

CBRP Data and Analysis

CBRP has been collecting trail-level data since 1999 and in 2006 with the advent of the on-line data base has been collecting nest box-level data. These data are available for viewing and analysis.

ON-LINE DATA

The on-line data base was established in 2006 and tested by Santa Clara Valley trail monitors; in 2007 the on-line data base was opened to all participating counties in the state. Information collected includes:

A list of trail monitors and contact information by county

A list of trails including date established, monitor, data entry person, creation date, location (zip code and lat/long), number of boxes by size (small, standard and large) by county.

Nesting box data (results) by trail, by county, by season containing:

Trail information (see above), trail comments, notes for the newsletter, and box-by-box data (Box#, Brood#, Species, Date Nest created), Date of first egg, #Eggs, Date Hatched, #Hatched, Date Fledged, #Fledged and comments.

These data are entered by and available to the trail monitor, county administrator and system administrators only.

Information available to everyone including guests is provided by several reports which summarize the information in various ways plus a downloadable file which contains all of the data collected. These are:

COUNTY SUMMARY (Totals/percentages/avg per box - fledglings & boxes for all counties)

COUNTY BREAKDOWN FOR A SELECTED SPECIES (Details*- selected species - all counties)

SPECIES BREAKDOWN FOR A SELECTED TRAIL (Details* - all species - selected trail - selected county)

BREAKDOWN OF TRAILS IN A SELECTED COUNTY FOR A SELECTED SPECIES-- SLOW -- (Details* - summed over species - all trails - selected county)

SPECIES BREAKDOWN FOR A SELECTED COUNTY (Details* - all species - summed over trails in selected county)

TRAIL DATA (Trail Info & box-by-box data - selected trail - selected county)

ALL TRAILS FOR A SELECTED COUNTY -- SLOW - (Box-by-box data - all trails - selected county)

ALL TRAILS IN ALL COUNTIES-- REALLY SLOW (Box-by-box data - all trails - all counties)

SUMMARY BY COUNTY AND SPECIES (Details* - sorted by county - all species - summed over trails - all counties)

SUMMARY BY SPECIES AND COUNTY (Box-by box data - sorted on species - summed over trails - all counties)

TRAIL NOTES (Trail & Field notes - sorted by county - all trails)

COUNTY ADMINISTRATORS REPORT (Trails with and without data for selected year and county)

RAW DATA (through end of year 2009) This static comma delimited file has data for all years, all counties. Save it to your desktop as a CVS file, then open in Excel and create your own pivot table. Get the data you want, how you want it. Takes about a minute -- lots of data!

*DETAILS: Number of nest tries, eggs, hatchlings, fledglings & totals by brood

ANNUAL REPORT DATA

Data has been collected since the inception of CBRP and reported yearly in an annual report which has been included in each Winter issue of the newsletter, *Bluebirds Fly!*, since 1999. These reports are available on the CBRP web site at http://cbrp.org/annual_reports as PDF files. These files contain data by trail (not by nest box) including:

Trail Monitor, Trail Name, County, #Boxes of each size, Nest tries, #Eggs, #Hatchlings and #Fledglings by species (and brood, if appropriate). Total fledged, average per box and total fledglings by county. Lastly are state-wide totals over all trails/counties: of the trail information listed above.

Although this makes interesting reading the data was not amenable to analysis because the reports are PDF files and not database files (Excel, Access, or other). Several months ago I consolidated the information into an Excel data base containing the this trail-level data from the 1999 thru 2009. This Excel data base can be downloaded from CBRP.ORG in the PROGRAM RESULTS section or at: [http://cbrp.org/documents/CBRP trail level data 1999-2009.xls](http://cbrp.org/documents/CBRP%20trail%20level%20data%201999-2009.xls).

DATA ANALYSIS

In the following discussion I refer to several Excel features as I am most familiar with that program. The discussion will be conceptual and not a how-to use Excel. Database programs such as ACCESS and other spreadsheet programs including web-based office suites provided by Google's, Sun (Oracle) and Microsoft provide most of these or alternate features to analyze data. Excel HELP is very useful for assistance in understanding how to use features; many books have been written and a great deal of on-line help is available for Excel. In addition to building tables a variety of charts can be created.

Data downloaded from the on-line database as well as the trail-level data from the annual reports are sorted by season, county and trail. Each of the following features is available and found under the Excel DATA menu.

SORT:

One of the easiest analysis techniques is to sort the data first by trail-name and then by season. This allow you to see data for a specific trail and view the performance by season. Additionally the data could be sorted by trail-name, species and then season to see a given species performed over the years. Similarly, county-wide or state-wide data can be sorted by season or species to see similar information. Many other sorts are possible.

AUTO FILTER:

Excel provides a very powerful feature called filtering to organize data for viewing; it is both easier and more powerful than sorting. This feature can be thought of as a super-sort and selection technique and provides for arrangement of data in almost any way.

QUERY:

This is a more advanced feature using the Microsoft Query program to select specific data from web pages, external databases in ACCESS, Excel and other databases as well as from the Excel spreadsheet containing the data with which you are working. The feature is found under the DATA menu, then under the IMPORT DATA menu. This is arguably the most powerful data analysis feature available in Excel but requires a high level of knowledge.

PIVOT TABLE:

This feature provides for building tables of data sliced and diced just about anyway you would like to see the data. For most users this is the best approach as tables are created simply by dragging labels (name of data) into rows, columns or the data area. A simple example of a pivot table is one with rows representing the number of fledglings by species and columns representing seasons for the entire state, county or even a single trail. Alternately the rows and columns could be “pivoted; i.e.; transposed. A more complex example would be a table where the rows represent the number of fledglings by species and the columns represent counties by season for the entire state, county or a single trail. Totals and grand totals are created automatically. Easy to create but complex charts can be created.

EXAMPLES:

1. Nest box productivity for a specific trail. Have you every wondered if you should move any of the boxes? Here is a way to find out.
Start with the on-line (box-by-box) data and use the pivot table feature to create a table for a specific trail. The columns are seasons and the rows contain a measure of productivity (nest tries, eggs, fledglings, etc) by nest box number.
2. Seasonal variation of Western Bluebirds (or other species). The data will have to be normalized if the number of boxes changes from year to year.

- a) Start with the annual report (trail-level) data and sort by season, then trail, then season. Find the trail in which you are interested and look thru the results. It may be necessary for you to insert a row summing the data for the trail, county or state.
 - b) The same result can be obtained easier by means of a pivot table where the columns represent seasons and the rows are the measures (#nest tries, fledglings, etc) you want to compare for a specific trail, county or the entire state.
3. Total number of fledglings for the entire state by season.
Start with the annual (trail-level) data. The rows will contain the number of fledglings by species and the column are the seasons.