



Survey Schedule

1 st Survey	May 25 – June 8
2 nd Survey (<i>Optional</i>)	June 8– 22
3 rd Survey (<i>Optional</i>)	June 22 – July 6
4 th Survey (<i>Optional</i>)	July 6 - 15

Background

Avian species in the mid-Atlantic region face numerous habitat threats including urbanization, conversion to agriculture, and fragmentation. National parks provide refuge from such threats, containing contiguous tracts of various habitat types such as forests, wetlands, and grasslands, which are suitable for breeding birds. Many of the network parks have bird species that are declining throughout their range, emphasizing the need for understanding their status and trends.

Monitoring landbirds (species that occupy terrestrial habitats) will not only provide information on the long-term trends of avian species composition and relative abundance, but will also provide a measure for assessing ecological integrity.

Neotropical-migratory songbirds (i.e., warblers, tanagers, and vireos) are sensitive to habitat fragmentation and, hence, are excellent barometers of environmental change or degradation. Birds are also good indicators of local and regional ecosystem changes because of their high body temperature, rapid metabolism, and prominent position in most food webs.

Detecting early changes in bird population trends may help us identify stressors such as invasive species, fragmentation, and management practices that will help guide future management actions.

Goals & Objectives

1. Determine annual changes and long-term trends in species composition and relative abundance.
2. Improve our understanding of the relationship between breeding birds, habitats, and park management.

Sampling Design

In this study, we use the point count methodology, a similar technique employed by the Breeding Bird Survey. Point counts provide a standardized methodology for obtaining information on landbird distribution, diversity, and abundance and are the most commonly used.

Within the network parks, point count stations are set up 250m apart and in some parks, a tree is tagged and flagged to denote the location of the station (if in a forested area). Each observer will navigate to their site using a GPS and conduct a 10-minute point count. During the 10-minute timeframe, all birds seen or heard are recorded, along with the time (minute of the count), and distance (<50m or >50m).

Assumptions

In order to accurately estimate bird abundance, we need to estimate the probability of detecting an individual. Doing so will allow us to determine the number of birds that were **not** seen or heard during the count. Distance sampling and removal modeling are two methods we will use in estimating this probability and they are based on several assumptions:

1. Birds are correctly identified to species
2. Each individual is recorded only once
3. All birds within the 50 m band (the first distance band) are always detected

4. Birds are accurately recorded in the correct distance band
5. Observers are equally likely to detect a bird in minute 1 as in minute 9
6. Time of detection is recorded the first time the individual is detected

Please aim to ensure these assumptions are met. If you feel they may have not been, make sure you take notes as these will help considerably in data analysis.

Safety Precautions

The Mid-Atlantic Network (MIDN) considers the health and safety of its volunteers to be of utmost importance. While we hope your surveys are fun, educational, and filled with interesting birds, there are hazards you should be aware of. In addition to reviewing and signing the Job Safety Analysis, we ask that you familiarize yourself with the safety precautions below prior to the field season to help minimize the risk of an incident.

Teamwork

Because much of the monitoring for this protocol is off-trail in somewhat inaccessible areas, MIDN recommends that participants work in teams for monitoring. Working with another person makes it more likely that someone will be able to obtain help in the event of an accident, and working with someone else usually makes field work more enjoyable. If you are unable to find a partner and would like to work with one, notify your park contact and he/she will determine if a partner is available.

Personal Health

- Dress appropriately for the weather conditions and hiking off trail.

- Use appropriate methods for reducing risk of exposure to ticks (e.g. insect repellent or Permanone) or poison ivy (Ivy Block).
- Bring a first aid kit ensure you have adequate food and water.

Field Preparations

- Notify your park contact when and where you will be surveying and provide your vehicle license number.
- Be sure to let someone know your departure and arrival times and your route and check in with them when you return.
- Make sure you bring a cell phone and have park emergency contact information (in a life-threatening emergency dial 9-1-1).
- Go over the Survey Procedure Checklist prior to going out in the field

Vehicle/Road Safety

- Ensure your vehicle is in safe working condition before leaving your home
- Adhere to all federal and state vehicle regulations
- Watch out for traffic hazards, wild animals, and suspicious-looking persons.

Survey Procedure Checklist

One month to one week prior to survey

- Review Volunteer Manual
- Review, sign, and return all safety documents
- Brush-up on bird songs in the field or with recordings
- Conduct a pre-survey visit
 - This will help familiarize you with your equipment, sites, and the types of birds you will see
 - Practicing distance estimation at sites will also help you make better estimates during the real counts.
- Notify park contact (park resource manager or project lead) of planned survey dates

Day before or day of survey

- Notify park contact of any changes to your plan
- Plan your survey route
 - Make sure you know where you will be going, which sites you will visit, and how to get back to your vehicle
- Check weather forecast and plan accordingly
- Check equipment list
- Notify your emergency contact where you will be
- Check-in with your emergency contact on return

Field equipment:

Item	Number needed	✓
GPS Unit	1	
Stopwatch	1	
Thermometer	1	
Map (with site locations)	1	
AOU bird species list	1	
Field Mapping Card	1 per point count	
Field Data Form	optional	
Survey instructions	1	
Binder	1 per crew member	
Pens or pencils	Many	
Binoculars	1	
Water	As needed	
First aid kit	Highly recommended	

Point Count Procedures:

1. Sampling in pairs:
 - If you are sampling in a pair, you must designate one person as the observer who conducts the actual survey, and one person as the recorder who records observer 1's detections.
 - **It is important that only one person be designated as the observer and that the second person, if available, only records the data and does not provide their own observations.**
2. Point count conditions:
 - Conduct point counts on **May 25 – July 15** between **sunrise and 5 hours after**. Check the weather and point conditions (details see above).

General rule: Only conduct surveys in weather that is unlikely to reduce count numbers (i.e. impairs your ability to see or hear birds).

3. Upon arrival at the sampling point:
 - Place thermometer in a fixed location away from your body. This will allow you to record an accurate temperature once sampling is complete.
 - Record the following information:
 - Park unit (provided)
 - Plot number
 - Visit number (Note a '1' if it is the first time you are conducting a point count at this site this year, '2' if it is the second time, etc.)
 - Plot conditions (Sky, Wind, Noise)
 - Date
 - Observer
 - Recorder (optional)
4. Begin the count after you are finished recording the site information:

- Record the start time
 - Use the NPS-issued timer to keep track of time
5. During the point count:
- Count all birds seen and heard during the **10-minute sampling period**
 - Note in which minute birds are first encountered; use the countdown (first minute = '9', last minute = '0')
6. Counting:
- Map all observations (both visual and auditory) on the field mapping card
 - Use the codes V(visual), A(auditory), or B(both) to report the detection type
 - Mark location and note movements
 - Different symbols help you keep track of observation status (see Field Mapping Card [FMC] instructions).
 - Use standard AOU species codes to identify species (see AOU species list). **If you cannot remember the code write the full name.**
 - Hold the mapping card in a fixed direction, and make sure you spend time facing each direction.
 - Use mapped locations to judge if a bird is really a new individual or one that has already been recorded and has moved
 - Estimate distance to encountered bird: Record if it is within the 50m buffer or beyond 50m
 - Distance should be the horizontal distance between the location a bird was first detected and the plot center
 - Keep an eye out for flyovers, mark them with an F
 - Record flocks and flock size (do not record each bird within a flock individually). Be sure you don't confuse flock size and time!
 - Do not record any birds believed to have been counted at previous stations

7. At the end of the point count:
 - Stop recording bird observations at the end of the 10 minute period
 - Do **not** record any new birds
 - Incidental observations of new species not detected during the point count may be recorded using a time code of 11
 - Record Temperature (°F)

8. After the survey or at the end of the sampling day:
 - Transcribe the notations from the field mapping card to the USGS pointcount database – do this as soon as possible while information is fresh in your mind
 - Verify each record after input to make sure data matches what is on the field mapping card

How to report birds on the Field Mapping Card

Look at the countdown timer when bird was seen first and record the minute

Use the following symbols to keep track of bird locations and to report your observations:

Species name:

Use the AOU 4-letter code (see separate list), or write full name if unsure of code

Detection type:

Visual=V Auditory=A Both=B Flyover=F

Sex etc.:

Male=  Female=  Pair=  Sex unknown= 
Nest= * Flock= 

Known change of position: 

Assumed change of position: 

Example:

To report a Magnolia Warbler male, heard in the second minute ('8' on countdown-timer) of the point count:

Species name + Detection type + Sex + Minute

MAWA

+

A

+

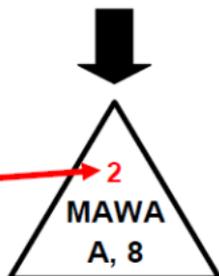


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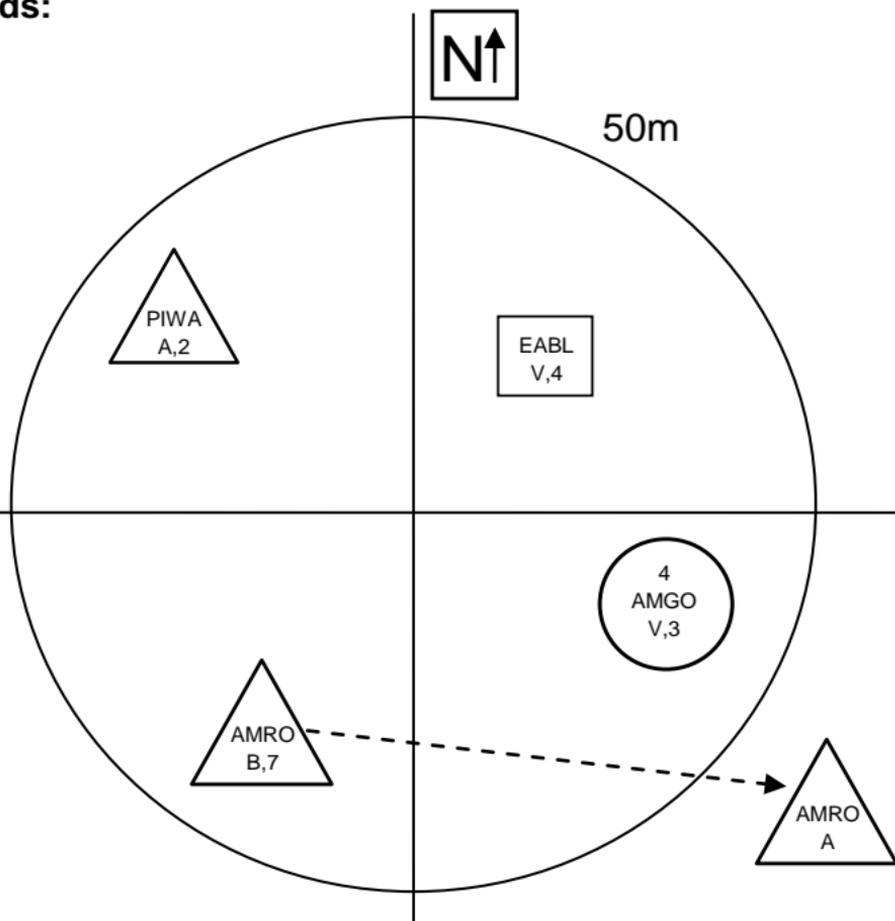
8

Flock:

To report the flock size, add the number above the specie code. (To avoid confusing it with time!)



Example of Field Mapping Card with several detected birds:



Explanation

The observer made following observations:

- A flock of 4 American goldfinches was seen in the seventh minute ('3') of the point count
- An American Robin male was both seen and heard in the third minute ('7'); the observer assumes that this bird changed its location (the second location must not be reported on the FIELD DATA FORM!)
- A female eastern bluebird was seen in the sixth minute ('4') of the point count
- A male pine warbler was heard in the eighth minute ('2') of the point count

Plot conditions/ requested data

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SKY/ PRECIPITATION		
Sky Code	Explanation	Point counts?
0	Clear or a few clouds	Yes
1	Partly cloudy (scattered)	Yes
2	Cloudy (broken) or overcast	Yes
4	Fog or Smoke	No
5	Drizzle	No
6	Rain	No
7	Snow	No

WIND			
Wind Speed (Beaufort Scale)	Mph	Explanation	Point counts?
0	<1	Smoke rises vertically	Yes
1	1 to 3	Light air; smoke drifts	Yes
2	4 to 7	Light breeze; wind felt on face	Yes
3	8 to 12	Gentle breeze; leaves in constant motion	(Yes)
4	13 to 18	Dust raised; small branches move	No
5	19 to 24	Small trees begin to sway	No
6	25 or more	Strong breeze; large branches in motion	No

Plot conditions/ requested data

Mid-Atlantic Network

BACKGROUND NOISE			
Noise Code	Decibel (dB)	Explanation	Point counts?
0	<40	No background noise (BN) during most of the survey	Yes
1	~40-45	Faint BN during at least half of the survey	Yes
2	~45-50	Moderate BN; difficulty hearing birds >100m away	Yes
3	~50-60	Loud BN; difficulty hearing birds >50m away	(Yes)
4	>60	Intense BN; difficulty hearing birds 25m away	No

