USER'S GUIDE
FOR
SPECIES STATUS DATABASE
VERSION 2.0

CLARK COUNTY

MULTIPLE SPECIES HABITAT CONSERVATION PLAN

August 2011

desert conservation
PROGRAM

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P R O G R A M

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2009-ECO-801A
D80

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ACRONYMS AND ABBREVIATIONS

AMP	Adaptive Management Program
DCP	Desert Conservation Program
GIS	geographic information system
MSHCP	Multiple Species Habitat Conservation Plan
PDF	portable document format
VBA	Visual Basics for Application

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1.0 Introduction

The Species Status Database is an important component of the Adaptive Management Program (AMP) of the Clark County Multiple Species Habitat Conservation Plan (MSHCP). It provides a basis for the Desert Conservation Program (DCP) to assess population and species trends, and achieve the MSHCP general goal of maintaining stable or increasing population numbers within Clark County (Clark County, 2000). Trends are assessed from data collected by projects funded by the DCP and from data collected by state and federal land management agencies in Clark County.

A Species Status Database and User Guide (Clark County, 2009) were developed in 2009. A review of that database (Clark County, 2010) revealed that it did not fully meet the intended purpose of assessing temporal and spatial changes in abundance and distribution of covered species. Nor did that database achieve its objective of calculating population metrics from which a measure of population trend could be generated.

The Science Advisor (Enduring Conservation Outcomes) developed Version 2.0 of the database using insights gained from the first version of the database, as well as a detailed review of 61 datasets (Clark County, 2011a; Clark County, 2011b). The conceptual basis of Version 2.0 was to summarize the data and capture how the data was collected, including the type of monitoring site, monitoring objectives, monitoring methods, and determine if standardized methods were used. This revision of the database and guidelines for data collection and entry will allow users to assess which reports provide adequate data to assess species or population status and trends. Thus, any statistical assessment of status and trend is done outside of the database.

Minimum data requirements were established for Version 2.0. To be entered into the database the data have to contain species scientific name, survey date, and location information.

The chapters of this User's Guide present the following information:

- Chapter 2, The Access® Database: an overview of the database software, how to open the database and navigate the main menu, how to search the database using a query, and how to use the report function.

- Chapter 3, Entering Data: describes how to enter data into the database.

- Chapter 4, Database Fields: presents a table of the database fields with each field name and type of field (e.g., text, drop-down menu, number, or checklist).

- Chapter 5, Description of Database Fields by Database Section: defines the sections and fields in the database, describes where the information for the field is most often found in reports, an example of the data entered into the field, and additional notes.

- Chapter 6, Database Troubleshooting: provides information on troubleshooting problems with the data or the database.

- Chapter 7, References: lists the references used in preparing this User's Guide.

2.0 The Access® Database

Microsoft® Access® is a relational database management system used for gathering and understanding information. Users can create tables, queries, forms, and reports. Information is first compiled into a database into one or many tables and then can be searched, filtered (a way to focus on specific entries rather than all records in a table), or summarized. Forms are used to enter information into tables, queries are used to search the tables, and reports are used to summarize data from the tables and queries. Advanced users can use Microsoft® Visual Basics® for Application (VBA) programming code for advanced data manipulation.

The information in this chapter and throughout this User's Guide refers to Microsoft Office® 2007 version of Access® and assumes the user has a basic understanding of or experience with the software.

2.1   USING THE ACCESS ® DATABASE

This section describes the fundamentals in using the Access® database from opening a file and understanding the main menu and objects.

ATTENTION! Changes to an Access® database are permanent. There is no undo button. Be sure to always back up (copy) the database before opening, using, or making changes to the database.

Version control, the process of managing copies of changing files over time, requires that any alteration or update to a file is considered a change and is reflected in the file name. The version control guidelines for this database include the file name and the date of the file in the year, month, and day format (MSHCP_Species_Status_yyyymmdd). More than one alteration or update to the database on the same day will include a revision number after the date (MSHCP_Species_Status_yyyymmdd_rev1).

2.1.1   Opening the Database

Double-click on the file name or icon to open the Access® database. If a security warning appears just below the ribbon (toolbar), click the "Options" button (Figure 1). If the database is from a trusted source, choose the "Enable this content" option and click "OK" (Figure 2). It is necessary to enable the contents to see the full content of the Species Status Database.
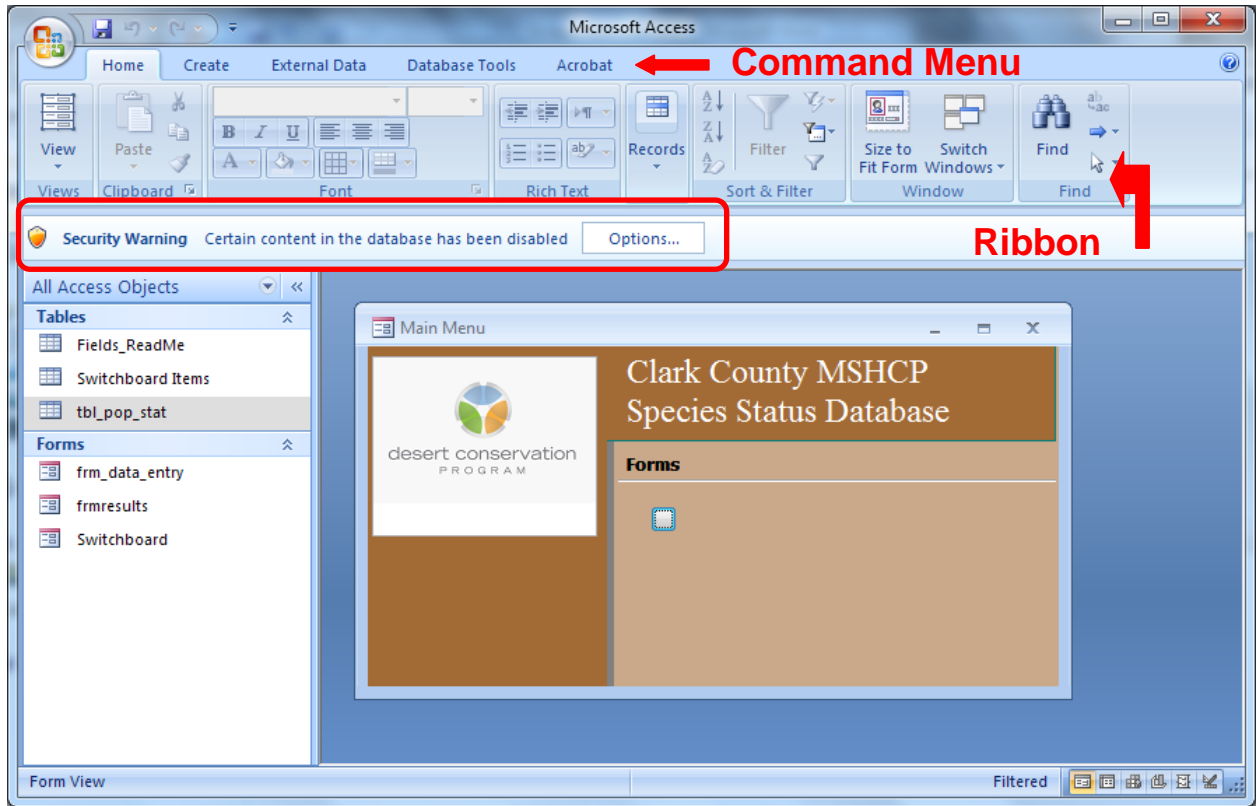
Figure 1. Opening Database – Main Menu and Security Warning

Figure 2. Opening Database – Enabling the Database Content

2.1.2 Main Menu

There will be three items in the Main Menu if the content of the Species Status Database has been enabled. These three items are Species Data Entry, Species Status Data Summary, and Exit Database (Figure 3).
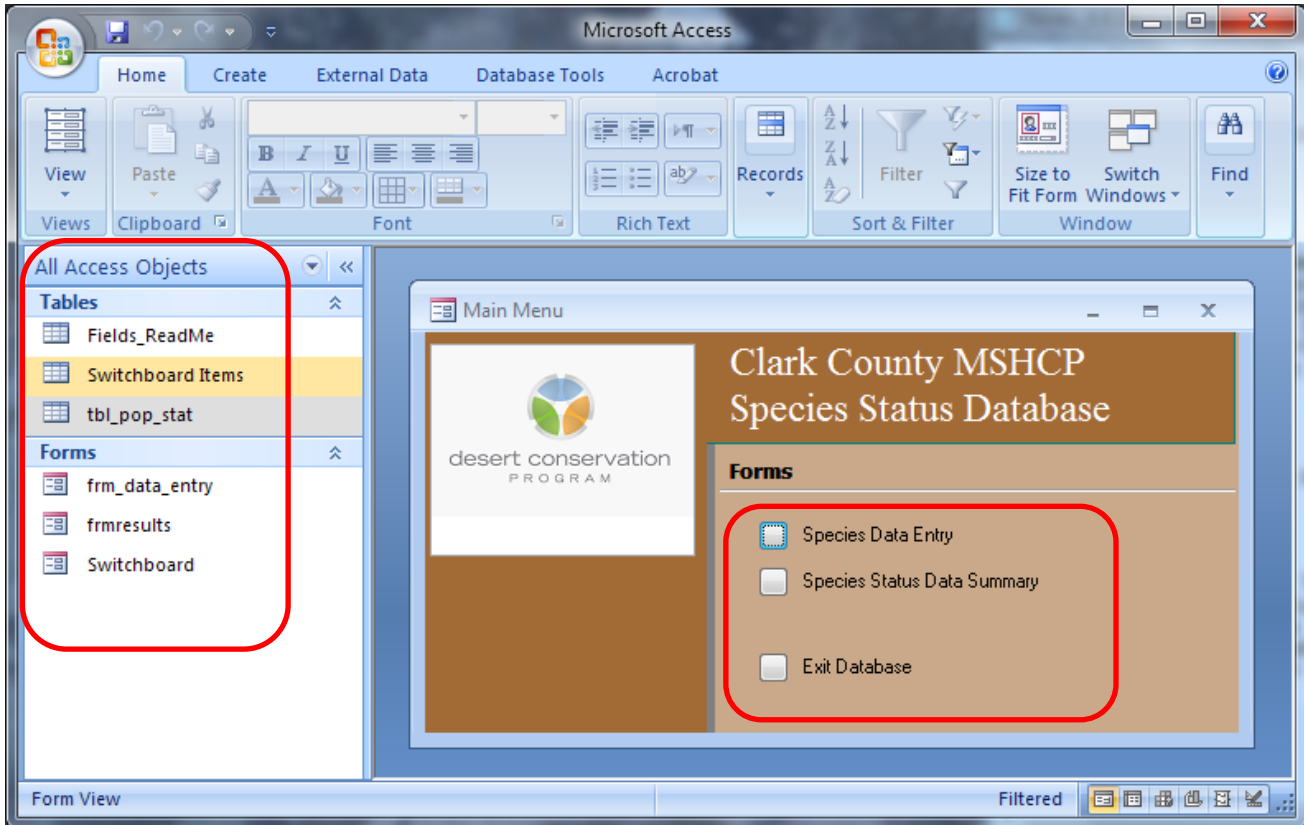
Figure 3. Main Menu Items and Access Objects

Species Data Entry

The "Species Data Entry" button is a link to the data entry form (Figure 4) that allows the user to add new data to the database. Once open, the data entry form should be blank and the user can begin entering information in the database. Click the "Add New Record" button after each entry to open another empty data entry page for multiple entries to the database. The left and right arrows (◄ ►) at the bottom of the form can be used to scroll through each data entry.

⚠ **ATTENTION!** Manipulation of any data within the data entry screen is permanent. Always back up (copy) the database before opening, using, or making changes.

Figure 4. Species Data Entry Form

Species Status Data Summary

The "Species Status Data Summary" button is a link to the form (Figure 5) that allows the user to search the database by species to find report names and/or data file names associated with the species monitoring data in the database. To use, choose a species name from the drop-down menu. The user can narrow down search options further by specifying "Population Name", "Year", and/or "Method" (i.e., monitoring method) from the corresponding drop-down menus. The user can click through the "Species Data", "Report", and "Environmental Data" tabs to view the report names and data file names associated with the data for the selected species.

Figure 5. Species Status Data Summary Form

Exit Database

The "Exit Database" button will automatically exit Microsoft® Access®. There is no option to save the database if the "Exit Database" button is clicked. All changes to the database are permanent – always back up (copy) the database before opening, using, or making changes.

ATTENTION! Changes to the database are permanent – always back up (copy) the database before opening, using, or making changes.

2.1.3 Access Objects

Within the Species Status Database there are six existing Access Objects in either a table or a form. Five of these objects are required for the proper functioning of the database; the "Fields_ReadMe" object is not. The objects are visible down the left side of the screen (Figure 3) and should not be deleted. Each object is described below:

Tables

Fields_ReadMe – The table provides a reference list of the database fields and has the same fields as the Species Data Entry form. This is the only object that is not integral to the functioning of the database.

Switchboard Items – The table is connected to the Main Menu items (i.e., Species Data Entry, Species Status Data Summary, and Exit Database) and is necessary for proper functioning of the database.

tbl_pop_stat – The master table containing all the species monitoring data. Information entered into the Species Data Entry form is stored in this table.

Forms

frm_data_entry – The Species Data Entry form, also accessed through the Main Menu.

frmresults – The Species Status Data Summary form, also accessed through the Main Menu.

Switchboard – The Main Menu which should appear automatically upon opening the database.

2.2   HOW TO SEARCH THE DATABASE USING A QUERY

A query is a powerful tool for searching and filtering data from one or multiple data tables. A query allows the user to ask a specific question of the data and obtain only those records and fields pertinent to the question. How to use the query tool and two examples are presented in the next sections.

2.2.1   Using a Query

Set up a simple query by selecting the "Create" tab from the Access® command menu that appears across the top of the screen. Next, select "Query Wizard" from the ribbon, highlight "Simple Query Wizard", and click "OK" (Figure 6). This allows the user to create a query to search data within a single table, which is useful for the Species Status Database as all the data is stored in one master table.
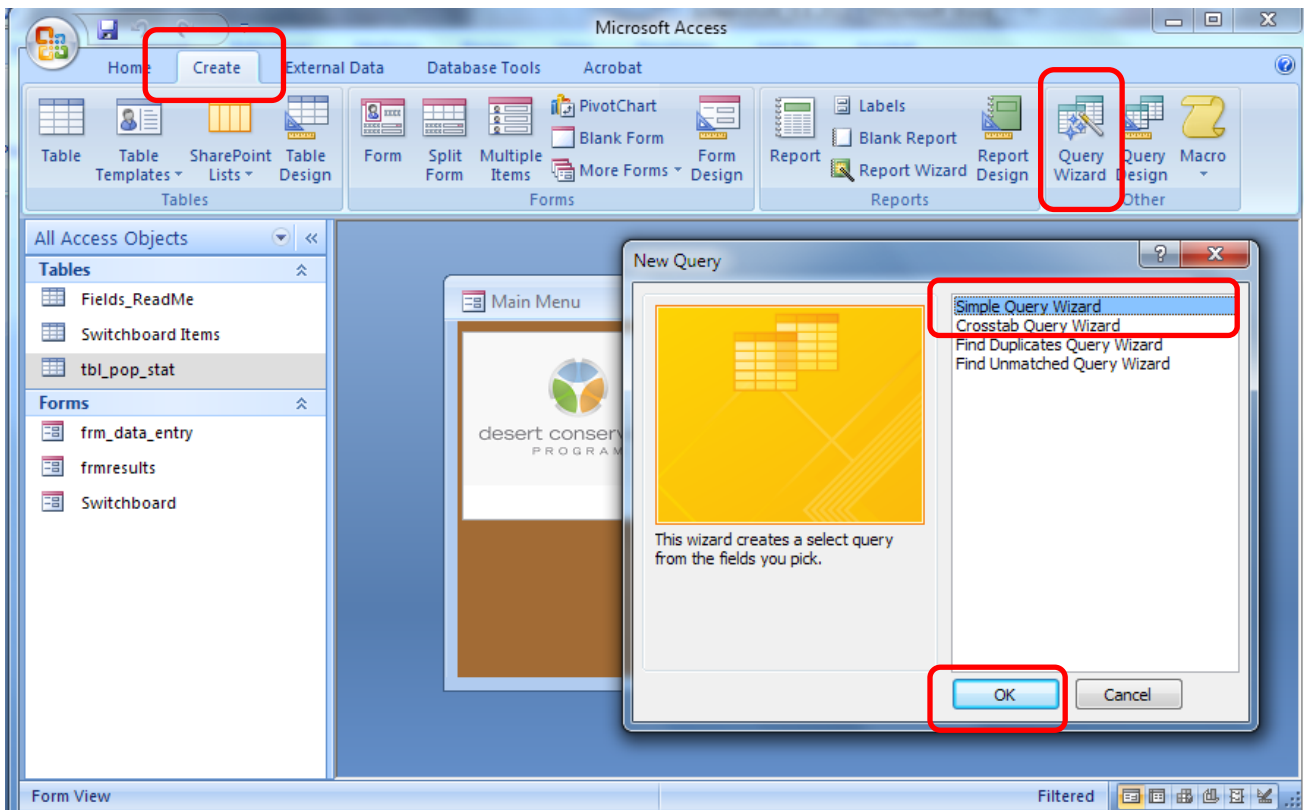
Figure 6. Creating a Query using Simple Query Wizard

In the Simple Query Wizard, select a table from the "Tables/Queries" drop-down menu on which to perform the query (Figure 7). Choose which fields to include in the query from the "Available Fields" menu by highlighting the field(s) and pressing the single arrow (>) button to move the field(s) to the "Selected Fields" column. Click the double arrow (>>) button to include all data fields in the query and click "Finish". The query will automatically open in Datasheet View. Change the view to Design View (described in the examples below) to begin searching or filtering data.
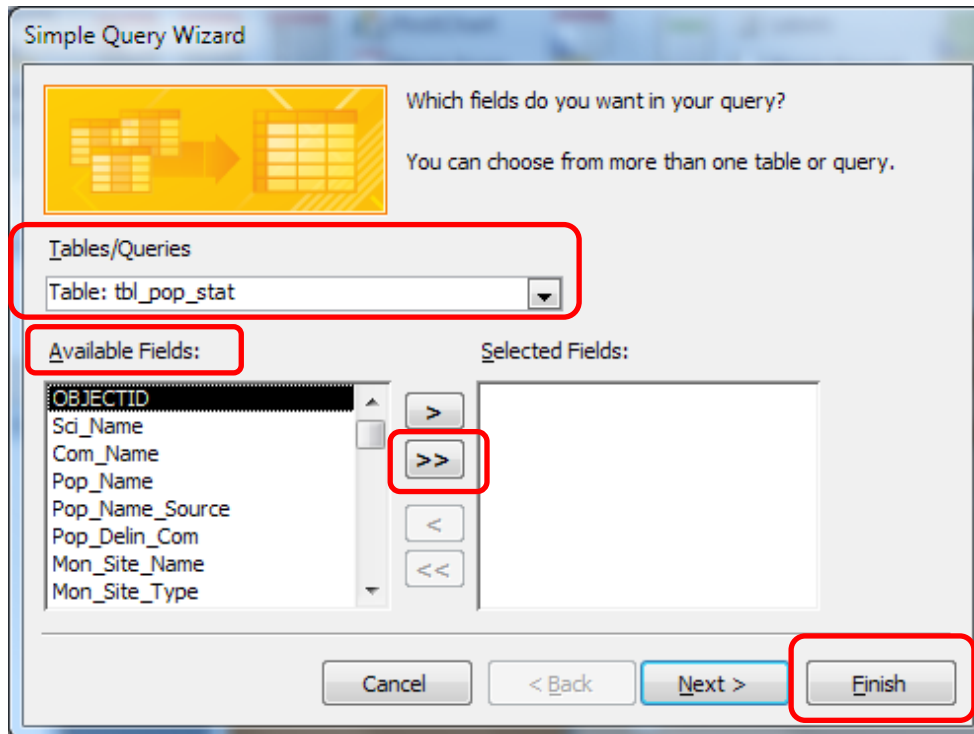
Figure 7. Creating a Query of the Master Data Table

2.2.2 Examples of Useful Queries

Two simple queries of the database are presented as examples for viewing and filtering data for a particular species and in a specific area.

Example Query #1: How to view all data for one species

1. Begin a new query using the Simple Query Wizard (Figure 6).

   a. Select the "Create" tab in the command menu.

   b. Click the "Query Wizard" icon on the right side of the ribbon.

    c.   Highlight "Simple Query Wizard" and click "OK".

2.   Select the table "tbl_pop_stat" (Figure 7).

3.   Click the double arrow (>>) button to include all the data fields in the query.

4.   Click "Finish".

5.   The query will automatically open in Datasheet View (Figure 8).

6.   To change the query from Datasheet View to Design View (Figure 9):

    a.   Select the "Home" tab in the command menu.

    b.   Click the "View" icon on the left side of the ribbon to access the drop-down menu.

    c.   Select "Design View" from the drop-down menu.
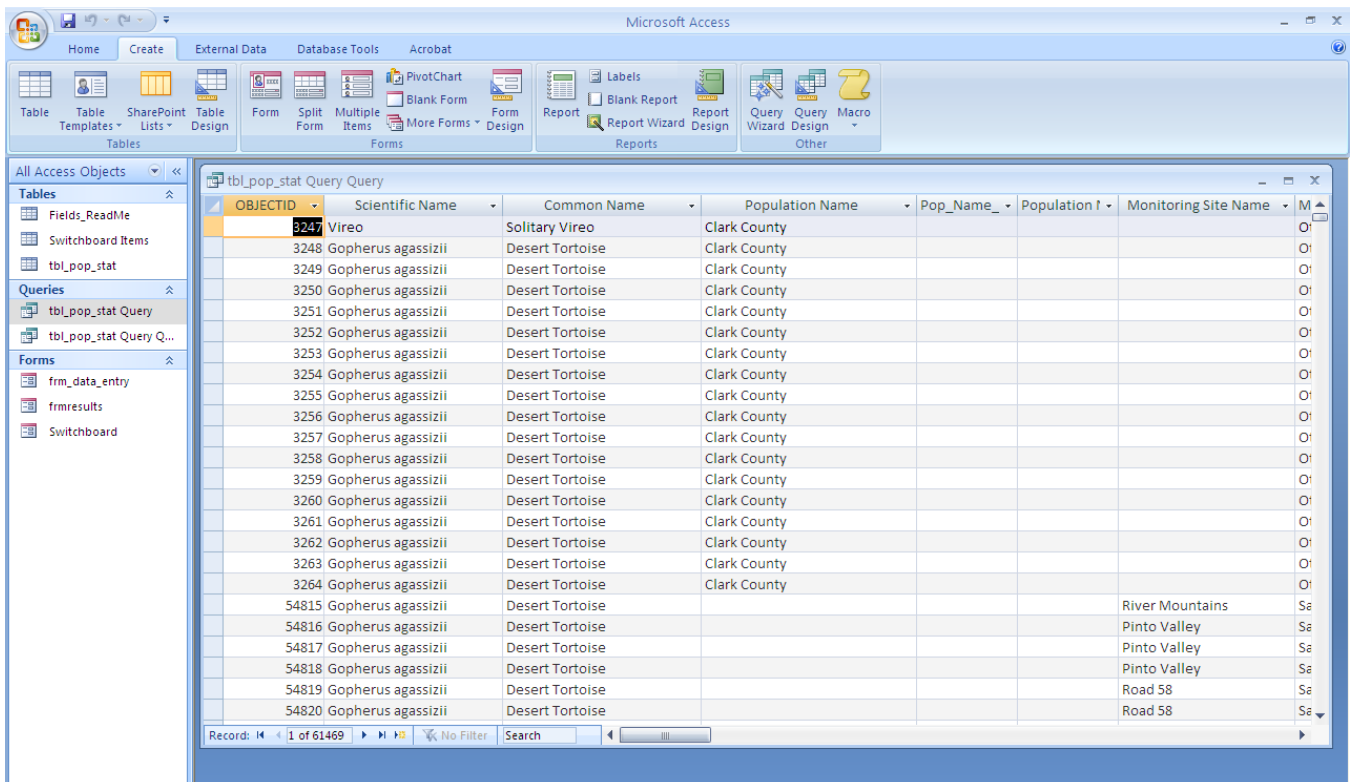
Figure 8. Database View of a Simple Query
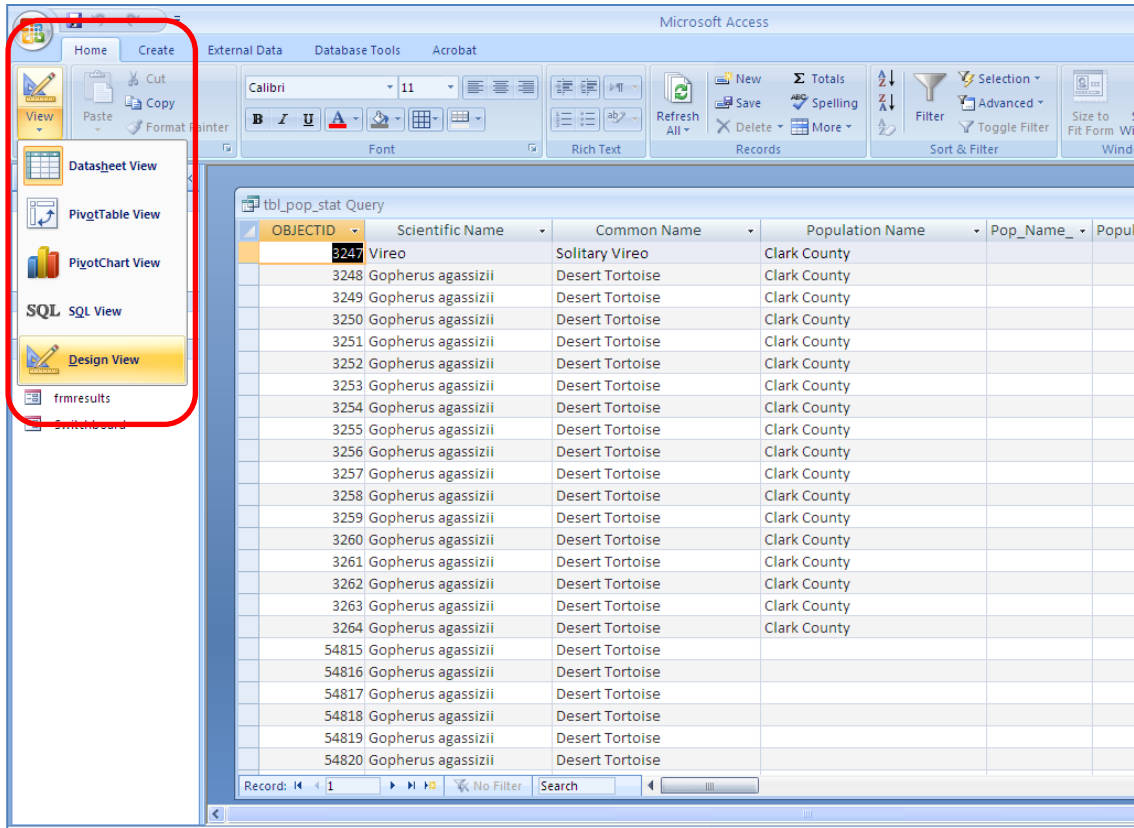
Figure 9. Change Query to Design View

7. In the bottom half of the screen (Figure 10) there is a column for each field from the Species Data Entry form. In the "Criteria" row under the "Sci_Name" (species scientific name field) column type the name of the species which is the focus of the query.

   a. Example: Phainopepla nitens

8. Return to Datasheet View to view the filtered table.

   b. Select the "Home" tab in the command menu.

   c. Click the "View" icon on the left side of the ribbon to access the drop-down menu.

   d. Select "Datasheet View" from the drop-down menu.

9. Save the query.
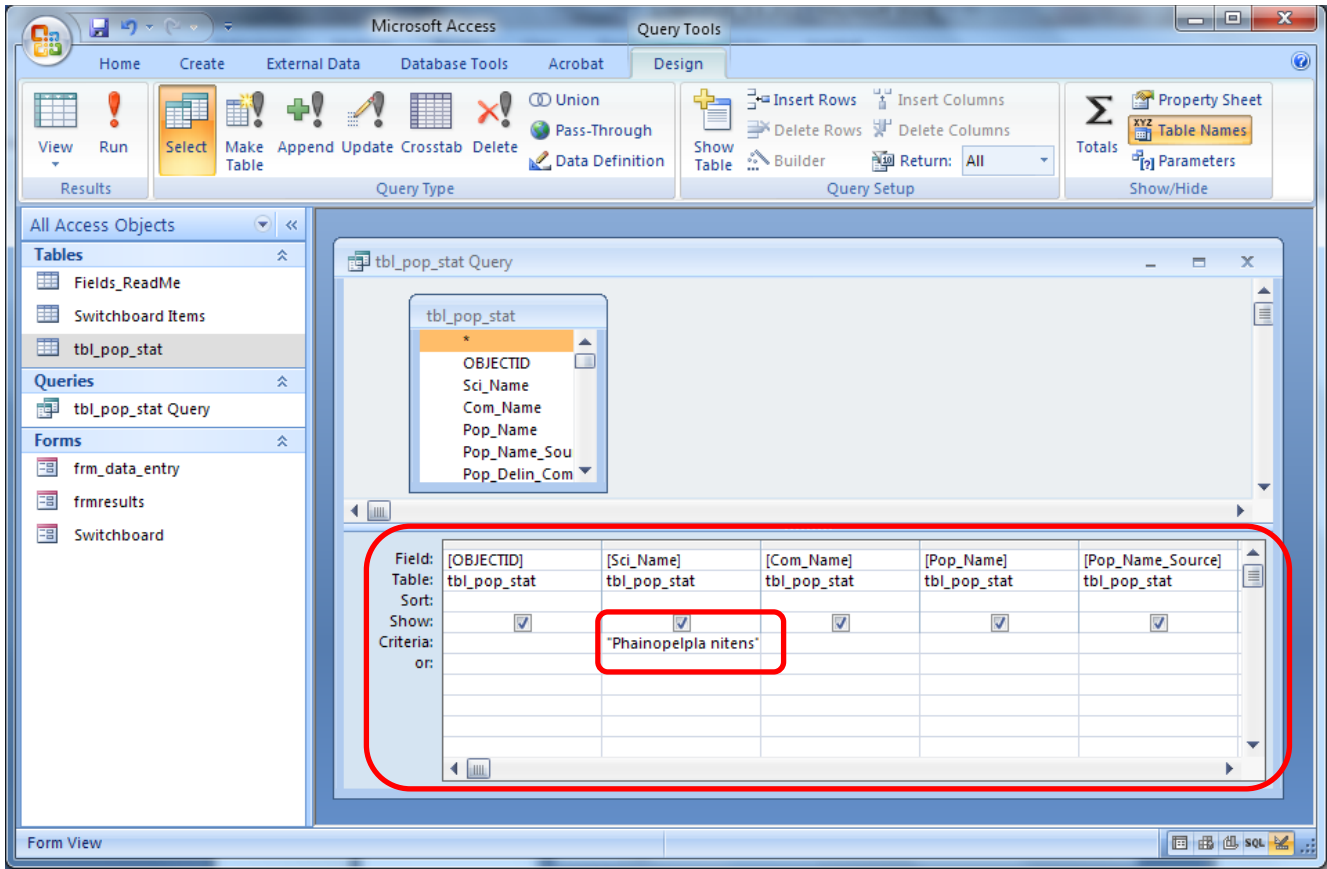
Figure 10. Design View of Simple Query

Example Query #2: How to search for data in a precise area

1. Begin a new query using the Simple Query Wizard (Figure 6).

    a. Select the "Create" tab in the command menu.

    b. Click the "Query Wizard" icon on the right side of the ribbon.

    c. Highlight "Simple Query Wizard" and click "OK".

2. Select the table "tbl_pop_stat" (Figure 7).

3. Click the double arrow (>>) button to include all the data fields in the query.

4. Click "Finish".

5. The query will automatically open in Datasheet View. To change to Design View (Figure 9):

   a. Select the "Home" tab in the command menu.

   b. Click the "View" icon on the left side of the ribbon to access the drop-down menu.

   c. Select "Design View" from the drop-down menu.

6. In the bottom half of the screen there will be a column for each field from the Species Data Entry form. To specify the coordinate range or boundaries of interest for the query, enter x- and y-coordinates in the "Criteria" row under the "xUTM" and "yUTM" columns.

   a. Example x-coordinate range: >123456AND<123456

   b. Example y-coordinate range: >1234567AND<1234567

   c. Do not include the equal sign (=) or parentheses ( ).

   d. Coordinates must be entered in the UTM Zone 11 NAD 1983 coordinate system.

7. Return to the Datasheet View to view the filtered table.

   a. Select the "Home" tab in the command menu.

   b. Click the "View" icon on the left side of the ribbon to access the drop-down menu.

   c. Select "Datasheet View" from the drop-down menu.

8. Save the query

2.2.3 Exporting and Printing Queries

Queries can easily be exported into Excel® spreadsheets. From the Datasheet View, click the "External Data" tab in the command menu (Figure 11). Select the "Excel" icon from the "Export" section of the ribbon. A screen will appear to specify the destination file name, format, and export options. Click "OK" to convert the Access® query into an Excel® spreadsheet.
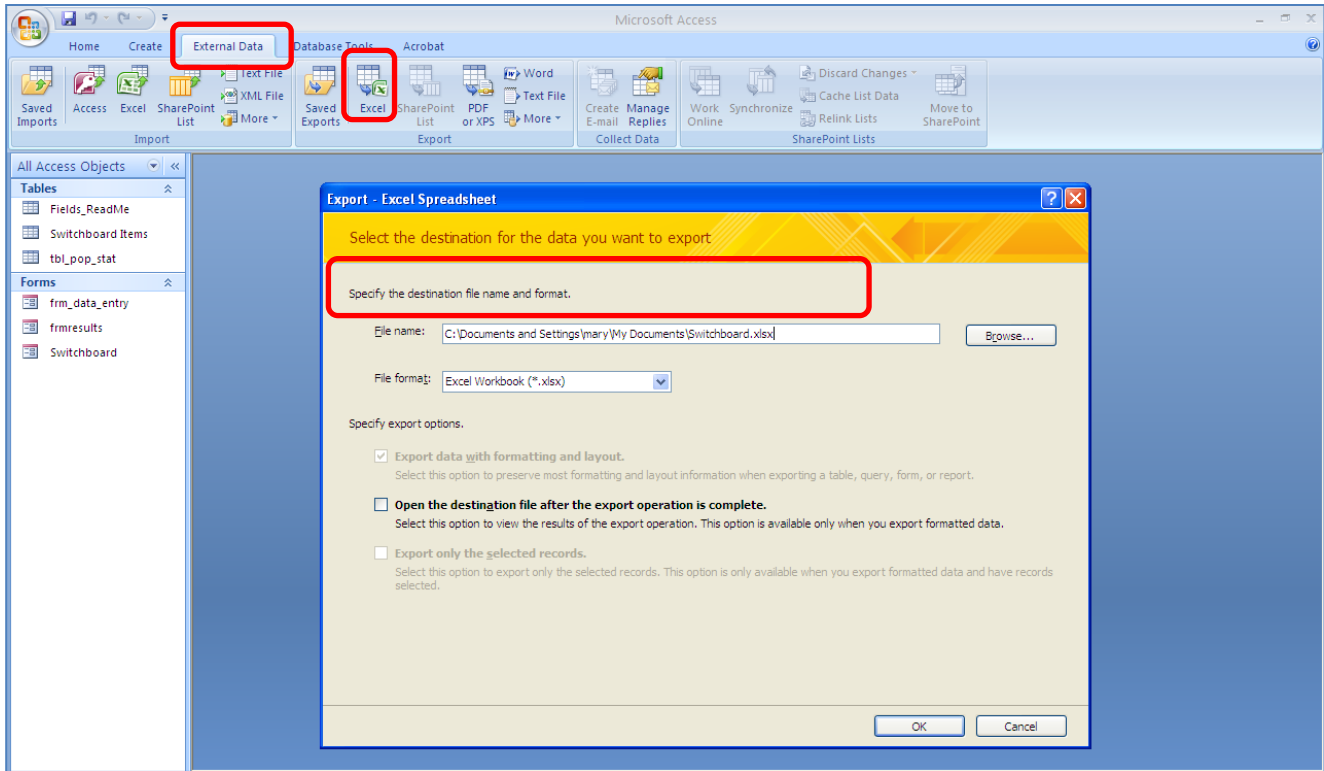
Figure 11. Export Query to Excel®

Queries can also be printed from the Datasheet View. To send the query to a printer, click the Microsoft Office® icon in the upper left corner of the screen and select the printer function, or use the "Ctrl" and "P" keys on the keyboard to access the printer function. An Abode® PDF (portable document format) can be created from the query. Select the "Acrobat" tab from the command menu and select "Create PDF" from the ribbon.

2.3   THE REPORT FUNCTION IN ACCESS®

Access® reports are a very useful way to organize and present data by enabling the user to format data in an informative layout for printing or on-screen viewing. Beginners can use the Report Wizard to create a basic template report (Figure 12), whereas advanced users can create a report to their specifications using Report Design. Select the "Create" tab from the command menu and then "Report Wizard" from the ribbon. The Report Wizard screen will appear, select the master data table (tbl_pop_stat) from the "Tables/Queries" drop-down menu. Choose which fields to include in the report from the "Available Fields" menu by highlighting the field(s) and pressing the single arrow (>) button to move the field(s) to the "Selected Fields" column, and click "Finish".
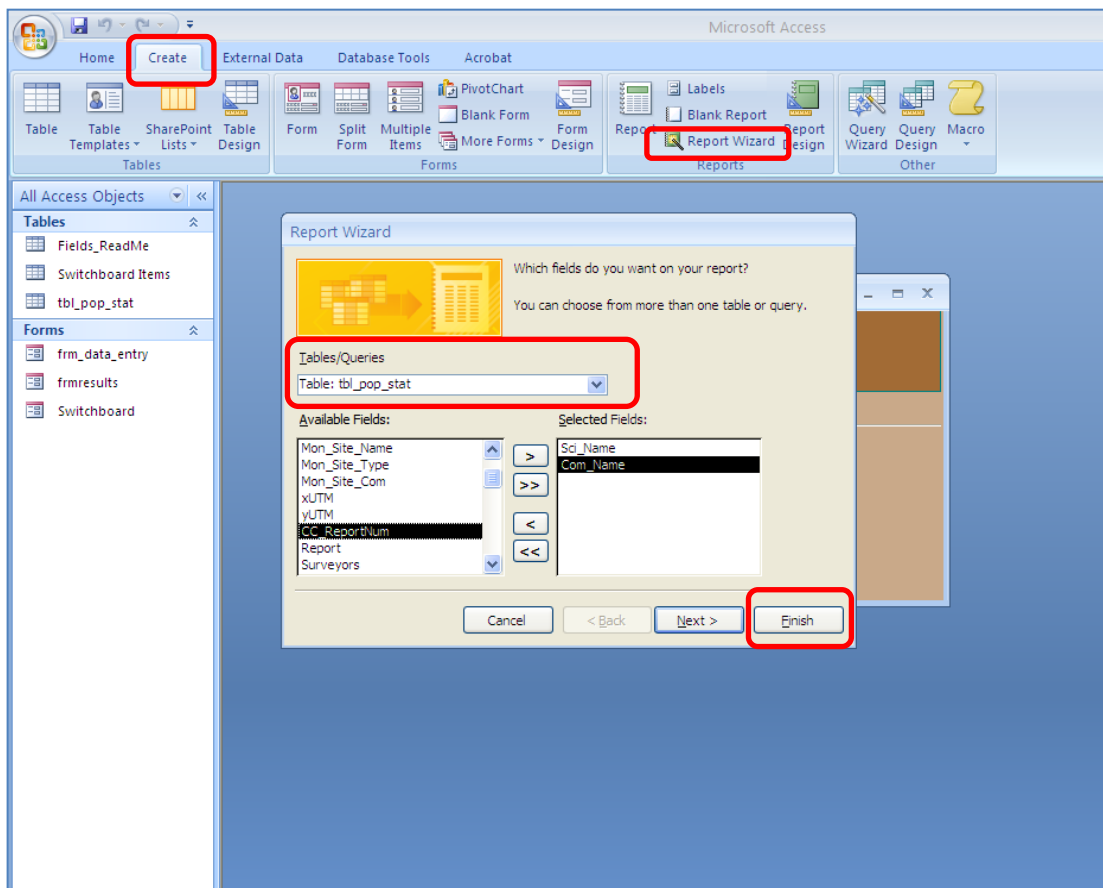
Figure 12. Create a Report

3.0 Entering Data

Data can be entered into the database in two ways – one entry at a time using the Species Data Entry form (Figure 8) or multiple entries at a time by uploading an Excel® spreadsheet of data. There is a minimum data requirement necessary before any data can be entered into the Species Status Database. The minimum required database fields are:

- Species Scientific Name

- Survey Year

- XUTM

- YUTM

Entry of the full survey date (Day, Month, Year) is preferable when available. If x-y coordinates (UTM Zone 11 NAD 1983) are not available, the user can enter a location description in the Monitoring Site Description field. This option for a minimum required field should only be used if the site description is detailed enough to allow others to relocate the site (e.g., quarter section, township, range).

ATTENTION! If information is not available for the minimum required fields (i.e., species scientific name, survey year, and x-y coordinates), then data should not be entered in the database until this information is obtained.

3.1 SINGLE ENTRY

The Species Data Entry form can be accessed from the Main Menu items upon opening the database. The form should be empty when initially opened, but if this not the case, click the "Add New Record" button at the top of the form and a blank data entry page will appear. Fill in at least the minimum required fields within the form for each species observation. Click the "Add New Record" button to add another entry or simply close the form when done. All data entered into the form is automatically added to the master data table (tble_pop_stat).

Use the left and right arrows (◄ ►) at the bottom left corner of the form to scroll through the entries within the form.

3.2   MULTIPLE ENTRIES

Access® has the capability to upload (import) Excel® spreadsheets into a new or existing Access® table. The Excel® spreadsheet column headers must be renamed to match the Access® field names. All data types must also match before attempting to import from Excel® to Access®. Errors may occur if the data has not been properly aligned.

Click the "External Data" tab in the command menu and select the "Excel" icon from the "Import" section of the ribbon. A screen will appear from which to specify the source data (i.e., where the Excel® spreadsheet is saved) and options for where and how to store the uploaded data. Click "OK" to upload the Excel® spreadsheet into the Access® database. Check the Access® table to confirm the upload proceeded correctly. This can be done by opening the table and viewing the most recent objectid (highest number) to view the most recent entry, or by creating a simple query to view the number of records.

