cyanoMonDocumentation

Bryan

April 29, 2015

To Do List

- Build forms-with data validation steps
- Complete 2014 data QA/QC
- Interface for Phone App
- Update for 2015

Considerations for 2015 database

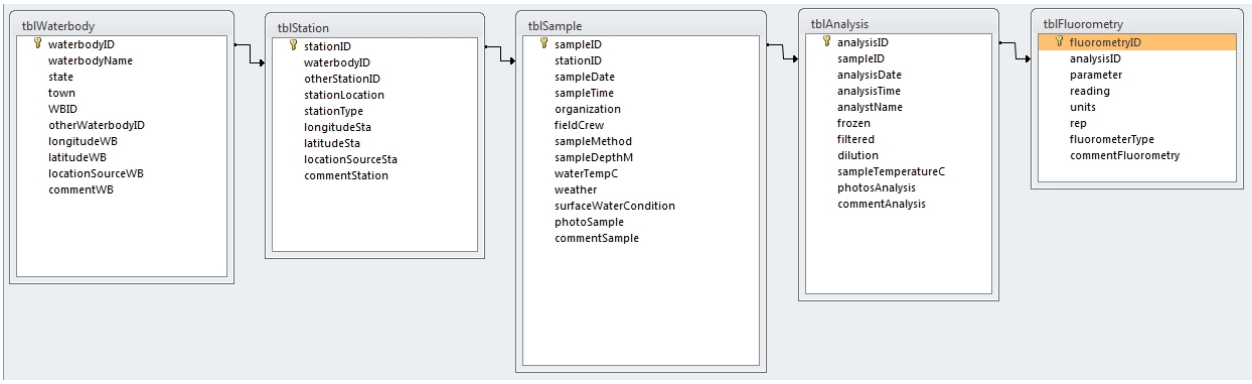
- Remove Field "analysisTime" from table tblAnalysis
- Remove Field "rep" from table tblFluorometry
- Combine tables tblAnalysis & tblFluorometry
- Do we want to include any kind of replicate analyses or readings?
- What about field duplicate samples?
- Add text field 'stationDescription' to describe location of the station (e.g., off Bubby's dock)
- JSON to google docs link
- use phone app for field data only?
- add tables for lab results and ancillary data-toxins, nutrients, secchi, etc.
- eliminate the filtered field?
- add fields for email and phone number (from phoneApp)
- add field for data entry method (phoneApp, access, spreadsheet)
- Do we need to capture information on primary and secondary standards?

Background

- EPA region 1 is coordinating a Cyanobacteria Monitoring Progam for the six New England States (CT, MA, ME, NH, RI, & VT)
- Data collection initiated during the summer of 2014
- 2014 data have been collated and standardized
- For future data collection we need a relational database developed for data entry and archiving
- The Database needs to work with a Data Collection Phone App under development
- For now, the database will be created in MSAccess (cyanoMon.mdb)

Database Structure

- The five tables in the access database (cyanoMon.mdb) are described below:



- **tblWaterbody** provides general information on the waterbody and assigns a unique identifier. Ideally we will have this table populated before the field crews go out so that they can select the correct lake from a list. The reality is that we will also need to be able to add lakes on the fly as new lakes are added to the sampling plan. There may be multiple stations for each waterbody.

Field	Data Type	Description
waterbodyID	Short Text	Primary Key for this table. Unique ID for the Waterbody. Can either be entered by
waterbodyName	Short Text	Name of the waterbody
state	Short Text	Combo Box (“CT”; “MA”; “ME”; “NH”; “RI”; “VT”): Two letter state abbreviatio
town	Short Text	Text Box: Closest town to the lake
WBID	Long Integer	Text Box: EPA Waterbody Identifier
otherWaterbodyID	Short Text	Text Box: If the states or the samping organization have a unique identifier for the
longitudeWB	Double	Text Box: longitude in decimal degrees (WGS84) of the lake centroid. This field wi
latitudeWB	Double	Text Box: latitude in decimal degrees (WGS84) of the lake centroid. This field will
locationSourceWB	Short Text	Combo Box (“WaterbodyDatabase”; “GPS”; “GoogleEarth”; “BingMaps”; “topoMa
commentWB	Long Text	Text Box: Additional information or comments

- **tblStation** within each Waterbody there may be multiple stations. This table provides general information on the station. There may be multiple samples taken from each station.

