

Date: 11 May 2011

TO: Kathryn Furr, Zone Wildlife Biologist
Sylamore and St. Francis Ranger Districts
USDA Forest Service, Ozark-St. Francis National Forests

FROM: Glen R. Thomas¹, Ecologist
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RE: Ozark-St. Francis National Forests (OSF) R8BIRD:
(1) database troubleshooting; and (2) the 2006-2010 dataset

INTRODUCTION

This report, presented in two parts, consists of: (1) this memorandum and (2) a worksheet with recorded data and descriptive statistics. The memorandum serves two functions. It is intended as a discussion of the 2010-2011 R8BIRD database troubleshooting efforts. It also serves as a guide when viewing the 2006-2010 dataset and statistics as reported in MS-Excel File THOMAS_OSF_R8BD_DESCR_STATS_06-10_(RPT_WKSHT_2011).xlsx (Thomas 2011b).

TROUBLESHOOTING

Current troubleshooting continues to indicate that the new database is calculating temporal trend totals and respective relative-abundance-by-survey-point quotients correctly with respect to regional datasets currently being centrally-served by the Kansas City Data Center. To preserve data integrity, reviews of past dataset migrations outlined in Thomas (2011a) continue as planned.

THE 2006-2010 DATA SET

The data are largely displayed in the form of a complex spreadsheet, which presents a considerable amount of usable information, including forest-wide species totals from 2006 through 2010. These totals were also externally processed to derive descriptive statistics for: (1) each individually-recorded species; and (2) each year for all species combined. The data are shown in a read-only file, which is not suitable for further sorting in its current format, as the data categories are necessarily freeze-framed, so that data can be scrolled horizontally or vertically to focus on specific values in relation to category of choice.

DESCRIPTIVE ROW-STATISTICS describing the annual total numbers of observations per species can be respectively viewed in the columns on the right side of the worksheet. The year-column data (i.e., 2006 through 2010) reveal how many individuals of a given species were observed in a specific year. The N column denotes how many of the five years in which a given species was recorded. Species are sorted in

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order of descending abundance per the five-year SUM column. Further columns include: MEAN, MEDIAN, STD DEV (standard deviation), SE Mean (standard error of the mean), Minimum, Maximum, Range, and quartiles one (Q1) and three (Q3).

DESCRIPTIVE COLUMN-STATISTICS for each year's number of recorded species and total observations for each can be seen in the text box shown below the YEAR AND SUM COLUMN TOTALS at the bottom of the data grid per se. These are sorted by row for each year with their respective statistics shown in columns. The N column shows the number of species recorded each year. The MEAN and MEDIAN columns are calculated on total annual observations per species when all species are viewed in combination. Similarly as before, further columns include: STD DEV, SE Mean, Minimum, Maximum, Q1, and Q3. Additionally, a trimmed mean (i.e., TrMean) was calculated, whereby, ten percent of the most extreme data (i.e., five percent of the lowest and highest values, respectively) were omitted before computing the mean.

RESULTS AND DISCUSSION

There was a small decline in total observations for surveys conducted from 2006 through 2007 (range = 36). However, the trend line from 2007 through 2010 revealed a modest, yet continual, annual increase (range = 320). While the yearly increases by themselves were not necessarily dramatic, the sustained increase from 2008 through 2010 continues to illustrate that destructive effects from the January 2009 ice storm do not seem to have negatively impacted avian breeding dynamics. All storm-affected districts continue to proportionately follow this trend. In concert with the past, Red-eyed Vireos (*Vireo olivaceus*; $\bar{X} = 345.6$) and Indigo Buntings (*Passerina cyanea*; $\bar{X} = 239.2$) were the most observed species each year. While there were no newly recorded species during 2010, the Chestnut-sided Warbler (*Dendroica pensylvanica*) and the Orchard Oriole (*Icterus spurius*) – respectively unrecorded since 1998 and 2002 – were recorded in 2010.

As mentioned previously in Thomas (2010), to enhance the description of OSF species composition and abundance, the respective habitat types by which OSF survey plots were originally characterized should be recorded in the database. Table 1 (Thomas 2011a) shows the original numbers of each type respective to district, but these optional classifications have never been entered for plots other than those established on the Sylamore, Big Piney North, and St. Francis Ranger Districts. Using this table as a starting point, it will be necessary for all districts to characterize their individual plots accordingly, modifying classifications where needed. Additionally, the R8BIRD protocol to annually refresh vegetation records for at least twenty percent ($\geq 20\%$) of all plots per district remains in place.

CONCLUSION

While specific styles of canned reports still do not consistently run, the operational integrity of the current R8BIRD database remains generally healthy. Additionally, reviews of all data integrity continue as planned.

While there was a decline in total observations for all species combined from 2006 through 2007, the trend line showed a continual increase from 2007 through 2010. Finally, future descriptions of species abundance and composition will substantially benefit from coordinating bird observation data with the original habitat-type matrix used to select and survey plots.

Habitat Types	Sylamore	Big Piney North	Big Piney South	Pleasant Hill	Boston Mtn	Magazine	St Francis	Total
Glade	3	2	3	2	3	2	0	15
Yellow Poplar	0	0	0	0	0	0	2	2
Pine Early	1	0	4	2	1	2	0	10
Pine PT Closed	0	1	3	2	1	2	0	9
Pine Open PT/ST	2	1	4	1	2	4	0	14
Pine Closed ST	3	4	10	5	5	7	0	34
Hwd Dry Open	3	4	3	2	4	1	2	19
Hwd Mesic ST Closed	7	18	12	10	13	1	5	66
Hwd Dry Closed	3	6	4	4	2	1	2	22
Bottomland Hwd Wetland	0	0	0	0	0	0	10	10
Riparian	2	4	3	4	3	1	2	19
Hwd Early	1	2	1	1	2	0	2	9
Mixed PT Closed	0	2	1	2	1	1	1	8
Mixed ST	1	3	1	2	1	1	0	9
Total	26	47	49	37	38	23	26	246

Table 1. Ozark-St. Francis National Forests' plot totals by district and habitat type for the Southern National Forests' Migratory and Resident Landbird Conservation Strategy (R8BIRD).

LITERATURE CITED

THOMAS, GLEN R. 2010. Ozark-St. Francis National Forests: R8BIRD descriptive statistics, 2005-2009. 4 p. [Internet]. [cited 2011 May 11]. Available in a two-file format [memorandum, 3 p.; plus dataset worksheet, 1 p.] from: http://ecospectra.com/lib_reports_memos.htm.

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