

**The**  
**BLUEBIRD**

**THE AUDUBON SOCIETY OF MISSOURI**

Volume XLIII, Number 3

September, 1976

GENE + 25 0-2 2800 + 3/11/0  
S. H. BULL 17 0-2 2800 + 3/11/0

# The Audubon Society of Missouri

## Founded 1901

### PURPOSE

The Audubon Society of Missouri is a non-profit statewide society organized in 1901 and affiliated with The National Audubon Society. It is dedicated to the preservation and protection of birds and all wildlife forms and habitat, to the education of the citizenry toward appreciation of the natural world, and to working for wise conservation practices related to people and wildlife.

### OFFICERS

President .....	Paul Bauer 4 Club Grounds South Drive, Florrisant, 63033
Vice-President .....	Dr. William Goodge 1017 South Glenwood, Columbia, 65201
Treasurer .....	Mrs. Katherine Wade 2202 Missouri Blvd., Jefferson City, 65101
Secretary .....	Mrs. Edna Kriege 6123 Waterman Blvd., St. Louis, Mo. 63112
Bluebird Editor .....	Mrs. Rebecca Matthews Rt. 2, Box 128, Springfield, 65802
Bird Survey Editor .....	Dick Anderson 1147 Grenshaw Dr., St. Louis, Mo. 63137
Conservation Editor .....	James P. Jackson 103 Terry Lane, Washington, 63090

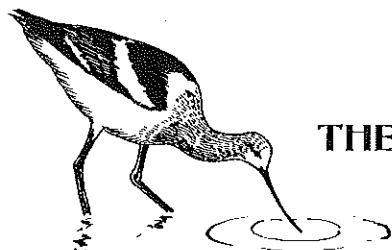
### Regional Directors

Mrs. Dean Cole .....	Shawnee Mission, Kan.
Miss Bonnie Dunlap .....	Jefferson City
Dr. David Easterla .....	Maryville
David M. Jones .....	St. Louis
Dr. Keith Evans .....	Columbia
Floyd Lawhon .....	St. Joseph
Mrs. Rebecca Matthews .....	Springfield
Dr. Earl McHugh .....	Kansas City
Dr. James H. Shaddy .....	Kirksville
Nathan Fay (Honorary Director) .....	Ozark

# The Bluebird

Volume 43, Number 3

September, 1976



## FROM THE PRESIDENT'S CIRCLE

by PAUL E. BAUER

The long petition drive was a huge success. The Design for Conservation sales tax will be on the November 2nd ballot as the first amendment. This proposed constitutional change to provide greatly expanded funding for conservation programs is being submitted to the people of Missouri at the November general election. Almost 200,000 signatures were gathered making the initiative petition effort the largest ever by the citizens of Missouri. Now the most important effort of informing all the voters lies ahead. When the time is taken to tell folks how badly the Design is needed, how small the cost will be, and how many people will benefit, including themselves, nearly 80% say they will vote for the program. Thus, education is the key; and if we help, our efforts will aid in turning the "key" to success on the November ballot.

Our annual conference on October 9th and 10th will provide a most enjoyable and valuable program. The theme will focus on our forests, their wildlife and ecology. There will be two slide shows and a color movie to inform and entertain. All this will help us understand and picture how valuable our forests are, and what unique wildlife they contain. Also, we can better realize why buying more wildlife habitat and supporting the Design for Conservation sales tax is so important. The business meeting will be short, but vital. We will be electing officers this year, and making important additions to our constitution. If you recall my comments in the June issue, we want to include additional directors on our

board from affiliate organizations. This action will allow each member to have a stronger voice, and will improve the ability of our Society to influence conservation issues throughout Missouri.

Mildred Boessen and her staff will again provide the excellent food for us, and the total program is designed to appeal to youngsters as well as adults. The price has been maintained at the same cost as last year. May I urge you to read the program details inside and make every effort to attend this annual meeting. I am looking forward to seeing you in October!

□ □ □

### FALL BIRDING ADVENTURE SUGGESTIONS

by Paul Bauer

By now every birder knows that visits to Squaw Creek and Swan Lake refuges are outstanding in both fall and spring for shorebirds and waterfowl. In the fall be sure your visits to refuges are timed to avoid the duck and goose hunting seasons.

While the best concentrations of warblers are seen in spring, fall is the best season for concentrated numbers of hawks in migration. The peak period for spectacular autumn flights is from mid-September to mid-November--two full months to enjoy birds of prey at their best.

In Missouri we have numerous excellent locations for hawk observations: (a) the bluffs overlooking the Mississippi River on Highway 79 at Clarksville and on both sides of Hannibal; (b) bluffs on the south side of the Missouri River as it cuts across the state from west to east; (c) and roughly 75 fire towers located all across the southern half of Missouri that is carpeted with forest. Many members may live near several of these towers which are usually located on ridge-tops. Once you climb the tower to a point above the tree tops you have an excellent vantage point to survey miles of sky in all directions.

For the best birding, plan to spend at least 2 to 3 hours on location; 4 to 6 hours, or more would be

→ → →

better. A team of 3 to 5 birders gives better circular coverage and allows some members to take rest periods between scanning sessions without coverage interruptions. Actively scan the sky with binoculars, because some hawks fly very high and will not be noticed with the eye against bright sky. Bring food and drink, scope, small stool or chair. Consider the wind-chill factor in selecting clothing, gloves, hats, etc.

Weather is an important factor in hawk migration. In fall the migration begins behind a cold front; weather is clearing, temperature is dropping, wind is blowing strong and steady from northwest and west, barometric pressure is rising rapidly. Olin S. Pettigill provides additional details in the chapter on migration in "A Laboratory and Field Manual of Ornithology." Study weather maps in daily papers or on TV to select the time when a cold front will pass your area. With luck the frontal passage will occur during daylight hours, but migrations can be good from one to three days after a front passes through.

Identification of tiny high-flying specks can be tough. Besides the standard field guides, many helpful hints can be found in "A Guide to Northeastern Hawk Watching" by Donald Heintzelman (about \$1.50). Additional fine points in separating sharp-shinned, Cooper's, and goshawks are provided in "Birding" Vol. V, No. 5 (Sept-Oct 1973) published by the American Birding Association.

Make at least one serious attempt at hawk watching this fall when the weather is right. Report your results to the Bird Survey Editor, Dick Anderson, and we will try to correlate and publish the results. To keep the reports consistent, please provide the following: (a) numbers of each species seen during each hour of observation, include UFO's; (b) comments on air temperature, average wind speed, direction, percentage cloud cover during each hour; (c) your location--nearest town or road numbers; names of observers; (d) date.

Good hawking--another example of how you can enjoy nature without collecting any samples that are removed from the environment.

■ ■ ■

## SUPPORT THE DESIGN FOR CONSERVATION CAMPAIGN

The campaign is an effort by citizens and conservation groups, organized as the Citizens Committee for Conservation, to broaden the funding base for conservation programs beyond present hunting and fishing license fees and to acquire lands while they are still available for wildlife habitat and public recreation to meet the ever-growing recreational needs of Missourians. The Department of Conservation would administer the expanded program and they have outlined a long-range plan called "The Design for Conservation" detailing approximately how the additional revenue would be allocated.

The plan calls for acquiring five new waterfowl areas, upland game habitat, natural areas such as floodplain forests, spring branches, glades and marshes. State forests would be expanded, managed not only for

timber, but also for recreation and education. Community lakes would be constructed, and stream access sites acquired. Wildlife management services to landowners would be expanded along with fisheries and other aquatic management. Forest management, law enforcement, the information program and conservation education services would be broadened. Research would be expanded to include non-game wildlife. Forest and aquatic research, water pollution enforcement, large reservoir management and forest fire control would be strengthened.



DESIGN for CONSERVATION

If approved by the voters, 1/8 of 1% additional sales tax would be earmarked for conservation programs in Missouri. This amounts to only one dollar of tax to every 800 dollars of taxable purchases. All total, some \$18 million each year would be added to

conservation coffers to bolster Missouri's wildlife conservation and recreation effort. The revenue would be collected by the Department of Revenue in the same manner as the present tax is collected. It would amount to between \$3 and \$4 per individual wage earner per year.

The Citizens Committee feels this tax will not single out any individual or industry or special interest group; it is a broad-based tax to support a broad-based conservation-recreation program serving all Missourians. It also has the advantage of very little or no additional cost of collection since it is an add-on tax.

The overwhelming success of the petition campaign reinforces the belief that the people of Missouri want expanded conservation and recreation programs and will support this proposed constitutional change at the polls. We expect the people will approve the amendment overwhelmingly in November.

How you can help: Explain the Design for Conservation to your friends, neighbors, to people at school, church, and at work. Yard signs, bumper stickers, writing letters to the editor of your newspaper, phone calls and again personal contacts will help.

Citizens wishing to lend their support to the effort can do so by writing to the Citizens Committee for Conservation, 312 E. Capitol, Jefferson City, Mo. 65101.

□ □ □

#### FELLOWSHIP AWARDED REGIONAL DIRECTOR

Ronald Klataske, the West Central Regional Representative of the National Audubon Society, has won the first Carl W. Buchheister Fellowship, an award of cash and paid leave offered under a program established in honor of the President Emeritus of NAS to enable staff members to undertake special activities relevant to their Audubon service.

