

Native Vegetation Monitoring Protocol for the Mediterranean Coast Network

Standard Operating Procedure (SOP) No. X

MEDN Native Vegetation Database – Structure and Organization

Version 1.0 (March 2021)

Revision History Log:

Previous Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #

This SOP describes how to enter MEDN Native Vegetation Monitoring Program data into the MS Access database and also describes the existing queries and reports that can be used to write trip and annual reports, or for further density/abundance analyses. This SOP makes the following assumptions: (1) user has access to the park network, (2) user has access to the database, and (3) the computer being used has MS Access 2016 or higher installed. Please make the necessary corrections to ensure all of the assumptions are valid.

Native Vegetation Monitoring Database

The MEDN Native Vegetation Monitoring Program database is a customized relational database developed in MS Access 2016 and is used to store and manipulate the data associated with this project. The MEDN Data Manager is responsible for the development and maintenance of the database. The design of this database follows the Natural Resource Database Template (NRDT) and is consistent with NPS Inventory and Monitoring Program guidance for the management of natural resource data (Lee 2005).

The database consists of a "back-end" database, where data in a series of related tables resides, and a "front-end" database, where users can enter, view, edit, error-check, summarize and export data through an interactive interface. By splitting the database into front- and back-end components, multiple users can interact with the data simultaneously.

The master **back-end** database schema (tables, fields and relationships) is located in:

- CABR: U:\VEGETATION\CABR vegetation monitoring\Data\Database\Master
- CHIS: T:\Im\Land_Veg\Land_Veg_Database\Database\Master
- SAMO: H:\DIVISION\psrm\Inventory_and_Monitoring\Vital_Signs\Native_Vegetation\Database\Master

There are two back-end databases associated with this monitoring program:

- The back-end database storing field-collected data begins with “MEDN_VegetationMonitoring_BE” followed by the current year.
- The back-end database storing species names begins with “MEDN_Plants_vX” followed by the 4-letter code for each respective park.

The **front-end** database is located in:

- CABR: U:\VEGETATION\CABR vegetation monitoring\Data\Database
- CHIS: T:\Im\LandVeg\LandVeg_Database
- SAMO: H:\DIVISION\psrm\Inventory_and_Monitoring\Vital_Signs\Native_Vegetation\Database

The front-end database contains the forms, queries, and reports customized with Visual Basics for Applications (VBA) programming code. Data-entry forms are designed to meet the requirements of project managers and are based on existing field forms used to record data. The database is structured to minimize data entry errors by guiding the data entry technician through a simple two-form digital data entry process. Details of the database, including a description of the structure and relationship links among data tables are presented in this SOP.

The database is primarily managed by the Network Data Manager. Changes to the design or structure of the database can only be made by the Network Data Manager or with the approval of the Network Data Manager.

Prior to any structural changes to the database, a copy with the most recent version number is stored in the ‘Archive’ subdirectory. Each new version of the database is assigned a sequentially higher number. Version numbers allow project and data managers to track changes to the database over time. Changes to any record in the database are documented in the record itself and must include a description of pre- and post-edit changes, especially changes made to the data post-verification.

Information on data management organization and procedures can be found in Standard Operating Procedure No. X.

Tables

Data tables are located in a back-end database (MEDN_VegetationMonitoring_BE.accdb). Figure 1 shows the relationships among the primary tables. Table relationships are either one-to-many ($1 \rightarrow \infty$) or one-to-one (1 to 1). One-to-many relationship depicts one record in one table related to many records in another table. For example, one island has many monitoring locations. A one-to-one relationship depicts one record in one table related to only one record in another table. For example, one survey can only have one weather record.

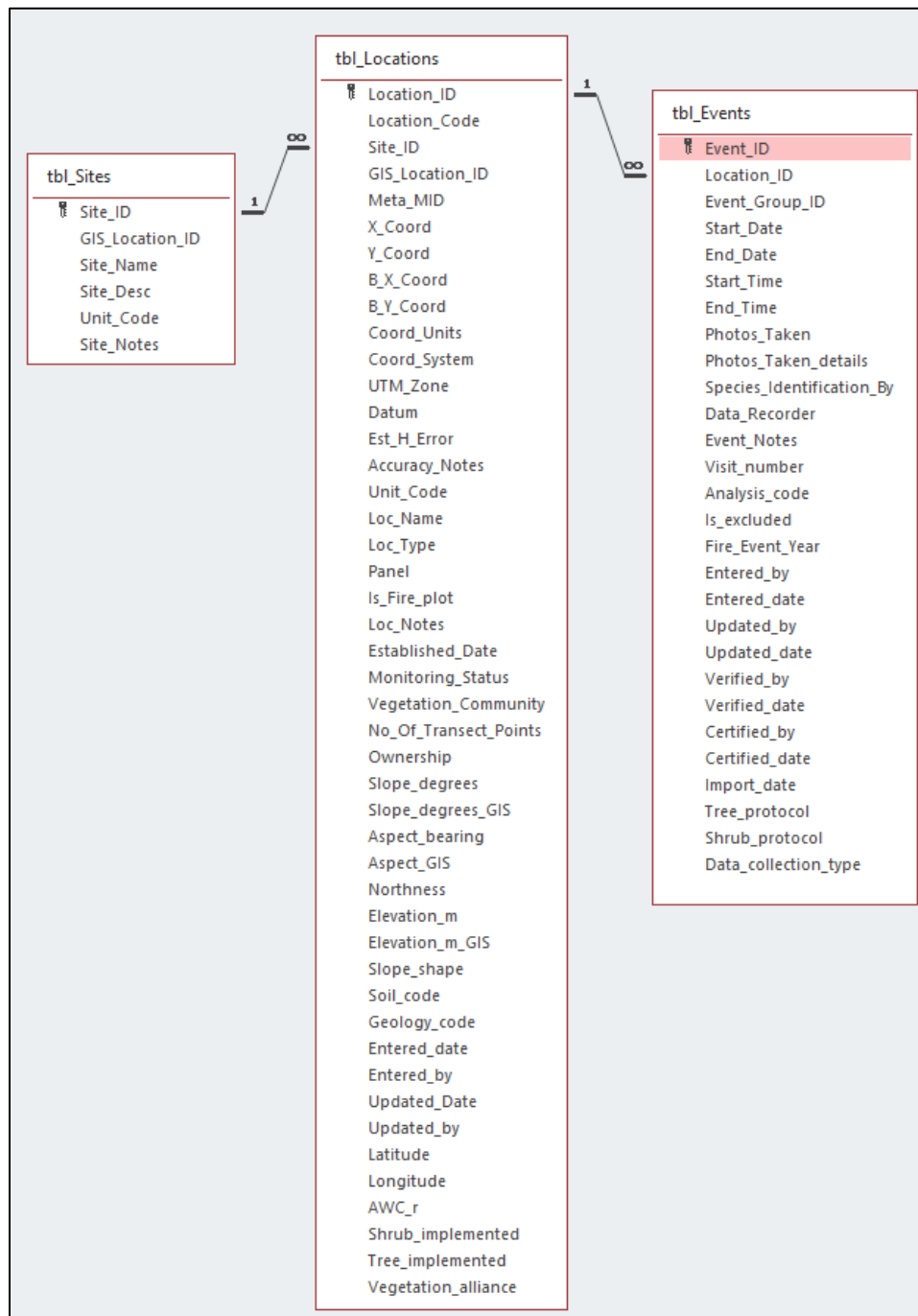


Figure 1. Table relationship among the primary tables in the Native Vegetation Monitoring Program database.

The primary table for storing location information is tbl_Sites and tbl_Locations (Table 1 and 2, respectively). Both are core mandatory tables under the NRDT standard. tbl_Locations contains one record for each location that is monitored.

Table 1. **tbl_Sites** is the primary table for storing park and island names. There is one record for each island.

Field Name	Data Type	Size	Field Description
Site_ID	Long Integer	4	M. Site identifier (Site_ID)
GIS_Location_ID	Short Text	50	MA. Link to GIS feature, equivalent to NPS_Location_ID (GIS_Loc_ID)
Site_Name	Short Text	50	M. Unique name or code for a site (Site_Name)
Site_Desc	Short Text	50	M. Description for a site (Site_Desc)
Unit_Code	Short Text	50	M. Park, Monument or Network code (Unit_Code)
Site_Notes	Long Text	255	MA. General notes on the site (Site_Notes)

Index: PrimaryKey = Site_ID

Table 2. **tbl_Locations** is the primary table for storing site information including location name, x- and y-coordinates, and any other location specific information (e.g. elevation). There is one record for each survey location.

Field Name	Data Type	Size	Field Description
Location_ID	Long Integer	4	M. Location identifier (Loc_ID)
Location_Code	Short Text	50	Two to four letter code assigned to a location.
Site_ID	Long Integer	4	MA. Link to tbl_Sites (Site_ID)
GIS_Location_ID	Short Text	50	MA. Link to GIS feature, equivalent to NPS_Location_ID (GIS_Loc_ID)
Meta_MID	Short Text	50	MA. Link to NR-GIS Metadata Database (Meta_MID)
X_Coord	Double	8	M. X coordinate (X_Coord)
Y_Coord	Double	8	M. Y coordinate (Y_Coord)
B_X_Coord	Double	8	X coordinate of B point
B_Y_Coord	Double	8	Y coordinate of B point
Coord_Units	Short Text	50	M. Coordinate distance units (Coord_Unit)
Coord_System	Short Text	50	M. Coordinate system (Coord_Syst)
UTM_Zone	Short Text	50	MA. UTM Zone (UTM_Zone)
Datum	Short Text	50	M. Datum of mapping ellipsoid (Datum)
Est_H_Error	Single	4	MA. Estimated horizontal accuracy (Est_H_Error)
Accuracy_Notes	Short Text	50	MA. Positional accuracy notes (Acc_Notes)
Unit_Code	Short Text	50	M. Park, Monument or Network code (Unit_Code)
Loc_Name	Short Text	50	M. Name of the location (Loc_Name)
Loc_Type	Short Text	50	MA. Location type category (Loc_Type)

Panel	Short Text	50	MEDN. Sampling panel
Loc_Notes	Long Text	255	MA. General notes on the location (Loc_Notes)
Established_Date	Date/Time	8	MEDN. Date the sampling location was established
Monitoring_Status	Short Text	50	MEDN. Current status of sample location (active, inactive)
Vegetation_Community	Short Text	50	MEDN. Historic Vegetaion Community
No_Of_Transect_Points	Integer	2	MEDN. Number of transect points
Ownership	Short Text	50	MEDN. Landowner that transect falls under
Slope_degrees	Long Integer	4	MEDN. Slope in degrees
Slope_degrees_GIS	Double	8	MEDN. Aspect in degrees derived from DEMs
Aspect_bearing	Integer	2	MEDN. Aspect in bearing number
Aspect_GIS	Double	8	MEDN. Aspect in bearing numbers derived from DEMs
Northness	Double	8	MEDN. Northness calculated as $\text{Cos}([\text{Aspect_bearing}] * (4 * \text{Atn}(1)) / 180)$
Elevation_m	Integer	2	MEDN. Elevation in meters
Elevation_m_GIS	Double	8	MEDN. Elevation in meters derived from DEMs
Slope_shape	Short Text	50	MEDN. Slope shape
Soil_code	Short Text	50	MEDN. Soil code
Geology_code	Short Text	50	MEDN. Geology code
Entered_date	Date/Time	8	Date on which data entry occurred
Entered_by	Short Text	50	Person who entered the data for this event
Updated_Date	Short Text	50	MA. Date of entry or last change (Upd_Date)
Updated_by	Short Text	50	Person who made the most recent updates
Latitude	Double	8	Latitude
Longitude	Double	8	Longitude
AWC_r	Double	8	AVERAGE Available water content (representative) - derived from NRCS Soil Survey Map
Shrub_implemented	Boolean	1	Is the shrub protocol implemented on this transect?
Tree_implemented	Boolean	1	Is the tree protocol implemented on this transect?

Index: PrimaryKey = Location_ID; idx_Unique = Site_ID, Location_Code

The primary table for storing information on survey event is tbl_Events (Table 3). This is a core mandatory table under the NRD standard. The table is linked to tbl_Locations by the Location_ID field and to tbl_Event_Group by the Event_Group_ID field. The table contains one record for each visit made and includes data on the visit such as the date and time, trap night number, and names of the field crew.

Table 3. **tbl_Events** is the primary table for storing event (visit) information including date and time, observers, and photo information. The table contains one record for each survey visit.

Field Name	Data Type	Size	Field Description
Event_ID	Long Integer	4	M. Event identifier (Event_ID)
Location_ID	Long Integer	4	M. Link to tbl_Locations (Transect)
Event_Group_ID	Long Integer	4	MA. Link to tbl_Event_Group (Ev_Gp_ID)

Start_Date	Date/Time	8	M. Starting date for the event (Start_Date)
End_Date	Date/Time	8	M. Ending date for the event (End_Date)
Start_Time	Date/Time	8	MA. Starting time for the event
End_Time	Date/Time	8	MA. Ending time for the event
Photos_Taken	Short Text	50	Were photos taken at the location?
Photos_Taken_details	Short Text	50	Details on photos taken
Species_Identification_By	Short Text	50	Name of individual identifying the plants
Data_Recorder	Short Text	50	Name of individual recording information
Event_Notes	Long Text	255	Notes for the event
Visit_number	Integer	2	Visit number
Analysis_code	Byte	1	Analysis type: 1=I&M official; 2=I&M extra; 3=Fire; 4=Weeds; 5=Cloud
Is_excluded	Boolean	1	Exclude this survey from analysis?
Fire_Event_Year	Short Text	50	Fire Event ID + survey year number
Entered_by	Short Text	50	Person who entered the data for this event
Entered_date	Date/Time	8	Date on which data entry occurred
Updated_by	Short Text	50	Person who made the most recent updates
Updated_date	Date/Time	8	Date of the most recent edits
Verified_by	Short Text	50	Person who verified accurate data transcription
Verified_date	Date/Time	8	Date on which data were verified
Certified_by	Short Text	50	Person who certified data for accuracy and completeness
Certified_date	Date/Time	8	Date on which data were certified
Import_date	Date/Time	8	Date data was imported from mobile device
Tree_protocol	Boolean	1	Was the tree protocol completed?
Shrub_protocol	Boolean	1	Was the shrub protocol completed?
Data_collection_type	Short Text	50	Data collection type: paper datasheet or iPad (FileMaker)

Index: PrimaryKey = Event_ID; idx_unique = Location_ID, Start_Date

The primary table for storing annual sampling information is tbl_Event_Group (Table 4). This is a core mandatory table under the NRDT standard. The table is linked to tbl_Sites by the Site_ID field and to tbl_Events by the Event_Group_ID field (Figure 2). The table contains one record for each island and sampling year and includes data on the start and end dates for the sample year.

Table 4. **tbl_Event_Group** is the primary table for storing sampling period information. There is one record for each sampling period.

