

Bird Monitoring Protocol for Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas

Standard Operating Procedure (SOP) # 2

Training Observers

Version 1.00 (July 18, 2003)

Revision History Log:

Previous Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #

This Standard Operating Procedure explains the training procedures that all observers should follow to learn (1) how to identify birds by sight and vocalizations; (2) how to estimate distances in the field; and (3) how to estimate ground cover and measure tree characteristics.

I. Identification of Birds by Sight and Vocalizations

The most essential component for the collection of credible, high-quality bird data is well-trained and experienced observers. This cannot be overemphasized. Proficient bird observers obtain species estimates within 90% of total species known to be present and estimate abundance within 80% accuracy (Ralph et al. 1993). Various studies have shown that observer bias is one of the most noteworthy bias factors in trend analysis of songbird populations (Kepler and Scott 1981, Baker and Sauer 1995). Before conducting VCP counts, read "Reducing bird count variability by training observers" by Kepler and Scott (1981) for a detailed discussion of training observers to identify birds by sight and sound as well as training them to estimate distances.

Procedures:

1. See Appendix B for a list of bird species likely to be encountered at Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas. Beginning several months prior to the field-season, review and practice bird identification skills.
2. Birders should pass a minimum proficiency test on the vocalizations and sight ID of bird species likely to be encountered, correctly identifying all common species likely to be encountered and 90% of the less frequently encountered species (i.e. species encountered less than ten times annually).
3. Regardless of skill level, birders should spend time in the field familiarizing themselves with the birds in a park prior to starting a survey.

4. Suggested reference materials for conducting bird surveys at Agate Fossil Beds National Monument and Tallgrass Prairie National Preserve:
 - Tapes or CDs of bird songs for species found in Nebraska and Kansas. These tapes and CDs are produced by Cornell Laboratory of Ornithology's Library of Natural Sounds and may be obtained from State Wildlife Agencies.
 - National Audubon Society Interactive CD-ROM Guide to North American Birds. This interactive CD-ROM is an excellent resource for learning calls, site ID and background information on bird species.
 - Bird slides of species likely to be encountered can be obtained from Cornell Laboratory of Ornithology.
 - National Geographic. 1987. Field Guide to Birds of North America, 3rd Edition. National Geographic, Washington, D.C. 480 pages.
 - Robbins, C.S., B. Bruun, and H.S. Zim. 1983. Golden: A Guide to Field Identification of North American Birds. Western Publishing Company, Inc., Racine, WI. 360 pages.
 - Stokes, D. W. and L. Q. Stokes. 1995. Stokes Field Guide to Birds: Western Region. Little, Brown and Company, New York, NY. 519 pages.
 - Stokes, D. W. and L. Q. Stokes. 1995. Stokes Field Guide to Birds: Eastern Region. Little, Brown and Company, New York, NY. 471 pages.

II. Estimating Distances to Birds Seen or Heard

Read the paper "Reducing Bird Count Variability by Training Observers" by Kepler and Scott (1981) for a detailed discussion of training observers to identify birds by sight and sound as well as training them in distance estimating. For observers who are already competent at identifying birds by sight and sound, one full day of training is usually all that is necessary to be able to estimate distances within $\pm 10\%$. Experienced observers usually recalibrate themselves the afternoon before a bird survey begins (VCP counts are done early in the morning, so people usually travel to the study site on the morning before the count and recalibrate the afternoon before the count).

Procedure:

1. Begin by placing flagging at 10 m, 25 m, 50 m and 100 m from a central point and having observers estimate distances to trees, rocks and flagging from the central point.
2. Have each observer place flagging at 4-5 locations visible from the station, and then have everyone in the group record distances to each flag in a field book. Distances should be estimated to the nearest meter. Then, use tape measures to measure the distance to each flag, and have each person compare their initial estimate to the actual distance. A laser rangefinder may also be useful for measuring the actual distances. Repeat this exercise at several sites with both open and closed vegetation until observers can consistently estimate distances to within 10-15% of the actual distance. For objects within 20 m of the station, observers should be able to accurately estimate distances to within 1 meter of the true distance.
3. The majority of birds are usually heard but not seen, and estimating distances to birds that are only heard is often the greatest source of error in VCP counts. With all observers at the

central point, have each observer estimate the distance to vocalizing birds pointed out by the leader. Horizontal distances should be estimated, as if a plumb bob was lowered to the ground from the bird's location. Observers should visually identify the tree or branch where they think the bird is, and estimate the horizontal distance to an object that they can see directly below where they think the bird is vocalizing from.

4. Half of the group should place themselves at various distances away from the central point, and quietly wait until a bird vocalizes near them. Place reference markers at measured distances from the central point to help these "spotters" estimate the distance between the central point and birds that vocalize. The other half of the group should remain at the central point, and estimate the distance to any birds that vocalize. The observer closest to the bird should then indicate where the bird was vocalizing from and if necessary, the distance to the point directly under the bird should be measured from the station using a tape measure. This is a slow but important part of the training, and should be repeated until observers have experience with estimating distances to a number of different species and call or song types.
5. Simultaneous counts: Divide observers into groups of 4-5 persons and conduct 5-minute counts from the same location. At the end of each count, have the observers compare notes and discuss any discrepancies in the species detected and the estimated distances to them. Remember that the distance to where the bird was first detected should be recorded, so that if a bird flies towards the central point, the distance where it was first heard or seen is recorded, not the closest distance or where it lands. Continue these simultaneous counts until there are consistency among observers in species and distances recorded (recommend no difference in species identification and less than 10% difference in distance estimates).

III. Collecting Habitat Data

Procedure:

1. Familiarize yourself with the Prairie Cluster Prototype Long-term Ecological Monitoring Program (PC-LTEM) standard cover classes, SOP #6 "Documenting Habitat Variables".
2. Spend time prior to the field season practicing estimating cover classes of different vegetation guilds and ground cover categories within 1.78-m practice plots. Someone skilled in conducting cover class estimates need to assist in training and confirm cover class estimates.
3. If habitat monitoring cannot be practiced prior to the field season, than someone skilled in conducting cover class estimates must assist in collecting habitat data if consistency across years is to be maintained. However, other members on the habitat crew should be trained and proficient in estimating cover classes within the first week of conducting fieldwork.
4. Someone skilled in estimating tree heights, canopy cover and basal areas of trees influencing bird plots is also needed on the habitat crew. Instructions for using a clinometer (tree height), densiometer (canopy cover) and cruz-all or prizm (basal area) accompany each instrument and should be reviewed prior too and followed during field data collection. All members on the habitat crew should be trained and proficient in using each instrument within a half day of training and conducting fieldwork.

IV. References

- Baker, R. J. and J. R. Sauer. 1995. Statistical aspects of point count sampling. Pages 125-130 *in* C. J. Ralph, J. R. Sauer and S. Droege, eds. Monitoring bird populations by point counts, USDA Forest Service, Pacific Southwest Research Station, General Technical Report PSW-GTR-149.
- Kepler, C. B. and J. M. Scott. 1981. Reducing bird count variability by training observers. *Studies in Avian Biology* 6:366-371.
- Ralph, C. J., G. R. Geupel, P. Pyle, T. E. Martin and D. F. DeSante. 1993. Handbook of field methods for monitoring landbirds. USDA Forest Service, Pacific Southwest Research Station, General Technical Report PSW-GTR-144