cyanoMonDocumentation

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To Do List

- Build forms-with data validation steps
- Interface for Phone App
  - Make sure ID structure is the same between database and phoneApp

Question

- Do we remove the field "filtered"?
- Should we add table for lab results and ancillary data-toxins, nutrients, secchi, etc.?
- How do we keep track of what method was used to enter the data?
- Do we want to keep track of which Fluorometers are used (i.e, assign each unit a code)?
- Do we need to capture information on primary and secondary standards?
- How can we capture and archive the photos?

Changes for the 2015 database

tblWaterbody * removed field "otherWaterbodyID" * changed commentWB to format "Long Text" to allow for multiple comments

tblStation * removed field "otherStationID" * changed commentSta to format "Long Text" to allow for multiple comments * renamed "stationLocation" to "stationDescription" to match phoneApp

tblSample * added field "sampleRep" to register replicate samples: with default value "primary" and optional value "duplicate"

tblFluorometry * table removed and fields added to tblAnalysis

tblAnalysis * added fields from tblFluorometry - "parameter" - "fluorometerType" - "rep" renamed "analysisRep": with default value "primary" and optional value "duplicate" - "reading" renamed "valueUGL" * fields that were not transferred from from tblFluorometry - fluorometryID - commentFluorometry - units

Phone App

- General Questions and Comments
  - will there be an instruction manual?
  - no indicator of whether table has been saved (updated or not) except on Station Table; could the text color for "Update DB" change depending on update status (red=unsaved items; green=everything up to date)
  - no warning if you leave a page without saving (updating)
  - date and time selector widgets difficult to use.
  - selection button on drop down list very small.
  - yes/no dropdowns have phycocyanin and chl. as choices instead of "yes" & "no"; I see what is happening. Whenever you choose a dropdown it stays on the screen. When you go to another dropdown it writes over the first but both values are still visible.

  - dilution dropdown
  - if you select "update DB" and there are unfilled fields it returns you to the missing field but erases other fields.
  - temperature fields (sample & analysis) auto adds a decimal place so 21 becomes 2.1
  - How can we capture the email and phone number for data entered by phoneApp?

- Welcome Screen:
  - how are the name, email, phone, & org saved and linked to the data tables?
  - can the app remember this info and reuse it?
  - Organization should be a combo box that allows for new organizations to be added and remembered.
  - "new lake" & "existing lake" button only visible in portrait mode. This should be fixed or the app could be locked in portrait.

- New Lake Screen:
  - Apparently this will be used to both add new waterbodies and select known waterbodies that are already in the app. Somewhat confusing.
  - on screen keyboard blocks view of data entry boxes.
  - The abbreviation "WBID" (GENERATE WBID button) is a field name in the database.
  - If you start adding data then cancel when you return the data entered are not erased.
  - can "generate WBID" without adding the lake name or date.

- waterbody screen
  - Include NY and Ontario in State should be a combo box-allowing other states beside the known 6. Ontario and NY should be included also.

- station:
  - RI out of range on longitude (-71.4)

- sample screen
  - add "today" to sampleDate widget
  - add "now" to sampleTime widget
  - would be nice to be able to choose a station ID directly from this screen instead of having to pass through waterbody & station pages first. If a person goes to a lake they will likely want to collect samples from more than 1 station at each visit.
  - Add field "fieldCrew" to tblSample
  - rename field "time" to "sampleTime" in tblSample
  - Add field "sampleRep" to tblSample: with default value "primary" and optional value "duplicate"

- Analysis Screen:
  - text slightly garbled for "Parameter" drop down
  - Add field "analysisRep" to tblAnalysis: with default value "primary" and optional value "duplicate"