Field Name	Data Type	Size	Field Description
Event_Group_ID	Long Integer	4	Unique identifier
Start_Date	Date/Time	8	Start date of survey event (DD/MM/YYYY)
End_Date	Date/Time	8	End date of survey event (DD/MM/YYYY)
Event_Group_Name	Short Text	50	MA. Event group (e.g. season, trip) name (Ev_Gp_Name)

Event_Group_Desc	Short Text	50	MA. Event group description (Ev_Gp_Desc)
Event_Group_Notes	Long Text	255	MA. Event group notes (Ev_Gp_Note)
Event_Group_Report	Short Text	50	MA. Trip report, link to trip report or trip report name (Ev_Gp_Rept)
Entered_date	Date/Time	8	Date on which data entry occurred
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = Event_Group_ID

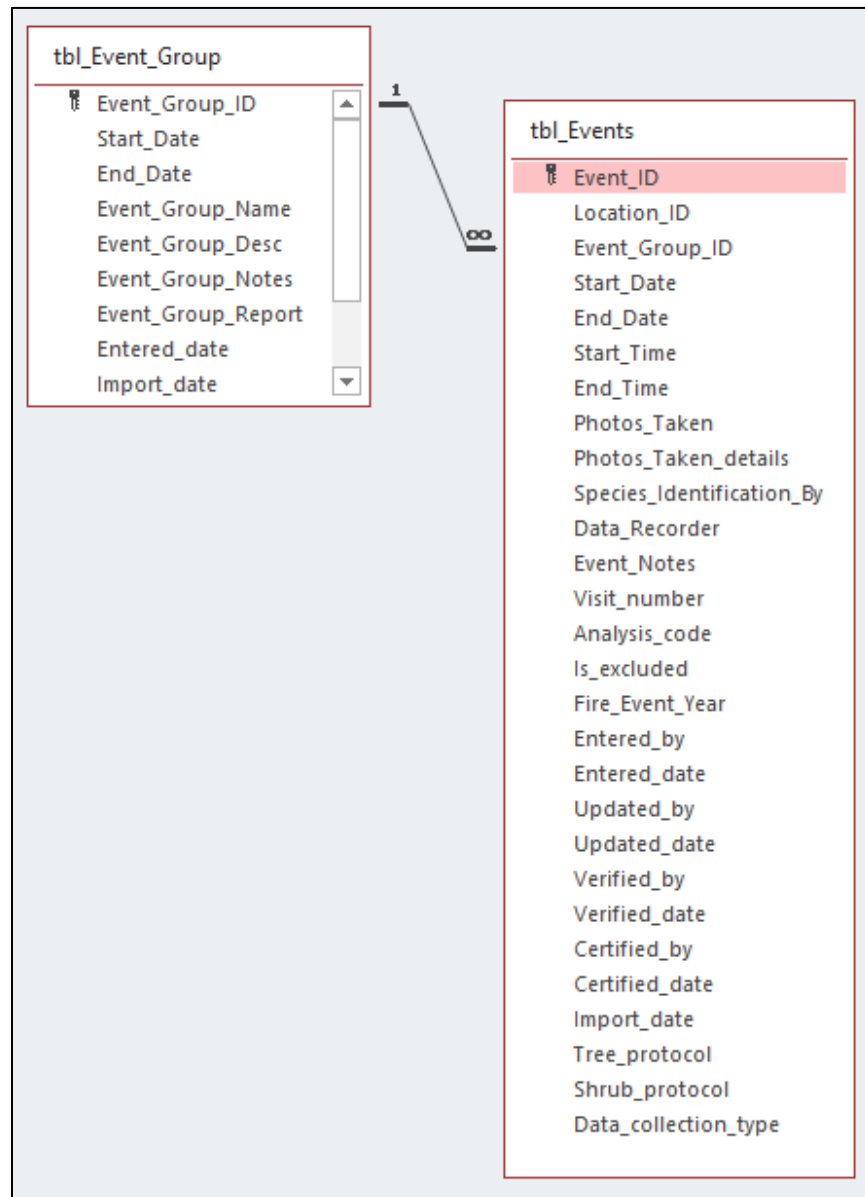


Figure 2. Table relationship of tbl_Event_Group in the Native Vegetation Monitoring Program database.

Methodology on field data collection can be found in the protocol. Line-point intercept data is always collected at a survey event (location and date). Other data collected, when applicable, include shrub density, tree density and species richness. All field data tables are linked to tbl_Events by the Event_ID field.

Line-Point Intercept

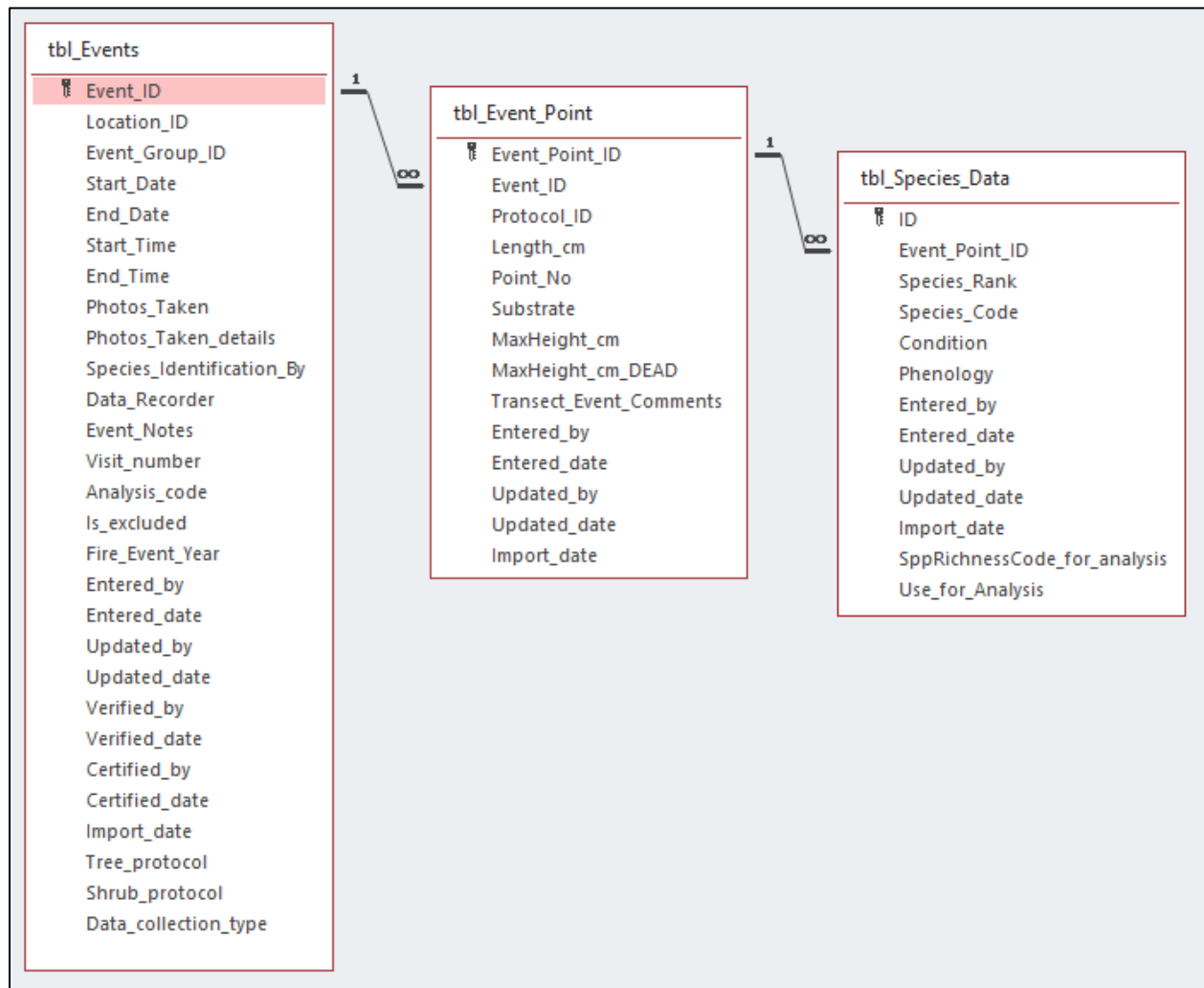


Figure 3. Table relationship for Point-Line Intercept in the Native Vegetation Monitoring Program database.

Table 5. **tbl_Event_Point**

Field Name	Data Type	Size	Field Description
Event_Point_ID	Long Integer	4	Unique identifier
Event_ID	Long Integer	4	Link to tbl_Events
Protocol_ID	Long Integer	4	M. The ID of the protocol governing the event

Length_cm	Long Integer	4	30 cm measurement increment
Point_No	Long Integer	4	Point from 1-100
Substrate	Short Text	50	Substrate
MaxHeight_cm	Long Integer	4	Height of tallest plant measured in centimeters
MaxHeight_cm_DEAD	Long Integer	4	Height of tallest dead plant measured in centimeters
Transect_Event_Comments	Long Text	255	Additional comments on the point
Entered_by	Short Text	50	Person who entered the data for this event
Entered_date	Date/Time	8	Date on which data entry occurred
Updated_by	Short Text	50	Person who made the most recent updates
Updated_date	Date/Time	8	Date of the most recent edits
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = Event_Point_ID; idx_unique = Event_ID, Protocol_ID, Point_No

Table 6. **tbl_Species_Data**

Field Name	Data Type	Size	Field Description
ID	Long Integer	4	Unique identifier
Event_Point_ID	Long Integer	4	Link to tbl_Event_Point
Species_Rank	Long Integer	4	Species rank (order observed)
Species_Code	Short Text	50	Species code
Condition	Short Text	50	Condition: alive [Alive] or dead branch [Dead Branch] on live plant or dead plant [Dead Plant]
Phenology	Short Text	50	Phenology: flowering or fruiting (deprecated)
Entered_by	Short Text	50	Person who entered the data for this event
Entered_date	Date/Time	8	Date on which data entry occurred
Updated_by	Short Text	50	Person who made the most recent updates
Updated_date	Date/Time	8	Date of the most recent edits
Import_date	Date/Time	8	Date data was imported from mobile device
SppRichnessCode_for_analysis	Short Text	50	Species code to use for species richness analysis
Use_for_Analysis	Boolean	1	Use this record for analysis?

Index: PrimaryKey = ID

Shrub Density

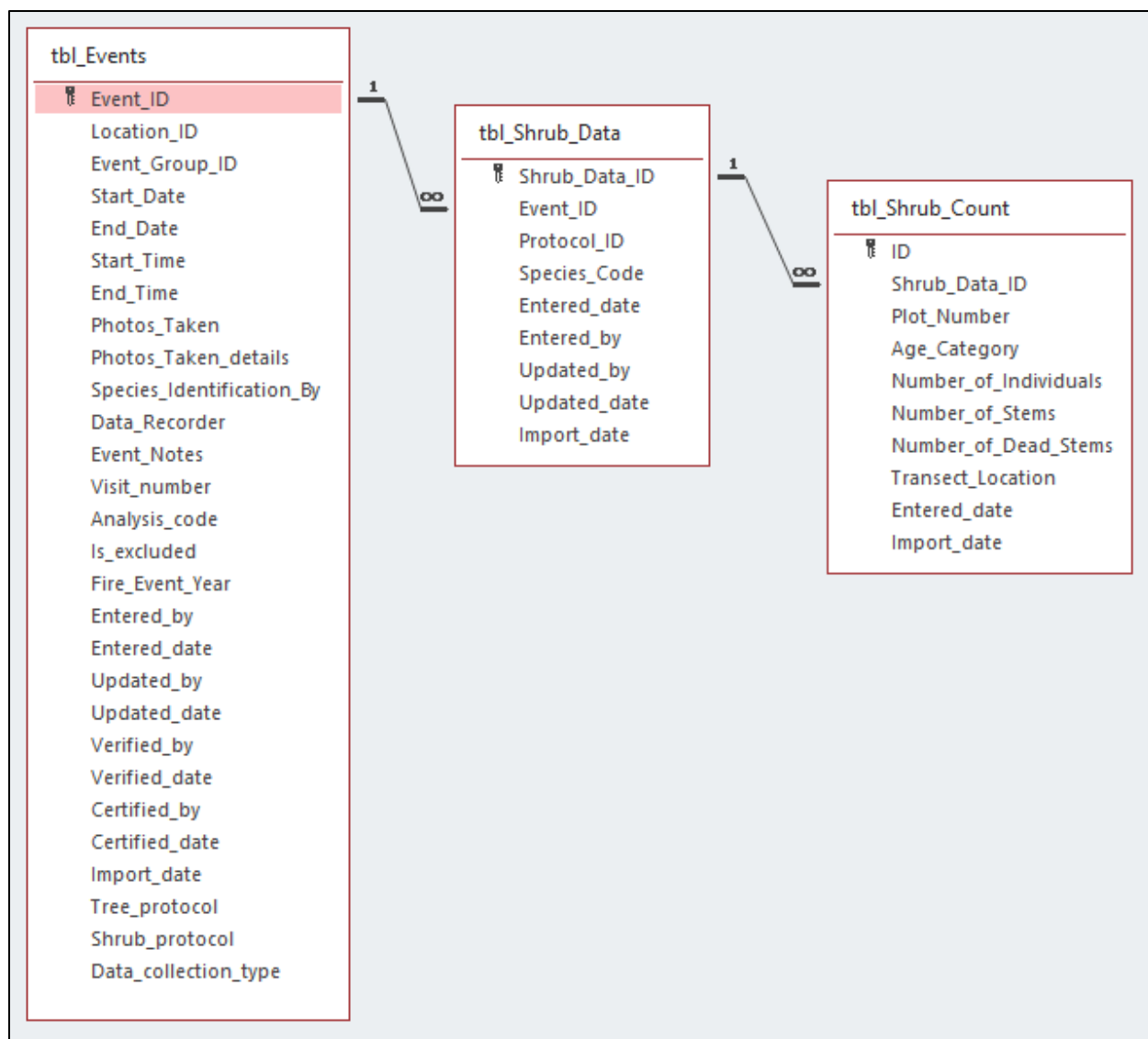


Figure 4. Table relationship for Shrub Density in the Native Vegetation Monitoring Program database.

Table 7. **tbl_Shrub_Data**

Field Name	Data Type	Size	Field Description
Shrub_Data_ID	Long Integer	4	Unique identifier
Event_ID	Long Integer	4	Link to tbl_Events
Protocol_ID	Long Integer	4	M. The ID of the protocol governing the event
Species_Code	Short Text	50	Four letter code for species used by the park
Entered_date	Date/Time	8	Date on which data entry occurred
Entered_by	Short Text	50	Person who entered the data for this event
Updated_by	Short Text	50	Person who made the most recent updates
Updated_date	Date/Time	8	Date of the most recent edits
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = Shrub_Data_ID; idx_Unique = Event_ID, Protocol_ID, Species_Code

Table 8. **tbl_Shrub_Count**

Field Name	Data Type	Size	Field Description
ID	Long Integer	4	Unique identifier
Shrub_Data_ID	Long Integer	4	Link to tbl_Shrub_Data
Plot_Number	Long Integer	4	Plot number - 1: 0-5m; 2: 5-10m; 3: 10-15m; 4: 15-20m; 5: 20-25m; 6:25-30m
Age_Category	Short Text	50	Age category: Seedling; Sapling; Adult; Dead Adult; Resprout; Year 2; Dead Seedling
Number_of_Individuals	Long Integer	4	Number of individuals in the plot
Number_of_Stems	Long Integer	4	Number of stems of all individuals in the plot
Number_of_Dead_Stems	Long Integer	4	Number of dead stems of all individuals in the plot
Transect_Location	Short Text	50	Location of the transect on which the shrubs were counted: North, South, East, West
Entered_date	Date/Time	8	Date on which data entry occurred
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = ID; idx_Unique = Shrub_Data_ID, Plot_Number, Age_Category

Tree Density

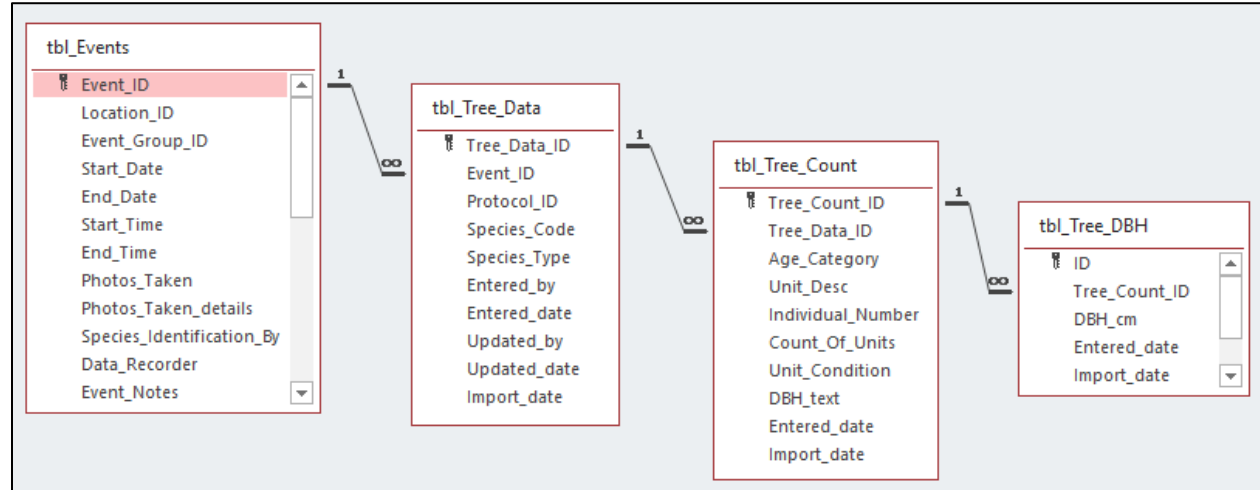


Figure 5. Table relationship for Tree Density in the Native Vegetation Monitoring Program database.

Table 9. **tbl_Tree_Data**

Field Name	Data Type	Size	Field Description
Tree_Data_ID	Long Integer	4	Unique identifier
Event_ID	Long Integer	4	Link to tbl_Events
Protocol_ID	Long Integer	4	M. The ID of the protocol governing the event

Species_Code	Short Text	50	4-letter species code used by the park
Species_Type	Short Text	50	Type of species: Tree or Shrub
Entered_by	Short Text	50	Person who entered the data for this event
Entered_date	Date/Time	8	Date on which data entry occurred
Updated_by	Short Text	50	Person who made the most recent updates
Updated_date	Date/Time	8	Date of the most recent edits
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = Tree_Data_ID; idx_Unique = Event_ID, Protocol_ID, Species_Code

Table 10. **tbl_Tree_Count**

Field Name	Data Type	Size	Field Description
Tree_Count_ID	Long Integer	4	Unique identifier
Tree_Data_ID	Long Integer	4	Link to tbl_Tree_Data
Age_Category	Short Text	50	Age category: Seedling; Sapling; Resprout; Adult; Dead Adult
Unit_Desc	Short Text	50	Unit description: Individual (tree and shrub), Trunk (tree) or Stem (shrubs)
Individual_Number	Long Integer	4	Number of individuals being measured
Count_Of_Units	Long Integer	4	Count of units (see Unit_Desc) in the plot
Unit_Condition	Short Text	50	Condition: Alive or Dead
DBH_text	Short Text	50	Diameter at breast height (cm): Comma delimited list of DBH measurements for this record
Entered_date	Date/Time	8	Date on which data entry occurred
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = Tree_Count_ID

Table 11. **tbl_Tree_DBH**

Field Name	Data Type	Size	Field Description
ID	Long Integer	4	Unique identifier
Tree_Count_ID	Long Integer	4	Link to tbl_Tree_Count
DBH_cm	Double	8	Diameter at breast height measured in centimeters
Entered_date	Date/Time	8	Date on which data entry occurred
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = ID

Species Richness

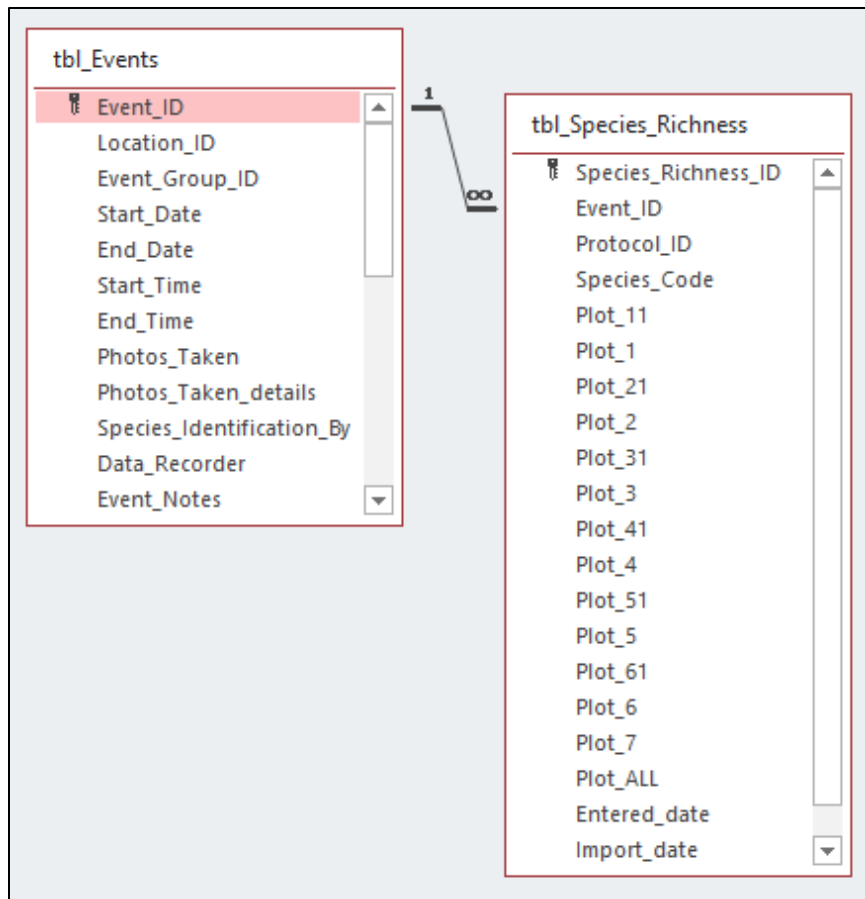


Figure 6. Table relationship for Species Richness in the Native Vegetation Monitoring Program database.

Table 12. **tbl_Species_Richness**

Field Name	Data Type	Size	Field Description
Species_Richness_ID	Long Integer	4	Unique identifier
Event_ID	Long Integer	4	Link to tbl_Events
Protocol_ID	Long Integer	4	M. The ID of the protocol governing the event
Species_Code	Short Text	50	Species code used by the park
Plot_11	Short Text	50	Species detected in Plot 1.1: 0-1m
Plot_1	Short Text	50	Species detected in Plot 1: 1-5m
Plot_21	Short Text	50	Species detected in Plot 2.1: 5-6m
Plot_2	Short Text	50	Species detected in Plot 2: 6-10m
Plot_31	Short Text	50	Species detected in Plot 3.1: 10-11m
Plot_3	Short Text	50	Species detected in Plot 3: 11-15m
Plot_41	Short Text	50	Species detected in Plot 4.1: 15-16m
Plot_4	Short Text	50	Species detected in Plot 4: 16-20m
Plot_51	Short Text	50	Species detected in Plot 5.1: 20-21m
Plot_5	Short Text	50	Species detected in Plot 5: 21-25m
Plot_61	Short Text	50	Species detected in Plot 6.1: 25-26m

Plot_6	Short Text	50	Species detected in Plot 6: 26-30m
Plot_7	Short Text	50	Species detected in Plot 7: outside
Plot_ALL	Short Text	50	To be used when species richness is taken for entire 1x30m belt and not by subplots
Entered_date	Date/Time	8	Date on which data entry occurred
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = Species_Richness_ID; idx_Unique = Event_ID, Species_Code

Fire Species Richness

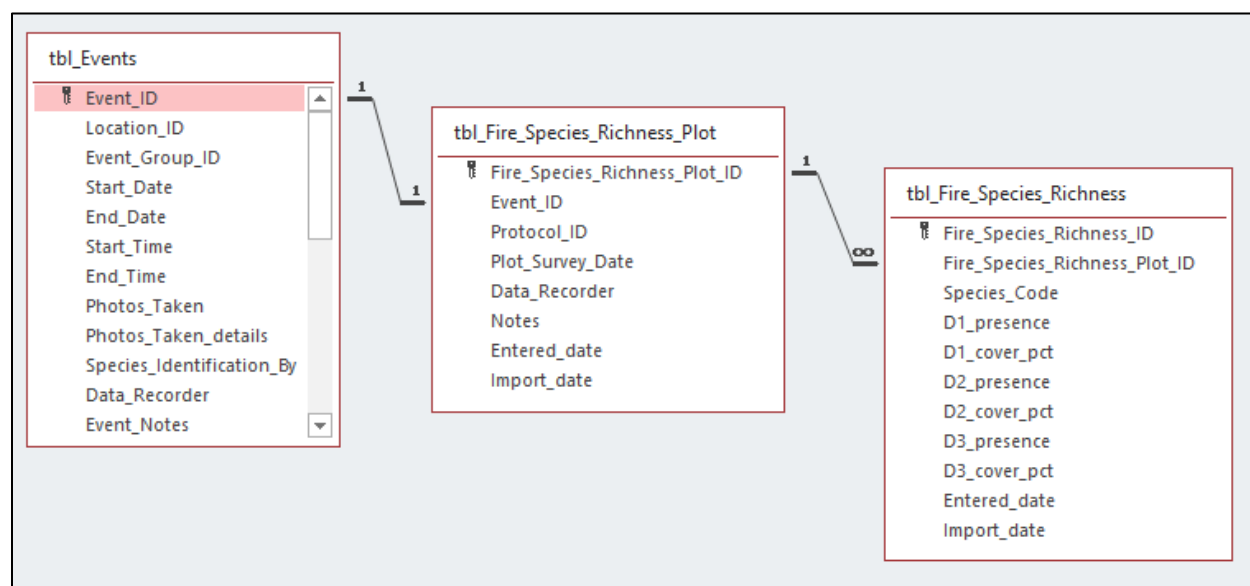


Figure 7. Table relationship for Fire Species Richness in the Native Vegetation Monitoring Program database.

Table 13. **tbl_Fire_Species_Richness_Plot**

Field Name	Data Type	Size	Field Description
Fire_Species_Richness_Plot_ID	Long Integer	4	Unique identifier
Event_ID	Long Integer	4	Link to tbl_Events
Protocol_ID	Long Integer	4	M. The ID of the protocol governing the event
Plot_Survey_Date	Date/Time	8	The date plot was surveyed (default = vegetation transect date)
Data_Recorder	Short Text	50	Name of individual recording information (default = vegetation transect data recorder)
Notes	Long Text	255	Additional notes on species richness
Entered_date	Date/Time	8	Date on which data entry occurred
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = Fire_Species_Richness_Plot_ID; idx_unique = Event_ID

Table 14. **tbl_Fire_Species_Richness**

Field Name	Data Type	Size	Field Description
Fire_Species_Richness_ID	Long Integer	4	Unique identifier
Fire_Species_Richness_Plot_ID	Long Integer	4	Link to tbl_Fire_Species_Richness_Plot
Species_Code	Short Text	50	Four letter code for species used by the park
D1_presence	Boolean	1	Was the species present in this plot (D1)?
D1_cover_pct	Double	8	Percent cover of species in plot D1 (default = 0.01)
D2_presence	Boolean	1	Was the species present in this plot (D2)?
D2_cover_pct	Double	8	Percent cover of species in plot D2 (default = 0.01)
D3_presence	Boolean	1	Was the species present in this plot (D3)?
D3_cover_pct	Double	8	Percent cover of species in plot D3 (default = 0.01)
Entered_date	Date/Time	8	Date on which data entry occurred
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = Fire_Species_Richness_ID; idx_Unique = Fire_Species_Richness_Plot_ID, Species_Code

Fire Shrub Density + Burn Severity

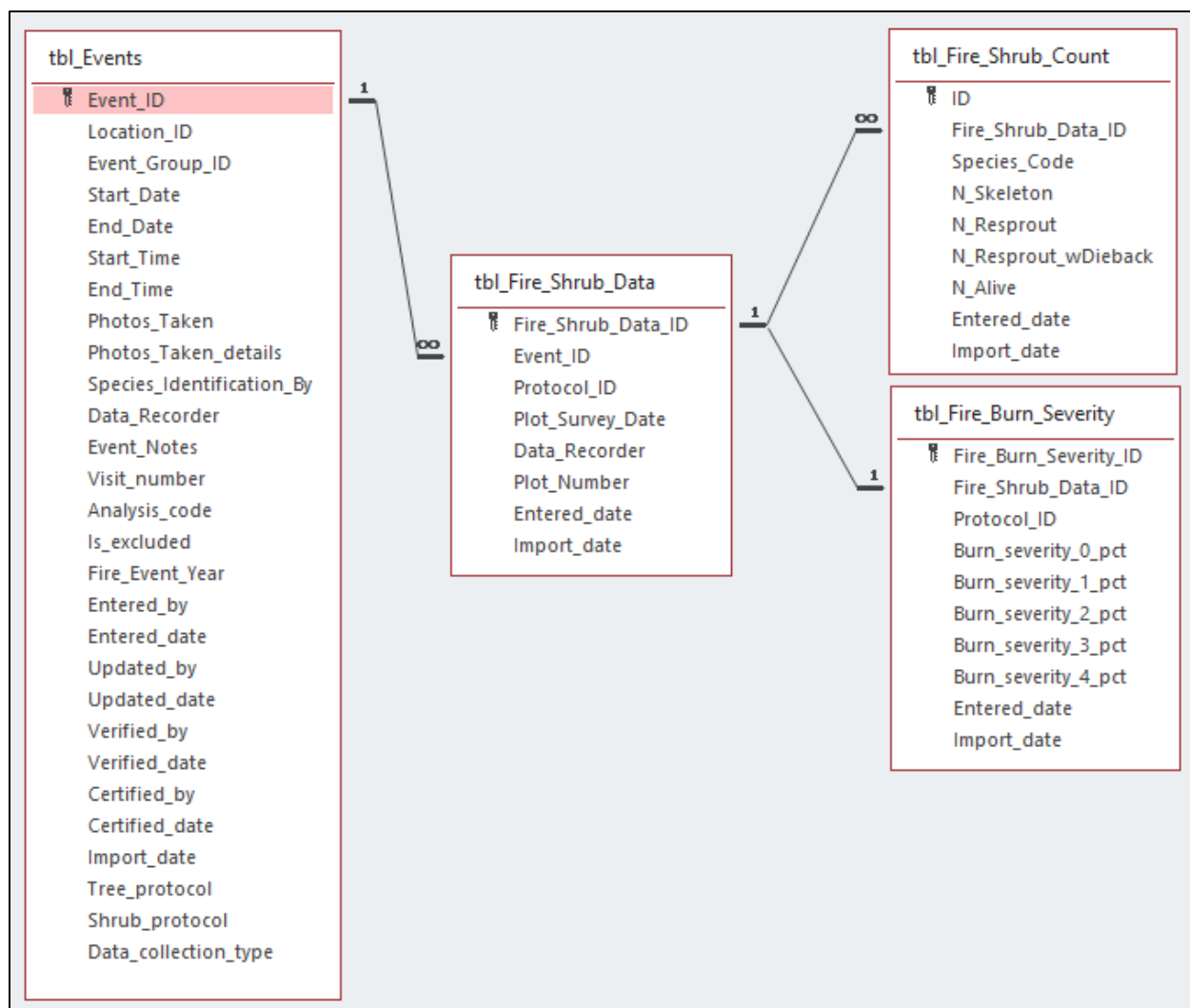


Figure 8. Table relationship for Fire Shrub Density and Burn Severity in the Native Vegetation Monitoring Program database.

Table 15. **tbl_Fire_Shrub_Data**

Field Name	Data Type	Size	Field Description
Fire_Shrub_Data_ID	Long Integer	4	Unique identifier
Event_ID	Long Integer	4	Link to tbl_Events
Protocol_ID	Long Integer	4	M. The ID of the protocol governing the event
Plot_Survey_Date	Date/Time	8	The date plot was surveyed (default = vegetation transect date)
Data_Recorder	Short Text	50	Name of individual recording information (default = vegetation transect data recorder)
Plot_Number	Byte	1	Plot number - D1: 0-10m; D2: 10-20m; D3: 20-30m
Entered_date	Date/Time	8	Date on which data entry occurred
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = Fire_Shrub_Data_ID; idx_unique = Event_ID, Plot_Number

Table 16. **tbl_Fire_Shrub_Count**

Field Name	Data Type	Size	Field Description
ID	Long Integer	4	Unique identifier
Fire_Shrub_Data_ID	Long Integer	4	Link to tbl_Fire_Shrub_Data
Species_Code	Short Text	50	Four letter code for species used by the park
N_Skeleton	Long Integer	4	Number of individuals that were skeletons (burned and dead)
N_Resprout	Long Integer	4	Number of individuals that were resprouts (alive but burned)
N_Resprout_wDieback	Long Integer	4	Number of individuals that were resprouts (alive but burned) with dieback
N_Alive	Long Integer	4	Number of individuals that were alive (not burned)
Entered_date	Date/Time	8	Date on which data entry occurred
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = ID; idx_unique = Fire_Shrib_Data_ID, Species_Code

Table 17. **tbl_Fire_Burn_Severity**

Field Name	Data Type	Size	Field Description
Fire_Burn_Severity_ID	Long Integer	4	Unique identifier
Fire_Shrub_Data_ID	Long Integer	4	Link to tbl_Fire_Shrub_Data
Protocol_ID	Long Integer	4	M. The ID of the protocol governing the event
Burn_severity_0_pct	Integer	2	Percent of plot under burn severity index 0 - unburned/not applicable
Burn_severity_1_pct	Integer	2	Percent of plot under burn severity index 1 - scorched
Burn_severity_2_pct	Integer	2	Percent of plot under burn severity index 2 - lightly burned
Burn_severity_3_pct	Integer	2	Percent of plot under burn severity index 3 - moderately burned
Burn_severity_4_pct	Integer	2	Percent of plot under burn severity index 4 - heavily burned
Entered_date	Date/Time	8	Date on which data entry occurred
Import_date	Date/Time	8	Date data was imported from mobile device

Index: PrimaryKey = Fire_Burn_Severity_ID; idx_unique = Fire_Shrub_Data_ID

Supporting tables include tlu_Project_Taxa (species list) and several lookup tables. *Note: not all lookup tables are listed in this SOP. Refer to the database to view all lookup tables.*

Table 18. **tlu_Project_Taxa**

Field Name	Data Type	Size	Field Description
Taxon_ID	Long Integer	4	Unique identifier
Unit_code	Short Text	50	Park code

Family_Name	Short Text	50	Family name (tlu_Families)
Family_order	Long Integer	4	Sort order for family
Sort_order	Double	8	Sort order of taxon within family
List_order	Double	8	Sort order of species list
Species_code	Short Text	50	Species code for taxon name
Taxa_rank	Short Text	50	Taxonomic rank
Scientific_name	Short Text	50	Scientific Name
Common_name	Short Text	50	Common Name
Park_List	Boolean	1	List on official park species list?
USDA_Code	Short Text	50	USDA Code
TSN	Double	8	ITIS Taxonomic Serial Number (NPSpecies)
LocalAcceptedTSN	Long Integer	4	What is the current ITIS TSN (name) for the species?
Taxon_is_active	Boolean	1	Indicates that the record is currently available for data entry pick lists
Refers_to	Long Integer	4	Valid taxon the record should refer to for analysis and summaries
SppTrendCode_for_analysis	Short Text	50	Species code to use for trend analyses
Layer	Short Text	50	Functional group (tlu_Layer)
Native	Short Text	50	Nativity. Is the species native to the park?
IsEndemic	Boolean	1	Check box if the species is only found on the Channel Islands, or endemic.
ParkStatusID	Long Integer	4	NPSpecies Park Status code: 10 = present in park, 40 = unconfirmed, 100 = NA
AbundanceID	Long Integer	4	NPSpecies Abundance code: 10 = abundant, 20 = common, 30 = uncommon, 40 = rare, 50 = unknown, 100 = NA
NativityID	Long Integer	4	NPSpecies Nativity code: 10 = native, 20 = nonnative, 30 = unknown, 100 = NA
CultivationCode	Short Text	50	NPSpecies Cultivation code: C = cultivated, N = not cultivated, U = unknown, NA = NA
IsCultivated	Short Text	50	NPSpecies Is Cultivated code
InNPSpecies	Short Text	50	Is this taxon name in NPSpecies?
InNPSpp	Short Text	50	Should this record be included into NPSpecies? E = entered into NPSpecies, N = need to enter into NPSpecies, X = do not enter into NPSpecies, D = delete from NPSpecies
Comments	Long Text	255	Additional comments
Created_date	Date/Time	8	Time stamp for record creation
Updated_date	Date/Time	8	Date of the last update to this record
Updated_by	Short Text	50	Person who made the most recent edits
Taxon_code	Long Integer	4	Person who made the most recent edits
Invasive_weeds_protocol_species	Boolean	1	Targeted species for Invasive Plants monitoring

Index: PrimaryKey = Taxon_ID; idx_unique = Unit_code, TSN, Species_code

Table 19. **tlu_AnnualPerennial**

Field Name	Data Type	Size	Field Description
AnnualPerennial_code	Short Text	50	Lookup code for annual or perennial status
AnnualPerennial_desc	Short Text	50	Description of annual or perennial status
Analysis_code	Short Text	50	Code used for analysis
Sort_order	Long Integer	4	Sort order

Index: PrimaryKey = AnnualPerennial_code

Table 20. **tlu_Layer**

Field Name	Data Type	Size	Field Description
Layer_code	Short Text	50	Lookup code for layer (functional group)
Layer_desc	Short Text	50	Layer (functional group) description
Analysis_code	Short Text	50	Code used for analysis
Sort_order	Long Integer	4	Sort order

Index: PrimaryKey = Layer_code

Table 21. **tlu_Nativity**

Field Name	Data Type	Size	Field Description
Nativity_code	Short Text	50	Lookup code for nativity
Nativity_desc	Short Text	50	Nativity description
Analysis_code	Short Text	50	Code used for analysis
Sort_order	Long Integer	4	Sort order

Index: PrimaryKey = Nativity_code

Table 22. **tlu_Richness**

Field Name	Data Type	Size	Field Description
Richness_code	Short Text	50	Lookup code for species richness phenology
Richness_value	Integer	2	Value of species richness phenology

Index: PrimaryKey = Richness_code

Table 23. **tlu_Layer**

Field Name	Data Type	Size	Field Description
Soil_code	Short Text	50	Lookup code for soils
Soil_desc	Short Text	50	Description of soil codes

Index: PrimaryKey = Soil_code

Table 24. **tlu_Substrate**

Field Name	Data Type	Size	Field Description
Substrate_code	Short Text	50	Lookup code for substrate
Substrate_description	Long Text	255	Description of substrate codes
Sort_Order	Integer	2	Sort order

Index: PrimaryKey = Substrate_code

Users not familiar with MS Access or the Monitoring Protocol are prohibited from working in the back-end database. Any questions about data entry procedures or difficulties should be directed to Project Lead or Network Data Manager.

Forms

Forms are located in the front-end database (MEDN_VegetationMonitoringDatabase_v2021.X.accdb). The user interfaces with the database through a series of custom-built forms. The forms have been designed in a way to (1) mimic existing field recording methodology, (2) minimize transcription error (i.e. look-up tables, drop-down menus, auto-filled fields, range limits), and (3) allow users not familiar with MS Access to query the database and export datasets for analysis. Instructional steps are also provided on each form, where applicable, to help guide the user in making the correct selections.

Get the latest version of the front-end database

Navigate to the front-end database directory. Copy the latest version of the database (MEDN_VegetationMonitoringDatabase_v2021.X.accdb) onto your local desktop.

To determine the latest version of the database, look for the highest version number at the end of the database file name.

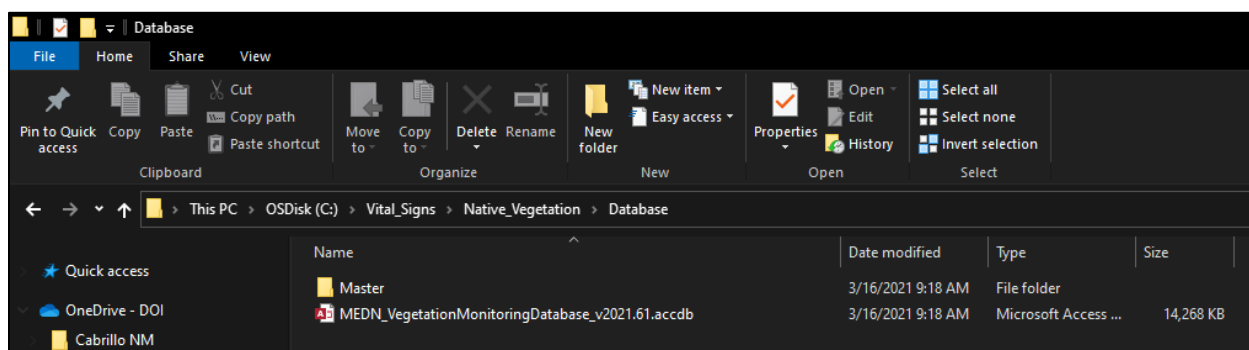


Figure 9. In the screenshot above, the latest version of the front-end database is 61.

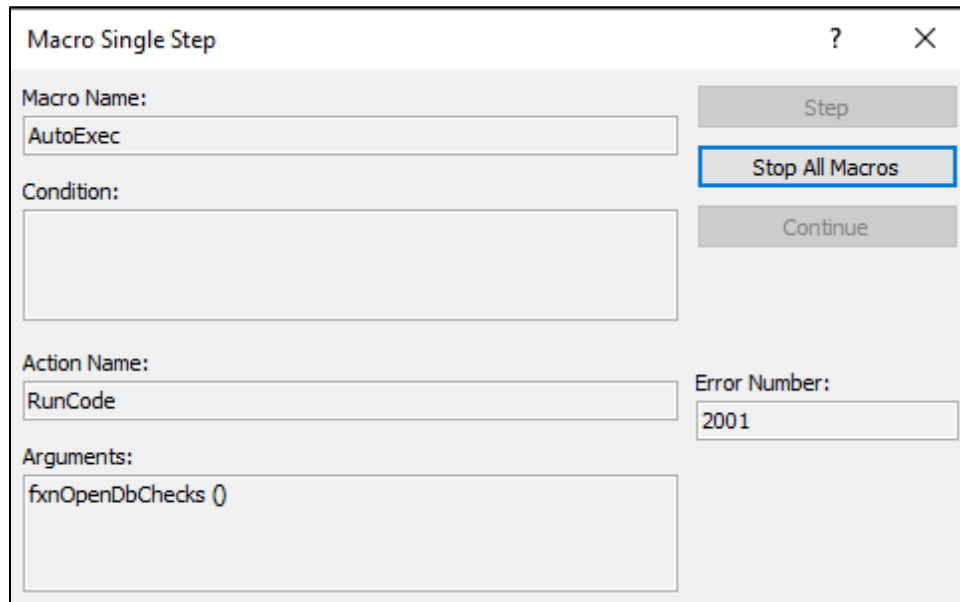
Open the MEDN Native Vegetation Monitoring Program database

Once the front-end (and back-end, if applicable) database has been copied to your local computer, double-click the front-end database to open it. This database opens to the Main Menu. This window will contain most of the functions for viewing, entering and exporting data.

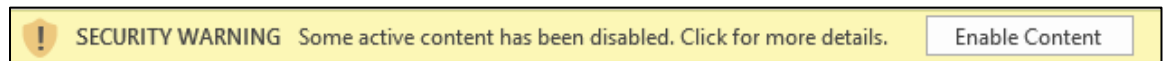
Enable Database Programing Scripts

Unless you have made the directory where your database is located as a “Trusted Location”, no programming scripts will function unless they are “enabled” first. When the database is opened, several scripts are scheduled to automatically run. Because the database cannot execute any programming scripts (since it is not “enabled”) an error will be generated (Figure 5) warning that the start-up scripts were not able to run.

1. Hit the “Stop all Macros” button to close the error window.



2. Click the “Enable Content” button in the yellow Security Warning ribbon.



Re-connect back-end data files (if necessary)

The database will automatically look for the back-end data files when it is opened. If it cannot find the back-end data files, the “Update Links to Back-end Database Tables” window will appear and you will be prompted to update the links to the back-end data files (for instance, when you are not working in the office and are working off site).

Alternatively, even though the database may find the correct back-end files on the network server, you may still want to connect the front-end database to a different back-end database. To do this, hit the “Db connections” button on the main menu screen to bring up the “Update Links to Back-end Database Tables” window.

If you had to “enable” the database (see section “Enable database programming scripts”), click the “Update Links” button to make sure you are connected to the correct back-end database.

Update Data Table Connections

Mediterranean Coast Network Inventory and Monitoring Program

Update Links to Back-end Database Tables

Data tables are stored in one or more separate database files. Check the filename and location on your computer for the following and use the browse button to change the file location(s).

MEDN Plants v1.4 SAMO.accdb Sort: ☐ ODBC / SQL Server ☒ File backups

Species data MEDN plant species database

Path: C:\Vital_Signs\Native_Vegetation\Database\Master\MEDN_Plants_v1.4_SAMO.accdb

Browse New file:

Path:

Server: New server (ODBC only):

Test connection New db name (ODBC only):

SAMO VegetationMonitoring_be.accdb Sort: ☐ ODBC / SQL Server ☒ File backups

Back-end data CABR vegetation monitoring database

Path: C:\Vital_Signs\Native_Vegetation\Database\Master\SAMO_VegetationMonitoring_be.accdb

Browse New file:

Path:

Server: New server (ODBC only):

Test connection New db name (ODBC only):

Figure 10. Updating Links to Back-end Database (frm_Connect_Dbs) window. In this example, the tool will help re-connect to SAMO's back-end databases.

1. To update the database link, hit 'Browse' to open the Windows file directory dialog box. Navigate to the directory where the back-end database resides in. The back-end database file will have a "be" attached to the end of the file name. For Native Vegetation, there are two back-end databases to connect to:
 - Field data ("MEDN_VegetationMonitoring_BE" followed by the current year)
 - Species names ("MEDN_Plants_vX" followed by the 4-letter code for each respective park)
2. Once the directory has been selected, hit the "Update Links" button.

Main Menu

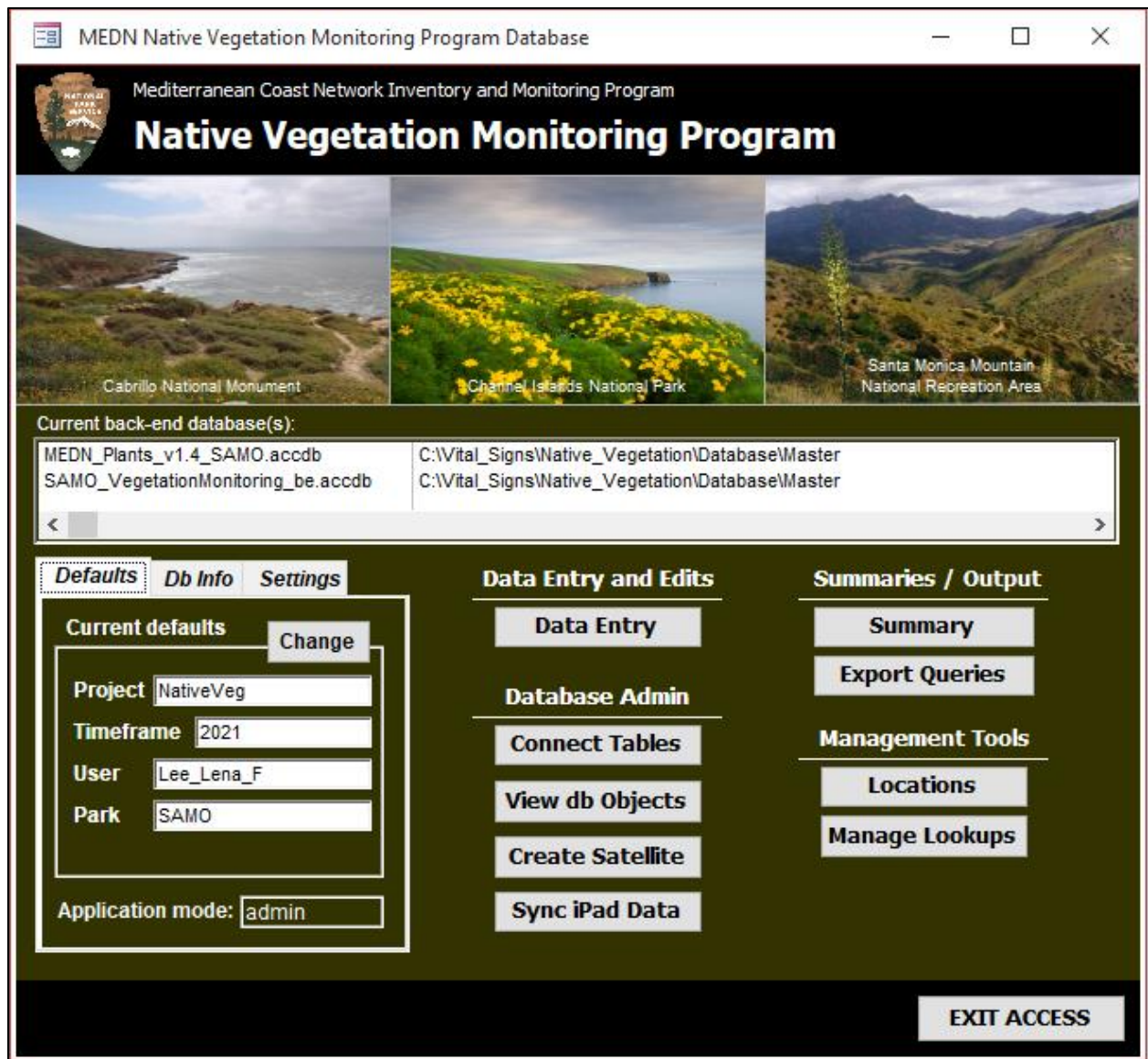


Figure 11. Screen shot of the “Main Menu” window in the Native Vegetation Monitoring Program database.

When the database is first opened, the Main Menu (frm_Switchboard) window appears (Figure 11). There are six sections:

- **Current back-end databases.** Lists the current back-end databases the front-end database is connected to.
- **Application default and database settings.** Default and database settings.
- **Data Entry and Edits.** View/enter data.
- **Database Admin.** Administrative tools to assist with the management of the database.

- **Summaries / Output.** Tools to access the data for export or analysis.
- **Management Tools.** Tools to assist with the management of data.

DATA ENTRY

Data may be imported from the iPad (current methodology) or entered manually.

Manual Data Entry

After selecting “Data Entry” from the Main Menu, the “Line-Point Transect Data Entry Form” (frm_Events) opens (Figure 12). The form is first filtered to the current sampling year. Use the filter functions at the top right to go to a specified transect. If data exists for the transect, the form will be populated with the relevant information.

MEDN Native Vegetation Monitoring Program
Mediterranean Coast Network Inventory and Monitoring Program
Native Vegetation Monitoring Program
Line-Point Transect Data Entry Form

Filter Records
Select Year: 2020
Select Site/Island: SAMO
Select Transect: 0004

New Transect Survey **New Location** **DELETE EVENT** 1678

Survey Year: 2020 **Protocol:** Line-Point Transect

PARK: SAMO **Plot Type:** I&M official

Site/Island: SAMO **Transect #:** 0004 **Survey Date:** 4/20/2020 **Photos Taken?** Yes

Species Identification By: Sagar_Tarja **Data Recorder:** Rachman_Richard

Notes:

ADD POINTS **FIRE SPECIES RICHNESS** **FIRE SHRUB PROTOCOL** **SPECIES RICHNESS** **SHRUB PROTOCOL** **TREE PROTOCOL**

Point	Length (cm)	Max Height (cm)	Dead Max Height	Substrate	Spp 1	Spp 2	Spp 3	Spp 4	Spp 5	Spp 6	Spp 7
1	30			Litter							

check box if dead plant or dead branch ☐ D ☐ DB ☐ D ☐ DB ☐ D ☐ DB ☐ D ☐ DB ☐ D ☐ DB ☐ D ☐ DB

DELETE SPECIES DATA **DELETE POINT DATA** **First Point** **Previous Point** **Next Point** **Last Point** **New Point**

To print out datasheet summaries, go to Summary Reports on the Main Menu.

Entered by: Lee_Lena_F **Verified by:** Gomez_Giancarlo **Date:** 10/27/2020 **Verify Record** **CLOSE WINDOW**

Record: 1 of 1 **Filtered** Search

Figure 12. Screen shot of the “Line-Point Transect Data Entry Form” in the Native Vegetation Monitoring Program database. In this example, the form is displaying data for SAMO transect 004 for the 2020 sampling year.

If data does not exist for the transect, follow the steps to enter data:

1. Select the “Survey Year” from the drop-down.

2. The “PARK” field is automatically entered from your default settings. Verify that it is correct.
3. For CABR and SAMO, the “Site/Island” field will be defaulted to the park code. For CHIS, select the island from the drop-down.
4. Select the “Transect #” from the drop-down.
5. The “Plot Type” field will be defaulted to “I&M official”. Verify that this is correct, otherwise edit as necessary.
6. Enter the “Survey Date”.
7. If photos were taken, select “Yes”, otherwise, select “No”.
8. Select a name from the drop-down for “Species Identification By” and “Data Recorder”. If the name does not exist in the drop-down, click on “Add Contacts” to add the name to the database. The name drop-down field can be filtered to “Active” (*i.e.* current) observers or “All” observers in the database.
9. Enter any notes for this survey.
10. Line-point transect: click on “ADD POINTS” to populate the database with the transect points (100).
 - a. For each point, enter the “Max Height” for live and dead hits.
 - b. Select a “Substrate” from the drop-down. Substrate is a required field.
 - c. For every species encountered at a point, select a species code from the drop-down.
 - d. Each species is assumed “Alive” unless otherwise noted. Check off “D” for dead plant or “DB” for dead branch.
11. Shrub Protocol: click on “SHRUB PROTOCOL” to open the “Shrub Protocol – Add Species” window (frm_Shrub_AddSpecies, Figure 13).

MEDN Native Vegetation Monitoring Program

**Mediterranean Coast Network
Native Vegetation Monitoring Program
Shrub Protocol - Add Species**

Park: **SAMO**

Island: **Santa Monica Mountains National Re**

Transect Number: **0231**

Survey Date: **2/16/2021** 1687

Select a Species Code: **ADD SPECIES**

Shrub species currently recorded for this transect:

Code	Scientific_Name
SALMEL	Salvia mellifera
MALLAU	Malosma laurina
CEAMEGI	Ceanothus megacarpus var. megacarpus
RHUINT	Rhus integrifolia
NICGLA	Nicotiana glauca
RHUOVA	Rhus ovata

Delete Species **ENTER DATA**

CLOSE WINDOW

Figure 13. Screen shot of the “Shrub Protocol – Add Species” window in the Native Vegetation Monitoring Program database. In this example, the form is displaying shrub data for SAMO transect 0231.

- Select a “Species Code” from the drop-down. Click “ADD SPECIES”.
- The species entered for this transect will be displayed in the window below. Add all shrub species observed at this time, if desired.
- Select a species and hit “ENTER DATA”. This will open the “Shrub Protocol Data Entry Form” (frm_Shrub_Plot, Figure 14).

MEDN Native Vegetation Monitoring Program

**Mediterranean Coast Network
Native Vegetation Monitoring Program**

Shrub Protocol Data Entry Form

Park: **SAMO**
 Island: **Santa Monica Mountains National Re**
 Transect Number: **0231**
 Survey Date: **2/16/2021** 1687

SALMEL (*Salvia mellifera*) NEW SPECIES DELETE SPECIES

1687

	0-5m	5-10m	10-15m	15-20m	20-25m	25-30m
Seedling						
Sapling						
Adult						
# of Stems						
# of Dead Stems						
Dead Adult						1
Resprout						
Year 2						
Dead Seedling						
Dead Resprout						

Additional Plots First Species Previous Species Next Species Last Species

CLOSE WINDOW

Figure 14. Screen shot of the “Shrub Protocol Data Entry Form” in the Native Vegetation Monitoring Program database. In this example, the form is displaying shrub density data for *Salvia mellifera* at SAMO transect 0231.

- d. Enter the number of individuals seen in each plot for each age category.
 - e. Click on “NEW SPECIES” to go back to the “Shrub Protocol – Add Species” window and enter data for another species or “CLOSE WINDOW” to go back to the “Line-Point Transect Data Entry Form”.
12. Tree Protocol: click on “TREE PROTOCOL” to open the “Tree Protocol – Add Species” window (frm_Tree_AddSpecies, Figure 15).

MEDN Native Vegetation Monitoring Program

**Mediterranean Coast Network
Native Vegetation Monitoring Program**

Tree Protocol - Add Species

Park: **SAMO**

Island: **Santa Monica Mountains National Re**

Transect Number: **0147**

Survey Date: **4/2/2020**

Select a Species Code:

Tree (and/or shrub) species currently recorded for this transect:

Code	Scientific_Name
Quelob	Quercus lobata

Figure 15. Screen shot of the “Tree Protocol – Add Species” window in the Native Vegetation Monitoring Program database. In this example, the form is displaying tree data for SAMO transect 0147.

- Select a “Species Code” from the drop-down. Click “ADD SPECIES”.
- The species entered for this transect will be displayed in the window below. Add all tree species observed at this time, if desired.
- Select a species and hit “ENTER DATA”. This will open the “Tree Protocol Data Entry Form” (frm_Tree_Plot, Figure 16).

MEDN Native Vegetation Monitoring Program

**Mediterranean Coast Network
Native Vegetation Monitoring Program
Tree Protocol Data Entry Form**

Park: **SAMO** 1513
Island: **Santa Monica Mountains National Re** 92
Transect Number: **0147**
Survey Date: **4/2/2020**

Quelob (Quercus lobata) NEW SPECIES DELETE SPECIES

ID	Age	Unit	Ind #	Count	
▶ 358	Adult	Trunk		1	delete
* (New)		Individual			delete

DBH values for this species or individual number:

ID	DBH_cm
685	75.50

Delete

Add DBH value: ADD

First Species Previous Species Next Species Last Species

CLOSE WINDOW

Figure 16. Screen shot of the “Tree Protocol Data Entry Form” in the Native Vegetation Monitoring Program database. In this example, the form is displaying tree density data for *Quercus lobata* at SAMO transect 0147.

- d. Enter the age, unit of measurement, and number of individuals seen.
 - e. If diameter at breast height (dbh) was measured for the individual, enter the value in the “Add DBH value” field and click “ADD”. The dbh will be shown in the window above. More than one dbh value can be added for an individual.
 - f. Click on “NEW SPECIES” to go back to the “Tree Protocol – Add Species” window and enter data for another species or “CLOSE WINDOW” to go back to the “Line-Point Transect Data Entry Form”.
13. Species Richness: click on “SPECIES RICHNESS” to open the “Species Richness Protocol Data Entry Form” (frm_Species_Richness, Figure 17).

MEDN Native Vegetation Monitoring Program

**Mediterranean Coast Network
Native Vegetation Monitoring Program**

Species Richness Protocol Data Entry Form

Park Code: **SAMO**

Park/Island: **Santa Monica Mountains National Recreation Area**

Transect Number: **0147**

Survey Date: **4/2/2020** 1513

Species	0-1m	1-5m	5-6m	6-10m	10-11m	11-15m	15-16m	16-20m	20-21m	21-25m	25-26m	26-30m	outside
Rafca													P
Amsint													P
PHADIS						P	P		P		P		
Quelob						P	P		P		P		
Brodia						P	P		P		P		
Malsax			P										
Branig	P		P		P		P		P		P		
Ascfas													P
Avefat	P		P		P		P		P		P		
*	--	--		--		--		--		--		--	--

CLOSE WINDOW

Figure 17. Screen shot of the “Species Richness Protocol Data Entry Form” in the Native Vegetation Monitoring Program database. In this example, the form is displaying species richness data for SAMO transect 0147.

- a. Select a “Species” from the drop-down. A species can only be entered once.
 - b. For each species, in each subplot, enter “P” if the species was present.
 - c. Make sure all unknown species names are verified. Assign them to an “UNKSPE” code if necessary.
 - d. When all species have been entered, click on “CLOSE WINDOW” to go back to the “Line-Point Transect Data Entry Form”.
14. Fire Shrub Protocol: click on “FIRE SHRUB PROTOCOL” to open the “Shrub (Fire) Protocol Data Entry Form” (frm_Fire_Shrub_Plot_new, Figure 18).

MEDN Native Vegetation Monitoring Program

**Mediterranean Coast Network
Native Vegetation Monitoring Program**

Shrub (Fire) Protocol Data Entry Form

Park: **SAMO** 1513

Island/Site: **Santa Monica Mountains National Recreation Area**

Transect Number: **0147**

Plot Survey Date: **4/2/2020** Plot Data Recorder: **Brown_Makenna**

First Plot Previous Plot Next Plot Last Plot NEW PLOT

Plot_Number: **D1**

Species_Code	Skeleton	Resprout	Resprout w/Dieback	Alive
*	0	0	0	0

DELETE PLOT

Burn Severity

0

1

2

3

4

CLOSE WINDOW

Figure 18. Screen shot of the “Shrub (Fire) Protocol Data Entry Form” in the Native Vegetation Monitoring Program database.

- Verify the “Plot Survey Data” and “Plot Data Recorder” are correct. Enter the correct values if necessary.
 - Select a “Plot_Number” from the drop-down.
 - In each plot, select a “Species_Code” and enter the number of individuals seen in each age category.
 - Make sure all unknown species names are verified. Assign them to an “UNKSPE” code if necessary.
 - Enter the “Burn Severity” for each category.
 - When done, click on “CLOSE WINDOW” to go back to the “Line-Point Transect Data Entry Form”.
15. Fire Species Richness: click on “FIRE SPECIES RICHNESS” to open the “Species Richness (Fire) Protocol Data Entry Form” (frm_Fire_Species_Richness, Figure 19).

