

Overview of the Watershed Data Portal

Timothy Pricer

Data Management Tools Session

The National Water Quality Data Management Training Workshop

May 31, 2017

Context

- Assessment Units – 1113 (711 Lakes / 402 Rivers)
- 3900 Monitoring Locations
- 1.1 Million Raw Water Quality Records (~50K per Year)
- 7900 Bio Population Samples (Bug/Fish) (~300 per Year)

Problem Statement

- Several Data sources with no consistent and easy way to retrieve and present the data

Search

Where ?
Type: All # 100 Sort: Site Rank

What Bugs Chemistry Fish Wetland
 Sites Habitat Special

When Start
End

Search **Sites and Reports** Map Other Reports

- Location ID
- Location Name
- Location Description
- Town
- WBID
- Lake ID
- LMP ID
- Laymon ID
- Bio Site ID
- LaRosa ID
- Wetland ID

What Bugs Chemistry Fish Wetland

Sites

By Collection Method

- Kick Net
- Sweep with Kicknet
- Artificial Substrate Loboy
- Ekman Dredge 6
- Qualitative Pick
- Surber Square Foot
- Vernal Pool Scoop
- Vernal Pool Trap
- Sandy Littoral Core
- Vernal Pool Qualitative

By Assessment

- Excellent
- Excellent - Very Good
- Very Good
- Very Good - Good
- Good
- Good - Fair
- Fair
- Fair - Poor
- Poor

By Tag

- Aquatic Biomonitoring Network
- Compliance Biomonitoring Data
- Lake Biomonitoring Whole Lake Assessment
- Sentinel - Climate Change
- Green Mountain National Forest Monitoring
- Littoral Habitat Assessment

Habitat

Special

- Laymon Report

Chemistry

By Group

Water Quality

- Alkalinity
- Alkalinity, Grand
- Chloride, Dissolved
- Chloride, Total
- Color, Dissolved by Spectrograph
- Color, Total by Visual
- Conductivity
- Dissolved Solids, Total
- Hardness, Total
- pH
- pH, Air-equilibrated
- Temperature, C
- Turbidity (NTU)
- Turbidity (JTU)
- Suspended Solids, Total
- E. Coli

Nutrients

- Ammonia Nitrogen, Total
- Nitrate Nitrogen, Dissolved
- Nitrate Nitrogen, Total
- Nitrite Nitrogen, Total
- Nitrate/Nitrite Nitrogen, Total
- Nitrogen, Total
- Oxygen, Dissolved
- Oxygen Saturation, Dissolved
- Phosphorus, Dissolved
- Phosphorus, Total

