



NPS Landbird Monitoring Program



Blackburnian Warbler
Laura Gooch photo

VOLUNTEER RESOURCE MANUAL



Hermit Thrush
Kelly Colgan Azar photo

VOLUNTEER RESOURCE MANUAL

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NPS LANDBIRD MONITORING PROGRAM

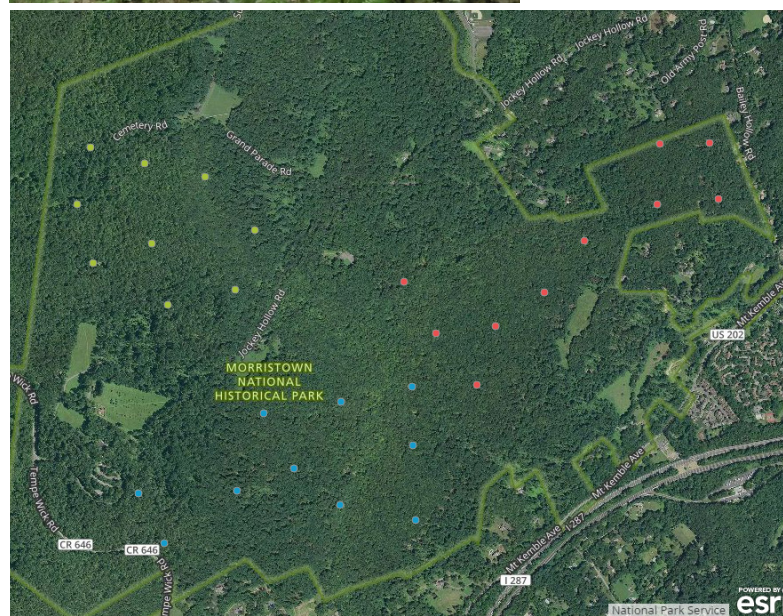
From everyone within the National Park Service [Inventory & Monitoring Division](#) - **THANK YOU** for being a volunteer for the NPS landbird monitoring program! This resource manual will provide you with guidance on how to properly and safely collect bird observation data. Following you will find specific details on how to conduct bird surveys, training exercises, and your data management responsibilities after fieldwork is finished.



Why Monitor Birds?

I&M networks in the northeast have been monitoring “landbirds” (relatively small, terrestrial birds - excluding raptors and upland game birds) since the mid-2000’s. The NPS is particularly interested in birds that utilize park forests for breeding purposes, which includes many species that migrate thousands of miles in order to do so. Birds are important members of park ecosystems, and their presence or absence make them good indicators of local and regional ecosystem change. Birds can also be indicators of the effects of habitat fragmentation.

When parks manage for different bird species with unique ecological requirements, it creates cascading benefits at a much larger landscape scale. The insights your monitoring will provide about long-term bird trends will give parks a measuring stick for assessing their ecological integrity and sustainability.

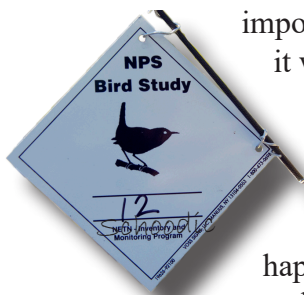


How You Will Do the Monitoring

A series of bird monitoring points have been established at each participating park. Most parks have multiple study routes of between 5 and 10 “point-count” stations spaced from 200 to 250 meters apart. You will listen and look for birds while at each station on your route during 10-minute **countdown** sessions. For each bird observed, you will record the minute (down from minute 9 to 0) and the distance it is from you (in “bands” of 0-50 m and >50 m). If possible, *a pre-survey visit is strongly recommended* to become familiar with your site. A map and GPS coordinates are provided for each point. A handheld GPS unit or one of several GPS smartphone apps (e.g. GPS Waypoints, Avenza) can help guide you to each point. You can use a

hand compass as well. Walking routes between stations may change due to topographic obstacles, felled trees, wetlands, or other issues. Unless noted otherwise, all bearings on the site directions sheets are magnetic, not “true” (so do not correct the declination if you use a compass – but check your directions to be sure!).

Why You Are Being Asked to Record Birds in This Very Specific Way



The data collected during point counts are analyzed by several scientific models. It is very important you record your detections precisely as the directions call for. When done accurately, it will not only relate the number of birds that you detected, but will also allow NPS scientists to estimate the numbers of birds that were **NOT** seen or heard during your point count. This gives a more complete estimate on the numbers of birds in a park than using only birds actually seen or heard.

An important component of this monitoring project is that point-counts are meant to happen *early* in the morning. As all intrepid birders know, the first few hours just after sunrise are when most migratory birds are singing to defend territories and attract mates. It's no wonder this time of day is dubbed the "dawn chorus".

When collecting data, keep in mind the most essential details to get right are to identify bird species correctly and to count each individual **only once**. Data models assume that the time recorded for the individual bird is the time it was **first** heard or seen. If for any reason you can't meet these observation requirements during your count, please provide written comments with as much detail as possible when you submit your data forms. *This will be a tremendous help to the data analysis phase of the project!*

Your Duties and Responsibilities as a Volunteer



This volunteer landbird monitoring program would be impossible without you - *the volunteer!* We again thank you for all the hard work you have already done and will do to make this program a success. Our goal is to provide a safe, scientifically sound, and rewarding experience for all involved. Don't hesitate to contact the your landbird coordinator with any concerns, issues, or needs you have. By volunteering for this program, there are also some basic but crucial expectations we have of you.

As you likely can guess, having strong bird id skills (by both sight and song) for your area is the primary skill you need to successfully be a part of this program. But equally important is the need for **good data management practices**. After all, if your can identify all 914 bird species in North America by just 2 notes, but can't accurately record them on your Field Mapping Card, then all those observations are useless to this study and to science.

■ Monitoring Window and Frequency

Network	Survey Window	Minimum # of Surveys
MIDN	May 25 th – July 15 th	2
NCBN	May 25 th – July 15 th	2
NETN	May 25 th (MORR & WEFA only) June 1 st – June 30 th	1, except SAGA, SAIR, WEFA 2

Survey windows and minimum number of surveys vary between networks and parks. See table for details. Follow-up surveys should be completed within 2-weeks of the

initial visit. NETN's three smallest parks (Saint-Gaudens NHP, Saugus Iron Works NHS, and Weir Farm NHS) can only accommodate a few point count stations and so must be surveyed at least twice. Second site visits for all other NETN parks are highly encouraged but not required. Counts must be conducted in the survey window period for each network. Counts occurring outside of this window will be flagged in the dataset and may not be included in the analysis portion of the project. The following section provides **best practices** regarding preparing for, executing, and reporting your bird observations.



Study Your Bird Songs and Codes. April and early May are a good time to re-familiarize yourself with the bird songs and calls common to your area. The more bird songs/calls you can recognize the more valuable your data will be to this study. You should also start familiarizing yourself with the 4-letter bird codes of species common to your area. For the latest codes, see the [Institute for Bird Populations website](#) and click on the Alpha Codes Alphabetically by English Name link.



