Wisconsin Breeding Bird Atlas II
Point Counter Handbook

Thank you for being part of our Wisconsin Breeding Bird Atlas II (WBBA II) Point Count Team!

Note: New additions to this handbook for 2017 are in red type.

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1. Background

Although atlases contain valuable information for conservation on bird occurrences, ranges, and breeding information, they traditionally have not provided good information on relative *abundance* of birds. Second-generation atlases are now incorporating stationary point counts in order to better look at how avian abundance varies within occupied regions. This information can lead to products like relative abundance maps and estimates of population size. With WBBA II, we hope to conduct over 16,000 point counts in 50% of blocks (in a checkerboard pattern) across the state in order to gain better information on relative abundances of our breeding birds (or at least the species we detect enough to be able to model!). Each year from 2016–2019 we will conduct approximately 4,000 roadside point counts distributed evenly around the state.

2. Point Count Webpage

A website with point count resources is available at: https://wsobirds.org/atlas-point-counts-2017

This website is not intended for the general atlasing public and so is not linked from the main atlas webpage; please bookmark it.

3. **Checklist of Materials**

- Maps of points
- GPS with point locations
- Extra GPS batteries
- Pencils
- Binoculars
- Datasheets
- Quick Reference Sheet for Point Counters
- Clipboard
- Headlamp
- Stopwatch/timer
- High-visibility vest
- Rangefinder
- Gazetteer
- Headnet and gloves

4. **Finding Your Points**

This link will take you to a web page hosting folders. The first folder has GPS coordinates for the points. The spreadsheet in that folder also shows the surveyor for each quad. A second spreadsheet has additional backup points if the 10 we provide aren't enough (this will probably be a rare occurrence for most people). All the alphabetized folders have maps to your points, listed by block name. Most quads will have three maps, one corresponding to each block being surveyed.

If you need to find out where your block is, you can use the interactive map here, and the search bar should locate your block.

5. **GPS Settings & Uploading Points**

Your GPS should be set to decimal degrees (e.g. 44.50121, −88.06212 -- it might look like hddd.ddddd on your settings) and the Map Datum should be NAD83. If these are not set correctly, you will likely be in the wrong place!

Be sure to add the locations of all of the points for your blocks – this includes locations of the backup points in case you need them.

If you do not already have a way to upload these coordinates into your GPS, follow these steps:

1. Download and install MN DNR GPS, which you can get here.

2. Make a spreadsheet listing only the points for your blocks. You can get that in folder 1 here.

3. Save a version of that spreadsheet, and make a new spreadsheet that you cut down to 3 columns: Point ID, Latitude, Longitude. Rename the Point ID column to say: ident

4. Save a version of this file as a .txt file. It should have 3 columns, ident, Latitude, Longitude.

5. Plug your GPS into your computer, turn your GPS on, and open the MN Garmin program.

6. Using MN Garmin, click “File”, Load from, and point it to the .txt file you made. Note you may have to use the drop down on the lower right to allow it to view text files.

7. Using MN Garmin, go to “GPS”, then “Find GPS” to get DNR Garmin talking to your GPS. This may occur by itself as soon as you open DNR Garmin, but if it does not, this should fix it. When the computer is talking to your GPS correctly, the GPS details will show at the top of the screen.

8. Go to “Waypoint”, “Upload”, and this should upload the points to your GPS. This may take several minutes. Then, you’re done!

6. Points to be Surveyed

Yellow Primary Points

At each block, you will do 5 primary points. These are marked in yellow on your map. These first 5 points can be done in any order, so do them in the most efficient manner.

Purple Backup Points

There are 10 backup points on your map, marked in purple, if for some reason you are not able to conduct one of the first 5 points (see criteria below). ***Backup points must be selected in order.*** If one of the first 5 points is not doable, you must move to point 6. If two of the first 5 are not doable, you must do 6 and 7. (In theory, once you knew you had to do 6 and 7, you could do 7 before 6, but you could not do 14 as your backup just because it was closest to you). Continue tossing points out in order as necessary but the end result should be surveying the lowest numbered replacement points possible, not the most convenient, ultimately to total 5 points per block. If all five of your primary (yellow) points are suitable, then you will not use the purple points.

Blue Star Forest Points

There is a second tier of points in some blocks, selected specially because they represent northern or southern forest types of particular interest. These are marked with a blue star and must be surveyed when suitable. They are surveyed exactly the same as the other points.

New Blue Star Point Adjustment Rules for 2017:

In effort to improve forest bird detections on blue star points, we have introduced the following rules for shifting these points when the original location is not suitable.

1. In counties targeting southern forest, blue star points should be conducted in a location where at least 50% of the 100 m circle surrounding you is forest (ignore the road when estimating this). Forest is defined as “Habitats dominated by trees at least 20 ft tall, and canopy cover is at least 50%.” In counties targeting northern forest, blue star points should be conducted in a location where at least 50% of the 100 m circle surrounding you is **coniferous forest**, i.e. spruce, fir, tamarack, cedar, pine, etc. The goal here is to be sampling conifer-rich areas more likely to host the priority species whose detections we’re trying to increase with these points.

2. Maps now have blue shaded areas of target forest on them (polygons). If the original point is not suitable, you may move your point within the same blue polygon to reach the 50% criteria using the steps below. You may not move it out of your blue polygon into a neighboring blue polygon.
3. Move your point the smallest distance necessary to reach the 50% forest criteria. You are not permitted to cherry-pick to get to the "best" spot with really good looking forest.
4. Point locations should remain roadside as with all other points, though the new location is not required to be on the same road as the original location as long as it is associated with the same polygon.
5. Don't forget to take a new GPS location at the new points (you should be doing this anyway but it is especially important when you move the point).
6. When moving a point, be sure to maintain a 400 m distance from adjacent points that you surveyed. Do not toss one of your primary points in order to fit in a forest point. The five yellow/purple points you survey should take priority before you move a blue star forest point.
7. If moving a forest point within your blue polygon does not achieve the 50% threshold, conduct the survey at the point with the highest % of target forest you can reach.
8. If you cannot access a blue star forest point location or anywhere near the blue polygon associated with that point, abandon the point, and do not replace it with another.

7. Rules for Moving Points

A point can be moved up to 25 m if some issue makes the exact point dangerous or unsuitable, but a nearby location would be suitable. Moving points should be rare. Do not move points because the habitat looks "better" 25 meters in another direction. If a point cannot be moved 25 meters to solve the issue, then discard it and select the next lowest number among purple backup points.

If the quality of the GIS road layer on the map causes the point count location to be some distance from the road in real life, you may move the point to the nearest point on the actual road, unless this discrepancy is >100 m. If the discrepancy is >100 m, discard the point and select a purple point to replace it.

8. Rules for Discarding Points

A point should be discarded and a purple point drawn to replace it if you cannot access the road the point is on. If the point is on a road but you cannot drive the road, for example, a gated road that is accessible to the public, you may still do the point IF you could get out of your car and walk to the point and back within 10 minutes. If it would take longer than 10 minutes to walk, then discard the point.

A point should be discarded and a purple point drawn to replace it if the point is too noisy (e.g., a very busy road or a factory), which would significantly limit the birds you are able to detect. If you have trouble hearing birds >50 m away because of noise, reject the point and move to a backup point.

If the point presents a dangerous situation with regard to traffic, including a sharp curve, no shoulder, or any other reason you do not feel safe standing on the side of the road, discard the point and draw a purple point to replace it. In some instances you may be able to salvage these points by finding an alternate spot to park, and walking to the point location from a safer parking area (if less than 10 minutes round trip).

If the point is not on a road at all or the road is private, discard the point and select a purple point to replace it.

If through the process of discarding/replacement you are left with less than 5 suitable points in the block, additional points are available in folder 1 here.

9. When to Conduct Point Counts

Points should be conducted May 24–July 4 in the south, and May 27–July 7 in the north. See the green dividing line on this map that indicates north and south. For quads with a line cutting through them, use the imaginary quad center point to determine whether the quad is north or south. Do not break up blocks within a quad to be done on different days — if the quad center point is north, all blocks are considered north.

Counts should begin ½ hour before sunrise and finish no later than 4.5 hours after sunrise. Find sunrise/sunset times here. If you have just one or two points left in the quad and you're at 4.5 hours after sunrise, you can stretch it a bit, but strive to be done as early as possible as bird song can taper off sharply in late morning. If you finish all points in a quad and still have time to visit another nearby quad and knock out a few points, then you are welcome to do so. Moreover, it is not necessary to conduct all points in a quad in the same day so feel free to knock out 8 one day and 7 another, or other combinations as your schedule and suitable weather allow.

Points should be conducted during mornings without sustained precipitation and winds below 12 mph. If weather conditions deteriorate after three consecutive points, end the survey and attempt to conduct the survey during better weather conditions.

We strongly recommend you scout your route before you run it to determine which points will be doable and which will need to be discarded in favor of a backup point. Having to re-choose points during the morning of a point count may cost valuable time and significantly impede your ability to finish the quad that morning. If you are surveying additional quads in the same region, late morning after your survey finishes is a good time to scout a nearby quad.

To save time and mileage scouting, we strongly recommend first reviewing your maps at home using internet maps, particularly Bing Maps (especially "Bird's Eye View" to view zoomed-in overhead views) and Google Maps (especially "Street View" to view street-level images). Examine your maps, especially looking for points that might be on small roads, high-traffic or no-shoulder roads, or any other situation that makes it necessary to discard and re-choose points. In many cases you will still have some points to ground-truth in the field, but use of the internet maps may help make it clear if certain roads are private driveways or gated roads, and will allow you to rule out a few points and save you time during the scouting process.

NOTE: We suggest you practice these point counts before your first day in the field. Print out some datasheets and head out in the morning to anywhere birds are singing to familiarize yourself with these protocols.

10. At the Point

As you are preparing to count, record: block ID, point ID, date, observer name, wind, weather, and noise. If you have a rangefinder, use it to identify 50m and 100m in several directions so you are

prepared to bin bird detections accordingly. We do not have an official period between pulling up and starting the point but this period of time when you are filling out the top of the datasheet and shooting some rangefinder locations will serve as a short period to let the birds settle a bit.

Points are 10 minutes long with 1-minute time intervals. Each individual bird will be recorded once (except see section below marked "important"), and you will be indicating in which minute-interval you FIRST detected it (with minute 0 being the initial minute). Estimate how far from you the bird is by putting it in one of three distance bins: 0-50m, 50-100m, and >100m. Record all birds you see or hear, unless you believe you detected the same individual at a previous point. If you can hear a bird from multiple points, only report that individual once — report it at the point closest to the bird. The number of birds seen (#) will be 1 in most cases. Occasionally groups of birds (e.g. a flock of Starlings or 5 Red-winged Blackbirds all singing in a field) may warrant a larger number provided the minute, distance, and detection categories are identical.

Note the detection type for every species. Each species receives only 1 detection type, if more than 1 applies, choose the letter towards the top of this list:

Detection type
J – Juvenile
F – Flyover
S – Singing
C – Calling
V – Visual

Note that if you did see both juvenile birds and adult birds of a species at a point you'll want to put those on separate rows of the datasheet to keep the juveniles separate.

IMPORTANT: There is one instance where an individual will be recorded in more than one minute on the datasheet. For birds that are first detected as a visual or calling, if that individual later starts singing, you should also record when and where it started singing. To do this, simply add a slash in the box and include the new data in the same row (for this reason, you'll want to get in the habit of writing your entries on the left sides of the column).

For Example, let's say you first detected a Hermit Thrush giving a call note in minute 2 at distance 2. At minute five the bird is still at distance 2, and it starts singing. In this case, your datasheet should look like this:

	Species Code	Detect. Code	1 0–50m 2 >50–100m 3 >100m Distance	Minute	#
1	WTSP	S	1	0	1
2	HETH	C/S	2/2	2/5	1

This only applies to birds that are first detected as Visual or Calling, and then start Singing. For any birds that are initially singing or any birds that never sing, the slash method does not apply. The reason for this is because our data analysis requires we know the time/distance of first detection AND the time/distance to first SINGING detection if the bird sings.

Determining song vs. call will not be difficult for most species. However, in some cases the primary vocalization of a songbird may not be very song-like (e.g. Cedar Waxwing, Red-breasted Nuthatch), while some non-passerines may have distinctive sounds that technically aren't songs but function as such (e.g. cuckoos, doves). **Use the "S – Singing" code for any sound that represents a primary noise advertising a bird's territory,** i.e. NOT a sound the bird makes outside of breeding season. Most often this will be straightforward with singing passerines. Some examples of songbirds that often vocalize but should never be "S" are corvids (jays, crows, ravens), swallows, nuthatches, and waxwings. Other sounds not technically songs that do warrant an "S" are drumming Ruffed Grouse, drumming Yellow-bellied Sapsucker or Pileated Woodpecker (no other woodpeckers can be confidently identified by drumming pattern), American Bittern pump-er-lunking, and Mourning Dove cooing. When in doubt the principle guideline should be, "Is this a sound the bird is likely to make off territory outside of breeding season?" if the answer is yes, then it probably doesn't qualify as "S – Singing" and is more likely "C – Calling". Feel free to write comments on your datasheet to clarify any uncertainties. The Acceptable Breeding Codes Chart we created for general atlasing can help you determine for which species S is not meaningful.

During the point, you may use either the bull's-eye diagram to keep track of birds (helpful for points where you have multiple individuals of a species that may move) or the tabular format. We have also included a stand-alone large bull's-eye companion datasheet, if that is your preference for recording — but note that using the bull's eye is only an intermediate step in data recording. You need to fill out the table as the main method of recording data, even if you used the bull's-eye in the field. The table does not need to be completed in the field if you are primarily using the bull's eye, but must be filled in by the end of the day so you do not forget anything!

During the point, stand at a single spot, but rotate your body during the course of the point to make sure you are looking and listening in every direction. Stand away from your vehicle as to not be subjected to any noises from your vehicle. On busy roads, stand on the shoulder to avoid traffic. On rural roads, you may stand in the middle of the road (but watch for traffic!)

Record data using the standard 4-letter codes available here. If you use your own coding system in the field, please add the standard codes to your datasheet prior to mailing your datasheets.

Be aware of the following 4-letter-codes that were commonly confused:
EWPW is Eastern Whip-poor-will but EAWP is Eastern Wood-Pewee
RNPH is Red-necked Phalarope but RNEP is Ring-necked Pheasant
BWWA is Blue-winged Warbler but BAWW is Black-and-white Warbler

Use atlas breeding codes when applicable, with 2 minor changes from regular atlasing:

1. It is not necessary to use H or S codes during point counts. We will assume most birds are Possible unless you write otherwise.

2. Please use O for Observed (or F for Flyover) to indicate you are not sure if a bird will breed there.

Hopefully this requirement will ensure we are getting good incidental observations for the atlas without being time consuming. Do not worry about using the M code within a block for a species, we will figure that out on the back end. There is no need to enter atlas codes into Atlas eBird for birds observed at a point count during the point count period as these will get bulk uploaded on the back end. Other

incidental observations outside of the period or away from the point WILL need to go in via Atlas eBird, however.

Upon completing the survey, record the latitude and longitude of the point surveyed, REGARDLESS OF WHETHER YOU MOVED THE POINT OR NOT. Also record the 2 most dominant/abundant habitats within a 100-m radius of the point center using the established WBBA II habitat codes listed on your Quick Reference Guide for Point Counters. Do not overanalyze these habitat assessments and lose valuable bird survey time.

BREEDING CODES	
	OBSERVED
O	Observed (not likely breeding in this block)
F	Flyover
	POSSIBLE
	NOT NECESSARY TO LIST H OR S CODES FOR POINT COUNTS
	PROBABLE
S7	Singing male heard 7+ days apart
M	Multiple (7+) singing males
P	Pair in suitable habitat
T	Territory defense
C	Courtship display/copulation
N	Visiting probable Nest site
A	Agitated behavior
B	Woodpecker/wren nest Building/cavity excavation
	CONFIRMED
PE	Physiological Evidence/brood patch
CN	Carrying Nest material
NB	Nest Building (except woodpeckers & wrens)
DD	Distraction Display
UN	Used Nest (use with caution)
ON	Occupied Nest
FL	Recently FLedged young
CF	Carrying Food
FY	Feeding Young
FS	Carrying Fecal Sac
NE	Nest w/Eggs
NY	Nest w/Young

11. After Your Quad is Finished

If you finish 15 points and it is not yet 4.5 hours after sunrise, feel free to try to head to one of your nearby assigned quads to do a few more points.

We highly recommend after your route is done that you scout a nearby quad (see section 9).

If you still have time and energy, feel free to conduct additional atlasing in priority or specialty blocks on the way back from your route.

12. Data Management and Entry

Later in the day when you're out of the field you should clean up your datasheet and check that you've filled everything out correctly. Don't let this go for days or you will forget what happened this particular morning. If you took the morning's survey notes on the back of a McDonald's bag, please transcribe your data to the official datasheet. Please make sure all handwritten data are legible to individuals other than yourself so we can proof hard copies and perform follow-up as necessary.

If you will not be immediately entering your point count data, (for some paid surveyors, datasheets may ride around in their car or tent for a week) please back up your datasheets each day by taking a photo of them. Photos can be discarded after the data has been entered electronically.

If you are a new atlas point counter this year, in order to make sure you are doing things correctly, after your first survey, please send us 3 of your datasheets immediately. These can be photographed or scanned and emailed to ryan.brady@wisconsin.gov, sent as picture message to Ryan at 715.685.8585, or faxed to 715.685.2909.

You should enter data into a MS-Excel spreadsheet template and email this spreadsheet to us periodically. If you are able to keep up on your data entry, that is ideal, but we realize depending on what else you have going on, the field season may be quite busy. The data entry template is here. The top rows give an example of how to enter it.

Here's what you need to know about the data entry template:

1. There are multiple tabs at the bottom – you only need to fill out the 2 first tabs – D_SamplingEvents and D_Observations.

2. The third row down has the name of the data field. The second row down has an example of what you'll be putting in that column. The top row provides further details on what we expect in that column, but if you've filled out your datasheet properly, this should be pretty intuitive.

3. Many fields have a filter on them so if you enter an impossible value for that column, it will tell you to fix it.

4. The PointId column appears on both tabs. It is the name of your survey point. The full point name is the 6-letter abbreviation that appears on your field map, then an underscore, then the point number. So Point 2 in Island Lake SE is ISLASE_2. Remember that the blue star points all start with an F, so a blue star point would look like ISLASE_F2. The tab called M_SamplingUnits has a complete list of all the points. IMPORTANT: Please take a second to double-check you are using the correct Point ID. Note that PointId appears in both of the tabs you need to fill out.

5. D_SamplingEvents contains all the info at the top of your datasheet, like name, date, start time, habitat, wind speed, etc. You'll need to fill out one row for each point you did.

6. D_Observations contains all the bird data you recorded at a point. You'll fill out about 20 or 30 rows here for each point, depending on how many rows of data you recorded. . In many cases,

entering data by going down in each column instead of going across each row is actually faster. Add it exactly as you recorded it in the field, except for the "Slash" situations where the bird started singing after you first saw it calling/visual. For the slash situation you'll put your first detection info in columns C, D and E, and you'll put the second half of your slash in the "redetection" columns H, I, and J. Since the slash situation is relatively rare, most of the time you won't be using columns H, I, and J. Do not leave any empty rows between entries.

7. When you are done, save it as an .xlsx file. It's probably easiest to just keep adding your visits onto the same file, and saving a new version every time, so that at the end of the year, your final file has all your visits.

8. If possible, enter your data by keeping points from 1 block together, and blocks from 1 quad together. This makes it easier for you to keep track of how many points are in each quad, and easier for us during the proofing process. Also DO NOT EVER USE THE SORT FUNCTION ON THE SPREADSHEET with your data, which could make the proofing process extremely difficult.

9. When you think you have finished entering data, please double-check that you have all of your data entered. You should have the correct number of quads that you did, the correct number of points in each quad, and the correct point names.

10. We expect that you will have completed your assigned points if it was possible to complete them. If you ran into a situation where the road conditions made it impossible to reach points, please keep track of these and report to us which blocks or points were not surveyable.

As you periodically enter and double-check your data, give it a new file name and email it to ryan.brady@wisconsin.gov.

Incidental atlas-worthy observations encountered before or after a point count should be entered separately into Atlas eBird.

13. Time is of the Essence

It can be tight to average 15 points/quad in a given morning (quads with 3+ additional Blue Star Forest points will likely not be doable in one morning). Thus you should plan to maximize your efficiency in every way possible. Start on time, move swiftly, do not spend time atlasing, and take advantage of all suitable weather conditions during the period.

Beware of the following factors which can impact your ability to finish a quad in a morning:

a) Getting started too late (wake up early enough to get yourself together and drive to the survey site so you're ready at your first point 0.5 hours before sunrise);
b) Too much time conducting incidental atlasing (return to location later in day if desired);
c) Too much time cleaning up data sheets (do this later in day when you return from field);
d) Inefficient navigation between points (scout points and roads the day before); and
e) Sleeping in and then the rain or wind stops (rain and wind when you wake up doesn't mean later in the morning won't be good so pay attention to weather forecasts and radar).

We have a relatively short window of time to be able to conduct these counts, so it is imperative that you accomplish the ones you have been assigned this year. Be sure to take advantage of all good weather days whenever possible!

14. Roadside Safety and Public Interactions

Safety is of the utmost importance, being that all of these are roadside point counts.

We suggest you wear a high-visibility vest when you are point counting. This will make you more visible to cars, and make people less likely to pester you during a count as you look more "official" when wearing it.

Please ensure the point you are standing is safe. On busy roads, you should be parked completely off the road and standing off the road. On smaller roads, you should ensure that you are parked in a location where approaching cars can see you. Although you will be primarily focused on counting birds, please ensure you remain cognizant of any traffic. As discussed above, if you do not feel safe at the point, discard it and select a replacement point.

Each day you go into the field, please let someone (significant other, friend, colleague, supervisor, etc.) know where you'll be and when you expect to be back. Since you're working as a volunteer or contractor, we will not be checking in on each of you on a daily basis, but this is just good practice for fieldwork.

Be very careful during your pre-dawn drive to conduct counts. Be alert for deer, which are particularly active and can be difficult to see at this time of day.

Additional basic reminders on field safety appear in the regular Atlas Handbook.

If you are approached by someone while stopped by the road, we have a 1-page flyer that you can share if they want more information on what you are doing. It's intended for general atlasing, but it should suffice.

We have made a vehicle sign which we suggest you display to look more official.

If you are approached by someone in the middle of your count, politely say you are in the middle of a bird survey and can't talk for the next several minutes until it's complete. If someone ends up engaging you in conversation that takes more than 30 seconds away from your count, you will end up having to completely restart the point after the conversation.

If someone really doesn't believe you when you tell them why you are stopped on the road, and for some reason wanted to follow up with your supervisors, at the end of this document is the contact info for 3 DNR people who know that you're out doing these points and can vouch for you. (Call Nick and Ryan first before you call our supervisor ☺).

15. When all your surveys are complete:

-Finish data entry
-Proof data, including

-compare your hard copy datasheet to the electronic spreadsheet
-double-check that point names are correct
-double-check that you entered every point and block you surveyed

-Mail hardcopy datasheets to Ryan or Nick at the address below

***NOTE: Please sort your hard copies into the order in which you entered them into the spreadsheet, preferably by keeping points from 1 block together, and blocks from 1 quad together. This makes it MUCH easier for us during the proofing process.

-Return any borrowed equipment

-Fill out atlas priority info forms (note that point counters don't need to do this for Possible codes found during the point count because we'll already have exact location and 2 most abundant habitats)

If you have any general questions about conducting Point Counts, contact Ryan or Nick using the info below.

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