Data to note and to report on both Field Mapping Card and Field Data Form

Park Unit = Name of a certain unit (e.g. Spotsylvania)	Obs. = Observer, who conducts the point count
Plot number = Every point count site has a unique number	Rec. = Recorder, who records observer's data on Field Mapping Card
Date = Day, when point count is conducted (mm/dd/yy)	
	Start time = Time, when point count is started (hhmm)
WS = Wind speed (see plot conditions check above)	Series: '1' if it is the first visit (evt.'2' if you make a second, etc.)
Noise = Noise code (see plot conditions check above)	Sky = Sky code (see plot conditions check above)

Data to note and report on Field Data Form

Species: enter the AOU 4-letter code	Min. = minute during point count the bird was first detected (countdown!)
Type = How was the bird first detected? (A,V,B,F)	Flock= birds moving and behaving in a group (How many?)
Dist. = distance (0= 0-50m; 1= ≥50m)	Comments: problems, uncertain species, etc.

AOU bird species list

Code	Common Name
ACFL	Acadian flycatcher
ALFL	Alder flycatcher
ABDU	American black duck
AMBI	American bittern
AMCO	American coot
AMCR	American crow
AMGO	American goldfinch
AMKE	American kestrel
AMPI	American pipit
AMRE	American redstart
AMRO	American robin
AMWI	American wigeon
AMWO	American woodcock
ATSP	American tree sparrow
BAEA	Bald eagle
BANS	Bank swallow
BAOR	Baltimore oriole
BARS	Barn swallow
BAWW	Black-and-white warbler
BBCU	Black-billed cuckoo
BBWA	Bay-breasted warbler
BCCH	Black-capped chickadee
BCNH	Black-crowned night-heron
BADO	Barred owl
BEKI	Belted kingfisher
BEWR	Bewick's wren
BGGN	Blue-gray gnatcatcher
BHCO	Brown-headed cowbird
BHVI	Blue-headed vireo
BITH	Bicknell's thrush
BLBW	Blackburnian

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	warbler
BLGR	Blue grosbeak
BLJA	Blue jay
BLPW	Blackpoll warbler
BLSC	Black scoter
BLVU	Black vulture
BANO	Barn owl
BOBO	Bobolink
BOGU	Bonaparte's gull
BRCR	Brown creeper
BRTH	Brown thrasher
BRWA	Brewster's Warbler
BTBW	Black-throated blue warbler
BTNW	Black-throated green warbler
BUFF	Bufflehead
BWHA	Broad-winged hawk
BWTE	Blue-winged teal
BWWA	Blue-winged warbler
CACH	Carolina chickadee
CAEG	Cattle egret
CANG	Canada goose
CANV	Canvasback
CARW	Carolina wren
CAWA	Canada warbler
CEDW	Cedar waxwing
CERW	Cerulean warbler
CHSP	Chipping sparrow
CHSW	Chimney swift
CLRA	Clapper rail
CLSW	Cliff swallow
CMWA	Cape may warbler
COGO	Common goldeneye
COGR	Common grackle
COHA	Cooper's hawk
COLO	Common loon
COME	Common merganser
COMO	Common moorhen

AOU bird species list

CONI	Common nighthawk
CORA	Common raven
CORE	Common redpoll
COTE	Common tern
CONW	Connecticut warbler
COYE	Common yellowthroat
CSWA	Chestnut-sided warbler
DCCO	Double-crested cormorant
DEJU	Dark-eyed junco
DICK	Dickcissel
DOWO	Downy woodpecker
EABL	Eastern bluebird
EAKI	Eastern kingbird
EAME	Eastern meadowlark
EAPH	Eastern phoebe
EASO	Eastern screech owl
EATO	Eastern towhee
EAWP	Eastern wood-pewee
EUST	European starling
EVGR	Evening grosbeak
FICR	Fish crow
FISP	Field sparrow
FOSP	Fox sparrow
GADW	Gadwall
GBBG	Great black-backed gull
GBHE	Great blue heron
GCFL	Great crested flycatcher
GCKI	Golden-crowned kinglet
GCTH	Gray-cheeked thrush
GHOW	Great horned owl
GLIB	Glossy ibis

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GOEA	Golden eagle
GRCA	Gray catbird
GREG	Great egret
GRHE	Green-backed heron
GRSC	Greater scaup
GRSP	Grasshopper sparrow
GRYE	Greater yellowlegs
GWFG	Greater white-fronted goose
AGWT	Green-winged teal
GWWA	Golden-winged warbler
HAWO	Hairy woodpecker
HERG	Herring gull
HESP	Henslow's sparrow
HETH	Hermit thrush
HOFI	House finch
HOGR	Horned grebe
HOLA	Horned lark
HOME	Hooded merganser
HOSP	House sparrow
HOWA	Hooded warbler
HOWR	House wren
INBU	Indigo bunting
KEWA	Kentucky warbler
KILL	Killdeer
KIRA	King rail
LAGU	Laughing gull
LBBG	Lesser black-backed gull
LBHE	Little blue heron
LEBI	Least bittern
LEFL	Least flycatcher
LEOW	Long-eared owl
LESA	Least sandpiper
LESC	Lesser scaup
LEYE	Lesser yellowlegs
LISP	Lincoln's sparrow