 ATTENTION! Be careful not to add, delete, or change information while looking through an Access® data table because all changes are permanent.

4.0 Database Fields

Table 1 presents the fields in the MSHCP Species Status Database, with the full descriptive name, abbreviated name, and the type for each field. A complete description of each database field is provided in Chapter 5.

TABLE 1. LIST OF DATABASE FIELDS, FIELD NAMES, AND FIELD TYPES		
Database Field	Field Name	Field Type
1 Choose Species From List	N/A	Drop-Down Menu
2 Species Scientific Name	Sci_Name	Text
3 Species Common Name	Com_Name	Text
4 Population Name	Pop_Name	Text
5 Population Name Source	Pop_Name_Source	Text
6 Comments on Population Delineation	Pop_Delin_Com	Text
7 Monitoring Site Name	Mon_Site_Name	Text
8 Monitoring Site Type	Mon_Site_Type	Drop-Down Menu
9 Monitoring Site Description	Mon_Site_Com	Text
10 XUTM (UTM11 NAD83)	xUTM	Number (up to 4 decimals)
11 YUTM (UTM11 NAD83)	yUTM	Number (up to 4 decimals)
12 Clark County Report Number	CC_ReportNum	Text
13 Report Title	Report	Text
14 Surveyor	Surveyors	Text
15 Surveyor Affiliation	Survey_Affiliation	Text
16 Monitoring Objectives	Objectives	Text
17 Monitoring Method	Mon_Method	Drop-Down Menu
18 Monitoring Method Comments	Mon_Method_Com	Text
19 Standardized Monitoring Protocol	Mon_Protocol	Check Box
20 Standardized Monitoring Protocol Source	Mon_Prot_Source	Text
21 Day	Survey_Day	2 Digit # in text format
22 Month	Survey_Month	2 Digit # in text format
23 Year	Survey_Year	4 Digit # in text format
24 Observation Area (m2)	Area	Number
25 Evidence of Reproduction	Reproduction	Check Box
26 Evidence of Reproduction Comments	Repro_Com	Text
27 Abundance Unit	Abund_Unit	Text
28 Abundance #	Abund_Num	Number
29 Abundance SD	Abund_SD	Number
30 Qualitative/Quantitative Estimate	Abund_Qual_Est	Text
31 Abundance Comments	Abund_Com	Text

TABLE 1. LIST OF DATABASE FIELDS, FIELD NAMES, AND FIELD TYPES			
	Database Field	Field Name	Field Type
32	Absence Data	Absence	Check Box
33	Dead Data	Dead	Check Box
34	Data File Name	Data_File	Text
35	Spatial Data File Name	Shapefile	Text
36	Spatial Data Type: Point or Polygon	Shape_Type	Drop-Down Menu
37	PDF/Sketch	Site_Sketch	Check Box
38	Habitat Data	Habitat	Check Box
39	Elevation Data	Elevation	Check Box
40	Geological Data	Geology	Check Box
41	Soils Data	Soil	Check Box
42	Precipitation Data	Precipitation	Check Box
43	Threat Data	Threat	Check Box
44	Environmental/Threat Data Comments	Env_Comments	Text
45	Additional Comments	Notes	Text

5.0 Description of Database Fields by Database Section

The database is set up into eight separate sections for entering data, with each section containing similar or related data fields. The database sections and data fields are defined below. A complete listing of the database fields is presented in Table 1.

5.1 RECORD IDENTIFIER SECTION

The record identifier section of the database identifies the unique number of a current record or generates a unique number for a new record.

Figure 13. Record Identifier Section of Data Entry Form

5.1.1 Record ID

- **Definition:** Record ID is a number automatically generated for each record in consecutive order by Access®.

- **Location:** in the Access® database.

- **Example:** not applicable; number automatically assigned.

- **Note 1:** Record ID is stored under the name Object ID in the table.

- **Note 2:** Record IDs are unalterable once assigned. Therefore, it is normal for gaps in the numbering to occur as entries are added or removed from the database.

5.1.2 Add New Record

- **Definition:** Button that opens a blank Species Data Entry form (screen) to create a new record. All data entered into the Species Data Entry screen will create one line of data in the master data table.

- **Location:** in the Access® database.

- **Example:** not applicable

5.2   SPECIES SECTION

The fields in this database section identify the species for which data are being or have been entered into the record (Figure 9).

Figure 14. Species Section of Data Entry Form

5.2.1   Chose Species From List

- **Definition:** Self-populating drop-down menu containing all the scientific species names currently entered into the database. Selecting a species from the drop-down menu will automatically fill in the species scientific name and species common name fields.

- **Location:** in the Access® database.

- **Example:** *Gopherus agassizii*

5.2.2   Species Scientific Name

- **Definition:** Scientific name of the species as used in the report.

- **Location:** If the report is on a single species the name is usually in the title of the report. If the report covers multiple species, the names may be found in the introduction, methods, results, or tables in the report. The species names should also be in the database that accompanies the report.

- **Example:** *Arctomecon californica*

- **Note 1:** Species Status Database records the scientific name that is used in the report, even when a newer name has been designated. There are few examples of this in the projects that are currently in the database. One example is a record for the western flycatcher which was recently split into two species, the Pacific-slope fly-

catcher and the cordilleran flycatcher. Since both species could occur in Clark County and it was impossible to ascertain which species was observed, the name in the report was entered into the database.

- **Note 2:** It is recommended that searches on the species scientific name include other names that have been used for the species.

5.2.3 Species Common Name

- **Definition:** Common name of the species as used in the report.

- **Location:** If the report is on a single species the name is usually in the title of the report. If the report covers multiple species, the names may be found in the introduction, methods, results, or in tables in the report. The species names will also be in the database that accompanies the report.

- **Example:** Las Vegas bearpoppy

- **Note 1:** There can be multiple common names for a single species. The Species Status Database records the common name that is used in the report. It is recommended that this field not be used for querying for records for a specific species.

- **Note 2:** Common names are lower case letters unless a formal name (e.g., person, place) is used.

5.3   LOCATION INFORMATION SECTION

The fields in this database section identify the location of the data entered in the species section.

Figure 15. Location Information Section of Data Entry Form

5.3.1   Population Name

- **Definition:** Population name can only be entered if there are formally circumscribed populations for the species in Clark County. For many species Clark County is considered the population. If unsure whether the population name is formally designated and accepted, leave this field blank and only fill in the Monitoring Site Name. Most likely there will not be enough information to enter a name into this field.

ATTENTION! Do not infer a population name – enter a population name only if there has been one so designated and has been referenced.

- **Location:** Reference to whether population names that are used have been formally circumscribed populations is usually found in the introduction, methods, or discussion of the report.

- **Example:** An excellent example of the circumscription of populations within Clark County is the report from The Nature Conservancy: A Conservation Management Strategy of Nine Low Elevation Rare Plants in Clark County. The report explicitly maps the populations and subpopulations for the nine species and provides supporting documentation. For certain bird species, such as the southwestern willow flycatcher, Clark County is considered the population. For other species, specific mountain ranges or watersheds are considered populations.

5.3.2 Population Name Source

- **Definition:** Source of the population name recorded in the previous field. There are two possible sources for the population name; a reference to a publication or report that circumscribes the populations of the species in Clark County, or the report from which the data is being extracted.

- **Location:** Source of the population name would be in the introduction or the methods of the report.

- **Example:** The Nature Conservancy 2007. A Conservation Management Strategy of Nine Low Elevation Rare Plants in Clark County.

5.3.3 Comments on Population Delineation

- **Definition:** Any additional comments on the population delineation as found in the project reports.

- **Location:** Information for this field would be in the introduction or the methods of the report.

- **Example:** For relict leopard frog entries it is stated that the monitoring site and the population are the same, since the species is restricted to springs, small wetlands, or watersheds that are isolated from each other.

5.3.4 Monitoring Site Name

- **Definition:** Name of the location from which the monitoring data was collected.

- **Location:** Monitoring Site Name may be found in the introduction, methods, results, or in tables in the report. The name will also be in the database that accompanies the report.

- **Example:** Lime Cove is one of the monitoring sites for Sticky Buckwheat (*Eriogonum viscidulum*).

5.3.5 Monitoring Site Description

- **Definition:** Written description of the location of the monitoring site if available from the project report.

- **Location:** Description of the monitoring site is usually found in the methods section of the report.

- **Example:** Information that could be added here to explain more about the monitoring site, such as the site being riparian habitat in a specific study area, or that the monitoring site was a 1 meter by 10 meter plot.

5.3.6 Monitoring Site Type

- **Definition:** Type of site that is being monitored and from which the data is being collected. The options in the dropdown menu include:

  o **Habitat Type:** an area of a habitat that contains the monitored species (mesquite woodland for phainopepla or a spring site for relict leopard frog).

  o **Management Unit:** monitoring data collected from a spatial area that is being managed in a similar way.

  o **Recovery Unit:** an area defined by the desert tortoise recovery plan and for which monitoring data is collected.

  o **Sample Plot:** monitoring data collected from a random or subjectively placed plot. For example, plot data is used for many of the rare plant species (e.g., Las Vegas bearpoppy in the Bowl of Fire population).

  o **Transect:** monitoring data collected from a random or subjectively placed transect. For example, transect data is used for many bird species (e.g., blue grosbeak).

  o **Nest Location:** monitoring data collected from a nest site (e.g., peregrine falcons).

  o **Burrow Location:** monitoring data collected for individual burrow locations (e.g., desert tortoise, burrowing owls).

  o **Other:** any other type of natural monitoring unit from which monitoring data is collected.

- **Location:** Monitoring site type can usually be inferred from the information in the introduction, methods, results, or the database accompanying the report.

- **Example:** Examples are included above in the definitions of types of monitoring sites.

5.3.7 XUTM

- **Definition:** Latitudinal coordinate for the monitoring observation in the Universal Transverse Mercator (UTM) Zone 11 NAD 1983 projection.

- **Location:** For spatial data this information can be viewed in the attribute table and/or generated using geographic information system (GIS) software.

- **Example:** 714202.3685

- **Note:** For consistency it is suggested that no more than 4 decimal places are included.

5.3.8 YUTM

- **Definition:** Longitudinal coordinate for the monitoring observation in the UTM Zone 11 NAD 1983 projection.

- **Location:** For spatial data this information can be viewed in the attribute table and/or generated using GIS software.

- **Example:** 3927232.9267

- **Note:** For consistency it is suggested that no more than 4 decimal places are included.

5.4   DATA SOURCE SECTION

The fields in this database section identify the source of the data entered in the record.

Data Source

Clark County Report Number	Surveyor
Report Title	Surveyor Affiliation

Figure 16. Data Source Section of Data Entry Form

5.4.1   Clark County Report Number

- **Definition:** Number of the report as assigned by the DCP to projects that received funding from the DCP.

- **Location:** Report number is found on the title page of the report.

- **Example:** 2005_NPS_475 (Peregrine Falcon Monitoring within Lake Mead National Recreation Area, 2008-2009)

5.4.2   Report Title

- **Definition:** This field records the name of the report from where the data is obtained.

- **Location:** Report name is found on the title page of the report.

- **Example:** Peregrine Falcon Monitoring within Lake Mead National Recreation Area, 2008-2009 (2005_NPS_475)

5.4.3   Surveyor

- **Definition:** This field records the name of the person or people responsible for the survey data.

- **Location:** Surveyor name(s) is found in the spatial data or in tabular data in the report.

- **Example:** Jef R. Jaeger

5.4.4 Surveyor Affiliation

- **Definition:** This field records the agency or professional affiliation of the surveyor or surveyors.

- **Location:** The surveyor affiliation is found on the title page of the report and occasionally in the spatial or tabular data.

- **Example:** Public Lands Institute, University of Nevada, Las Vegas.

5.5 MONITORING OVERVIEW SECTION

This section summarizes the monitoring objectives and monitoring methods for the project and indicates if a standardized monitoring protocol was used. This information is essential for the interpretation of the monitoring data.

Figure 17. Monitoring Overview Section of Data Entry Form

5.5.1 Monitoring Objectives

- **Definition:** The objective (intent) of the monitoring data presented in the report.

- **Location:** The monitoring objective is usually presented in the introduction or methods of the report; however, it must often be inferred from the information presented in the report.

- **Examples:** A collage of different objectives: to locate breeding territories, to evaluate habitat quality, to determine reproductive success, to estimate population sizes, to determine presence/absence of the species in randomly selected sample units.

5.5.2 Monitoring Method

- **Definition:** Methods used to collect the monitoring data selected from a drop-down menu. The selections include:

  o **presence/absence:** assessment of whether individuals of the species were found at the monitoring site.

  o **complete count:** complete count of the individuals of the species found at the monitoring site.

  o **spatial extent:** measure of the area or boundaries of an area within which individuals of the species are found at a monitoring site.

- o **statistical estimate of population (random sample):** inference of individuals at a monitoring site through the use of an appropriate number of randomly placed sample units.

- o **non-random index sample:** estimate of the number of individuals of the species found at the monitoring site by using a subjectively placed sample unit or units and extrapolating the total population size.

- o **demographic monitoring:** monitoring of individuals of the species which allows estimates of survivorship, morality and reproduction for specific age or size classes of individuals.

- o **call back:** use of a tape recording of a bird species call to determine the presence or absence of a species at a monitoring site.

- o **transect point count:** method of estimating the density of animals by establishing one or multiple transects through a monitoring site and stopping a standardized distance along the transect (the point) to observe or listen for the species of interest.

- o **other:** monitoring method not described above.

- **Location:** Usually found in the methods section of the report but at times needs to be inferred from the data.

5.5.3 Monitoring Method Comments

- **Definition:** Field to capture any additional details about the monitoring method selected from the drop-down menu in the previous field.

- **Location:** Usually found in the methods section of the report but at times needs to be inferred from the data.

- **Examples:** baited survey for fish, call-broadcast survey for birds, or incidental sightings

5.5.4 Standardized Monitoring Protocol

- **Definition:** Monitoring protocol that is documented such that the same methods can be used in future monitoring efforts. This includes the repeatability in relocating

sample units and counting individuals, consistent sampling methods, and an equal probability of detecting individuals of the species.

- **Location:** Information, if present, should be in the introduction or methods section of the report.

- **Example:** The monitoring methods for desert tortoise are standardized.

5.5.5   Standardized Monitoring Protocol Source

- **Definition:** Source for the standardized monitoring protocol, either a reference to another publication or the report itself.

- **Location:** Information, if present, should be in the introduction or methods section of the report.

- **Example:** The standardized monitoring methods for desert tortoise are published in the recovery plan.

5.6   MONITORING DATA SUMMARY SECTION

This section of the database summarizes the available monitoring data from the project reports.

Figure 18. Monitoring Data Summary Section of Data Entry Form

5.6.1   Survey Date (Day, Month, Year)

- **Definition:** Date on which the data was collected. Each is entered separately as a number with no dashes, back slashes, or other non-numerical symbols. The year is entered as a 4-digit number.

- **Location:** Survey date could be found in the methods, results, tables in the report, or the database associated with the report.

- **Example Day:** 12

- **Example Month:** 4

- **Example Year:** 2010

5.6.2   Observation Area (m2)

- **Definition:** Quantitative measure of the area from which the monitoring data was collected. Area units are in square meters.

- **Location:** Information, if present, could be found in the methods or the results.

- **Example:** 50 [m2]

5.6.3 Evidence of Reproduction

- **Definition:** Check-off box to record any documentation of reproduction, including the production of seeds, the presence of eggs, nestlings, or fledglings in a nest, or current year juveniles of a species.

- **Location:** Information, if present, can be recorded as data in the results, tables, or the database, or could be noted in the results or discussion.

5.6.4 Evidence of Reproduction Comments

- **Definition:** Documentation of the previous check-off box on evidence of reproduction, including the evidence used to determine that the species is reproducing.

- **Location:** Information, if present, can be recorded as data in the results, tables, or the database, or could be noted in the results or discussion.

- **Examples:** eggs, nestlings, fledglings, fruit

5.6.5 Abundance Units (Individuals, Nests, etc.)

- **Definition:** Units in which abundance is recorded, including number of individuals of a species or number of nest sites.

- **Location:** Information is usually found in the methods; recorded as data in the results, tables, or the database; or could be noted in the introduction, results, or discussion of the report.

- **Examples:** individuals, nests

5.6.6 Abundance

- **Definition:** Measure of the abundance of the species in the units recorded above.

- **Location:** Information is usually found in the methods; recorded as data in the results, tables, or the database; or could be noted in the introduction, results or discussion.

- **Example:** a number

5.6.7 Abundance SD

- **Definition:** Standard Deviation – a measure of the variability of the data in the same terms as the measurement (individuals, density), from which other measures of variability, standard errors, and confidence intervals can be derived.

- **Location:** Usually found associated with the data, in a table of the data, or in the database. Can be discussed in the results or discussion.

- **Example:** No examples currently exist in the database. Examples would be given as +/- of a number.

5.6.8 Qualitative / Quantitative Estimate

- **Definition:** Qualitative or quantitative estimate of the abundance of the abundance units at a monitoring site. This could be a numerical or verbal estimate.

