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Cooperative Breeding Bird Survey of North America, 1968

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Section of Migratory Non-Game Bird Studies
Bureau of Sport Fisheries and Wildlife
Migratory Bird Populations Station, Laurel, Maryland 20810

COOPERATIVE BREEDING BIRD SURVEY OF NORTH AMERICA, 1968

Purpose: To obtain, by random sampling, an index of abundance of breeding birds. Such a technique is needed in order to provide information on distribution and relative abundance of North American birds, and specifically to measure changes in abundance that result from such factors as changes in land use and widespread applications of pesticides.

Sampling Technique: Each one-degree block of latitude and longitude (about 55 miles wide, east to west, by 70 miles long) will be sampled by one or more random transects or "routes." In most states west of the 100th meridian the sample size has been reduced to one route for each two-degree block. The number of routes per degree block will vary according to the number of qualified observers available, but preferably will remain uniform with a given State. Starting points and compass directions have been determined at random. Each route is covered once each summer by the following standardized procedure: Begin exactly one-half hour before sunrise; make 50 stops one-half mile apart and count all birds heard at each stop or seen within one-fourth mile during a 3-minute watching and listening period. One observer should do all the observing on a given route, but he may have an assistant to help with recording or driving. Unless driving conditions are very poor, most routes can be completed in 4 to 4 1/2 hours.

Time Period: In most States, routes should be run in June. In Canada and bordering States the first week of July is acceptable (except in Ohio, Pa., and southern N. Y.). In California, Arizona, N. Mexico, Texas, and Florida routes may be run as early as the last week in May, at the discretion of the State Coordinator(s). In general, select a date as near as possible to last year's.

Scouting of Routes is strongly recommended. More leisurely trial runs may be made in advance to become familiar with songs and calls and with roads and stopping locations. A single route may be run more than once if the observer wishes to have the practice, but only one coverage of a route should be reported; this must not be the best of several coverages, but the first one made under satisfactory conditions of weather and familiarity with birds along the route.

STRICT ADHERENCE TO RULES IS ESSENTIAL FOR STATISTICAL ANALYSIS OF RESULTS!

DIRECTIONS FOR RUNNING ROUTES

Equipment: Clip board, pencils, forms supplied by the Migratory Bird Populations Station, map, binoculars, watch with second hand (or automatic 3-minute timer), gasoline, thermometer.

Weather: To be comparable, routes must be run under satisfactory weather conditions: good visibility, little or no precipitation, light winds. Occasional light drizzle or a very brief shower may not affect bird activity, but fog, steady drizzle, or prolonged rain should be avoided. Counts preferably should be made on mornings when the wind is less than 8 m.p.h., except in

those prairie States and Provinces where winds normally exceed Beaufort 3.
 (If you can walk faster than the wind is blowing, winds are very satisfactory.)
 Counts should not be taken if the wind exceeds 12 m.p.h.

Weather codes (enter Beaufort Numbers on Summary Sheet)

<u>Beaufort Number</u>	<u>Wind Speed miles per hr.</u>	<u>Indicators of Wind Speed</u>
0	Less than 1	Smoke rises vertically.
1	1 to 3	Wind direction shown by smoke drift.
2	4 to 7	Wind felt on face; leaves rustle.
3	8 to 12	Leaves and small twigs in constant motion; wind extends light flag.
4	13 to 18	Raises dust and loose paper; small branches are moved.
5	19 to 24	Small trees in leaf begin to sway; crested wavelets form on inland waters.

Sky condition (enter these Weather Bureau code numbers on Summary Sheet)

0	Clear or a few clouds.	4	Fog or smoke.
1	Partly cloudy (scattered) or variable sky.	5	Drizzle.
2	Cloudy (broken) or overcast.	8	Shower(s).

Start 30 minutes before official sunrise. Consult newspaper or Weather Bureau for sunrise time. If starting point is more than 25 miles from the city of reference, start 4 minutes earlier for each degree block (55 mi.) east of the city or 4 minutes later for each degree block to the west. Be at the starting position at least 2 minutes before official start, to record weather and speedometer reading.

