Data Dictionary for:

NETN_RAM_20201026.accdb

Report Summary

Table Names	Table Descriptions
tbl_Location	Critical information about each site, such as its location. Each site should have only one record. WHEN COLLECTED: When a new plot is established.
tbl_Protocol	Documents which protocol was used for each visit. WHEN COLLECTED: Collected for each visit.
tbl_Visit	Critical information for each visit, such as sampling date and panel. Every data collection visit to a site should have one and only one event. WHEN COLLECTED: Collected for each visit.
tbl_Visit_Inundation	Indicators of recent inundation for form H-1: hydrology in the AA. WHEN COLLETED: Collected for each visit.
tbl_Visit_Metadata	Record of changes made to data after data have been certitifed. WHEN COLLECTED: After any data are changed post ceritification.
tbl_Visit_Saturation	Indicators of recent saturation for form H-1: hydrology in the AA. WHEN COLLETED: Collected for each visit.
tbl_Visit_Surface	Indicators of surface water or saturation for form H-1: hydrology in the AA. WHEN COLLETED: Collected for each visit.
tbl_Water_Level	Hourly water level measurements collected in shallow wells or above ground for barometric pressure corrections. WHEN COLLECTED: Collected in the 8 sentinel sites on Mount Desert Island continuously
tbl_Well	Data associated with each shallow well in the 8 sentinel sites on Mount Desert Island. WHEN COLLECTED: Every time a well is established in a new site or moved to a different location in the same site.
tbl_Well_Visit	Information collected during each well visit. WHEN COLLECTED: Collected in the 8 sentinel sites on Mount Desert Island once every spring and once every fall.
tlu_AA_Layout	Defines all possible layouts for the shape of the AA
tlu_Buffer_Direction	Defines all transects examined for Buffer width
tlu_Class	Defines all possible Hydrogeomorphic Classes
tlu_Contact	Contact information for project-related personnel
tlu_Contact_Role	Defines all possible roles that contacts can perform at a site.
tlu_Difficulty	Defines possible reasons that a site is difficult to access.
tlu_Hydrologic_Stressor	Lists all hydrology stressors in the AA that each site is assessed for in the H-1 form.
tlu_Hydrologic_Stressor_Category	Defines the different hydrology stressor types listed on the H-1 form.
tlu_Hydrology	Defines wetland hydrology indicators present at a site during the initial point verification and based on the PV-1 form.
tlu_Invasive_Coverage	Defines all possible cover classes of invasive species cover for USA-RAM Metric 10
tlu_Perimeter	Defines all possible percent classes for percent of AA having a natural buffer
tlu_Plant	No description
tlu_Predominant_Category	Defines all possible Cowardin wetland types that are part of the target population and should be included.
tlu_Requirement	Defines possible requirements to access site in PV-1 form
tlu_Strata	Defines all possible strata examined for USA-RAM 05 and 06.
tlu_Stressor	Lists all stressors that are examined at each site across multiple USA-RAM metrics and the H-1 form
tlu_Stressor_Category	Defines whether stressor is assessed in the (AA) Assessment Area or (BZ) Buffer Zone
tlu_Sub_Class	Defines all possible Hydrogeomorphic subclasses
tlu_Topo_Complexity	Defines all possible indicators of Topographic Complexity for USA-RAM 3
tlu_Vert_Complexity	Defines all possible percent cover classes for vertical strata in USA-RAM 5.
tlu_Water	Definese all possible water sources for the H-1 form

xref_Buffer_Stressor	Cross-reference between tbl_Visit and tlu_Stressor where Stressor_ID is 1-57 or 108-114 (USA-RAM 2). WHEN COLLECTED: Collected for each visit.
xref_Buffer_Width	Cross-reference between tbl_Visit and tlu_Buffer_Direction for USA-RAM 1. WHEN COLLECTED: Collected for each visit.
xref_Hydro_Period_Stressor	Cross-reference between tbl_Visit and tlu_Stressor where Stressor_ID is 71-81 (USA-RAM 8). WHEN COLLECTED: Collected for each visit
xref_Location_Difficulty	Cross-reference between tbl_Location and tlu_Difficulty. WHEN COLLECTED: Collected only when there's a difficulty in accessing a site.
xref_Location_Hydrology	Cross-reference between tbl_Location and tlu_Hydrology. WHEN COLLECTED: Only collected during the initial point vertification process and only if indicators are present.
xref_Location_Requirement	Cross-reference between tbl_Location and tlu_Requirement. WHEN COLLECTED: Only collected if there are requirements for access to a site.
xref_Plant_Complexity	Cross-reference between tbl_Visit and tlu_Strata for USA-RAM 6. WHEN COLLECTED: Collected for each visit.
xref_Species_List	Cross-reference between tbl_Visit and tlu_Plant to list all species observed by quarter in each site. WHEN COLLECTED: Collected for each visit.
xref_Substrate_Stressor	Cross-reference between tbl_Visit and tlu_Stressor where Stressor_ID is between 82 and 93 (USA-RAM 9). WHEN COLLECTED: Collected for each visit.
xref_Topo_Complexity	Cross-reference between tbl_Visit and tlu_Topo_Complexity (USA-RAM 4). WHEN COLLECTED: Collected for each visit.
xref_Vegetation_Stressor	Cross-reference between tbl_Visit and tlu_Stressor where Stressor_ID is 94-106 or 123-125 (USA-RAM 11). WHEN COLLECTED: Collected for each visit.
xref_Vert_Complexity	Cross-reference between tbl_Visit, tlu_Strata, and tlu_Verti_Complexity for USA-RAM 5. WHEN COLLECTED: Collected at each visit.
xref_Visit_Contact	Cross-reference between tbl_Visit, tlu_Contact, and tlu_Contact_Role. WHEN COLLECTED: Collected for each visit.
xref_Visit_Hydrologic_Stressor	Cross-reference between tbl_Visit, tlu_Hydrologic_Stressor, and tlu_Hydrologic_Stressor_Category (H-1 form). WHEN COLLECTED: Collected for each visit.
xref_Visit_Water	Cross-reference between tbl_Visit and tlu_Wate (H-1 form). WHEN COLLECTED: Collected for each visit.
xref_Water_Stressor	Cross-reference between tbl_Visit and tlu_Stressor where Stressor_ID is 58-70 or 116-120 (USA-RAM 7). WHEN COLLECTED: Collected for each visit.
xref_Well_Contact	Cross-reference between tbl_Well_Visit and tlu_Contact. WHEN COLLECTED: Collected at teach of the 8 sentinel sites with wells in spring and fall.

Number of Tables: **48**

Table Name	Table Description
tbl_Location	**Critical information about each site, such as its location. Each site should have only one record. WHEN COLLECTED: When a new plot is established.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Code	☐	☐	Code
Contact_ID	☐	☐	Contact_ID
Layout_ID	☐	☐	Layout_ID
Location_ID	☐	☐	Location_ID1
Location_ID	☑	☑	PrimaryKey
Layout_ID	☐	☐	tlu_AA_Layouttbl_Location
Class_ID	☐	☐	tlu_Classtbl_Location
Contact_ID	☐	☐	tlu_Contacttbl_Location
Predominant_Category_ID	☐	☐	tlu_Predominant_Categorytbl_Location
Sub_Class_ID	☐	☐	tlu_Sub_Classtbl_Location

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Code	Text	11	Yes	Site ID. ACCEPTED VALUES: R-01 to R-40	
Location_ID	Long Integer	4	Yes	Unique Identifier for each record/site location in the table. ACCEPTED VALUES: unique numbers.	
Panel	Double	8	Yes	Panel that Rapid Assessment Sites are visited based on GRTS sample. ACCEPTED VALUES: Null for NWCA sites, 1-4 for RAM sites.	
Date_Established	Date/Time	8	Yes	Date site was established. ACCEPTED VALUES: Month/Day/Year after 07/01/2011	
Contact_ID	Long Integer	4	Yes	Contact ID for person who verified/established plot. ACCEPTED VALUES: Follow tlu_Contact	
Directions	Memo	0	Yes	Directions to site, written and updated by field crews following each sampling visit. ACCEPTED VALUES: No restrictions on text.	
Is_Eval_Point	Text	255	Yes	Denotes whether center of AA was evaluated (Yes) or nearest possible location to point (Nearest Practicable). ACCEPTED VALUES: Yes/Nearest Practicable	
Easting	Double	8	Yes	X Coordinate for center of AA. ACCEPTED VALUES: > 526770 and <578850	
Northing	Double	8	Yes	Y Coordinate for center of AA. ACCEPTED VALUES: > 4871500 and <4921530	
UTM_Zone	Text	3	Yes	UTM Zone for center pf AA. ACCEPTED VALUES: 19N	Like "##[a-z]"
Access_Comments	Text	255	No	Comments related to accessing site. ACCEPTED VALUES: No restrictions on text.	
Location_Comments	Text	255	No	Comments about the location. ACCEPTED VALUES: No restrictions on text.	
Layout_ID	Long Integer	4	Yes	Design of plot layout. ACCEPTED VALUES: 1= POINT is center of AA; 2= AA is shifted	

Table Name				Table Description
Area	Other	16	Yes	Area of the AA in hectares. ACCEPTED VALUES: 0.5
Predominant_Category_ID	Text	255	Yes	Predoinant Cowardin wetland type in AA. ACCEPTED VALUES: Follow tlu_Category_ID
Class_ID	Long Integer	4	Yes	Hydrogeomorphic Class Code. ACCEPTED VALUES: Follow tlu_Class
Sub_Class_ID	Long Integer	4	No	Hydrogeomorphic Sub Class Code. ACCEPTED VALUES: Follow tlu_Class
Notes_AA2	Memo	0	No	Notes specific to the AA that are written and updated by field crews following each sampling visit. ACCEPTED VALUES: No restrictions on text.

tbl_Protocol

Documents which protocol was used for each visit. WHEN COLLECTED: Collected for each visit.

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
ID	☑	☑	PK_tluProtocol

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
ID	Long Integer	4	Yes	Unique ID for protocol version. ACCEPTED VALUES: >=1 and unique	
Version	Text	50	Yes	Report number for the version of the NETN permanent freshwater wetland protocol used at each visit.	
Description	Text	100	Yes	Title of NETN protocol.	

Table Name	Table Description
tbl_Visit	**Critical information for each visit, such as sampling date and panel. Every data collection visit to a site should have one and only one event. WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID	☑	☑	PrimaryKey
Location_ID	☐	☐	SiteID
Location_ID	☐	☐	tbl_Locationtbl_Visit
Invasive_Coverage_ID	☐	☐	tluInvasiveCoveragetblSiteVisits
Perimeter_ID	☐	☐	tluPerimetertblSiteVisits
Visit_ID	☐	☑	Visit_ID_

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Visit_ID	Long Integer	4	Yes	Unique Identifier for each visit to a plot/ record in the table. ACCEPTED VALUES: >= 1 and unique numbers.	
Location_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Locations for this site.	
Date	Date/Time	8	Yes	Date site was sampled. ACCEPTED VALUES: Month/Day/Year after 07/01/2011	
AA_Point	Memo	0	Yes	Denotes whether initial POINT can be established as the center of the AA. ACCEPTED VALUES: Yes/No	"Yes" Or "No"
Notes_AA_Point	Memo	0	No	Notes related to AA_Point. ACCEPTED VALUES: No restrictions on text.	
Weather	Memo	0	Yes	Weather on the day of sampling. ACCEPTED VALUES: No restrictions on text.	
Prior_Weather	Memo	0	No	Weather on the week prior to sampling. ACCEPTED VALUES: No restrictions on text.	
Depth_1	Long Integer	4	No	Depth measurement 1 of deepest ditch. ACCEPTED VALUES: Null where no ditch is present. >0 m where ditch is present.	
Depth_2	Long Integer	4	No	Depth measurement 2 of deepest ditch. ACCEPTED VALUES: Null where no ditch is present. >0 m where ditch is present.	
Depth_3	Long Integer	4	No	Depth measurement 3 of deepest ditch. ACCEPTED VALUES: Null where no ditch is present. >0 m where ditch is present.	
Perimeter_ID	Long Integer	4	Yes	Percent of AA Perimeter that is in natural land use. ACCEPTED VALUES: 1 is <25%; 2 is 26-50%; 3 is 51=75%; 4 is >75%.	
Mosaic_Complexity	Memo	0	Yes	USA-RAM Metric 4: Patch Mosaic Complexity. ACCEPTED VALUES: 1-4.	>=1 And <=4
Invasive_Coverage_ID	Long Integer	4	Yes	Percent cover class of invasive species in AA estimated for USA-RAM 10. ACCEPTED VALUES: Follow tlu_Invasive_Coverage	
Ditch_Present	Memo	0	Yes	Denotes whether a ditch is present or not in AA. ACCEPTED VALUES: Yes/No	
Checked	Memo	0	Yes	Indicates that visit cleared the checker and data were QCed in FileMaker app. Sites sampled before FM app are N.	

Table Name				Table Description
Data_Verified_By	Long Integer	4	Yes	Contact ID of person who verified the data for that visit. ACCEPTED VALUES: Follow tlu_Contacts
Notes_RAM10	Memo	0	No	Notes for USA-RAM Metric 10. ACCEPTED VALUES: No restrictions on text.
Notes_RAM01	Memo	0	No	Notes for USA-RAM 1. ACCEPTED VALUES: No restrictions on text.
Notes_RAM02	Memo	0	No	Notes for USA-RAM 2. ACCEPTED VALUES: No restrictions on text.
Notes_Topographic_Complexity	Memo	0	No	Notes for USA-RAM 3. ACCEPTED VALUES: No restrictions on text.
Notes_Mosaic_Complexity	Memo	0	No	Notes for USA-RAM 4. ACCEPTED VALUES: No restrictions on text.
Notes_RAM05	Memo	0	No	Notes for USA-RAM 5. ACCEPTED VALUES: No restrictions on text.
Notes_RAM06	Memo	0	No	Notes for USA-RAM 6. ACCEPTED VALUES: No restrictions on text.
Notes_RAM07	Memo	0	No	Notes for USA-RAM 7. ACCEPTED VALUES: No restrictions on text.
Notes_RAM08	Memo	0	No	Notes for USA-RAM 8. ACCEPTED VALUES: No restrictions on text.
Notes_RAM09	Memo	0	No	Notes for USA-RAM 9. ACCEPTED VALUES: No restrictions on text.
Notes_RAM11	Memo	0	No	Notes for USA-RAM 11. ACCEPTED VALUES: No restrictions on text.
Notes_Species	Memo	0	No	Notes on timed species search. ACCEPTED VALUES: No restrictions on text.
Notes_H1	Memo	0	No	Note on H-1 Form (hydrology assessment). ACCEPTED VALUES: No restrictions on text.
Visit_Type	Text	255	Yes	Denotes with the visit is a true visit or QA/QC visit. ACCEPTED VALUES: VS or QAQC
Invasive_Cover	Double	8	Yes	Percent cover of invasive species in the AA. ACCEPTED VALUES: 0-100.
Sphagnum_Cover	Double	8	Yes	Percent cover of bryophytes in the AA. ACCEPTED VALUES: 0-100.
Certification_Level	Text	255	Yes	Indicates whether data are raw (R), provisional (P), accepted (A), or certified (C).
Protocol_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Protocol, which indicates the protocol version used for each visit. ACCEPTED VALUES: >=1

Table Name	Table Description
tbl_Visit_Inundation	**Indicators of recent inundation for form H-1: hydrology in the AA. WHEN COLLETED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
AlgalMatOrCrust	Long Integer	4	Yes	Denotes presence/absence of Algal Mat or Crust. ACCEPTED VALUES: -1 or 0	
AquaticInvertebrate	Long Integer	4	Yes	Denotes presence/absence of Aquatic Invertebrates. ACCEPTED VALUES: -1 or 0	
BioticCrust	Long Integer	4	Yes	Denotes presence/absence of Biotic Crust. ACCEPTED VALUES: -1 or 0	
DrainagePatterns	Long Integer	4	Yes	Denotes presence/absence of Drainage Patterns. ACCEPTED VALUES: -1 or 0	
DriftDeposits	Long Integer	4	Yes	Denotes presence/absence of Drift Deposits. ACCEPTED VALUES: -1 or 0	
Flag	Memo	0	No	Flag for a note. ACCEPTED VALUES: No restrictions on text.	
IronDeposits	Long Integer	4	Yes	Denotes presence/absence of Iron Deposits. ACCEPTED VALUES: -1 or 0	
MarlDeposits	Long Integer	4	Yes	Denotes presence/absence of Marl Deposits. ACCEPTED VALUES: -1 or 0	
MossTrimLines	Long Integer	4	Yes	Denotes presence/absence of Moss Trim Lines. ACCEPTED VALUES: -1 or 0	
SaltCrust	Long Integer	4	Yes	Denotes presence/absence of Salt Crust. ACCEPTED VALUES: -1 or 0	
SedimentDeposits	Long Integer	4	Yes	Denotes presence/absence of Sediment Deposits. ACCEPTED VALUES: -1 or 0	
SparselyVegetatedConcaveSurfaces	Long Integer	4	Yes	Denotes presence/absence of Sparsely Vegetated Concave Surfaces. ACCEPTED VALUES: -1 or 0	
SurfaceSoilCracks	Long Integer	4	Yes	Denotes presence/absence of Surface Soil Cracks. ACCEPTED VALUES: -1 or 0	
WaterMarks	Long Integer	4	Yes	Denotes presence/absence of Water Marks. ACCEPTED VALUES: -1 or 0	
WaterStainedLeaves	Long Integer	4	Yes	Denotes presence/absence of Water Stained Leaves. ACCEPTED VALUES: -1 or 0	
TrueAquaticPlants	Long Integer	4	Yes	Denotes presence/absense of True Aquatic Plants. ACCEPTED VALUES: -1 or 0	
Visit_ID	Long Integer	4	Yes	Linked to unique identifier in tbl_Visit. ACCEPTED VALUES: >=1	

Table Name	Table Description
tbl_Visit_Metadata	**Record of changes made to data after data have been certitifed. WHEN COLLECTED: After any data are changed post ceritification.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID	☑	☑	PrimaryKey
Location_ID	☐	☐	SiteID
Visit_ID	☐	☑	Visit_ID_

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Location_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Locations for this site.	
Visit_ID	Long Integer	4	Yes	Unique Identifier for each visit to a plot/ record in the table. ACCEPTED VALUES: >= 1 and unique numbers.	
Updated_Date	Date/Time	8	Yes	Date site was updated.	
Updated_Table	Text	255	Yes	table where record was updated	
Updated_By	Long Integer	4	Yes	Initials of person who made the update	
Updated_Notes	Memo	0	Yes	Notes about data that were updated	

Table Name	Table Description
tbl_Visit_Saturation	**Indicators of recent saturation for form H-1: hydrology in the AA. WHEN COLLETED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
CrayfishBurrows	Long Integer	4	Yes	Denotes presence/absence of Crayfish Burrows. ACCEPTED VALUES: -1 or 0	
DrySeasonWaterTable	Long Integer	4	Yes	Denotes presence/absence of Dry Season Water Table. ACCEPTED VALUES: -1 or 0	
FiddlerCrabBurrows	Long Integer	4	Yes	Denotes presence/absence of Fiddler Crab Burrows. ACCEPTED VALUES: -1 or 0	
Flag	Memo	0	No	Flag for a note. ACCEPTED VALUES: no restrictions on text.	
HydrogenSulfideOdor	Long Integer	4	Yes	Denotes presence/absence of Hydrogen Sulfide Odor. ACCEPTED VALUES: -1 or 0	
SaltDeposits	Long Integer	4	Yes	Denotes presence/absence of Salt Deposits. ACCEPTED VALUES: -1 or 0	
SurficialThinMuck	Long Integer	4	Yes	Denotes presence/absence of Surficial Thin Muck. ACCEPTED VALUES: -1 or 0	
OxidizedRhizospheres	Long Integer	4	Yes	Denotes presence/absence of Oxidized root rhizospheres. ACCEPTED VALUES: -1 or 0	
Visit_ID	Long Integer	4	Yes	Linked to unique identifier in tbl_Visit. ACCEPTED VALUES: >=1	

Table Name	Table Description
tbl_Visit_Surface	**Indicators of surface water or saturation for form H-1: hydrology in the AA. WHEN COLLETED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Flag	Text	255	No	Flag for a note. ACCEPTED VALUES: no restrictions on text.	
GeomorphicPosition	Long Integer	4	Yes	Denotes presence/absence of Geomorphic Position conducive to a wetland. ACCEPTED VALUES: -1 or 0	
HighWaterTable	Long Integer	4	Yes	Denotes presence/absence of High Water Table. ACCEPTED VALUES: -1 or 0	
MicrotopographicRelief	Long Integer	4	Yes	Denotes presence/absence of Microtopographic Relief. ACCEPTED VALUES: -1 or 0	
ShallowAquitard	Long Integer	4	Yes	Denotes presence/absence of Shallow Aquitard. ACCEPTED VALUES: -1 or 0	
SoilSaturation	Long Integer	4	Yes	Denotes presence/absence of Soil Saturation. ACCEPTED VALUES: -1 or 0	
StuntedOrStressedPlants	Long Integer	4	Yes	Denotes presence/absence of Stunted or Stressed Plants. ACCEPTED VALUES: -1 or 0	
SurfaceWater	Long Integer	4	Yes	Denotes presence/absence of Surface Water. ACCEPTED VALUES: -1 or 0	
SphagnumMoss	Long Integer	4	Yes	Denotes presence/absence of Sphagnum moss. ACCEPTED VALUES: -1 or 0	
Visit_ID	Long Integer	4	Yes	Linked to unique identifier in tbl_Visit. ACCEPTED VALUES: >=1	

Table Name	Table Description
tbl_Water_Level	**Hourly water level measurements collected in shallow wells or above ground for barometric pressure corrections. WHEN COLLECTED: Collected in the 8 sentinel sites on Mount Desert Island continuously**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
ID	☐	☐	ID
ID	☑	☑	PrimaryKey
Well_ID	☐	☐	Well_ID

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
ID	Long Integer	4	Yes	Unique identifier for each record. ACCEPTED VALUES: unique numbers	
Well_ID	Long Integer	4	Yes	Linked to well_ID for each well in tbl_Well. ACCEPTED VALUES: >0	
Measure_Date_Time	Date/Time	8	Yes	Timestamp of water level measurement:mm/dd/yyyy hh:nn (GMT-04:00). ACCEPTED VALUES: >= 4/24/13 12:00 pm	
Absolute_Pressure_kPa	Other	16	Yes	Raw uncorrected water level logger pressure in kPa. ACCPETED VALUES: 90-120	
Degrees_C	Other	16	Yes	Temperature in C. ACCEPTED VALUES: -30 to 45	
Flag	Text	255	Yes	Flag for pressure data. A=Accepted; R=Rejected. ACCEPTED VALUES: A or R	
Flag_Note	Memo	0	No	Justification for Flag	

Table Name	Table Description
tbl_Well	**Data associated with each shallow well in the 8 sentinel sites on Mount Desert Island. WHEN COLLECTED: Every time a well is established in a new site or moved to a different location in the same site.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
ID	☐	☐	ID
Location_ID	☐	☐	Location_ID
ID	☑	☑	PrimaryKey
Site_Code	☐	☐	Site_Code

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
ID	Long Integer	4	No	Unique identifier for each record. ACCEPTED VALUES: unique numbers	
Location_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Locations. ACCEPTED VALUES: >=1	
Well_Name	Text	20	Yes	Name of wetland where well is located. ACCEPTED VALUES: No restrictions on text.	
Easting	Long Integer	4	No	X Coordinate for center of AA. ACCEPTED VALUES: > 526770 and <578850	
Northing	Long Integer	4	No	Y Coordinate for center of AA. ACCEPTED VALUES: > 4871500 and <4921530	
UTM_Zone	Text	3	Yes	UTM Zone for center pf AA. ACCEPTED VALUES: 19N	
Status	Text	1	Yes	Designates status of well. ACCEPTED VALUES: (A)ctive or (I)nactive	"A" Or "I"
Launch_Date	Date/Time	8	Yes	Date well was first installed and logger was launched. ACCEPTED VALUES: >=9/16/12	
Version	Long Integer	4	Yes	Incremented when well is moved. ACCEPTED VALUES: >=1	
Logger_Length	Other	16	No	Length of cable attached to logger down to the measurement point on the logger. ACCEPTED VALUES: 90-150 cm for loggers in wells. Null for barometric correction loggers.	
MP_to_Bolt	Other	16	No	Distance in cm from the bolt holding the logger cable to the top of the well pipe where measurement point is located. ACCEPTED VALUES: 10-30cm	
Note	Text	255	No	Notes about well. ACCEPTED VALUES: No restrictions on text.	
Site_Code	Text	255	Yes	4-letter code for each site, plus _BARO, if the logger is for barometric pressure correction. ACCEPTED VALUES: No restriction on text.	

Table Name	Table Description
tbl_Well_Visit	**Information collected during each well visit. WHEN COLLECTED: Collected in the 8 sentinel sites on Mount Desert Island once every spring and once every fall.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
ID	☐	☐	ID
ID	☑	☑	PrimaryKey
Well_ID	☐	☐	Well_Detail_ID

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
ID	Long Integer	4	No	Unique identifier for each well visit. ACCEPTED VALUES: unique numbers	
Well_ID	Long Integer	4	Yes	Linked to ID for each well in tbl_Well. ACCEPTED VALUES: >=1	
Logger_SN	Text	50	Yes	Serial number of logger currently deployed in each well. ACCEPTED VALUES: unique 7 digit numbers	
Visit_Date	Date/Time	8	Yes	Date of well visit. ACCEPTED VALUES: >=4/24/2013	
Time	Date/Time	8	Yes	Interval of hour that logger was redeployed, and used to compare field WL to logger WL. ACCEPTED VALUES: 07:00- 17:00	
Battery_Status	Text	5	Yes	Status of logger battery. ACCEPTED VALUES: Good, Fair, Poor	
Stick_Up_at_MP	Other	16	No	Height of well pipe from wetland surface to measuring point (MP). ACCEPTED VALUES: > 0 and <100 cm.	
Post_1_Height	Other	16	No	Height of post 1 from wetland surface to level line. ACCEPTED VALUES: >0 and < 100cm	
Post_1_Distance	Other	16	No	Distance from post 1 level line to well MP. ACCEPTED VALUES: >0 and < 100cm	
Post_2_Height	Other	16	No	Height of post 2 from wetland surface to level line. ACCEPTED VALUES: >0 and < 100cm	
Post_2_Distance	Other	16	No	Distance from post 2 level line to well MP. ACCEPTED VALUES: >0 and < 100cm	
Water_Depth	Other	16	No	Field measured depth of water level in the well. ACCEPTED VALUES: > -100 and < 100	
Water_Depth_Time	Date/Time	8	No	Time field measured water level was taken. ACCEPTED VALUES: 07:00- 17:00	
Reset	Text	255	No	Denotes whether well had to be reset during that visit. If reset, then Stick Up and Post heights/distances need to be remeasured. ACCEPTED VALUES: Yes/Null	
Note	Text	255	No	Notes about well visit. ACCEPTED VALUES: No restrictions on text.	
Certification_Level	Text	255	Yes	Indicates whether data are raw (R), provisional (P), accepted (A), or certified (C).	

Table Name	Table Description
tlu_AA_Layout	**Defines all possible layouts for the shape of the AA**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Layout_ID	☐	☐	Layout_ID
Layout_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Shape	Text	30	Yes	Type of layout used for AA	
Layout_ID	Long Integer	4	Yes	Unique identifier for AA layout type for tbl_Locations.	

Table Name	Table Description
tlu_Buffer_Direction	**Defines all transects examined for Buffer width**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Buffer_Direction_ID	☐	☐	Buffer_Direction_ID
Buffer_Direction_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Buffer_Direction	Text	2	Yes	Cardinal direction of transect	
Buffer_Direction_ID	Long Integer	4	No	Unique identifier for direction of buffer transect for xref_Buffer_Direction	

Table Name	Table Description
tlu_Class	**Defines all possible Hydrogeomorphic Classes**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Class_ID	☐	☐	Class_ID
Class_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Class	Text	25	No	Hydrogeomorphic classes	
Class_ID	Long Integer	4	No	Unique identifier for hydrogeomorphic classes for tbl_Location	

Table Name	Table Description
tlu_Contact	**Contact information for project-related personnel**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Contact_ID	☐	☐	Contact_ID
Contact_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Contact_Notes	Memo	0	No	Notes about contact	
Current	Text	1	No	Denotes whether contact is current or not (Y/N)	"Y" Or "N"
FirstName	Text	50	No	First Name of the contact	
Initials	Text	10	No	Initials of contact	
LastName	Text	50	No	Last Name of the contact	
MiddleInitial	Text	4	No	Middle Initial of the contact	
Network	Text	50	No	NPS I&M network that this person is most closely affiliated	
Organization	Text	50	No	Organization or employer	
Position_Title	Text	50	No	Title or position description	
Contact_ID	Long Integer	4	No	Unique identifier for each contact/ record in the table for tlu_Location, tlu_xref_Visit_Contact, xref_well_contact.	

Table Name	Table Description
tlu_Contact_Role	**Defines all possible roles that contacts can perform at a site.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Contact_Role_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Contact_Role	Text	255	No	Possible roles contacts can perform at a site.	
Contact_Role_ID	Long Integer	4	No	Unique identifier for contact roles for xref_Visit_Contact	

Table Name	Table Description
tlu_Difficulty	**Defines possible reasons that a site is difficult to access.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Difficulty_ID	☐	☐	Difficulty_ID
Difficulty_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Difficulty	Text	50	No	Common difficulties encountered while trying to access a site	
Difficulty_Full	Text	255	No	Long version of difficulties encountered while trying to access a site	
Difficulty_ID	Long Integer	4	No	Unique identifier for difficulty categories for xref_Location_Difficulty	

Table Name	Table Description
tlu_Hydrologic_Stressor	**Lists all hydrology stressors in the AA that each site is assessed for in the H-1 form.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Hydrologic_Stressor_ID	☐	☐	ID
Hydrologic_Stressor_ID	☑	☑	PrimaryKey
Hydrologic_Stressor_Category_ID	☐	☐	tlu_Hydrologic_Stressor_Categtlu_Hydrologic_Stressor

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Hydrologic_Stressor	Text	50	No	Hydrologic stressors used on H-1 form combines 23 fields	
Hydrologic_Stressor_Category_ID	Long Integer	4	No	Category of stressor based on the H-1 form and linked to tlu_Hydrologic_Stressor_Category.	
Hydrologic_Stressor_ID	Long Integer	4	No	Linked to unique ID for each type of stressor for xref_Visit_Hydrologic_Stressor	

Table Name	Table Description
tlu_Hydrologic_Stressor_Category	**Defines the different hydrology stressor types listed on the H-1 form.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Hydrologic_Stressor_Category_ID	☑	☑	PK_tluStressorTypes
Hydrologic_Stressor_Category	☐	☐	tlu_Hydrologic_Stressor_CategoryHydrologic_Stressor_Categ

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Hydrologic_Stressor_Category	Text	100	Yes	Hydrology stressor type listed on H-1 form	
Hydrologic_Stressor_Category_ID	Long Integer	4	Yes	Unique identifier for hydrology stressor type linked to tlu_Hydrologic_Stressor	

Table Name	Table Description
tlu_Hydrology	**Defines wetland hydrology indicators present at a site during the initial point verification and based on the PV-1 form.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Wetland_Hydrology_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Wetland_Hydrology	Text	255	No	Indicators of wetland hydrology on the PV-1 form	
Wetland_Hydrology_ID	Long Integer	4	No	Unique identifier for hydrology indicator for xref_Location_Hydrology	

Table Name	Table Description
tlu_Invasive_Coverage	**Defines all possible cover classes of invasive species cover for USA-RAM Metric 10**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Invasive_Coverage_ID	☑	☑	PK_tluInvasiveCoverage

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Invasive_Coverage	Text	255	Yes	Cover classes for invasive species in USA-RAM Metric 10	
Invasive_Coverage_ID	Long Integer	4	Yes	Unique identifier for invasive cover classes for tbl_Visit.	

Table Name	Table Description
tlu_Perimeter	**Defines all possible percent classes for percent of AA having a natural buffer**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Perimeter_ID	☑	☑	PK_tluPerimeter

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Percent	Text	8	Yes	Classes for percent of AA having a natural buffer in USA-RAM Metric 01	
Perimeter_ID	Long Integer	4	Yes	Unique identifier for percent classes for tbl_Visit	

Table Name	Table Description
tlu_Plant	No description

Indexes and Fields - compound Index names describe relationships between tables

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Accepted_Latin_Name	Text	255	No	Latin name associated with accepted TSN	
Common	Text	128	No	Common name	
Created_By	Text	50	No	Name of person creating the record	
Family	Text	36	No	Family	
Genus	Text	50	No	Genus	
Latin_Name	Text	100	No	Latin name, may be a synonym of Accepted Latin Name	
Order	Text	36	No	Order	
PLANTS_Code	Text	16	No	Code for taxonomic unit assigned by USDA PLANTS database	
Rank_Name	Text	24	No	Taxonomic rank of that record	
Species	Text	50	No	Species	
Subspecies	Text	50	No	Subspecies	
Synonym	Text	255	No	Commonly used synonym	
Updated_By	Text	50	No	Name of person updating the record	
ACAD_ED	Boolean	1	No	Early detection list for ACAD	
Accepted_Found	Boolean	1	No	TSN is accepted and found in ITIS	
Aquatic	Boolean	1	No	Species is a true a quatic plant	
Exotic	Boolean	1	No	Species is exotic to the state of Maine	
Fern_Ally	Boolean	1	No	Species is a fern or fern ally (e.g., vascular and spore producing)	
Graminoid	Boolean	1	No	Species is a grass, sedge or rush	
Herbaceous	Boolean	1	No	Species is herbaceous and not a graminoid	
Moss_Lichen	Boolean	1	No	Species is a moss or lichen	
Shrub	Boolean	1	No	Species is woody shrub or vine	
Tree	Boolean	1	No	Species is a tree	
TSN	Double	8	No	Taxonomic Species Number as assigned by ITIS.	
TSN_Accepted	Double	8	No	Accepted TSN as assigned by ITIS.	
Vine	Boolean	1	No	Species is a woody vine	
CoC_ME_ACAD	Double	8	No	Coefficient of conservatism, ranges from 0 to 10. Note that not all species have an assigned COC for Maine.	

