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Point Count Survey Standard Operating Procedures – WLFW Northern Bobwhite & Grassland Birds Outcomes Assessment

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Focal Species
Nine target species will be included in the point count surveys. Surveyors should familiarize themselves with both the visual and auditory identification of all focal species *prior* to conducting surveys. Photos, descriptions, range maps, recordings of example vocalizations, and other identification resources can be search for here: https://www.allaboutbirds.org/. It is *imperative* that surveyors have a familiarity with the vocalizations of all focal species they may reasonably encounter (i.e., all focal species for which the point falls within the range of).

Species List & 4-letter AOU codes:

- Northern Bobwhite – **NOBO**
- Western Meadowlark – **WEME**
- Grasshopper Sparrow – **GRSP**
- Henslow's Sparrow – **HESP**
- Dickcissel – **DICK**
- Eastern Meadowlark – **EAME**
- Loggerhead Shrike – **LOSH**
- Bachman's Sparrow – **BACS**
- Field Sparrow – **FISP**

Survey Windows (Time of Year & Time of Day)
Surveys will take place from May 15 to July 15 during morning surveys. Valid survey windows are measured relative to sunrise. The 3-hour survey window starts 30 minutes before sunrise and ends 2 hours and 30 minutes after sunrise. [Note: ARUs should be set to record for the duration of this 3-hour window, not the 1-hour window used during the fall covey counts.] Points may be surveyed anytime during this window. Check your weather app or click on the following link to search sunrise times for the closest city/town to your point: https://www.timeanddate.com/sun/.

Point Selection
Biologists will send their contract lists to David and Sprih (see contacts above). Those contracts will be randomly sorted and assigned a priority number grouped by practice-status (certified/planned) combos. [Note: duplicate contracts are removed and the practice-status combo for any one particular contract is selected at random from those available for that contract. It is expected that contracts will have more than a single practice type applied. We are only using one of the practices for the selection process, but the entire suite of practices will be used for analysis. It is possible that rarer practice-status combos are lost in the randomization process. If so, biologists may pull that practice-status combo from the general EQIP list and send a list of just those combos for prioritization.]

Biologists will contact landowners in the priority order for each practice-status combo to request monitoring access. Biologists will need to coordinate with their in-state colleagues to ensure they reach their state's target (see the WLFW Monitoring Design PowerPoint). Once the

biologists have gathered permissions, they must send back the priority order lists with the contracts that accepted highlighted or otherwise indicated. Additionally, biologists will need to send David and Sprih georeferenced PDFs of each contract map; label the PDF files with the contract numbers. Please also send the coordinates for any historic points where covey counts or ARUs were deployed in Fall 2022. For new points, ARU deployment locations will be selected at random within the selected practice of each contract and the points will be randomly prioritized to also receive point count surveys. Point count surveys should be conducted at a minimum of 25% of all locations. However, biologists who have only a few contracts should consider doing point counts at all or most of their points.

Coordinating with ARU Deployment

Ideally, both ARU and point-count surveys are to be done 2-3 times at each appropriate point with a minimum of 7 days between surveys. [Remember: ARUs are deployed at all selected locations, and point counts are conducted at least 25% of all locations.] ARUs are to be deployed for 5 days. To cover each site more than once, you will need to rotate the ARUs among sites. If you can't repeat ARU surveys at some sites, then extend the duration of the ARU survey on that site to 10 days.

Point counts should be conducted in tandem with an actively-recording ARU to allow for comparison and integration of the two data streams. To avoid disturbance before a survey, it is not recommended to conduct a point count immediately following ARU deployment. However, point counts may be conducted just prior to retrieval, provided that the survey is being conducted both within the survey window (i.e., during the right time of day relative to sunrise) and during appropriate weather conditions. It is up to the surveyors to plan ahead to ensure ARU rotations and the repeated point count visits coincide.

Weather Restrictions

Point counts should only be conducted during favorable weather conditions. Do *not* survey during periods with heavy fog (<200m visibility), rain, unusually cold temperatures, or high wind (>12mph). If observer hearing is impeded by wind or high background noise, or if bird activity is suspected to be significantly reduced by weather or human activities (e.g., chainsaws/tree felling in close proximity), please return on a day with better conditions.

