

Appendix G

Census Guidelines (DOC)

AVIAN ECOLOGICAL INVESTIGATIONS

DIVISION OF FOREST RESOURCES AND NATURAL HERITAGE

ILLINOIS DEPARTMENT OF CONSERVATION

Breeding Bird Investigations on Illinois Department of Conservation Land-Holdings.

PURPOSE: To obtain, through standardized, systematic sampling, an estimate of abundance and distribution of breeding birds on I.D.O.C. land-holdings. The information obtained will be used to provide appropriate management recommendations in the development of Master Management Plans for those areas.

SAMPLING TECHNIQUE: Even though the actual plan for each I.D.O.C. area will have to be individually prepared, the standard technique will be Spot Censusing along accompanying Transect Routes. Each land-holding will be divided into Transect Sets with up to ten (10) Census Stops (each $\frac{1}{2}$ mile apart and equivalent to one stop for every 160 acres) for each Transect Route. At each Census Stop all birds heard and seen will be recorded for ten (10) minutes; in addition, all birds will be recorded during the $\frac{1}{2}$ mile walk between each Stop. Each Transect Set will be completed four (4) times during the Survey Period. (An additional four (4) days will be used to obtain a qualitative sample of the areas not satisfactorily covered by the Transect Sets.) Habitat identification will be recorded for each Census Stop. Daily field investigations will begin at the starting point of a particular Transect Set by at least sunrise (C.D.T.) and the Transect Route will be completed by 10:00 a.m.

SURVEY PERIOD: Field Investigations will be conducted during May and June 1982--with the greatest concentration of field activity to be completed during late May and early June. If an I.D.O.C. Land-holding has five (5) Transect Sets, a minimum of twenty (20) field census days will be necessary for this portion of the Investigation. Four additional days will be needed for the Qualitative Searches.

STRICT ADHERENCE TO THE FOLLOWING RULES IS ESSENTIAL FOR CONDUCTING THESE INVESTIGATIONS

Requirements: Observers must be familiar with the songs, calls and visual identification of all species likely to be encountered; this is especially important for the discovery and documentation of rare, threatened and endangered species. Since identification by songs and calls is required, acute hearing is extremely important and necessary.

Advance preparations and scouting: Much valuable time can be lost if transect routes are not followable and Census Stops cannot be properly located. Therefore, scouting of all Transect Sets should be completed in advance of the first census of the Set and each Census Stop should be marked (use materials that will endure several years and which can be readily relocated by other investigators) in advance so that the observer will recognize the precise location each time returning to it. The Transect Routes between Census Stops may also need to be marked for convenience.

Materials and Equipment: Field sheets and report forms supplied by the Illinois Department of Conservation, pencils, binoculars, maps, a clip board, a watch with a second hand (or other time piece for recording precise ten (10) minute intervals--such as a stop watch), personal transportation, gasoline, and a thermometer will be needed. (Also, some areas will require a canoe or boat).

Weather: Transect Routes and Census Stops must be completed 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. When wind conditions exceed Beaufort 3, the bird censuses should not be taken.

Wind Speed Codes (enter Beaufort Numbers, not m.p.h., on Data Sheets)

Beaufort Number	Wind Speed miles per hr.	Indicators of Wind Speed
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, small twigs in constant motion; lt. flag extended
4	13 to 18	Raises dust and loose paper; small branches are moved
5	19 to 24	Small trees in leaf sway; crested wavelets on inland waters

Sky Condition Codes (enter these Weather Bureau code numbers on Data Sheets)

- 0 Clear or a few clouds
- 1 Partly cloudy (scattered) or variable sky
- 2 Cloudy (broken) or overcast
- 4 Fog or smoke
- 5 Drizzle
- 7 Snow
- 8 Showers

Starting: The observer should be at the first census spot or walking the first leg of a Transect Route by at least sunrise (C.D.T.); however, initiation of the Route may begin as early as 15 minutes before sunrise (sunrise occurs as early as 5:15 a.m. in some areas). Be at the starting location early enough to record the weather data.

Census Stops will have been clearly marked and numbered (as noted in advance preparations and scouting) in advance of the actual running of each route. Each Stop will be $\frac{1}{2}$ mile from any other Stops. For census purposes though, the observer should attempt to locate and mark Census Stops (whenever possible) so that they do not occur near a dramatic habitat change (edge); individual Census Stops (and markers) may be adjusted up to 300 feet from a designated $\frac{1}{2}$ mile point (these points have been marked on Master Site Maps) in order to comply with the contiguous habitat ideal. Should such adjustments be made, the actual Census Stops (and markers) should also be identified on the maps of the site and written descriptions prepared--so they can be readily relocated in the future.

Counting: One and only one observer should count. If a second person accompanies the observer, talking and other distractions should be minimized--and avoided entirely during the 10-minute census period at each Census Stop. Do not exceed the 10-minute recording period nor stay at a Census Spot less than the 10 minutes. Do not use a tape recorder during the actual surveys.

It is important that each Transect Set be completed as close to 10 a.m. as possible (earlier would be desirable) since bird activity changes drastically by that time. The observer should not prolong the walk between Census Stops.

Which Birds To Count: Count all individual birds (of all species) seen and/or heard during the transects and the 10-minute census periods, regardless of distance. Make a special note (including numbers) when dependent young or downy chicks of

Which Birds To Count (continued):

water or shorebirds and when migrants are recorded. The data sheets have separate spaces for recording birds noted during the transect portions of the route (left space), during the 10-minute censuses (right space), and for those species noted flying over or through the area without stopping and those not a typical part of the community (habitat) type being censused during the 10-minute stops (reverse side at bottom). Avoid estimating numbers except for large flocks of birds flying swiftly through/over the area. Birds identified prior to or after but not during the 10-minute time censuses will be recorded as part of the transect data before or after the appropriate 10-minute census. Do not record any birds more than one time--even though some individuals will be identifiable before, during and/or after the 10-minute census period. Written details of unusual species, or observations should also be prepared.

Record Keeping: Use of the I.D.O.C. field sheets is highly recommended. Please submit your original field notes (even if soiled) along with reports when finished; keep copies yourself. A word of caution concerning dictating observations to a tape recorder: it is risky because the data can be easily lost by one manner of malfunction or another. Transferring the data is tedious and also subject to error.

Remember to record weather data at start and finish of daily field investigations.

Transect Route Problems: Advance scouting of routes should eliminate most last minute adjustments. It may be that the actual routes prepared by the Springfield staff are impossible to complete owing to existing physical conditions of the areas which were not known or discernible to us. It is possible that some major adjustments will become necessary; if such is the case, notify the Springfield office (217/785-8774) immediately so that the necessary adjustments can be made. Your recommendations for changes would be appreciated.

Qualitative Searches: In order to assure coverage of all habitat types within the designated I.D.O.C. land-holding, four (4) additional census days will also be used for selective sampling of habitat types that were either a) missed or b) poorly covered by the Transect Sets. Such areas may include but are not limited to picnic areas, certain fields, residential or work complexes, orchards, other natural areas, etc. and shall be designed by the field observer and shall consist of 10-minute Census Stops at the various habitat sites selected. The observer may drive, rather than walk, to the various sites, but each selected census site must be censused on four different days. There will be no Transect Legs in conjunction with these Census Stops.

VEGETATIVE SYNOPSIS: All 10-minute Census Stops (of each Transect Route and all Qualitative Searches) must be vegetatively described. The I.D.O.C. Stratum Ranking Forms make recording of the necessary data easy. The following Community Types and Stratum Ranking System (also printed on the I.D.O.C. Stratum Ranking Form) will be used.

COMMUNITY TYPES

<u>Forests</u>	<u>Wetland</u>	<u>Prairies</u>	<u>Savanna</u>
Upland Forest	Marsh	Prairie	Savanna
Sand Forest	Swamp	Sand Prairie	Sand Savanna
Floodplain Forest	Bog	Gravel Prairie	Barren
Flatwoods	Fen	Hill Prairie	
	Sedge Meadow	Scrub Prairie	

(continued on next page)

Surface Water
 Lake Michigan
 Reservoir
 Impoundment
 Stream

Cropland
Developed Land

Successional Field
Forageland

STRATUM RANKING (SR)

- 9 Dominant in essentially pure stand, no other species exceed SR 2
- 8 Dominant, next lower species cannot exceed SR 6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Dodominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

FINAL REPORT AND TABULATIONS: TO BE COMPLETED BY 31 AUGUST 1982. (PRELIMINARY REPORT TO BE COMPLETED BY 31 JULY 1982).