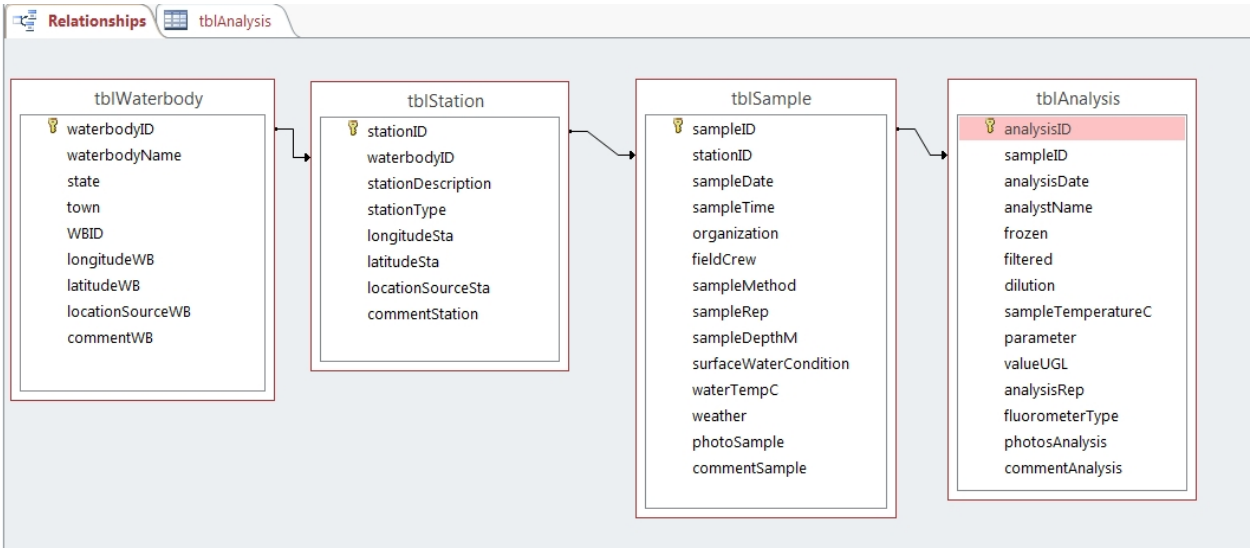
- submit page
  - should be able to submit more than one lake at a time- perhaps a checklist of lakeIDs with a status indicator showing whether they have been submitted before or not.
  - can submit the same data multiple times-data arrives with the same subject line and the same file names.
  - why are we given so many choices on how to send the data (twitter-facebook-etc)?
  - email address for submissions can be changed. Is this a good idea?
  - does not send "waterbody" table

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
- The database will be created in MSAccess (cyanoMon2015.mdb)

Database Structure

- The relationships between the tables are shown in the figure below



- Each table in the access database (cyanoMon2015.mdb) is described and data definitions are given 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 abbreviation
town	Short Text	Text Box: Closest town to the lake
WBID	Long Integer	Text Box: EPA Waterbody Identifier; Not in phoneApp. This field will be populated
longitudeWB	Double	Text Box: longitude in decimal degrees (WGS84) of the lake centroid. This field wil
latitudeWB	Double	Text Box: latitude in decimal degrees (WGS84) of the lake centroid. This field will

Field	Data Type	Description
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
stationDescription	Short Text	Text description of the station location
stationType	Short Text	List Box/Radio Button (“nearShore”; “offShore”;“other”): Location of the station in r
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	Short Text	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 Time	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
sampleRep	Short Text	Option to choose between “primary” (default) and “duplicate”. Note: a sampl
sampleDepthM	Integer	Combo Box (1; 3): Depth (meters) sample was taken. Should be 1 or 3 meter
waterTempC	Single	Text Box: Lake water temperature in Celsius
weather	Short Text	List Box (“Clear”; “Partly Cloudy”; “Overcast”; “Rain”): Limited choice desc
surfaceWaterCondition	Short Text	List Box (“Calm”; “Ripples”; “Choppy”; “White Caps”): Limited choice descr
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.

Field	Data Type	Description
analysisID	Short Text	Primary Ke
sampleID	Short Text	Lookup pri
analysisDate	Short Date	Text Box:
analystName	Short Text	Text Box:
frozen	Yes/No	Check Box:
filtered	Yes/No	Check Box:
dilution	Short Text	Combo Box
sampleTemperatureC	Single	Text Box:
parameter	Short Text	List Box/R
valueUGL	Single	Text Box:
analysisRep	Short Text	Option to
fluorometerType	Combo Box: (“Beagle”): this should be a Beagle but user can input other choices.	
photoAnalysis	Yes/No	Check Box:
commentAnalysis	Long Text	Text Box: