Exploring Fox River Study Data with Great Lakes To Gulf Virtual Observatory

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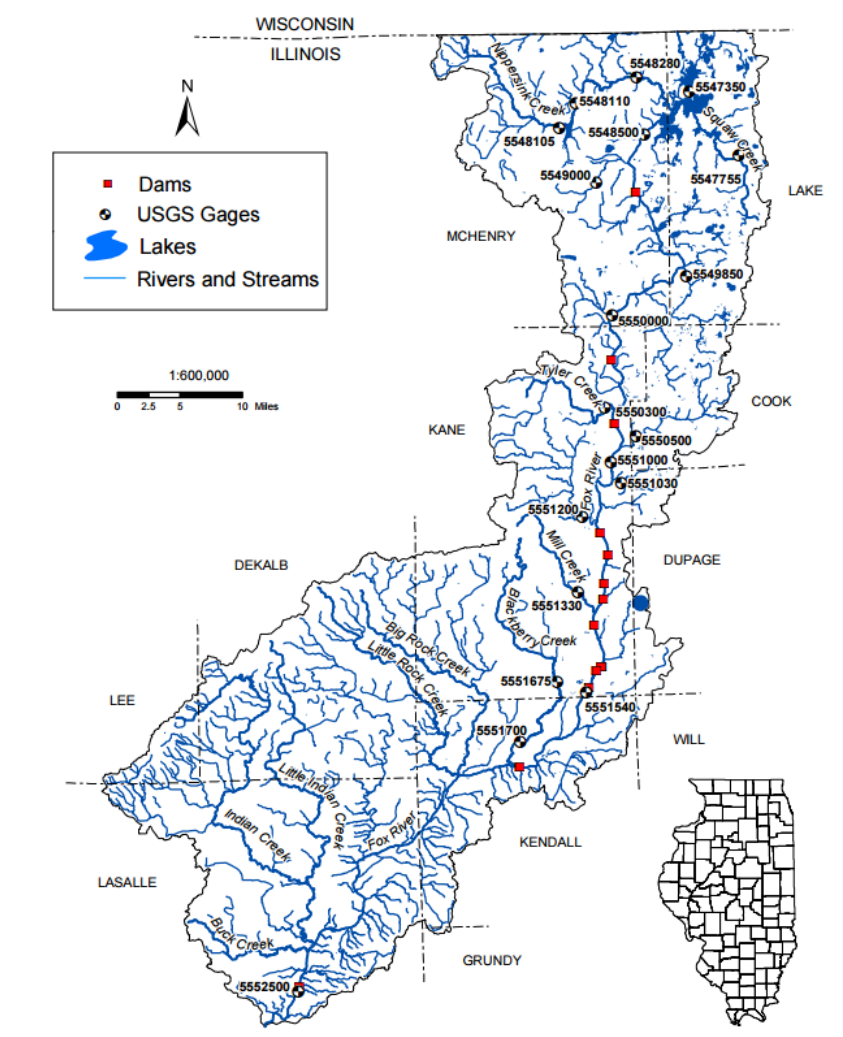
Fox River Watershed Investigation

- A multi-phase water quality study of the Fox River watershed.
- The objective of the study is
  - to identify significant watershed issues and implement a watershed scale plan including data collection, model development, and monitoring.
- By the Fox River Study Group, the Illinois State Water Survey (ISWS)



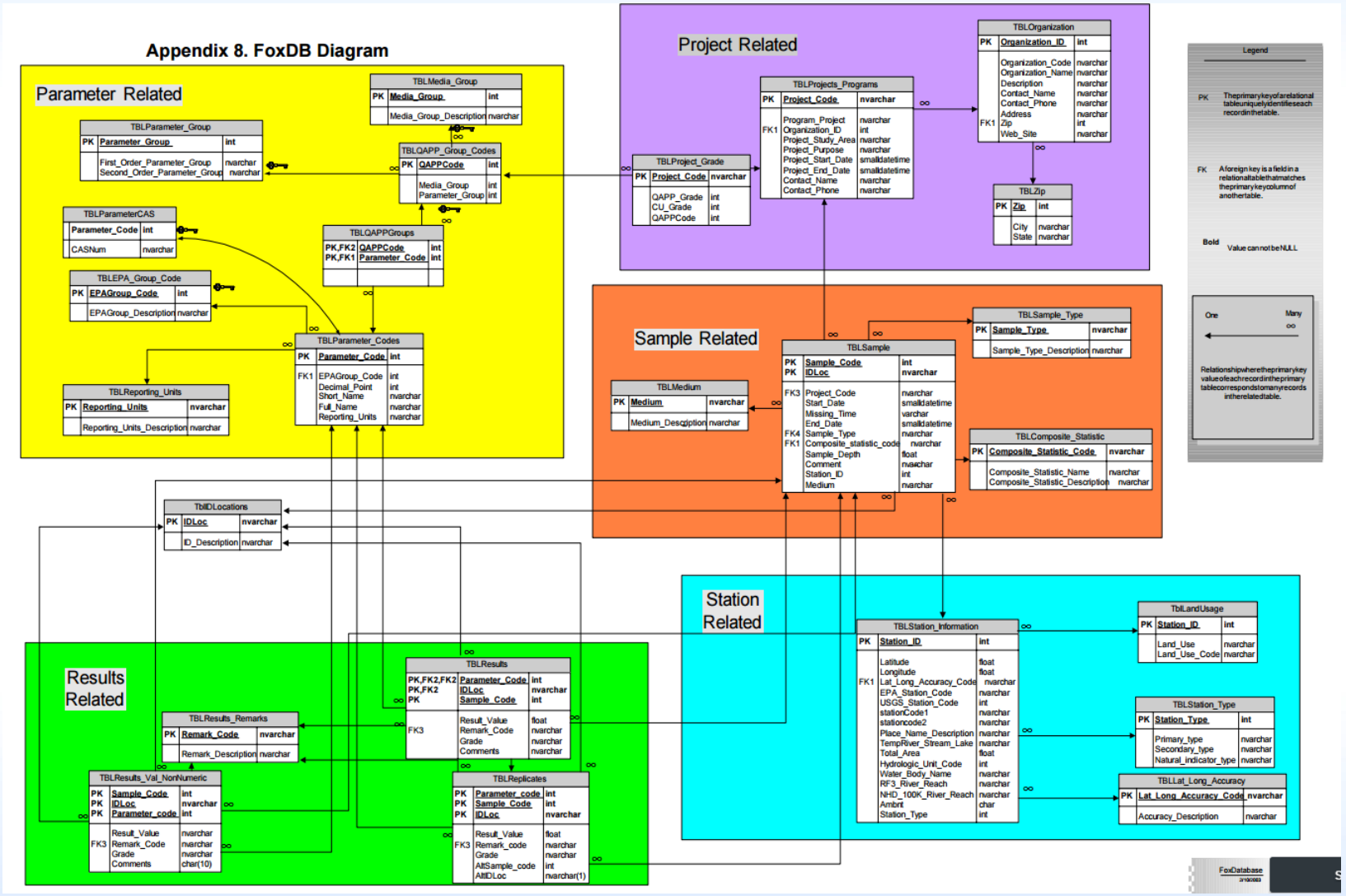
Data

- The collected data is acquired at http://ilrdss.sws.uiuc.edu/fox/
- FoxDB environmental database (updated 7/1/2014) is used
  - MS Access
  - Around 150MB
  - Structured relational database
- Documentation on the database
  - http://ilrdss.sws.uiuc.edu/fox/fox_report_phase1.asp?ws=3

Purpose

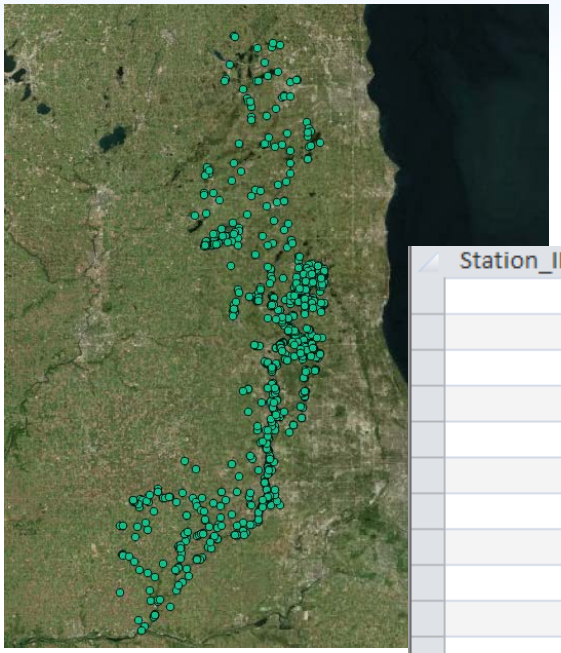
- How feasible to load FoxDB data to GLTG GeoDashboard?
  - Reviewed the database structure
  - Identified sample data
  - Loaded the sample data to GLTG GeoDashboard

FoxDB


Appendix 8. FoxDB Diagram
Parameter Related
Project Related
Sample Related
Station Related
Results Related
TBLMedia_Group
TBLParameter_Group
TBLQAPP_Group_Codes
TBLParameterCAS
TBLQAPPGroups
TBLEPA_Group_Code
TBLParameter_Codes
TBLReporting_Units
TBLProject_Grade
TBLProjects_Programs
TBLOrganization
TBLZip
TBLSample_Type
TBLSample
TBLMedium
TBLComposite_Statistic
TblDLocations
TBLStation_Information
TblLandUsage
TBLStation_Type
TBLLat_Long_Accuracy
TBLResults
TBLResults_Remarks
TBLResults_Val_NonNumeric
TBLReplicates
Legend
One
Many
Bold
Value cannot be NULL

FoxDB

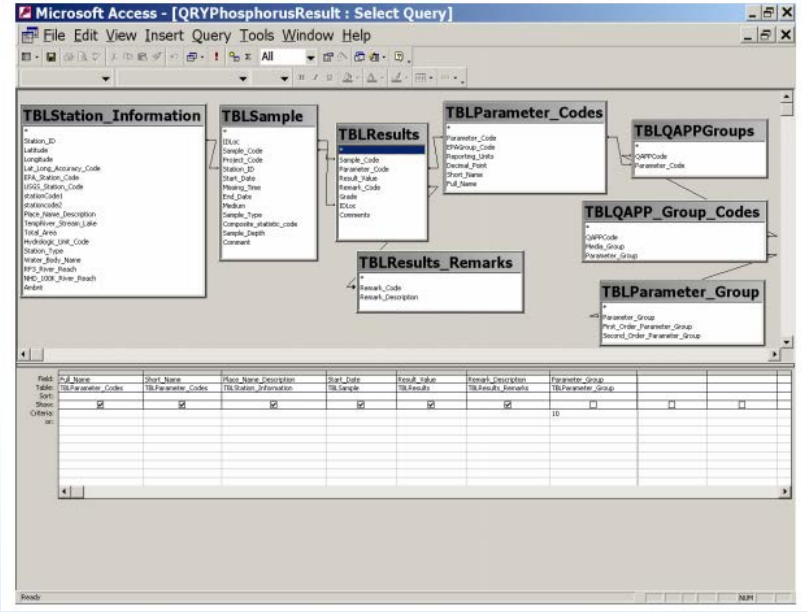
- Well designed database
- Well documented
  - Example queries: http://ilrdss.sws.uiuc.edu/fox/downloads/Fox_Chapter_4.pdf
- 5030 Stations
- 570 Stations that contains N and P
  - Station 27: 5588 data points
  - Station 26: 4955 data points



Station_ID	Expr1001
27	5588
26	4955
24	4924
25	2872
23	2740
33	2697
28	2602
197	2490
30	2338
236	1968
5020	1957
29	1765
240	1565
4001	1483
34	1475
276	1464
40	1446
5030	1400
184	1392
895	1340
4004	1194
5010	1192
268	1191

Identifying Stations

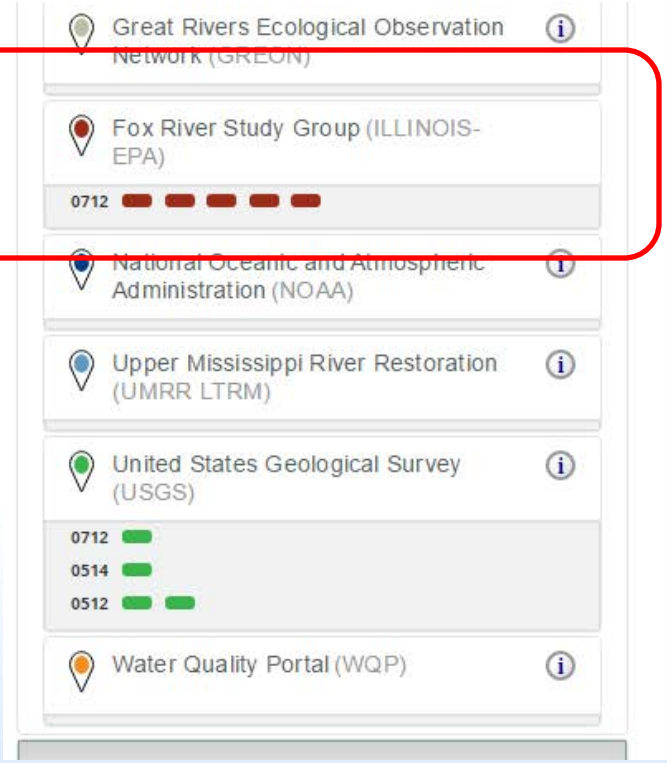
- 5 Stations that have most data points of N and P
- Modifying the example query from the documentation
  - Page 69, Chapter 4
  - Parameter Group = 9 OR Parameter Group = 10

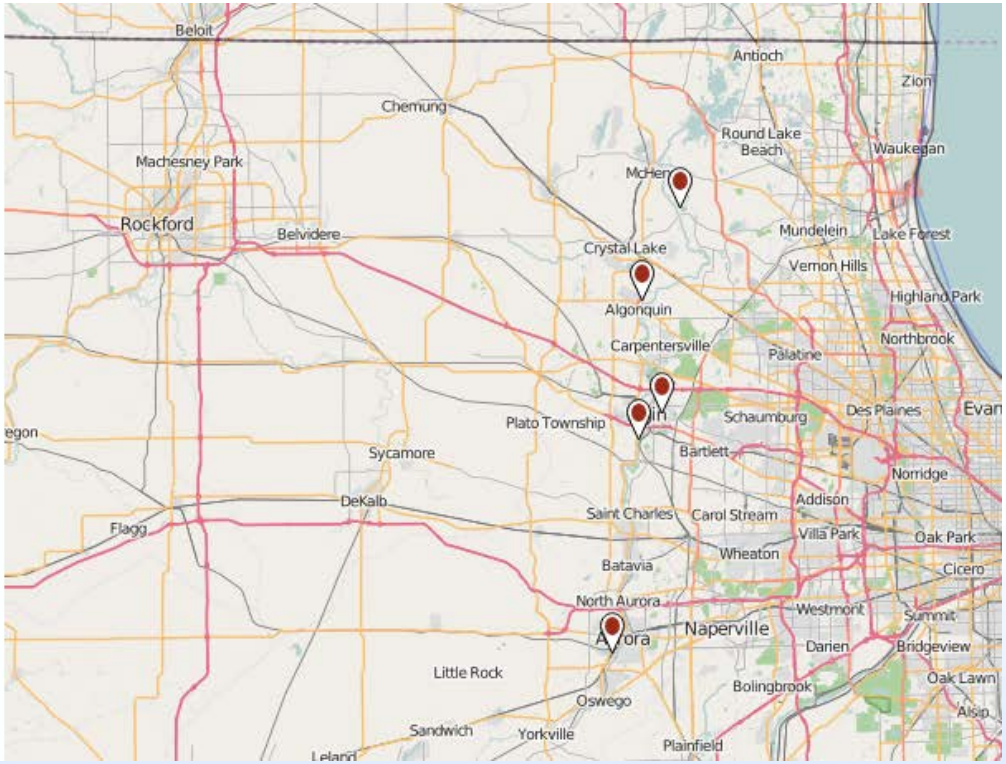


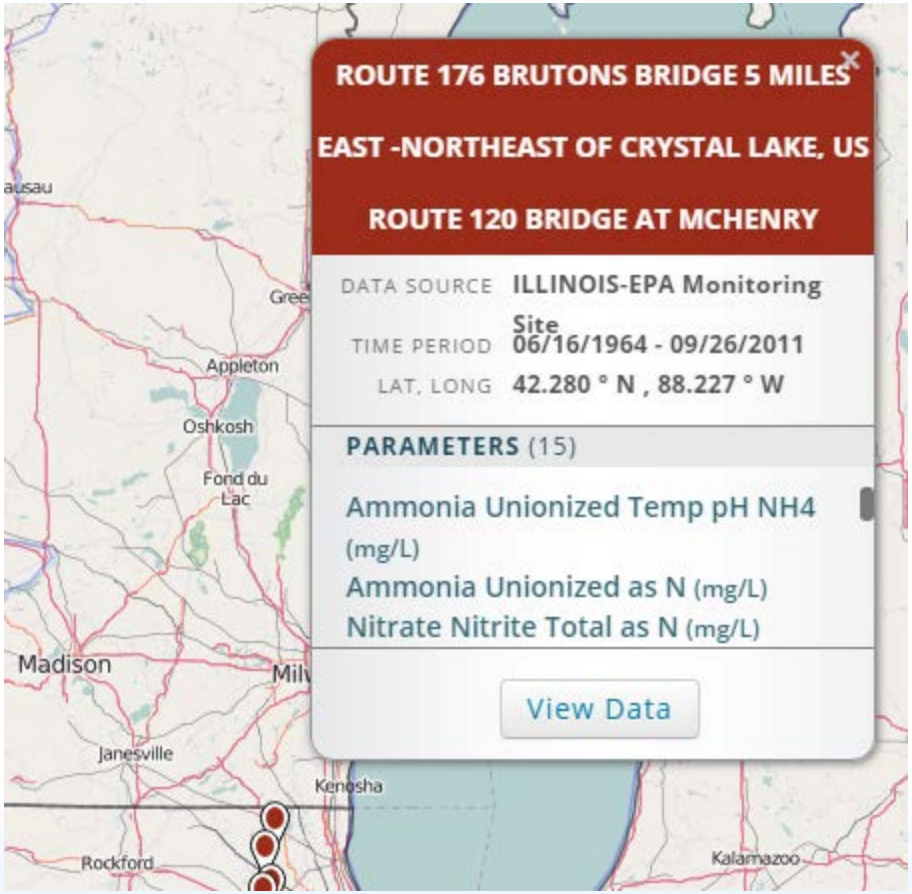
Station_ID	Expr1001
27	5588
26	4955
24	4924
25	2872
23	2740

Loading Data to GLTG

- Export the query results to CSV
- Running CSV parser to load the data






ROUTE 176 BRUTONS BRIDGE 5 MILES EAST -NORTHEAST OF CRYSTAL LAKE, US ROUTE 120 BRIDGE AT MCHENRY
DATA SOURCE ILLINOIS-EPA Monitoring Site
TIME PERIOD 06/16/1964 - 09/26/2011
LAT, LONG 42.280 ° N , 88.227 ° W
PARAMETERS (15)
Ammonia Unionized Temp pH NH4 (mg/L)
Ammonia Unionized as N (mg/L)
Nitrate Nitrite Total as N (mg/L)
View Data
Appleton
Oshkosh
Fond du Lac
Madison
Janesville
Kenosha
Rockford
Kalamazoo

ROUTE 176 BRUTONS BRIDGE 5 MILES EAST -NORTHEAST of CRYSTAL LAKE, US ROUTE 120 BRIDGE at MCHENRY

Time Series

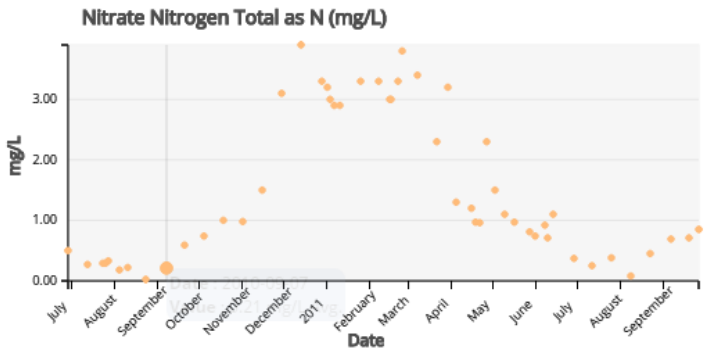
Date Range 6/22/2010 - 9/26/2011
Averaged by day

Download Data

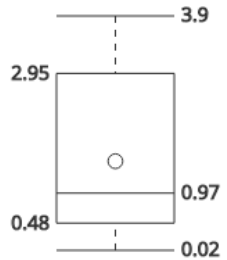
Selected Parameters

- [ ] Ammonia Unionized as N (mg/L)
- [ ] Ammonia Unionized Temp pH NH4 (mg/L)
- [x] Nitrate Nitrite Total as N (mg/L)
- [x] Nitrate Nitrogen Total as N (mg/L)
- [x] Nitrite Nitrogen Total as N (mg/L)
- [x] Nitrogen Ammonia Total as N (mg/L)

Time Series



Box and Whisker



Demo

- http://gltg-dev.ncsa.illinois.edu/geodashboard/