Table Name				Table Description
Created_Date	Date/Time	8	No	Date the record was created
Updated_Date	Date/Time	8	No	Date the record was updated
Invasive	Boolean	1	No	Indicates that a species is both exotic and invasive
Author	Text	255	No	Taxonomic author assigned by ITIS
Canopy_Exclusion	Boolean	1	No	Indicates tree species and genera that do not make it to the canopy and are excluded from canopy analyses
Favorites	Boolean	1	No	Used to sort species drop downs in the FileMaker app
Protected_species	Boolean	1	No	Indicates whether a species is protected from public dissemination. 1 is protected. 0 is not protected.

tlu_Predominant_Category — Defines all possible Cowardin wetland types that are part of the target population and should be included.

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Predominant_Category_ID	☐	☐	Category_Include_ID
Code	☐	☐	Code
Predominant_Category_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Code	Text	255	No	Cowardin wetland type abbreviations	
Description	Text	255	No	Cowardin code of wetlands to include as part of the target population	
Predominant_Category_ID	Text	255	Yes	Unique identifier for wetland categories to include for tbl_Location	

Table Name	Table Description

tlu_Requirement

Defines possible requirements to access site in PV-1 form

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
ID	Long Integer	4	No	Unique identifier for access requirements for xref_Location_Requirement	
Requirement	Text	50	No	Requirement code	
Requirement_Full	Text	255	No	Full description of requirement	

tlu_Strata

Defines all possible strata examined for USA-RAM 05 and 06.

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Strata_ID	☑	☑	PK_tluVerticalComplexity

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Strata	Text	100	Yes	Plant strata fields assessed in USA-RAM 05 and 06	
Strata_ID	Long Integer	4	Yes	Unique identifier for strata categories for xref_Plant_Complexity and xref_Vert_Complexity	

Table Name	Table Description
tlu_Stressor	**Lists all stressors that are examined at each site across multiple USA-RAM metrics and the H-1 form**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Stressor_ID	☑	☑	PK_tluStressors
Stressor	☐	☐	RAMS2_Stressor_ID
Stressor_Category_ID	☐	☐	tluStressorTypestluStressors

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Stressor	Text	255	No	Descriptions of all stressors examined for at each site for USA-RAM 2 (buffer), USA-RAM 7 (water quality), USA-RAM 8 (hydroperiod), USA-RAM 9 (substrate), USA-RAM 11 (vegetation)	
Stressor_Category_ID	Long Integer	4	No	Used to filter the stressors by stressor categories for different forms	
Stressor_ID	Long Integer	4	Yes	Unique identifier for each stressor for xref_Buffer_Stressor, xref_Hydro_Period_Stressor, xref_Water_Stressor, xref_Substrate_Stressor, and xref_Vegetation_Stressor.	

Table Name	Table Description
tlu_Stressor_Category	**Defines whether stressor is assessed in the (AA) Assessment Area or (BZ) Buffer Zone**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Stressor_Category_ID	☑	☑	PK_tluStressorTypes

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Location_Level	Text	2	No	Denotes whether stressor is assessed in the (AA) Assessment Area or (BZ) Buffer Zone	"AA" Or "BZ"
Stressor_Category	Text	100	Yes	Category of stressor where 1-4 = USA-RAM 2 (buffer), 5-9 = USA-RAM 7 (Water Quality), 10 = USA-RAM 8 (Hydroperiod), 11= USA-RAM 9 (Substrate), and 12-14 = USA-RAM 11 (Vegetation).	
Stressor_Category_ID	Long Integer	4	Yes	Unique identifier for stressor category linked to tlu_Stressor	

Table Name	Table Description
tlu_Sub_Class	**Defines all possible Hydrogeomorphic subclasses**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Sub_Class_ID	☐	☐	ID
Class_ID	☐	☐	Parent_ID
Sub_Class_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Sub_Class	Text	255	No	Hydrogeomorphic subclasses	
Class_ID	Long Integer	4	No	Linked to unique ID in tlu_Class	
Sub_Class_ID	Long Integer	4	No	Unique identifier for each subclass for tbl_Location	

Table Name	Table Description
tlu_Topo_Complexity	**Defines all possible indicators of Topographic Complexity for USA-RAM 3**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Topography_ID	☑	☑	PK_tluTopography

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Topography	Text	100	Yes	Combines 20 EPA topographic indicator fields USA-RAM 3	
Topography_ID	Long Integer	4	Yes	Unique identifier for each topographic indicator for xref_Topo_Complexity	

Table Name	Table Description
tlu_Vert_Complexity	**Defines all possible percent cover classes for vertical strata in USA-RAM 5.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Vert_Complexity_ID	☑	☑	PK_tluCoverage

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Vert_Complexity	Text	6	Yes	Cover classes used in USA-RAM 5.	
Vert_Complexity_ID	Long Integer	4	Yes	Unique identifier for each cover class for xref_Vert_Complexity.	

Table Name	Table Description
tlu_Water	**Definese all possible water sources for the H-1 form**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Water_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Source	Text	50	No	Water sources used on H-1 form; combines 11 fields.	
Water_ID	Long Integer	4	No	Unique identifier for water souces for xref_Visit_Water.	

Table Name	Table Description
xref_Buffer_Stressor	**Cross-reference between tbl_Visit and tlu_Stressor where Stressor_ID is 1-57 or 108-114 (USA-RAM 2). WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID; Stressor_ID	☑	☑	PK_xrefBufferStressor
Visit_ID	☐	☐	tbl_Visitxref_Buffer_Stressor
Stressor_ID	☐	☐	tluStressorsxrefBufferStressor

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Severity	Long Integer	4	Yes	Severity of Stressor. ACCEPTED VALUES: 0-3.	0 Or 1 Or 2 Or 3
Stressor_ID	Long Integer	4	Yes	Linked to unique ID in tlu_Stressor where Stressor_ID is 1-57 or 108-114 for USA-RAM 2.	(>=1 And <=57) Or (>=108 And <=115)
Visit_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Visit for this visit	

Table Name	Table Description
xref_Buffer_Width	**Cross-reference between tbl_Visit and tlu_Buffer_Direction for USA-RAM 1. WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID; Buffer_Direction_ID	☑	☑	PrimaryKey
Visit_ID	☐	☐	tbl_Visitxref_Buffer_Width
Buffer_Direction_ID	☐	☐	tlu_Buffer_Directionxref_Buffer_Width

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Buffer_Direction_ID	Long Integer	4	Yes	Linked to unique ID in tlu_Buffer_Direction	
Visit_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Visit for this visit.	
Width_m	Long Integer	4	Yes	Width of buffer transect. ACCEPTED VALUES: 0-100 m.	