According to the Audubon Leader, Klataske's project is a book, to be illustrated with his own photographs, on the Flint Hills area of Kansas, where the Tallgrass Prairie National Park has been proposed.

□ □ □

## PROPOSED CHANGES IN BY-LAWS

In an effort to up-date the existing by-laws of the Audubon Society of Missouri, several changes have been proposed for consideration at the Annual Fall Conference to be held October 9 and 10.

Of particular significance is the proposed change in ARTICLE IX - REGIONAL BOARD. The existing article provides for a governing board consisting of nine regional directors.

In an effort to give each member a stronger voice and to increase the influence of our Society in conservation issues throughout Missouri, the proposed article includes a new class of directors--representatives from the Affiliate Organizations within the state Society.

The text of the proposed article is given below. We urge you to study it carefully, to consider its impact on the future society, and come to the fall meeting prepared to discuss and act upon the proposal.

(Proposed) "ARTICLE IX. BOARD OF DIRECTORS.

"THE BOARD OF DIRECTORS of the Society shall consist of the Executive Committee and the combined membership of the Regional Board and the Affiliate Board (as described below). It shall be the duty of the Regional and Affiliate Directors (1) to advise the Executive Committee in matters of general policy; (2) to stimulate interest in and to coordinate the activities of the Society, including the membership at large and the affiliate membership, and (3) to bring to the attention of the Executive Committee any matters that require the attention of the Society as a whole.

"THE REGIONAL BOARD of the Society shall consist of nine members elected by a majority vote of the Executive Committee to serve for three years, one-third of the membership of the Board being elected each year. It will be permissible for a member of the board to succeed himself. The membership shall represent as fairly as possible the major geographical areas of Missouri as determined by the Executive Committee.

"In addition to their duties as members on the Board of Directors, it shall be the duty of members of

→ → →



the Regional Board (1) to represent the interests of their sections of the state, and (2) to stimulate among the membership of their region concern for the purposes and activities of the Society.

"THE AFFILIATE BOARD of the Society shall consist of representatives of the various Affiliate Organizations of the Society, chosen by and in a manner determined by the Affiliate Organization. Their term shall be for one year, but a member may succeed himself.

"Affiliate Organizations having more than ten but less than 200 members shall be entitled to one representative on the Affiliate Board. Those Affiliate Organizations having over 200 members shall have one additional representative on the board for each additional 400 members of their organization.

"In addition to their duties as members of the Board of Directors it shall be the duty of the members of the Affiliate Board (1) to represent the interests of their Affiliate Organization; (2) to stimulate within their Affiliate Organization concern for the purposes and activities of the Society, and (3) to coordinate the activities of the Affiliate Organizations on a state-wide basis."

Copies of the present by-laws and other changes which have been proposed will be available for all who attend the Fall Conference at Camp Rising Sun in October. If you would like to have a copy now, please write to the secretary, Mrs. Edna Kriege, 6123 Waterman Blvd., St. Louis, 63112.

□ □ □

#### PRAIRIE EXHIBIT NOW IN ST. LOUIS

An exhibit of photographs and illustrations by artist-photographer Patricia Duncan may be seen at the St. Louis Museum of Science and Natural History through September 26. Hours are 9 A.M. to 5 P.M. with parking and admission free.

Patricia Duncan is a former Webster Grove resident and Washington University graduate. Her exhibit encourages preservation of the tallgrass prairie, and discusses the proposed National Prairie Park in the Flint Hills of Kansas.

□ □ □

AUDUBON SOCIETY OF MISSOURI  
ANNUAL FALL CONFERENCE

CAMP RISING SUN  
LAKE OF THE OZARKS STATE PARK

October 9 and 10, 1976

WHAT IS HAPPENING:

Friday, October 8:

Camp Rising Sun Facilities open after 4:00 P.M.  
Informal fellowship among early arrivals.  
Volleyball. No meal provided.

Saturday, October 9:

Breakfast (optional. Cost: \$2.00 extra)  
Camp Registration (Before noon if possible)  
Informal Nature Walks in woods or at lake shore,  
swimming.  
Lunch Dining Hall, free time. Volleyball.  
Afternoon Program (Details on next page).  
Annual Business Meeting (Details on next page)  
Dinner Dining Hall, free time. Ping pong.  
Evening Program (Details on next page)

Sunday, October 10:

Breakfast (Outdoor worship service available)  
Field Trips to several areas - your choice  
Dinner (Noon) Dining Hall

WHAT TO BRING:

Casual clothes, walking shoes, light jacket, and  
rainwear for cool or wet weather, swim suit.  
Sleeping bag or sheets and blanket; pillow (cabin,  
bed with mattress, is provided)  
Personal items (soap, towels, etc.)  
Flashlight, hand lens, camera, film, nature guides.  
BINOCULARS!

COST: Includes registration, housing, four meals.

	Adults	Children (under 12)
*Pre-registration	\$15.00	\$9.00
Registration at camp	16.50	10.00

▶ \*To pre-register send form on last page of The Bluebird  
with one dollar by September 22 to Katherine Wade,  
2202 Missouri Boulevard, Jefferson City, Mo. 65101.

AUDUBON SOCIETY OF MISSOURI  
ANNUAL FALL CONFERENCE  
SATURDAY ACTIVITIES

1:30 P.M. Meeting of all officers and directors.

2:30 P.M. Afternoon Program - Focus on forests, their habitat, management, clear cutting as a national issue, etc.

"Life of the Forest Floor" - Slide presentation by James P. Jackson, biology teacher in Washington, Missouri, free-lance writer and photographer, and former president of our Society.

"U.S. Forest Service Habitat Management Programs" - Roger Kirkman, Wildlife Management Biologist with U.S. Forest Service, Mark Twain National Forest, Rolla, Missouri.

"Current Habitat Research Projects" - Dr. Keith Evans, Research Biologist with the U.S. Forest Service Experimental Station in Columbia, and one of our Society's regional directors.

Design for Conservation Campaign - How you can help

4:00 P.M. Annual Business Meeting

Election of Officers

Revisions to By-laws of the Society

Plans for Memorial for Jim Comfort

Candidates for Audubon Camp in 1977. Bring names of your nominees.

7:30 P.M. Evening Program

Announcements

"OUR WILD LANDS - AN AMERICAN HERITAGE" - a beautiful slide and sound presentation by Wendell Mohling, teacher of biology in Shawnee Mission, Kansas, and participant in many environmental education programs.

"FOREST ECOLOGY" - a new Schwartz movie!

PLEASE pre-register. Use coupon on last page of  
The Bluebird.

A NEW BOOK FOR YOUR ENJOYMENT

The Compositae of the White River Ozarks Area

by Alice A. Nightingale, 1974

The School of the Ozarks Press

An introduction to the Compositae (Daisy Family) of the White River Ozarks area of Southwestern Missouri. Its use, however, is not confined to this area.

Missouri Audubon members will remember Dr. Nightingale's slide presentation on Ozark Flowers given at the Spring Meeting in 1975. Some of you have walked through prairies, glades, and woods with her. Dr. Alice has spent a lifetime teaching botany and in plant research, and has over 20 years experience in collecting and identifying Compositae in the Ozarks. Specimens of most of the species described in the book are preserved in The School of the Ozarks herbarium.

The book is an 8 3/4 by 11 1/4 inch hard cover, with 166 pages. There are four color prints, and many black and white photographs and drawings. The book includes a complete diagnostic key, and a description of subfamilies, tribes, and species. There are both common and scientific name indexes. A glossary will help the layman with scientific terminology used in the key.

The cost is \$11.15, postpaid, for hard cover. Orders should be sent to The School of the Ozarks, Order Department, Point Lookout, Mo. 65726, or phone 417-334-6411.

WAYNE DAVIS

I love to think of nature as an unlimited broadcasting station through which God speaks to us every hour, if we will only tune in.

--George Washington Carver

## AUDUBON WILDLIFE FILMS

Once again the beautiful Audubon Wildlife Films have been scheduled for appearance in several Missouri cities. We anticipate that their interesting titles and descriptions will soon be turning into delightful evenings of enrichment and entertainment.

If you are not familiar with these programs, perhaps this is the year for you to discover a meaningful new experience. Some are free, others are offered at a nominal cost (\$1.50 or less). Each is a color movie narrated in person by one who is well acquainted with the subject, often the photographer himself..

"HOLLAND CLOSE UP" by Roy E. Coy

September 21 - St. Joseph, Central High School  
26th and Edmond, 7:45 P.M.

"GRASSROOTS JUNGLE" by Fran William Hall (film study  
of the insect world)

September 29 - St. Joseph (as above)

"SMALL WORLD" by Fran William Hall (another interest-  
ing insect study)

September 28 - Columbia, Stephens College, Windsor  
Auditorium in the Learning Center, 7:30 P.M.?

October 11 - Springfield, SMSU, Temple Hall,  
L102, 7:30 P.M.

"THE VANISHING EDEN" by Stefan Kling (Florida's swamp-  
land and its extraordinary wildlife.)

October 18 - St. Joseph (as above)

October 19 - Kansas City, Community Christian  
Church, 4601 Main Street, 8:00 P.M. (free)

October 20 - Columbia (as above)

October 22 - St. Louis, Ethical Society,  
9001 Clayton Road, 8:15 P.M. (free)

"VANISHING AMERICAN WILDLIFE" by Burdette White  
(featuring U.S. endangered species)

November 15 - St. Joseph (as above)

November 16 - Kansas City (as above)

November 26 - St. Louis (as above)

November 30 - Columbia (as above)

December 7 - Springfield (Temple Hall, L103)

# THE BREEDING BIRD SURVEY IN MISSOURI - 1967 to 1975

by Keith E. Evans and Deanna K. Dawson\*

---

\*Principal Wildlife Biologist and Research Biological Technician, respectively, North Central Forest Experiment Station, Forest Service, U.S. Department of Agriculture, Columbia, Missouri (field office maintained in cooperation with the University of Missouri Agricultural Experiment Station).

---

The nationwide Breeding Bird Survey (BBS) is designed to provide the data needed to delineate ranges and monitor population trends of breeding birds. The program is sponsored by USDI, Fish and Wildlife Service, Migratory Bird and Habitat Research Laboratory, Laurel Maryland. Each year since 1967, volunteer co-operators have censused 15 to 33 of the 37 routes established in Missouri. The census for each route consists of identifying and counting all birds seen or heard at 50 3-minute stops along a predetermined 25-mile section of road. Additional information on route locations, cooperators, and standardized procedures for data collection can be found in The Bluebird 40(2):2-3 (1973) and 41(1):5-7 (1974).

This report summarizes the Missouri BBS for the years from 1967-1975. During these 9 years, 139 species were observed (table 1). The most often recorded species are the upland species such as bobwhites, mourning doves, red-winged blackbirds and eastern meadowlarks. The bird species that sing loudly and repetitively have the best chance to be recorded in large numbers; however, competent observers see and record the less conspicuous and silent birds of the area. Population trends, but not total population size, can be established with these data.

Missouri is a diversified state with some species of birds occurring only in certain localities. The BBS data are analyzed by strata. These are delineated nationally by soils, topography, elevation, and vegetational potential. Five strata are found in Missouri (fig. 1). A variable number of routes have been established in each stratum (table 2).

→ → →

Although many species are found statewide, some interesting differences are apparent. The turkey vulture, whip-poor-will, and all the hawks are rare in the bootheel (05), but waterfowl, egrets and herons are common. Several species show a definite preference for the northern Missouri routes (32): short-billed marsh wren, bobolink, yellow-headed blackbird, and rose-breasted grosbeak. The greater prairie chicken and Henslow's sparrow are found primarily in the greater prairie area (33). The extensive forests of the Ozarks (19) contain the greatest numbers of most vireos and warblers. The chickadees are fairly well separated: the black-capped nests north of the Missouri River (31 and 32) and the Carolina nests south of the river (05, 19 and 33). Species richness seems to be fairly consistent among strata with the bootheel (05) recording 85 species (only 2 routes), the Ozarks (10) with 108, the east central region (31) with 97, north Missouri (32) with 107, and the western prairie (33) with 105.

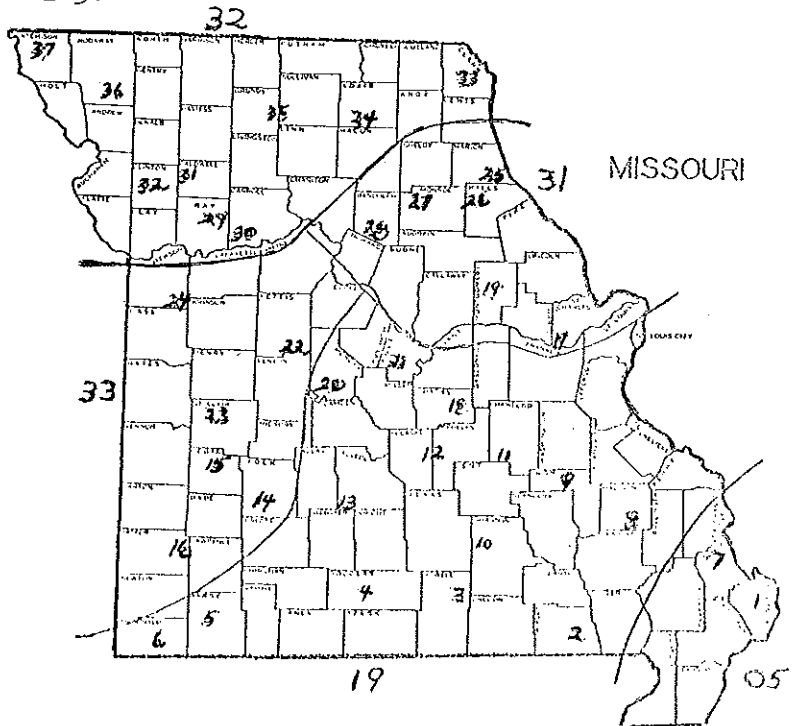


Figure 1 - Distribution of BBS routes in Missouri with strata delineation.

→ → →

Table 1 - Bird species recorded on Breeding Bird Survey routes in Missouri from 1967-1975  
(birds per censused route)

Species	Stratum	Years										Average	
		67	68	69	70	71	72	73	74	75			
Great Blue Heron	05				1.00								.11
	19	1.00	.20		.25		.16	.66	.16		.92	.33	.45
	31												.05
	32	1.25	.20		.20								.13
	33		.50		.50			1.50	.40	1.00			.53
Green Heron	05		3.00	.50	1.50	1.00	1.00	1.00	.50	.50			1.00
	19	.33	1.60	.20	1.00	1.00	1.33	.55	.33	.92	.75		.75
	31	1.20	.33	.25	1.00	1.00	.50	1.50	.75	.66	.79		.79
	32	1.00	.40	.16		.66	.83	.33	1.00	.57	.54		.54
	33	1.00	3.00	2.00	1.00	1.33	1.33	.50	2.00	2.20	1.60		1.60
Little Blue Heron	05	13.00	38.00	40.50	31.50	15.00	32.50	3.50	19.50	4.50			22.00
Cattle Egret	05						2.00	9.50	6.00	.50			2.00
Great Egret	05	.50	.50						1.50				.27
Black-Crowned Night Heron	05			1.50	.50		.50						.27
	31		.66										.05
	32									.14			.01
Yellow-Crowned Night Heron	05			.50									.05
American Bittern	31									.16			.02
	32								.20				.01
	33								.20				.03
Canada Goose	33										2.80		.50
Mallard	05					1.00			.50				.16
	32						.28	1.00	.80	.14			.25
Gadwall	32							.33					.03
Pintail	32							.50					.05
Green-winged Teal	32							.16					.01
Blue-winged Teal	05								3.50				.38
	32	.25							1.33	.40			.21
	33								.25				.03
Wood Duck	05	.50				.50	1.50		.50	1.00			.44
	31								.50	.25			.07
	32			.50					.16				.07
	33									.20			.03
Turkey Vulture	05			.50									.05
	19	2.00	.80	2.60	3.00	3.75	.16	2.22	2.91	3.00			2.35
	31	1.60	.66	3.25		1.20	2.50	1.00	.75	1.50			1.53
	32	.75	1.80	1.50	4.20	4.00	.71	.66	1.40	1.51			1.82
	33	2.50	.50	.50		1.66	.33		1.60	.40			.78
Mississippi Kite	05	.50	.50		.50		.50						.22
	32									.14			.01
Sharp-shinned Hawk	19								.08				.01
Cooper's Hawk	19							.11					.01
Red-tailed Hawk	05	1.00								1.50			.27
	19	.83	1.00	1.20	.75	1.75	.50	.55	.58	.38	.71		.71
	31	1.00	.66		1.00	1.00	.66	.50	.33	.56			.56
	32	2.50	1.00	1.50	1.60	.66	.28	.66	.60	.86	1.00		1.00
	33	2.00	1.00		1.50		.66	1.50	1.20	3.00	1.39		1.39
Red-shouldered Hawk	19									.08			.01
Broad-winged Hawk	19						.16	.11	.08				.04
Marsh Hawk	19	.16											.01
	33					.33		.25	.40				.14
Osprey	32					.16							.01

→ → →



Table 1 - Birds per route, continued

Species	Sta- tum	Years										Average
		67	68	69	70	71	72	73	74	75		
Sparrow Hawk	05	.50	1.00	1.00	1.00	2.50	1.50	.50	2.00	1.00	1.22	
	19	.33	.20	.40		.25	.16	.55	.08	.23	.25	
	31	1.00		.75			.50		1.25	.16	.43	
	32	.25	.40	.50	.20			.16		.16	.17	
	33					.33	1.66		.60	.20	.35	
Prairie Chicken (Greater)	33						1.00	13.00	1.20	2.60	2.66	
Bobwhite	05	29.50	27.00	17.00	29.00	31.00	35.50	36.50	40.00	42.50	32.00	
	19	22.50	49.00	45.60	41.25	46.00	46.83	52.55	42.66	43.31	43.53	
	31	57.40	77.66	50.75	80.50	79.60	65.00	56.30	71.25	65.16	66.00	
	32	52.75	53.40	58.50	86.80	63.83	51.71	54.50	61.20	58.00	59.74	
	33	24.00	36.50	49.00	31.00	33.66	42.66	48.50	40.40	58.20	42.75	
Ring-necked Pheasant	31									.16	.02	
	32	.75	4.40	6.66	5.40	8.50	.71	11.00	1.00	6.71	5.21	
	33							1.50	.20		.25	
Turkey	32					.16	1.14				.17	
	33						.66			.20	.10	
American Coot	32							1.83			.21	
Killdeer	05	2.50	4.00	5.00	4.50	8.00	7.50	17.00	18.00	5.50	8.00	
	19	.83	1.20	1.40	1.50	.50	1.16	3.33	1.16	2.85	1.78	
	31	1.00		1.75	2.50	1.00	.50	2.25	2.25	1.33	1.30	
	32	1.25	2.00	2.50	2.40	3.00	1.42	3.50	3.20	2.86	2.49	
	33	1.00	1.00	2.00	1.00	1.33	2.33	1.75	8.00	7.00	3.67	
Upland Sandpiper	19		.20					.11			.03	
	31								.25	.16	.05	
	32	4.00	1.60	1.83	2.00	2.83	3.43	1.50	2.80	1.43	2.33	
	33					.33	.33	.25	.20	.40	.21	
Rock Dove	05	23.00	18.00	12.00	17.00	21.00	21.50	67.00	23.50	14.00	24.11	
	19	1.50	1.40	3.40	3.50	3.75	3.66	.78	2.08	1.54	2.12	
	31	9.00	2.00	4.50	1.50	5.80	5.33	2.75	2.25	1.16	4.10	
	32	4.25	5.00	2.50	5.00	4.00	3.57	3.50	7.60	4.00	4.27	
	33	2.00	3.00	2.00	1.50	7.00	2.33	2.25	5.80	3.60	3.60	
Mourning Dove	05	90.00	75.50	104.50	83.00	70.00	71.00	71.50	62.50	39.50	74.16	
	19	11.83	16.60	12.80	12.75	16.25	24.16	22.22	19.58	17.08	17.75	
	31	70.80	44.66	47.75	49.00	63.40	50.00	42.25	44.25	41.16	50.94	
	32	53.25	55.40	49.33	58.40	65.83	62.86	61.50	51.60	49.28	56.56	
	33	33.00	27.00	30.50	22.50	23.66	42.33	38.75	41.80	42.60	33.96	
Yellow-billed Cuckoo	05	10.50	12.50	10.50	12.00	8.50	4.00	9.00	8.50	7.00	9.16	
	19	8.33	8.20	8.40	19.75	18.25	14.16	10.00	10.25	12.08	11.58	
	31	6.20	7.66	2.00	5.00	5.80	7.66	2.50	3.75	3.50	4.94	
	32	2.25	3.60	6.33	7.00	8.83	5.57	5.00	4.60	4.71	5.45	
	33	21.00	5.00	14.50	15.00	10.66	16.00	12.75	12.40	13.40	13.25	
Black-billed Cuckoo	19				.25			.11	.33	.15	.10	
	31							1.00	.75	.17	.17	
	32	.25	.20	.16	1.00	1.33	3.00		.40	.14	.78	
	33								.40		.07	
Roadrunner	19	.16							.08	.07	.04	
Great-horned Owl	19		.40	.20			.16		.08	.07	.09	
	31					.40	.66			.15	.15	
	32	.75	.20	.83	.80	.66	2.28	.50	1.20	.43	.88	
	33			1.50				.50	.60	1.20	.50	
Barred Owl	05					.50					.05	
	19		.40							.15	.15	
	31					.20		.22	.16	.31	.02	
	32			.33							.03	
Chuck-Will's-Widow	19	.66	2.00	1.20	1.00	2.00	.50	2.11	1.42	2.15	1.54	
	31	.60	.66		.50	1.20	.33	.50	.25	.83	.56	
	33					.33		.25	.60	2.00	.53	
Whip-Poor-Will	19	1.33	1.80	3.60	6.00	2.75	2.00	4.00	1.16	3.46	2.76	
	31	.80	.33	.50		1.60	.66	.50	1.00	1.16	.82	
	32			2.00	3.50		.33	2.00	.80	1.60	1.14	
	33											

→ → →

Table 1 - Birds per route, continued

Species	Stratum	Years										Average
		67	68	69	70	71	72	73	74	75		
Common Nighthawk	05	1.00	2.50	.50	1.50	1.50	2.00	1.50	2.50	1.50	1.61	
	19						.16	.33		.15	.09	
	31				.50	.20	.16		.25		.10	
	33		.50	.50				.20	.40		.17	
Chimney Swift	05	30.00	16.00	26.00	17.50	24.00	14.50	11.50	19.00	7.50	18.44	
	19										5.15	
	31										15.71	
	33										10.25	
											9.10	
Ruby-throated Hummingbird	05		.50	.50	.50	.50	1.00				.33	
	19	.33	.20	.40	.75	.25	.16		.44	.66	.42	
	31	.20	.33	.75	.50						.33	
	33	1.00		.50		.16	.14	1.33		.60	.40	
											.42	
Belted Kingfisher	05				.50						.11	
	19	.50	1.20	1.20	.50	1.25	.16	.44	.50	.31	.57	
	31					.20	.16				.05	
	33	.75		.33			.42		.20		.17	
			1.00	.50	.33	.33	.75		.20	.20	.32	
Common Flicker	05	1.00		1.00	1.50	.50		1.50	.50	.50	.72	
	19	.33	3.60	2.20	2.25	4.00	3.66	3.33	2.33	3.15	2.76	
	31	5.20	4.00	2.75	3.50	5.60	5.33	4.75	1.50	7.00	4.69	
	33	5.50	8.00	6.00	6.00	6.66	6.00	2.16	4.40	6.43	5.68	
			.50	1.00	1.00	1.66	2.25	1.00	1.00	1.00	1.07	
Pileated Woodpecker	05	.50						.50			.11	
	19	1.66	2.60	.80	1.75	4.00	3.16	2.11	2.33	1.85	2.18	
	31		.66	.75	.50	.40	.16	.75	.25	.33	.38	
	33						.33	1.00	.20		.21	
Red-bellied Woodpecker	05	9.00	4.50	9.00	5.50	5.00	2.50	4.50	4.00	7.00	5.66	
	19	2.66	6.80	9.60	9.25	5.00	5.16	11.55	10.25	10.08	8.50	
	31	7.80	7.00	6.75	9.50	6.00	5.00	13.00	11.75	7.66	7.97	
	33	3.00	3.00	3.00	5.40	3.66	3.86	1.66	6.00	7.43	4.17	
		9.50	4.50	12.50	6.50	2.33	7.00	9.50	6.80	9.20	7.57	
Red-headed Woodpecker	05	1.00	2.50	2.00	4.00	3.50	.50	.50	3.50	.50	2.00	
	19	1.83	1.00	2.40	.75	1.50	.83	2.55	2.33	1.77	1.81	
	31	7.60	7.66	6.75	3.50	15.20	11.16	11.25	7.75	16.00	10.51	
	33	11.50	18.00	10.66	9.00	15.16	11.86	8.33	9.20	15.57	12.23	
		6.00	3.50	1.50	.50	3.33	3.33	4.50	3.00	6.80	3.92	
Hairy Woodpecker	19		.20	.40	.50	.25	.16	.11	.08	.15	.17	
	31	.40	.33			.60	.16	.75	.25	.33	.33	
	32	.75	.60	.33	1.00	1.16	.86	.33	.60	.57	.68	
	33	.50	1.00	1.00	.50			.50	.20	.40	.39	
Downy Woodpecker	05	.50	.50	1.50	.50	2.00	1.00	1.50	1.00	.50	1.00	
	19	1.33	2.00	1.60	.25	1.00	1.16	.55	1.66	1.15	1.21	
	31	.40	1.33	1.50	2.00	2.00	1.33	1.25	1.50	1.83	1.43	
	33	4.75	3.20	1.16	3.66	4.50	3.43	1.66	2.00	2.57	2.92	
		.50	1.00	.50	.33	2.33	.50	1.00	1.20	.89		
Eastern Kingbird	05	3.50	1.50	2.50	3.00	1.50	2.00	1.00	1.00	.50	1.83	
	19	7.00	9.20	8.80	10.00	6.50	6.66	8.11	5.08	8.08	7.45	
	31	10.00	6.00	6.00	1.50	6.20	6.83	8.75	6.75	4.16	6.51	
	33	12.50	10.20	12.16	15.20	9.83	8.28	9.66	8.00	10.28	10.52	
		13.50	8.50	6.50	5.00	6.33	9.66	7.75	7.80	12.20	8.78	
Western Kingbird	32		1.40			.16					.15	
	33						.33				.03	
Scissor-tailed Flycatcher	19	.66					1.00	.33		.23	.25	
	33	1.50				.33	.66		.60	2.60	.78	
Great-crested Flycatcher	05	1.00	2.00	2.00	2.00	2.00	.50	3.00	2.00	1.00	1.72	
	19	3.16	11.60	8.80	7.75	4.25	2.16	4.44	4.33	4.31	5.15	
	31	1.60	1.33	4.25	3.00	5.20	2.16	2.00	4.00	3.33	3.02	
	33	1.50	7.20	4.00	7.40	7.83	6.28	3.33	3.80	6.28	5.43	
		.50	.50	2.00	1.66	4.00	4.00	4.40	5.80	3.21		

→ → →

Table 1 - Birds per route, continued

Species	Sta- tum	Years										Average			
		67	68	69	70	71	72	73	74	75					
Eastern Phoebe	05	1.00	1.00	.50	.50										
	19	3.16	3.00	3.20	2.75	1.25	1.16	1.11	3.08	2.61	2.47				
	31	1.40	2.66	1.00	1.00	2.40	2.50	.50	3.75	1.66	1.71				
	32	1.50	2.60	2.66	1.60	1.83	4.43	1.00	2.20	.86	2.11				
	33	1.00	.50	1.00	1.00	.33	1.66	2.25	1.60	1.20	1.28				
Acadian Flycatcher	05			1.00	1.00	.50		1.00							.44
	19		.20	.40		.50	.16		.16	.08					.14
	31					.40									.05
	32				.20				.20	.14					.05
	33							.33	1.25	.40	.20				.32
Traill's Flycatcher	19			.20							.25				.06
	31							.16							.02
	32	.25			.20				.16	.20					.07
	33		.50												.03
Least Flycatcher	19		.60												.04
	33		.50	.50											.07
Eastern Wood Pewee	05	1.00	3.00	4.00	4.00	1.00	2.00	1.50	1.50	11.00					2.11
	19	6.83	8.80	9.80	9.50	7.00	1.83	3.89	6.50	5.31	6.14				
	31	2.60	2.33	1.75	3.50	2.80	2.66	2.00	.50	3.50	2.43				
	32	3.25	4.20	4.16	6.40	6.33	1.28	3.83	2.60	2.86	3.80				
	33	3.50	3.00	4.00	5.00	6.66	6.66	3.25	3.80	8.00	5.25				
Horned Lark	05	8.00	10.00	17.00	9.00	17.50	10.50	18.50	26.00	2.00	13.16				
	19	.50	1.20	2.40	1.25	3.25	.16	.11	.50	.46	.62				
	31	6.80	6.66	14.00	15.00	22.20	20.83	4.00	6.00	15.66	13.07				
	32	10.25	11.80	7.83	15.60	7.50	10.66	16.33	19.20	8.57	11.76				
	33	1.50	1.50	3.50	1.50	1.33	2.66	8.00	4.80	8.40	4.50				
Tree Swallow	05								3.00	.50					.38
	19									.08					.01
	31	1.80						.33							.43
	33			1.50		1.33									.25
Bank Swallow	19									1.31					.26
	31							.50							.07
	32				1.20	.33	.14			.28					.21
Rough-winged Swallow	05			1.50										31.00	3.61
	19	1.66	.60	.60		.25	1.66	1.55	.42	1.00				.92	
	31				.50	1.00	1.00	.25		.83				.46	
	32	1.25	1.20	1.00	5.20	.33	1.14	2.33	.40	1.28	1.52				
	33	.50		2.00	.50	.33	.66	.50		.80	.53				
Barn Swallow	05	46.00	34.50	38.50	40.50	17.50	36.00	25.00	42.50	32.00	34.72				
	19	18.00	37.40	15.00	18.50	22.25	11.83	19.00	16.50	21.54	18.73				
	31	34.40	33.00	29.75	57.00	33.00	32.33	27.00	44.75	32.83	34.53				
	32	31.00	33.20	26.50	46.60	40.00	31.00	29.50	40.60	32.14	34.19				
	33	28.00	23.00	19.00	10.50	33.33	31.00	23.00	23.60	32.40	25.92				
Cliff Swallow	32				.20				.20	.14					.05
	33					2.00									.21
Purple Martin	05	2.00	12.00	4.50	4.50	8.00	7.00	4.00	8.00	5.00	6.66				
	19	1.16	2.00	7.40	1.00	1.75	1.50	2.66	7.42	7.31	4.40				
	31	14.00	5.66	4.00	8.50	3.20	11.00	4.25	13.50	2.66	7.41				
	32	3.25	1.80	1.00	3.40	1.50	.71	1.00	1.40	1.28	1.58				
	33	1.50		.50	2.00	1.00		4.25	4.00	5.80	2.75				
Blue Jay	05	8.50	6.50	10.00	8.00	7.00	6.00	8.00	8.50	5.50	7.55				
	19	10.33	18.00	17.40	18.75	15.00	26.33	23.33	21.33	18.23	19.29				
	31	22.40	16.66	13.00	23.50	16.00	16.00	22.00	13.75	14.66	17.12				
	32	26.25	18.00	14.83	17.60	18.50	12.86	8.00	13.00	14.43	15.43				
	33	20.00	16.00	18.50	7.00	8.00	16.66	14.00	9.80	14.20	13.32				
Common Crow	05	25.50	23.00	8.00	16.50	5.50	17.00	13.50	20.50	14.00	15.94				
	19	20.66	43.60	51.20	46.75	42.25	22.00	38.44	33.16	31.92	35.07				
	31	20.00	18.66	13.25	24.00	21.60	17.33	17.75	19.50	9.50	17.30				
	32	22.75	10.80	8.00	17.40	10.16	8.86	7.16	11.00	8.43	10.96				
	33	20.50	15.00	27.50	22.00	10.00	17.00	13.75	21.60	32.20	20.53				
Fish Crow	05		.50		.50					1.00					.22

Table 1 - Birds per route, continued

Species	Stratum	Years										Average
		67	68	69	70	71	72	73	74	75		
Black-capped Chickadee	19										.15	.03
	31	4.40	3.33	2.00	3.50	2.40	.83	1.00	2.75	2.00	2.33	
	32	3.75	3.40	2.33	5.40	12.66	4.85	2.16	4.00	5.86	5.03	
	33	.50		1.50			3.00	.25		.80	.64	
Carolina Chickadee	05	1.00	.50	1.50	1.50	1.00	1.50	2.00	2.00	1.00	1.33	
	19	4.50	5.80	1.20	3.00	6.75	2.66	2.44	2.41	4.15	3.46	
	31	1.00	5.00	1.50	3.50		1.00		.20	1.60	1.21	
	33											
Tufted Titmouse	05	8.50	5.50	8.00	7.50	6.00	4.00	6.00	6.00	4.50	6.22	
	19	14.00	22.40	18.80	16.75	13.75	9.16	23.44	19.33	16.15	17.50	
	31	8.40	9.66	7.75	16.00	8.20	9.50	14.75	14.25	9.50	10.38	
	32	1.25	5.80	5.50	5.40	6.83	4.85	5.00	7.00	7.00	5.54	
	33	6.00	10.00	7.50	7.50	1.66	6.0	7.50	4.80	6.20	6.07	
White-breasted Nuthatch	05			.50			.50		1.00		.22	
	19	2.83	3.40	2.80	2.00	5.75	1.66	3.22	3.25	2.15	2.89	
	31	1.20	1.66	.75	3.00	2.40	1.16	1.50	3.00	.50	1.53	
	32	.75	1.00	.66	2.20	1.66	.86	.66	1.00	.43	1.00	
	33	.50	1.00		.50		1.33	.50	1.00	.60	.64	
House Wren	05	1.50	1.00	.50	1.50	2.50	2.00	2.00	2.50	1.50	1.66	
	19	4.00	4.00	.25	.25	.16	.22	.08	.31	.17		
	31	5.00	7.00	4.25	9.50	10.60	9.66	6.25	9.75	9.16	8.00	
	32	6.00	15.00	9.83	14.80	17.50	19.00	9.83	11.40	14.57	13.49	
	33		.50			.33	1.00	1.20	1.40	.40	.67	
Bevick's Wren	19	2.16	5.00	6.80	5.00	3.75	.83	1.22	.92	1.85	2.64	
	31	.80	.66	.50	.50		.50	.75		.33	.43	
	32	1.00									.07	
	33			2.50	2.50	2.00	.33	.75	.80	.40	.92	
Carolina Wren	05	6.00	7.00	8.00	3.00	2.50	3.50	2.50	6.00	4.00	4.94	
	19	4.50	6.20	7.60	1.00	4.50	4.33	2.11	3.42	4.00	4.00	
	31	1.40	2.00	2.50	5.00	2.40	4.33	1.25	1.75	2.16	2.46	
	32		1.80	.16		.33	.71	1.66	1.20	.57	.72	
	33	1.00	.50	1.50	1.00	1.66	5.33	.50	.40	1.80	1.50	
Short-billed Marsh Wren	05									.50	.05	
	32	4.25	1.00	.66	.20	.16		.16	.20	.51	.66	
	33							.50	.20		.10	
Mockingbird	05	20.00	21.50	22.00	21.50	20.00	18.00	26.50	16.00	16.00	20.16	
	19	11.50	19.40	14.40	21.25	16.25	17.66	18.33	17.42	13.77	16.35	
	31	13.60	11.66	9.25	16.00	13.60	18.16	9.00	13.00	10.83	12.87	
	32	7.25	5.00	4.16	3.20	5.83	10.43	4.83	3.80	2.71	5.29	
	33	16.50	17.50	27.00	26.50	20.66	27.66	26.50	27.00	28.40	25.10	
Catbird	05			.50			.50	1.50		.50	.33	
	19	1.00	2.80	1.60	2.00	1.25	1.00	1.88	1.33	1.69	1.59	
	31	3.60	2.33	1.50	.50	2.60	4.00	2.00	4.75	3.33	2.97	
	32	7.50	7.00	4.65	4.40	7.16	5.86	1.66	7.20	5.57	5.56	
	33	1.00	2.50	3.50	1.33	.66	1.75	1.40	3.00		1.75	
Brown Thrasher	05	1.50	4.50	1.50	2.50	1.50	2.50	2.50	2.00	4.00	2.50	
	19	4.50	9.80	6.80	9.00	8.00	3.33	4.55	5.75	4.61	5.75	
	31	10.80	5.33	5.25	6.00	7.20	5.50	7.25	7.75	9.83	7.46	
	32	12.25	14.40	13.50	14.40	14.66	12.43	10.83	9.40	17.00	13.33	
	33	9.50	16.00	8.50	9.00	6.66	6.33	4.50	9.40	8.80	8.35	
American Robin	05	14.50	8.50	13.50	20.00	17.00	10.00	15.50	12.50	21.00	14.72	
	19	11.50	10.40	14.40	12.75	10.00	9.50	16.78	14.08	16.84	13.75	
	31	19.00	24.66	36.25	28.50	27.00	30.83	30.50	32.25	25.83	28.12	
	32	19.00	31.40	34.66	34.80	39.00	36.14	32.66	40.60	31.14	33.70	
	33	11.00	13.00	24.50	16.00	26.33	16.33	25.75	18.00	26.20	20.75	
Wood Thrush	05	3.50	2.00	5.00	2.00	3.50	5.00	3.50	3.50	3.50	3.50	
	19	1.66	3.20	4.40	5.75	1.25	2.16	3.00	1.00	2.08	2.42	
	31	2.40	2.33	2.25	1.50	.60	.33	1.00	1.25	.66	1.25	
	32		.60	.16	.40	1.00	.14	1.33	1.60	.71	.66	
	33		1.00				.33	.25	.80	.40	.35	
Eastern Bluebird	05	5.00		1.00	1.00		.50	1.50	.50		1.05	
	19	6.83	16.40	12.00	9.00	9.00	13.66	11.44	5.58	6.69	9.28	
	31	4.20	13.33	7.25	7.00	8.60	7.00	4.00	8.00	3.83	6.66	
	32	4.25	6.00	5.50	8.40	4.50	6.43	2.50	2.60	3.43	4.82	
	33	5.00	11.50	3.50	6.00	6.00	15.66	6.00	3.40	5.60	6.64	
Blue-gray Gnatcatcher	05	1.00	1.50	2.00	.50	1.50	1.00	.50			.88	
	19	2.83	9.00	6.20	3.60	11.00	.83	3.33	2.50	2.69	3.89	
	31	.20		.50	.50	.20				.16	.15	
	32				.60	.16	.14	.33	.40	1.86	.43	
	33				.50	.33	.66	2.00	1.20	5.60	1.64	
Cedar Waxwing	33								.40	.07		