Metals

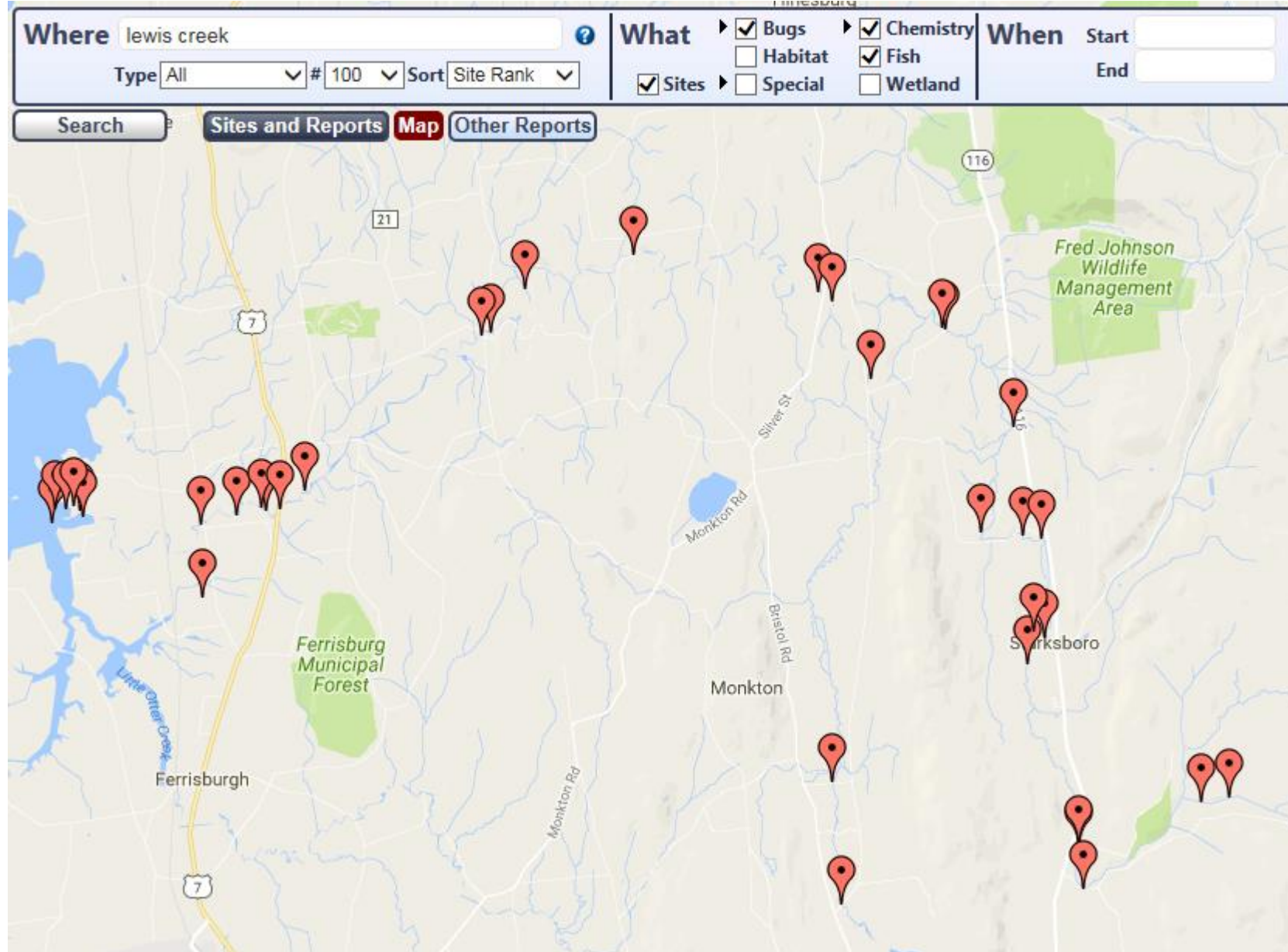
LayMon

- Secchi Transparency
- Phosphorus, Total
- Chlorophyll-a

Fish

Wetland

Search Results on a Map



Water Quality/Chemistry

Visit Date	Start Time	Location ID	Location Name	Conductivity	Dissolved Oxygen	Temperature	Total Nitrogen	Total Phosphorus	Turbidity				
				umho/cm	mg/l	C	mg/l	ug/l	NTU				
6/14/2005	1015	502525	Bartlett Brook				0.87	40.9	9.72				
6/29/2005	0900	502525	Bartlett Brook				1.07	27.8	4.11				
6/29/2005	0903	502525	Bartlett Brook				1.09	30	4.83				
7/6/2005	1430	502525	Bartlett Brook				0.97	58.2	18.8				
7/19/2005	0948	502525	Bartlett Brook				1.02	25.6	2.69				
7/27/2005	1311	502525	Bartlett Brook				0.9	357	204				
8/9/2005	1100	502525	Bartlett Brook				1.08	20.4	2.16				
8/26/2005	0950	502525	Bartlett Brook				0.81	20.6	3.93				
9/19/2005	1330	502525	Bartlett Brook				0.99	31.2	8.21				
9/27/2005	0925	502525	Bartlett Brook	435.3			0.35						
				433.8	7.55	85.9	8.02	19.86	0.75	38	6.88		
10/11/2005	1000	502525	Bartlett Brook		Biomon	Reg	8.3	78.5	16.8	7.37	1.12	26.6	2.99
10/21/2005	0940	502525	Bartlett Brook		Biomon	Reg	6.96	60.1	14.5	7.44	1.61	25.2	1.64
11/7/2005	1000	502525	Bartlett Brook		Biomon	Reg	9.73	86.1	22	7.98	1.49	38.7	5.1
11/14/2005	0934	502525	Bartlett Brook		Biomon	Reg	10.51	8.85	16.6	7.79	1.41	23.9	1.85
11/23/2005	1313	502525	Bartlett Brook		Biomon	Reg	6.04	46	14.3	7.52	1.11	27.4	1.98
12/12/2005	1229	502525	Bartlett Brook		Biomon	Reg			10.4	7.53	1.9	17.2	1.89
12/12/2005	1233	502525	Bartlett Brook		Biomon	R1			11.3		2.15	16.9	1.79
1/11/2006	1115	502525	Bartlett Brook		Biomon	Reg				7.56	2.21	26.2	3.91
1/12/2006	1232	502525	Bartlett Brook		Biomon	Reg			23.3	7.47	1.15	58.3	17.6

