File name: Mtn\_Lakes\_current.DM1

Model name: Physical

Platform: Microsoft Access

Report date: 9/17/2018 2:20:37 PM

List of data tables in the data model:

tbl\_Amphibian\_Habitat Amphibian VES habitat data

tbl\_Amphibian\_Specimens Amphibian VES specimen data

tbl\_Amphibian\_Transect Amphibian snorkel transect data

tbl\_Amphibian\_Transect\_Counts Amphibian transect species counts

tbl\_Amphibian\_Transect\_Event Amphibian transect event details

tbl\_Amphibian\_VES\_Counts Amphibian VES observations

tbl\_Amphibian\_VES\_Event Amphibian VES event details

tbl\_Analysis\_Notes Sample location-specific comments related to data analysis

tbl\_Angling\_Counts Fish angling counts

tbl\_Angling\_Event Angling event details

tbl\_Array\_Level Temperature array level

tbl\_BMI\_Counts Benthic macroinvertebrate taxon counts

tbl\_BMI\_Event BMI event details

tbl\_BMI\_Habitat BMI habitat survey results

tbl\_BMI\_Sample Benthic macroinvertebrate lab data

tbl\_Coordinates Coordinate data collected during sampling events

tbl\_Edit\_Log Edit log for changes made to data after certification

tbl\_Events Data collection event for a given location

tbl\_Field\_Log General cover sheet information collected during site visits

tbl\_Fish\_VES\_Counts Fish VES species counts

tbl\_Fish\_VES\_Event Fish VES event details

tbl\_Fish\_VES\_Observations Fish VES results

tbl\_Gill\_Net\_Counts Gillnet survey counts by species

tbl\_Gill\_Net\_Event Fish gillnet survey event details

tbl\_Gill\_Net\_Specimens Gillnet survey specimens

tbl\_GPS\_Info GPS information associated with sampling event coordinates

tbl\_Images Images associated with sampling events

tbl\_Lake\_Level Lake level measurements

tbl\_Lake\_Level\_Continuous Lake level continuous data

tbl\_Locations Sample locations - places where data collection occurs

tbl\_Observers Observers for each sampling event

tbl\_QA\_Results Quality assurance query results for the working data set

tbl\_Sample\_Periods The span of dates during which data collection occurs

tbl\_Schedule Schedule for monitoring sites

tbl\_Secchi\_Depth Secchi depth measurements

tbl\_Sites Sample sites - grouped sample locations

tbl\_Target\_Coords Target coordinates for sample locations

tbl\_Task\_List Checklist of tasks to be completed at sampling locations

tbl\_Temperature\_Array Temperature array data

tbl\_Water\_Clarity\_Event Water clarity event details

tbl\_Water\_Column\_Profile Water column profile parameter measurement

tbl\_Water\_Sample Water sample details

tbl\_Water\_Sample\_Chemistry Water sample chemistry data

tbl\_Zooplankton\_Counts Zooplankton sample taxon counts

tbl\_Zooplankton\_Event Zooplankton sampling event details

tbl\_Zooplankton\_Sample Zooplankton sample details

**tbl\_Amphibian\_Habitat** - Amphibian VES habitat data

*Index Index columns*

Amphibian\_ves\_event\_ID Amphibian\_ves\_event\_ID

Site\_num Site\_num

pk\_tbl\_Amphibian\_Habitat (primary) Amphibian\_ves\_event\_ID, Site\_num

*Field name Index/key Data type Description*

Amphibian\_ves\_event\_ID primary (FK)\* int Amphibian VES sampling event

Site\_num primary \* tinyint Site number assigned to intensive search site

Substrate\_type\_1 (FK) text (4) First dominant substrate type

Substrate\_type\_2 (FK) text (4) Second dominant substrate type

Substrate\_type\_3 (FK) text (4) Third dominant substrate type

Substrate\_type\_4 (FK) text (4) Fourth dominant substrate type

Percent\_CWD tinyint Percentage of sample site covered by course woody debris (CWD)

*Constraint*: Is Null Or (>=0 And <=100)

CPOM\_present\_yn smallint Is course particulate organic matter (CPOM) present?

*Constraint*: Is Null Or 0 Or -1

Veg\_emerg\_yn smallint Is emergent vegetation present?

*Constraint*: Is Null Or 0 Or -1

Veg\_float\_yn smallint Is floating vegetation present?

*Constraint*: Is Null Or 0 Or -1

Veg\_submerg\_yn smallint Is submerged vegetation present?

*Constraint*: Is Null Or 0 Or -1

**tbl\_Amphibian\_Specimens** - Amphibian VES specimen data

*Index Index columns*

Amphibian\_ves\_event\_ID Amphibian\_ves\_event\_ID

Life\_stage\_code Life\_stage\_code

Species\_code Species\_code

pk\_tbl\_Amphibian\_Specimens (primary) Amphibian\_ves\_specimen\_ID

*Field name Index/key Data type Description*

Amphibian\_ves\_specimen\_ID primary \* int Unique identifier for each amphibian VES observation

Amphibian\_ves\_event\_ID indexed (FK)\* int Amphibian VES event ID

Species\_code indexed (FK)\* text (5) Taxon observed

Life\_stage\_code indexed (FK)\* text (2) Amphibian species life stage code

Total\_length\_mm int Specimen total length in millimeters

Snout-vent\_length\_mm int Snout vent length in millimeters

Comments text (255) Comments

**tbl\_Amphibian\_Transect** - Amphibian snorkel transect data

*Index Index columns*

Event\_ID Event\_ID

udx\_tbl\_Amphibian\_Transect (unique) Event\_ID, Transect\_number

pk\_tbl\_Amphibian\_Transect (primary) Amphibian\_transect\_ID

*Field name Index/key Data type Description*

Amphibian\_transect\_ID primary \* int Unique identifier for each transect

Event\_ID unique (FK)\* int Event ID of transect

Transect\_number unique text (255) Nearshore or offshore transect number

Start\_time datetime Transect start time

End\_time datetime Transect end time

Transect\_distance\_m tinyint Transect distance in meters

UTM\_east double Final UTM easting (zone 10N, meters), including any offsets and corrections

*Default*: 0

UTM\_north double Final UTM northing (zone 10N, meters), including any offsets and corrections

*Default*: 0

Dominant\_habitat text (4) Dominant habitat classification

Water\_temperature\_c single Water temperature in celsius

*Constraint*: Between 0 And 50 Or Is Null

**tbl\_Amphibian\_Transect\_Counts** - Amphibian transect species counts

*Index Index columns*

udx\_tbl\_Amphibian\_Transect\_Counts Amphibian\_transect\_ID, Species\_code, Life\_stage\_code

pk\_tbl\_Amphibian\_Transect\_Counts (primary) Amphibian\_transect\_count\_ID

Habitat\_code Habitat\_code

tbl\_Amphibian\_Transect\_CountsSpecies\_Code Species\_code

*Field name Index/key Data type Description*

Amphibian\_transect\_count\_ID primary \* int Unique identifier of amphibian species count

Amphibian\_transect\_ID indexed (FK)\* int Transect ID

Species\_code indexed (FK)\* text (5) Taxon observed

Life\_stage\_code indexed (FK) text (2) Amphinian species life stage code

Count smallint Total count for this species and life stage at this transect

*Constraint*: Between 1 And 5000

Count\_method text (8) Count method used (actual or estimated)

Specimen\_length\_mm tinyint Specimen length in millimeters

Comments text (255) Comments (including voucher specimens, photographs, etc.)

