

Date: 10 March 2010

TO: Keith Whalen, Forest Fisheries Biologist  
USDA Forest Service, Ozark-St. Francis National Forests

Robert Csargo, Forest Wildlife Biologist  
USDA Forest Service, Ozark-St. Francis National Forests

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

FROM: Glen R. Thomas<sup>1</sup>, Ecologist  
Ecospectra Services

RE: Ozark-St. Francis National Forests (OSF) R8BIRD:  
(1) database troubleshooting; and (2) the 2005-2009 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 2010 R8BIRD database troubleshooting efforts. It also serves as a guide when viewing the 2005-2009 dataset and statistics as reported in MS-Excel File THOMAS\_OSF\_R8BD\_DESCR\_STATS\_05-09\_(RPT\_WKSHT\_2010).xlsx (Thomas 2010).

## TROUBLESHOOTING

Current troubleshooting indicates 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. In the coming year, I would like to review the numerous dataset migrations to and from all past versions of the database to ensure data integrity remains stable – particularly for older data, which have been through proportionately more migrations, splitting, and merging. These issues were outlined in the recently-submitted report on the R8BIRD project, its database, and their use by the OSF (Thomas 2009). Now that the data are finally residing in what is hopefully to be their long-term database platform, R8BIRD v5, the timing seems right. Finally, other styles of canned reports do not always run, including validation reports for visits and vegetation. I will address this issue with Margaret Griep and the Digital Visions Enterprise Unit.

## THE 2005-2009 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 2005 to 2009. These totals

---

<sup>1</sup> Consulting Ecologist, Ecospectra Services, 201 North Shore Drive, Russellville, Arkansas 72802-8827;  
Telephone (479) 747-4186; e-mail: [gthomas@ecospectra.com](mailto:gthomas@ecospectra.com); URL: <http://ecospectra.com>.

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., 2005 through 2009) 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 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

The trend line for total observations for surveys conducted from 2005 to 2007 was very flat ( $\bar{X} = 2900$ ) with minimal variation among years (range = 36). However, the trend line from 2007 to 2008 elevated slightly, increasing from the previously-mentioned mean to 3021 observations. Interestingly, from 2008 to 2009, this trend-line increase continued, with the total number of individual observations for all species combined growing to 3156. While these are not large increases, they do appear to illustrate that destructive effects from the January 2009 ice storm did not – on balance – negatively impact avian breeding dynamics. All storm-affected districts followed this trend proportionately. Other than a slight increase in total number of species observed after 2005 – which can be attributed, at least in part, to the St. Francis Ranger District's Stumpy Point surveys begun in 2006 – overtly evident changes were not recorded. Red-eyed Vireos (*Vireo olivaceus*;  $\bar{X} = 336.6$ ) and Indigo Buntings (*Passerina cyanea*;  $\bar{X} = 227.4$ ) were the most observed species each year.

In the future, to begin a process for enhancing 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 2009) shows the 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. This is a logical starting point – one we understand and upon which we can build and modify.

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
<b>Total</b>	<b>26</b>	<b>47</b>	<b>49</b>	<b>37</b>	<b>38</b>	<b>23</b>	<b>26</b>	<b>246</b>

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).

## CONCLUSION

While specific styles of canned reports do not consistently run, the operational integrity of the current R8BIRD database seems generally healthy. Additionally, as R8BIRD data are likely to be maintained in the current database for the foreseeable future, this may be good time for a routine review of data integrity.

While the trend line for total observations for all species combined remained flat from 2005 through 2007, it increased slightly during 2008, and again in 2009. Finally, future descriptions of species abundance and composition may benefit from coordinating bird observation data with the original habitat-type matrix used to select and survey plots.

## LITERATURE CITED

- THOMAS, GLEN R. 2009. A synopsis of the Southern National Forests' Migratory and Resident Landbird Conservation Strategy, the R8BIRD database, and their use by the Ozark-St. Francis National Forests. 6 p. [Internet]. [cited 2010 March 10]. Available from: [http://ecospectra.com/lib\\_reports\\_memos.htm](http://ecospectra.com/lib_reports_memos.htm).
- THOMAS, GLEN R. 2010. Ozark-St. Francis National Forests: R8BIRD descriptive statistics, 2005-2009. 4 p. [Internet]. [cited 2010 March 10]. Available in a two-file format [memorandum, 3 p.; plus dataset worksheet, 1 p.] from: [http://ecospectra.com/lib\\_reports\\_memos.htm](http://ecospectra.com/lib_reports_memos.htm).