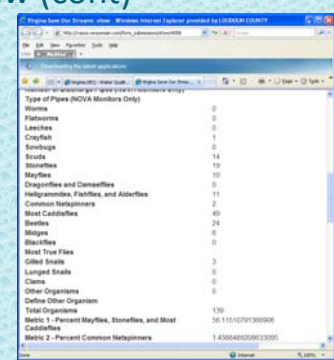
- Data submission uploads are verified to ensure integrity of upload process



http://vasos.wrayeslan.com/form_submissions/show/4058

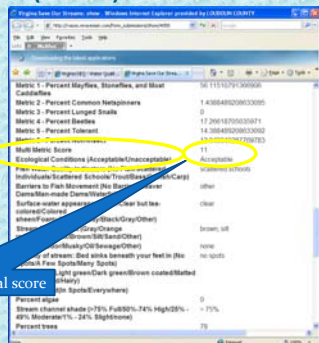
VASOS Data View (cont)

- Includes all data on fields sheets
- Metrics are recalculated

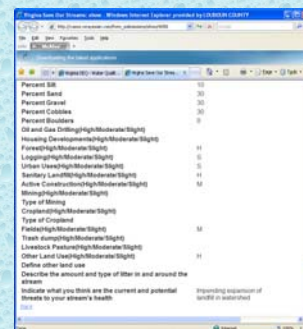


VASOS Data View (cont)

- Benthic and habitat (if reported)



VASOS Data View (cont)



VA DEQ Water Quality Assessment

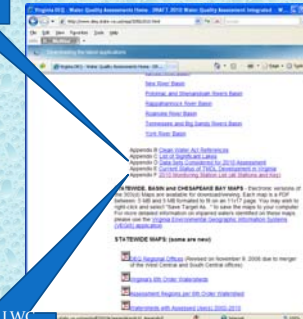
- Every two years, DEQ prepared "Integrated Report" [303(d) listed water]
- Data windows of past 6 years on monitoring data, so for 2010, uses 2003 to 2008 data
- Lists the "Impaired Waters" for benthic(aquatic life use), bacteria (recreational use), fish (consumption)
- Requires EPA Approval
- Six water use criteria – Aquatic Life Use as assessed by benthic macroinvertebrates
- Includes echo, albeit cryptic, of LWC data

VA DEQ Water Quality Assessment

- Source data, as submitted to DEQ prior to VASOS in 2008
- As uploaded to VA SOS (2008-2010)
- Summary table in Integrated Report by DEQ (after slice and dice)
- Mapped
- Verification Table returned from DEQ per specific request

LWC Listed

Stations and LWC data



http://www.deq.state.va.us/wqa/pdf/2010ir/appendices/ir20_AppendixF_Mon_Stations_Key-List.pdf

Appendix D

- LWC includes 29 stations with 91 events between 2003 and 2006 – Using EPA RBP
- VA SOS includes 442 station with 2,043 events (presumably LWC 2008 data)

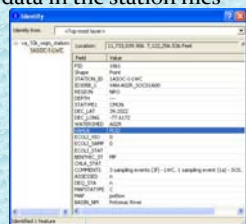
Appendix D WATER QUALITY DATA SETS CONSIDERED FOR THE 2010 303(d) ASSESSMENT				
Data Set	Parameters/Use Goals	Organization/Contact	QA/QC Review	Comments
Ambient lake monitoring	ALUS - Dissolved Oxygen, pH, Temperature SWMB - Fecal Bacteria	Leeville Lake Association Michael Lohue www.leevillelake.org	QA/QC review by DEQ James Bechley, 804-698-4222 Dissolved oxygen, pH, temperature data are acceptable for assessment. E. coli Coliforms (E. coli) data is acceptable for VA Category 3C and 3D (2003-2006)	Reference May 2007 Quality Assurance Project Plan 9 stations with 109 sample events monitored from May 2007 to October 2008.
Benthic Macroinvertebrate Monitoring	ALUS - Benthic Macroinvertebrates	Loudoun Wildlife Conservancy David Ward 540-622-5592 www.loudounwildlife.org	QA/QC plan and SOPs for benthic macroinvertebrates reviewed Benthic macroinvertebrate data were used for assessment of water quality as VA Category 3C or 3D.	29 stations with 91 sample events collected from May 2003 to October 2006.

GIS files

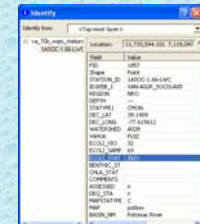


GIS data

- GIS files are downloaded and contains synopsis of LWC data in the station files



Three benthic events - SF Catocin (Ward property)
MP is medium probability for adverse conditions



Bacteria where 32 of 69 samples exceeded - SF
Catocin Waterford bridge

Data Flow

- Source data, as submitted to DEQ prior to VA SOS in 2008
- As uploaded to VA SOS (2008-2010)
- Summary table in Integrated Report by DEQ (after slice and dice)
- Mapped
- Verification Table returned from DEQ per specific request

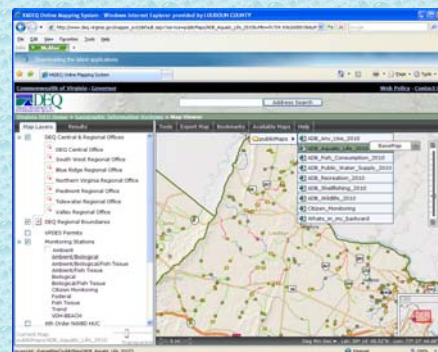
DEQ Benthic Monitoring

- DEQ stores data in EDAS, a MS Access file for the state
- Needs to be queried - complex
- Includes the 140+ samplings in Loudoun since 1995 (Spring & Fall)



Site data is translated to stream reaches

- Reaches are defined

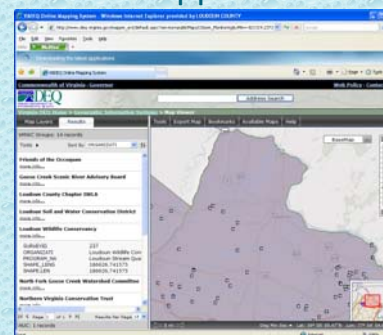


Fact Sheets for Each reach



Citizen data on webmapper

- DEQ uses separate databases and the web GIS file in knowingly incomplete



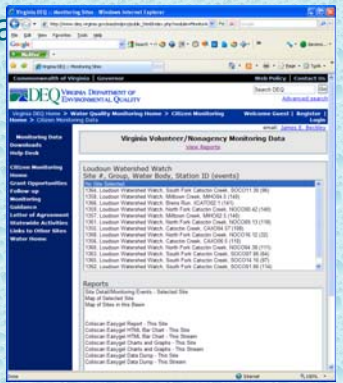
end

Part 1 (extra)

other data submissions

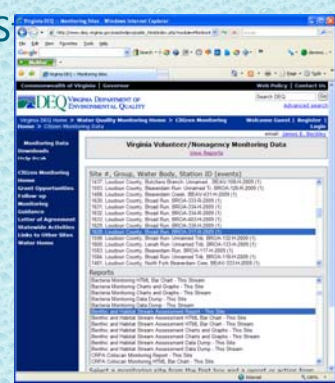
Bacteria Upload

- Bacteria results are uploaded in batch to DEQ's citizen monitoring
- Catoctin Watershed Project 2005-2009



Loudoun 2009 S

- The Loudoun County 2009 (Versar) benthic and habitat data can be viewed
- County still needs to submit "Data Use" form



Loudoun 2009 S

- Data display for one of the 500 sites monitored