Table Name	Table Description
xref_Hydro_Period_Stressor	**Cross-reference between tbl_Visit and tlu_Stressor where Stressor_ID is 71-81 (USA-RAM 8). WHEN COLLECTED: Collected for each visit**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID; Stressor_ID	☑	☑	PK_xrefHydroPeriodStressor
Visit_ID	☐	☐	tbl_Visitxref_Hydro_Period_Stressor
Stressor_ID	☐	☐	tluStressorsxrefHydroPeriodStressor

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Stressor_ID	Long Integer	4	Yes	Linked to unique ID in tlu_Stressor where Stressor_ID is between 71 and 81 (USA-RAM 8)	(>=71 And <=81) Or (=121)
Severity	Long Integer	4	Yes	Severity of stressor. ACCEPTED VALUES: 0-3	0 Or 1 Or 2 Or 3
Visit_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Visit for this visit	

Table Name	Table Description
xref_Location_Difficulty	**Cross-reference between tbl_Location and tlu_Difficulty. WHEN COLLECTED: Collected only when there's a difficulty in accessing a site.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Difficulty_ID	☐	☐	Difficulty_ID
Location_ID	☐	☐	Location_ID
Difficulty_ID; Location_ID	☑	☑	PrimaryKey
Location_ID	☐	☐	tbl_Locationxref_Location_Difficulty
Difficulty_ID	☐	☐	tlu_Difficultyxref_Location_Difficulty

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Location_Difficulty_Comments	Memo	0	No	Notes about access difficulties	
Difficulty_ID	Long Integer	4	No	Linked to unique ID in tlu_Difficulty	
Location_ID	Long Integer	4	No	Linked to unique ID in tbl_Location for this site	

Table Name	Table Description
xref_Location_Hydrology	**Cross-reference between tbl_Location and tlu_Hydrology. WHEN COLLECTED: Only collected during the initial point vertification process and only if indicators are present.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Location_ID; Wetland_Hydrology_ID	☑	☑	PrimaryKey
Location_ID	☐	☐	tbl_Locationxref_Location_Hydrology
Wetland_Hydrology_ID	☐	☐	tlu_Hydrologyxref_Location_Hydrology

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Wetland_Hydrology_Comments	Memo	0	No	Notes on wetland hydrology	
Location_ID	Long Integer	4	Yes	linked to unique ID in tbl_Location for this site.	
Wetland_Hydrology_ID	Long Integer	4	Yes	linked to unique ID in tlu_Hydrology	

xref_Location_Requirement	**Cross-reference between tbl_Location and tlu_Requirement. WHEN COLLECTED: Only collected if there are requirements for access to a site.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Location_ID	☐	☐	Location_ID
Location_ID; Requirement_ID	☑	☑	PrimaryKey
Requirement_ID	☐	☐	Requirement_ID
Location_ID	☐	☐	tbl_Locationxref_Location_Requirement
Requirement_ID	☐	☐	tlu_Requirementxref_Location_Requirement

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Location_Requirement_Comments	Memo	0	No	Notes on access requirements	
Location_ID	Long Integer	4	No	linked to unique ID in tbl_Location for this site.	
Requirement_ID	Long Integer	4	No	linked to unique ID in tlu_Requirement	

Table Name	Table Description
xref_Plant_Complexity	**Cross-reference between tbl_Visit and tlu_Strata for USA-RAM 6. WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID; Strata_ID; TSN	☑	☑	PrimaryKey
Strata_ID	☐	☐	Strata_ID
Visit_ID	☐	☐	tbl_Visitxref_Plant_Complexity
Strata_ID	☐	☐	tlu_Strataxref_Plant_Complexity

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Is_Invasive	Long Integer	4	Yes	Denotes whether species is invasive or not. ACCEPTED VALUES: 0 or 1	
Percent_Cover	Double	8	Yes	Percent cover of each dominant species. ACCEPTED VALUES: 0.1-100	
Strata_ID	Long Integer	4	Yes	Linked to unique ID in tlu_Strata	
TSN	Double	8	Yes	Linked to unique ID in tlu_Plant	
Visit_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Visit for this visit.	

Table Name	Table Description
xref_Species_List	**Cross-reference between tbl_Visit and tlu_Plant to list all species observed by quarter in each site. WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Plant_ID	☐	☐	Plant_ID
Visit_ID; Plant_ID	☑	☑	PrimaryKey
Quadrat_Selected	☐	☐	Quadrat_Selected
Visit_ID	☐	☐	tbl_Visitxref_Species_List
Visit_ID	☐	☐	Visit_ID

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Coll	Long Integer	4	Yes	Denotes whether a species was collected or not. ACCEPTED VALUES: 0 or 1	
Comments	Text	255	No	Notes field on Species List form	
Quadrat_NE	Long Integer	4	Yes	Denotes whether a species was present in the NE Quarter. ACCEPTED VALUES: -1 or 0	
Quadrat_SE	Long Integer	4	Yes	Denotes whether a species was present in the SE Quarter. ACCEPTED VALUES: -1 or 0	
Quadrat_SW	Long Integer	4	Yes	Denotes whether a species was present in the SW Quarter. ACCEPTED VALUES: -1 or 0	
Quadrat_NW	Long Integer	4	Yes	Denotes whether a species was present in the NW Quarter. ACCEPTED VALUES: -1 or 0	
Plant_ID	Double	8	Yes	unique identifier (TSN) in tlu_Plant for this species	
Visit_ID	Long Integer	4	Yes	unique identifier in tbl_Visit for this visit	
Quadrat_Selected	Double	8	Yes	Denotes whether species list is by quarter (1) or if it is for full site (0) because quarters could not be delineated. ACCEPTED VALUES: 0,1	

Table Name	Table Description
xref_Substrate_Stressor	**Cross-reference between tbl_Visit and tlu_Stressor where Stressor_ID is between 82 and 93 (USA-RAM 9). WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID; Stressor_ID	☑	☑	PK_xrefSubstrateStressor
Visit_ID	☐	☐	tbl_Visitxref_Substrate_Stressor
Stressor_ID	☐	☐	tluStressorsxrefSubstrateStressor

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Severity	Long Integer	4	Yes	Severity of Stressor. ACCEPTED VALUES: 0-3.	0 Or 1 Or 2 Or 3
Stressor_ID	Long Integer	4	Yes	Linked to unique ID in tlu_Stressor where Stressor_ID is between 82 and 93.	(>=82 And <=93) Or (=122)
Visit_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Visit for this visit	

Table Name	Table Description
xref_Topo_Complexity	**Cross-reference between tbl_Visit and tlu_Topo_Complexity (USA-RAM 4). WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID; Topography_ID	☑	☑	PK_xrefTopoComplexity
Visit_ID	☐	☐	tbl_Visitxref_Topo_Complexity
Topography_ID	☐	☐	tluTopographyxrefTopoComplexity