Habitat\_code indexed (FK) text (4) Amphibian substrate habitat classification

**tbl\_Amphibian\_Transect\_Event** - Amphibian transect event details

*Field name Index/key Data type Description*

Event\_ID primary (FK)\* int Event ID of amphibian transect sample

Air\_temperature\_c \* single Air temperature at time of sampling

*Constraint*: Between 0 And 50 Or Is Null

**tbl\_Amphibian\_VES\_Counts** - Amphibian VES observations

*Field name Index/key Data type Description*

Amphibian\_ves\_event\_ID primary (FK)\* int Amphibian VES event ID

Site\_num primary \* text (5) Site number or in-between sites

*Constraint*: Like "#" Or Like "##" Or Like "#-#" Or Like "#-##" Or Like "##-##" Or Like "##-#" Or Like "P-#"

Species\_code primary (FK)\* text (5) Taxon observed

Life\_stage\_code primary (FK)\* text (2) Amphibian species life stage code

Count smallint Total number of this species observed

*Constraint*: Between 1 And 5000

Count\_method primary \* text (8) Count method used (actual or estimated)

Sample\_method primary \* text (12) Sample method used (hand net or visual only)

Comments text (255) Comments (including voucher specimens, photographs, etc.)

Sort\_order \* int The order in which records were entered

**tbl\_Amphibian\_VES\_Event** - Amphibian VES event details

*Constraints*: : [Start\_time]<[End\_time]

*Index Index columns*

Event\_ID Event\_ID

udx\_tbl\_Amphibian\_VES\_Event (unique) Event\_ID, VES\_number

Num\_observers Num\_observers

Num\_sites Num\_sites

pk\_tbl\_Amphibian\_VES\_Event (primary) Amphibian\_ves\_event\_ID

*Field name Index/key Data type Description*

Amphibian\_ves\_event\_ID primary \* int Unique identifier for amphibian ves event

Event\_ID unique (FK)\* int Event ID of amphibian ves event

VES\_number unique \* text (6) Survey number (VES 1 or VES 2)

Start\_time datetime Start time of VES survey

End\_time datetime Stop time of VES survey

Num\_observers indexed tinyint Number of observers

Survey\_perimeter\_m smallint Survey perimeter distance in meters

Num\_sites indexed tinyint Number of intensive search sites

Total\_time\_min smallint Total time of VES survey in minutes

*Constraint*: >0

None\_seen\_tf bit Were no amphibians observed?

**tbl\_Analysis\_Notes** - Sample location-specific comments related to data analysis

*Index Index columns*

Location\_ID Location\_ID

pk\_tbl\_Analysis\_Notes (primary) Location\_ID, Analysis\_year

*Field name Index/key Data type Description*

Analysis\_year primary \* text (4) Analysis year (e.g., 2010)

Analysis\_notes memo Comments about this sample location related to the specified analysis year

Location\_ID primary \* int Sampling location

**tbl\_Angling\_Counts** - Fish angling counts

*Field name Index/key Data type Description*

Angling\_event\_ID primary (FK)\* int Unique identifier of angling event

Fish\_taxon\_code primary (FK)\* text (3) Fish species code

Fish\_life\_stage primary (FK)\* text (15) Fish life stage

Count smallint Total caught for this species and life stage

*Constraint*: Between 1 And 1500

**tbl\_Angling\_Event** - Angling event details

*Index Index columns*

Event\_ID (unique) Event\_ID

pk\_tbl\_Angling\_Event (primary) Angling\_event\_ID

*Field name Index/key Data type Description*

Angling\_event\_ID primary \* int

Event\_ID unique (FK)\* int

Total\_time\_fished\_hr int

None\_caught\_tf bit

**tbl\_Array\_Level** - Temperature array level

*Index Index columns*

udx\_tbl\_Array\_Level (unique) Event\_ID, Array\_level

Event\_ID Event\_ID

Logger\_ID Logger\_ID

pk\_tbl\_Array\_Level (primary) Array\_level\_ID

*Field name Index/key Data type Description*

Array\_level\_ID primary \* int Unique identifier for temperature array level

Event\_ID unique (FK)\* int Event ID of temperature array level

Array\_level unique (FK) text (9) Array level

Logger\_ID indexed text (255) Logger device ID

**tbl\_BMI\_Counts** - Benthic macroinvertebrate taxon counts

*Index Index columns*

BMI\_sample\_lab\_ID BMI\_sample\_ID

BMI\_taxon BMI\_taxon

pk\_tbl\_BMI\_Counts (primary) BMI\_sample\_ID, BMI\_taxon, BMI\_Life\_stage

*Field name Index/key Data type Description*

BMI\_sample\_ID primary (FK)\* int BMI sample ID of species count

BMI\_taxon primary (FK)\* text (100) Species taxon for BMI

BMI\_Life\_stage primary (FK)\* text (1) Species life stage code

Abundance \* smallint Species abundance

Unique\_yn bit Can the taxa be considered unique or is it likely an immature specimen that that is not a unique taxa?

**tbl\_BMI\_Event** - BMI event details

*Field name Index/key Data type Description*

Event\_ID primary (FK)\* int Event ID of BMI event

Linear\_distance\_interval\_m smallint Linear distance interval in meters

Time\_constraint\_min single Time constraint in minutes

Container\_count tinyint Number of containers for sample

Start\_time datetime Start time of sample collection

End\_time datetime End time of sample collection

**tbl\_BMI\_Habitat** - BMI habitat survey results

*Index Index columns*

pk\_tbl\_BMI\_Habitat (primary) Subsample\_site\_num, Event\_ID

Event\_ID Event\_ID

*Field name Index/key Data type Description*

Event\_ID primary (FK)\* int Event ID of BMI habitat survey

Subsample\_site\_num primary (FK)\* text (6) Sub-sample site assigned to intensive search site (prefix is "S" for sample, "R" for replicate)

Substrate\_type\_1 (FK) text (4) Most dominant substrate type

2nd most dominant substrate type

Substrate\_type\_2 (FK) text (4) Second most dominant substrate type

Substrate\_type\_3 (FK) text (4) Third most dominant substrate type

Substrate\_type\_4 (FK) text (4) Fourth most dominant substrate type

Percent\_CWD tinyint Percentage of sample site covered by course woody debris (CWD)

*Constraint*: Is Null Or (>=0 And <=100)

CPOM\_present\_yn smallint Is course particulate organic matter (CPOM) present?

*Constraint*: Is Null Or 0 Or -1

Veg\_emerg\_yn smallint Is emergent vegetation present?

*Constraint*: Is Null Or 0 Or -1

Veg\_float\_yn smallint Is floating vegetation present?

*Constraint*: Is Null Or 0 Or -1

Veg\_submerg\_yn smallint Is submerged vegetation present?

*Constraint*: Is Null Or 0 Or -1

**tbl\_BMI\_Sample** - Benthic macroinvertebrate lab data

*Index Index columns*

Event\_ID Event\_ID

udx\_tbl\_BMI\_Sample (unique) Event\_ID, BMI\_sample\_lab\_ID

pk\_tbl\_BMI\_Sample (primary) BMI\_sample\_ID

Lab Lab

*Field name Index/key Data type Description*

BMI\_sample\_ID primary \* int Unique identifier for BMI sample

Event\_ID unique (FK) int Event ID of BMI sample

BMI\_sample\_lab\_ID unique text (255) Unique sample ID used by analysis lab

Replicate\_tf bit Is the sample a replicate?

*Default*: False

Lab indexed (FK)\* text (12) Lab that performed the analysis

**tbl\_Coordinates** - Coordinate data collected during sampling events

*Index Index columns*

Coord\_label Coord\_label

Coord\_type Coord\_type

Coord\_updated Coord\_updated

Datum Datum

Event\_ID (unique) Event\_ID

Field\_coord\_source Field\_coord\_source

pk\_tbl\_Coordinates (primary) Coord\_ID

*Field name Index/key Data type Description*

Coord\_ID primary \* int Unique identifier for each coordinate record

Event\_ID unique (FK)\* int Sampling event of coordinate data collection

Is\_best bit Indicates whether this set of coordinates is the best available for this location

*Default*: False

UTM\_east double Final UTM easting (zone 10N, meters), including any offsets and corrections

UTM\_north double Final UTM northing (zone 10N, meters), including any offsets and corrections

Est\_horiz\_error double Estimated horizontal error (meters) of UTM\_east and UTM\_north

Elevation\_m single Elevation in meters, derived from GIS using final UTMs

Slope\_deg single Slope steepness in degrees, derived from GIS using final UTMs

Aspect\_deg single Slope aspect in degrees, derived from GIS using final UTMs

Coord\_label indexed text (25) Name of the coordinate feature (e.g., plot center, NW corner)

Field\_UTME double UTM easting (zone 10N) as recorded in the field

Field\_UTMN double UTM northing (zone 10N) as recorded in the field

Field\_datum text (5) Datum of field coordinates

Field\_horiz\_error double Field coordinate horizontal error (m)

Field\_offset\_m double Distance (meters) from the field coordinates to the target

*Constraint*: Is Null Or (>=0)

Field\_offset\_azimuth smallint Azimuth (degrees, declination corrected) from the coordinates to the target

*Constraint*: Is Null Or (>=0 And <=360)

Field\_coord\_source indexed text (12) Field coordinate data source

GPS\_file\_name text (50) GPS rover file used for data downloads

GPS\_model text (25) Make and model of GPS unit used to collect field coordinates

Source\_citation text (250) Name, date and scale of the source map

Coordinate\_notes memo Notes about this set of coordinates

Coord\_created\_date datetime Time stamp for record creation

*Default*: Now()

Coord\_updated indexed datetime Date of the last update to this record

Coord\_updated\_by text (50) Person who made the most recent edits

Coord\_type indexed (FK) text (20) Coordinate type stored in UTM\_east and UTM\_north: target, field, post-processed

Datum indexed (FK) text (5) Datum of UTM\_east and UTM\_north

*Default*: "NAD83"

**tbl\_Edit\_Log** - Edit log for changes made to data after certification

*Index Index columns*

Edit\_date Edit\_date

Edit\_type Edit\_type

pk\_tbl\_Edit\_Log (primary) Data\_edit\_ID

Project\_code Project\_code

Table\_affected Table\_affected

User\_name User\_name

*Field name Index/key Data type Description*

Data\_edit\_ID primary \* int Unique identifier for each data edit record

Project\_code indexed \* text (10) Project code, for linking information with other data sets and applications

*Default*: "MIa01"

Edit\_date indexed \* datetime Date on which the edits took place

*Default*: Now()

Edit\_type indexed \* text (12) Type of edits made: deletion, update, append, reformat, tbl design

Edit\_reason \* text (100) Brief description of the reason for edits

User\_name indexed \* text (50) Name of the person making data edits

Table\_affected indexed text (50) Table affected by edits

Fields\_affected text (200) Description of the fields affected

Records\_affected text (200) Description of the records affected

Data\_edit\_notes memo Comments about the data edits

**tbl\_Events** - Data collection event for a given location

*Index Index columns*

Certified\_date Certified\_date

Entered\_date Entered\_date

Location\_ID Location\_ID

Period\_ID Period\_ID

pk\_tbl\_Events (primary) Event\_ID

Project\_code Project\_code

Start\_date Start\_date

udx\_tbl\_Events (unique) Location\_ID, Start\_date, SOP\_type

Event\_ID (unique) Event\_ID

*Field name Index/key Data type Description*

Event\_ID primary \* int Unique identifier for each sampling event

Project\_code indexed \* text (10) Project code, for linking information with other data sets and applications

*Default*: "ACa02"

Start\_date unique \* datetime Start date of the sampling event

Start\_time datetime Start time of the sampling event

End\_time datetime End time of the sampling event (optional)

Declination text (25) Declination correction factor for measurement of compass bearings

Logistics\_notes memo Comments about logistics for reaching and sampling this location

Event\_notes memo Comments about the sampling event

Entered\_by text (50) Person who entered the data for this event

Entered\_date indexed datetime Date on which data entry occurred

*Default*: Now()

Updated\_by text (50) Person who made the most recent updates

Updated\_date datetime Date of the most recent edits

Verified\_by text (50) Person who verified accurate data transcription

Verified\_date datetime Date on which data were verified

Certified\_by text (50) Person who certified data for accuracy and completeness

Certified\_date indexed datetime Date on which data were certified

QA\_notes memo Quality assurance comments for the selected sampling event

Is\_excluded bit Flag to exclude the sampling event from data summary output

*Default*: False

SOP\_type unique text (255)

Old\_event\_ID int

Old\_Location\_ID int

Period\_ID indexed (FK) int Sample period during which this event occurred

Location\_ID unique (FK)\* int Sampling location for this event

**tbl\_Field\_Log** - General cover sheet information collected during site visits

*Field name Index/key Data type Description*

Event\_ID primary \* int Sampling event

Swell\_surge text (5) Relative level of water movement over the seaward portion of the site

*Default*: "---"

Wind text (5) Wind levels: L = 10 knots and under, M = 11-20 knots, H = over 20 knots

*Default*: "---"

Rain text (5) Precipitation at the site during the survey

*Default*: "---"

Wrack text (5) Unattached algae or other drift plants within the site

*Default*: "---"

Driftwood text (5) Sticks, branches and logs at the site

*Default*: "---"

Shells text (5) Levels of dead shells, especially mussel shells

*Default*: "---"

Dead\_animals text (5) Levels of dead invertebrates, fish, birds or mammals

*Default*: "---"

Trash text (5) Human debris including cans, bottles, plastics and metal items

*Default*: "---"

Oil\_tar text (5) Fresh or weathered oil/tar within the site

*Default*: "---"

Human\_animal\_notes text (255) Notes about human or animal observations

Other\_notes memo Other site visit notes

Site\_photos\_yn bit Indicates whether site photos were taken during the visit

*Default*: 0

Marker\_repairs\_yn bit Indicates whether plot marker repairs were made during the visit

*Default*: 0

Sand\_cores\_yn bit Indicates whether sand core observations were made during the visit

*Default*: 0

Beach\_profile\_yn bit Indicates whether beach profile measurements were recorded during the visit

*Default*: 0

Sediment\_yn bit Indicates whether sand core sediments were collected during the visit

*Default*: 0

Vouchers\_yn bit Indicates whether sand core species vouchers were collected during the visit

*Default*: 0

Sand\_photos\_yn bit Indicates whether sand core species photos were taken during the visit

*Default*: 0

Target\_plots\_yn bit Indicates whether MARINe target species point intercept plots were collected during the visit

*Default*: 0

Field\_scored\_yn bit Indicates whether the MARINe target species point intercept data were scored in the field (FALSE means that data were scored from photos back in the office)

*Default*: 0

Seastar\_plots\_yn bit Indicates whether seastar plot counts were made during the visit

*Default*: 0

Zone\_transects\_yn bit Indicates whether rocky community zone transects were sampled during the visit

*Default*: 0

Point\_intercept\_yn bit Indicates whether rocky community point intercept data were collected during the visit

*Default*: 0

Rocky\_quadrats\_yn bit Indicates whether rocky community quadrat counts were made during the visit

*Default*: 0

**tbl\_Fish\_VES\_Counts** - Fish VES species counts

*Index Index columns*

Fish\_taxon\_code Fish\_taxon\_code

Fish\_ves\_event\_ID Fish\_ves\_event\_ID

pk\_tbl\_Fish\_VES\_Counts (primary) Fish\_ves\_count\_ID

*Field name Index/key Data type Description*

Fish\_ves\_count\_ID primary \* int Unique identifier for fish ves ID

Fish\_ves\_event\_ID indexed (FK)\* int Fish ves event ID of observation

Sample\_method text (12) Sample method used (hand net or visual only)

Count\_method text (8) Count method used (actual or estimated)

Count\_n \* smallint Count of species

*Constraint*: Between 0 And 1500

Comments text (255) Comments regarding fish species observation

Fish\_taxon\_code indexed (FK)\* text (3) Fish species code

Fish\_life\_stage (FK) text (15) Fish life stage

**tbl\_Fish\_VES\_Event** - Fish VES event details

*Index Index columns*

Event\_ID Event\_ID

pk\_tbl\_Fish\_VES\_Event (primary) Fish\_ves\_event\_ID

*Field name Index/key Data type Description*

Fish\_ves\_event\_ID primary \* int Unique identifier of fish VES event

Event\_ID indexed (FK)\* int Event ID of fish VES event

Total\_time\_hr int Total survey time in hours

None\_seen\_tf bit Were no fish observed?

**tbl\_Fish\_VES\_Observations** - Fish VES results

*Index Index columns*

Fish\_ves\_event\_ID Fish\_ves\_event\_ID

Contact\_ID Contact\_ID

Fish\_taxon\_code Fish\_taxon\_code

pk\_tbl\_Fish\_VES\_Observations (primary) Fish\_ves\_observation\_ID

*Field name Index/key Data type Description*

Fish\_ves\_observation\_ID primary \* int Unique identifier for fish ves ID

Fish\_ves\_event\_ID indexed (FK)\* int Fish ves event ID of observation

Fish\_taxon\_code indexed (FK)\* text (3) Fish species code

Fish\_life\_stage text (255) Fish life stage

Comments text (255) Comments regarding fish species observation

Contact\_ID indexed (FK) text (50) Observer ID

**tbl\_Gill\_Net\_Counts** - Gillnet survey counts by species

*Index Index columns*

Fish\_taxon\_code Fish\_taxon\_code

Gill\_net\_event\_ID Gill\_net\_event\_ID

pk\_tbl\_Gill\_Net\_Counts (primary) Gill\_net\_count\_ID

*Field name Index/key Data type Description*

Gill\_net\_count\_ID primary \* int Unique identifier for gillnet species count

Gill\_net\_event\_ID indexed (FK)\* int Gillnet event ID of specimen

Count\_n \* tinyint Count of species

Fish\_taxon\_code indexed (FK)\* text (3) Fish species code

**tbl\_Gill\_Net\_Event** - Fish gillnet survey event details

*Index Index columns*

Event\_ID Event\_ID

udx\_tbl\_Gill\_Net\_Event (unique) Gill\_net\_number, Event\_ID

pk\_tbl\_Gill\_Net\_Event (primary) Gill\_net\_event\_ID

*Field name Index/key Data type Description*

Gill\_net\_event\_ID primary \* int Unique identifier for gillnet survey

Event\_ID unique (FK)\* int Event ID of gillnet survey

Gill\_net\_number unique \* text (12) Gillnet number

Start\_time datetime Start time of gillnet survey

End\_date datetime End date of gillnet survey

End\_time datetime End time of gillnet survey

Start\_date datetime Start date of gillnet survey

Total\_time\_min smallint Total time surveyed in minutes

*Constraint*: Between 1 And 10000

**tbl\_Gill\_Net\_Specimens** - Gillnet survey specimens

*Constraints*: : [Fork\_length\_mm]<[Total\_length\_mm]

*Index Index columns*

Fish\_taxon\_code Fish\_taxon\_code

Gill\_net\_event\_ID Gill\_net\_event\_ID

Gill\_net\_specimen\_ID Gill\_net\_specimen\_ID

pk\_tbl\_Gill\_Net\_Specimens (primary) Gill\_net\_specimen\_ID

*Field name Index/key Data type Description*

Gill\_net\_specimen\_ID primary \* int Unique identifier for gillnet specimen

Gill\_net\_event\_ID indexed (FK)\* int Gillnet event ID of specimen

Fish\_taxon\_code indexed (FK)\* text (3) Fish species code

Total\_length\_mm smallint Specimen total length in millimeters

Fork\_length\_mm smallint Specimen fork length in millimeters

Weight\_g smallint Specimen weight in grams

**tbl\_GPS\_Info** - GPS information associated with sampling event coordinates

*Index Index columns*

Datum GPS\_datum

Feat\_name Feat\_name

Feat\_type Feat\_type

GPS\_date GPS\_date

GPS\_file GPS\_file

Location\_ID Location\_ID

pk\_tbl\_GPS\_Info (primary) GPS\_ID

Num\_sat Num\_sat

Coord\_ID Coord\_ID

Corr\_type Corr\_type

*Field name Index/key Data type Description*

GPS\_ID primary \* int Unique identifier for the GPS record

Coord\_ID indexed int Coordinate identifier

Location\_ID indexed int Sample location, used for temporary links

Feat\_name indexed text (50) Feature name in data dictionary

Flag bit Internal flag used to identify records while matching with tbl\_Coordinates during post-season processing

*Default*: False

GPS\_file indexed text (50) GPS file name

GPS\_date indexed datetime Date GPS file was collected

GPS\_time datetime Time GPS file was collected

Corr\_type indexed text (50) GPS file correction type

GPS\_UTME double UTM easting in GPS unit

GPS\_UTMN double UTM northing in GPS unit

UTM\_zone text (5) UTM projection system zone

*Default*: "10N"

GPS\_datum indexed text (5) Datum of GPS coordinates

Feat\_type indexed text (20) Feature type (point, line, or polygon) collected with GPS

Data\_dict\_name text (50) Data dictionary name used to collect feature

Elev\_m double Elevation (meters) in GPS unit

Num\_sat indexed smallint Number of satellites tracked by GPS unit during data collection

GPS\_duration text (25) Length of time GPS file was open

Filt\_pos smallint Number of GPS positions exported from GPS file

PDOP double Position dilution of precision scale

HDOP double Horizontal dilution of precision scale

H\_err\_m double Horizontal error (meters)

V\_err\_m double Vertical error (meters)

Std\_dev\_m double Standard deviation (meters)

GPS\_process\_notes text (255) GPS file processing notes

Is\_better bit Indicates that the field crew thought this coordinate record to be an improvement over the current Is\_best coordinate

*Default*: False

**tbl\_Images** - Images associated with sampling events

*Index Index columns*

Event\_ID Event\_ID

Image\_label Image\_label

Image\_quality Image\_quality

Image\_type Image\_type

pk\_tbl\_Images (primary) Image\_ID

*Field name Index/key Data type Description*

Image\_ID primary \* int Unique identifier for each image record

Event\_ID indexed (FK)\* int Sampling event

Image\_label indexed text (25) Image caption or label

Image\_desc text (255) Brief description of the image bearing, perspective, etc.