MEDN Native Vegetation Monitoring Program

**Mediterranean Coast Network
Native Vegetation Monitoring Program
Species Richness (Fire) Protocol Data Entry Form**

Park: **SAMO** 1513

Island/Site: **Santa Monica Mountains National Recreation Area**

Transect Number: **0147**

Plot Survey Date: **4/2/2020** Plot Data Recorder:

Species	D1	D1 Cover (%)	D2	D2 Cover (%)	D3	D3 Cover (%)
Escal	☐		☐		☒	
Rafcal	☒		☐		☒	
Amsint	☐		☐		☒	
Phadis	☐		☐		☒	1
Quelob	☐		☒	12	☒	10
Brodia	☒	1	☒	30	☒	80
Malsax	☒		☐		☐	
Branig	☒	3	☒	3	☒	3
Ascfas	☒		☐		☐	
Avefat	☒	70	☒	65	☒	10
*	☐		☐		☐	

CLOSE WINDOW

Figure 19. Screen shot of the “Species Richness (Fire) Protocol Data Entry Form” in the Native Vegetation Monitoring Program database.

- a. Verify the “Plot Survey Date” and “Plot Data Recorder”. Enter the correct values if necessary.
 - b. Select a “Species” from the drop-down.
 - c. For each species, mark if the species was present in each plot (D1, D2, D3).
 - d. If a species was present, enter the percent cover.
 - e. Make sure all unknown species names are verified. Assign them to an “UNKSPE” code if necessary.
 - f. Click on “CLOSE WINDOW” to go back to the “Line-Point Transect Data Entry Form”.
16. When all data for the transect has been entered, click on “CLOSE WINDOW” to go back to the Main Menu.
 17. Go to “Summary” on the Main Menu to print out a datasheet view of the data. This will serve as the hard copy version of the data along with the field datasheet.

Sync Data from iPad

Data from the iPad is collected via the FileMaker Pro software. FileMaker Pro is a proprietary software only available to iOS devices. Instructions on how to use the iPad can be found in Section X.

The workflow process of data collection using the iPad is as follows:



Data collected on the iPad is sent by email (via WiFi) and exported as Excel files. From there, data can be imported/synced into the database.

Downloaded data should be saved by Park, Year, and Date download (YYMMDD) (Figure 20).

Name	Date modified	Type
20210217	2/17/2021 6:45 PM	File folder
20210219	2/19/2021 10:35 AM	File folder
20210223	2/23/2021 8:54 AM	File folder
20210224	2/25/2021 4:42 PM	File folder
20210225	2/25/2021 6:00 PM	File folder
20210305	3/5/2021 8:18 AM	File folder
20210309	3/9/2021 5:24 PM	File folder
20210311	3/16/2021 11:19 AM	File folder

Figure 20. Directory structure for FileMaker files in the Native Vegetation Monitoring Program. Files should be saved by Park, Year and Date of download (YYMMDD).

Export data from FileMaker

Make sure FileMaker (version 14+) is installed on your computer. Software and license files can be found at: [INSERT FILE PATH]

1. From the Main Menu in the Native Vegetation Monitoring App on the iPad, select “Export Records” (blue button) near the bottom of the screen (Figure 21).

Layout: SAMO_NativeVeg_Defa... View As: Preview

MEDN Inventory & Monitoring Program
Native Vegetation Monitoring App

SET DEFAULTS

Park_code iPad Park_name

SAMO MEDN_IM4 Santa Monica Mountains NRA

Species Identification by

Mendelsohn_Mark **Create Survey**

Browse Existing
 (Click row to view details)

Island	Transect Number	Date	Checked?	Exported?
SAMO ▼	0365 ▼	2/18/2021	Y	Y
SAMO ▼	0413 ▼	2/18/2021	Y	Y
SAMO ▼	0436 ▼	2/22/2021	Y	Y
SAMO ▼	0340 ▼	2/22/2021	Y	Y
SAMO ▼	0545 ▼	2/23/2021	Y	Y
SAMO ▼	0481 ▼	2/23/2021	Y	Y
SAMO ▼	0217 ▼	2/24/2021	Y	Y
SAMO ▼	0297 ▼	2/24/2021	Y	Y
SAMO ▼	0429 ▼	2/25/2021	Y	Y

Default export email: **lena_lee@nps.gov** **Export Records**

FOR OFFICE USE ONLY ON FILEMAKER DESKTOP SOFTWARE: Export to Excel

Figure 21. In the desktop Native Vegetation Monitoring App (FileMaker file), click on “Export Records” to export field data. A FileMaker file with all the data will be attached to an email sent to the specified recipient(s).

2. An email will be generated with the FileMaker data as an attachment. The “From” address is a generic email address created for the network (medn.im.ipad@gmail.com). Send the file to your NPS email address and CC the Network Data Manager. The email will be placed in the Outgoing email box until the iPad is connected to a WiFi network.
3. Once the email is sent, look for the email in your NPS inbox (Figure 22). Download the file attachment to a folder in the recommended directory structure.

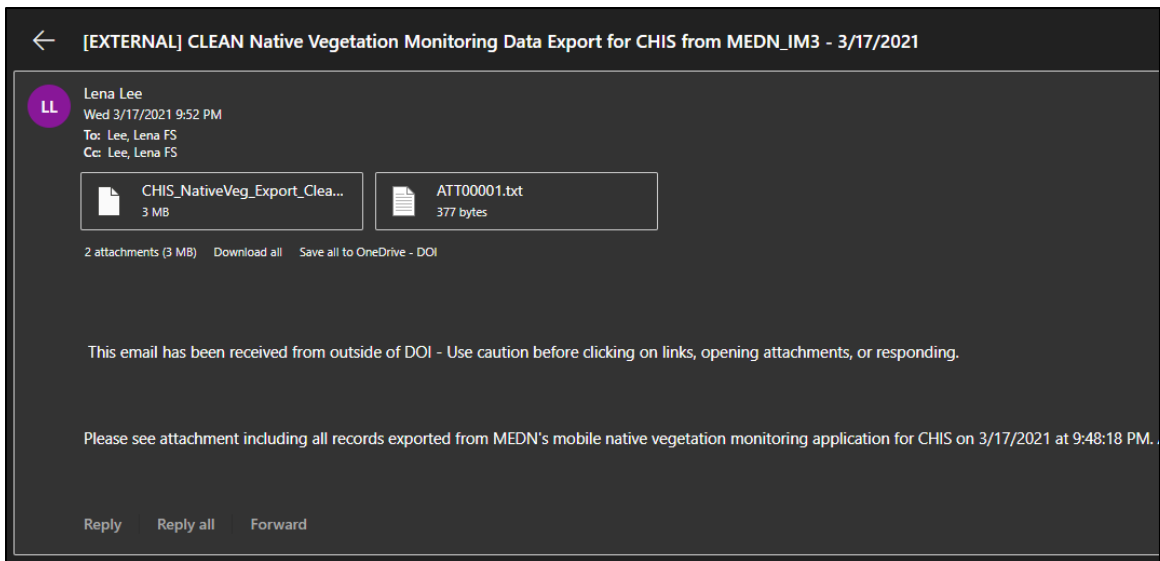


Figure 22. Screen shot of the email sent from the iPad.

4. The file attachment is prefaced with “[MEDN]_NativeVegetation_Export” and should have a *.fmp12 extension, where [MEDN] is your park unit. Double-click the file to open it in FileMaker.
5. In the FileMaker software, go to Layout and select “[MEDN]_NativeVeg_Defaults” from the drop-down, where [MEDN] is your park unit (Figure 23). This will bring up the “Native Vegetation Monitoring App”.

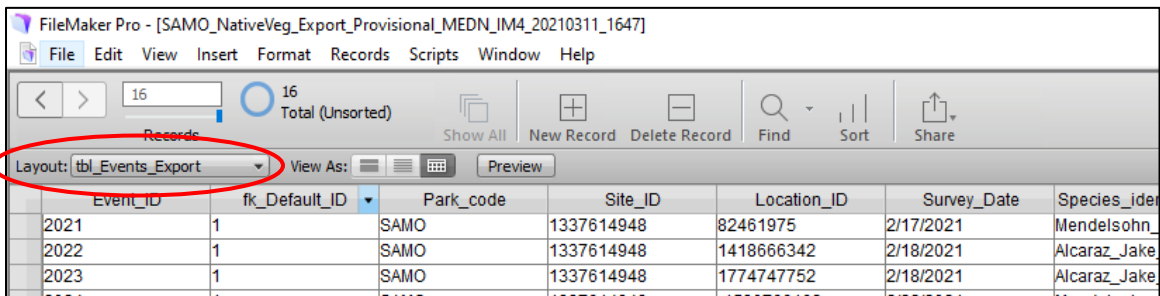


Figure 23. Screen shot of the downloaded FileMaker file when first opened. The file will be default to the “tbl_Events_Export” table view.

6. The FileMaker Main Menu on the computer is the same form used on the iPad.

Layout: SAMO_NativeVeg_Def... View As: Preview

MEDN Inventory & Monitoring Program
Native Vegetation Monitoring App

SET DEFAULTS

Park_code iPad Park_name

SAMO MEDN_IM4 Santa Monica Mountains NRA

Species Identification by

Mendelsohn_Mark **Create Survey**

Browse Existing
 (Click row to view details)

Island	Transect Number	Date	Checked?	Exported?
SAMO ▼	0365 ▼	2/18/2021	Y	Y
SAMO ▼	0413 ▼	2/18/2021	Y	Y
SAMO ▼	0436 ▼	2/22/2021	Y	Y
SAMO ▼	0340 ▼	2/22/2021	Y	Y
SAMO ▼	0545 ▼	2/23/2021	Y	Y
SAMO ▼	0481 ▼	2/23/2021	Y	Y
SAMO ▼	0217 ▼	2/24/2021	Y	Y
SAMO ▼	0297 ▼	2/24/2021	Y	Y
SAMO ▼	0429 ▼	2/25/2021	Y	Y

Default export email: **lena_lee@nps.gov** **Export Records**

FOR OFFICE USE ONLY ON FILEMAKER DESKTOP SOFTWARE: **Export to Excel**

Figure 24. In the desktop Native Vegetation Monitoring App (FileMaker file), click on “Export to Excel” to save the data as Excel files.

- Click on “Export to Excel” (green button) at the bottom of the screen (Figure 24). Six excel files (tbl_Events, tbl_Fire_Species_Richness, tbl_Point_Species, tbl_Shrub_Species, tbl_Species_Richness, and tbl_Tree_Species) will be generated and saved in the same directory as the FileMaker file (Figure 25). The files will also have today’s date appended to the file name.

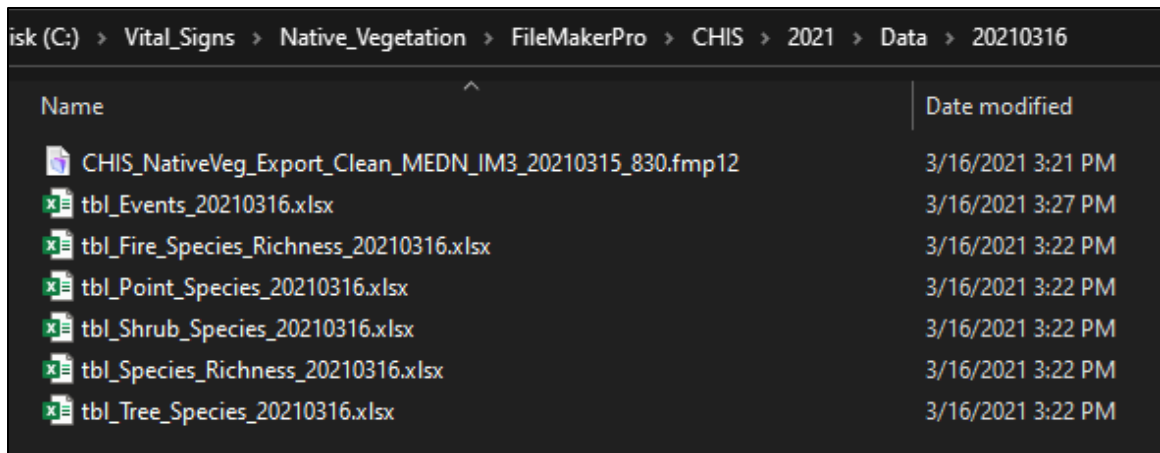


Figure 25. Six Excel files with today's date will be saved in the same directory as the FileMaker file.

8. Close FileMaker.
9. Open the "tbl_Events" Excel file and make sure the [Export?] field (Column P) is set to "Y" for the records to import (Figure 26). This field is used to indicate if the user should export the data into the database (e.g., "Y" = yes, "N" = no). You will need to know which data (survey dates) you have already imported in order to mark the correct records to import.

D	E	F	G	N	O	P	
iPad_Name	Site_ID	Location_ID	Survey_Date	Checked?	Data_verified_by	Export?	Act
MEDN_IM4	1337614948	257944412	03/04/2021	Y	Alcaraz_Jake_N	Y	Act
MEDN_IM4	1337614948	1402606409	03/04/2021	Y	Alcaraz_Jake_N	Y	Act
MEDN_IM4	1337614948	-1315045373	03/09/2021	Y	Alcaraz_Jake_N	N	Act
MEDN_IM4	1337614948	-1635023071	03/11/2021	Y	Alcaraz_Jake_N	N	Act

Figure 26. Modify the "Export?" field (Column P) in the **tbl_Events** excel file.

10. Save the Excel file and close.

Import data into Database

Once Excel files have been extracted from the downloaded FileMaker file, it is ready to be imported into the database.

1. Open the MEDN Native Vegetation Monitoring Program database and click on "Sync iPad Data" from the Main Menu. The "Synchronize Mobile Device Data" window (frm_Sync) will open to the "Sync Parameters" tab (Figure 27). The tools on this form will assist you in importing iPad FileMaker data into the database.

Figure 27. Screen shot of the “Sync Parameters” tab in the “Synchronize Mobile Device Data” window in the Native Vegetation Monitoring Program.

2. Fill in the following parameters:
 - a. Select the **Survey Year** from the drop-down.
 - b. Mark the **Import Type** as “Long” (default). [“Short” will only import the Events and Line-Point Intercept data]
 - c. Click “Browse” to select the **Data Folder** where all the Excel files are located.
 - d. Verify the **Folder Import Date**. The default value is derived from the data folder (hence it is important to label the folder YYYYMMDD).
 - e. Verify that the file path names for the Excel files are correct. If necessary, click on “Browse” to select the correct file and path.
 - f. Make sure “New” is selected for data type.
 - g. Select your name from the drop-down. The synchronization date is defaulted to the current date and time.
3. After verifying all parameters are correct, select “Sync Mobile Data to Database” to import data. A message will appear if no tree or fire species richness data was collected for the records you are importing.
4. Once completed, click on “Return to Main Menu” to close the form.

5. Go to “Summary” on the Main Menu to print out a datasheet view of the data (refer to the *Summary* section for detailed instructions). This will serve as the hard copy version of the data.
6. When you have verified all records have been imported into the database, the transect data on then iPad can be deleted.

Partial Data Uploads

To import FileMaker data to a survey that has already been uploaded to the database, use the functions in the “Partial Uploads” tab in the “Synchronie Mobile Device Data” form to append the new data to the survey (Figure 28).

Figure 28. Screen shot of the “Partial Uploads” tab in the “Synchronize Mobile Device Data” window in the Native Vegetation Monitoring Program.

In FileMaker, export the data into Excel files (refer to the *Export data from FileMaker* section for detailed instructions).