The final report will consist of a physical tabulation of the results obtained (on I.D.O.C. Tabulation Sheet); a vegetative synopsis of the Census Stops; a brief, but concise, account of each species occurrence, abundance, distribution, and habitat association within the designated land-holding; a distribution map indicating the stops and census-route legs where each species was recorded; accounts of the various habitats within the land-holding and the bird species utilization and dependencies on those habitats; and recommendations for the conservation of particular species, species groups and/or habitats within the land-holding (which may include neighboring areas). In addition, the report will include a discussion of the pros and cons of these investigations and problems that should be addressed and/or corrected before pursuing similar investigations.

Forests -- Communities that are dominated by trees, with an average canopy cover of 80% or greater.

Upland Forests -- Those forests, including those on terraces, which do not normally flood.

Sand Forest -- Those forests which occupy portions of sand deposits where natural fire breaks have reduced burning frequency.

Floodplain Forests -- Forests on the floodplain of streams.

Flatwood Forests -- Those forests that occur on level or nearly level soil that has an impermeable or slowly permeable layer, which causes a shallow, perched water table.

Prairies -- Communities dominated by grasses (or, locally, low shrubs) on mineral soil. Trees may be present, but less than 10% of the area has a tree canopy.

Prairie -- Simply referred to as prairie (without modifier) because it includes the typical, "black-soil" prairies. Soils are deep and fine-textured, usually silt loam or clay loam derived from loess or glacial till, although the prairies may occur on alluvium.

Sand Prairie -- These soils are coarse-textured: sand, loamy sand, and sandy loam can support sand prairie. However, prairies on sandy loam are considered sand prairies only if they are acidic enough to have characteristic plants. Sand prairies are found on sandy outwash plains, lake plains, and valley trains, and the soil moisture varies from dry to wet.

Gravel Prairie -- Includes prairies on gravel or very gravelly soil. The soils are usually calcareous.

Hill Prairie -- A prairie opening on a forested slope, caused by a combination of factors which result in droughty, well drained or somewhat excessively drained soil. Hill prairies typically occur on steep, exposed, south to west-facing bluffs.

Shrub Prairie -- This community is dominated by shrubs and prairie grasses.

Savannas -- Communities with a grassy groundcover and an average tree canopy cover less than 80% but greater than 10%. A savanna may have shrubby areas, and the tree canopy may locally be greater or less than the above limits. Savannas have soils that are transitional between forest and prairie, and they have distinctive plants and animals.

Savanna -- The typical savanna occupies fine-textured soil on till plains and lowlands.

Sand Savanna -- The soils are very sandy with little humus. Sand savannas are associated with dune and swale topography, either dunes or beach ridges.

Barren -- A term applied to local inclusions of prairie flora, mixed with forest, in forested land mainly in southern and western Illinois and along major rivers.

Wetlands -- Natural communities that are flooded or have hydric soils and that have a vegetative cover.

Marsh -- Tall graminoid plants dominate marsh communities, which have water near or above the surface for most of the year. Soils may be peat, muck or mineral.

Swamp -- A wetland dominated by woody plants.

Bog -- Nearly always in glacial depressions with restricted drainage. A variety of bog communities are supported by low-nutrient, acid (at least in the upper layer) peat deposits.

Fen -- Peat with calcareous seepage is necessary for all fen communities. Most fen communities tend to have a rather pronounced slope.

Sedge Meadow -- A wetland dominated by sedges (Carex) on peat, muck or wet sand which is remarkably homogeneous in composition and structure.

Surface Water -- Areas of open, standing water, generally lacking emergent woody or graminoid vegetation.

Lake Michigan -- Lake Michigan

Reservoir -- U.S. Corps of Engineers Reservoirs: Shelbyville, Carlyle and Rend Lakes
Impoundment -- Any artificial lake, regardless of size.

Natural Lake -- Any natural lake, regardless of size.

Stream -- Flowing water. Streams must be permanent, not intermittent or ephemeral.

Cropland -- This includes row crops.

Forageland -- Usually pastured land but not including forests.

Successional Field -- Includes abandoned fields and abandoned pastures. It also includes any formerly disturbed open land which cannot be properly termed abandoned fields, such as roadsides and vacant lots.

Developed Land -- Any sort of land that has been highly modified or has structures is included in this classification. It includes strip-mined land, roadways, buildings and cemeteries.