Table 1 - Birds per route, continued

Species	Sta- tum	Years										Average
		67	68	69	70	71	72	73	74	75		
Loggerhead Shrike	05	8.50	1.00	4.00	3.00	5.00	4.00	1.00	1.50			3.11
	19	3.16	3.00	4.00	.75	7.50	2.66	1.33	2.42	2.00		2.65
	31	.40	1.66	.50	.50		.66	1.00	.25	.83		.61
	32	4.23	5.60	5.33	3.80	2.66	3.16	3.66	2.60	1.85		3.56
	33	5.00	7.00	9.00	1.00	2.66	4.33	1.25	4.00	1.40		3.46
Starling	05	107.00	92.50	135.50	111.00	122.50	286.00	50.50	67.50	50.50		113.66
	19	23.00	18.60	19.00	13.25	22.00	74.83	16.00	15.83	14.38		22.45
	31	30.60	59.33	37.75	56.00	43.40	55.00	39.00	95.25	42.16		49.51
	32	64.50	28.00	40.16	25.20	29.00	18.00	32.50	22.20	21.71		29.86
	33	26.00	22.50	40.00	13.50	16.66	37.00	26.50	22.80	22.60		24.92
White-eyed Vireo	05		1.50	1.00	1.50	3.50	1.00		1.50	.50		1.16
	19	2.66	9.00	5.80	5.25	3.50	2.00	3.22	2.92	2.38		3.62
	31	.20				.20		.25	.75			.12
	32	.25			.20	.16			.20			.07
	33	.50					.66	.50		.20		.21
Bells' Vireo	05	.50										.05
	19				.25	.50	.16			.08		.07
	31	.20				1.40						.20
	32	.50	2.60	.66	.20	.50	.57	1.66	1.80	1.57		1.11
	33			.50	1.00	.66	1.66	3.75	3.20	5.40		2.42
Yellow-throated Vireo	19	1.16	2.00	1.00	.75	1.00	.16	.33				.56
	31	.40				.40						.10
	32	.50	.80	.16	.20		.71	.16				.28
	33											.03
Red-eyed Vireo	05	2.50	3.00	1.00	4.00	1.50	1.50	2.50	2.50	2.00		2.27
	19	4.50	9.40	7.00	15.25	11.75	6.83	10.11	7.42	4.38		7.73
	31	.20		.75	1.00	.60	1.33	.50	.75	1.00		.71
	32	.50	.20	.16	.80	.66	.57	.16	1.20	.43		.50
	33	.50	.50			.66	.25	.20	1.00		.35	
Warbling Vireo	05	2.50	2.50	5.50	3.50	2.50	.50	4.00	.50			2.38
	19	.66	.60		.75	1.00	.66	.11	.08			.31
	31	.60	2.00	.50	.50	1.40	1.66		.25	1.33		.97
	32	3.25	3.20	2.83	2.80	4.83	1.43	2.33	1.60	2.43		2.70
	33	1.50	1.00	.50				.25				.25
Black & White Warbler	19		.20					.44	.08			.10
	31											.16
	33							.25	.20			.02
Prothonotary Warbler	05	.50	1.00	.50	.50	1.00	.50	2.00	2.00	1.00		1.00
	19		.20									.01
	33						.33	.50		.20		.16
Worm-eating Warbler	19							.22	.08			.04
Blue-winged Warbler	19	.16	1.60	.60		1.00		.66	.42	.31		.46
	31							.25				.02
	32						.86					.11
	33									.40		.07
Parula Warbler	19	.16	3.80	2.40		3.25	1.66	2.66	1.33	1.23		1.73
	31	.20		.25	.50	.20	.33	.25	.25	.66		.30
	32	.50	.20	.16		.66		.33	.20	.71		.31
	33			.50		.66	1.00	1.00	.60	1.80		.78
Yellow-Warbler	05			1.50	.50	.50		.50				.33
	19	.16	.40	.20		.25			.08			.09
	32		2.00	.16	.60	.66		.50	.80	.86		.60
	33					.33	.33			.60		.17
Corulean Warbler	19								.08	.07		.03
Yellow-throated Warbler	19	.16	.80		.50			.33	.33	.23		.26
	32									.28		.03
Pine Warbler	19	.16		.40				.66	.83	.54		.40
Prairie Warbler	19	1.33	.60	.80	.50	1.00	1.66	1.66	.58	.54		.93
	31				.50		.16	.25				.07
	33							.25	.20	.60		.17
Ovenbird	19	.16	.20	.20	1.00	.50		1.00	.66	.23		.45
	31									.16		.02
	32		.20		.20							.03
Louisiana Waterthrush	19		1.20					.16	.44			.18
	31								.25			.02
	32									.20		.01