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Observed	Long Integer	4	Yes	Denotes whether that indicator was observed or not. ACCEPTED VALUES: 0 or 1	
Topography_ID	Long Integer	4	Yes	linked to unique ID in tlu_Topo_Complexity	
Visit_ID	Long Integer	4	Yes	linked to unique ID in tbl_Visit for this visit	

Table Name	Table Description
xref_Vegetation_Stressor	**Cross-reference between tbl_Visit and tlu_Stressor where Stressor_ID is 94-106 or 123-125 (USA-RAM 11). WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID; Stressor_ID	☑	☑	PK_xrefVegetationStressor
Visit_ID	☐	☐	tbl_Visitxref_Vegetation_Stressor
Stressor_ID	☐	☐	tluStressorsxrefVegetationStressor

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Severity	Long Integer	4	Yes	Severity of Stressor. ACCEPTED VALUES: 0-3.	0 Or 1 Or 2 Or 3
Stressor_ID	Long Integer	4	Yes	Linked to unique ID in tlu_Stressor where Stressor_ID is 94-106 or 123-125.	(>=94 And <=106) Or (>=123 And <=125)
Visit_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Visit for this visit	

Table Name	Table Description
xref_Vert_Complexity	**Cross-reference between tbl_Visit, tlu_Strata, and tlu_Verti_Complexity for USA-RAM 5. WHEN COLLECTED: Collected at each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID; Strata_ID	☑	☑	PK_xrefVertComplexity
Visit_ID	☐	☐	tbl_Visitxref_Vert_Complexity
Vert_Complexity_ID	☐	☐	tluCoveragexrefVertComplexity
Strata_ID	☐	☐	tluPlantStrataxrefVertComplexity

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Strata_ID	Long Integer	4	Yes	linked to unique identifier in tlu_Strata	
Vert_Complexity_ID	Long Integer	4	Yes	linked to unique identifier in tlu_Vert_Complexity	
Visit_ID	Long Integer	4	Yes	linked to unique identifier in tbl_Visit for this visit	

Table Name	Table Description
xref_Visit_Contact	**Cross-reference between tbl_Visit, tlu_Contact, and tlu_Contact_Role. WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Contact_ID	☐	☐	Contact_ID
Contact_Role_ID	☐	☐	Contact_Role_ID
Visit_ID; Contact_ID	☑	☑	PrimaryKey
Visit_ID	☐	☐	tbl_Visitxref_Visit_Contact
Contact_Role_ID	☐	☐	tlu_Contact_Rolexref_Visit_Contact
Contact_ID	☐	☐	tlu_Contactxref_Visit_Contact
Visit_ID	☐	☐	Visit_ID

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Contact_ID	Long Integer	4	Yes	linked to unique identifier in tlu_Contact	
Contact_Role_ID	Long Integer	4	Yes	linked to unique identifier in tlu_Contact_Role	
Visit_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Visit for this visit	

Table Name	Table Description
xref_Visit_Hydrologic_Stressor	**Cross-reference between tbl_Visit, tlu_Hydrologic_Stressor, and tlu_Hydrologic_Stressor_Category (H-1 form). WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Hydrologic_Stressor_ID	☐	☐	Hydrologic_ID
Hydrologic_Stressor_Category_ID	☐	☐	Hydrologic_Stressor_Category_ID
Present	☐	☐	Present
Visit_Id; Hydrologic_Stressor_ID	☑	☑	PrimaryKey
Visit_Id	☐	☐	tbl_Visitxref_Visit_Hydrologic_Stressor
Hydrologic_Stressor_ID	☐	☐	tlu_Hydrologicxref_Visit_Hydro
Visit_Id	☐	☐	Visit_Id

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Visit_Id	Long Integer	4	Yes	Linked to unique ID in tbl_Visit for this visit	
Hydrologic_Stressor_ID	Long Integer	4	Yes	Linked to unique ID in tlu_Hydrologic_Stressor	
Present	Long Integer	4	No	Denotes whether stressor is present or not. ACCEPTED VALUES: 0 or 1	
Flag	Memo	0	No	Notes on hydrological stressors (H-1 form)	
Rank	Long Integer	4	Yes	Severity rank of hydrologic stressors. ACCEPTED VALUES: 0-3	0 Or 1 Or 2 Or 3
Hydrologic_Stressor_Category_ID	Long Integer	4	Yes	Linked to unique ID for tlu_Hydrologic_Stressor_Category	

Table Name	Table Description
xref_Visit_Water	**Cross-reference between tbl_Visit and tlu_Wate (H-1 form). WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID; Water_ID	☑	☑	PrimaryKey
Visit_ID	☐	☐	tbl_Visitxref_Visit_Water
Water_ID	☐	☐	tlu_Waterxref_Visit_Water
Visit_ID	☐	☐	Visit_ID
Water_ID	☐	☐	Water_ID

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Flag	Memo	0	No	Notes field for water sources.	
Present	Long Integer	4	Yes	Denotes whether a source of water is present or absent. ACCEPTED VALUES: 0 or 1	
Rank	Long Integer	4	Yes	Water source rank of influence on site. ACCEPTED VALUES: 0-3	0 Or 1 Or 2 Or 3
Visit_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Visit for this visit	
Water_ID	Long Integer	4	Yes	Linked to unique ID in tlu_Water	

Table Name	Table Description
xref_Water_Stressor	**Cross-reference between tbl_Visit and tlu_Stressor where Stressor_ID is 58-70 or 116-120 (USA-RAM 7). WHEN COLLECTED: Collected for each visit.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Visit_ID; Stressor_ID	☑	☑	PK_xrefWaterStressor
Visit_ID	☐	☐	tbl_Visitxref_Water_Stressor
Stressor_ID	☐	☐	tluStressorsxrefWaterStressor

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Severity	Long Integer	4	Yes	Severity of Stressor. ACCEPTED VALUES: 0-3.	0 Or 1 Or 2 Or 3
Stressor_ID	Long Integer	4	Yes	Linked to unique ID in tlu_Stressor where Stressor_ID is 58-70 or 116-120.	(>=58 And <=70) Or (>=116 And <=120)
Visit_ID	Long Integer	4	Yes	Linked to unique ID in tbl_Visit for this visit	

Table Name	Table Description
xref_Well_Contact	**Cross-reference between tbl_Well_Visit and tlu_Contact. WHEN COLLECTED: Collected at teach of the 8 sentinel sites with wells in spring and fall.**

Indexes and Fields - compound Index names describe relationships between tables

Field names	Primary	Unique	Index name
Contact_ID	☐	☐	Contact_ID
Well_Visit_ID; Contact_ID	☑	☑	PrimaryKey

Field Name	Field Type	FieldSize	Required	Description	Validation Rule
Well_Visit_ID	Long Integer	4	No	Linked to unique ID in tbl_Well_Visit for this well visit	
Contact_ID	Long Integer	4	No	Linked to uniqe ID in tlu_Contact	