Fall Covey Count Survey Standard Operating Procedures

Contacts: David Tilson (david.tilson@uga.edu), Sprih Harsh (sprih.harsh@uga.edu)

General Information

Unlike breeding-season point count surveys, birds are not counted individually during fall counts, but instead as a covey. Additionally, no non-bobwhite target species will be surveyed during the fall covey counts. A covey is indicated by a single or grouped series of "koi-lee" vocalizations (example recording here) coming from a single location, or in rarer instances, by a visual observation of a cluster of quail. Be reasonably conservative when estimating the number of coveys; if calling coveys are perceived to be within 30-m (~98-ft) of each other, consider them a single covey, and record the first estimated location.

Survey Windows (Time of Year & Time of Day)

Surveys will take place from Oct. 16 to Dec. 1 during morning surveys. The survey windows are measured relative to sunrise. The 1-hour survey starts 45 minutes before sunrise and ends 15 minutes after sunrise. [Note: fall covey count surveys have a much narrower survey window than the 3-hour window used for spring point-count surveys -BUT- covey counts last for the duration (i.e., the entire hour) of the survey window (unlike the 5-minute point counts).] Surveyors are welcome to bring a collapsible camp chair to sit in for the survey. 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 & Coordinating with ARU Deployment

Please see the Fall ARU Deployment SOP for the Song Meter Minis for instructions on programming and deploying the ARUs.

Points monitored during the breeding-season surveys will continue to be monitored for fall covey counts, provided the landowner has not withdrawn permission for monitoring access. No new points will be added during the fall season. Biologists that have changed location or lead biologists in states where recent vacancies have not yet been filled should coordinate with Jess McGuire and David Tilson to help find someone to fill in if possible.

ARUs are deployed at *all* selected locations, and in-person counts are conducted at a minimum of 25% of all locations. Please use the same randomly prioritized list from the breading-season point counts to decide which points should receive in-person counts. [Note: Please meet the 25% minimum, but don't worry about exceeding the minimum as greatly if you conducted point counts at more than 25% of points in the spring. Unlike point counts, only one covey count can be conducted per day.] Surveyors *must* use the randomly prioritized lists to decide which points receive in-person counts. It is **not** acceptable to select locations based on ease of access (e.g., points with shorter drive times) or based on suspected bobwhite presence (e.g., points with a higher suspected population).

Both ARU and human surveys are to be done 2 times at each appropriate (see paragraph above) point with a minimum of 7 days between surveys. 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 (but always maintain at least 7 days between any in-person counts).

In-person covey 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 for the entire survey window and during appropriate weather conditions. ARUs may be left recording for a day or two extra if conditions are not suitable at the originally anticipated date of survey/retrieval. It is up to the surveyors to plan ahead to ensure ARU rotations and the repeated point count visits coincide.

Weather Restrictions

Covey counts should only be conducted during favorable weather conditions. Do *not* survey during periods with heavy fog (<200m visibility), rain, 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 the pre-selected survey point coordinates where the ARU is recording.

For each covey count, you will be provided datasheets to print out before the survey. This includes 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.

Conducting a Covey Count:

1. Because surveys are to start at set times, surveyors should plan to leave early enough to allow themselves sufficient time to drive to the area, navigate to the point in the dark, and get set up. Surveyors should arrive at the survey location 10-15 minutes *prior* to the start of the survey window. This provides the birds time to acclimate to a human's presence and ensures you have sufficient time to get set up.

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

   a. Point ID, Observer Name, Date, Coordinates, ARU serial number, ARU Recording Start Date: 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. At the start of the survey window (exactly 45-min. prior to sunrise), surveyors should start the count. During this time, coveys are recorded for exactly 1 hour. Don't forget to record the survey start time. Any coveys detected outside the time of the count and any distant coveys that occur outside of the 500x500-m area surrounding the point should *not* be included in the data table (but may be included in the survey notes).

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

1. Covey observation table:
    a. Covey ID: Each detected covey should be recorded on its own line in the table. The pre-filled "Covey ID" column will be used to mark bird locations on the gridded map.
    b. Time of First Detection: Record the time of first detection for each covey seen/heard during the survey. Any further observations of these coveys are not recorded on a new line; however, you should keep mental track of coveys to avoid double-counting (also see "Number of Calls" below). Remember, calling coveys that are perceived to be within 30-m (~98-ft) of each other should be considered a single covey.
    c. Seen/Heard: Record whether the covey was seen or heard at the time of *first detection*. If the covey was both seen *and* heard at the time of first detection, record "seen".
    d. Distance: Record a distance estimation to the nearest whole meter for each detected covey.
    e. Number of Calls: For the 1st covey detected during a survey, please keep track of the number of calls given by that covey for the survey's duration. This is useful data for informing the ARU data analysis. Surveyors may keep a count for subsequent coveys if possible, but do not sacrifice the accuracy of the other data by trying to tack more than you are able (e.g., If many coveys are calling, keep a call count for only the 1st covey and otherwise focus your attention on getting an accurate count of total coveys and their locations.).
    f. Covey 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 "Covey ID" column from the observation table. Additionally, please write the time of first detection (i.e., the same time listed in the "Time of First Detection" column from the observation table) next to the Covey ID.

[Note: for surveys where no coveys are detected, please record all the site and environmental information, and write something in the notes along the lines of "no coveys detected." Please include this note when entering your data into the data entry spreadsheet.]

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 count locations 2 times throughout the field season (Oct 16th-Dec 1st). 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 surveyor will have a OneDrive folder shared with them. 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). The fall data entry deadline is December 15th. It is highly recommended to stay on top of data entry; please do not save it as a lumpsum of work to be done just before the deadline. Additionally, it is the surveyors' responsibility to meet this deadline; it should not take multiple reminders to get this done. Once all data from the field season has been entered, please send David and Sprih a confirmation email.

It is vital that all files are named according to the specified conventions. Additionally, surveyors must follow the specified conventions for data entry. Poor attention to details during data entry means field efforts are wasted time at best and actively misrepresenting data at worst.

ARU Data Management:

1. A log should be continuously updated on the "Data Entry_ARU Deployment History_*YourLastName*" spreadsheet located in your folder on OneDrive. This information includes the date of ARU deployment, date of retrieval, and date of data upload. Biologists should 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. When SD cards are collected from the field, files should be downloaded onto the biologist's computer. Please download all files prior to making any modifications (e.g., compressing & renaming files); this avoids the need to first encrypt the SD cards when using a government computer. Do *not* encrypt SD cards.

3. ***More details about file management and naming conventions to be added in a subsequent version of this SOP. We are working on some changes to reduce the long upload times on BirdLocale.***

   These files should then be uploaded to BirdLocale (https://www.birdlocale.org/), following the instructions on the website. [Note: new users will first need to create an account from the login page.] Please keep a copy of the original file on your work computer in case there are unexpected errors with upload or storage.

   Two copies of the data should be kept at all times. At first, this will be one copy kept on the SD card and one kept on the computer. Once a copy has been uploaded to the BirdLocale website, the copy on the SD card can be cleared (and the one on the computer retained at least until the end of the field season, but possibly moved to an external hard drive after the end of the field season).

Covey Count Data Management:

1. All covey count data should be updated continuously on the "Data Entry_CoveyCount Survey_*YourLastName*" spreadsheet located in your folder on OneDrive. Again, biologists should 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 (including the gridded maps for counts where coveys were detected) 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.

Covey Count Datasheet -

WLFW Northern Bobwhite Outcomes Assessment

Point ID:	Observer Name:	Date:	Start Time:
1234	David Tilson	10/21/2023	06:54
Temperature °F	**Cloud Cover %**	**Beaufort Code:**	**Noise Code:**
58	25	1	1

Coordinates of survey location: 33.89500, -83.37440 **ARU serial number**: 10776 **ARU Recording Start Date**: 10/16/2023

Covey ID	Time of First Detection	Seen / Heard	Distance (m)	No. of Calls	Covey Notes
1	06:55	Heard	154	27	
2	07:01	Heard	102		
3	07:19	Heard	175		
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Survey Notes:

If no coveys are detected during the survey, please write "no coveys detected" and include this note when entering your data into the spreadsheet. All site and environmental information at the top of this sheet should be filled in regardless.

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
1 – distant noise, but not interfering with count quality
2 – difficult to hear clearly at times; intermittent noise
3 – constant noise; low quality count

Do not forget to mark all coveys on the table to the left *and* on the grided map.

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

Contract No.: 7443102859P
Site ID: ae1a5ed2-b77c-47c8-ab85-434c6226aed3
Point ID: 1234 Point Coordinates: 33.895001, -83.374398