1. Select the **Survey Year** from the drop-down.
2. Select the **Transect** from the drop-down corresponding to the data to upload.
3. Select the **Protocol** methodology from the drop down corresponding to the data to upload.
4. Click “Browse” to select the **tbl_Events** file and the corresponding **Data** file from the file directory. The Excel data file names for the protocol methodology is listed below.
 - tbl_Point_Species = line-point intercept

- tbl_Shrub_Species = shrub density
 - tbl_Tree_Species = tree density
 - tbl_Species_Richness = species richness
 - tbl_Fire_Species_Richness = fire species richness
5. Select your name from the drop-down. The synchronization date is defaulted to the current date and time.
 6. After verifying all parameters are correct, select “Upload Data to Database” to import data.
 7. Once completed, click on “Return to Main Menu” to close the form.

Current Status of Data

To quickly assess the status of transects, go to the “Current Status of the Data” tab in the “Synchronize Mobile Device Data” form to view the transects that have data entered into the database (Figure 29). “X” indicated that data exists in the database. “---” indicates no data exists in the database.

SurveyYear	Transect	SurveyDate	Point-Line	Shrubs	Trees	SppRichness	FireSppRichness
2021	0217	2/24/2021	X	X	---	X	---
2021	0231	2/16/2021	X	X	---	X	---
2021	0297	2/24/2021	X	---	---	X	---
2021	0340	2/22/2021	X	---	---	X	---
2021	0361	2/25/2021	X	---	---	X	---
2021	0365	2/18/2021	X	---	---	X	---
2021	0413	2/18/2021	X	X	---	X	---
2021	0429	2/25/2021	X	X	---	X	---
2021	0436	2/22/2021	X	X	---	X	---
2021	0481	2/23/2021	X	X	---	X	X
2021	0484	2/17/2021	X	---	---	X	---
2021	0545	2/23/2021	X	X	---	X	X

Figure 29. Screen shot of the “Current Status of Data” tab in the “Synchronize Mobile Device Data” window in the Native Vegetation Monitoring Program.

SUMMARIES / OUTPUT

Summary

After selecting “Summary” from the Main Menu, the “Basic Summary Reports” window (frm_Summary) will open (Figure 30).

MEDN Native Vegetation Monitoring Program

Mediterranean Coast Network
Native Vegetation Monitoring Program
Basic Summary Reports

Select Year: 2021

Transect:

Report:

- New Recorded Species
- Number of Points Per Transect
- DATASHEET-Point Line
- DATASHEET-Shrub Density
- DATASHEET-Tree Density
- DATASHEET-Species Richness
- DATASHEET-Fire Species Richness

Get Report

CLOSE WINDOW

Figure 30. Screen shot of the “Basic Summary Reports” window in the Native Vegetation Monitoring Program database.

1. Select the **Year** and **Transect** of interest from the drop-downs.
2. Select the **Report** type from the list.
3. Click on “Get Report” to preview the report. To print out the report, click on  .
4. Click on “CLOSE WINDOW” to close the form and return to the Main Menu.

New Recorded Species (rpt_NewSppRecorded) – generates a report of all new species detected for a transect in a survey year.

MEDN Native Vegetation Monitoring Program	
New Species Recorded for 2021	
Santa Monica Mountains National Recreation	
Transect: 0217	MARLAE
Transect: 0231	CEAMEGMe
Transect: 0340	BRODIA STILEP

Number of Points Per Transect (rpt_NoOfPointsPerTransect) – generates a report of the number of points recorded for a transect in a survey year.

MEDN Native Vegetation Monitoring Program		
Number of Points per Transect		
2021		
	<u>Transect</u>	<u># of Points</u>
Santa Monica Mountains National Recreation		
	0217	100
	0231	100
	0297	100
	0340	100
	0361	100
	0365	100
	0413	100
	0429	100
	0436	100
	0481	100
	0484	100
	0545	100

DATASHEET-Point Line (rpt_Datasheet_PointLine) – generates a print-out of the Line-Point Intercept data for the specified transect and survey year.

NATIVE VEGETATION - LINE-POINT INTERCEPT TRANSECT DATASHEET											
Island: SAMO		Survey Date: 25 Feb 2021		Transect: 0429		Photos Taken? Yes					
Species Identification By: Alcaraz Jake N				Data Recorder: Pydde Alec							
Comments:											
L (cm)	PNT#	SUBSTR	SP 1	SP 2	SP 3	SP 4	SP 5	SP 6	SP 7	MAX HT.	MAX HT. (dead)
30	1	Soil									
60	2	Soil	ENCCAI							8	
90	3	Soil	CEAMEg							25	
120	4	Soil	CEAMEG							19	
150	5	Litter									
180	6	Pebble									
210	7	Litter	SALMEL							25	
240	8	Soil	SALMEI							31	
270	9	Litter	SALMEI							36	
300	10	Rock									
330	11	Soil									
360	12	Soil									
390	13	Soil	(DP)CEAMEG								77

DATASHEET-Shrub Density (rpt_Datasheet_ShrubDensity) – generates a print-out of the Shrub Density data for the specified transect and survey year.

NATIVE VEGETATION - SHRUB DENSITY DATASHEET													
Island: SAMO		Survey Date: 22 Apr 2020		Transect: 0177		Photos Taken? Yes							
Species Identification By: Sagar Taria				Data Recorder: Rouwenhorst Rachel									
Comments: Dead adult ceamegs were killed by fire; adefas resprout in 20-25 is an adult M. Mendelsohn replaced TS to finish surveying plot w/ RSR on 4/23; MM changed any Ceacun's to Ceameg on 4/23 in reg & fire sp richness, as MM didn't see any Ceacun at all (all C													
Species: ADE FAS							Species: MALFAS						
Age	0-5	5-10	10-15	15-20	20-25	25-30	Age	0-5	5-10	10-15	15-20	20-25	25-30
Seedling							Seedling				1		
Sapling							Sapling	7	25	3	4		
Resprout					1		Resprout						
Year 2							Year 2		1				
Adult							Adult	8	12	6	2		1
Dead Adult							Dead Adult						
Dead Seedling							Dead Seedling						
Dead Resprout							Dead Resprout						
Dead Subadult							Dead Subadult						
Rootsprout							Rootsprout						

DATASHEET-Tree Density (rpt_Datasheet_TreeDensity) – generates a print-out of the Tree Density data for the specified transect and survey year.

NATIVE VEGETATION - TREE DENSITY DATASHEET		
Island: <u>SAMO</u>	Survey Date: <u>02 Apr 2020</u>	Transect: <u>0147</u> Photos Taken? <u>Yes</u>
Species Identification By: <u>Sagar Taria</u>		Data Recorder: <u>Brown Makenna</u>
Comments:		
Species: QUELOB		
Age	N	DBH
Adult	1	75.5

DATASHEET-Species Richness (rpt_Datasheet_SppRichness) – generates a print-out of the Species Richness data for the specified transect and survey year.

NATIVE VEGETATION - SPECIES RICHNESS DATASHEET													
Island: <u>SAMO</u>	Survey Date: <u>25 Feb 2021</u>	Transect: <u>0429</u>	Photos Taken? <u>Yes</u>										
Species Identification By: <u>Alcaraz Jake N</u>		Data Recorder: <u>Pydde Alec</u>											
Comments:													
Species	0-1	1-5	5-6	6-10	10-11	11-15	15-16	16-20	20-21	21-25	25-26	26-30	Outside
ACMMARMA													
EROCIC				P	P							P	
ARTCAL													
RHUOVA													P
CROSCO									P			P	
ACMGLA									P		P		
SOLXAN												P	
MUHMIC				P	P							P	
HAZSQU												P	
ERICIN				P	P	P		P	P		P		
CALOCU4440												P	

DATASHEET-Fire Species Richness (rpt_Datasheet_FireSppRichness) – generates a print-out of the Fire Species Richness data for the specified transect and survey year.

NATIVE VEGETATION - FIRE SPECIES RICHNESS DATASHEET

Island: SAMO Survey Date: 31 Mar 2020 Transect: 0324 Photos Taken? Yes
 Species Identification By: Brown Makenna Data Recorder: Sagar Tarja
 Comments: MB called species richness and TS called point-line

FIRE SPECIES RICHNESS

Species	— D1 %—	— D2 %—	— D3 %—
BRODIA	☒ 3	☒ 35	☒ 45
LACSER	☒	☒	☒
RHUOVA	☐	☐	☒ 2
MARMAC	☐	☐	☒
TRICIL	☒	☒	☒
AMSINT	☒ 1	☐	☐
TRIWIL	☒	☐	☐
MELIND	☐	☐	☒
RAFCAL	☒	☐	☐
MEDPOL	☒	☒	☒
SONOLE	☒	☒	☒
CLAPER	☒	☐	☐
BRANIG	☒	☒ 1	☒
AVEFAT	☒ 25	☒ 40	☒ 45
DIPCAP	☐	☐	☒
LUPSUC	☒	☒ 1	☒ 1

Total Species Richness to date (rpt_SppRichness) – generates a print-out of all species detected at the transect from the last monitoring survey as well as all time.

Total Species Richness								
Cabrillo National Monument								
Site Code: 015		Last Survey Date: 4/12/2021			Panel: B			
Spp Code	Scientific Name	0-5m	5-10m	10-15m	15-20m	20-25m	25-30m	outside
AMBPU S	<i>Amblyopappus pusillus</i>	X	-	-	-	-	X	X
ARTCAL	<i>Artemisia californica</i>	X	-	X	X	X	X	X
BACSAR	<i>Baccharis sarothroides</i>	-	-	-	-	-	-	X
BROMADRU	<i>Bromus madritensis</i>	X	X	X	X	X	X	X
CENMEL	<i>Centaurea melitensis</i>	-	-	-	-	-	X	X
DEIFAS	<i>Deinandra fasciculata</i>	-	-	-	-	-	X	X
DICOCC	<i>Dichondra occidentalis</i>	-	-	-	-	-	-	X
DISSPI	<i>Distichlis spicata</i>	X	-	-	-	-	X	X
DUDEDU	<i>Dudleya edulis</i>	-	-	-	-	-	X	X
DUDLAN	<i>Dudleya lanceolata</i>	-	-	-	-	-	-	X
ENCCAL	<i>Encelia californica</i>	X	-	-	-	X	X	X
ERIFAS	<i>Eriogonum fasciculatum</i>	-	-	-	-	X	-	X
EROCIC	<i>Erodium cicutarium</i>	-	-	-	-	-	-	X
LAMAU R	<i>Lamarckia aurea</i>	X	X	X	-	-	-	X
LEPMAR	<i>Leptosyne maritime</i>	X	X	X	-	-	-	X

Export Queries

After selecting “Export Queries” from the Main Menu, the “Data Summary and Export” window (frm_ExportData) will open (Figure 31).

Query Description:
Select a query: Custom Create query based on user parameters

Query Parameters: SQL Statement Annual Report Shannons Diversity and Evenness Indices

Park:
☐ CABR
☐ CHIS
☒ SAMO

Island:
☒ ALL ISLANDS
☐ By Island(s): AN, SB, SC, SM, SR

Year:
☒ ALL YEARS
☐ Single Year: [Dropdown]
☐ By Year(s): from: 2014 to: 2021

Transect:
☒ ALL LOCATIONS
☐ By Location(s): 0001, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009, 0010, 0011
☐ Export X-, Y-Coordinates

Vegetation Community:
☒ ALL VEGETATION TYPES
☐ By Vegetation Type(s): Ceanothus Chaparral, Chamise Chaparral, Chaparral, Coastal Sage Scrub, CSS, Grassland, Herbaceous Scrub (generic), Riparian, Riparian Woodland, Shrubland, Successional Shrubland, Upland Woodland

Species: only available with custom queries
☒ ALL SPECIES ☐ By Species: [Dropdown] ☐ GROUP
Nativity: ☐ Native ☐ Nonnative ☐ GROUP Clear
Life Cycle: ☐ Annual ☐ Perennial ☐ GROUP Clear
Status: ☐ Live ☐ Dead ☐ GROUP Clear
Growth Form: ☐ Grass ☐ Shrub ☐ GROUP
☐ Herbaceous ☐ Sub-shrub ☐ Tree Clear
Combine: ☐ Island ☐ Vegetation Communities

Data Output:
☒ Raw Data
☐ Absolute/Relative Cover
☐ Total Hits
☐ Average Heights
☐ Spp Richness (point line)
☐ Spp Richness (all)

Filter Parameters: Park: SAMO Island(s): NA Year(s): All Years Transect(s): All Sites
Veg Communities: All Veg Communities Species: All Species Data: Raw Data

Reset Submit

QUERY PREVIEW
Query completed! Results below.

Park	ParkIsland	SiteCode	Ownership	Vegetation_Comm	SurveyYear	PointNo	Substrate	MaxHeight_cm	MaxHeight_cm	Species_Rank	Species_cc	Sci
SAMO	SAMO	0879	RSRPD	Grassland	2019						Species_code	Scientif
SAMO	SAMO	0879	RSRPD	Grassland	2020						Species_code	Scientif
SAMO	SAMO	0981	NPS	Grassland	2018						Species_code	Scientif
SAMO	SAMO	0981	NPS	Grassland	2019						Species_code	Scientif
SAMO	SAMO	0981	NPS	Grassland	2020						Species_code	Scientif
SAMO	SAMO	0547	MRCA	Upland Woodland	2019						Species_code	Scientif
SAMO	SAMO	0547	MRCA	Upland Woodland	2020						Species_code	Scientif
SAMO	SAMO	0225	SP	Coastal Sage Scrub	2014						Species_code	Scientif
SAMO	SAMO	0225	SP	Coastal Sage Scrub	2015						Species_code	Scientif

Record: 1 of 916 No Filter Search

^ SCROLL TO THE RIGHT TO VIEW MORE FIELDS ^

Export 2 Excel

Figure 31. Screen shot of the “Data Summary and Exports” window in the Native Vegetation Monitoring Program database.

1. Select a pre-defined query from the drop-down.
2. Select the parameters for the query:
 - a. Park (and Island(s))
 - b. Year
 - c. Transect
 - d. Vegetation community
 - e. Species, including nativity, life cycle, and growth form status
 - f. Data output
 - i. Raw Data – basic dataset
 - ii. Absolute and Relative Cover – these can be grouped by species, nativity, life cycle, and growth form.
 - iii. Total Hits – these can be grouped by species, nativity, life cycle, and growth form.

- iv. Average Height – these can be grouped by species, nativity, life cycle, and growth form.
- v. Species Richness (from line point intercept data)
- vi. Species Richness (all) (from line point intercept and species richness)
- g. To combine islands or vegetation communities, select the

MANAGEMENT TOOLS

Locations

To edit or add new transect locations to the database, select “Locations” (frm_Locations) from the Main Menu (Figure 28).

MEDN Native Vegetation Monitoring Program

Mediterranean Coast Network Inventory and Monitoring Program
Native Vegetation Monitoring Program

Location Information

Edit **Park:** SAMO **Site/Island:** SAMO **Transect Number:** 0879 **X Coordinate:** 338971 **Y Coordinate:** 3782274 **B point (X):** 338977 **B point (Y):** 3782245 **Coordinate Units:** meters **Coordinate System:** UTM **UTM Zone:** 11 **Datum:** NAD83 **Monitoring Status:** Active **No of Points:** 100 **Veg Community:** Grassland **Slope (deg):** **Aspect (0-360):** **Elevation (m):** **Slope shape:**

Search for a Location:
SAMO **Find**
-2144969001 **Add New Location**

Notes:
Lower Palo Comado

Record: 1 of 395 No Filter Search

Figure 28. Screen shot of the “Location Information” window in the Native Vegetation Monitoring Program database.

1. Use the filter functions in the light blue box to find a transect.
2. To edit an existing location, click on the “Edit” button to unlock the fields.
3. To add a new location, click on “Add New Location”. Fill in as many fields as possible. Yellow-highlighted fields are mandatory.