Look and listen for exactly 3 minutes and record the number of birds of each species seen within 1/4 mile in all directions and all birds of each species heard regardless of distance; limiting distance for birds seen may be judged as half the distance to the next stop.

Drive 0.5 mile to the next stop. If this stop falls in a place where it is dangerous to stop or where local noise is excessive, the stop may be moved as much as 0.1 mile (forward or back). Do not record any bird seen or heard while driving between stops unless it is subsequently heard at the next stop during the prescribed 3-minute period. In case of excessive traffic noise, up to one additional minute (but no more) may be added to a few stops--but not routinely to all stops. It is important to complete the 50 stops on schedule because singing decreases appreciably soon after 9 a.m.

Speedometers vary slightly, so please mark on your map the number and exact position of one or more stops every few miles--whenever there is a convenient landmark. This will enable you or another observer to stop at the same spots in a subsequent year and to make any necessary adjustments in speedometer readings.

Make 50 stops. Each route consists of exactly 50 stops. Allowing 3 minutes for each stop and 2 minutes driving time between stops, approximately 12 stops will be covered per hour and the entire route will take a little over 4 hours.

What Birds to Count: Count all wild birds (including Rock Doves) seen or heard that can be identified to species. Species recorded which are not found on the form should be added at the bottom. Estimates are permissible only in those cases where a flock is too large to count, bird by bird, in the brief time it is seen. Do not use check marks even for abundant species. No one will detect all birds within hearing or seeing distance of his stops. Hundreds of birds will be missed. Observers should not try to estimate birds that are missed or include them on their report forms even if they are known to be present. We wish to have reported only those birds actually seen or heard during the prescribed 3-minute stops.

Record Keeping: Two types of report forms are enclosed. Take both in the field with you. The summary form is for recording weather conditions at the beginning and end of the count and for reporting a summary of observations that should be compiled after the count has been completed. The form with the ten columns after each species is to be used for recording birds in the field. Get familiar with this form so you can locate the species rapidly. Use one sheet for each ten consecutive stops. Number the first and last stop at the top of the columns, and enter the starting and ending time for each page. The additional spaces for time and speedometer reading for intermediate stops on each page of the Field Sheet are provided for the convenience of the observer (and such data may prove to be valuable).

Processing of Results: The five field sheets, one summary sheet, and the route map should be sent to Willet T. Van Velzen, Migratory Bird Populations Station, Laurel, Maryland 20810. The map will be returned the following year with new forms. This office will enter a State code and Route No. (if a new route), will abbreviate the locality and observer's name if they exceed 12 digits each, and will spot-check the lists. Data from the summary sheet will then be punched onto 80-column data cards, one for each species. A machine listing will be mailed to each observer and a State tabulation will be mailed to each coordinator. A summary of all lists will later be sent to each participant. A comparison of 1967 and 1968 counts will be prepared and an analysis of population changes for the entire area covered will be made available. Data on distribution and comparative abundance of individual species will be available to research workers on request.

ALL FORMS MUST BE COMPLETED AND RETURNED BY JULY 31, 1968.

Reporting Results: Immediately after coverage of your route has been successfully completed, please complete and mail the enclosed post card.

If for any reason it should be impossible for you to cover your route during the prescribed period, please contact your Coordinator to see whether arrangements might be made for another observer to run the route, or for you to cover it on a slightly later date.

One set of 5 tally sheets, representing 50 stops, plus one copy of the summary sheet, should be returned as soon as possible after completion of the count. (An extra set of forms is provided for your records.)

Upon completion of the route coverage data should be transferred from the Field Sheet to the Summary Sheet. The species totals for each of the 5 field sheets should be entered under the appropriate page totals column on the Summary Sheet. The sum of these 5 columns is entered in the Total Indiv. column and the number of stops, out of the total of 50, upon which each species was seen is entered in the Stops per Spec. column.

Special attention should be given to double checking the number of species recorded and all species totals listed on the Summary Sheets.

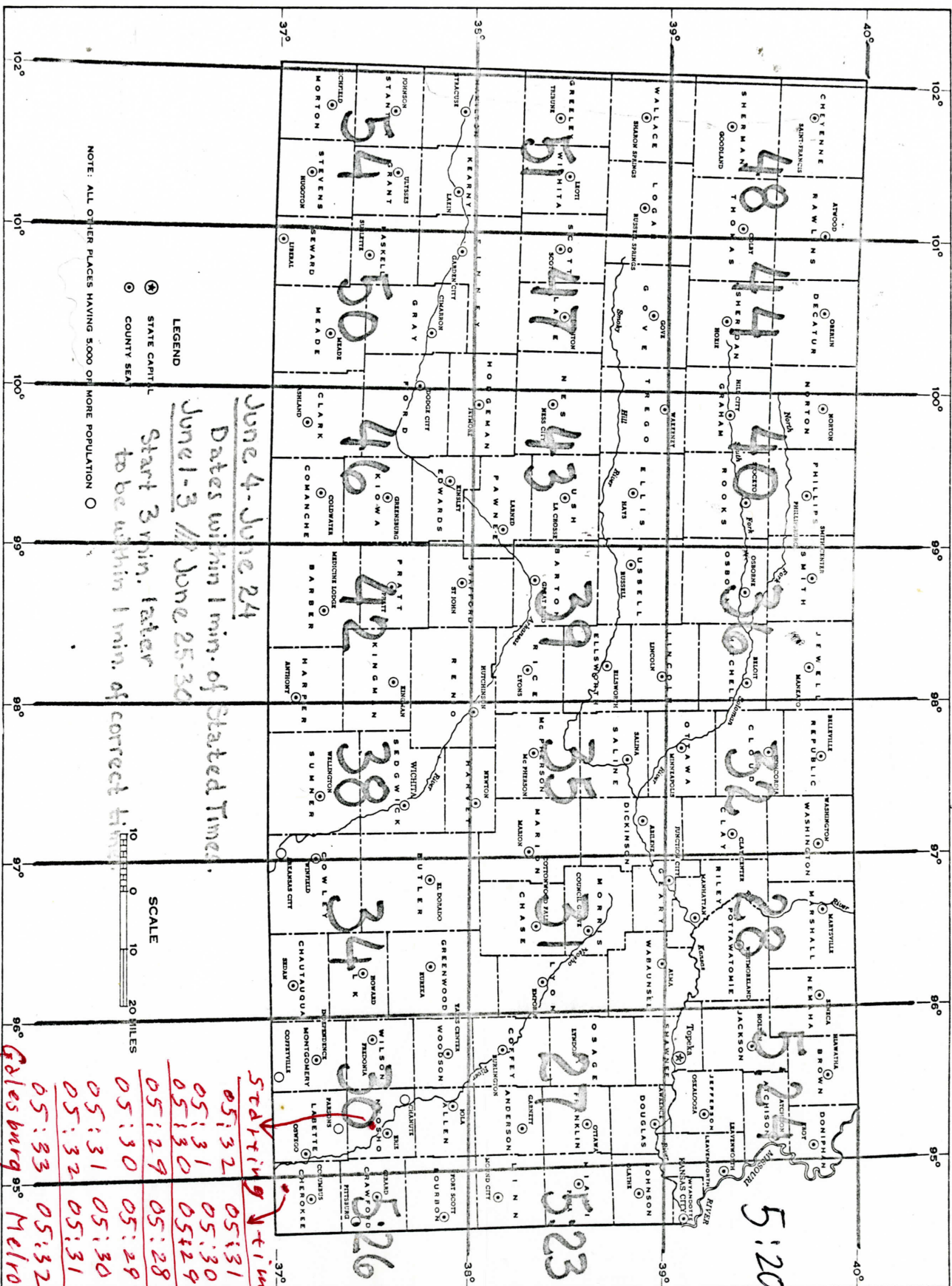
Details of Picking Starting Locations: Starting points of all routes were taken at random (generally from a table of random numbers corresponding to minutes of latitude and longitude). The intersection of latitude and longitude was found on a map and the first stop of the Route is on the road closest to the latitude-longitude intersection--preferably at some easily recognized landmark. The starting direction was determined from the minutes of latitude and longitude as follows: if the latitude and longitude both end in odd numbers, the route proceeds to the north; if latitude is odd and longitude is even the route goes to the east; if latitude is even and longitude odd the route goes south; and if latitude and longitude are both even (that is, both divisible by 2), the route goes west.