- **Location:** Usually found associated with the data, in a table of the data, or in the database. Can be discussed in the results or discussion.

- **Example:** approximately 1000

5.6.9 Abundance Comments

- **Definition:** Any additional comments from the report that relate to the abundance of the species at the monitoring location.

- **Location:** Could be found in the methods, results, or discussion sections of the report.

5.6.10 Absence Data

- **Definition:** Check-off field that records whether the data includes information on the absence of the species from the monitoring site.

- **Location:** Information could be reported in the methods or results section of the report. Also could be found in the tabular or spatial data.

5.6.11 Dead Data

- **Definition:** Check-off field that records whether dead individuals of the species were recorded.

- **Location:** Information could be reported in the methods or results section of the report. Also could be found in the tabular or spatial data.

5.6.12 Data File Name

- **Definition:** Non-spatial file containing data relevant to the species monitoring. The file type could be Excel®, .dbf, or a non-tabular file type such as Word® or Adobe® PDF.

- **Location:** Generally located within a project folder, possibly alongside spatial data and the report.

- **Example:** monitoringdata.xls

5.6.13 Spatial Data File Name

- **Definition:** Spatial file containing data relevant to the species monitoring, generally read using a GIS software program. Data could include observation data or monitoring site locations.

- **Location:** Generally located with a project folder, a GIS data folder, or a Geodatabase.

- **Example:** observations.shp

5.6.14 Spatial Data Type (Point, Polygon)

- **Definition:** Spatial monitoring data is stored as either Points (discreet locations) or Polygons (areas).

- **Location:** Spatial data file type will specify Point or Polygon. If it is still unclear, this can be determined by looking at the spatial data using GIS software to visually identify either the points or polygons.

- **Example:** Point

5.6.15 PDF / Sketch

- **Definition:** Drawing or map of the study areas and/or observation locations, available as a PDF or another image file type.

- **Location:** This can be found either as a separate file within a project folder or as an image nested within the project report.

- **Example:** StudyArea.pdf

5.7   ENVIRONMENTAL / THREAT DATA SECTION

This section of the database includes check-off fields to record the presence of the data in each of the listed categories. The intent of these fields is to record information that is specific to the monitoring site, not generalized environmental or threat information for a larger regional area or for Clark County as a whole.

Figure 19. Environmental / Threat Data Section of Data Entry Form

5.7.1   Habitat Data

- **Definition:** Check-off field that records the presence of any information in the report that relates to the habitat (ecological information including vegetation) of the monitoring site.

- **Location:** If present, this information can be found in the introduction, methods, results, or discussion of the report. It can also be found in tables in the report or with the associated spatial data.

5.7.2   Elevation Data

- **Definition:** Check-off field that records the presence in the report of the elevation of the monitoring site. Accuracy or source of the elevation data is not needed.

- **Location:** If present, this information can be found in the introduction, methods, results, or discussion of the report. It can also be found in tables in the report or with the associated spatial data.

5.7.3 Geological Data

- **Definition:** Check-off field that records the presence of any information in the report that relates to the geology (rock type) of the monitoring site.

- **Location:** If present, this information can be found in the introduction, methods, results, or discussion of the report. It can also be found in tables in the report or with the associated spatial data.

5.7.4 Soils Data

- **Definition:** Check-off field that records the presence of any quantitative or qualitative information in the report that relates to the soils (soil type or structure) of the monitoring site.

- **Location:** If present, this information can be found in the introduction, methods, results, or discussion of the report. It can also be found in tables in the report or with the associated spatial data.

5.7.5 Precipitation Data

- **Definition:** Check-off field that records the presence of any information in the report that relates to the amount or pattern of precipitation during the sampling period of the monitoring site.

- **Location:** If present, this information can be found in the introduction, methods, results, or discussion of the report. It can also be found in tables in the report or with the associated spatial data.

5.7.6 Threat Data

- **Definition:**   Check-off field that records the presence of any information in the report that relates to threats to the monitoring site.

- **Location:** If present, this information can be found in the introduction, methods, results, or discussion of the report. It can also be found in tables in the report or with the associated spatial data.

- **Examples:** mining, off-road vehicles, invasive species

5.7.7 Environmental / Threat Data Comments

- **Definition:** Any comments that provide additional information on why the boxes above were checked-off.

- **Location:** If present, this information can be found in the introduction, methods, results, or discussion of the report. It can also be found in tables in the report or with the associated spatial data.

- **Examples:** high-use area, near campground, wildlife trails present

5.8 ADDITIONAL COMMENTS SECTION

This section provides a field for any additional comments that are not covered by the other fields in the database.

Figure 20. Additional Comments Section of Data Entry Form

5.8.1 Additional Comments

- **Definition:** Any additional comments that do not relate to the other fields in the database.

- **Location:** Can come from any part of the project report.

- **Example:** number of scutes on a desert tortoise, host plants for insect species

6.0 Database Troubleshooting

Troubleshooting is required of all software and databases. Some problems encountered with the Access® software and the updated versions of the database are summarized in the following sections. As more problems or issues are encountered, this chapter of the User's Guide will be updated with additional troubleshooting solutions.

6.1 PREVIOUS VERSION OF THE DATABASE IS NOT SAVED

All changes to an Access® database are permanent. There is no undo button. Always back up (copy) the database before opening, using, or making changes to the database. Back up the database even if only reviewing the data table (tbl_pop_stat) or filtering the data. These actions can accidently change data. Rather than using the filtering command or sorting the data table, it is recommended the query command be used. Version control, the process of managing copies of changing files over time, requires that any alteration or update to a file is considered a change and is reflected in the file name.

6.2 DELETED FILES ARE NOT BEING DELETED FROM THE DATEBASE

Occasionally, Access® will not delete records marked for deletion. This will result in the database increasing in file size and number of records. To insure these files are deleted, compact the database on a regular basis. The compact and repair process will reclaim unused space in a database that is created by object and record deletions. Refer to the Microsoft® Support web site (http://support.microsoft.com/kb/283849) for further details on compact and repair commands.

6.3 DAMAGED (CORRUPTED) DATEBASE FILES

Files can be corrupted in two ways. One way is when the database is open and Access® shuts down by either turning off the computer without saving the database, or through a power interruption. Access® should be properly closed by clicking the Microsoft Office® icon in the upper left corner of the screen and selecting either "Exit Access" or "Close Database" and follow the prompts to save changes.

The second way is when a database is opened and saved in a different program, such as Excel®. There is no way to recover an Access® file (.mdb file extension) that was opened and then saved in a different program.

The following suggestions are from Microsoft® on steps that can be taken to prevent the corruption of databases. The user should consult the Microsoft® Support web site (http://support.microsoft.com/kb/283849) for this and other problems encountered with the database. To prevent database corruption:

1. Avoid losing power during database writes. Losing power during database writes can cause the database to be left in a suspended state.

2. Avoid dropping network connections.

3. Avoid abnormal termination of connections such as power loss, manual shutdown, using Task Manager shut down the application, and so on.

4. Fatal system errors almost always cause abnormal termination. If your database is prone to fatal errors, the user should resolve the errors before the database becomes too damaged to open or to recover.   Refer to the Microsoft® Support web site for more information about fatal system errors.

5. Compact the database often.

6. Avoid a large number of open and close operations in a loop (more than 40,000 successive open and close operations could cause corruption).

6.4   TECHNICAL SUPPORT AND USEFUL TOOLS

The Microsoft® Support web site should be the first location to search for technical support or useful tools. Recommended links include:

- Support for Microsoft® Access® 2007 Technical Problems

  o http://support.microsoft.com/ph/915#tab0

- Access® 2007 Help and Tutorials

  o http://office.microsoft.com/en-us/access-help/CH010224776.aspx

- Differences between Access® 2007 and Access® 2003

  o http://it.lsue.edu/office2007/access.pdf

7.0 References

Clark County. 2000. Final Clark County Multiple Species Habitat Conservation Plan and Environmental Impact Statement for Issuance of a Permit to Allow Incidental Take of 79 Species in Clark County, Nevada. September 2000.

_____. 2009. MSHCP Species Status Database User Guide, Version 1.1. Created by Shawn MacCabe, Desert Research Institute for Clark County. March 2009, Updated January 26, 2010.

_____. 2010. Final Adaptive Management Report, Clark County Multiple Species Habitat Conservation Plan. Desert Conservation Program, Department of Air Quality and Environmental Management. June 15, 2010.

_____. 2011a. Species Data Review and Database Modification, Evaluation of Projects and Species Data for Database Entry and Modification to Species Status Database Structure. Clark County Multiple Species Habitat Conservation Plan. Desert Conservation Program, Department of Air Quality and Environmental Management. January 14, 2011.

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