Location ID: 500912

Find | Next

- XML file with report data
- CSV (comma delimited)
- PDF
- MHTML (web archive)
- Excel**
- TIFF file
- Word

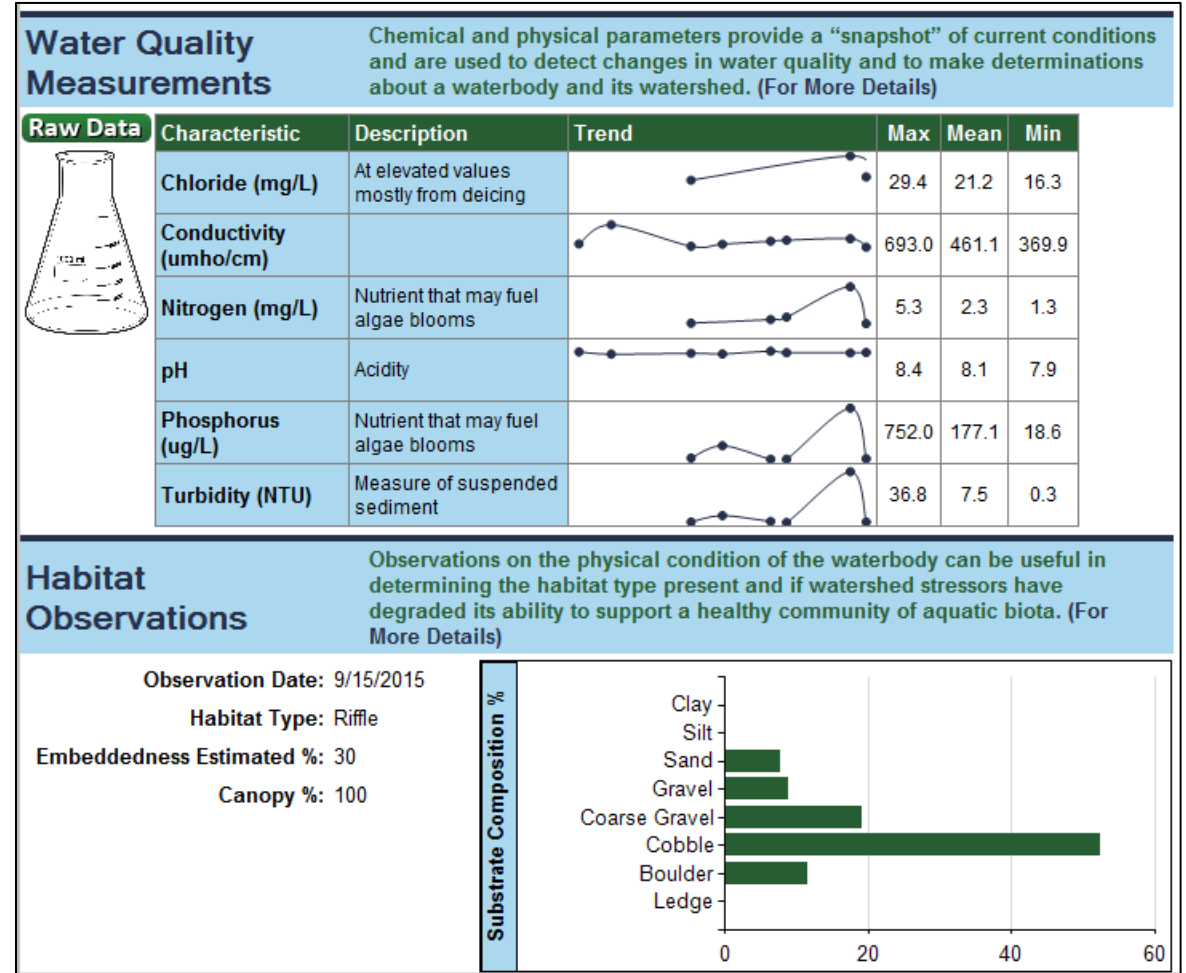
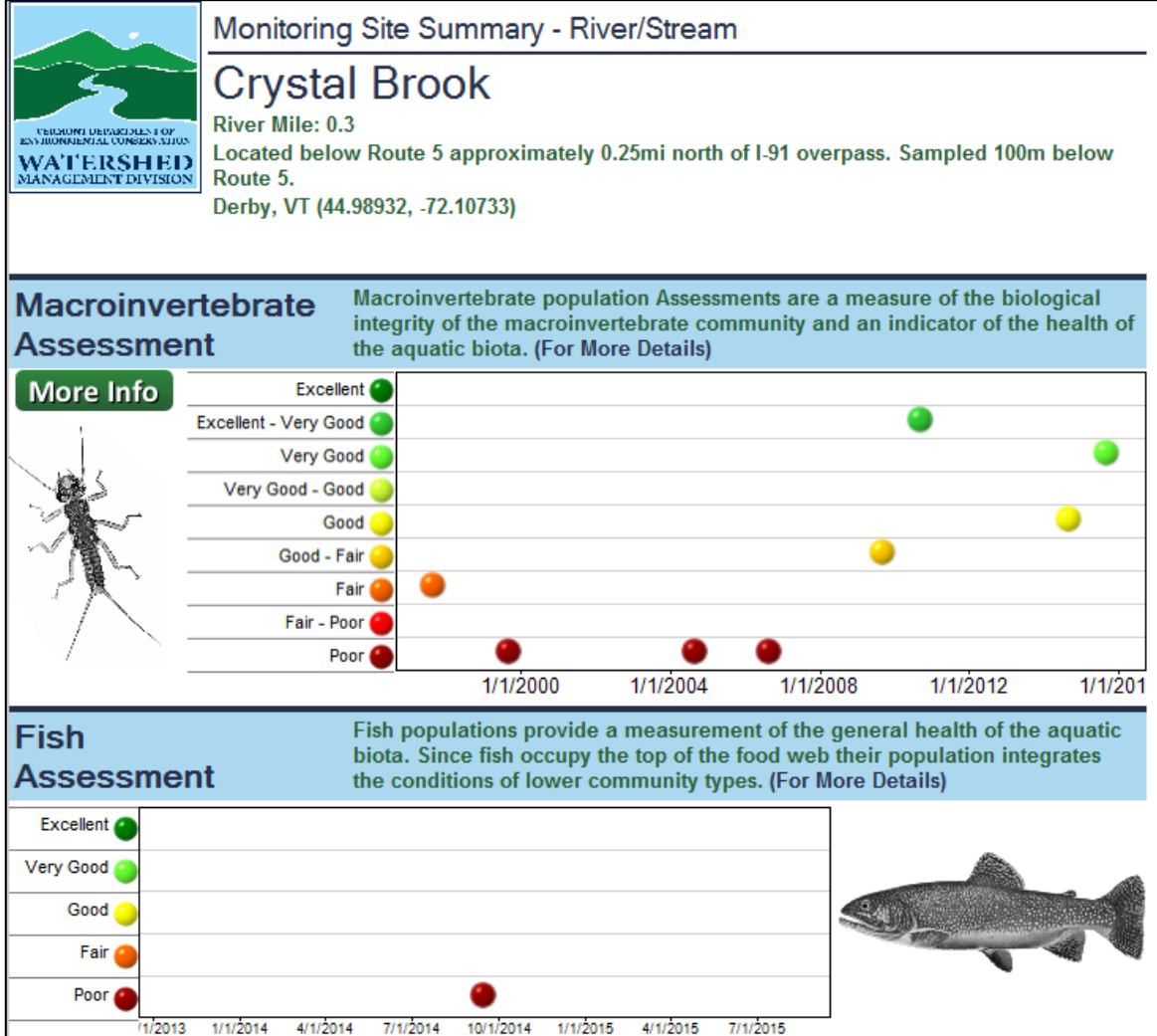
Macroinvertebrate Site Summary

