Grassland Bird Survey Manual

Virginia Working Landscapes (VWL) began in 2010 in response to a strong grass-roots demand from regional landowners, citizens, and conservation NGOs for leadership from the Smithsonian on how to sustain native biodiversity on working landscapes. What began as a dynamic network of regional stakeholders convened by the **Smithsonian Conservation Biology Institute (SCBI)**, is now an emergent and vital program of the SCBI that studies and promotes the sustainable use of Virginia's landscapes for native biodiversity through ecosystem research, habitat monitoring, and community engagement.

Why Grassland Birds?

In recent decades America's grassland birds have experienced a declining trend incomparable to any other assemblage of bird species. Working landscapes, or landscapes that are dominated by land used for agricultural purposes, are an area of critical importance for grassland bird conservation in the eastern United States, as the majority of our remaining grasslands exist on private land. Monitoring bird populations on these working landscapes will provide valuable information on the long-term trends of relative abundance and species composition in relation to habitat structure and land management practices.

Goals and Objectives of VWL Bird Surveys

- To advance our understanding of the relationship between grassland bird populations, habitat structure, and land management practices.
- Identify landscape features that correlate with the occurrence of target grassland species.
- Provide landowners and land managers with species lists specific to their properties and land management practices.
- Engage the community through the training of volunteer naturalists on the importance of grassland bird conservation.

Without support from our incredible community scientist team, we would not be able to make as significant of an impact as we are. Thank you for all you do!

Bird Survey Protocol

Bird surveys are carried out using a point count method. Community scientists stand at predetermined points (labeled A, B, & C) within survey fields and note every bird they see and hear within two distance bands (0 - 50m and between 50 – 100m) for a total of 10 minutes.

REQUIRED EQUIPMENT	RECOMMENDED EQUIPMENT
Binoculars	Range finder
Stopwatch	Measuring tape
Clipboard with datasheets, protocol, map of site and blank sheets for taking notes	Sun protection (hats, sunscreen)
Pencils (>5)	Insect repellant
Water	First Aid kit
Long pants	
Sturdy field boots	
Field guide	
Cell phone	
VWL parking sign (*provided by VWL*)	
GPS Unit or Navigation App on phone	

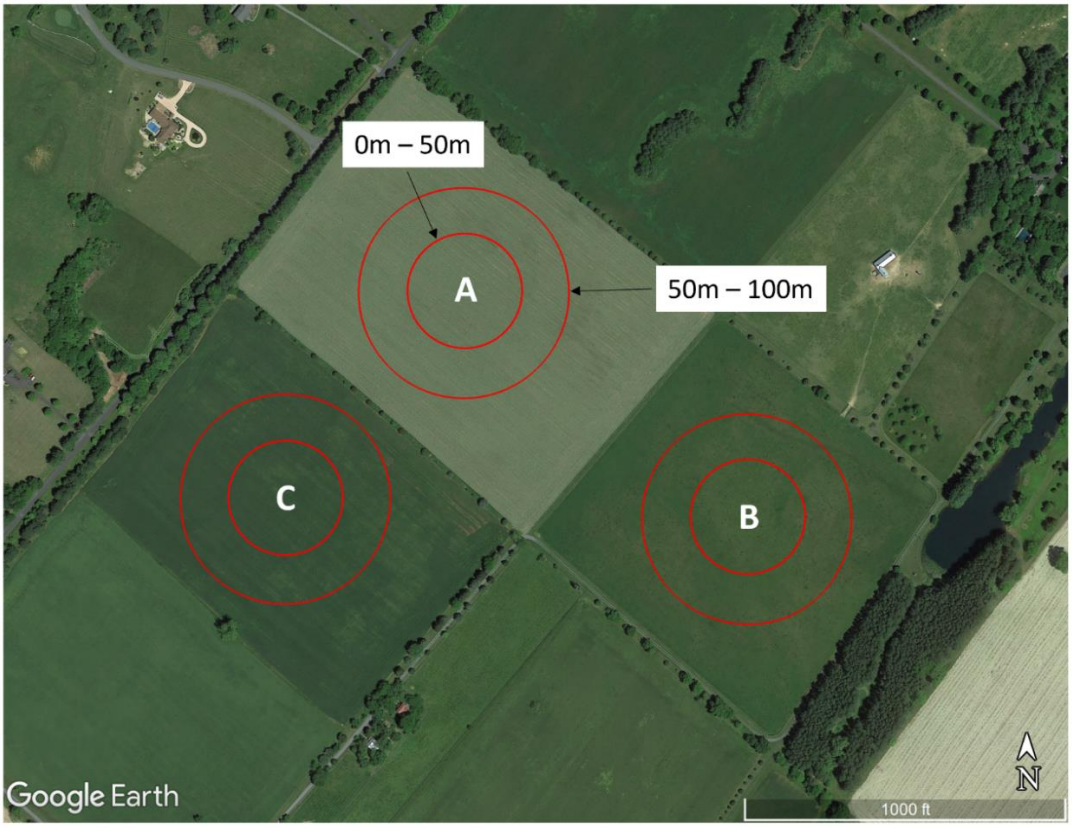
Accessing Private Properties

Many of our field sites are privately-owned. Before the field season starts, contact the landowners or managers for your survey site(s) and discuss your planned survey schedule. The site directions document provided to you will indicate when and who to contact before each visit. **Please share your field work schedule with the Survey Coordinator before survey season begins**. At the beginning of each visit, place the provided VWL signs in your car window. Please do your best to carpool, and only drive and park in the areas designated on the property maps provided to you. Some landowners may wish to join you for your survey. This is allowed and encouraged as long as it does not interfere with your ability to conduct surveys.

Identifying Your Survey Plots

Survey waypoints will be provided to survey teams as GPS points on site maps and are identified as point A, B, or C. Waypoints are placed at least 200 meters apart from one another in most fields so that survey plots do not overlap. Where plots do overlap slightly, use your judgment to identify a boundary line in the middle so you do not count the same area twice. During your first visit, orient yourself with landscape features in the field to help you establish boundaries and distance bands. If available to you, a range finder or measuring tape can be used to measure your distance bands (0 – 50m and between 50 – 100m).

An example map is provided on the following page illustrating survey waypoints and distance bands.



Three survey waypoints are labeled Points A, B, & C, and the two distance bands (0 – 50m and between 50 – 100m) at each point are illustrated.

Conducting a Point Count Survey

Each site is surveyed 3 times by the assigned surveyors, **between May 15 and June 30**. Visits should be at least 4 days apart. To stay organized, make a schedule with your partner and share your survey dates with the Survey Coordinator before the survey season starts. If you schedule 5 visits for each site, then you have two extra days scheduled in case of bad weather. Recommended visit dates are:

1. May 15 – May 25
2. May 29 – June 8
3. June 12 – June 22

In general, **surveys should be carried out within 3 hours of sunrise**. However, the end of June tends to bring much warmer temperatures. Carry out your surveys as close to sunrise as possible during this time, and **no later than 9am**.

Surveyors will go out in pairs; one person will be the primary observer while the other records observations.

Arrive to your site quietly. Use a GPS unit, or phone navigation app, and a provided map to locate your survey points. Once you reach the first point, fill out the required information at the top of your data sheet. ALWAYS make sure to do this before starting your survey; **do not leave any spaces blank**. Once this is complete, record the time and begin your point count.

Conducting a Point Count Survey (con.)

Recording Vegetation Height

This is a rough estimate of the dominant vegetation height at each point.

- Short = < 0.5 m (below your knee)
- Mid = 0.5 – 1 m (between your knee and your hip)
- Tall = > 1 m (above your hip)

Recording Weather Data

Current temperature

Recorded in degrees Celsius. If you don't have a thermometer or a smartphone weather app, review weather data on your home computer after returning from the field.

Sky Condition

Recorded using one of the following terms below:

- Clear (can include a few clouds)
- Partly Cloudy (ca. 10% to 60% cloudy)
- Cloudy (more than ca. 60% cloudy)
- Fog (includes mist, but not haze)

DO NOT SURVEY IN RAIN SHOWERS, HEAVY FOG OR SNOW

Wind Speed

Given according to the Beaufort Scale (Look up to a height of about 3 m for the indicators of wind):

Beaufort No.	Speed in MPH	Indicators of Wind Speed
0	0	Smoke rise vertically, absolutely still conditions
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
4	13 to 18	Raises dust, loose paper and small branches
5	19 to 24	Small trees in leaf sway

DO NOT SURVEY IF WINDS ARE 4+

Conducting a Point Count Survey (con.)

During the first 5 minutes (up until 4m 59s), you record your observations in the 0-5 min columns. Once you have reached the 5-minute mark, move over to the 5-10 min columns. Please do not pause between the two 5-minute periods.

1. **Record** the alpha code of every individual bird you see and hear within 100m.
    a. If you see 5 American goldfinches, use one row for each of them.
2. **Record** whether the bird is 0 - 50m or between 50m - 100m (these are known as distance bands).
    a. Note how each bird is detected as Seen only (S), Heard only (H), or both (SH).
        i. **Record** detection method in respective distance band columns.

If...	Then...
Individuals are moving throughout survey plot for all 10 mins	Record the distance band where the bird was **first detected** for **each time period**
Same individual(s) recorded during 0-5 mins, still within survey distance bands, are detected during 5-10 mins period	Note detection method and distance in the 5-10 min columns, using the **same row** individual(s) were recorded on during 0-5 mins period.
New individual(s) are detected **only** during 5-10 mins period	Note detection method and distance in the 5-10 min columns, creating a **new row** for the individual(s)

An example data sheet is attached at the end of this document.

Do not count any birds that may have been counted at your previous point.

Once the 10 minutes is up, stop recording birds and quietly move to your next survey point to start your next survey. **Do not exceed the 10-minute time limit** simply because you are sure a "good bird" is there and not calling – if it's there, it will be recorded on another visit. Also remember, absence of a species is as important as presence in this survey.

Any birds detected as flyovers or before/after the survey period can be noted as incidentals (explained on the following page).

Recording Incidentals and Unknowns

Incidentals are any birds that are recorded as **flyovers**, are observed **outside of the 100m** survey boundary, or observed **before and/or after the survey** period including those observed walking to and from your assigned fields. These records are not used for data analysis but are important so that we can provide landowners with a list of species detected on their properties during your visits.

If…	Then…
A bird is observed flying over the field during the survey	The bird is recorded as a **flyover** in the bottom left datasheet section
A bird is observed while walking to the survey point	The bird is recorded as a **before/after/outside survey observation** in the bottom middle datasheet section
A bird is observed foraging over the field during the survey (i.e. swallows sp.)	The bird is recorded as an **official survey observation** and listed under the appropriate time period, distance band, and detection method for the survey
A bird is observed outside of the 100m survey boundary during the survey	The bird is recorded as a **before/after/outside survey observation** in the bottom middle datasheet section
A bird is observed flying over the survey field while walking to/from the survey point	The bird is recorded as a **before/after/outside survey observation** in the bottom middle datasheet section

If there is a bird (or birds) on your site that you cannot identify, make sure to include it on your data sheet as “unknown” and then describe it in the notes at the bottom of your data sheet. Take field notes that will help you identify it later on, (i.e. take pictures, sketch a drawing, note its behavior, record its songs, etc.) We can also have a VWL staff member come out with you on one of your surveys if you really get stumped.

Entering Data

After each site visit, enter the data collected during your 3 point counts to the excel file provided to you. The spreadsheet contains 3 tabs: “ENTER DATA HERE”, “AOUCodes”, and “Example Data Sheet”. If you enter the alpha code correctly, the common name will fill automatically. Please input data from the field data sheets to the excel spreadsheet. Save your completed datasheet as “sitename_yourname.xls” and send it to the Survey Coordinator, Erin Shibley, at ShibleyE@si.edu.

An example field data sheet and Excel spreadsheet are attached at the end of this manual.

Example Bird Survey Datasheet

Survey 1 of 3

VWL GRASSLAND BIRD SURVEY POINT COUNT FORM

Christopher Rademacher, Erin Shibley
Observer(s)

27 May 2024
Date (ex. 24 May 14)

Contigo Ranch A
Property Name and Survey Point (A, B or C)

05:57 am
Start time of 10-minute count

15.5 | Clear | 1
Temperature (°C) | Sky Condition | Wind Speed (0-5)

med
Vegetation height (short, med, tall)

SPECIES ALPHA CODE (enter each bird individually)	0-5 minutes Seen (S), Heard (H), Both (SH)		5-10 minutes Seen (S), Heard (H), Both (SH)		COMMENTS (breeding behavior, carrying food/nesting material, territorial aggression, etc.)
	Within 50m	Between 50m - 100m	Within 50m	Between 50m - 100m	
RWBL	SH				♂
SOSP		H		H	
AMGO		SH			on coneflowers
AMGO		SH			" "
AMGO		SH			" "
EAME	S		SH		carrying food
BARS		SH			foraging
RWBL		S			
BLJA			SH		
KILL				H	
FISP				H	
SOSP			SH		
TRES			SH		foraging
TRES			SH		" "
TRES			SH		" "
BOBO				SH	♂
BOBO				S	♀
NOMO			SH		

FLYOVERS (During Survey)

CANG ×3
TUVU
GBHE
CORA

BEFORE/AFTER/OUTSIDE SURVEY OBSERVATIONS

YBCU
RHWO
PIWO
EAKI
NOBO! ↑ heard
GCFL
EATO
CARW
AMGO
AMRO ×6

OTHER NOTES

- buggy morning
- deer in field ×3

Revised 14 Feb 2024 by C. Rademacher, SCBI

Example Excel Datasheet

	A	B	C	D	E	F	G	H	I	J
1	Who took part in the survey?	Where was the survey conducted?		When was the survey conducted?			What were the field conditions during the survey?			
2	**Observers** (use full names, each separated by a comma)	**Site Name**	**Point (A, B, or C)**	**Date** (MM/DD/YYYY)	**Start Time** (hh:mm)	**Visit #** (1st, 2nd, or 3rd)	**Temp** (deg C)	**Sky Condition**	**Wind Condition** (0-5)	**Grass Height** (short, med, tall)
3	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
4	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
5	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
6	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
7	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
8	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
9	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
10	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
11	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
12	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
13	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
14	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
15	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
16	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
17	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
18	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
19	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
20	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med
21	Christopher Rademacher, Erin Shibley	Contigo Ranch	A	5/27/2024	5:57	1	15.5	clear	1	med

K	L	M	N	O	P	Q	R	S	T
What species was observed?		Where&How did you observe this species (during 0 to 5 minutes)?		Where&How did you observe this species (during 5 to 10 minutes)?		Was this species detected as a Flyover or Incidental observation?		**Species Notes** about the species observed (e.g., behaviors or observations such as carrying nesting material or food, territorial behavior, male or female, etc.)	**Survey Notes** regarding survey period (e.g., things that could have impacted detection, such as noise levels or the presence of other predatory wildlife)
Species Alpha Code (each line represents an individual)	**Common Name** (this will automatically fill if the species code is correct)	≤50m = 1 >50m = 2	seen = S heard = H both = SH	≤50m = 1 >50m = 2	seen = S heard = H both = SH	**Flyover** (seen flying over field during the survey; Yes or No)	**Incidental** (seen before/after/outside of surveys; Yes or No)		
RWBL	Red-winged Blackbird	1	SH					male	buggy morning, deer in field x3
SOSP	Song Sparrow	2	H	2	H				buggy morning, deer in field x3
AMGO	American Goldfinch	2	SH					on coneflowers	buggy morning, deer in field x3
AMGO	American Goldfinch	2	SH					on coneflowers	buggy morning, deer in field x3
AMGO	American Goldfinch	2	SH					on coneflowers	buggy morning, deer in field x3
EAME	Eastern Meadowlark	1	S	1	SH			carrying food	buggy morning, deer in field x3
BARS	Barn Swallow	2	SH					foraging	buggy morning, deer in field x3
RWBL	Red-winged Blackbird	2	S						buggy morning, deer in field x3
BLJA	Blue Jay			1	SH				buggy morning, deer in field x3
KILL	Killdeer			2	H				buggy morning, deer in field x3
FISP	Field Sparrow			2	H				buggy morning, deer in field x3
SOSP	Song Sparrow			1	SH				buggy morning, deer in field x3
TRES	Tree Swallow			1	SH			foraging	buggy morning, deer in field x3
TRES	Tree Swallow			1	SH			foraging	buggy morning, deer in field x3
TRES	Tree Swallow			1	SH			foraging	buggy morning, deer in field x3
BOBO	Bobolink			2	SH			male	buggy morning, deer in field x3
BOBO	Bobolink			2	S			female	buggy morning, deer in field x3
NOMO	Northern Mockingbird			1	SH				buggy morning, deer in field x3
CANG	Canada Goose					Y			buggy morning, deer in field x3
CANG	Canada Goose					Y			buggy morning, deer in field x3
CANG	Canada Goose					Y			buggy morning, deer in field x3
TUVU	Turkey Vulture					Y			buggy morning, deer in field x3
GBHE	Great Blue Heron					Y			buggy morning, deer in field x3
CORA	Common Raven					Y			buggy morning, deer in field x3
YBCU	Yellow-billed Cuckoo						Y		buggy morning, deer in field x3
RHWO	Red-headed Woodpecker						Y		buggy morning, deer in field x3
PIWO	Pileated Woodpecker						Y		buggy morning, deer in field x3
EAKI	Eastern Kingbird						Y		buggy morning, deer in field x3