Survey Methods & Guidelines

Surveyors will stand at pre-selected survey point coordinates where the ARU is recording.

For each point count, you will be provided a datasheet to print out before the survey. This sheet contains two pages to be completed:

1. A table sheet for recording environmental factors and all focal species observations.
2. A grided map of the 500x500-m area centered around the survey point. This map is split into 50x50-m grid cells on which any focal species detected should be recorded as accurately as possible.

When you arrive at a point:

1. Surveyors should wait 5 minutes before starting their point count. Birds may not vocalize immediately after a human passes, so this 5-minute acclimation time is to reduce the impact of any potential disturbance caused when walking to the point.

   During this time, surveyors should ensure the environmental conditions are completed on the datasheet.

   a. Point ID, Observer Name, Date, Coordinates, ARU serial number, Date of ARU Deployment: Much of this information can be filled in prior to arriving at the point, but please take this time to ensure every field is complete and correct.
   b. Cloud Cover: This should be recorded to the nearest 5%. Do not include decimals or percentages other than multiples of five. For consistency, **provide an estimate for the entire visible sky**, *not* just what is directly above.
   c. Temperature: Please record the actual temperature at the time of the survey by, for example, checking the car thermometer as you exit to walk to the point, using a weather meter, or checking the real-time temperature on your local weather app.
   d. Wind Speed: This should be recorded using the Beaufort wind scale:

Beaufort #	Wind speed indicator(s)	Wind speed (mph)
0	Smoke rises vertically	0
1	Wind direction shown by smoke drift	1-3
2	Wind felt on face; leaves rustle	4-7
3	Leaves, small twigs in constant motion; light flag extended	8-12
4	Raises dust and loose paper; small branches are moved	13-18

   If you have a weather meter, feel free to use it. Otherwise, check the real-time wind speed on your local weather app. **Be sure to record the Beaufort value rather than the actual wind speed.** As mentioned before, if it is too windy (>12mph), do not conduct the point count on that day (i.e., you should never be recording a Beaufort value of 4 or higher).

2. Begin the survey. After the 5-minute waiting period, surveyors may start the point count. During this time, detections of focal species are recorded for exactly 5 minutes. To easily track the time, surveyors should start the survey at the start of a new minute (e.g., the surveyor watches the time on their phone/watch and starts the survey exactly as the time changes from 6:04 to 6:05). Don't forget to record the survey start time! Any birds detected outside the time of the count should *not* be included on the datasheet. Likewise, very distant birds that occur outside of the 500x500-m area surrounding the point should *not* be included on the datasheet.

Remember, you will be recording each individual bird on two separate pages:

1. Bird observation table:
    a. Bird ID & Species: Each detected focal bird should be recorded on its own line in the table. The pre-filled "Bird ID" column will be used to mark bird locations on the gridded map. Fill in the 4-letter AOU code (see Focal Species above) in the "Species" column for each individual detected.
    b. Seen/Heard: In this column record whether the individual bird was seen or heard at the time of ***first detection***. If the bird was both seen *and* heard at the time of first detection, record "seen". Any further observations of these individuals are not recorded, but you should make a mental note of individuals to avoid double counting them.
    c. Distance: For individual birds you detect, record a distance estimation to the nearest whole meter.
    d. Time: Record the time of first detection for each individual focal bird detected. All birds first detected during a prior minute will be excluded ("removed") from subsequent time intervals. In other words, only record **new** birds. For example, if an individual is heard in the 1st minute, and that *same* individual is heard later during the 3rd minute, *do not re-record* anything for that bird related to the second detection in the 3rd minute.
    e. Bird Notes & Survey Notes: These fields are optional, but please record detailed notes if you encounter unexpected problems that are not addressed in this SOP and/or that may affect data quality.
2. Gridded Map:
    a. All detections should be marked on the gridded map within the most likely 50x50-m grid square. Please mark the locations as accurately as possible. Label each mark with the number corresponding to the "Bird ID" column from the observation table. Additionally, please write the time of first detection (i.e., the same time listed in the "Time" column from the observation table) next to the Bird ID.