Macroinvertebrate Site Summary										
Location:	Crystal Brook							Location ID:	501650	
Town:	Derby							Bio Site ID:	360300000003	
Description:	Located below Route 5 approximately 0.25mi north of I-91 overpass. Sampled 100m below Route 5.							WBID:	VT17-01	
Stream Type:	Small High Gradient									

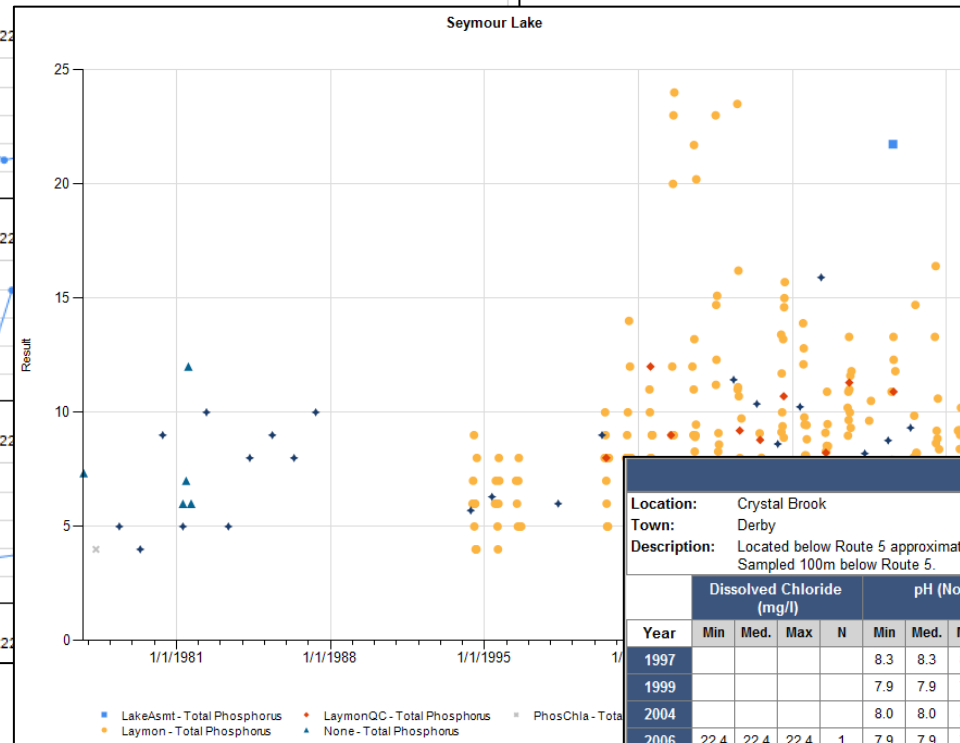
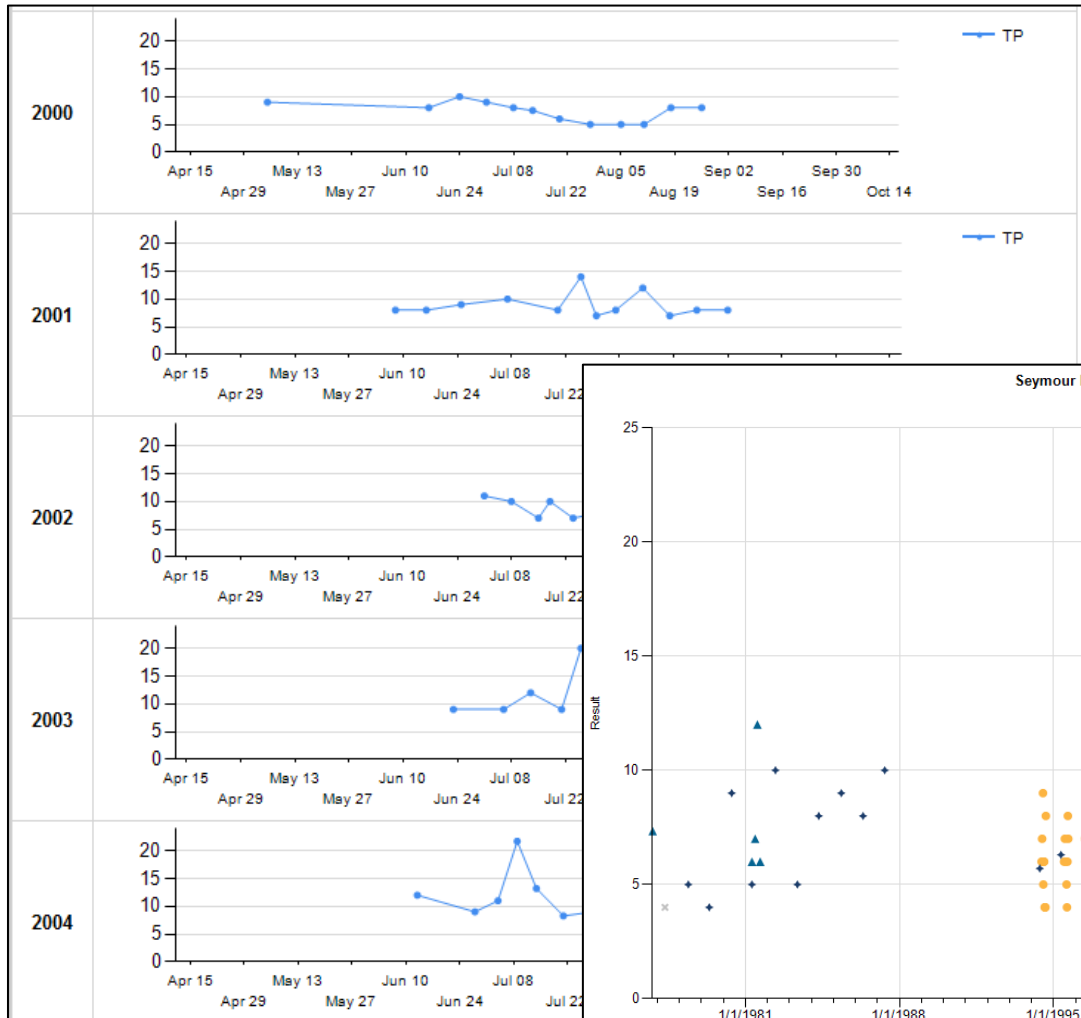
Date	Density	Richness	EPT Richness	PMA-O	B.I.	Oligo.	EPT/EPT + Chiro	PPCS-F	Community Assessment
9/4/1997	1824	46.0	18.0	46.9	4.92	7.46	0.32	0.35	Fair
9/14/1999	2876	38.5	9.0	31.7	5.56	5.95	0.13	0.32	Poor
9/16/2004	3280	27.0	5.0	42.3	7.21	14.27	0.29	0.11	Poor
9/7/2006	9960	36.0	7.0	32.8	6.84	14.94	0.18	0.30	Poor
9/16/2009	2068	37.0	21.0	68.7	4.41	6.96	0.96	0.36	G-Fair
9/16/2010	2388	43.0	24.0	84.2	3.13	1.34	0.94	0.54	Ex-Vgood
9/16/2014	2150	55.5	23.5	65.6	4.22	2.13	0.48	0.52	Good
9/15/2015	1604	41.0	27.0	69.0	3.49	3.49	0.95	0.46	Vgood
Full Support	≥ 350	≥ 28	≥ 17	≥ 50	≤ 4.35	≤ 9.5	≥ 0.47	≥ 0.45	
Meets Threshold	≥ 300	≥ 27	≥ 16	≥ 45	≤ 4.5	≤ 12	≥ 0.45	≥ 0.4	
Near Threshold	≥ 250	≥ 26	≥ 15	≥ 40	≤ 4.65	≤ 14.5	≥ 0.43	≥ 0.35	
Non-Support	< 250	< 26	< 15	< 40	> 4.65	> 14.5	< 0.43	< 0.35	