Table 1 - Birds per route, continued

Species	Stratum	Years										Average
		67	68	69	70	71	72	73	74	75		
Kentucky Warbler	05			.50					.50	.50	1.00	.27
	19	.50	1.60	.40	1.50	.25		.33	.66		.38	.56
	31	1.00	.33	.25	.50	.40	.33				.16	.35
	32		.20		.20	.66	.14	.50				.21
Yellowthroat	05	15.50	16.50	24.00	20.50	14.50	14.50	21.50	10.50	9.50	14.72	
	19	1.66	3.80	3.40	.75	3.00	2.83	3.00	2.66	2.84	2.71	
	31	4.60	7.33	7.50	10.50	17.60	12.16	13.25	17.75	17.00	12.38	
	32	11.75	12.80	12.33	15.20	12.16	13.86	14.16	24.60	20.14	15.29	
Yellow-breasted Chat	05	7.00	6.50	10.00	4.00	4.00	5.00	5.50	3.50	3.00	5.38	
	19	10.00	13.80	16.00	19.00	17.75	10.33	13.22	11.75	10.31	12.68	
	31	1.60	4.66	2.75	2.50	1.00	2.83	1.75	2.75	1.33	2.20	
	32	1.25	.80	1.00	1.60	.16	.14	.33	.80	.71	.79	
Hooded Warbler	05											
	19					.25						.01
	31		.33						.50			.05
	32	.75			.40	.33	.28	.33	.20	.28		.27
House Sparrow	05	172.00	193.00	170.00	204.00	137.00	179.00	118.50	181.00	107.50	162.44	
	19	68.66	51.00	30.40	36.25	36.25	55.16	27.55	34.66	35.15	40.01	
	31	109.80	89.33	87.50	105.50	113.20	199.16	92.25	151.25	118.16	123.64	
	32	229.25	112.60	96.50	148.80	121.16	155.00	149.66	214.40	141.71	147.86	
Bobolink	05											
	19						.33			.33	.10	
	31	.25	.60	1.33	1.00	1.00	3.86	1.16	1.80	1.86	1.54	
	32											
Eastern Meadowlark	05	48.00	45.00	55.00	36.00	39.50	47.00	29.00	42.50	28.50	41.16	
	19	19.83	33.00	40.60	29.50	43.00	47.33	51.22	45.00	51.46	42.67	
	31	89.80	45.66	59.00	57.50	95.20	81.66	83.50	71.75	69.66	72.87	
	32	64.00	54.00	58.33	84.80	76.00	101.57	84.33	68.20	54.00	72.39	
Western Meadowlark	05											
	19	.40				.20	.16				.10	
	31	11.50	16.80	20.50	18.40	19.66	5.00	34.33	10.80	18.00	17.33	
	32								.20		.03	
Yellow-headed Blackbird	05											
	19								.40		.03	
	31											
	32											
Red-winged Blackbird	05	170.00	216.00	214.50	235.50	233.00	234.50	249.00	219.00	209.00	220.05	
	19	23.66	19.60	22.20	23.25	24.25	22.83	36.66	29.75	35.92	28.62	
	31	98.00	46.33	100.75	85.00	146.00	112.66	158.50	159.25	165.83	124.97	
	32	124.75	91.60	83.33	123.60	106.83	132.14	143.66	162.00	113.00	119.68	
Orchard Oriole	05	3.00	2.50	.50	3.50	4.00	2.00	3.50	3.00	.50	2.50	
	19	3.83	6.40	5.20	5.75	4.00	1.00	2.00	3.42	2.69	3.43	
	31	1.60	2.66	2.50	1.00	.60	1.33	.25	1.00	1.00	1.28	
	32	1.25	7.20	4.16	3.00	1.33	1.86	2.83	4.00	4.28	3.31	
Northern Oriole	05	.50	.50	2.50	1.50	2.00	3.33	2.25	4.40	4.40	2.82	
	19	1.00	.50	2.50	2.00	2.00	.50	1.00	3.50	1.50	1.61	
	31	.16	.20				.33	.11	.50	.31	.23	
	32	2.60	2.33	1.25	1.00	4.00	1.16	.75	1.25	1.66	1.84	
Common Grackle	05	4.75	6.20	6.50	5.60	6.00	6.57	9.33	5.20	9.28	6.78	
	19	1.00	6.00	2.50	3.00	1.33	.66	2.50		.80	1.60	
	31											
	32											
Brown-headed Cowbird	05	144.00	175.50	213.50	189.50	197.50	143.00	208.00	114.00	169.77		
	19	21.33	32.60	32.80	37.00	38.00	107.33	50.77	44.66	48.61	47.25	
	31	83.20	88.33	94.75	98.50	87.80	63.83	70.00	99.75	59.16	79.62	
	32	88.00	53.00	62.00	76.00	77.50	50.28	61.16	69.00	47.86	63.39	
Scarlet Tanager	05	30.00	40.00	61.00	24.00	64.66	72.33	53.00	68.60	51.60	54.78	
	19	17.00	16.50	11.00	7.00	10.00	8.00	8.50	10.00	2.00	10.00	
	31	13.33	17.20	18.20	19.50	19.25	16.83	21.33	18.25	18.23	18.14	
	32	17.80	13.33	14.50	15.00	13.60	16.66	23.25	24.50	17.16	17.41	
Scarlet Tanager	05	18.00	20.20	22.33	36.80	28.00	33.51	30.83	29.20	29.43	28.05	
	19	25.50	26.50	20.50	13.50	11.66	25.66	15.50	16.00	25.80	19.82	
	31											
	32											
Scarlet Tanager	05											
	19	.33	1.20	.60		.25		.50	.50		.11	
	31							.11	.08	.15	.25	
	32					.33	.14	.33		.33	.05	
Scarlet Tanager	05											
	19											
	31											
	32									.40	.07	

Table 1 - Birds per route, continued

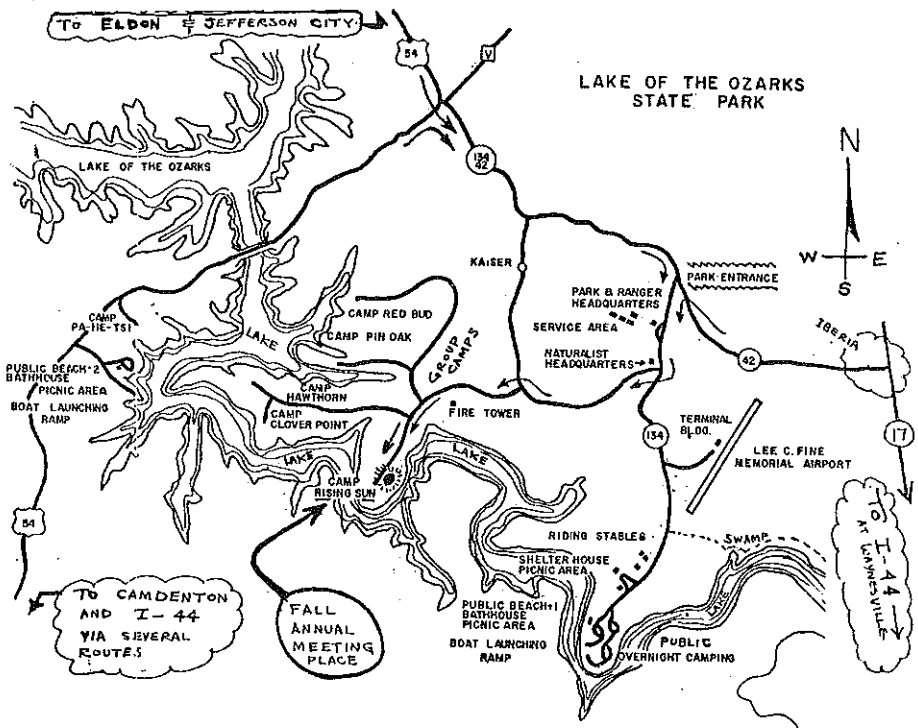
Species	Sta- tum	Years									Average		
		67	68	69	70	71	72	73	74	75			
Summer Tanager	05	.50	1.00	.50			.50	.50					.33
	19	3.00	10.20	9.40	6.50	7.75	3.33	4.53	6.25	6.00			6.04
	31	.20	1.33	1.25	2.50	1.00	1.00	.25	.25	1.15			.89
	32		.60	.50	.60	.33	.57	.40	.40	.71			.43
33		2.00		.50	.50	.66	1.66	1.50	1.00	2.60			1.28
Cardinal	05	35.00	33.50	39.00	44.50	30.00	31.50	35.50	31.00	32.50			34.72
	19	22.00	25.00	25.00	31.50	23.50	21.83	26.55	21.66	27.38			24.81
	31	44.80	43.33	30.50	40.50	37.80	26.00	25.75	26.75	26.66			32.61
	32	28.00	31.00	32.83	39.40	42.50	25.14	29.50	39.80	32.86			33.29
	33	26.90	30.50	19.50	22.00	16.66	34.00	19.75	28.80	38.60			27.28
Rose-breasted Grosbeak	19		.20					.33		.15			.09
	31	.20		.75		.80	.66	.75	.75	1.16			.64
	32	2.25	2.40	3.33	4.00	4.66	2.86	5.50	3.20	7.86			4.17
	33		1.00	.50				.25					.14
Blue Grosbeak	19	5.33	9.80	7.80	10.75	5.00	5.33	4.44	4.92	4.00			5.71
	31	.40	.66	.25	1.50	1.60	1.33	2.25	1.50	1.93			1.28
	32	.25	.20	.66	1.40	.33	1.86	.66	1.00	1.57			.96
	33	5.00	2.00	3.50	4.00	3.00	4.33	3.50	4.00	8.00			4.46
Indigo Bunting	05	17.00	23.00	26.50	26.00	25.50	23.50	33.00	23.50	21.00			26.33
	19	20.16	29.60	28.60	31.50	29.25	26.66	24.11	27.58	30.00			27.39
	31	20.60	22.33	17.75	28.50	28.20	23.33	21.00	30.75	21.16			23.41
	32	10.25	11.00	13.16	13.80	20.16	22.57	19.83	21.60	24.28			19.01
33	14.00	9.00	13.00	11.50	13.66	15.00	11.75	12.00	21.80			14.17	
Dickcissel	05	37.00	30.00	37.00	48.00	38.00	17.00	29.00	14.00	8.50			28.72
	19	10.66	8.60	5.40	15.50	18.00	5.50	13.00	11.83	8.54			10.48
	31	63.80	30.66	42.50	31.50	52.80	49.50	42.50	47.00	41.16			46.41
	32	68.50	65.80	85.66	109.20	121.16	146.71	177.83	95.60	94.86			110.31
	33	32.00	19.00	31.50	48.00	50.33	92.66	81.75	81.00	128.8			73.78
American Goldfinch	05	1.00	3.00	.50		.50		.50					.61
	19	2.66	3.80	8.00	1.75	1.75	3.16	4.44	3.00	2.85			-3.45
	31	2.60	2.66	5.00	.50	2.80	3.83	3.25	4.25	3.66			3.35
	32	17.75	12.80	12.83	14.80	11.66	10.00	8.50	6.60	8.71			11.19
33	2.50	1.00	8.00	6.50	1.66	3.00	4.25	.20	3.80			3.10	
Rufous-sided Towhee	05	.50	1.00	.50	2.00	.50	1.50	1.50	1.50	.50			1.05
	19	4.00	7.40	11.20	8.75	6.25	2.50	8.88	5.25	7.15			6.68
	31	3.80	6.66	4.25	7.50	2.80	2.33	5.25	5.75	2.00			3.97
	32	1.25	3.20	1.16	4.60	3.83	4.14	2.16	.40	1.43			2.50
33	4.00	4.00	2.50	3.00	4.00	5.33	3.75	1.20	3.60			3.35	
Lark Bunting	32			1.50									.17
Savannah Sparrow	32					.16							.01
Grasshopper Sparrow	05				.50					.50			.11
	19	.16	1.00		.75	2.25	1.00	.33	1.08	1.54			.93
	31	4.00	5.00	2.50	.50	10.00	3.50	9.00	14.00	9.50			6.82
	32	7.75	10.40	8.33	18.40	23.00	25.00	22.83	14.00	15.71			16.76
33		.50	.50	.50	.50	2.33	7.00	7.50	6.80			6.00	
Henslow's Sparrow	33						.33	.50	.40	1.00			.35
Vesper Sparrow	19	.33											.03
32		.20		.60	.33								.11
Lark Sparrow	19	1.83	1.20	1.60	3.50	3.75	.16	1.11	.42	1.00			1.29
	31	1.40	1.66	.25	1.00	.40	1.50	.50		.66			.82
	32	.50	1.20	1.83	3.60	2.16	1.14	.83	.60	1.14			1.45
	33	1.00		.50	.50	.33	1.66	1.50	.60	2.60			1.14
Beckman's Sparrow	19					.25	.16		.16	.23			.10
Chipping Sparrow	05		1.00					.50					.16
	19	5.16	7.80	6.40	5.50	12.00	7.16	4.00	5.83	4.46			5.22
	31	1.80	2.33	1.25	2.50	3.00	1.00	3.50	2.75	1.83			2.12
	32	.25	.20	.16	1.00	.66		.33	.60	.28			.37
33	3.50	1.00		2.50	1.00	3.00	1.50	1.60	1.80			1.6	
Field Sparrow	05	15.00	10.00	9.00	7.50	10.50	8.00	11.30	11.00	3.50			9.50
	19	23.33	31.00	28.80	19.50	24.25	21.00	22.55	18.41	19.38			22.12
	31	22.80	32.00	22.25	24.00	29.80	25.83	21.00	26.00	25.33			25.41
	32	10.75	15.60	13.16	22.20	20.83	16.85	8.66	19.40	15.57			15.92
	33	30.00	16.00	19.00	21.00	16.00	26.66	22.75	18.40	28.60			22.57
Song Sparrow	05	2.50	3.00	.50	1.00	3.50	4.00	6.50	7.00	2.00			3.33
	19	1.50							.16	.15			.20
	31	.20		1.75	1.00	1.80	.66	.75	1.25	.83			.92
	32	2.50		.33	1.20	1.16	.71	2.33	1.20	1.57			1.19
	33		2.00										.14