Manage Lookups

To edit or add new species names, contacts, or other lookup values to the database, select “Manage Lookups” (frm_Lookups) from the Main Menu (Figure 29).

MEDN Native Vegetation Monitoring Program - Manage Lookup Tables

Mediterranean Coast Network
Native Vegetation Monitoring Program

Manage Lookup Tables Close Form

Species list **Project crew list** **Other lookup tables**

View details New record

Species_code	Scientific_name	Current_Name	Fxn_Group	Nativity	Life_Form
ABIES	Abies sp.	No	Tree	Nonnative	Perennial
ABRMAR	Abronia maritima	Yes	Herbaceous	Native	Perennial
ABRONI	Abronia sp.	No	Herbaceous	Native	Perennial
ABRUMB	Abronia umbellata	No	Herbaceous	Native	Perennial
ABRUMBUM	Abronia umbellata ssp. umbellata	Yes	Herbaceous	Native	Perennial
ACACYC	Acacia cyclops	Yes	Shrub	Nonnative	Perennial
ACADEA	Acacia dealbata	Yes	Tree	Nonnative	Perennial
ACALON	Acacia longifolia	Yes	Tree	Nonnative	Perennial
ACAMEL	Acacia melanoxylon	No	Tree	Nonnative	Perennial
ACARED	Acacia redolens	Yes	Tree	Nonnative	Perennial
ACARET	Acacia retinodes	Yes	Tree	Nonnative	Perennial
ACASAL	Acacia saligna	Yes	Tree	Nonnative	Perennial
ACACIA	Acacia sp.	Yes	Tree	Nonnative	Perennial
ACEMAC	Acer macrophyllum	Yes	Tree	Native	Perennial
ACENEG	Acer negundo	Yes	Tree	Nonnative	Perennial
ACENEGSC	Acer negundo ssp. californicum	No	Tree	Nonnative	Perennial
ACENEGVC	Acer negundo var. californicum	No	Tree	Nonnative	Perennial
ACER	Acer sp.	No	Tree	Unknown	Perennial
ACHMIL	Achillea millefolium	Yes	Herbaceous	Native	Perennial
ACHMILSL	Achillea millefolium ssp. lanulosa	No	Herbaceous	Native	Perennial
ACHMILCA	Achillea millefolium var. californica	No	Herbaceous	Native	Perennial
ACHMILVL	Achillea millefolium var. lanulosa	No	Herbaceous	Native	Perennial
ACHBRA	Achnatherum brachychaetum	Yes	Grass	Native	Perennial
ACHCOR	Achnatherum coronatum	No	Grass	Native	Perennial
ACHDIE	Achnatherum diegoense	Yes	Grass	Native	Perennial
ACHNAT	Achnatherum sp.	No	Grass	Native	Perennial
ACHMOL	Achyrochaena mollis	Yes	Herbaceous	Native	Annual
ACMAMEAM	Acmispon americanus var. americanus	Yes	Herbaceous	Native	Annual
ACMARGAR	Acmispon argophyllum var. argophyllum	Yes	Herbaceous	Native	Perennial
ACMGLA	Acmispon glaber	Yes	Sub-shrub	Native	Perennial
ACMGRAGR	Acmispon grandiflorus var. grandiflorus	Yes	Herbaceous	Native	Perennial
ACMMAR	Acmispon maritimus	Yes	Herbaceous	Native	Annual
ACMMARMA	Acmispon maritimus var. maritimus	Yes	Herbaceous	Native	Annual

Figure 29. Screen shot of the “Manage Lookup Tables” window in the Native Vegetation Monitoring Program database.

Species list

To view or edit a species, select a species from the list and click on “View details” or double-click the species in the list. To enter a new species, select “New record”. The “Native Vegetation Species List” (frm_Project_Taxa) will open (Figure 30). Edit the species information fields as necessary. Yellow highlighted fields are required.

Species Information Form

Mediterranean Coast Network
Native Vegetation Monitoring Program

Native Vegetation Species List

New record Undo Close Form

Species code: ABRMAR

Go to Species: []

Family: NYCTAGINACEAE Scientific name: Abronia maritima Taxon type: species Common name: []

Active: Yes USDA: ABMA2 TSN: 19562 Accepted TSN: 19562 Valid taxon this refers to: ABRMAR - Abronia maritima

Functional Group: Herbaceous Nativity: Native Life Form: Perennial Taxon comments: []

Taxon_ID: 1520515697 Created: [] Updated: 2014 Nov 20 9:18 by: Lee_Lena_F

Figure 30. Screen shot of the “Native Vegetation Species List” window in the Native Vegetation Monitoring Program database.

Project crew list

Select the “Project crew list” tab in the “Manage Lookup Tables” window to view contact information in the database (Figure 31).

MEDN Native Vegetation Monitoring Program - Manage Lookup Tables

Mediterranean Coast Network
Native Vegetation Monitoring Program

Manage Lookup Tables

Close Form

Species list Project crew list Other lookup tables

View details New record

Status	Name	Organization	Title	Last updated
Inactive	Aaronson_Julia	SAMO		
Inactive	Aguilar_Luis	SAMO	Biotech	
Active	Alcaraz_Jake_N	SAMO	Intern	
Active	Algiers_Joey	SAMO	Biotech	
Active	Algiers_Joseph	SAMO	Restoration Ecologist	
Active	Anderson_Crystal	SAMO	Biotech	
Inactive	Barancik_Talisa	SAMO	Biotech	
Inactive	Berry_Candice	SAMO		
Active	Brown_Makenna_L	SAMO	Intern	
Active	Brown_Melissa	SAMO	LE Ranger	
Inactive	Canning_Bridget	SAMO	VIP	
Active	Chan_Patty	SAMO	Intern	
Active	Cholo_Ana_B	SAMO	Senior Writer	
Inactive	Christensen_Kat	SAMO	Biotech	
Active	Clarke_Brendan	SAMO		
Inactive	Condo_Theresa	SAMO		
Inactive	Crispy_Megan	SAMO		

Figure 31. Screen shot “Project crew list” tab in the “Manage Look” window in the Native Vegetation Monitoring Program database.

To view or edit a contact, select a name from the list and click on “View details” or double-click the name in the list. To enter a new contact, select “New record”. The “Contact Information” form (frm_Contacts) will open (Figure 32). Edit the contact information fields as necessary.

MEDN Native Vegetation Monitoring Program

Mediterranean Coast Network
Native Vegetation Monitoring Program

Contact Information Close Form

Edit record New record Undo Done

Filter: ☐ View all contacts ☒ Filter by search

Search by:
Alcaraz_Jake_N

First Name: Jake

Middle Initial: N

Last Name: Alcaraz

Database Name: Alcaraz_Jake_N

Organization: SAMO

Position Title: Intern

Status: Active

Contact Location: SAMO

Notes:

Project code: NativeVeg Created on: 6/19/2018 by: Mendelsohn_Mark

Last updated: by:

Figure 32. Screen shot of the “Contact Information” window in the Native Vegetation Monitoring Program database.

Other lookup tables

Select the “Other lookup tables” tab in the “Manage Lookup Tables” window to view current lookup lists used in the database (Figure 33).

MEDN Native Vegetation Monitoring Program - Manage Lookup Tables

 Mediterranean Coast Network
Native Vegetation Monitoring Program

Manage Lookup Tables

[Species list](#) [Project crew list](#) [Other lookup tables](#)

Table: Shrub_Age_Category Note: Only users with admin or power user access privileges may change lookup domain values. Please contact the Project Lead if you need to make changes but are unable to.

Shrub_Age_Category_ID	Field_name	Sort_Order
Seedling	Seedling	1
Sapling	Sapling	2
Resprout	Resprout	3
Year 2	Year2	4
Adult	Adult	5
Dead Adult	DeadAdult	6
Dead Seedling	DeadSeedling	7
Dead Resprout	DeadResprout	8
Dead Subadult	DeadSubadult	9
Rootsprout	Rootsprout	10
*		

Figure 33. Screen shot of the “Manage Lookup Tables” window in the Native Vegetation Monitoring Program database.

1. Select a table from the drop-down.
2. Users with the appropriate privileges will be able to modify the lookup lists.

APPLICATION DEFAULTS AND SETTINGS

The application defaults and settings section in the Main Menu consists of three tabs: Defaults, Db Info and Settings (Figure 34).



Figure 34. Screen shots of the “Defaults”, “Db Info” and “Settings” tabs in the Main Menu of MEDN Terrestrial Herpetofauna Monitoring Program database.

Defaults

The “Defaults” tab shows the current field defaults set for the database. To change the current defaults, click on “Change” to open the “Set application default values” window (frm_Set_Defaults, Figure 35).

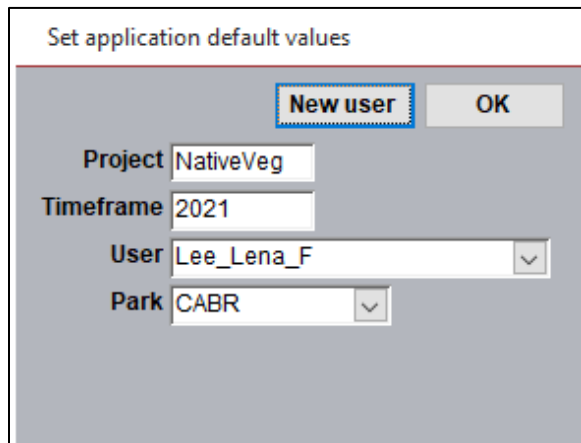


Figure 35. Screen shot of the “Set application default values” window in the MEDN Terrestrial Herpetofauna Monitoring Program database.

DB Info

The “DB Info” tab shows the latest database version and contact information for the Network Data Manager. Click on “View release history” to open the “Application Releases” window (frm_App_Releases, Figure 36) to see the history of the database front-end development.

Application Releases

Release ID 20210316091453-705547511.577606

Database title MEDN Native Vegetation Monitoring Program Database

Version number 2021.61 **Current/supported?** Current

Release date 3/16/2021 **Release by** Lee_Lena_F

File name LandVegetationMonitoring_v2021.61.ac

Release notes

Known bugs

* **Bug ID** 20210418145205-579518616.1994 **Report date** 4/18/2021

Found by **Reported by**

Report details

Fix date **Fixed by**

Fix details

Record: 1 of 1 No Filter Search

Figure 36. Screen shot of the “Set application default values” window in the MEDN Terrestrial Herpetofauna Monitoring Program database.

To log a database problem or error, click on “Report a bug” to open the “Bug Reports” window (fsub_Bug_Reports, Figure 37). Information on how to document the error will be shown prior to the window opening.

The left screenshot is a dialog box titled "Report a database problem or error". It contains the following text: "Please fill out the following form to describe the problem and provide the following details:" followed by a list of instructions: "- Your name and the date the problem occurred.", "- Application version number.", "- Name of the form or report, if known.", "- Frequency of the problem (every time or just once?).", and "- Other details to help isolate the problem (e.g. 'Error #2001 message appears when entering the site code for a new record')." There is an "OK" button at the bottom right.

The right screenshot is a window titled "Bug Reports". It contains a form with the following fields: "Bug ID" (20210331095854-774740099.9069), "Report date" (3/31/2021), "Found by" (lee), and "Reported by" (lee). Below these are sections for "Report details" and "Fix details", each with a "Fix date" and "Fixed by" field. At the bottom, there is a status bar showing "Records: 1 of 1" and a search bar.

Figure 37. Screen shot of the “Bug Reports” window in the MEDN Terrestrial Herpetofauna Monitoring Program database. Instructions on how to document the error will be shown prior to the window opening.

Settings

The “Settings” tab shows various database management options pertaining to backups that can be set by the user. Mark all that apply.

To edit the latest database version and contact information of the Network Data Manager, click on “Set application info” to open the “Set application version information” window (frm_Set_Db_Info, Figure 38). Only users with the appropriate permissions (“admin”, “power user”) will be able to edit these fields.

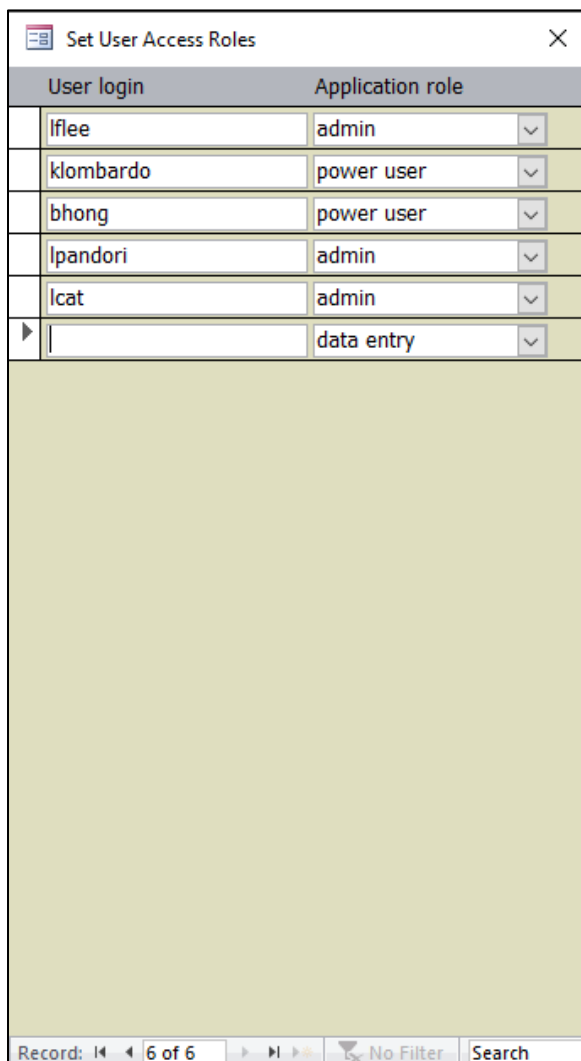
The screenshot shows a window titled "Set application version information". At the top right, there are two buttons: "View release history" and "OK". Below these, there is a "Db version:" label followed by a dropdown menu showing "Version 2021.61 (3/16/2021)". Underneath, there are four text input fields: "Contact name:" with "Lena Lee", "Contact org:" with "MEDN", "Contact phone:" with "805-370-2338", and "Contact email:" with "lena_lee@nps.gov".

Figure 38. Screen shot of the “Set application version information” window in the MEDN Terrestrial Herpetofauna Monitoring Program database.

DATABASE ADMIN

The functions in this section are designed for the Program Lead and Network Program Manager to help manage the database. Please use caution when using these functions.

- *Connect Tables* – Refer to section “Re-connect back-end data files (if necessary)”
- *View db Objects* – Shows the database objects (tables, queries, forms, reports, and modules) navigation pane
- *Set User Roles* – Opens the “Set User Access Roles” window (frm_User_Roles, Figure 39) to add usernames and roles to the database.



The screenshot shows a window titled "Set User Access Roles" with a close button (X) in the top right corner. The window contains a table with two columns: "User login" and "Application role". The table has six rows of data. The first five rows have user logins "lflee", "klombardo", "bhong", "lpandori", and "lcat", all with the role "admin". The sixth row has a user login "l" and the role "data entry". Below the table is a large empty area. At the bottom of the window, there is a status bar with the text "Record: 14", "6 of 6", "No Filter", and a "Search" button.

User login	Application role
lflee	admin
klombardo	power user
bhong	power user
lpandori	admin
lcat	admin
l	data entry

Figure 39. Screen shot of the “Set User Access Roles” window in the MEDN Terrestrial Herpetofauna Monitoring Program database.

- *Backup Data* – Manual backup of the data.