Practice Estimating 50 Meters Distance. During your survey, you'll need to be able to place your bird observations into two distance bands: 0-50m and >50m. It is important you can do this quickly in the middle of a busy count. For reference, things that equal 50m are: two tennis court lengths and an Olympic swimming pool. See Appendix A for optional training exercises.



Learn Your Route. If you will be surveying a route you are not familiar with, you are strongly encouraged to walk the route before your first survey. This will get you familiar with the route and let you identify any points that are difficult to find for any reason (let your landbird coordinator or park contact know).



Coordinate with Your Park. Your safety is of utmost importance to the NPS. As such, it is vitally important you adequately plan for a day “in the field” and that the park is fully aware of *when and where* you will be doing your monitoring. Please coordinate your schedule with the park **at least two days before your survey.**

REMEMBER: Try to begin your survey as close to sunrise as possible. Allowing for 10 to 15 minutes to navigate between points, you should be able to complete a 10 point-count route in 5 hours or sooner. If you still have several stations to go after 5 hours, it's best to visit them another day if possible.

The Day of Your Survey



■ **Count Conditions.** Counts should be conducted between sunrise and 5 hours after when birds are most active. We recommend a 0500 start time. Winds should be < 12 mph (Code 3 or less on the Beaufort Scale; Table 1). Other acceptable weather conditions include a sky of 0, 1, or 2 (Table 2). Counts should not be conducted in rain unless it is very light. *The rule is to only conduct surveys in weather that is unlikely to reduce count numbers.* Generally, the calmer and clearer the weather, the better the count. Check the forecast the night before your survey and plan accordingly (remember to contact the park if your plans change). Ambient noise levels should be at 2 or less during the survey (Table 3). If higher noise levels occur during a count (a loud train or vehicle noise) affecting more than 2 minutes of the count, it is invalidated and you must start over after noise returns to an acceptable level.



■ **Navigate to Your First Point-Count Station.** Use the map, GPS, and/or a compass to get to your first point. The forest routes may be periodically marked with flagging, NPS bird signs, or reflective markers (depending on the policy of your park).

■ **Prepare the Field Mapping Card.** Upon arriving at each sampling point, fill in the **Park/Route, Date, Observer and Recorder** section on the top of the Field Mapping Card (FMC - Figure 1). Before starting the countdown timer, record the **POINT #, TIME, SKY** conditions (Table 2) **WIND** speed (Table 1), **NOISE** levels (Table 3) and **TEMP** (degrees Fahrenheit). You should keep your FMC oriented in the same direction for the duration of your count.

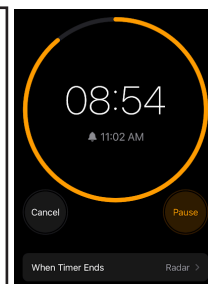
■ **Use a Smartphone App or Countdown Timer.** Use a smartphone app or **countdown timer** to keep track of the time. **Do not use a stopwatch.** Set the timer for 10 minutes and **verify it counts down** when you start it. Although the data will be transcribed to coding sheets later, the Field Mapping Card is the *only true record of what was detected during the survey.* Even during the rush of a busy point count survey, remember to record data clearly and in a firm hand.

In the Field: Count-down Monitoring Steps

■ **Record All Bird Observations.** Start the countdown timer. Recording is done by mapping all observations (visual and auditory) in the appropriate distance band (0-50m and 50+m) and approximate spatial location on the FMC. Only record the minute of the *first detection* of all individuals or groups of birds seen and heard during the 10-minute sampling period (NOTE: NETN park volunteers will also need to record squirrel observations. See Appendix B). This will require close attention to your count-down timer. See insets at right and **Figure 1** for a sample Field Mapping Card with all detection scenarios. For each bird detected, record on the FMC its 4-letter code (A) in the correct distance band and approximate spatial location. If you are unsure of the bird code, use full common name and look up the code later. Underneath the code, write an “A” for an audio detection (likely the majority of your bird observations), or a “V” for a visual one. If you see and hear the bird

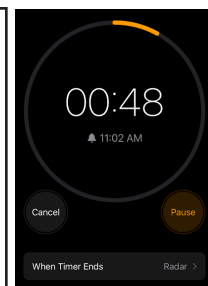
An individual Ovenbird

OVEN
A, 8
Audibly detected 8+ minutes to go in the survey



Group of 6 Red-winged Blackbirds

6
RWBL
V, 0
Visually detected Less than a minute to go in the survey





Scarlet Tanager
Bird Code: **SCTA**

at the same time, choose which detection type gives you the most confidence in your species identification. After the detection letter, record the minute it was first encountered (9 for birds detected during the first minute, then **counting down** all the way to 0 for detections during the final minute of a 10-minute survey period).

■ **Groups and Flocks.** All birds in a flock are counted together and recorded as a number above the 4-letter bird code. For example, if you observe a family group or breeding pair interacting with each other at the same time, that would be considered a group and are counted together. This is because the group was detected together, not as independent birds. The same is true for large flocks of birds like Starlings, Grackles, and Red-winged Blackbirds. It's important that when recording a group to not record each bird in the group as individual detections. They should be transcribed as one row on the Bird Data Coding Sheet (Figure 2).



■ **Keep track of bird movements as best you can.** *All birds should be counted only once.*

Mapping (marking the approximate location and noting movements) is the best way to reduce duplicate records. Recording type of detection (visual vs. audio) will help you track individuals. Also remember that the recorded distance should be **the horizontal distance** between the location a bird was first detected and the plot center (your location). *Note - to help avoid double-counting*

birds, keep your mapping card oriented the same direction during entirety of count, but you can turn your body in different directions if helpful to hear all

Table 1. Codes and descriptions for wind conditions

WIND	MPH
0 = Calm, smoke rises vertically	<1
1 = Light Air; rising smoke drifts	1-3
2 = Light Breeze; leaves rustle, can feel wind on face	4-7
3 = Gentle Breeze; leaves & twigs move*	8-12
4 = Moderate Breeze; moves thin branches, raises loose paper*	13-18
5 = Stiff Breeze; trees sway*	19-24

*Postpone survey until better conditions.

Table 2. Codes and descriptions for sky conditions. *Note that there is no category 3.*

SKY

0 = clear or a few clouds	4 = fog, if deters detection*
1 = scattered to partly cloudy	5 = drizzle or light rain*
2 = broken clouds/overcast	6 = rain*
	7 = snow*

*Postpone survey until better conditions.

Table 3. Codes and descriptions for noise conditions

NOISE	dB
0 = No background noise for majority of survey	<40
1 = Faint background noise for majority of survey	40-45
2 = Moderate background noise; difficulty hearing birds >100m away for majority of survey	45-50
3 = Loud background noise; difficulty hearing birds >50m away for >2 minutes*	50-60
4 = Intense background noise; difficulty hearing birds >25m away for >2 minutes*	>60

*Count is invalidated. Wait to see if you can restart the survey or return when conditions are more favorable. You may also pause timer mid-survey for short-lived noise disturbance (e.g. train, loud truck, etc.)

surrounding birds.

■ **Record incidental observations.**

“Incidental” birds are those that you encounter when moving from point-to-point, or birds that fly over/through your survey area during your point-count without interacting/utilizing the habitat. They do not factor into this study model and do not need to be recorded. However, if they are species of interest (rare/unusual), they can still help improve species lists for your park. For these birds, record the species code in the **Incidental Observations** section on the bottom of the FMC.

■ **Additional Survey Notes**

No attracting devices or techniques (e.g., recordings or “pishing”) should be used during a point count survey.

Do not refer to a bird song app for id. (Merlin, BirdNET, etc), but you can run it and the background and check it later if you'd like.

If you are working in pairs or teams, **only one person** should be making the detections. The second person may act as a recorder, but should not add any encounters the primary observer may have missed. This protocol is based on a single observer sample design, and doing so would adversely affect data analysis.

PARK/ROUTE: Acadia/Giant Slide DATE: 6/12/24

OBSERVER/RECORDER: Bob O Link / Robin N Swallow

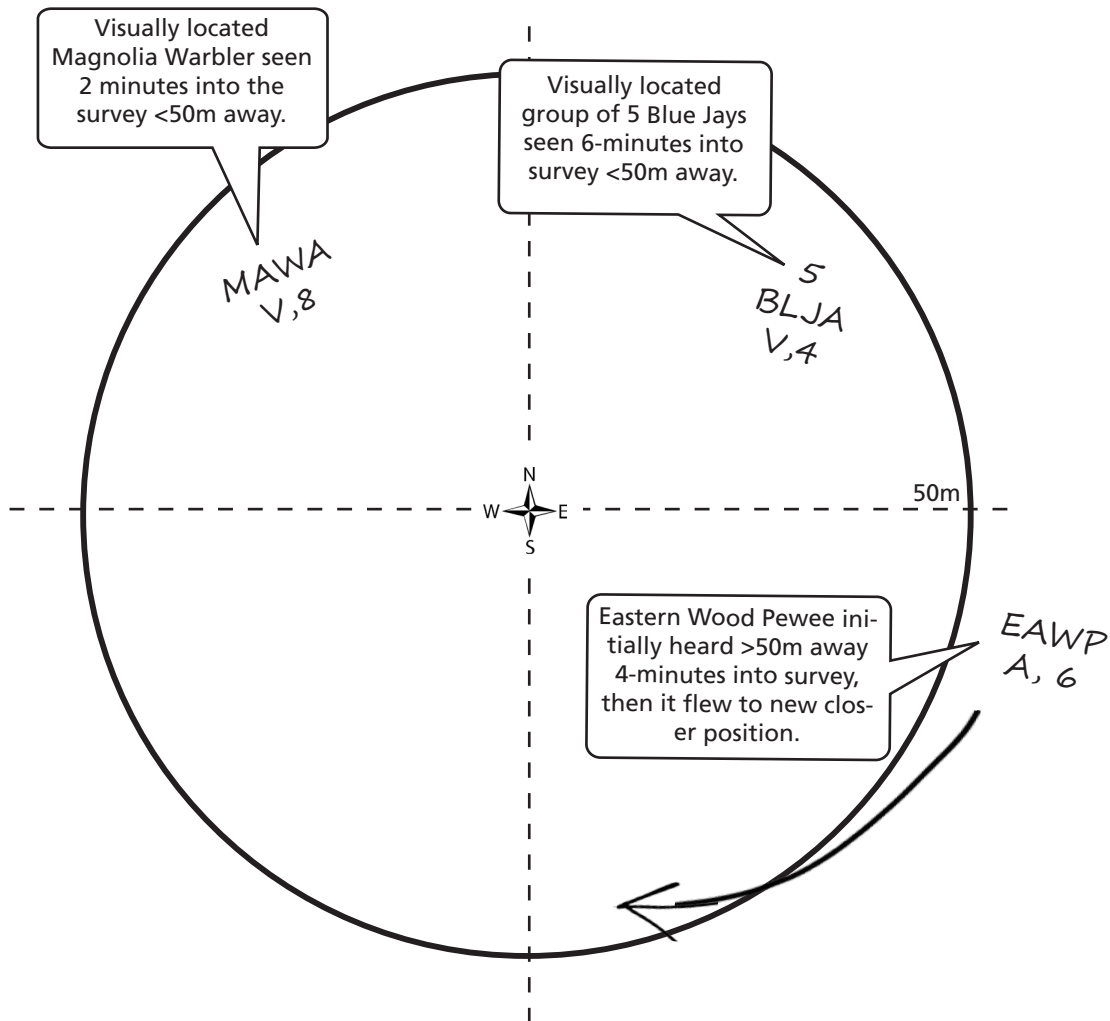
POINT# 3 TIME 6:15 SKY 1 WIND 0 NOISE 0 TEMP 58

NPS ONLY

Rte#: _____

100%: _____

10%: _____



Notes:

Recoding Incidentals and flyovers is optional and will not be included in the survey study. Only record rare/unusual birds observed while walking between points or ones that fly through your observation area during your survey without utilizing the habitat.

Incidental/flyover species codes

HADU, PEFA

Figure 1. Field Mapping Card example.

- **Stop recording bird observations at the end of 10 minutes.** Do not record any new birds in the mapping area of the FMC seen or heard after the 10 minutes has passed. As noted earlier, bird species of interest detected before or after your count may be recorded in the **Incidental Observations** section at the bottom of the FMC. Before heading to the next point, check over card thoroughly making sure it is complete and legible. Remember, *this is the only record of what happened during the survey*. Take the time to clarify anything illegible or out of the ordinary. Also, check to make sure you have gathered all of your field gear before moving to the next point.



- **Head to the next point.** Once satisfied everything is legible and in order, navigate to your next point-count station and repeat the process until you've completed all your points.



At Home: One Day After Your Survey Through August 15th

Transcribing Data and Mailing Forms - Data Responsibilities



- **Data Transcription.** Field Mapping Card observations need to be transcribed to the Bird Data Coding Sheets (BDCS - see Figure 3 for an example) soon after your survey. If possible, **do this within one-day** of your survey while your memory of events is still fresh.

■ Data Transcription Best Practices:

Note: the transcription process can be skipped if you decide to enter your data directly in the online database. See Online Data Entry below.

Do not transcribe detections chronologically or taxonomically. See Figure 2 for correct order as described below

- Event info and comments transcribed first (1).
- All birds in the >50m distance band are transcribed in clockwise order (2, dark blue arrow).
- Birds within 0-50m distance band are transcribed by quadrant, starting with the upper right quadrant.
- Birds within each quadrant are transcribed top to bottom (light blue arrows) (3-6).
- Incidental and flyover observations are transcribed last (7).

If you recorded bird movement during your survey, only transcribe the time of its first detection to the BDCS.

After transcription is complete, do a 100% review of your work. Correct any errors (wrong bird code, double transcription, etc.) by drawing a single line through them and entering the correct data with your initials at the end. Compare the FMC to the BDCS by counting up each bird observation and verifying they match.

■ Online Data Entry

After you've transcribed and verified your data on the BDCS, it is ready for entry into the [Region 1 Landbird online database](#). Depending on the park policy, you may be able to enter your own bird data. If you are eligible, an online security training is required before you can access the database. If you are interested in doing so, detailed instructions for accessing and using the database will be provided to you by your Landbird Coordinator. If you are unable to do the online entry, please let your Coordinator know as soon as possible.

- **Return All Data Sheets and Mapping Cards no later than August 15th.** After data have been transcribed and proofed, return the original Field Mapping Cards and Bird Data Coding Sheets back to your landbird coordinator. Either mail them, or if you have access to a scanner, you can scan and email them. For questions and additional information contact your landbird coordinator.



- **You're Done!** Once you've returned your datasheets and any borrowed equipment to the landbird coordinator - you officially finished with monitoring for the season! Time to

sit back, relax, and muse over the valuable contribution you've made to science that will pay dividends for decades to come. The landbird coordinator will be in touch in late summer/early fall to check-in on how the experience went for you and to get any feedback you have. You will also be contacted in the late winter/early spring to see if you'd like to do it again the coming bird monitoring season. **Thank you** again and enjoy the "off season"!

PARK/ROUTE: _____ DATE: ____/____/____		NPS ONLY Rte#: _____ 100%: _____ 10%: _____
OBSERVER/RECORDER: _____		
POINT# _____ TIME _____:____ SKY _____ WIND _____ NOISE _____ TEMP _____		

Notes:

Incidental/flyover species codes 7

Figure 2. Bird data transcription order

PARK/ROUTE: Acadia/Giant Slide DATE: 6/12/24

OBSERVER: Bob O. Link RECORDER: Robin Swallow

POINT# 3 TIME 6:15 SKY 1 WIND 0 NOISE 0 TEMP 58

NPS ONLY			
Rte#:			
100%:			
10%:			

	Species Code	Count (#)	Minute (9, 8...0)	Type (A,V, I)	Distance		Observation Notes	DB? ✓
					0-50	>50		
1	EAWP	1	6	A		X		
2	BLJA	5	4	V	X			
3	MAWA	1	8	V	X			
4	HADU			I				
5	PEFA			I				
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Figure 3. Bird Data Coding Sheet example.

Appendix A. Training procedure for estimating distance.

The two most critical aspects of conducting point counts for this protocol are to ensure that species are identified correctly and double-counting of individual birds is avoided. Additionally, to correctly estimate bird abundance within study plots, it is important that observers accurately estimate distances to detected individuals. Read and practice the training procedures below. All observers should “recalibrate” themselves by practicing these procedures at the beginning of each field season.



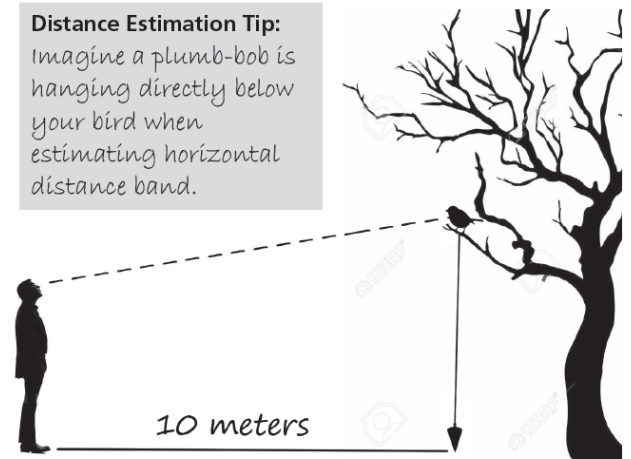
Training Procedure:

In a habitat similar to the one in which you will be conducting point counts, begin by placing flagging at 25m and 50m from a marked central point (e.g. the point count location). To do this, volunteers will either need a 25m (or longer) tape, a laser rangefinder, or a measured length of rope.

Place additional flagging of an unknown distance at 4 or 5 locations within your mock study site. Make sure that you can see them from the central location. Return to the center point and estimate the distances to these flags. For this protocol, a critically important skill is to estimate whether a bird is within 50m of your location or beyond 50m. Record your distance estimates, then using a measuring device, determine the distance to each flag and compare your initial estimate to the actual distance. Repeat this exercise several times until you can consistently estimate distances correctly.

The majority of birds detected by an observer are usually heard but not seen, and estimating distances to birds that are only heard is often the **greatest source of error** in point counts. Standing at the central point, listen for vocalizing birds. Choose one consistently vocalizing individual and estimate the distance (within 50m or beyond 50m) to the bird. It is important to note that the horizontal distance should be estimated to a point on the ground beneath the bird, as if a plumb-bob was lowered to the ground from the bird's location. Try to visually identify the tree or branch where the bird is vocalizing, and estimate the horizontal distance to an object that can be seen directly below the location of the individual. Now, with one end of your measuring device affixed to the central point, slowly walk toward the vocalizing bird until you can either see it or accurately estimate its location. Compare your initial estimate to the actual distance. Repeat this exercise for several birds at various distances.

Distance Estimation Tip:
Imagine a plumb-bob is hanging directly below your bird when estimating horizontal distance band.



Appendix B. NETN Parks Only: Squirrel observation procedures.



Red squirrels, gray squirrels, and eastern chipmunks are known to be effective nest predators. NETN wants to monitor their populations as well as those of forest birds. Follow the same recording procedures for these vocal mammals as you would for birds using these 4-letter codes:

- o RDSQ - red squirrel
- o EGSQ – Eastern gray squirrel
- o CHIP - Eastern chipmunk

Appendix C. GPS Coordinates for NETN Bird Routes.

MABI East (Route 10) Monitoring Sites at Marsh-Billings-Rockefeller NHP, Woodstock, VT

Route Access and Parking: Park at the Billings Farm and Museum, east of Route 12 from the park. To enter the park, cross west over route 12 on foot and walk up the entrance road bearing left at the first fork. Walk uphill past the Carriage Barn (on your right), and up to the back of the Mansion (on your left, small garage on your right).

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
10.01 (MABI East)	43.629893	-72.523924	699750	4833750
10.02 (MABI East)	43.632141	-72.523832	699750	4834000
10.03 (MABI East)	43.632209	-72.526928	699500	4834000
10.04 (MABI East)	43.632276	-72.530024	699250	4834000
10.05 (MABI East)	43.632343	-72.533121	699000	4834000
10.06 (MABI East)	43.632410	-72.536217	698750	4834000
10.07 (MABI East)	43.634592	-72.533028	699000	4834250
10.08 (MABI East)	43.634525	-72.529932	699250	4834250
10.09 (MABI East)	43.634457	-72.526836	699500	4834250
10.10 (MABI East)	43.634390	-72.523739	699750	4834250

MABI Northwest (Route 11) Monitoring Sites at Marsh-Billings-Rockefeller NHP, Woodstock, VT

Route Access and Parking: Trailhead parking is available off of Prosper Road on the west side of Marsh-Billings-Rockefeller NHP (be sure not to block gated access to trails).

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
11.01 (MABI NW)	43.634859	-72.545414	698000	4834250
11.02 (MABI NW)	43.634726	-72.539221	698500	4834250
11.03 (MABI NW)	43.636908	-72.536033	698750	4834500
11.04 (MABI NW)	43.636974	-72.539129	698500	4834500
11.05 (MABI NW)	43.637041	-72.542226	698250	4834500
11.06 (MABI NW)	43.637108	-72.545322	698000	4834500
11.07 (MABI NW)	43.639357	-72.545231	698000	4834750
11.08 (MABI NW)	43.637175	-72.548419	697750	4834500
11.09 (MABI NW)	43.634926	-72.548510	697750	4834250
11.10 (MABI NW)	43.637241	-72.551516	697500	4834500

Appendix C. GPS Coordinates for NETN Bird Routes.

MABI South (Route 12)

Route Access and Parking: Trailhead parking is available off of Prosper Road on the west side of Marsh-Billings-Rockefeller NHP (be sure not to block gated access to trails). *Note: The most efficient way to run these points is to not visit them in the order that they are numbered. Start with Point 05 and then proceed in the order of the remaining points.*

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
12.01 (MABI S)	43.630257	-72.536193	698759	4833761
12.02 (MABI S)	43.632477	-72.539313	698500	4834000
12.03 (MABI S)	43.632543	-72.542409	698250	4834000
12.04 (MABI S)	43.632456	-72.545438	698006	4833983
12.05 (MABI S)	43.630361	-72.545597	698000	4833750

Hartwell Tavern (Route 13) Monitoring Sites Minute Man NHP, Lexington/Concord, MA

Route Access and Parking: Park at the Hartwell Tavern Historical Area parking lot off Route 2A.

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
13.01 (MIMA HT)	42.451952	-71.291594	311560	4702505
13.02 (MIMA HT)	42.449728	-71.290248	311664	4702255
13.03 (MIMA HT)	42.450266	-71.294378	311326	4702324
13.04 (MIMA HT)	42.450776	-71.297242	311092	4702387
13.05 (MIMA HT)	42.452768	-71.297595	311069	4702609
13.06 (MIMA HT)	42.454678	-71.298455	311004	4702823
13.07 (MIMA HT)	42.453722	-71.295416	311251	4702710

Appendix C. GPS Coordinates for NETN Bird Routes.

Meriam's Corner (Route 14) Monitoring Sites at Minute Man NHP, Lexington/Concord, MA

Route Access and Parking: Park at the Meriam's Corner parking lot off Lexington Rd. at the western end of Park.

Note: Poison ivy is extremely prevalent on this route and is often unavoidable. The observer will come into contact with it. Several other points have the potential to be marshy. Waterproof hiking boots are recommended.

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
14.01 (MIMA MC)	42.457066	-71.321114	309148	4703139
14.02 (MIMA MC)	42.456700	-71.318729	309343	4703093
14.03 (MIMA MC)	42.454753	-71.319739	309254	4702879
14.04 (MIMA MC)	42.453941	-71.315806	309575	4702780
14.05 (MIMA MC)	42.453864	-71.312483	309848	4702764
14.06 (MIMA MC)	42.455897	-71.312582	309846	4702990
14.07 (MIMA MC)	42.459660	-71.316661	309522	4703417
14.08 (MIMA MC)	42.461354	-71.317514	309457	4703607

The Bluff (Route 15) Monitoring Sites at: Minute Man NHP, Lexington/Concord, MA

Route Access and Parking: Park in the large paved lot at the park's Battle Road Visitor Center on Route 2A (North Great Road).

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
15.01 (MIMA TB)	42.449493	-71.269994	313329	4702184
15.02 (MIMA TB)	42.447391	-71.269723	313345	4701950
15.03 (MIMA TB)	42.447432	-71.272181	313143	4701960
15.04 (MIMA TB)	42.447448	-71.275015	312910	4701968
15.05 (MIMA TB)	42.447650	-71.277952	312669	4701997
15.06 (MIMA TB)	42.450544	-71.274190	312987	4702310
15.07 (MIMA TB)	42.451400	-71.270099	313326	4702396
15.08 (MIMA TB)	42.450591	-71.267747	313517	4702301

Appendix C. GPS Coordinates for NETN Bird Routes.

Mt Kemble (Route 16) Monitoring Sites at: Morristown NHP, Jockey Hollow, Morristown, NJ.
Route Access and Parking: Park in the NY Brigade Lot near junction of Jockey Hollow and Grand Parade Roads.

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
16.01 (MORR MK)	40.768716	-74.528017	539833	4513190
16.02 (MORR MK)	40.766836	-74.526466	539965	4512982
16.03 (MORR MK)	40.764927	-74.524501	540132	4512771
16.04 (MORR MK)	40.767085	-74.523585	540208	4513011
16.05 (MORR MK)	40.768319	-74.521266	540403	4513149
16.06 (MORR MK)	40.770221	-74.519321	540566	4513361
16.07 (MORR MK)	40.771548	-74.515804	540862	4513510
16.08 (MORR MK)	40.771725	-74.512840	541112	4513531
16.09 (MORR MK)	40.773781	-74.513263	541075	4513759
16.10 (MORR MK)	40.773755	-74.515681	540871	4513755

Primrose Brook (Route 17) Monitoring Sites at Morristown NHP, Jockey Hollow, Morristown, NJ
Route Access and Parking: Park in Visitor Center parking lot off Tempe Wick Rd.

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
17.01 (MORR PB)	40.760984	-74.540843	538755	4512326
17.02 (MORR PB)	40.759169	-74.539600	538861	4512125
17.03 (MORR PB)	40.761092	-74.536115	539154	4512340
17.04 (MORR PB)	40.761900	-74.533361	539386	4512431
17.05 (MORR PB)	40.760558	-74.531096	539578	4512283
17.06 (MORR PB)	40.759993	-74.527474	539884	4512222
17.07 (MORR PB)	40.762715	-74.527609	539871	4512524
17.08 (MORR PB)	40.764868	-74.527653	539866	4512763
17.09 (MORR PB)	40.764332	-74.531081	539577	4512702
17.10 (MORR PB)	40.763906	-74.534793	539264	4512653

Appendix C. GPS Coordinates for NETN Bird Routes.

Soldier's Huts (Route 18) Monitoring Sites at Morristown NHP, Jockey Hollow, Morristown, NJ
Route Access and Parking: Park in the Trail Center Parking Area off Jockey Hollow Rd.

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
18.01 (MORR SH)	40.77059	-74.53355	539199	4513395
18.02 (MORR SH)	40.77257	-74.53768	539015	4513613
18.03 (MORR SH)	40.77300	-74.54046	538780	4513660
18.04 (MORR SH)	40.77372	-74.54303	538563	4513739
18.05 (MORR SH)	40.77146	-74.54377	538502	4513488
18.06 (MORR SH)	40.76954	-74.54301	538567	4513275
18.07 (MORR SH)	40.77016	-74.54001	538820	4513345
18.08 (MORR SH)	40.76812	-74.53909	538899	4513119
18.09 (MORR SH)	40.76831	-74.53625	539138	4513141

Eleanor Roosevelt NHS (Route 19) Monitoring Sites at Roosevelt-Vanderbilt NHS, Hyde Park, NY

Route Access and Parking: Starting point is the trailhead for Top Cottage Trail and Eleanor's Walk Trail. Park either in main visitor lot or staff parking area right next to trailhead. *Note: The most efficient way to run these points is to not visit them in the order that they are numbered. Start with Point 03 – Point 08, Point 02, Point 09 – 11, and finish with Point 01.*

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
19.01 (ELRO)	41.764577	-73.895104	591842	4624228
19.02 (ELRO)	41.762704	-73.895232	591834	4624020
19.03 (ELRO)	41.761750	-73.897138	591677	4623912
19.04 (ELRO)	41.759448	-73.897550	591646	4623656
19.05 (ELRO)	41.757531	-73.897631	591642	4623443
19.06 (ELRO)	41.756662	-73.895348	591833	4623349
19.07 (ELRO)	41.758382	-73.895319	591833	4623540
19.08 (ELRO)	41.760641	-73.895172	591842	4623791
19.09 (ELRO)	41.761819	-73.893082	592014	4623924
19.10 (ELRO)	41.765559	-73.890540	592220	4624342
19.11 (ELRO)	41.766943	-73.888338	592401	4624498

Appendix C. GPS Coordinates for NETN Bird Routes.

FDR (Route 20) Monitoring Sites at: Sites at Roosevelt-Vanderbilt NHS, Hyde Park, NY.

Route Access and Parking: Park in the main parking area for Home of Franklin D. Roosevelt NHS and the Presidential library. *Note: The most efficient way to run these points is to not visit them in the order that they are numbered. Start with Point 06, Point 01 - 05, Point 09 - 10, Point 12, Point 11, Point 08, and finish with Point 07.*

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
20.01 (HOFR)	41.772051	-73.940828	588031	4625010
20.02 (HOFR)	41.769746	-73.944849	587700	4624750
20.03 (HOFR)	41.767594	-73.943982	587775	4624512
20.04 (HOFR)	41.768107	-73.940990	588023	4624572
20.05 (HOFR)	41.769605	-73.942216	587919	4624737
20.06 (HOFR)	41.770262	-73.939210	588168	4624813
20.07 (HOFR)	41.768686	-73.937287	588330	4624640
20.08 (HOFR)	41.7668456	-73.938977	588192	4624434
20.09 (HOFR)	41.765662	-73.941487	587985	4624300
20.10 (HOFR)	41.763363	-73.940238	588092	4624046
20.11 (HOFR)	41.762579	-73.937339	588334	4623962
20.12 (HOFR)	41.760400	-73.937399	588332	4623720

Vanderbilt Mansion (Route 21) Monitoring Sites at: Roosevelt-Vanderbilt NHS, Hyde Park, NY

Route Access and Parking: Drive towards Bard Rock in northwest corner of park on Shagabak Place. Before reaching the railroad crossing bridge, park on left near gated entrance to Hyde Park Trail (do not block gate). *Note: The most efficient way to run these points is to not visit them in the order that they are numbered. Start with Point 01 – Point 04, Point 07, Point 06, and finish with Point 05.*

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
21.01 (VAMA)	41.803556	-73.942669	587835	4628506
21.02 (VAMA)	41.801384	-73.942524	587850	4628265
21.03 (VAMA)	41.799169	-73.942621	587845	4628019
21.04 (VAMA)	41.796726	-73.944322	587707	4627746
21.05 (VAMA)	41.794686	-73.942935	587825	4627521
21.06 (VAMA)	41.792554	-73.943151	587810	4627284
21.07 (VAMA)	41.791998	-73.945447	587620	4627220

Appendix C. GPS Coordinates for NETN Bird Routes.

SAGA (Route 22) Monitoring Sites at: Saint-Gaudens NHP, Cornish, NH

Route Access and Parking: Upon reaching Saint-Gaudens NHP park in the grass area signed as the RV parking area. The RV parking area is located immediately on the left when you emerge from the white pine lined entry road used to access the park. If you reach the main paved parking lot on the right, you have gone 100 m too far. *Note: The most efficient way to run these points is to not visit them in the order that they are numbered. Reverse the order in which Points 05 and 06 are visited.*

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
22.01 (SAGA)	43.502668	-72.371114	712525	4820000
22.02 (SAGA)	43.502739	-72.374204	712275	4820000
22.03 (SAGA)	43.502832	-72.378220	711950	4820000
22.04 (SAGA)	43.500569	-72.377699	712000	4819750
22.05 (SAGA)	43.500498	-72.374610	712250	4819750
22.06 (SAGA)	43.498249	-72.374707	712250	4819500
22.07 (SAGA)	43.496000	-72.374805	712250	4819250
22.08 (SAGA)*	43.491612	-72.376207	712152	4818759

*Although sample coordinates for Point 08 are 4818750; 712100; true coordinates are listed here to aid with finding the point.

Middle Ravine (Route 23) Monitoring Sites at: Saratoga NHP, Saratoga, NY

Route Access and Parking: Enter the park and proceed to the Visitor Center at the NE corner. Continue on the Park Tour Rd about ½ mile. Just beyond Tour Stop 1, turn left onto a short gravel service road, then another left back onto the Tour Road. Continue about ½ mile and park at Tour Stop 6, a pull-out on right with cannons nearby.

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
23.01 (SARA MR)	43.002524	-73.635283	611232	4761999
23.02 (SARA MR)	43.002478	-73.632217	611482	4761998
23.03 (SARA MR)	43.000673	-73.632613	611453	4761797
23.04 (SARA MR)	43.000255	-73.635346	611231	4761747
23.05 (SARA MR)	43.000211	-73.638438	610979	4761738
23.06 (SARA MR)	43.000383	-73.641551	610725	4761753
23.07 (SARA MR)	42.998159	-73.640815	610789	4761507
23.08 (SARA MR)	42.998130	-73.638313	610993	4761507
23.09 (SARA MR)	42.996886	-73.635212	611248	4761373
23.10 (SARA MR)	42.995849	-73.638105	611014	4761254

Appendix C. GPS Coordinates for NETN Bird Routes.

Wilkinson Trail (Route 24) Monitoring Sites at: Saratoga NHP, Saratoga, NY.

Route Access and Parking: Enter the park and proceed to the Visitor Center at the NE corner. Continue on the 1-way Park Tour Rd about ½ mile. Just beyond Tour Stop 1, turn left onto a short gravel service road, then another left back onto the Tour Road. Continue about 1 mile and park at Tour Stop 7 on left.

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
24.01 (SARA WT)	43.007913	-73.633385	611377	4762600
24.02 (SARA WT)	43.007891	-73.630784	611589	4762601
24.03 (SARA WT)	43.006922	-73.628830	611750	4762496
24.04 (SARA WT)	43.007200	-73.626444	611944	4762530
24.05 (SARA WT)	43.007072	-73.622557	612261	4762521
24.06 (SARA WT)	43.005433	-73.620299	612448	4762342
24.07 (SARA WT)	43.003311	-73.625843	612000	4762099
24.08 (SARA WT)	43.000864	-73.626020	611990	4761827
24.09 (SARA WT)	43.000875	-73.629161	611734	4761824
24.10 (SARA WT)	43.004608	-73.628833	611754	4762239

Burgoyne's HQ (Route 26) Monitoring Sites at: Saratoga NHP, Battlefield Area, Saratoga, NY

Route Access and Parking: Park at the auto-tour lot adjacent to stop 8, Burgoyne's Headquarters.

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
26.01 (SARA BH)	43.0023495	-73.6197303	612500	4762000
26.02 (SARA BH)	43.0000989	-73.6197807	612500	4761750
26.03 (SARA BH)	42.9978483	-73.6198311	612500	4761500
26.04 (SARA BH)	42.9978113	-73.6167649	612750	4761500
26.05 (SARA BH)	43.0000619	-73.6167144	612750	4761750

Appendix C. GPS Coordinates for NETN Bird Routes.

Freeman Farm (Route 27) Monitoring Sites at: Saratoga NHP, Battlefield Area, Saratoga, NY

Route Access and Parking: Park at the auto-tour lot adjacent to Stop 6, Balcarres Redoubt / Freeman Farm.

GPS Coordinates – Datum NAD 83, UTM Zone 18T

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
27.01 (SARA FF)	43.0048206	-73.6380790	611000	4762250
27.02 (SARA FF)	43.0050541	-73.6350065	611250	4762280
27.03 (SARA FF)	43.0047474	-73.6319460	611500	4762250
27.04 (SARA FF)	43.0025700	-73.6381288	611000	4762000
27.05 (SARA FF)	43.0026428	-73.6442616	610500	4762000
27.06 (SARA FF)	43.0048934	-73.6442121	610500	4762250
27.07 (SARA FF)	43.0071441	-73.6441626	610500	4762500
27.08 (SARA FF)	43.0093947	-73.6441131	610500	4762750
27.09 (SARA FF)	43.0093583	-73.6410463	610750	4762750
27.10 (SARA FF)	43.0071077	-73.6410960	610750	4762500

Neilson Farm (Route 28) Monitoring Sites at: Saratoga NHP, Battlefield Area, Saratoga, NY

Route Access and Parking: Park at the park's south service entrance gate off Route 32.

GPS Coordinates – Datum NAD 83, UTM Zone 18T

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
28.01 (SARA NF)	42.9801363	-73.6447563	610500	4759500
28.02 (SARA NF)	42.9801726	-73.6478216	610250	4759500
28.03 (SARA NF)	42.9846739	-73.647723	610250	4760000
28.04 (SARA NF)	42.9846376	-73.6446574	610500	4760000
28.05 (SARA NF)	42.9846013	-73.6415919	610750	4760000
28.06 (SARA NF)	42.9845648	-73.6385263	611000	4760000
28.07 (SARA NF)	42.9868519	-73.6415423	610750	4760250
28.08 (SARA NF)	42.9868883	-73.644608	610500	4760250
28.09 (SARA NF)	42.9869245	-73.6476736	610250	4760250
28.10 (SARA NF)	42.9869607	-73.6507393	610000	4760250

Appendix C. GPS Coordinates for NETN Bird Routes.

Weir Farm NHS (Route 29) Monitoring Sites at: Weir Farm NHS, Wilton, CT

Route Access and Parking: Park in the main Parking lot for the Weir Farm NHS (735 Nod hill Road, Wilton, CT)

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
29.01 (WEFA)	41.255795	-73.454920	629442	4568305
29.02 (WEFA)	41.258189	-73.458110	629170	4568566
29.03 (WEFA)	41.257842	-73.455110	629422	4568532
29.04 (WEFA)	41.259363	-73.452998	629596	4568704
29.05 (WEFA)	41.261187	-73.451988	629677	4568908

Schoodic Peninsula (Route 30) Monitoring Sites at: sites at Acadia NP, Winter Harbor, ME

Route Access and Parking: From the small town of Winter Harbor on Schoodic Peninsula, travel west on Route 186/Main Street. After ½ mile, look for and take the right hand turn onto Moore Road. Travel south on Moore Road for 1.4 miles and park at the NPS interpretive sign/pull-off overlooking Mosquito Harbor (on right). If you reach the Frazier Point turnoff you have gone 1/10 mile too far south.

GPS Coordinates – Datum NAD 83, UTM Zone 19T (coordinates field verified: 2008)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
30.01 (ACAD SCP) – NETN B47	44.368859	-68.073458	573823	4913260
30.02 (ACAD SCP) – NETN B48	44.368823	-68.070145	574087	4913259
30.03 (ACAD SCP) – NETN B49	44.368826	-68.067208	574321	4913262
30.04 (ACAD SCP) – NETN B50	44.366720	-68.067355	574312	4913028
30.05 (ACAD SCP) – NETN B51	44.366672	-68.070179	574087	4913020
30.06 (ACAD SCP) – NETN B52	44.366653	-68.073405	573830	4913015
Reference Point A	44.368946	-68.071963	573942	4913271
Reference Point B	44.366603	-68.071724	573964	4913011

Appendix C. GPS Coordinates for NETN Bird Routes.

Witch Hole Pond (Route 32) Monitoring Sites Acadia NP, Mount Desert Island, ME

Route Access and Parking: Park at the Hull's Cove Visitor Center on Highway 3 about 2 miles north of the town of Bar Harbor on Mount Desert Island,

GPS Coordinates – Datum NAD 83, UTM Zone 19T (coordinates field verified: 2008)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
32.01 (ACAD WHP) – NETN B38	44.403570	-68.248136	559870	4916973
32.02 (ACAD WHP) – NETN B39	44.403599	-68.251174	559628	4916974
32.03 (ACAD WHP) – NETN B40	44.401376	-68.251303	559620	4916727
32.04 (ACAD WHP) – NETN B41	44.401383	-68.248214	559866	4916730
32.05 (ACAD WHP) – NETN B42	44.401308	-68.245000	560122	4916724
32.06 (ACAD WHP) – NETN B43	44.396881	-68.248108	559879	4916230
32.07 (ACAD WHP) – NETN B44	44.396966	-68.251372	559619	4916237
32.08 (ACAD WHP) – NETN B45	44.396994	-68.254410	559377	4916238
32.09 (ACAD WHP) – NETN B46	44.399129	-68.254559	559363	4916475

Seal Cove - Center (Route 33) Monitoring Sites Acadia NP, Mount Desert Island, ME

Route Access and Parking: From the Acadia National Park Visitor Center at Hulls Cove travel south on Hwy 3 to its intersection with Hwy233/Eagle Lake Road (~2 miles; just north of the town of Bar Harbor). Turn right, and travel west on Eagle Lake Road until its intersection with Sound Drive (~6 miles). Turn right, and travel north to its intersection with Main Street (~1 mile). In less than a mile, bear left at the fork to stay south on Main Street/Hwy 102. Look for Seal Cove Road on your right after 5 miles (< 1 north of the town of Southwest Harbor). Travel west on Seal Cover Road for 2 miles looking for a small, unnamed, Class 4 connector road on your right (see reference point 'RD-1' in the coordinate table below). Turn right (north) onto the connector road and drive 0.2 miles north (see reference point 'RD-2'). Find the best available pull off to park your car.

GPS Coordinates – Datum NAD 83, UTM Zone 19T (coordinates field verified: 2008)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
33.01 (ACAD SCC) – NETN B13	44.281045	-68.369420	550317	4903282
33.02 (ACAD SCC) – NETN B12	44.283341	-68.369458	550312	4903537
33.03 (ACAD SCC) – NETN B08	44.285726	-68.369369	550317	4903802
33.04 (ACAD SCC) – NETN B09	44.287851	-68.369372	550315	4904038
33.05 (ACAD SCC) – NETN B11	44.283348	-68.372403	550077	4903536
33.06 (ACAD SCC) – NETN B10	44.285717	-68.372515	550066	4903799

Appendix C. GPS Coordinates for NETN Bird Routes.

Seal Cove - East (Route 34) Monitoring Sites at: Acadia NP, Mount Desert Island, ME

Route Access and Parking: Park at gate of fire road that heads south from Seal Cove Road just after you pass the park boundary.

GPS Coordinates – Datum NAD 83, UTM Zone 19T (coordinates field verified: 2008)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
34.01 (ACAD SCE) – NETN B20	-68.345701	44.282847	552208	4903497
34.02 (ACAD SCE) – NETN B21	-68.345536	44.280803	552223	4903270
34.03 (ACAD SCE) – NETN B22	-68.345473	44.278588	552230	4903024
34.04 (ACAD SCE) – NETN B23	-68.355196	44.280993	551452	4903285
34.05 (ACAD SCE) – NETN B24	-68.354820	44.278677	551484	4903028
34.06 (ACAD SCE) – NETN B25	-68.352002	44.278598	551709	4903021
34.07 (ACAD SCE) – NETN B27	-68.352077	44.280876	551701	4903274

SAIR NHS (Route 37) Monitoring Sites at: Saugus Iron Works NHS, Saugus, MA

Route Access and Parking: Park in the Historic Site's main visitor parking (244 Central St., Saugus, MA).

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
37.01 (SAIR)	42.469312	-71.007158	334996	4703839
37.02 (SAIR)	42.468054	-71.006971	335008	4703699
37.03 (SAIR)	42.467094	-71.006807	335019	4703592

Appendix C. GPS Coordinates for NETN Bird Routes.

SARA NW (Route 38) Monitoring Sites at: Saratoga NHP, Battlefield Area, Saratoga, NY

Route Access and Parking: Enter the park via the entrance off of state highway 32 and park at the north end of the lower (west) Visitor Center parking lot (marked with 'P' on map).

GPS Coordinates – Datum NAD 83, UTM Zone 18T (coordinates field verified: 2011)

Point Name	Latitude (Dec. Deg)	Longitude (Dec. Deg.)	UTM E	UTM N
38.01 (SARA NW)	43.011727	-73.651240	609915	4763000
38.02 (SARA NW)	43.009494	-73.652823	609790	4762750
38.03 (SARA NW)	43.007250	-73.653363	609750	4762500
38.04 (SARA NW)	43.004825	-73.653906	609710	4762230
38.05 (SARA NW)	43.002704	-73.653523	609745	4761995
38.06 (SARA NW)	43.002479	-73.650583	609985	4761975
38.07 (SARA NW)	43.005085	-73.649238	610090	4762265
38.08 (SARA NW)	43.006739	-73.648221	610170	4762450

Giant Slide (Route 31) Monitoring Sites at: Acadia NP, Mount Desert Island, ME

Route Access and Parking: From the intersection of Eagle Lake Road (Highway 233) and Sound Drive (Highway 3/198) on Mount Desert Island travel south 1.0 miles to park at the trailhead of the new Giant Slide Trail.

Label	X	Y		Label	X	Y		Label	X	Y
P1	556422	4911092		P6	556909	4910833		CT 2-3	556574	4911344
P2	556424	4910347		P7	556666	4910829		TR 4	556628	4911084
P3	556669	4911352		P8	556659	4910588		TR 6-7	556754	4910835
P4	556678	4911086		P9	556414	4910597		CT 10	556401	4910892
P5	556911	4911081		P10	556438	4910843		P10 Rte.	556420	4910830

Appendix C. GPS Coordinates for NETN Bird Routes.

Seal Cove - West (Route 35) Monitoring Sites at: Acadia NP, Mount Desert Island, ME

Route Access and Parking: Park at pulloff that is across from intersection of Oak Hill Rd. and Western Mountain Rd.

NOTE: There are no real pulloffs on WMR until the trail head to Bald Mountain (PO 4), so park on side of road for Points 2 and 3 (reference point “RD 2-3”).

Label	X	Y
1	549418	4904289
2	549177	4904276
3	549172	4904524
4	0548927	4904532
5	549170	4904774
6	548669	4904529
RD 2-3	549171	4904384
PO 4	548927	4904532
PO 6	548654	4904473
TR 5	549134	4904805

Youngs Mountain (Route 36) Monitoring Sites Acadia NP, Mount Desert Island, ME

Route Access and Parking: Begin at the north parking lot for Break Neck Pond Fire Road.

Point Name	Latitude (Dec. Deg.)	Longitude (Dec. Deg.)	UTME	UTMN
36.01 (ACAD YSM) – NETN B28	44.399140	-68.263098	55883	4916470
36.02 (ACAD YSM) – NETN B29	44.396793	-68.266292	558431	4916207
36.03 (ACAD YSM) – NETN B30	44.396751	-68.269570	558170	4916200
36.04 (ACAD YSM) – NETN B31	44.399065	-68.269641	558162	4916457
36.05 (ACAD YSM) – NETN B32	44.401478	-68.269661	558158	4916725
36.06 (ACAD YSM) – NETN B33	44.401232	-68.266412	558417	4916700
36.07 (ACAD YSM) – NETN B34	44.401175	-68.263248	558669	4916696
Reference Point: FR 1	44.399303	-68.254996	559328	4916494
Reference Point: FR 7	44.400797	-68.254965	559329	4916660