Frame\_number text (10) Frame number for photographic images

Image\_date datetime Date on which the image was created, if different from the sampling event date

Image\_source text (50) Name of the person or organization that created the image

Orig\_format text (20) Format of the original image

Image\_edit\_notes text (200) Comments about the editing or processing performed on the image

Image\_filename text (100) Name of the image including extension (.jpg) but without the image path

Image\_notes memo Comments about the image

Image\_path text (255) Path for the image file

Active\_tf bit Indicates whether the image is still being used for navigation or interpretation

*Default*: True

Image\_type indexed (FK) text (20) Type of image

*Default*: "Ground photo"

Image\_quality indexed (FK) tinyint Quality of the image

Object\_format (FK) text (20) Format of the image

**tbl\_Lake\_Level** - Lake level measurements

*Field name Index/key Data type Description*

Event\_ID primary (FK)\* int Event ID of lake level measurement

Mean\_level\_cm \* single Mean lake level relative to benchmark

Comments text (255) General comments or notes regarding data for this benchmark

**tbl\_Lake\_Level\_Continuous** - Lake level continuous data

*Index Index columns*

Event\_ID Event\_ID

Logger\_ID Logger\_ID

pk\_tbl\_Lake\_Level\_Continuous (primary) Event\_ID, Datetime

*Field name Index/key Data type Description*

Datetime primary \* datetime

Event\_ID primary (FK)\* int

Depth\_m \* single

Logger\_ID indexed text (255)

**tbl\_Locations** - Sample locations - places where data collection occurs

*Index Index columns*

Location\_code Location\_code

Location\_status Location\_status

Location\_type Location\_type

pk\_tbl\_Locations (primary) Location\_ID

Site\_ID Site\_ID

udx\_tbl\_Locations (unique) Site\_ID, Location\_code, Location\_type

*Field name Index/key Data type Description*

Location\_ID primary \* int Unique identifier for each sample location

Location\_code unique text (10) Alphanumeric code for the sample location

Location\_name text (50) Brief colloquial name of the sample location (optional)

UTME\_public double UTM easting (zone 10N, meters). Note: in addition to any measurement error, these coordinates may have been offset up to 2 km from their actual position.

UTMN\_public double UTM northing (zone 10N, meters). Note: in addition to any measurement error, these coordinates may have been offset up to 2 km from their actual position.

Public\_offset text (50) Type of processing performed to make coordinates publishable

Travel\_notes memo Directions for relocating the sample location

Location\_desc memo Environmental description of the sampling location

Location\_notes memo Other notes about the sample location

Loc\_established datetime Date the sample location was established

Loc\_discontinued datetime Date the sample location was discontinued

Loc\_created\_date datetime Time stamp for record creation

*Default*: Now()

Loc\_updated datetime Date of the last update to this record

Loc\_updated\_by text (50) Person who made the most recent edits

Location\_type unique (FK)\* text (20) Indicates the type of sample location

Location\_status indexed (FK)\* text (10) Status of the sample location

*Default*: "Active"

Site\_ID unique (FK)\* int Site membership of the sample location

temp\_GIS\_OID int Temporary-Object ID from ArcGIS

Old\_Location\_ID int

**tbl\_Observers** - Observers for each sampling event

*Index Index columns*

Contact\_ID Contact\_ID

Event\_ID Event\_ID

Observer\_role Observer\_role

pk\_tbl\_Observers (primary) Event\_ID, Contact\_ID, Observer\_role

*Field name Index/key Data type Description*

Event\_ID primary (FK)\* int Sampling event identifier

Contact\_ID primary (FK)\* text (50) Observer identifier

Observer\_notes text (200) Comments about the observer specific to this sampling event

Observer\_role primary (FK)\* text (25) Role of the observer during data collection (optional)

**tbl\_QA\_Results** - Quality assurance query results for the working data set

*Index Index columns*

Data\_scope Data\_scope

pk\_tbl\_QA\_Results (primary) Query\_name, Time\_frame, Data\_scope

Query\_name Query\_name

Query\_result Query\_result

Query\_type Query\_type

Time\_frame Time\_frame

*Field name Index/key Data type Description*

Query\_name primary \* text (100) Name of the quality assurance query

Data\_scope primary \* tinyint Scope of the data included in queries: 0=Uncertified events only, 1=Both certified and uncertified, 2=Certified events only

Time\_frame primary \* text (30) Field season year or range of dates for the data being passed through quality assurance checks

Query\_type indexed text (20) Severity of data errors being trapped: 1=Critical, 2=Warning, 3=Information

Query\_result indexed text (50) Query result as the number of records returned the last time the query was run

Query\_run\_time datetime Run time of the query results

Query\_description memo Description of the query

Query\_expression memo Evaluation expression built into the query

Remedy\_desc memo Details about actions taken and/or not taken to resolve errors

Remedy\_date datetime When the remedy description was last edited

QA\_user text (50) Name of the person doing quality assurance

Is\_done bit Temporary flag to indicate that the user is done reviewing this query even if some records remain

*Default*: False

**tbl\_Sample\_Periods** - The span of dates during which data collection occurs

*Index Index columns*

Period\_updated Period\_updated

pk\_tbl\_Sample\_Periods (primary) Period\_ID

Protocol\_version Protocol\_version

Start\_date Start\_date

*Field name Index/key Data type Description*

Period\_ID primary \* int Unique identifier for each sample period

Start\_date indexed \* datetime Start date of the sample period

End\_date \* datetime End date of the sample period

Trip\_purpose text (200) Brief description of the purpose of the trip

Protocol\_version indexed text (100) Version of the protocol used for sampling

Trip\_notes memo Details about the trip

Period\_created datetime Time stamp for record creation

*Default*: Now()

Period\_updated indexed datetime Date of the last update to this record

Period\_updated\_by text (50) Person who made the most recent edits

**tbl\_Schedule** - Schedule for monitoring sites

*Index Index columns*

Calendar\_year Calendar\_year

pk\_tbl\_Schedule (primary) Calendar\_year, Site\_ID

Site\_ID Site\_ID

*Field name Index/key Data type Description*

Calendar\_year primary \* text (10) Calendar year for scheduled sampling (not necessarily actually sampled)

Schedule\_notes text (255) Comments about this schedule item (especially for out-of-rotation sites)

Site\_ID primary (FK)\* int Monitoring site

**tbl\_Secchi\_Depth** - Secchi depth measurements

*Field name Index/key Data type Description*

Water\_clarity\_event\_ID primary (FK)\* int Water clarity event

Secchi\_test\_num primary (FK)\* text (2) Indicates secchi test number (T1, T2 or T3)

Replicate\_tf primary \* bit Indicates if trial is part of replicate sample

*Default*: 0

Descend\_depth\_m single Descending depth in meters

Ascend\_depth\_m single Ascending depth in meters

Average\_depth\_m single Average depth in meters

**tbl\_Sites** - Sample sites - grouped sample locations

*Index Index columns*

Panel\_name Panel\_name

Panel\_type Panel\_type

Park\_code Park\_code

Park\_region Park\_region

pk\_tbl\_Sites (primary) Site\_ID

Site\_status Site\_status

Site\_updated Site\_updated

udx\_tbl\_Sites (unique) Site\_code

Display\_order Display\_order

*Field name Index/key Data type Description*

Site\_ID primary \* int Unique site identifier

Site\_code unique \* text (10) Unique alphanumeric code for each site

Site\_name text (25) Brief colloquial name of the site

Park\_region indexed text (25) Region of the park in which the site is located

Panel\_type indexed text (20) Sampling panel for the site

Panel\_name indexed text (10) Name of the sampling panel, used to group data for analysis