Details of Laying Out Routes: Route maps will be provided for each co-operator. Last-minute adjustments will have to be made in some routes because of impassable roads or heavy traffic, so the procedure for laying out routes is given here in detail. It is important that routes sample urban and suburban areas as well as rural and wilderness areas, so routes should not be changed to avoid populated areas or to include favorite birding localities.

Routes will proceed in the specified direction, as closely as possible, unless or until reaching (1) the edge of the one-degree block; (2) a State or Provincial line; or (3) a body of water that cannot be crossed by bridge. Upon (or at the last chance before) reaching such a barrier, turn clockwise and continue. If the route will reach a dead end before the 50th stop, change any or all of it (except the starting point) as necessary to make a continuous route that does not duplicate itself or another route. Maintain the direction as closely as possible to the original direction, or the next direction clockwise, returning to the original direction at the first opportunity. If routes must cross, omit from the second route any stop that falls within one-half mile of any stop on the first route; add the extra stop at the end. If one route must run along a short portion of another route, the first route has priority and the second route should skip the duplicate stops and add them at the end. If possible, avoid Federal numbered highways, Interstate highways, and State numbered highways as well as other roads that are apt to have heavy traffic at the time of day you will be there. If it is necessary to traverse a well-traveled highway for a short distance, and if traffic interferes seriously with observations, make counts at the first two stops on this highway, then proceed without stopping until you can leave the highway (then stop about 1/4 mile after leaving it). Add the extra stops at the end of the route.

STARTING TIMES - DAYLIGHT TIME

All times shown are 1/2 hour before Sunrise



KANSAS

State

Route No.

Route Name

Lat. -Long

Counties (Number of stops in each)

Observer (Last name, then initials)

Mailing Address

Weather (start - finish):Temp.

o- o

Wing Speed, Beaufort

- -

Sky Code

- -

Date

/

/

Total SpeciesName of Assistant, if any

SPECIES	AOU	PAGE TOTALS					TOTAL INDIV	STOPS PER SPEC.	SPECIES	AOU	PAGE TOTALS					TOTAL INDIV	STOPS PER SPEC.
		1	2	3	4	5					1	2	3	4	5		
PIED-BILLED GREBE...	006								WHITE-N. RAVEN.....	487							
GREAT BLUE HERON...	194								COMMON CROW.....	488							
GREEN HERON.....	201								BLK-CAP. CHICKADEE..	735							
BLK-CR.NIGHT HERON..	202								CAROLINA CHICKADEE..	736							
YEL-CR.NIGHT HERON..	203								TUFTED TITMOUSE.....	731							
AM. BITTERN.....	190								WHITE-BR. NUTHATCH..	727							
MALLARD.....	132								HOUSE WREN.....	721							
BLUE-WINGED TEAL...	140								BEMICK'S WREN.....	719							
WOOD DUCK.....	144								CAROLINA WREN.....	718							
RUDDY DUCK.....	167								LONG-B MARSH WREN..	725							
TURKEY VULTURE.....	325								MOCKINGBIRD.....	703							
BLACK VULTURE.....	326								CATBIRD.....	704							
MISSISSIPPI KITE....	329								BROWN THRASHER.....	705							
RED-TAILED HAWK....	337								ROBIN.....	761							
SWAINSON'S HAWK....	342								WOOD THRUSH.....	755							
FERRUGINOUS HAWK...	348								E. BLUEBIRD.....	766							
SPARROW HAWK.....	360								BLUE-GR.GNATCATCHER	751							
MARSH HAWK.....	331								CEDAR WAXWING.....	619							
GR. PRAIRIE CHICKEN	305								LOGGERHEAD SHRIKE..	622							
BOBWITE.....	289								STARLING.....	493							
RING-NECK PHEASANT	3091								WHITE-EYED VIREO...	631							
SNOWY PLOVER.....	278								BELL'S VIREO.....	633							
KILLDEER.....	273								RED-EYED VIREO.....	624							
MOUNTAIN PLOVER....	281								WARBLING VIREO.....	627							
UPLAND PLOVER.....	261								BLK-AND-WHT WARB...	636							
SPOTTED SANDPIPER..	263								PROTHONOTARY WARB..	637							
AVOCET.....	225								PARULA WARBLER.....	648							
WILSON'S PHALAROPE..	224								YELLOW WARBLER.....	652							
FORSTER'S TERN.....	069								PRAIRIE WARBLER....	673							
LEAST TERN.....	074								LA. WATERTHRUSH....	676							
BLACK TERN.....	077								KENTUCKY WARBLER..	677							
ROCK DOVE.....	3131								YELLOWTHROAT.....	681							
MOURNING DOVE.....	316								YELLOW-BR. CHAT....	683							
YEL-BILLED CUCKOO...387									CANADA WARBLER.....	686							
BLK-BILLED CUCKOO...388									AMERICAN REDSTART..	687							
ROADRUNNER.....	385								HOUSE SPARROW.....	6882							
SCREECH OWL.....	373								BOBOLINK.....	494							
GREAT HORNED OWL...375									E. MEADOWLARK.....	501							
BARRED OWL.....	368								W. MEADOWLARK.....	5011							
CHUCK-WILL'S WIDOW..416									YEL-HD.BLACKBIRD...497								
WHIP-POOR-WILL.....417									RED-WING BLACKBD...498								
POOR-WILL.....	418								ORCHARD ORIOLE....506								
COMMON NIGHTHAWK...420									BULLOCK'S ORIOLE...508								
CHIMNEY SWIFT.....423									COMMON GRACKLE...511								
RUBY-T HUMMINGBIRD..428									BROWN-HEAD.COWBIRD495								
BELTED KINGFISHER...390									SUMMER TANAGER....610								
YEL-SHAFT FLICKER..412									CARDINAL.....	593							
RED-BELLIED WOPKR...409									ROSE-BR. GROSBEAK..595								
RED-HD.WOODPECKER..406									BLACK-HD.GROSBEAK..596								
HAIRY WOODPECKER...393									BLUE GROSBEAK.....597								
DOWNY WOODPECKER...394									INDIGO BUNTING....598								
E. KINGBIRD.....	444								LAZULI BUNTING....599								
W. KINGBIRD.....	447								PAINTED BUNTING...601								
SCISSOR-T FLYCATCHR443									DICKCISSEL.....	604							
GT-CREST FLYCATCHER452									PINE SISKIN.....	533							
E. PHOEBE.....	456								AM. GOLDFINCH.....	529							
SAY'S PHOEBE.....	457								RUFOUS-SIDE TOWHEE587								
TRAILL'S FLYCATCHER466									LARK BUNTING.....	605							
E. WOOD PEWEE.....	461								SAVANNAH SPARROW..542								
HORNED LARK.....	474								GRASSHOPPER SPAR..546								
BANK SWALLOW.....	616								HENSLOW'S SPARROW..547								
ROUGH-WING SWALLOW.617									LARK SPARROW.....	552							
BARN SWALLOW.....	613								CASSIN'S SPARROW..578								
CLIFF SWALLOW.....	612								CHIPPING SPARROW..560								
PURPLE MARTIN.....	611								FIELD SPARROW.....	563							
BLUE JAY.....	477								SWAMP SPARROW.....	584							
BLACK-BILLED MAGPIE475									SONG SPARROW.....	581							