*Scoring Guidelines for Stream Type SHG and WQ Class B.

IWIS Site Summary



Other Water Quality Reports



Chemistry Statistics																	
Location:		Crystal Brook										Location ID:			501650		
Town:		Derby										Bio Site ID:			360300000003		
Description:		Located below Route 5 approximately 0.25mi north of I-91 overpass. Sampled 100m below Route 5.										WBID:			VT17-01		
Year	Dissolved Chloride (mg/l)				pH (None)				Total Nitrogen (mg/l)				Total Phosphorus (ug/l)				
	Min	Med.	Max	N	Min	Med.	Max	N	Min	Med.	Max	N	Min	Med.	Max	N	
1997					8.3	8.3	8.3	1									
1999					7.9	7.9	7.9	1									
2004					8.0	8.0	8.0	1	1.3	1.3	1.3	1	36.0	36.0	36.0	1	
2006	22.4	22.4	22.4	1	7.9	7.9	7.9	1					212.0	212.0	212.0	1	
2009	29.2	29.2	29.2	1	8.4	8.4	8.4	1	1.7	1.7	1.7	1	18.6	18.6	18.6	1	
2010	21.6	21.6	21.6	1	8.1	8.1	8.1	1	2.0	2.0	2.0	1	18.8	18.8	18.8	1	
2014					8.1	8.1	8.1	1	5.3	5.3	5.3	1	752.0	752.0	752.0	1	
2015					8.2	8.2	8.2	1	1.3	1.3	1.3	1	25.2	25.2	25.2	1	

Conclusion

- What has it done for us?
 - Faster and easier access to data
 - One stop shopping for many users
 - More people using the data
 - Flexible design has allowed for novel uses

- Is the available for use?
 - Built for our system, so adapting elsewhere would be difficult 😞