3. At the conclusion of the survey, identify and record the level of background noise during the survey period. This step is easy to forget, so get in the habit of double checking.

Background Noise Codes:
0 – silent; no noise interference
1 – distant noise, but not interfering with count quality (e.g., a distant tractor or oil rig)
2 – difficult to hear clearly at times (e.g., intermittent traffic)
3 – constant noise; low quality count

Repeat Visits (Resampling)

Survey all point count locations 2-3 times (preferably 3 for most points) throughout the field season (May 15th-July 15th). To account for seasonal variation in calling rates and to increase the chances of surveying during the peak season, allow a minimum of 7 days to pass before resampling points. Follow the same survey protocol (detailed above) during each resampling visit.

Data Entry & Data Management

Each participating biologist will have a OneDrive folder shared with them (contact David & Sprih if you have not received a link). Data entry will occur there, and scanned copies of field datasheets will also be uploaded. ARU audio files will be uploaded to a separate website (details below).

ARU Data Management:

1. A log should be continuously updated on the "Data Entry_ARU Deployment History" spreadsheet located in your folder on OneDrive. This information includes the date of ARU deployment, date of retrieval, and date of data upload. It is suggested that biologists periodically download the spreadsheet to their computer and change the file name to include the date of download. This will prevent the need for reentering all the data if it is accidentally overwritten or deleted.
2. Once an ARU survey is complete at a point, all files (~15 files for a 5-day deployment, recording only within the survey window) should be zipped together using WinRAR (free available software) as a .zip file. Name this .zip file as *SiteID*_replicate*#*. The SiteID can be found on your point ID spreadsheet ("*YourLastName*_PointIDs") and "#" is a number 1-3 indicating the replicate represented by the data for this particular survey at this particular point.

   For example, if this is your 2nd ARU survey at a site, the file name should look something like: f8dd61ac-a22a-4416-873ffd7b11ad7c8a_replicate2.

   This file should then be uploaded to https://www.birdlocale.org/, following the instructions on the website. Please keep a copy of the original file on your work computer in case there are unexpected errors with upload or storage.

Point-count Data Management:

1. All point-count data should be updated continuously on the "Data Entry_PointCount Survey" spreadsheet located in your folder on OneDrive. Again, it is suggested that biologists periodically download the spreadsheet with their entries and change the file name to include the date of download to protect against accidental data deletions.
2. Additionally, your completed field datasheets (both pages) should be scanned and uploaded to the "Scanned Datasheets" folder located within your OneDrive folder. Label the scanned datasheets with *PointID_MM.DD.YY*, where PointID represents the 4-digit point ID and MM.DD.YY represents the date of the point count.

Please see the attached example datasheet. Please reach out if you have any questions regarding the Standard Operating Procedures.

Point Count Survey Datasheet - Northern Bobwhite & Grassland Birds EXAMPLE

Site ID:	Observer Name:	Date:	Start Time:
10001	D. Tilson	05/20/2023	06:05
Temperature °F	**Cloud Cover %**	**Beaufort Code:**	**Noise Code:**
67	45	2	1

Coordinates of survey location: 41.126809, -87.108645 **ARU serial number**: A12345, **Date of ARU deployment**: 06-01-2022

Bird ID	Species Code	Seen / Heard	Distance (m)	Time	Bird Notes
1	NOBO	Seen	23	06:05	
2	FISP	Heard	212	06:05	
3	NOBO	Heard	107	06:06	
4	BACS	Heard	47	06:08	
5	FISP	Heard	70	06:08	
6	FISP	Heard	85	06:08	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Survey Notes:

Beaufort Code:	Wind Speed (mph)
0	0
1	1-3
2	4-7
3	8-12
4	13-18

Note: do not survey during wind code 4 (>12mph).

Background Noise Codes:
0 – silent; no noise interference
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2 – difficult to hear clearly at times; intermittent noise
3 – constant noise; low quality count

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HESP – Henslow's Sparrow
FISP – Field Sparrow
DICK – Dickcissel

Are all fields complete and legible? Double check! Triple check start time and noise code!

DO NOT FORGET TO MARK ALL TARGET SPECIES ON THE GRIDED MAP AND IN THE TABLE!