Table 2 - Generalized location and number of routes run each year in each stratum

No.	Name	Route numbers	Number of routes censused								Total routes run/stratum		
			Year										
			67	68	69	70	71	72	73	74	75		
05	Bootheal	1, 7	2	2	2	2	2	2	2	2	2	18	
19	Ozarks	2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 18, 20, 21	6	5	5	4	4	6	9	12	13	64	
31	East Central	17, 19, 25, 26, 27, 28	5	3	4	2	5	6	4	4	6	39	
32	North	29, 30, 31, 32, 33, 34, 35, 36, 37	4	5	6	5	6	7	6	5	7	51	
33	Western Prairie	14, 15, 16, 22, 23, 24	2	2	2	2	3	3	4	5	5	28	
<b>Total Routes Run/Year</b>			<b>19</b>	<b>17</b>	<b>19</b>	<b>15</b>	<b>20</b>	<b>24</b>	<b>25</b>	<b>28</b>	<b>33</b>		

☒ ☒ ☒

COME TO THE ANNUAL FALL CONFERENCE. USE THIS MAP.







# Notes and Feathers

that fall on the editor's desk



THERE IS A TOUCH OF FALL IN THE AIR which adds to our excitement about the Annual Fall Conference. The program sounds great. We've had a preview of Jim Jackson's slide presentation on "The Forest Floor" in his recently published article by that name in the American Forests magazine. It will certainly be in keeping with the focus on forests which will highlight the afternoon and evening sessions.

There is important business to be taken care of, too: election of officers and a proposed change in our by-laws which may affect the future of our Society.

And then, of course there will be the fun of seeing old friends, making new ones, watching birds, finding flowers, and just plain enjoying an October weekend on the lake. DON'T MISS IT!



Oh, yes. A word from Katherine Wade, our treasurer: "Please, PLEASE, PLEASE, pre-register! We lost money last year because we didn't know how many

FLASH! NEWS ON IDEAL SHOREBIRD HABITAT.

Drought conditions have created about three miles of total shoreline into ideal shorebirding habitat on the western and eastern arms of Horseshoe Lake. This lake is located in Illinois less than 30 minutes from St. Louis. Conditions are better now for shorebirding than at any previous time in the past 30 years, according to local birders. These conditions should be good for the entire fall and next spring unless drastic changes in rainfall patterns occur.

Birders interested should contact Dick Anderson (314) 868-2009 or Paul Bauer (314) 921-3972.

FOR THE NEXT BLUEBIRD.

Do you have a contribution for the December issue of The Bluebird which will commemorate the seventy-fifth anniversary of The Audubon Society of Missouri? If so, please send it to the editor by November 1.

□ □ □

---

## AUDUBON ORGANIZATIONS IN MISSOURI

- # Audubon Club of Springfield . . . . . Springfield
- \* Bootheel Audubon Society . . . . . Kennett
- \*# Burroughs Audubon Society . . . . . Kansas City
- # Cape Girardeau Garden Club . . . . . Cape Girardeau
- \* Chariton Valley Audubon Society. . . . . Kirksville
- \* Columbia Audubon Society . . . . . Columbia
- # Elsberry Garden Club . . . . . Elsberry
- # Farmington Garden Club . . . . . Farmington
- # Fenton Garden Club . . . . . Fenton
- # Hawthorn Garden Club . . . . . Jefferson City
- + Ladue Garden Club . . . . . St. Louis
- # Louisiana Garden Club. . . . . Louisiana
- \* Mosage Audubon Society . . . . Sedalia-Marshall-Warrensburg
- # New-Mac Bird Club . . . . . Neosho
- \* Ozark Gateway Audubon Society . . . . . Joplin
- \* Ozarks Rivers Audubon Society . . . . . Rolla
- \*# River Bluffs Audubon Society . . . . . Jefferson City
- \* River Hills Audubon Society . . . . . Hannibal
- + St. Joseph Audubon Society. . . . . St. Joseph
- \*# St. Louis Audubon Society . . . . . St. Louis
- # Washington Garden Club . . . . . Washington
- # Webster Groves Nature Study Society . . . . . St. Louis

- \* Chapter, National Audubon Society
- + Affiliate, National Audubon Society
- # Affiliate, Audubon Society of Missouri

### SCHEDULE OF MEMBERSHIP DUES

(All dues should be sent with your name, address, zip,  
to Mrs. Katherine Wade, treasurer.)

Regular . . . . .	\$4.00	Contributing . . . . .	\$ 20.00
Family . . . . .	6.00	Benefactor . . . . .	50.00
Student . . . . .	2.00	Patron (Life Member) ..	100.00
Sustaining . . . . .	10.00	*Organization . . . . .	12.00

\* Individual members of affiliate organizations may also affiliate for \$2.00 and thus receive The Bluebird, provided their dues are transmitted to the local treasurer.

The Bluebird is the official publication of The Audubon Society of Missouri. It is published quarterly at St. Louis, Missouri. Articles, essays and stories on all phases of natural history and conservation are welcomed and will be printed within the limits of available space. Copy to be used should reach the editor by February 1, May 1 August 1, or November 1 for inclusion in the next issue.



104

After ten days return to  
THE AUDUBON SOCIETY OF MISSOURI  
c/o Mrs. E. R. Kreige  
6123 Waterman Boulevard  
St. Louis, Missouri 63112

$$\frac{104}{25} = 4.16$$

$$\frac{2}{3} =$$



NON-PROFIT ORGANIZATION  
U. S. POSTAGE

P A I D

St. Louis, MO.  
Permit #1778

Dr. E. E. Rickett  
608 Westmount  
Columbia, Mo.  
65201