Site\_notes memo Comments about the site

Site\_established datetime Date the sample site was established

Site\_discontinued datetime Date the sample site was discontinued

Site\_created\_date datetime Time stamp for record creation

*Default*: Now()

Site\_updated indexed datetime Date of the last update to this record

Site\_updated\_by text (50) Person who made the most recent edits

Display\_order indexed tinyint For displaying records in geographic order from north to south

Park\_code indexed (FK)\* text (4) Park in which the site is located

Site\_status indexed (FK)\* text (10) Status of the site (i.e., proposed, active, rejected, retired)

*Default*: "Active"

**tbl\_Target\_Coords** - Target coordinates for sample locations

*Index Index columns*

pk\_tbl\_Target\_Coords (primary) Location\_ID

Target\_updated Target\_updated

*Field name Index/key Data type Description*

Location\_ID primary (FK)\* int Sample location

Target\_UTME double Target UTM easting (zone 10N)

Target\_UTMN double Target UTM northing (zone 10N)

Target\_datum text (5) Target coordinate datum

*Default*: "NAD83"

Target\_notes memo Notes about the target coordinates

Target\_created\_date datetime Time stamp for record creation

*Default*: Now()

Target\_updated indexed datetime Date of the last update to this record

Target\_updated\_by text (50) Person who made the most recent edits

**tbl\_Task\_List** - Checklist of tasks to be completed at sampling locations

*Index Index columns*

Date\_completed Date\_completed

pk\_tbl\_Task\_List (primary) Location\_ID, Request\_date, Task\_desc

Task\_status Task\_status

Location\_ID Location\_ID

Request\_date Request\_date

*Field name Index/key Data type Description*

Location\_ID primary (FK)\* int Sampling location

Request\_date primary \* datetime Date of the task request

*Default*: Now()

Task\_desc primary \* text (100) Brief description of the task

Requested\_by text (50) Name of the person making the initial request

Task\_status indexed \* text (50) Status of the task

*Default*: "Active"

Date\_completed indexed datetime Date the task was completed

Followup\_by text (50) Name of the person following up on or completing the task

Task\_notes memo Notes about the task

Followup\_notes memo Comments regarding what was done to follow-up on or complete this task

**tbl\_Temperature\_Array** - Temperature array data

*Field name Index/key Data type Description*

Array\_level\_ID primary (FK)\* int Array level ID of measurement

Logtime primary \* datetime Date and time of measurement

Temperature\_c \* single Temperature in celsius

Pressure\_psi single Absolute pressure in psi

**tbl\_Water\_Clarity\_Event** - Water clarity event details

*Index Index columns*

Event\_ID (unique) Event\_ID

pk\_tbl\_Water\_Clarity\_Event (primary) Water\_clarity\_event\_ID

*Field name Index/key Data type Description*

Water\_clarity\_event\_ID primary \* int Unique identifier for each water clarity event header

Event\_ID unique (FK)\* int Sampling event

Cloud\_cover (FK) text (6) Cloud cover percentage class

Glare (FK) text (8) Water surface glare recorded during secchi

Lake\_surface (FK) text (9) Water surface character determined during secchi

Sample\_site\_depth\_m single Secchi sample site depth in meters

Time\_of\_measurement datetime Secchi measurement start time

Bottom\_visible\_yn smallint Indicates whether lake bottom was visible during secchi survey

*Constraint*: Is Null Or 0 Or -1

Sonar\_used\_yn smallint Indicates whether sonar was used to determine depth

*Constraint*: Is Null Or 0 Or -1

Secchi\_value\_m single Final secchi value for the event

Secchi\_value\_greaterthan\_tf smallint Indicates that the final secchi value is an unknown value greater than the sample site depth

*Constraint*: Is Null Or 0 Or -1

Secchi\_value\_replicate\_m single Final secchi value for the event replicate

**tbl\_Water\_Column\_Profile** - Water column profile parameter measurement

*Index Index columns*

Event\_ID Event\_ID

pk\_tbl\_Water\_Column\_Profile (primary) Event\_ID, Depth\_bin\_m, Parameter, Replicate\_tf, Logtime

DPL\_code DPL\_code

Processing\_flag Processing\_flag

Quality\_flag Quality\_flag

*Field name Index/key Data type Description*

Event\_ID primary (FK)\* int Sampling event

Depth\_bin\_m primary \* single Depth bin of measurement

Parameter primary (FK)\* text (20) Parameter name

Replicate\_tf primary \* bit Indicates if record is part of replicate sample

*Default*: False

Logtime primary \* datetime Date and time of measurement

Parameter\_value single Parameter value

Processing\_flag indexed (FK) text (5) Data processing flag

Quality\_flag indexed (FK) text (5) Quality assessment flag

DPL\_code indexed \* text (2) Data processing level (DPL) code

*Default*: "R"

DPL\_date datetime Time stamp for the most recent data processing level (DPL) change

DPL\_user text (50) Individual associated with the most recent data processing level (DPL) change

**tbl\_Water\_Sample** - Water sample details

*Constraints*: : Not ([Replicate\_tf] And [Field\_blank\_tf])

*Index Index columns*

Water\_sample\_lab\_ID Water\_sample\_lab\_ID

pk\_tbl\_Water\_Sample (primary) Water\_sample\_ID

udx\_tbl\_Water\_Sample (unique) Event\_ID, Water\_sample\_depth, Water\_sample\_type, Replicate\_tf, Lab

*Field name Index/key Data type Description*

Water\_sample\_ID primary \* int Unique identifier for water sample

Event\_ID unique (FK)\* int Event ID of water sample

Water\_sample\_depth unique (FK)\* text (20) Water sample depth category

Water\_sample\_type unique (FK)\* text (26) Water sample type

Replicate\_tf unique smallint Indicates if the sample is a replicate

*Constraint*: -1 Or 0

Field\_blank\_tf smallint Indicates if the sample is a field blank

*Constraint*: -1 Or 0

Water\_sample\_lab\_ID indexed text (100) Sample ID used by lab

Water\_sample\_depth\_value single Water sample depth value

Lab unique (FK)\* text (12) Lab that performed analysis

**tbl\_Water\_Sample\_Chemistry** - Water sample chemistry data

*Index Index columns*

pk\_tbl\_Water\_Sample\_Chemistry (primary) Water\_sample\_ID, Lab\_parameter\_ID, Lab\_replicate\_tf

Lab\_parameter\_ID Lab\_parameter\_ID

Parameter\_units Parameter\_units

Water\_sample\_ID Water\_sample\_ID

DPL\_code DPL\_code

Processing\_flag Processing\_flag

Quality\_flag Quality\_flag

*Field name Index/key Data type Description*

Water\_sample\_ID primary (FK)\* int Water sample ID of measurement

Parameter\_value single Value of parameter

Lab\_parameter\_ID primary (FK)\* int Parameter name

Lab\_replicate\_tf primary \* smallint Indicates if value is a lab replicate

old\_Parameter text (20) Parameter name

Parameter\_units indexed (FK)\* text (255) Units of parameter

Processing\_flag indexed (FK) text (5) Data processing flag

Quality\_flag indexed (FK) text (5) Quality assessment flag

Comment text (50) Brief comments related to data processing and/or data quality

DPL\_code indexed \* text (2) Data processing level (DPL) code

*Default*: "R"

DPL\_date datetime Time stamp for the most recent data processing level (DPL) change

DPL\_user text (50) Individual associated with the most recent data processing level (DPL) change

**tbl\_Zooplankton\_Counts** - Zooplankton sample taxon counts

*Index Index columns*

Zooplankton\_taxon\_ID Zooplankton\_taxon\_ID

pk\_tbl\_Zooplankton\_Counts (primary) Zooplankton\_sample\_ID, Zooplankton\_taxon\_ID