Field	Data Type	Description
stationID	Short Text	Primary Key for this table. Unique ID for the Station
waterbodyID	Short Text	Lookup primary Key from tblWaterbody
otherStationID	Short Text	Text Box: If the states or the samping organization have a unique identifier for the sta
stationType	Short Text	List Box/Radio Button (“nearShore”; “offShore”;“other”): Location of the station in re
longitudeSta	Double	Text Box: longitude in decimal degrees (WGS84) of the station. Miniumum of 4 decim
latitudeSta	Double	Text Box: latitude in decimal degrees (WGS84) of the station. Miniumum of 4 decima
locationSourceSta	Short Text	Combo Box (“WaterbodyDatabase”; “GPS”; “GoogleEarth”; “BingMaps”; “topoMap”)
commentStation	Long Text	Text Box: Additional information or comments

- **tblSample** for each station within a waterbody there may be multiple sample events. This table provides general information on each sample event. There may be multiple analysis events for each sample event.

Field	Data Type	Description
sampleID	AutoNumber	Primary Key for this table. Unique ID for the sample event
stationID	Short Text	Lookup primary Key from tblStation: where was the sample taken?
sampleDate	Short Date	Text Box: Date the sample was taken in format MM/DD/YYYY
sampleTime	Medium	Text Box: Time the sample was taken in format HH:MM AM/PM
organization	Short Text	Combo Box (“CRWA”; “CTDEEP”; “MEDEP”; “NHDES”;“RIWW”; “UNH_
fieldCrew	Short Text	Text Box: Names of the field crew separated by commas
sampleMethod	Short Text	Combo Box (“Integrated Sampler”): should be Integrated Sampler but other v
sampleDepthM	Integer	Combo Box (1; 3): Depth (meters) sample was taken. Should be 1 or 3 meters
waterTempC	Single	Text Box: Lake water temperature in Celsius
weather	Short Text	List Box (“Clear”; “Partly Cloudy”; “Overcast”; “Rain”): Limited choice descr
surfaceWaterCondition	Short Text	List Box (“Calm”; “Ripples”; “Choppy”; “White Caps”): Limited choice descri
photoSample	Yes/No	Check Box: where photos taken during sampling?
commentSample	Long Text	Text Box: Additional information or comments

- **tblAnalysis** for each sample taken there will be one or more analysis events. This table provides general information on each analysis event. There may be multiple fluorometry readings for each analysis event.

Field	Data Type	Description
analysisID	AutoNumber	Primary Key for this table. Unique ID for the analysis event
sampleID	AutoNumber	Lookup primary Key from tblSample: analysis for which sample event?
analysisDate	Short Date	Text Box: Date the sample was analyzed in format MM/DD/YYYY
analysisTime	Medium	Text Box: Time the sample was analyzed in format HH:MM AM/PM
analystName	Short Text	Text Box: Name of primary person in charge of the analysis
frozen	Yes/No	Check Box: was sample frozen prior to analysis?
filtered	Yes/No	Check Box: was sample filtered prior to analysis?
dilution	Short Text	Combo Box (“1:1”; “1:5”; “1:10”): Default = 1 to 1 (not diluted); other choices a
sampleTemperatureC	Single	Text Box: sample temperature in Celsius at time of analysis
photoAnalysis	Yes/No	Check Box: where photos taken during analysis?
commentAnalysis	Long Text	Text Box: Additional information or comments

- **tblFluorometry** this table provides the fluorometry readings for each analysis. There should be at least one reading each for phycocyanin and chlorophyll a.

Field	Data Type	Description
fluorometryID	AutoNumber	Primary K
analysisID	AutoNumber	Lookup pri
parameter	Short Text	List Box/R
reading	Single	Text Box:
units	Short Text	List Box/R
rep	Integer	replicate nu
fluorometerType	Combo Box: (“Beagle”): this should be a Beagle but user can input other choices.	
commentFluorometry	Long Text	Text Box: