



Standard Operating Procedure (SOP) 8:

Data Management V3.1

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Revision History Log

Prev. Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #
1.0	Oct 2006	T. Gardali, D. Press	Added SFAN/NPS protocols as they work with Point Blue protocols	NPS internal review comments	2.0
2.0	Oct 2006	M. Fitzgibbon, T. Gardali, D. Press	Modified to use the myCADDC web applications	Change of systems used in process	3.0
3.1	Dec 2018	M. Dettling, D. Humple	Updated name change from PRBO to Point Blue, stylistic and grammatical changes	Clarity	3.1

This Standard Operating Procedure is available in digital format from [San Francisco Bay Area Network website](#) and the [NPS Data Store](#).

Two critical long-term goals of the SFAN I&M Program are to:

- integrate natural resource inventory and monitoring information into National Park Service planning, management, and decision making
- share National Park Service accomplishments and information with other natural resource organizations and form partnerships for attaining common goals and objectives

In order for the landbird monitoring program to meet I&M Program goals, a detailed management plan is needed to ensure data quality, interpretability, security, longevity and availability. This Standard Operating Procedure describes how the SFAN landbird monitoring protocol meets these data management objectives through data entry specifications, database design, quality assurance and control measures, metadata development, data maintenance, data storage and archiving, and data distribution. These procedures are explained for the two types of landbird data included in this monitoring plan that are collected by Point Blue Conservation Science (hereafter, Point Blue) for the SFAN: point count surveys and mist-netting.

Database Design

The data collected by Point Blue at the SFAN parks are part of larger, regional data sets contained online in the California Avian Data Center (CADC), a data node of the Avian Knowledge Network, or managed offline in other master datasets Point Blue. All CADC data are stored in a set of MySQL databases used for managing avian research data for California and the Pacific flyway; data are entered, managed, retrieved and analyzed using the MyCADC web application suite, a set of research-intelligent and easy to use browser applications that include features to maintain high data integrity during entry, proofing and review. Offline databases (e.g., banding, net hours) are managed in Visual FoxPro. See also SOP 8: Appendix 1: Point Blue Database Documentation.

In order to ensure the accessibility of the data by NPS staff, to provide the NPS with greater ability to query the data, and to meet I&M database design standards, CADC data are available for downloading as FoxPro tables from the MyCADC applications. As the various databases become available (e.g., post data QAQC), they are provided to NPS and integrated into a relational Microsoft (MS) Access XP database designed and maintained by the SFAN I&M program. Simple import tools and a series of append queries have been developed to streamline the annual upload process into the SFAN MS Access database. During the append process, some fields are re-formatted to meet I&M data standards. For example, the “data” field in the downloaded data file is a multi-value field storing the type and distance of bird observations and the length of time of the point count. In the MS Access database, this field is split and appended to separate type, timing and distance fields in the point count data table.

Although the SFAN’s MS Access database is modeled from the I&M Natural Resource Database Template (NRDT), its design is limited by the extent and format of the data products made available by Point Blue. The concept of organizing the data by sampling events and locations is retained from the NRDT, but certain elements, such as observer contact information, are not delivered from the

MyCADC applications, and therefore not included in the MS Access database. To the greatest extent possible, the MS Access database attempts to mimic the format of the FoxPro data tables, which further limits NRDT compliance. For example, data are currently downloaded by the SFAN as flat text files, and at this time, no effort is being made to normalize the data in the MS Access database. In addition, table and field names in the database are derived from the MySQL databases, and do not conform to the NRDT standards.

Within the SFAN's MS Access database, data are grouped into two sets of tables representing the point count and mist-netting/banding components of the landbird program. Related data tables are linked in time and space by way of standardized event and location fields that cascade through the tables. Several look-up tables have been established within the database to help decipher data codes used within the core data tables. At this time, the SFAN is only actively acquiring the point count data from Point Blue on an annual basis. Although an MS Access template has been developed for the bird banding data, the SFAN and Point Blue are still discussing the need to transfer the raw bird banding data to the NPS.

The primary table for storing bird point count data is tblPC_Data. This table contains information about bird observation details collected at pre-determined point count locations. Variables in tblPC_Data include the species detected, type of detection, distance from the observer, duration of the detection, and relevant breeding observations. The table tblPC_Locations provides detailed location information associated with each sampling point, including UTM coordinates, and is linked to the tblPC_Data records by the "UNIQUECODE" field, which uniquely identifies each point count location. Because fields in tblPC_Data use pre-set codes, supporting elements of the point count data include bird species, detection type, distance, and breeding observation look-up tables. Tables relationships for the point count data are illustrated in Figure 13.

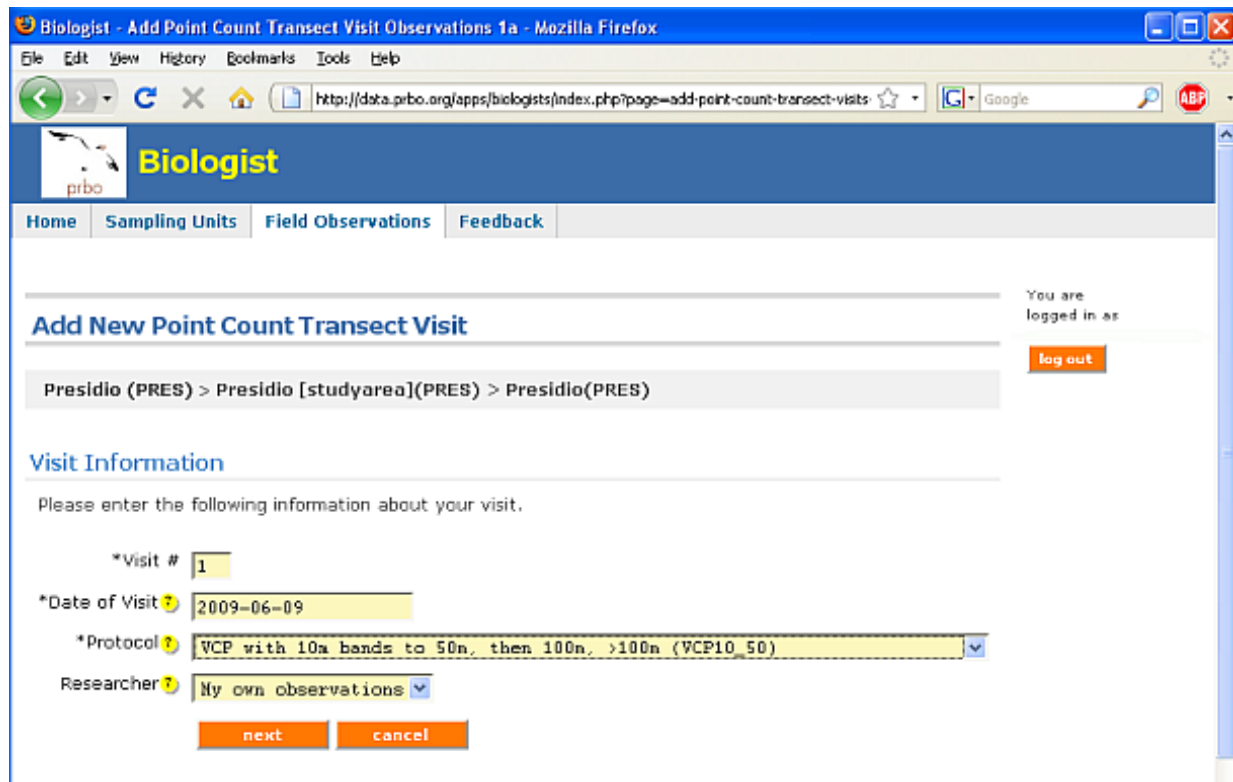
The upper tier of the bird banding data set is tblNetHrs, which stores daily event information for banding sites, such as location, date, start/end times, and bander initials. Related to tblNetHrs is tblNetWeather, which details banding weather conditions. Opening and closing times of individual nets at the banding sites are stored in tblNetHrsByNet. Finally, the core bird banding data is stored by individual bird within tblBand. Species, band information, and all of the bird measurements detailed in the banding SOP are contained in tblBand, with bird species codes referenced to the look-up table tluSpMastr. Tables relationships for the bird banding data are illustrated in Figure 14.

Data Entry and Proofing

For each type of data collected as part of the SFAN monitoring program (point count and banding), data entry and proofing is done by the observer(s) who collected the data. Data is entered and proofed using the MyCADC web applications for point count data, and Visual FoxPro for banding and related data. All data is stored in the MySQL databases on Point Blue servers. Additional tiers of proofing of various extents happen monthly and annually for the more complicated banding data.

Point Count Data

Using the MyCADC Biologists web application (Figure 1; <http://data.prbo.org/apps/biologists>; Accessed: June 9, 2009), we first enter information about the visit:



The screenshot shows a web browser window titled "Biologist - Add Point Count Transect Visit Observations 1a - Mozilla Firefox". The address bar shows the URL <http://data.prbo.org/apps/biologists/index.php?page=add-point-count-transect-visits>. The page has a blue header with the "prbo" logo and the word "Biologist". Below the header is a navigation bar with links: Home, Sampling Units, Field Observations, and Feedback. The main content area is titled "Add New Point Count Transect Visit" and shows a breadcrumb trail: "Presidio (PRES) > Presidio [studyarea](PRES) > Presidio(PRES)". There is a "log out" button in the top right corner. The "Visit Information" section prompts the user to enter information about their visit. The form includes the following fields: "*Visit #" with the value "1", "*Date of Visit" with the value "2009-06-09", "*Protocol" with a dropdown menu showing "VCP with 10m bands to 50m, then 100m, >100m (VCP10_50)", and "Researcher" with a dropdown menu showing "My own observations". At the bottom of the form are "next" and "cancel" buttons.

Figure 1. MyCADC Biologists web application.

Then information about the specific point is selected (Figure 2):

Biologist - Add Point Count Transect Visit Observations 2b - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://data.prbo.org/apps/biologists/index.php?page=add-point-count-transect-visit-1

Presidio (PRES) > Presidio [studyarea](PRES) > Presidio(PRES)

You are logged in as [username] [log out](#)

Visit: 1 Date: 2009-06-09 Protocol: VCP with 10m bands to 50m, then 100m, >100m (VCP10_50)

No Observations found for this Point Count Transect Visit.

Select an Observation Point

Select the observation point you want to add observations under, and provide a start time for observations at that location, your time interval and any comments related to this point in this visit. Click **add observations** to enter your species observation data. If you didn't collect any observations at a point, click **no observations** to save the selected point without observations explicitly in the database.

When you are finished, click on **Proof your observations** to review the data for this event and make sure your entries accurately reflect your field work.

*Point: 1 (PRES_1) *Observ. Time: 005 *Time Interval: 0 to 5 minutes

Point Comments: [text area]

[add observations](#) [no observations](#) [cancel](#) [Proof your observations](#)

Figure 2. MyCADCBiologists web application – selecting observation point.

Next, specific observation data is added (Figure 3):

Biologist - Add Point Count Transect Visit Observations 2c - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://data.prbo.org/apps/biologists/index.php?page=add-point-count-transect-visit-i

Google

Biologist

Home Sampling Units Field Observations Feedback

Presidio (PRES) > Presidio [studyarea](PRES) > Presidio(PRES)

You are logged in as **log out**

Visit: 1 Date: 2009-06-09 Protocol: VCP with 10m bands to 50m, then 100m, >100m (VCP10_50)

Add New Observations

Point: 1 (PRES_1) **new point** Time: 08:05 Time Intv: 0 to 5 minutes

*Species	*Observation Data	Breed/Behavior	Observ. Comments
SOSP	CL3	FL	

ok

Cues: C (Call), D (Drumming (e.g., woodpeckers)), H (Wing whir (e.g., hummingbirds, doves)), J (Juvenile), S (Song), V (Visual)

Bins: L1 (<10), L2 (10-20), L3 (20-30), L4 (30-40), L5 (40-50), G0 (50-100), B0 (>100), FL (FlyOver)

Figure 3. MyCADCBiologists web application – add new observations.

We then proof the data using the same program, and selecting "Proof your observations" button. We proof from the raw data to the computer screen, on which the program presents the summarized data to look like the data sheet for streamlined proofing (Figure 4):

Biologist - List Observations - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://data.prbo.org/apps/biologists/index.php?page=list-point-count-transect-visit-d

Add more observations +

Proofing completed ✓

statistics

copy table to: [CSV](#) [HTML](#) [DOC](#) [PDF](#)

Point	Time	Mins	Spp	<10	10-20	20-30	30-40	40-50	50-100	>100	FlyOver	Brd/Bhv	Rsrchr	Remarks
PRES_12	07:00	5	CORA						1C					
PRES_12	07:00	5	ANHU	1C										
PRES_12	07:00	5	AMRO	1V			2C							
PRES_12	07:00	5	PYNU		3C									
PRES_12	07:00	5	VATH				1V							
PRES_12	07:00	5	AMGO							1C				
PRES_12	07:00	5	SQSP						1S					
PRES_12	07:00	5	PUFI						1S					

Figure 4. Proofing data.

The program also provides other summary tools to help improve the quality of proofing. We write in red on the data forms any corrections/deletions/additions that need to be made, and then make corrections to the point count database file. When finished, we select “Proofing completed”.

Next, the project leader reviews the point counts in the MyCADDC Project Leaders application (Figure 5; <http://data.prbo.org/apps/projectleaders>; Accessed: June 9, 2009). The project leader reviews the raw and summarized data for the point count, and, when finished, decides the level of availability to set for the data:

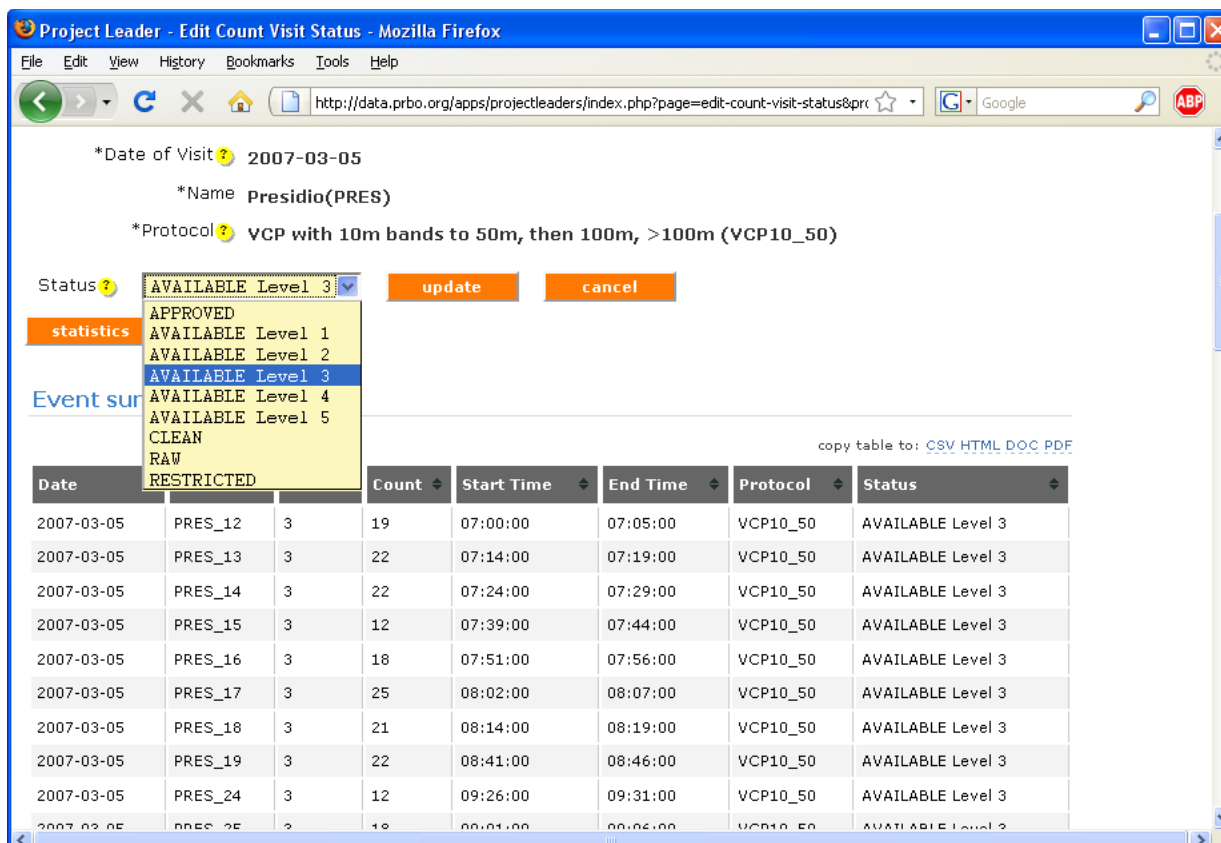


Figure 1. Project leader review.

Descriptions of the levels of availability are described in the application. All data entered are stored as “AVAILABLE Level 5”, which is defined as

Data are used in publicly available, predefined visualizations (maps and graphs), and are available to existing bioinformatic efforts. Additionally, the complete BMDE data set is available for download directly via download tools. After completing all point counts for the season, we also proof species codes, visits, sites, and data types. This data entry and proofing process for point counts is completed by the end of the breeding season.

Banding Data

Any bird that receives a line of data must be entered into the computer database. It is essential that this data entry be done daily, in order for the bander to correct any errors that were made. It is done via Point Blue’s Visual FoxPro data entry program, available at <http://www.prbo.org/tools/band/band.htm>. Through this we also enter weather data and net hours data. We then proof the data daily and again monthly, each time proofing them manually by reading from the raw data and checking the entered data for mistakes, and each time also proofing them through a computer generated program (created by Point Blue) that checks for other types of errors (e.g., discrepancy between ageing or sexing data; invalid or illogical codes). We also view the compiled historical capture history for each recaptured bird from a given day to look for errors in the current or previous captures of an individual. In addition, before we submit banding data to the

USGS Bird Banding Laboratory (BBL) annually, it undergoes another computer proofing process through a BBL computer program for select error types (e.g., wing chord out of range for the species, age illogical given time of year).

Providing SFAN with Data

All point count data is available to the SFAN at any time via the MyCADC Project Leaders applications. From this application, any set of visits can be downloaded for any set of locations into a variety of data formats, including the FoxPro format used to append data into the Access database. Banding data is available from Point Blue upon request.

Quality Assurance and Quality Control

Data must meet certain quality assurance (QA) and quality control (QC) standards in order to ensure that the data are consistent, repeatable and reliable, and so that the data stand up to external review. QA ensures that data meet defined standards of quality with a stated level of confidence. QA refers to the overall management system, which includes the organization, planning, data collection, documentation, metadata, evaluation, and reporting activities of the program. QC refers to the technical procedures involved in controlling errors, such as personnel training, calibration of equipment, repeated measuring to determine differences among observers and the repeatability of measurements by the same person, and exercises to identify the level of error during data recording and data entry.

Before the data are received by SFAN parks, the handling of the data follow a rigorous process, established and refined over many years at Point Blue. The data entry and proofing process, described above, follows clearly defined protocols provided on our website (<http://data.prbo.org/cadc2/index.php?page=field-research>; Accessed: June 9, 2009) and in our Palomarin Handbook. Additionally, the user-friendly MyCADC web applications created by Point Blue provide guidance through the data entry and proofing steps.

Other Data QA/QC steps include the following:

- Intensive and extensive training of interns and staff (including high retention rate of trained personnel, including field biologists and supervising biologists)
- Data forms are consistent over years (minor improving changes are occasionally made, with date on the bottom of each form representing versioning changes), and most recent versions are available at <http://data.prbo.org/cadc2/index.php?page=field-research> (Accessed: June 9, 2009).
- Data entry completed by the observer who collected the data
- The data are proofed for errors and consistency (daily, monthly and seasonally for banding data; daily and seasonally for point count data), both manually (all types of data) and with a program that detects inconsistencies (banding program only)
- Data are also proofed for outliers (e.g., quantities that do not make sense) or unlikely observations (e.g., species that do not occur locally).
- Annual summary analysis help to ensure that data are managed and collected properly

Metadata Procedures

The NPS GIS Committee recently required all NPS GIS data layers be described with the NPS Metadata Profile, which combines the FDGC standard, elements of the ESRI metadata profile, the Biological Data Profile, and NPS-specific elements. Although no standard has been applied to natural resource databases, the SFAN will complete the NPS Metadata Profile to the greatest extent possible to document databases developed for the SFAN I&M program.

A complete metadata record for the SFAN landbird monitoring MS Access database will be generated in compliance with current NPS standards by the SFAN data manager. Because the location data for this project is stored as UTM coordinates with the MS Access database, there are no spatial data products associated with this protocol that require metadata records.

The metadata record will initially be developed in Dataset Catalog v3.0, an MS Access metadata development and catalog tool developed by the NPS I&M Program. Dataset Catalog is currently the preferred tool to begin metadata records for MS Access databases because of its ability to harvest entity and attribute information from this database format.

The metadata record will be exported from Dataset Catalog as an XML file and completed in NPS Metadata Tools and Editor v1.0, thus allowing for all NPS-specific elements in the metadata record to be completed. The final metadata record will be posted to the NR-GIS Data Store for public discovery and consumption. Although the actual database will not be posted at the NR-GIS Data Store, contact information within the metadata record will direct interested parties to the SFAN lead data manager for further inquiries.

Additionally, Point Blue maintains a separate metadata document for all projects, study sites, and protocols.

Data Maintenance and Version Control

Data sets are rarely static. They often change through additions, corrections, and improvements made following the archival of a data set. When errors are found or other corrections need to be made to archived data, Point Blue staff make those changes to their master datasets. Changes are only made to improve or update the data while maintaining data integrity. Point Blue data servers are backed-up daily and allow for recovery of data if errors are made during editing. This data maintenance happens continuously throughout the year and the most up-to-date version (including all previous years' data) is provided to SFAN once a year.

At SFAN, version control guidelines for the MS Access landbird monitoring database will follow those presented in the SFAN's Data Management Plan (Press 2005). Prior to any major changes to the database, a copy should be archived with the appropriate version number that allows the tracking of changes over time. Version numbers should increase incrementally by hundredths (e.g. version 1_01, version 1_02, ...etc.) for minor changes. Major revisions should be designated with the next whole number (e.g., version 2_0, 3_0, 4_0 ...). With proper controls and communication, versioning ensures that only the most current database version is used for queries and analyses.

Database revisions will be documented within the landbird monitoring database utilizing the “tbl_DB_Meta” and “tbl_DB_Revisions” tables developed for the NRDT (Figure 15). Significant database re-design may require approval by the project manager and review by other data management staff. Following completion of a new database version, metadata records and online postings will be updated. Program revision (pointcnt.exe, band.exe, etc.) is also kept track of within the program through versioning, and is documented within the appropriate SOP.

Data Storage and Archival Procedures

All completed raw data are filed in a binder for the current year at the Palomarin Field Station, which is the base for several of Point Blue’s Bay Area Landbird monitoring projects. In addition, the CADC databases of observation data are kept on servers at Palomarin Point Blue headquarters in Petaluma, and are backed up to disk nightly as well as archived on tape. Data is also contributed to national databases (banding data: to the USGS Bird Banding Lab in Patuxent, MD, and to the Institute for Bird Population, Point Reyes Station, CA, and point counts to the Avian Knowledge Network, based on the level of Availability discussed earlier) as well as to the SFAN of the National Park Service. Hard copies of all banding data and, eventually, all other types of data, will also be scanned and stored digitally as Adobe Acrobat PDFs; these are stored on the Palomarin server (under Z:\Terrestrial\raw_data_archive) with backups kept at Point Blue headquarters.

Point Blue uses a variety of servers, storage arrays, and tape subsystems to ensure data integrity and availability. All servers and arrays are configured with redundant hard drives in RAID 1, RAID 5, or RAID 50 configurations. All servers and arrays have redundant power supplies and cooling fans. All servers and arrays are also connected to uninterruptible power supplies (UPS) to ensure orderly shutdown in the event of a power failure. In general, files stored on servers or arrays at remote offices will be synchronized nightly with systems at the Point Blue headquarters in Petaluma, California. Data at Petaluma is backed up to tape on an ongoing basis and tapes are rotated off-site weekly.

At the SFAN, all documents and data related to the landbird monitoring program are stored on the Marin Headlands server in the Golden Gate National Recreation Area. The landbird directory is found on the Network I&M drive, with data and documents stored in separate folders (Figure 16). The Dell PE 4600 Marin Headlands server has several built-in redundancy features to ensure data are kept safe, including a pair of hard drives configured as level-1 RAID (mirroring), data storage on a level-5 RAID with data capacity of 200GB, and redundant power supply. A SDLT 110/220 GB tape drive is also connected to back up data. The backup scheme is full nightly backup on every Tuesday and Friday. The remaining days of the week, including Saturday and Sunday, are incremental and are appended to the same tape that is used for full backup. The last tape of the month is taken offsite to further protect the data. GOGA IT team members are responsible for managing the tape backup jobs and tapes.

The SFAN maintains an archive directory on the Marin Headlands server where landbird monitoring data will be archived annually. Once incorporated into the landbird MS Access database (Figures 6 - 9), all raw data exports received from Point Blue will be stored in the archive directory, separated by

field season. The landbird database will be archived annually after that year's field data has been incorporated by the SFAN data manager. All data files in the archive directory are stored in read-only format. Each year, a CD will be created with that year's raw field data, the updated MS Access database, the accompanying annual report, and the landbird monitoring protocol.

Data Distribution

In order for the landbird monitoring program to inform park management and to share its information with other organizations and the general public, guidance documents, reports, and data must be easily discoverable and obtainable. The main mechanism for distribution of the landbird monitoring documents and data will be the Internet. The protocols and forms used in this monitoring program, in addition to being included and referenced in the other SOPs, are available at:

<http://data.prbo.org/cadc2/index.php?page=field-research> (Accessed: June 9, 2009)

The landbird monitoring protocol, accompanying SOPs, and all annual reports will be made available for download at the SFAN website:

<https://www.nps.gov/im/sfan/index.htm>

The landbird monitoring database are posted for public download, and as previously mentioned, a metadata record for the database will be maintained at the NR-GIS Data Store. The metadata record will direct interested parties to the SFAN lead data manager for further inquiries.

In addition to the NR-GIS Data Store, the NPS I&M Program maintains an on-line natural resource bibliographic database known as NatureBib. NatureBib records will be created for all of the landbird monitoring documents, including the protocol, annual reports, and any resulting publications. The public version of NatureBib is in development by the NPS I&M program.

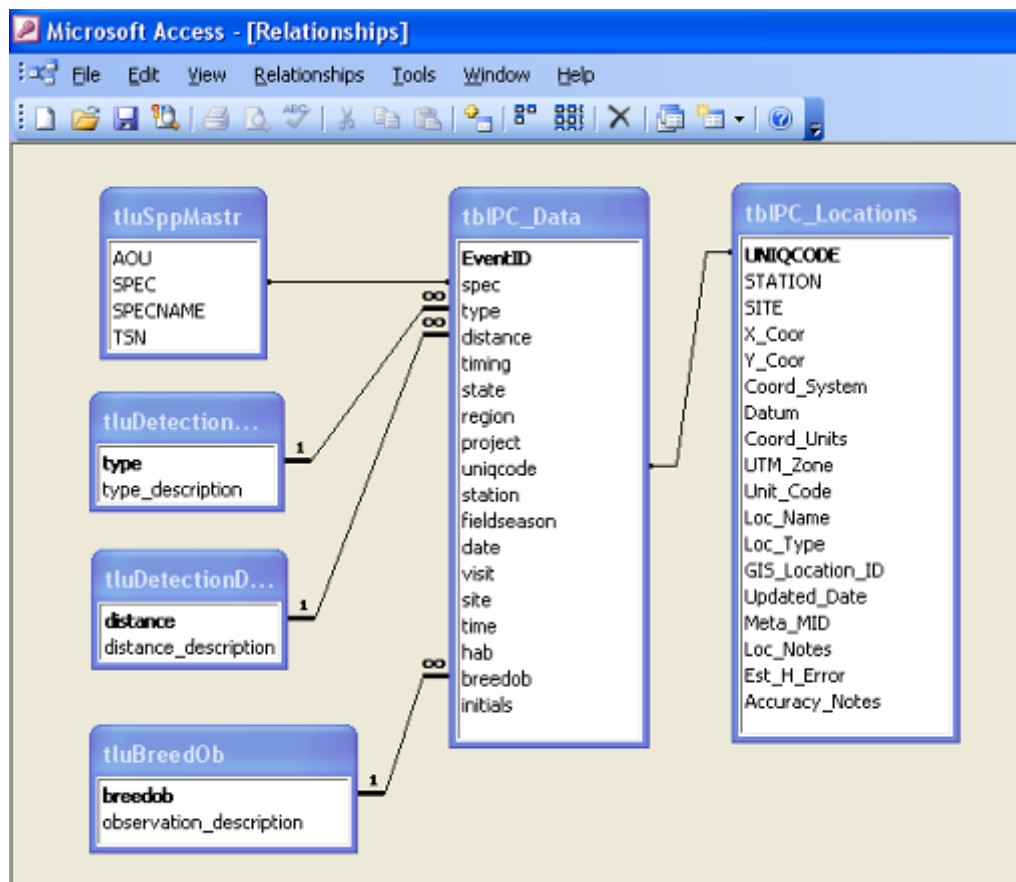


Figure 6. Table relationships for the landbird monitoring point count data set.

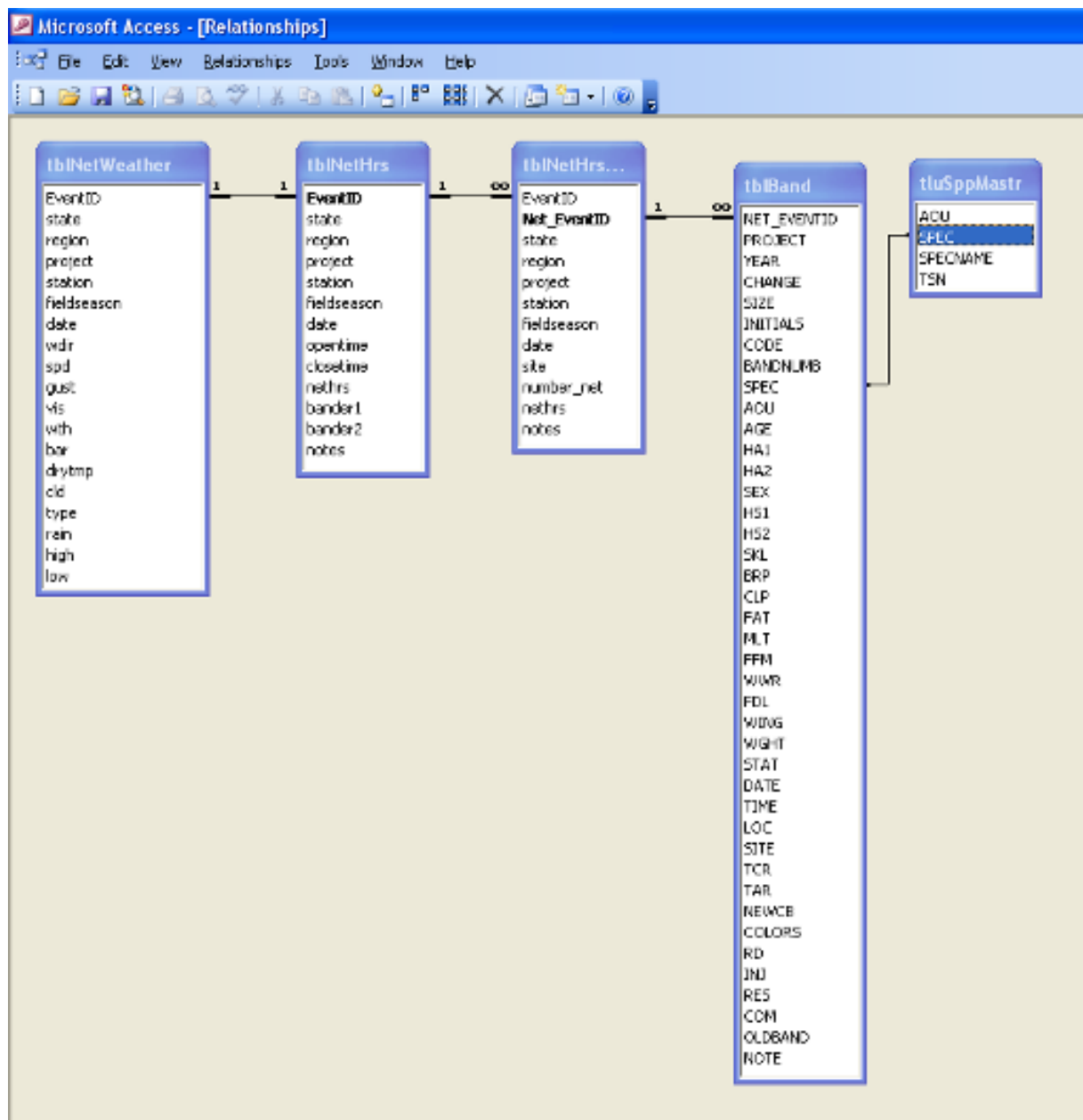


Figure 7. Table relationships for the landbird monitoring bird banding data set.

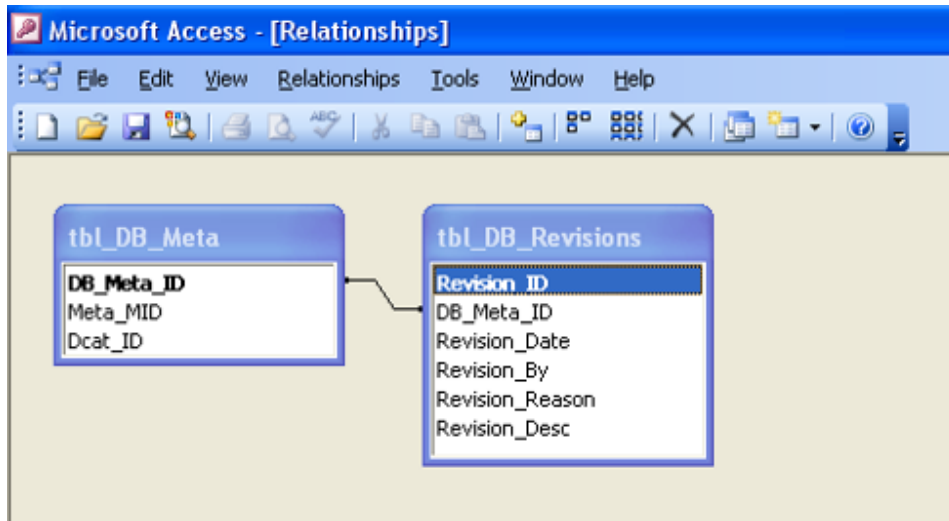


Figure 8 Tables used to document revisions and updates to the landbird monitoring database.

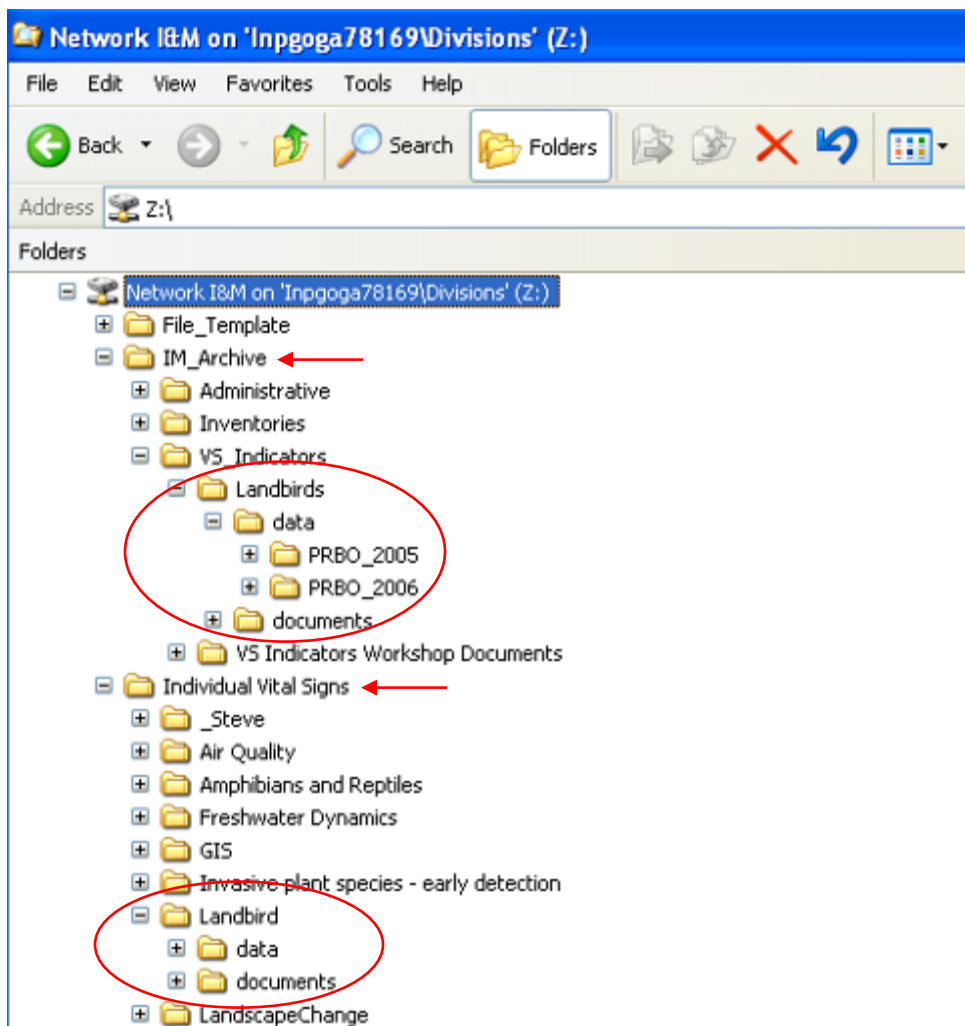
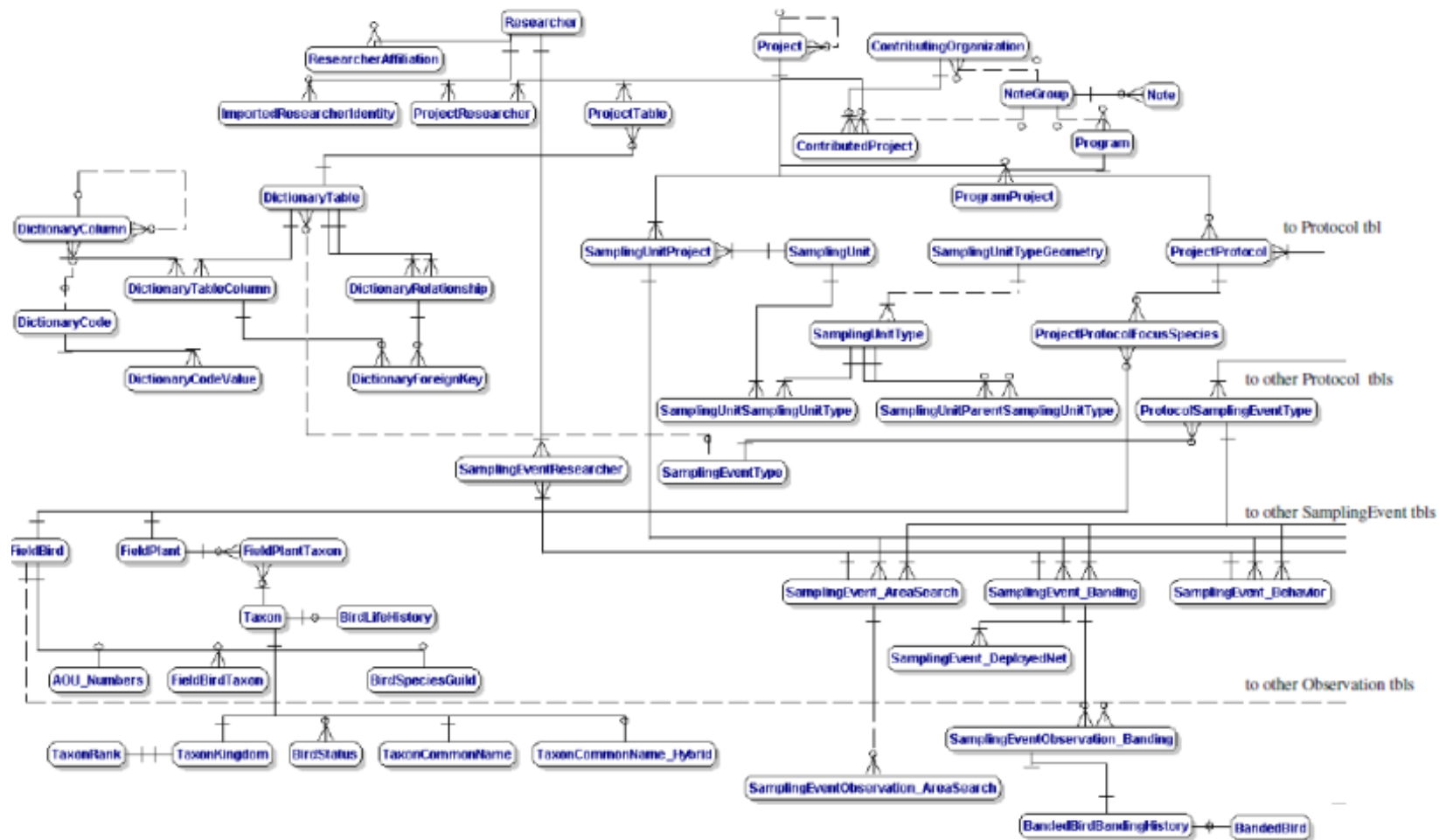
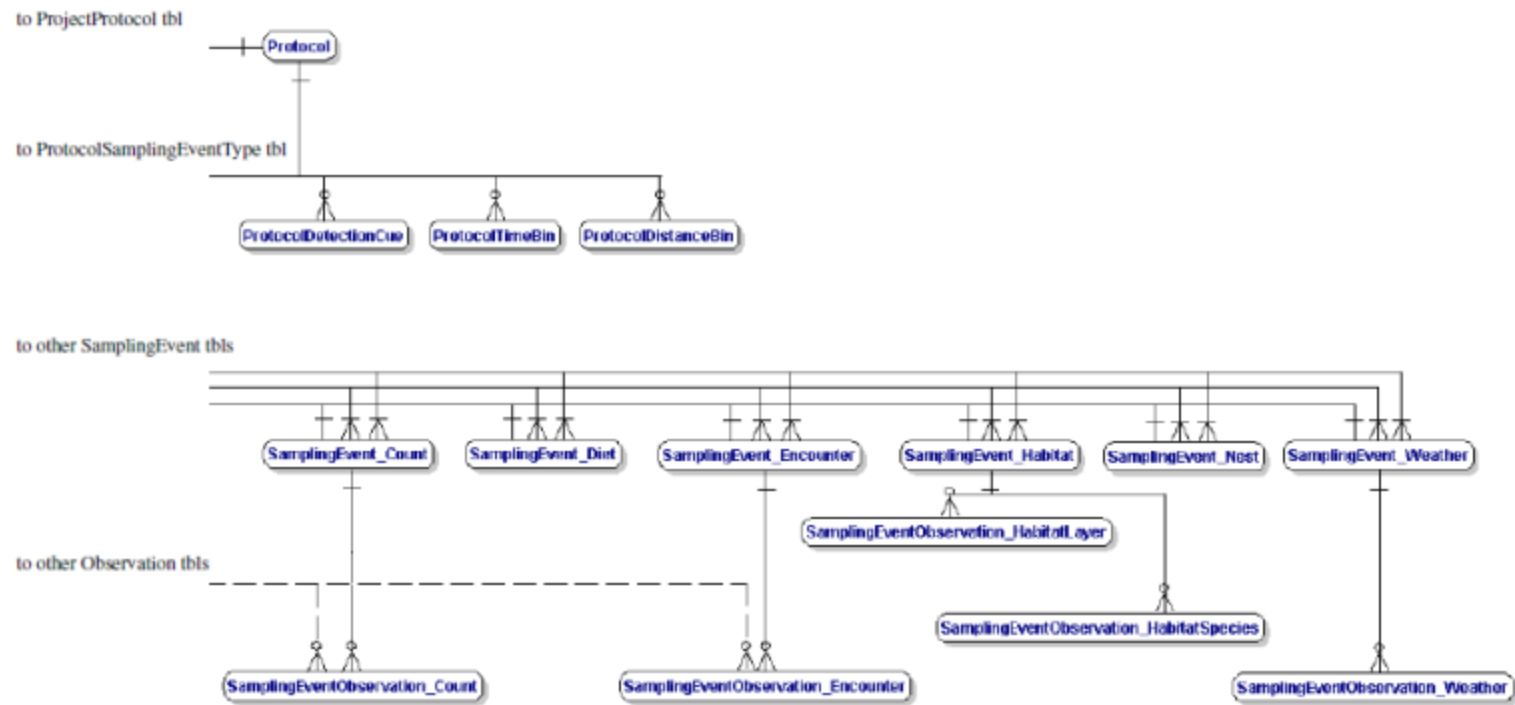


Figure 9. Directory structure of landbird files stored on the Marin Headlands server at the Golden Gate National Recreation Area.

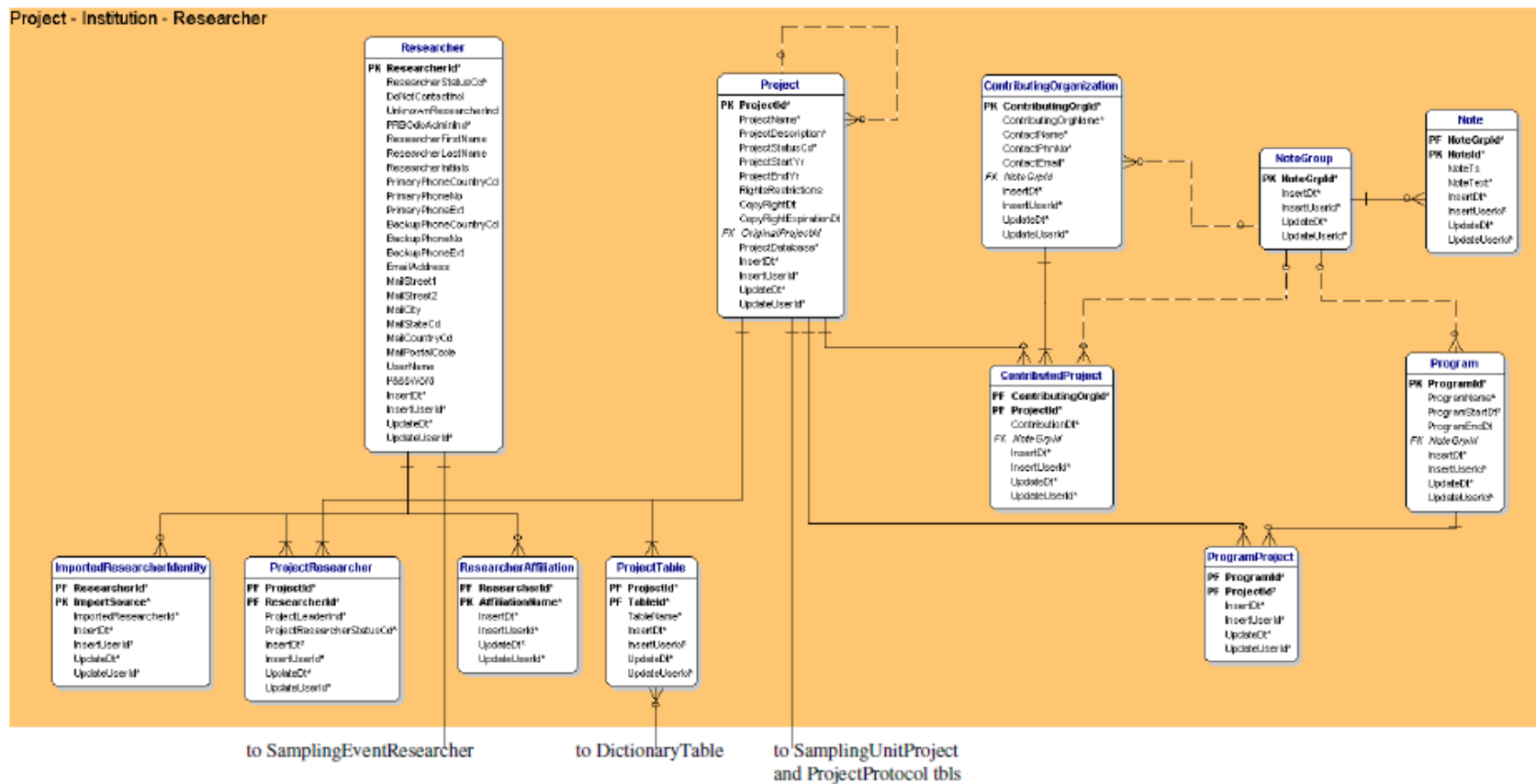
SOP 8: Appendix 1: Point Blue Database Documentation

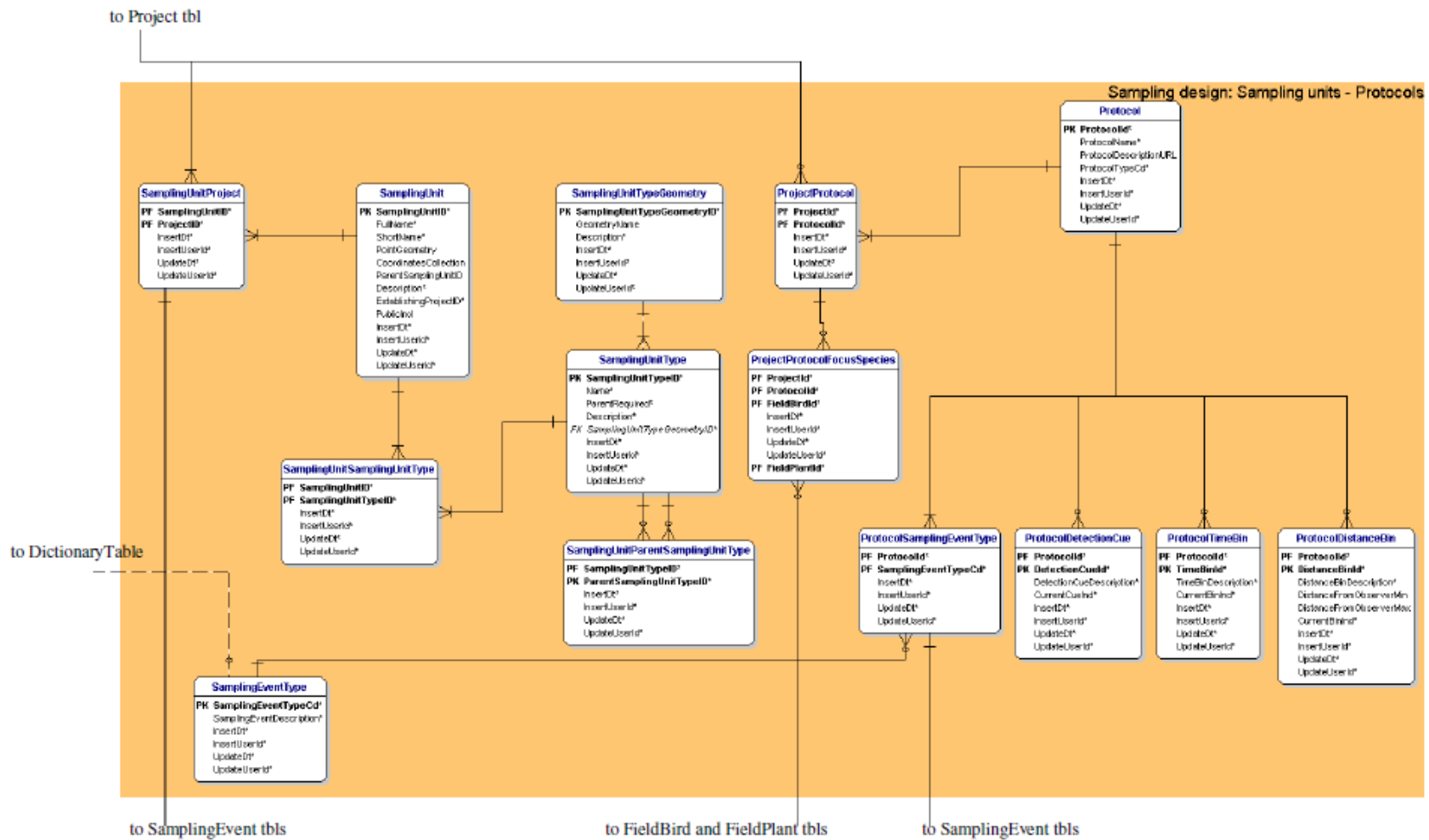
These tables can be grouped in six broad categories of data: Researcher (individual that performed surveys), Dictionaries (references internal to the database that help define or constrain data for consistency), Sampling Units (locations where surveys were performed), Taxonomy, Sampling Events (site visits when surveys were performed), and Observations (detections of birds). The schema of the database is shown in the following figures:

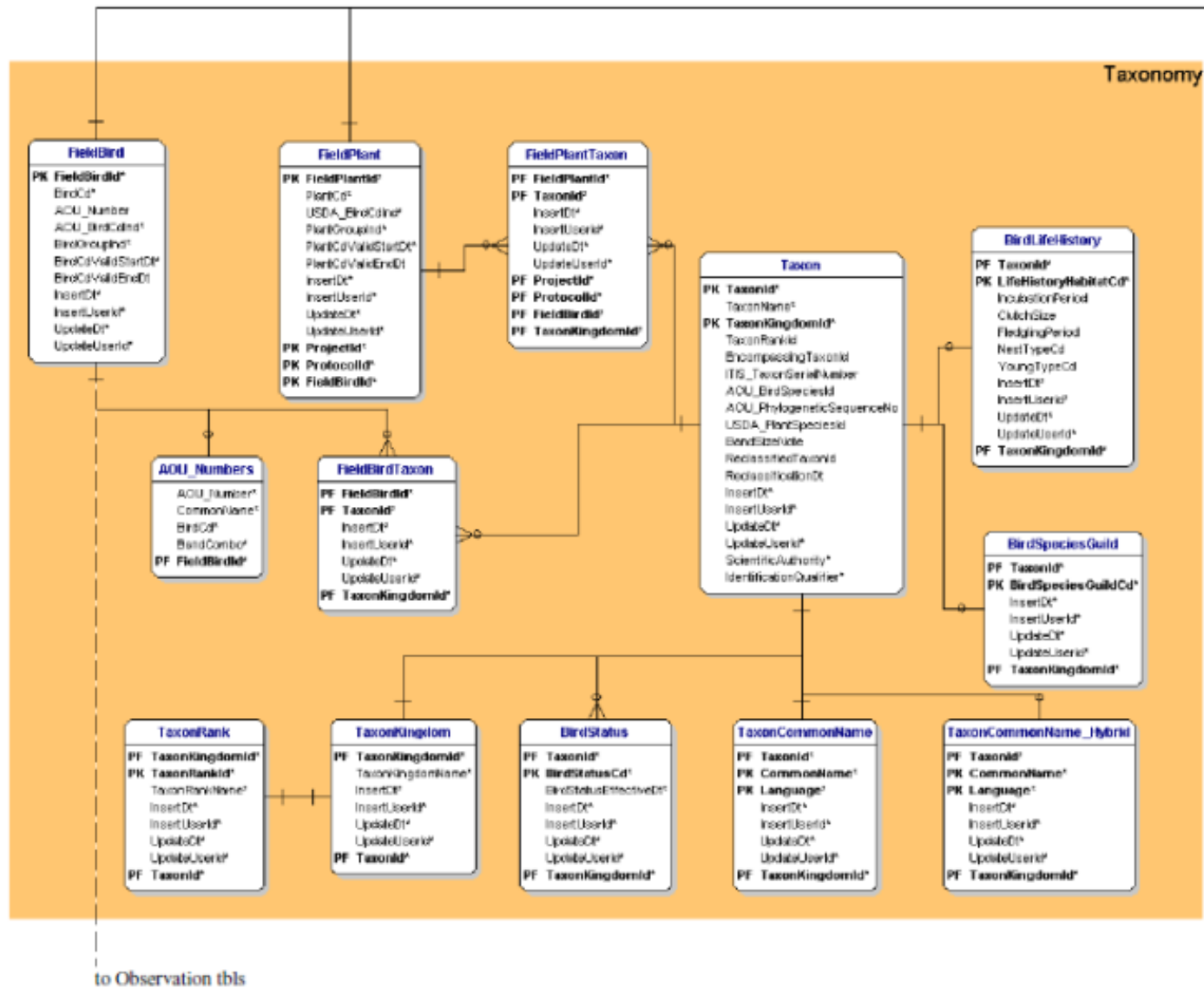


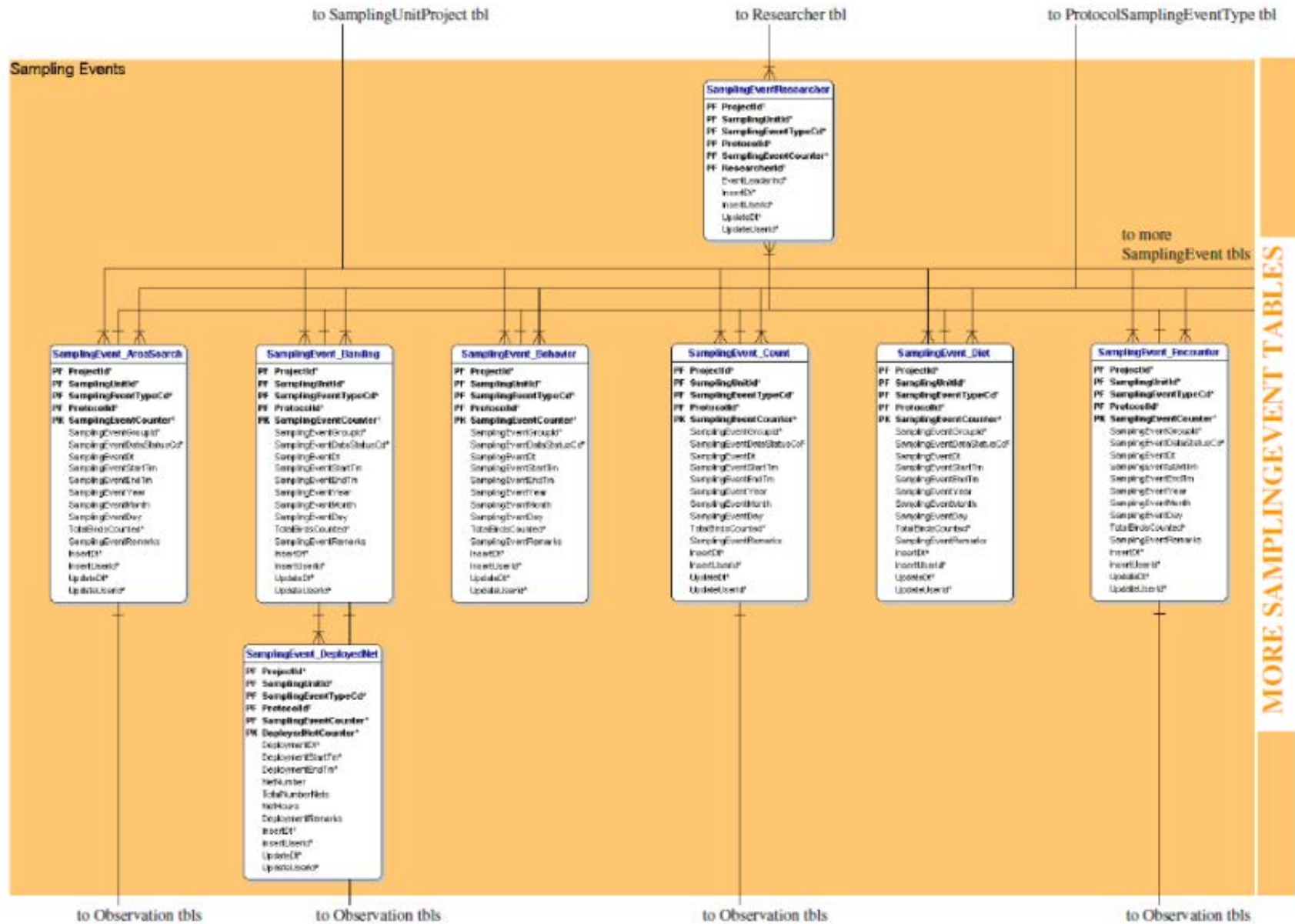


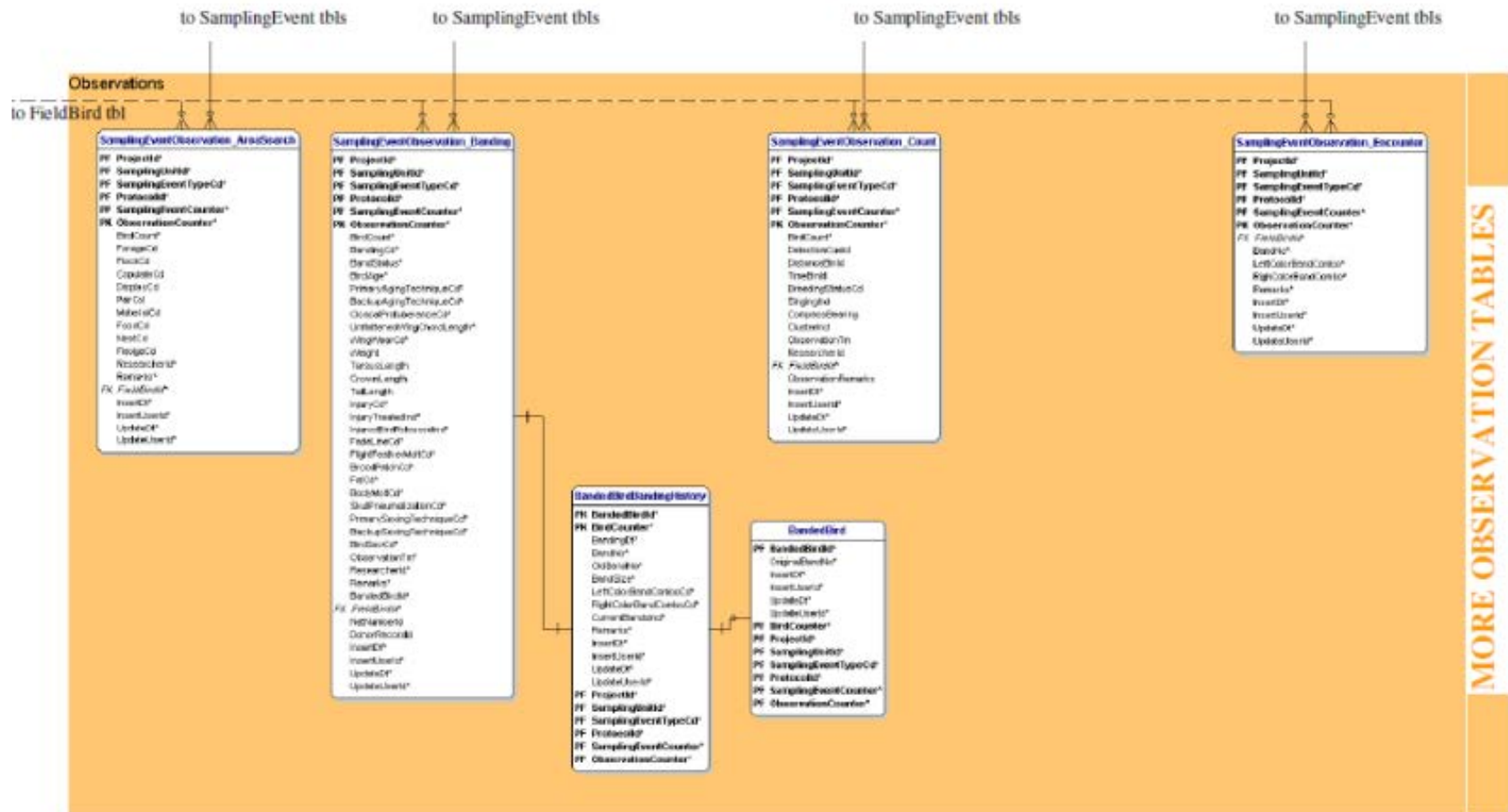
Project - Institution - Researcher











Descriptive metadata of Point Blue Conservation Science's enterprise database

Table: AOU_Numbers

Provides the AOU identifier number to an avian taxon, links to BBL four-letter species code and provides recommended band size for the taxon
No indices

Field name	Index	Data type	Description
AOU_Number*		varchar(12)	The numerical identifier of the taxon given by the AOU
CommonName*		varchar(255)	A common name for taxon in a particular language.
BirdCd*		varchar(4)	A four character code used to indicate the type of a bird observed by a field biologist. The code can represent a specific group of species or it could indicate only a general identification, such as sparrow.
BandCombo*		varchar(255)	Recommended band sizes for the species

Table: BandedBird

Records a unique identifier to every banded bird, regardless of changes in band number

Index	Column
PRIMARY	BandedBirdId
	OriginalBandNo

Field name	Index	Data type	Description
BandedBirdId*	PRI	int	Unique identifier to banded bird
OriginalBandNo*	UNI	int	First band number assigned to banded bird
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: BandedBirdBandingHistory

Tracks capture history of banded birds

Index	Column
PRIMARY	BandedBirdId
PRIMARY	BirdCounter

Field name	Index	Data type	Description
BandedBirdId*	PRI	int	Unique identifier of every banded bird
BirdCounter*	PRI	int	Counter: number of times a bird has been captured
BandingDt*		date	Date banded
BandNo*		int	Band number assigned to captured bird
OldBandNo*		int	Old band number, if band changed
BandSize*		varchar(4)	Size of band applied to bird
LeftColorBandComboCd*		varchar(128)	Color bands applied to left leg of bird
RightColorBandComboCd*		varchar(128)	Color bands applied to right leg of bird
CurrentBandsInd*		tinyint	THIS FIELD HAS ONLY 0's!!
Remarks*		text	
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: BirdLifeHistory

Some species of birds may have adapted to different habitats with changes to their life history. Factors such as the incubation period of eggs or type of nest can vary according by habitat.

<i>Index</i>	<i>Column</i>
PRIMARY	TaxonId
PRIMARY	LifeHistoryHabitatCd

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
TaxonId*	PRI	int	Identifies a taxon entry.
LifeHistoryHabitatCd*	PRI	varchar(32)	A code indicating the habitat in which a species may have different life history factors. The domain of this code is documented in DataDictionaryCodeSetValue.
IncubationPeriod		smallint	The number of days over which the eggs of a species of bird typically incubate.
ClutchSize		smallint	The typical number of eggs laid by a particular species of bird.
FledglingPeriod		smallint	The number of days which constitutes the fledgling period for the young of a particular species.
NestTypeCd		varchar(32)	A code indicating a nest type. The domain of this code is documented in DataDictionaryCodeSetValue.
YoungTypeCd		varchar(32)	Indicates the type of young produced by a bird species. The domain of this code is documented in DataDictionaryCodeSetValue.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: BirdSpeciesGuild

Some species of bird may be grouped into guilds such as waterfowl.

<i>Index</i>	<i>Column</i>
PRIMARY	TaxonId
PRIMARY	BirdSpeciesGuildCd

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
TaxonId*	PRI	int	Identifies a taxon entry.
BirdSpeciesGuildCd*	PRI	varchar(32)	A code representing a guild which a particular bird species is a member of i.e. waterfowl. The values of this code are documented in DataDictionaryCodeSetValue.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: BirdStatus

A species of bird may be designated a Partners In Flight Focus Species or endangered or threatened according to State and Federal government. A bird may have a combination of up to three designations.

<i>Index</i>	<i>Column</i>
PRIMARY	TaxonId

PRIMARY	BirdStatusCd		
<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
TaxonId*	PRI	int	Identifies a taxon entry.
BirdStatusCd*	PRI	varchar(32)	A code representing the status of a particular bird species as established by various organizations. The values of this code are documented in DataDictionaryCodeSetValue.
BirdStatusEffectiveDt*		date	The date upon which the status became effective for the bird.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ContributedProject

Indicates what organizations contributed what projects.

<i>Index</i>	<i>Column</i>
PRIMARY	ContributingOrgId
PRIMARY	ProjectId
ProjectContributor_ibfk_1	ProjectId
ContributedProjectNote_ibfk_1	NoteGrpId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ContributingOrgId*	PRI	int	The internal identifier for a contributing organization.
ProjectId*	PRI	varchar(32)	A mnemonic identifier for a project.
ContributionDt*		date	The date on which a project's data was contributed to PRBOdb.
NoteGrpId	MUL	int	Identifies a group of one or more notes related to a subject.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ContributingOrganization

Records information about organizations contribution data to PRBOdb.

<i>Index</i>	<i>Column</i>
PRIMARY	ContributingOrgId
ConrtbtgOrgNotes_ibfk_1	NoteGrpId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ContributingOrgId*	PRI	int	The internal identifier for a contributing organization.
ContributingOrgName*		varchar(64)	The name of a contributing organization.
ContactName*		varchar(64)	A name to which enquiries regarding a contributing organization should be directed.
ContactPhnNo*		varchar(32)	The phone number of the contact at a contributing organization.
ContactEmail*		varchar(128)	The email address of the contact at a contributing organization.

NoteGrpId	MUL	int	Identifies a group of one or more notes related to a subject.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: DictionaryCode

Some values in the database are codes. The set of values that make up the domain of a code is known as a code set. A code set is identified by a number. When a column in the database contains codes, the appropriate code set is related to the column by its identifier. This assists in editing the column for valid values and for presenting the user with the meaning of code values.

<i>Index</i>	<i>Column</i>		
PRIMARY	CodeSetId		

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
CodeSetId*	PRI	int	Identifies a code set in DataDictionaryCodeSet.
CodeSetName*		varchar(32)	The name of a code set in DataDictionaryCodeSet.
CodeSetDescription*		varchar(512)	A description of the purpose of a code set.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: DictionaryCodeValue

Each codeset contains a list of code values. This table contains the meaning of each of these values.

<i>Index</i>	<i>Column</i>		
PRIMARY	CodeSetId		
PRIMARY	CodeValue		

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
CodeSetId*	PRI	int	Identifies a code set in DataDictionaryCodeSet.
CodeValue*	PRI	varchar(32)	A value in the domain of a code set as defined in DataDictionaryCodeSetValue.
CodeValueDescription*		varchar(512)	A description of the meaning of a value in the domain of a code set as defined in DataDictionaryCodeSetValue.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: DictionaryColumn

The PRBOdb database consists of tables containing columns. Each column in the database is uniquely defined. Attributes of the column such as datatype and length are captured, as well as, the definition of the column.

<i>Index</i>	<i>Column</i>
PRIMARY	ColumnId

datadict_rolename_fk	BaseColumnId		
datadict_codeset_fk	CodeSetId		
Field name	Index	Data type	Description
ColumnId*	PRI	int	Identifies a column.
ColumnName*		char	Identifies a column defined in DataDictionaryColumn and is the name of a column that appears in one or more tables in the PRBOdb database.
ColumnDefinition		varchar(1024)	The definition of a column appearing in the PRBOdb database.
ColumnDataTypeCd		char	A code indicating the data type of a column in a table. The domain of this code is documented in DataDictionaryCodeSetValue.
ColumnUnitsCd		varchar(32)	A code identifying the unit of measurement of a column that indicates quantities. The domain of this code is documented in DataDictionaryCodeSetValue.
ColumnLength		smallint	The length of a column in the database when the column is of a datatype where length is a factor i.e. VARCHAR and DECIMAL.
DecimalPrecision		smallint	The number of positions to the right of the decimal point supported by a particular decimal data type declaration.
RoleNameInd*		tinyint	Indicates if the column name is a role name for another column.
BaseColumnId	MUL	int	Identifies the base name of a role-named column.
CodeColumnId		tinyint	Indicates if the domain of a column is a code set that appears in DataDictionaryCodeSet.
CodeSetId	MUL	int	Identifies a code set in DataDictionaryCodeSet.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: DictionaryForeignKey

Relationships between tables in the database are represented by repeating the columns making up the primary key of the parent table in the child table. These columns are known as a foreign key in the child table. A table may contain many foreign keys. The value of a set of foreign key columns in a child table must appear in the parent table.

Index	Column		
PRIMARY	ParentTableId		
PRIMARY	ChildTableId		
PRIMARY	RelationshipName		
PRIMARY	ColumnId		
datadict_tableColumn_fk	ChildTableId		
datadict_tableColumn_fk	ColumnId		
Field name	Index	Data type	Description
ParentTableId*	PRI	int	Identifies a table acting in the role of parent in a relationship.
ChildTableId*	PRI	int	Identifies a table acting in the role of child in a relationship.
RelationshipName*	PRI	varchar(64)	A phrase describing the nature of the relationship between two tables.
ColumnId*	PRI	int	Identifies a column.

InsertDt*	date	The date upon which a row was added to the PRBOdb database.
InsertUserId*	varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*	date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*	varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: DictionaryRelationship

Tables in the database may be related. A relationship is always between a parent table and a child table. For each row in a parent table, there may be one or more related rows in the child table.

<i>Index</i>	<i>Column</i>		
PRIMARY	ParentTableId		
PRIMARY	ChildTableId		
PRIMARY	RelationshipName		
datadict_childtable_fk	ChildTableId		

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ParentTableId*	PRI	int	Identifies a table acting in the role of parent in a relationship.
ChildTableId*	PRI	int	Identifies a table acting in the role of child in a relationship.
RelationshipName*	PRI	varchar(64)	A phrase describing the nature of the relationship between two tables.
CardinalityCd*		varchar(32)	A code indicating the cardinality of a relationship between tables. Cardinality is represented as a ratio between the parent and child tables in the relationship. The values of this code are documented in DataDictionaryCodeSetValue.
IdentifyingRelationshipInd*		tinyint	Indicates if a relationship between tables is identifying. In an identifying relationship the foreign key columns associated with the relationship appear in the primary key of the child table. The information in the child table would be considered characteristic of the parent entity and not merely associated.
OptionalRelationshipInd*		tinyint	Indicates if a relationship between tables is optional for any given row in the child table. If the relationship is optional, the foreign key may be null in the child table. Only non-identifying relationships can be optional.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: DictionaryTable

The PRBOdb database stores data in tables. Each table represents a thing, event, multi-valued characteristics of a thing or event, or a many to many relationship between things or events.

<i>Index</i>	<i>Column</i>
PRIMARY	TableId
TableSamplingEventType_ibfk_1	SamplingEventTypeCd
TBL_NAME_IX	TableName

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
TableId*	PRI	int	Identifies a table or view.
SamplingEventTypeCd	MUL	varchar(32)	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
TableName*	MUL	char	The name of a table in the PRBOdb database.
TablePurpose*		varchar(1024)	A description of the purpose of the table in the PRBOdb database.
ViewInd*		tinyint	Indicates if the table in the PRBOdb database is a view and not a physical table.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: DictionaryTableColumn

The tables in the PRBOdb database are made up of columns. Each column is either part of a identifying key or is data about the thing or event represented by the table. Some columns may be foreign keys. The data for columns may be required or optional.

<i>Index</i>	<i>Column</i>
PRIMARY	TableId
PRIMARY	ColumnId
datadict_Column_fk	ColumnId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
TableId*	PRI	int	Identifies a table or view.
ColumnId*	PRI	int	Identifies a column.
ColumnCounter*		int	A number indicating the position of a column in a table.
RequiredInd*		tinyint	Indicates whether a field is required or not (boolean)
AutoIncrementInd*		tinyint	Indicates if the value of a column is automatically set to the next highest integer
PrimaryKeyInd*		tinyint	Indicates if the column is a member of the primary key of the table.
ForeignKeyInd*		tinyint	Indicates if the column is a member of a foreign key in the table.
VirtualInd*		tinyint	What is this? It's empty
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: FieldBird

In practice, a researcher identifies species of birds, or groups of species of birds, using four character codes specified by the U.S. Bird Banding Lab when collecting observation data in the field. These codes have and can change over time as the underlying concept of what denotes a species or group of species changes. A code may be reassigned to a different species or the code associated with a particular species may change. Some codes may not originate with the AOU.

<i>Index</i>	<i>Column</i>
PRIMARY	FieldBirdId
BirdCd	BirdCd

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
FieldBirdId*	PRI	int	Identifies a particular instance of a four character code used to identify birds in the field in time. The meaning of a four character code can change over time.
BirdCd*	UNI	char	A four character code used to indicate the type of a bird observed by a field biologist. The code can represent a specific group of species or it could indicate only a general identification, such as sparrow.
AOU_Number		decimal	The identifier number given to the taxon by the AOU
AOU_BirdCdInd*		tinyint	Indicates if the bird code was issued by the American Ornithological Union.
BirdGroupInd*		tinyint	Indicates if the four character bird code represents a group of birds.
BirdCdValidStartDt*		date	The date upon which the four character bird code started representing a particular species or group of species or general identification of a bird.
BirdCdValidEndDt		date	The date upon which the four character bird code stopped representing a particular species or group of species or general identification of a bird.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: FieldBirdTaxon

The four character codes used to identify birds in the field are mapped to specific entries in the Taxon table.

<i>Index</i>	<i>Column</i>
PRIMARY	FieldBirdId
PRIMARY	TaxonId
TaxonBird_fk	TaxonId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
FieldBirdId*	PRI	int	Identifies a particular instance of a four character code used to identify birds in the field in time. The meaning of a four character code can change over time.
TaxonId*	PRI	int	Identifies a taxon entry.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: FieldPlant

In practice, a researcher identifies species of plants, or groups of species of plants, using six character codes specified by the United States Department of Agriculture when collecting observation data in the field. These codes have and can change over time as the underlying concept of what denotes a species or group of species changes. A code may be reassigned to a different species or the code associated with a particular species may change. Some codes may not originate with the USDA.

<i>Index</i>	<i>Column</i>
PRIMARY	FieldPlantId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
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FieldPlantId*	PRI	int	Identifies a particular instance of a six character code used to identify plants in the field in time. The meaning of a six character code can change over time.
PlantCd*		char	A six character code used by field biologists to identify plants. These codes may be assigned by the USDA.
USDA_BirdCdInd*		tinyint	This field is null. What is it?
PlantGroupInd*		tinyint	Indicates if the six character plant code represents a specific group of plants.
PlantCdValidStartDt*		date	The date upon which the six character plant code started representing a particular species or group of species or general identification of a plant.
PlantCdValidEndDt		date	The date upon which the six character plant code stopped representing a particular species or group of species or general identification of a plant.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: FieldPlantTaxon

The six character codes used to identify plants in the field are mapped to specific entries in the Taxon table.

<i>Index</i>	<i>Column</i>
PRIMARY	FieldPlantId
PRIMARY	TaxonId
TaxonPlant_fk	TaxonId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
FieldPlantId*	PRI	int	Identifies a particular instance of a six character code used to identify plants in the field in time. The meaning of a six character code can change over time.
TaxonId*	PRI	int	Identifies a taxon entry.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ImportedResearcherIdentity

Contains the researcher identifier used by a legacy system

<i>Index</i>	<i>Column</i>
PRIMARY	ResearcherId
PRIMARY	ImportSource

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ResearcherId*	PRI	int	Identifies a researcher in the PRBOdb database.
ImportSource*	PRI	varchar(128)	The name of the source of the imported researcher identifier.
ImportedResearcherId*		varchar(32)	A researcher identifier imported from another system.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.

InsertUserId*	varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*	date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*	varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: Note

Is a note about some subject.

<i>Index</i>	<i>Column</i>
PRIMARY	NoteGrpld
PRIMARY	Noteld

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
NoteGrpld*	PRI	int	Identifies a group of one or more notes related to a subject.
Noteld*	PRI	int	Identifies a note.
NoteTs		timestamp	The timestamp of when the note was originally written.
NoteText*		varchar(2048)	The text of a note.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: NoteGroup

Groups sets of notes about a common subject.

<i>Index</i>	<i>Column</i>
PRIMARY	NoteGrpld

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
NoteGrpld*	PRI	int	Identifies a group of one or more notes related to a subject.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: Program

Records information about a program that conducts a related set of projects.

<i>Index</i>	<i>Column</i>
PRIMARY	ProgramId
ProgramNote_ibfk_1	NoteGrpld

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProgramId*	PRI	varchar(32)	The identifier for a research program.
ProgramName*		varchar(128)	The name of a research program.
ProgramStartDt*		date	The inception date of a program.
ProgramEndDt		date	The date upon which a program was terminated.

NoteGrpId	MUL	int	Identifies a group of one or more notes related to a subject.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ProgramProject

Maps projects to their sponsoring programs, if they have such.

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	ProgramId
ProgramProject_ibfk_2	ProgramId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProgramId*	PRI	varchar(32)	The identifier for a research program.
ProjectId*	PRI	char	A mnemonic identifier for a project.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: Project

A project represents an effort to collect data for some purpose. The project usually is active for some defined period of time. A project will use certain protocols in the collection of data.

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
ProjectName	ProjectName
OriginalProject_fk	OriginalProjectId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.
ProjectName*	UNI	varchar(128)	The full, official name of a project.
ProjectDescription*		varchar(1028)	A description of a project, including project goals.
ProjectStatusCd*		varchar(32)	A code indicating the current status of a project. The domain of this code is documented in DataDictionaryCodeSetValue.
ProjectStartYr		year	The year in which the project originally became active.
ProjectEndYr		year	The year in which all project activity was terminated without the expectation of renewal.
RightsRestrictions		varchar(1028)	A description of any restrictions a project is placing on access to or use of data collected under the auspices of the project.
CopyRightDt		date	The effective date of a project copy right.
CopyRightExpirationDt		date	The date on which a project copy right expires.
OriginalProjectId	MUL	char	Only null or empty values in here. What is it?
ProjectDatabase*		varchar(64)	The name of the database containing the project data.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.

InsertUserId*	varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*	date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*	varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ProjectProtocol

A project will use one or more protocols when collecting data.

<i>Index</i>	<i>Column</i>		
PRIMARY	ProjectId		
PRIMARY	ProtocolId		
ProtocolProject_fk	ProtocolId		

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ProjectProtocolFocusSpecies

A project may use a specific protocol when collecting data about specific species of birds.

<i>Index</i>	<i>Column</i>		
PRIMARY	ProjectId		
PRIMARY	ProtocolId		
PRIMARY	FieldBirdId		
FocusSpeciesFieldBird_fk	FieldBirdId		

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
FieldBirdId*	PRI	int	Identifies a particular instance of a four character code used to identify birds in the field in time. The meaning of a four character code can change over time.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ProjectResearcher

A project will employ one or more researchers in various roles. A researcher may perform more than one role on a project.

<i>Index</i>	<i>Column</i>		
PRIMARY	ProjectId		
PRIMARY	ResearcherId		
ResearcherProject_fk	ResearcherId		

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.

ResearcherId*	PRI	int	Identifies a researcher in the PRBOdb database.
ProjectLeaderInd*		int	Indicates the researcher possesses Project Leader privileges.
ProjectResearcherStatusCd*		varchar(32)	A code indicating the current status of a researcher assigned to a project. The domain of this code is documented in DataDictionaryCodeSetValue.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ProjectTable

PRBO encompasses many research areas and many collaborators. Each project's data is stored in a set of sampling event and observation tables. This table documents which tables contain data for what project.

<i>Index</i>	<i>Column</i>		
PRIMARY	ProjectId		
PRIMARY	TableId		
ProjectTable_ibfk_2	TableId		

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	varchar(32)	A mnemonic identifier for a project.
TableId*	PRI	int	Identifies a table or view.
TableName*		varchar(64)	The name of a table in the PRBOdb database.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: Protocol

A protocol represents the rules and procedures employed when collecting data.

<i>Index</i>	<i>Column</i>		
PRIMARY	ProtocolId		

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
ProtocolName*		varchar(128)	The full, official name of a protocol.
ProtocolDescriptionURL		varchar(128)	A URL pointing to a pdf document describing the protocol in detail.
ProtocolTypeCd*		varchar(32)	A code indicating the type of protocol i.e. Marine, Terrestrial, Wetlands, etc. The domain of this code is documented in DataDictionaryCodeSetValue.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ProtocolDetectionCue

A protocol may have a set of cues defined that can lead to the detection of a bird, and which are to be recorded when gathering bird observation data.

<i>Index</i>	<i>Column</i>
PRIMARY	ProtocolId
PRIMARY	DetectionCueId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
DetectionCueId*	PRI	char	Identifies a detection cue being employed a part of a protocol.
DetectionCueDescription*		varchar(128)	A description of a detection cue being employed a part of a protocol.
CurrentCueInd*		tinyint	Logical field indicating which cue detection codes are considered current and should be used in an application.
InsertDt*		date	The date upon which a row was added to the PRBodb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBodb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBodb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBodb database.

Table: ProtocolDistanceBin

A protocol may have a set of distance bins defined in which bird sightings may be made, and which are to be recorded when gathering bird observation data. A distance bin represents a range in which a sighting was made i.e. 1 to 50 meters.

<i>Index</i>	<i>Column</i>
PRIMARY	ProtocolId
PRIMARY	DistanceBinId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
DistanceBinId*	PRI	char	Identifies a distance bin being employed a part of a protocol.
DistanceBinDescription*		varchar(128)	The description of a distance bin being employed a part of a protocol.
DistanceFromObserverMin		smallint	If exact distance is unknown, a range minimum value may be provided
DistanceFromObserverMax		smallint	If exact distance is unknown, a range maximum value may be provided
CurrentBinInd*		tinyint	Logical field indicating which protocol bins are considered current and should be used in an application.
InsertDt*		date	The date upon which a row was added to the PRBodb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBodb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBodb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBodb database.

Table: ProtocolSamplingEventType

Lists the sampling event types associated with a sampling protocol

<i>Index</i>	<i>Column</i>
PRIMARY	ProtocolId

PRIMARY
SamplingEventProtocol_fk SamplingEventTypeCd
SamplingEventProtocol_fk SamplingEventTypeCd

Field name	Index	Data type	Description
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdatedDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ProtocolTimeBin

A protocol may have a set of time bins defined during which bird sightings may be made, and which are to be recorded when gathering bird observation data. A time bin represents a block of time during which observations are collected i.e. 5 minutes.

Index	Column
PRIMARY	ProtocolId
PRIMARY	TimeBinId

Field name	Index	Data type	Description
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
TimeBinId*	PRI	char	Identifies a time bin used by a protocol when making observations.
TimeBinDescription*		varchar(128)	Description of an individual time bin, usually a duration.
CurrentBinInd*		tinyint	Logical field indicating which protocol bins are considered current and should be used in an application.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdatedDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: Researcher

A researcher is a user of the PRBOdb database and may also be associated with collected data. Each researcher is assigned a type code which is used to define the functions they may perform within the database.

Index	Column
PRIMARY	ResearcherId
Index_2	ResearcherFirstName

Field name	Index	Data type	Description
ResearcherId*	PRI	int	Identifies a researcher in the PRBOdb database.
ResearcherStatusCd*		varchar(32)	Indicates the status of the Researcher
DoNotContactInd		tinyint	If true, the Researcher should not be contacted by PRBO.
UnknownResearcherInd		tinyint	If true, the Researcher cannot be identified.
PRBOdbAdminInd*		tinyint	Indicates if the researcher is a PRBOdb Administrator.
ResearcherFirstName	MUL	varchar(64)	The first name of a researcher.
ResearcherLastName		varchar(64)	The last name of a researcher.

ResearcherInitials	varchar(6)	Initials of a researcher
PrimaryPhoneCountryCd	char	The country code that must be dialed before dialing the rest of the primary phone number.
PrimaryPhoneNo	char	The primary phone number of the researcher, including area code.
PrimaryPhoneExt	char	The extension associated the primary phone number of the researcher.
BackupPhoneCountryCd	char	The country code that must be entered before dialing the remainder of the researcher backup phone number.
BackupPhoneNo	char	The backup phone number of a researcher, including area code.
BackupPhoneExt	char	The extension associated with the backup phone number of a researcher.
EmailAddress	varchar(128)	An email address.
MailStreet1	varchar(64)	The first line of a street address in a mailing address.
MailStreet2	varchar(64)	The second line of a street address in a mailing address.
MailCity	varchar(64)	The city name in a mailing address.
MailStateCd	varchar(32)	A code indicating the state in a mailing address. The domain of this code is documented in DataDictionaryCodeSetValue under the code set StateCd.
MailCountryCd	varchar(32)	The country code in a mailing address. The domain of this code is documented in DataDictionaryCodeSetValue under the CountryCd code set.
MailPostalCode	varchar(32)	column-definition-placeholder
UserName	varchar(64)	The userid associated with a researcher used for managing security.
Password	varchar(128)	The encrypted value of a researchers password.
InsertDt*	date	The date upon which a row was added to the PRBOdb database.
InsertUserId*	varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*	date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*	varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: ResearcherAffiliation

A researcher may have one or more affiliations with institutions or organizations.

<i>Index</i>	<i>Column</i>
PRIMARY	ResearcherId
PRIMARY	AffiliationName

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ResearcherId*	PRI	int	Identifies a researcher in the PRBOdb database.
AffiliationName*	PRI	varchar(128)	The name of an organization or institution with which a researcher is affiliated.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEventObservation_AreaSearch

Specific observations made as part of an area search

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
PRIMARY	ObservationCounter
SamplingUnitEvent_fk	SamplingUnitId
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	ProtocolId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.
SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	int	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
ObservationCounter*	PRI	int	A value used to identify a particular observation within those collected for a sampling event. It does not necessarily indicate the order in which observations were collected, but it does indicate the order in which they were entered into the PRBOdb database.
BirdCount*		int	The number of birds observed in a single observation record.
ForageCd		char	Indicates if foraging behavior observed
FlockCd		char	Indicates if flocking behavior observed
CopulateCd		char	Indicates if copulation observed
DisplayCd		char	Indicates if breeding display observed
PairCd		char	Indicates if a mating pair/courtship behavior observed
MaterialCd		char	Indicates if carrying nesting material observed
FoodCd		char	Indicates if carrying food observed
NestCd		char	Indicates if active nest found
FledgeCd		char	Indicates if dependent fledgeling observed (being fed by adult, begging, fledgling-length tail)
ResearcherId*		int	Identifies a researcher in the PRBOdb database.
Remarks*		text	
FieldBirdId*		int	Identifies a particular instance of a four character code used to identify birds in the field in time. The meaning of a four character code can change over time.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.

UpdateUserId*	varchar(74)	The userid of the individual to most recently update a row in the PRBOdb database.
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Table: SamplingEventObservation_Banding

Specific observations made as part of a banding event

Index	Column
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
PRIMARY	ObservationCounter
SamplingUnitEvent_fk	SamplingUnitId
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	ProtocolId

Field name	Index	Data type	Description
ProjectId*	PRI	char	A mnemonic identifier for a project.
SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	int	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
ObservationCounter*	PRI	int	A value used to identify a particular observation within those collected for a sampling event. It does not necessarily indicate the order in which observations were collected, but it does indicate the order in which they were entered into the PRBOdb database.
BirdCount*		int	The number of birds observed in a single observation record.
BandingCd*		char	Disposition of the band, as to the type of capture and banding event: new, recapture, etc.
BandStatus*		mediumint	Status of banded bird, following the BBL 300-numbering system
BirdAge*		char	Age of the bird as determined by aging technique
PrimaryAgingTechniqueCd*		char	The main parameter used to determine the age of the bird
BackupAgingTechniqueCd*		char	The backup parameter used to determine the age of the bird
CloacalProtuberanceCd*		char	Size of the cloacal protuberance
UnflattenedWingChordLength*		decimal	Unflattened wing chord
WingWearCd*		char	Degree of flight feather wear in first 4-5 primaries
Weight		decimal	Weight of the bird to the nearest gram
TarsusLength		decimal	Tarsal bone length
CrownLength		decimal	Distance from most proximal to most distal crown feather, to the nearest mm
TailLength		decimal	Measurement of longest rectrice from base, to the nearest mm
InjuryCd*		char	Description of injury observed in bird
InjuryTreatedInd*		varchar(255)	Description of treatment given to injured bird

InjuredBirdReleasedInd*	varchar(255)	
FadeLineCd*	mediumint	Intensity of primary feather emargination; feather-tip wear
FlightFeatherMoltCd*	char	Presence and type of flight feather molt
BroodPatchCd*	char	Status of brood patch
FatCd*	char	Estimate of total (abdominal + furcular) body fat
BodyMoltCd*	char	Amount of molting in body (countour) feathers, including wing covert and tail covert feathers
SkullPneumatizationCd*	char	Degree of skull pneumaticization by wet skulling method
PrimarySexingTechniqueCd*	char	The main parameter used to determine the sex of the bird
BackupSexingTechniqueCd*	char	The backup parameter used to determine the sex of the bird
BirdSexCd*	char	Sex of the bird as determined by sexing technique
ObservationTm*	time	The time at which an observation was made.
ResearcherId*	int	Identifies a researcher in the PRBOdb database.
Remarks*	text	
BandedBirdId*	int	Unique identifier of a banded bird (see BandedBird table)
FieldBirdId*	int	Identifies a particular instance of a four character code used to identify birds in the field in time. The meaning of a four character code can change over time.
NetNumberId	smallint	Identifier of net where beird was captured.
DonorRecordId	int	If data from cooperator, unique identifier of record in original dataset is kept here
InsertDt*	date	The date upon which a row was added to the PRBOdb database.
InsertUserId*	varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*	date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*	varchar(74)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEventObservation_Count

Specific observations made as part of a point count visit

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
PRIMARY	ObservationCounter
DetectionCue_fk	ProtocolId
DetectionCue_fk	DetectionCueId
DistanceBin_fk	ProtocolId
DistanceBin_fk	DistanceBinId
TimeBin_fk	ProtocolId
TimeBin_fk	TimeBinId
CountObservationFieldBird_fk	FieldBirdId
SamplingUnitId	SamplingUnitId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.

SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	smallint	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
ObservationCounter*	PRI	smallint	A value used to identify a particular observation within those collected for a sampling event. It does not necessarily indicate the order in which observations were collected, but it does indicate the order in which they were entered into the PRBOdb database.
BirdCount*		smallint	The number of birds observed in a single observation record.
DetectionCueId		char	Identifies a detection cue being employed a part of a protocol.
DistanceBinId		char	Identifies a distance bin being employed a part of a protocol.
TimeBinId		char	Identifies a time bin used by a protocol when making observations.
BreedingStatusCd		varchar(32)	A code indicating the breeding status of an observed bird. The values of this code are documented in DataDictionaryCodeSetValue.
SingingInd		tinyint	Indicates if a bird was singing while observed.
CompassBearing		smallint	The direction in degrees in which the subject of an observation was seen.
ClusterInd		tinyint	Indicates if the observed birds were in a cluster.
ObservationTm		time	The time at which an observation was made.
ResearcherId		int	Identifies a researcher in the PRBOdb database.
FieldBirdId*	MUL	int	Identifies a particular instance of a four character code used to identify birds in the field in time. The meaning of a four character code can change over time.
ObservationRemarks		varchar(255)	Remarks recorded by the field biologist at the time of recording an observation in the field.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEventObservation_Encounter

Bird observations that do not follow standard sampling procedures may be stored in this table

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
PRIMARY	ObservationCounter

SamplingUnitEvent_fk	SamplingUnitId		
SamplingEventType_fk	SamplingEventTypeCd		
ProtocolEvent_fk	ProtocolId		
Field name	Index	Data type	Description
ProjectId*	PRI	char	A mnemonic identifier for a project.
SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	int	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
ObservationCounter*	PRI	int	A value used to identify a particular observation within those collected for a sampling event. It does not necessarily indicate the order in which observations were collected, but it does indicate the order in which they were entered into the PRBOdb database.
FieldBirdId*		int	Identifies a particular instance of a four character code used to identify birds in the field in time. The meaning of a four character code can change over time.
BandNo*		int	The band number, if any, seen/found on the bird
LeftColorBandCombo*		varchar(128)	Band color combination seen/found, if any, on the left leg
RightColorBandCombo*		varchar(128)	Band color combination seen/found, if any, on the right leg
Remarks*		text	
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(74)	The userid of the individual to most recently update a row in the PRBOdb database.

Table:

SamplingEventObservation_HabitatSpecies

Observations of habitat layers in habitat sampling events

Observations of habitat layers in habitat sampling events	
Index	Column
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
PRIMARY	ObservationCounter
SamplingUnitEvent_fk	SamplingUnitId
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	ProtocolId

Field name	Index	Data type	Description
ProjectId*	PRI	char	A mnemonic identifier for a project.

SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	int	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
ObservationCounter*	PRI	int	A value used to identify a particular observation within those collected for a sampling event. It does not necessarily indicate the order in which observations were collected, but it does indicate the order in which they were entered into the PRBOdb database.
VegetationLayerId		char	Unique identifier of the habitat layer where an observation was made
UpperBoundPlantHeight		float	To the nearest 0.1 meter, the average height of the upper bounds of the vegetation sublayers
UpperBoundPlantId		int	The 6-letter code of the dominant plant species that make up the upper bounds of the vegetation sublayer
UpperBoundPlantPercentCover		float	The relative cover made up by each species in the upper bounds of each vegetation sublayer
LowerBoundPlantHeight		float	To the nearest 0.1 meter, the average height of the lower bounds of the vegetation sublayers
LowerBoundPlantId		int	The 6-letter code of the dominant plant species that make up the lower bounds of the vegetation sublayer
LowerBoundPlantPercentCover		float	The relative cover made up by each species in the lower bounds of each vegetation sublayer
BreastHeightMinPlantDiameter		float	Diameter-at-breast-height of the plant with narrowest trunk in the tree (or if applicable, shrub) sublayer
BreastHeightMinPlantId		int	Identifier of the plant taxon of the plant with the narrowest diameter-at-breast-height in the tree (or if applicable, shrub) sublayer
BreastHeightMaxPlantDiameter		float	Diameter-at-breast-height of the plant with widest trunk in the tree (or if applicable, shrub) sublayer
BreastHeightMaxPlantId		int	Identifier of the plant taxon of the plant with the widest diameter-at-breast-height in the tree (or if applicable, shrub) sublayer
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(74)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEvent_HabitatLayer

Observations of vegetation layers in habitat sampling events

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId

PRIMARY
PRIMARY
SamplingUnitEvent_fk
SamplingEventType_fk
ProtocolEvent_fk

SamplingEventCounter
ObservationCounter
SamplingUnitId
SamplingEventTypeCd
ProtocolId

Field name	Index	Data type	Description
ProjectId*	PRI	char	A mnemonic identifier for a project.
SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	int	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
ObservationCounter*	PRI	int	A value used to identify a particular observation within those collected for a sampling event. It does not necessarily indicate the order in which observations were collected, but it does indicate the order in which they were entered into the PRBOdb database.
VegetationLayerCd		char	Unique identifier of the habitat layer/sublayer where vegetation observations were made
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(74)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEventObservation_Weather

Specific observations made at weather observation events

Index	Column
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
PRIMARY	ObservationCounter
SamplingUnitEvent_fk	SamplingUnitId
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	ProtocolId

Field name	Index	Data type	Description
ProjectId*	PRI	char	A mnemonic identifier for a project.
SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.

SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	int	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
ObservationCounter*	PRI	int	A value used to identify a particular observation within those collected for a sampling event. It does not necessarily indicate the order in which observations were collected, but it does indicate the order in which they were entered into the PRBODB database.
ObservationTm		time	The time at which an observation was made.
AvgTrueWindDirection		char	Average wind direction
AvgWindForce		float	Average wind force in Beaufort scale
HighestWindGust		float	Highest wind gust in Beaufort scale
CurrentRainFall		float	Current rainfall reading at the gauge in millimeters
RainGaugeDumpedInd		int	
RainGaugeDumpedVolume		float	
RainGaugeFullInd		int	
WeatherConditionsCd		char	
CloudCover		float	
CloudTypeCd		char	
EstimatedTemperature		decimal	Temperature estimate
EstimatedTemperatureUnitsCd		varchar(32)	Units of temperature (Fahrenheit or Celsius)
EstimatedCloudCoverPercentage		int	Estimated percent cloud cover
EstimatedWindSpeed		decimal	The estimated wind speed
EstimatedWindSpeedUnitsCd		varchar(32)	Units of wing speed (knots, mph, km/h)
InsertDt*		date	The date upon which a row was added to the PRBODB database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBODB database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBODB database.
UpdateUserId*		varchar(74)	The userid of the individual to most recently update a row in the PRBODB database.

Table: SamplingEventResearcher

Identifies the researchers who participated in a count sampling event.

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
PRIMARY	ResearcherId
ResearcherSamplingEvent_fk	ResearcherId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.
SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBODB database.

SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	smallint	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
ResearcherId*	PRI	int	Identifies a researcher in the PRBodb database.
EventLeaderInd*		tinyint	
InsertDt*		date	The date upon which a row was added to the PRBodb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBodb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBodb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBodb database.

Table: SamplingEventType

A sampling event type represents a named set of data points defined in the PRBodb database that are collected during a sampling event.

<i>Index</i>	<i>Column</i>
PRIMARY	SamplingEventTypeCd

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
SamplingEventDescription*		varchar(2048)	A description of the purposes and procedures for a particular type of sampling event.
InsertDt*		date	The date upon which a row was added to the PRBodb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBodb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBodb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBodb database.

Table: SamplingEvent_AreaSearch

Identifies and describes area search sampling events

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
SamplingUnitEvent_fk	SamplingUnitId
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	ProtocolId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.

SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	smallint	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
SamplingEventGroupId*		smallint	An identifier used to group individual sampling events into a larger logical group. For instance, sometimes a research effort may bridge two days or mornings and afternoons.
SamplingEventDataStatusCd*		varchar(32)	A code indicating the status of all data associated with a sampling event. The domain of this code is documented in DataDictionaryCodeSetValue.
SamplingEventDt		date	The date a sampling event took place.
SamplingEventStartTm		time	The time at which collecting observations during a sampling event began.
SamplingEventEndTm		time	The time at which collecting observations during a sampling event ended.
SamplingEventYear		smallint	The year the sampling event took place
SamplingEventMonth		tinyint	The month the sampling event took place
SamplingEventDay		tinyint	The day of the month the sampling event took place
TotalBirdsCounted*		smallint	The total number of birds observed during a sampling event.
SamplingEventRemarks		varchar(255)	Free form text to record remarks associated with a sampling event.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEvent_Banding

Identifies and describes bird banding sampling events

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
SamplingUnitEvent_fk	SamplingUnitId
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	ProtocolId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.

SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	smallint	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
SamplingEventGroupId*		smallint	An identifier used to group individual sampling events into a larger logical group. For instance, sometimes a research effort may bridge two days or mornings and afternoons.
SamplingEventDataStatusCd*		varchar(32)	A code indicating the status of all data associated with a sampling event. The domain of this code is documented in DataDictionaryCodeSetValue.
SamplingEventDt		date	The date a sampling event took place.
SamplingEventStartTm		time	The time at which collecting observations during a sampling event began.
SamplingEventEndTm		time	The time at which collecting observations during a sampling event ended.
SamplingEventYear		smallint	The year the sampling event took place
SamplingEventMonth		tinyint	The month the sampling event took place
SamplingEventDay		tinyint	The day of the month the sampling event took place
TotalBirdsCounted*		smallint	The total number of birds observed during a sampling event.
SamplingEventRemarks		varchar(255)	Free form text to record remarks associated with a sampling event.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEvent_Behavior

Identifies and describes behavioral study sampling events

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
SamplingUnitEvent_fk	SamplingUnitId
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	ProtocolId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.

SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	smallint	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
SamplingEventGroupId*		smallint	An identifier used to group individual sampling events into a larger logical group. For instance, sometimes a research effort may bridge two days or mornings and afternoons.
SamplingEventDataStatusCd*		varchar(32)	A code indicating the status of all data associated with a sampling event. The domain of this code is documented in DataDictionaryCodeSetValue.
SamplingEventDt		date	The date a sampling event took place.
SamplingEventStartTm		time	The time at which collecting observations during a sampling event began.
SamplingEventEndTm		time	The time at which collecting observations during a sampling event ended.
SamplingEventYear		smallint	The year the sampling event took place
SamplingEventMonth		tinyint	The month the sampling event took place
SamplingEventDay		tinyint	The day of the month the sampling event took place
TotalBirdsCounted*		smallint	The total number of birds observed during a sampling event.
SamplingEventRemarks		varchar(255)	Free form text to record remarks associated with a sampling event.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEvent_Count

Identifies and describes count (fixed-radius point counts, variable radius point counts, etc.) sampling events

<i>Index</i>	<i>Column</i>		
PRIMARY	ProjectId		
PRIMARY	SamplingUnitId		
PRIMARY	SamplingEventTypeCd		
PRIMARY	ProtocolId		
PRIMARY	SamplingEventCounter		
SamplingUnitEvent_fk	SamplingUnitId		
SamplingEventType_fk	SamplingEventTypeCd		
ProtocolEvent_fk	ProtocolId		
<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.

SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	smallint	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
SamplingEventGroupId*		smallint	An identifier used to group individual sampling events into a larger logical group. For instance, sometimes a research effort may bridge two days or mornings and afternoons.
SamplingEventDataStatusCd*		varchar(32)	A code indicating the status of all data associated with a sampling event. The domain of this code is documented in DataDictionaryCodeSetValue.
SamplingEventDt		date	The date a sampling event took place.
SamplingEventStartTm		time	The time at which collecting observations during a sampling event began.
SamplingEventEndTm		time	The time at which collecting observations during a sampling event ended.
SamplingEventYear		smallint	The year the sampling event took place
SamplingEventMonth		tinyint	The month the sampling event took place
SamplingEventDay		tinyint	The day of the month the sampling event took place
TotalBirdsCounted*		smallint	The total number of birds observed during a sampling event.
SamplingEventRemarks		varchar(255)	Free form text to record remarks associated with a sampling event.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEvent_DeployedNet

Identifies and describes nets deployed during a bird banding sampling event where nets were used

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
PRIMARY	DeployedNetCounter
SamplingUnitEvent_fk	SamplingUnitId
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	ProtocolId
ProjectId	ProjectId
ProjectId	SamplingUnitId
ProjectId	SamplingEventTypeCd
ProjectId	ProtocolId
ProjectId	SamplingEventCounter

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.
SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	int	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
DeployedNetCounter*	PRI	int	The date upon which a row was added to the PRBOdb database.
DeploymentDt*		date	
DeploymentStartTm*		time	
DeploymentEndTm*		time	
NetNumber		int	
TotalNumberNets		int	
NetHours		decimal	
DeploymentRemarks		text	
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEvent_Diet

Identifies and describes diet study sampling events

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
SamplingUnitEvent_fk	SamplingUnitId
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	ProtocolId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.
SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.

SamplingEventCounter*	PRI	smallint	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
SamplingEventGroupld*		smallint	An identifier used to group individual sampling events into a larger logical group. For instance, sometimes a research effort may bridge two days or mornings and afternoons.
SamplingEventDataStatusCd*		varchar(32)	A code indicating the status of all data associated with a sampling event. The domain of this code is documented in DataDictionaryCodeSetValue.
SamplingEventDt		date	The date a sampling event took place.
SamplingEventStartTm		time	The time at which collecting observations during a sampling event began.
SamplingEventEndTm		time	The time at which collecting observations during a sampling event ended.
SamplingEventYear		smallint	The year the sampling event took place
SamplingEventMonth		tinyint	The month the sampling event took place
SamplingEventDay		tinyint	The day of the month the sampling event took place
TotalBirdsCounted*		smallint	The total number of birds observed during a sampling event.
SamplingEventRemarks		varchar(255)	Free form text to record remarks associated with a sampling event.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEvent_Encounter

Identifies and describes general bird encounter sampling events

<i>Index</i>	<i>Column</i>
PRIMARY	Projectld
PRIMARY	SamplingUnitld
PRIMARY	SamplingEventTypeCd
PRIMARY	Protocolld
PRIMARY	SamplingEventCounter
SamplingUnitEvent_fk	SamplingUnitld
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	Protocolld

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
Projectld*	PRI	char	A mnemonic identifier for a project.
SamplingUnitld*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
Protocolld*	PRI	char	A mnemonic identifying a protocol.

SamplingEventCounter*	PRI	smallint	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
SamplingEventGroupld*		smallint	An identifier used to group individual sampling events into a larger logical group. For instance, sometimes a research effort may bridge two days or mornings and afternoons.
SamplingEventDataStatusCd*		varchar(32)	A code indicating the status of all data associated with a sampling event. The domain of this code is documented in DataDictionaryCodeSetValue.
SamplingEventDt		date	The date a sampling event took place.
SamplingEventStartTm		time	The time at which collecting observations during a sampling event began.
SamplingEventEndTm		time	The time at which collecting observations during a sampling event ended.
SamplingEventYear		smallint	The year the sampling event took place
SamplingEventMonth		tinyint	The month the sampling event took place
SamplingEventDay		tinyint	The day of the month the sampling event took place
TotalBirdsCounted*		smallint	The total number of birds observed during a sampling event.
SamplingEventRemarks		varchar(255)	Free form text to record remarks associated with a sampling event.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEvent_Habitat

Identifies and describes habitat sampling events

<i>Index</i>	<i>Column</i>
PRIMARY	Projectld
PRIMARY	SamplingUnitld
PRIMARY	SamplingEventTypeCd
PRIMARY	Protocolld
PRIMARY	SamplingEventCounter
SamplingUnitEvent_fk	SamplingUnitld
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	Protocolld

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
Projectld*	PRI	char	A mnemonic identifier for a project.
SamplingUnitld*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
Protocolld*	PRI	char	A mnemonic identifying a protocol.

SamplingEventCounter*	PRI	int	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
PrimaryHabitatCd		char	
PercentPrimaryHabitat		float	
SecondaryHabitatCd		char	
SurveyUnitAspect		char	
SurveyUnitSlope		char	
SurveyUnitAspectMeasurementCd		char	
WaterInd		char	
SnagsGT10cmCount		char	
SnagsLT10cmCount		char	
LogCount		char	
RiparianZoneWidth		float	
RiparianZoneLength		float	
ChannelWidth		float	
AdjacentLandUseCd		char	
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
Updatedt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(74)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEvent_Nest

Identifies and describes nest study sampling events

<i>Index</i>	<i>Column</i>
PRIMARY	ProjectId
PRIMARY	SamplingUnitId
PRIMARY	SamplingEventTypeCd
PRIMARY	ProtocolId
PRIMARY	SamplingEventCounter
SamplingUnitEvent_fk	SamplingUnitId
SamplingEventType_fk	SamplingEventTypeCd
ProtocolEvent_fk	ProtocolId

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.
SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	smallint	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
SamplingEventGroupId*		smallint	An identifier used to group individual sampling events into a larger logical group. For instance, sometimes a research effort may bridge two days or mornings and afternoons.

SamplingEventDataStatusCd*	varchar(32)	A code indicating the status of all data associated with a sampling event. The domain of this code is documented in DataDictionaryCodeSetValue.
SamplingEventDt	date	The date a sampling event took place.
SamplingEventStartTm	time	The time at which collecting observations during a sampling event began.
SamplingEventEndTm	time	The time at which collecting observations during a sampling event ended.
SamplingEventYear	smallint	The year the sampling event took place
SamplingEventMonth	tinyint	The month the sampling event took place
SamplingEventDay	tinyint	The day of the month the sampling event took place
TotalBirdsCounted*	smallint	The total number of birds observed during a sampling event.
SamplingEventRemarks	varchar(255)	Free form text to record remarks associated with a sampling event.
InsertDt*	date	The date upon which a row was added to the PRBOdb database.
InsertUserId*	varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*	date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*	varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingEvent_Weather

Identifies and describes weather sampling events

<i>Index</i>	<i>Column</i>			
PRIMARY	ProjectId			
PRIMARY	SamplingUnitId			
PRIMARY	SamplingEventTypeCd			
PRIMARY	ProtocolId			
PRIMARY	SamplingEventCounter			
SamplingUnitId	SamplingUnitId			

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
ProjectId*	PRI	char	A mnemonic identifier for a project.
SamplingUnitId*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingEventTypeCd*	PRI	char	A mnemonic identifier for a type of sampling event. The type identifies what data is collected during a sampling event.
ProtocolId*	PRI	char	A mnemonic identifying a protocol.
SamplingEventCounter*	PRI	int	An identifier that distinguishes between sampling events conducted by a project using a particular protocol and collecting a particular set of data points at a location.
SamplingEventGroupId		int	An identifier used to group individual sampling events into a larger logical group. For instance, sometimes a research effort may bridge two days or mornings and afternoons.
SamplingEventDataStatusCd*		varchar(32)	A code indicating the status of all data associated with a sampling event. The domain of this code is documented in DataDictionaryCodeSetValue.
SamplingEventDt		date	The date a sampling event took place.

SamplingEventStartTm	time	The time at which collecting observations during a sampling event began.
SamplingEventEndTm	time	The time at which collecting observations during a sampling event ended.
SamplingEventYear	char	The year the sampling event took place
SamplingEventMonth	tinyint	The month the sampling event took place
SamplingEventDay	tinyint	The day of the month the sampling event took place
DiurnalLowTemperature	decimal	
DiurnalHighTemperature	decimal	
SamplingEventRemarks	varchar(255)	Free form text to record remarks associated with a sampling event.
InsertDt*	date	The date upon which a row was added to the PRBOdb database.
InsertUserId*	varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*	date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*	varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingUnit

A sampling unit is a field location where research is conducted or an area containing these locations.

<i>Index</i>	<i>Column</i>
PRIMARY	SamplingUnitID
ShortName	ShortName
ShortName	FullName
ShortName	EstablishingProjectID
FullName	FullName
FullName	ShortName
FullName	EstablishingProjectID

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
SamplingUnitID*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
FullName*	MUL	varchar(128)	
ShortName*	MUL	char	
PointGeometry		point	
CoordinatesCollection		geometrycollection	
ParentSamplingUnitID		int	
Description*		text	
EstablishingProjectID*		char	
PublicInd		int	Indicates sampling units on public land.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingUnitParentSamplingUnitType

Lists the parent sampling unit type of a sampling unit type

<i>Index</i>	<i>Column</i>
PRIMARY	SamplingUnitTypeID

PRIMARY ParentSamplingUnitTypeID

Field name	Index	Data type	Description
SamplingUnitTypeID*	PRI	int	
ParentSamplingUnitTypeID*	PRI	int	
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingUnitProject

Lists the projects associated with a sampling unit

Index	Column
PRIMARY	SamplingUnitID
PRIMARY	ProjectID
samplingunitproject_ibfk_1	ProjectID

Field name	Index	Data type	Description
SamplingUnitID*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
ProjectID*	PRI	char	A mnemonic identifier for a project.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingUnitSamplingUnitType

Lists the type of a sampling unit

Index	Column
PRIMARY	SamplingUnitID
PRIMARY	SamplingUnitTypeID
samplingunitsamplingunittype_ibfk_2	SamplingUnitTypeID

Field name	Index	Data type	Description
SamplingUnitID*	PRI	int	An identifier for a sampling unit. Historically, sampling units have been identified using other identifiers. The sampling unit table acts as a mechanism for translating these legacy identifiers into a common surrogate key in the PRBOdb database.
SamplingUnitTypeID*	PRI	int	
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.

UpdateUserId*	varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.
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Table: SamplingUnitType

Describes each sampling unit type in this database

Index	Column
PRIMARY	SamplingUnitTypeID
samplingunittype_ibfk_1	SamplingUnitTypeGeometryID

Field name	Index	Data type	Description
SamplingUnitTypeID*	PRI	int	
Name*		varchar(128)	
ParentRequired*		tinyint	
Description*		text	
SamplingUnitTypeGeometryID*	MUL	int	
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: SamplingUnitTypeGeometry

Names and describes the geometry (point, polygon, etc.) of a sampling unit type (see SamplingUnitType table)

Index	Column
PRIMARY	SamplingUnitTypeGeometryID

Field name	Index	Data type	Description
SamplingUnitTypeGeometryID*	PRI	int	
GeometryName		set	
Description*		text	
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: Taxon

Taxon represents the scientific identification of organisms. This information is largely borrowed from the ITIS.

Index	Column
PRIMARY	TaxonId
TaxonId	TaxonId
TaxonId	EncompassingTaxonId

Field name	Index	Data type	Description
TaxonId*	PRI	int	Identifies a taxon entry.
TaxonName*		varchar(140)	The scientific name of an individual species, or family, or genus, etc. under the taxonomic system.
TaxonKingdomId		smallint	Identifies a taxon kingdom. All life on earth is divided into kingdoms.
TaxonRankId		smallint	Identifies a rank within a taxon kingdom. Ranks may be families, genus, species, etc.

EncompassingTaxonId	int	Identifies another taxon which contains or encompasses the taxon.
ITIS_TaxonSerialNumber	int	The serial number from the ITIS system identifying a particular taxon entry. This column is null if the entry did not originate in ITIS.
AOU_BirdSpeciesId	char	
AOU_PhylogeneticSequenceNo	smallint	A number indicating the position of a bird species in the phylogenetic sequence established by the American Ornithological Union.
USDA_PlantSpeciesId	varchar(6)	
BandSizeNote	varchar(32)	Lists band sizes appropriate for a specific species of bird.
ReclassifiedTaxonId	int	The taxon identifier that was previously assigned to a taxon.
ReclassificationDt	date	The date upon which the reclassification of a taxon was effective.
InsertDt*	date	The date upon which a row was added to the PRBOdb database.
InsertUserId*	varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*	date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*	varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.
ScientificAuthority*	varchar(100)	
IdentificationQualifier*	varchar(100)	

Table: TaxonCommonName

Each taxon may have a common name or descriptive label in more than one language.

<i>Index</i>	<i>Column</i>
PRIMARY	TaxonId
PRIMARY	CommonName
PRIMARY	Language

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
TaxonId*	PRI	int	Identifies a taxon entry.
CommonName*	PRI	varchar(80)	A common name for taxon in a particular language.
Language*	PRI	varchar(15)	The name of a language.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: TaxonCommonName_Hybrid

Supplemental table to TaxonCommonName, listing and providing unique identifiers for hybrids of taxa

<i>Index</i>	<i>Column</i>
PRIMARY	TaxonId
PRIMARY	CommonName
PRIMARY	Language

<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
TaxonId*	PRI	int	Identifies a taxon entry.
CommonName*	PRI	varchar(80)	A common name for taxon in a particular language.
Language*	PRI	varchar(15)	The name of a language.

InsertDt*	date	The date upon which a row was added to the PRBOdb database.
InsertUserId*	varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*	date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*	varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: TaxonKingdom

All living things are divided into kingdoms in the taxonomic system.

<i>Index</i>	<i>Column</i>		
PRIMARY	TaxonKingdomId		
<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
TaxonKingdomId*	PRI	smallint	Identifies a taxon kingdom. All life on earth is divided into kingdoms.
TaxonKingdomName*		char	The name of the taxon kingdom.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.

Table: TaxonRank

Each taxonomic kingdom contains taxonomic ranks i.e. family, species.

<i>Index</i>	<i>Column</i>		
PRIMARY	TaxonKingdomId		
PRIMARY	TaxonRankId		
<i>Field name</i>	<i>Index</i>	<i>Data type</i>	<i>Description</i>
TaxonKingdomId*	PRI	smallint	Identifies a taxon kingdom. All life on earth is divided into kingdoms.
TaxonRankId*	PRI	smallint	Identifies a rank within a taxon kingdom. Ranks may be families, genus, species, etc.
TaxonRankName*		char	The name of the rank within the taxon kingdom.
InsertDt*		date	The date upon which a row was added to the PRBOdb database.
InsertUserId*		varchar(64)	The userid of the individual who initially added the row to the PRBOdb database.
UpdateDt*		date	The most recent date upon which a row was updated in the PRBOdb database.
UpdateUserId*		varchar(64)	The userid of the individual to most recently update a row in the PRBOdb database.