*Field name Index/key Data type Description*

Zooplankton\_sample\_ID primary (FK)\* int Zooplankton sample ID of taxon

Zooplankton\_taxon\_ID primary (FK)\* smallint Zooplankton taxon

Abundance \* int Taxon abundance

**tbl\_Zooplankton\_Event** - Zooplankton sampling event details

*Index Index columns*

Event\_ID (unique) Event\_ID

pk\_tbl\_Zooplankton\_Event (primary) Zooplankton\_event\_ID

*Field name Index/key Data type Description*

Zooplankton\_event\_ID primary \* int Unique identifier for zooplankton event

Event\_ID unique (FK) int Event ID of zooplankton event

Tow\_length\_m single Tow length in meters

Sampling\_time datetime Time of sampling event

Net\_diameter\_cm smallint Net diameter in centimeters

**tbl\_Zooplankton\_Sample** - Zooplankton sample details

*Index Index columns*

pk\_tbl\_Zooplankton\_Sample (primary) Zooplankton\_sample\_ID

udx\_tbl\_Zooplankton\_Sample (unique) Event\_ID, Zooplankton\_sample\_lab\_ID

*Field name Index/key Data type Description*

Zooplankton\_sample\_ID primary \* int Unique identifier of zooplankton sample

Event\_ID unique (FK)\* int Event ID of zooplankton sample

Zooplankton\_sample\_lab\_ID unique \* text (255) Sample ID used in the lab

Replicate\_tf bit Indicates if sample is a replicate

*Default*: False

*Constraint*: -1 Or 0

Lab (FK)\* text (12) Lab that peformed the analysis of the sample

**tbx\_Lab\_Parameters** - List of water chemistry parameters by Lab

*Index Index columns*

udx\_tbx\_Lab\_Parameters (unique) Parameter, Parameter\_units, Lab

pk\_tbx\_Lab\_Parameters (primary) Lab\_parameter\_ID

*Field name Index/key Data type Description*

Lab\_parameter\_ID primary \* int

Lab unique (FK)\* text (12)

Parameter unique (FK)\* text (20)

Parameter\_units unique \* text (255)

**tlu\_Amphibian\_Life\_Stage** - List of amphibian life stage categories

*Field name Index/key Data type Description*

Life\_stage\_code primary \* text (2)

Life\_stage \* text (10)

**tlu\_Amphibian\_Taxon** - List of amphibian taxa

*Field name Index/key Data type Description*

Species\_Code primary \* text (5)

Scientific\_name \* text (255)

**tlu\_Array\_Level** - List of temperature array levels

*Field name Index/key Data type Description*

Array\_level primary \* text (9)

Sort\_order tinyint

**tlu\_BMI\_Life\_Stage** - List of BMI life stage categories

*Field name Index/key Data type Description*

BMI\_Life\_Stage primary \* text (1)

BMI\_Life\_Stage\_desc text (10)

Sort\_order tinyint

**tlu\_BMI\_Subsample\_Site** - List of BMI subsample sites

*Field name Index/key Data type Description*

Subsample\_site\_num primary \* text (6)

Sort\_order int

**tlu\_BMI\_Taxon** - List of BMI taxa

*Field name Index/key Data type Description*

BMI\_taxon primary \* text (100)

Cluster\_label \* text (100)

Analysis\_taxon text (100)

PNAMP\_taxon text (100)

Class text (100)

Order text (100)

Family text (100)

Subfamily text (100)

Tribe text (100)

Genus text (100)

Subgenus text (100)

Species text (100)

Group text (100)

Specificity text (100)

**tlu\_Cloud\_Cover** - List of cloud cover categories

*Field name Index/key Data type Description*

Cloud\_cover primary \* text (6)

Cloud\_cover\_desc text (100)

Sort\_order tinyint

**tlu\_Coord\_Source** - List of coordinate data sources (standard)

*Field name Index/key Data type Description*

Coord\_source primary \* text (12)

Coord\_source\_desc text (100)

Sort\_order tinyint

**tlu\_Coord\_Type** - List of coordinate types (standard)

*Field name Index/key Data type Description*

Coord\_type primary \* text (20)

Coord\_type\_desc text (100)

Sort\_order tinyint

**tlu\_Data\_Processing\_Level** - Lookup table for data processing (data quality) levels

*Index Index columns*

DPL\_label (unique) Alt\_label

udx\_DPL\_code (unique) DPL\_code

udx\_DPL\_label (unique) DPL\_label

udx\_Process\_order (unique) Process\_order

pk\_tlu\_Data\_Processing\_Level (primary) DPL\_code

*Field name Index/key Data type Description*

DPL\_code unique \* text (2) Unique alpha code for data processing level

DPL\_label unique \* text (20) Unique name for the data processing level

Alt\_label unique text (20) Optional alternate label for the data processing level, to crosswalk with local standards and terminology

DPL\_short\_desc text (100) Short description of data processing level

DPL\_summary \* memo Long description of data processing level

Is\_active bit Indicates whether the data processing level is appropriate for given application/protocol

*Default*: True

Process\_order unique \* int Used to enforce the forward progress of data processing levels and prevent moving backwards

**tlu\_Datum** - List of coordinate datum codes (standard)

*Field name Index/key Data type Description*

Datum primary \* text (5)

Datum\_desc text (50)

Sort\_order tinyint

**tlu\_Edit\_Type** - List of the types of post-certification edits made to data (standard)

*Field name Index/key Data type Description*

Edit\_type primary \* text (12)

Edit\_type\_desc text (100)

Sort\_order tinyint

**tlu\_Fish\_Life\_Stage** - List of fish life stage categories

*Field name Index/key Data type Description*

Fish\_life\_stage primary \* text (15)

Fish\_life\_stage\_desc text (10)

Sort\_order tinyint

**tlu\_Fish\_Taxon** - List of fish taxa

*Field name Index/key Data type Description*

Fish\_taxon\_code primary \* text (3)

Common\_name text (255)

**tlu\_Glare** - List of glare categories

*Field name Index/key Data type Description*

Glare primary \* text (8)

Glare\_desc text (100)

Sort\_order tinyint

**tlu\_GPS\_Model** - List of GPS devices used to collect coordinate data (template)

*Field name Index/key Data type Description*

GPS\_model primary \* text (25)

Sort\_order tinyint

**tlu\_Habitat\_Substrate\_Type** -

*Field name Index/key Data type Description*

Substrate\_type primary \* text (4)

Substrate\_type\_desc text (255)

Sort\_order tinyint

**tlu\_Image\_Format** - List of image, map, and photographic formats (template)

*Field name Index/key Data type Description*

Image\_format primary \* text (12)

Image\_format\_desc text (100)

Sort\_order tinyint

**tlu\_Image\_Quality** - List of quality ranks for images (template)

*Index Index columns*

pk\_tlu\_Image\_Quality (primary) Quality\_code

tlu\_Image\_QualityImage\_quality Image\_quality

*Field name Index/key Data type Description*

Quality\_code primary \* tinyint

Image\_quality indexed \* text (20)

Image\_quality\_desc text (100)

**tlu\_Image\_Type** - List of image types (template)

*Field name Index/key Data type Description*

Image\_type primary \* text (12)

Image\_type\_desc text (100)

Sort\_order tinyint

**tlu\_Lab** - List of labratories

*Field name Index/key Data type Description*

Lab primary \* text (12)

Lab\_desc text (255)

SOP \* text (15)

**tlu\_Lake\_Surface** - List of lake surface categories

*Field name Index/key Data type Description*

Lake\_surface primary \* text (9)

Lake\_surface\_desc text (100)

Sort\_order tinyint

**tlu\_Location\_Type** - List of location type codes (template)

*Field name Index/key Data type Description*

Location\_type primary \* text (20)

Loc\_type\_desc text (200)

Sort\_order tinyint

**tlu\_Observer\_Role** - List of observer role assignments (template)

*Field name Index/key Data type Description*

Observer\_role primary \* text (25)

Role\_desc text (100)

Sort\_order tinyint

**tlu\_Parameter\_Chemistry** -

*Field name Index/key Data type Description*

Parameter primary \* text (20)

Sample\_type \* text (26)

**tlu\_Parameter\_Profile** - List of water profile parameters

*Field name Index/key Data type Description*

Parameter primary \* text (20)

Parameter\_units \* text (10)

Parameter\_desc text (50)

**tlu\_Parameter\_Units** -

*Field name Index/key Data type Description*

Parameter\_units primary \* text (255)

**tlu\_Parameter\_Units\_Sample\_Types** -

*Field name Index/key Data type Description*

Parameter\_units primary (FK)\* text (255)

Sample\_type primary \* text (26)

**tlu\_Parks** - List of NCCN parks and park codes (standard)

*Field name Index/key Data type Description*

Park\_code primary \* text (4)

Park\_name text (50)

**tlu\_Processing\_Flag** - List of data processing flags for water chemistry and water profile data

*Index Index columns*

Flag\_label (unique) Flag\_label

pk\_tlu\_QA\_Flag (primary) Flag\_code

*Field name Index/key Data type Description*

Flag\_code primary \* text (5)

Flag\_label unique \* text (12)

Flag\_desc text (150)

**tlu\_Project\_Crew** - List of personnel associated with a project (template)

*Index Index columns*

Contact\_location Contact\_location

Contact\_updated Contact\_updated

First\_name First\_name

Last\_name Last\_name

Organization Organization

pk\_tlu\_Project\_Crew (primary) Contact\_ID

Project\_code Project\_code

*Field name Index/key Data type Description*

Contact\_ID primary \* text (50) Unique identifier for the individual (Lastname\_Firstname\_MI)

Project\_code indexed \* text (10) Project code, for linking information with other data sets and applications

*Default*: "ACa02"

Last\_name indexed \* text (24) Last name

First\_name indexed text (20) First name

Middle\_init text (4) Middle initials

Organization indexed text (50) Employer (e.g., NPS-MORA)

Position\_title text (50) Position title held by the individual

Contact\_is\_active bit Indicates that the contact record is currently available for data entry pick lists

*Default*: True

Email text (50) Email address

Work\_voice text (25) Work phone number

Work\_ext text (5) Work extension number

Mobile\_voice text (25) Mobile phone number

Home\_voice text (25) Home phone number

Fax text (25) Fax number

Contact\_location indexed text (255) Where the individual is located

Contact\_notes memo Notes about the contact

Contact\_created datetime Time stamp for record creation

*Default*: Now()

Contact\_updated indexed datetime Date of the last update to this record

Contact\_updated\_by text (50) Person who made the most recent edits

**tlu\_Quality\_Flag** - List of data quality assessment flags

*Index Index columns*

Flag\_label (unique) Flag\_label

pk\_tlu\_QA\_Flag (primary) Flag\_code

*Field name Index/key Data type Description*

Flag\_code primary \* text (5)

Flag\_label unique \* text (12)

Flag\_desc text (150)

**tlu\_Record\_QA\_Status** - List of record status codes to indicate the quality assurance status of records (standard)

*Index Index columns*

Rec\_status\_label (unique) Rec\_status\_label

pk\_tlu\_Record\_QA\_Status (primary) Rec\_status\_ID

*Field name Index/key Data type Description*

Rec\_status\_ID primary \* tinyint Order in which the record status labels are shown

Rec\_status\_label unique \* text (12) Status label to indicate the quality assurance status of the record

Status\_display text (255) Abbreviated description text shown to the user via the application

Status\_desc memo Full description of the quality assurance status

Criteria text (255) Query criteria used to define the record status

**tlu\_Secchi\_Test** - List of secchi test trials

*Field name Index/key Data type Description*

Secchi\_test\_num primary \* text (2)

Sort\_order tinyint

**tlu\_Site\_Status** - List of status codes for sampling stations (standard)

*Field name Index/key Data type Description*

Site\_status primary \* text (10)

Site\_status\_desc text (200)

Sort\_order tinyint

**tlu\_Water\_Sample\_Depth** - List of water chemistry sample depths

*Field name Index/key Data type Description*

Water\_sample\_depth primary \* text (20)

Sort\_order tinyint

**tlu\_Water\_Sample\_Type** - List of water chemistry sample types

*Field name Index/key Data type Description*

Sample\_type primary \* text (26)

Sample\_type\_short \* text (12)

Sort\_order tinyint

**tlu\_Zooplankton\_Taxon** - List of zooplankton taxa

*Index Index columns*

udx\_tlu\_Zooplankton\_Taxon (unique) Genus, Species

pk\_tlu\_Zooplankton\_Taxon (primary) Zooplankton\_taxon\_ID

*Field name Index/key Data type Description*

Zooplankton\_taxon\_ID primary \* smallint

Taxa\_group \* text (100)

Genus unique text (100)

Species unique text (100)

**tsys\_App\_Releases** - Application table - Application release history

*Index Index columns*

PrimaryKey (primary) Release\_ID

udx\_tsys\_App\_Releases (unique) Release\_date, Database\_title, Version\_number

old\_Release\_ID old\_Release\_ID

Release\_ID Release\_ID

*Field name Index/key Data type Description*

Release\_ID primary \* int Unique identifier for each release record

Release\_date unique \* datetime Date of the release

Database\_title unique \* text (100) Title of the database

Version\_number unique \* text (20) Version control number

File\_name text (50) Filename, used to identify older versions of the database

Release\_by text (50) Person who issued the release

Release\_notes memo Release notes, which may include a summary of revisions

Is\_supported \* tinyint Indicates the support level of this release: 0=user must use a newer version; 1=supported but newer available; 2=full suport, current version

*Default*: 2

old\_Release\_ID indexed text (50) GUID Release ID

**tsys\_Bug\_Reports** - Application table - Application bugs and development history

*Index Index columns*

Fix\_date Fix\_date

pk\_tsys\_Bug\_Reports (primary) Bug\_ID

Release\_ID Release\_ID

Report\_date Report\_date

*Field name Index/key Data type Description*

Bug\_ID primary \* int Unique identifier for each bug record

Release\_ID indexed (FK)\* int Database release version of the report

Report\_date indexed \* datetime Date the bug was reported

*Default*: =Date()

Found\_by text (50) Person who found the bug

Reported\_by text (50) Person who filled out this bug report

Report\_details memo Nature of the bug report

Fix\_date indexed datetime Date the bug was fixed

Fixed\_by text (50) Person who fixed the bug

Fix\_details memo Notes on fix

**tsys\_Logins** - Application table - Log of user access to the database through the front-end

*Field name Index/key Data type Description*

Time\_stamp primary \* datetime Time stamp of activity record

*Default*: Now()

User\_name primary \* text (50) Login name of the user

Action\_taken text (50) Action taken by the user

**tsys\_User\_Roles** - Application table - Determines user access privileges through the front-end

*Field name Index/key Data type Description*

User\_name primary \* text (50) Network login

User\_role \* text (50) Database application role, used to determine the access level