AOU bird species list

LOSH	Loggerhead shrike
LTDU	Long-tailed Duck
LOWA	Louisiana waterthrush
MALL	Mallard
MAWA	Magnolia warbler
MAWR	Marsh wren
MERL	Merlin
MODO	Mourning dove
MOWA	Mourning warbler
MUSW	Mute swan
NAWA	Nashville warbler
NOBO	Northern bobwhite
NOCA	Northern cardinal
NOFL	Northern flicker
NOGO	Northern goshawk
NOHA	Northern harrier
NOMO	Northern mockingbird
NOPA	Northern parula
NOPI	Northern pintail
NSHO	Northern shoveler
NOWA	Northern waterthrush
NRWS	Northern rough-winged sw.
NSHR	Northern shrike
OCWA	Orange-crowned warbler
OROR	Orchard oriole
OSFL	Olive-sided flycatcher
OSPR	Osprey
OVEN	Ovenbird
PAWA	Palm warbler
PBGR	Pied-billed grebe
PEFA	Peregrine falcon
PESA	Pectoral sandpiper
PHVI	Philadelphia vireo

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PIGR	Pine grosbeak
PISI	Pine siskin
PIWA	Pine warbler
PIWO	Pileated woodpecker
PRAW	Prairie warbler
PROW	Prothonotary warbler
PUFI	Purple finch
PUMA	Purple martin
RBGR	Rose-breasted grosbeak
RBGU	Ring-billed gull
RBME	Red-breasted merganser
RBNU	Red-breasted nuthatch
RBWO	Red-bellied woodpecker
RCKI	Ruby-crowned kinglet
RECR	Red crossbill
REDH	Redhead
REVI	Red-eyed vireo
RHWO	Red-headed woodpecker
RLHA	Rough-legged hawk
RNDU	Ring-necked duck
RNGR	Ring-necked grebe
RNPH	Ring-necked pheasant
ROPI	Rock pigeon
RSHA	Red-shouldered hawk
RTHA	Red-tailed hawk
RTHU	Ruby-throated hummingbird
RUBL	Rusty blackbird
RUDU	Ruddy duck
RUGR	Ruffed grouse
RWBL	Red-winged

AOU bird species list

	blackbird
SAVS	Savannah sparrow
SCTA	Scarlet tanager
SEPL	Semipalmated plover
SESA	Semipalmated sandpiper
SEWR	Sedge wren
SNEG	Snowy egret
SNGO	Snow goose
SORA	Sora
SOSA	Solitary sandpiper
SOSP	Song sparrow
SPSA	Spotted sandpiper
SSHA	Sharp-shinned hawk
SUTA	Summer tanager
SWSP	Swamp sparrow
SWTH	Swainson's thrush
SWWA	Swainson's warbler
TEWA	Tennessee warbler
TRHE	Tricolored heron
TRES	Tree swallow
TUSW	Tundra swan
TUTI	Tufted titmouse
TUVU	Turkey vulture
UNIN	Unknown
UPSA	Upland sandpiper
VEER	Veery
VESP	Vesper sparrow
VIRA	Virginia rail
WAVI	Warbling vireo
WBNU	White-breasted nuthatch
WCSP	White-crowned sparrow
WEVI	White-eyed vireo
WEWA	Worm-eating warbler
WIFL	Willow flycatcher
WITU	Wild turkey

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WIWA	Wilson's warbler
WIWR	Winter wren
WODU	Wood duck
WOTH	Wood thrush
WPWI	Whip-poor-will
WTSP	White-throated sparrow
WWCR	White-winged crossbill
WWSC	White-winged scoter
YBCH	Yellow-breasted chat
YBCU	Yellow-billed cuckoo
YBFL	Yellow-bellied flycatcher
YBSA	Yellow-bellied sapsucker
YCNH	Yellow-crowned night-heron
YWAR	Yellow warbler
YRWA	Yellow-rumped warbler
YTVI	Yellow-throated vireo
YTWA	Yellow-throated warbler

Name _____ Park Unit: _____

Field Season Completion Checklist. This checklist is an important part of our quality control procedures. Please initial and date each task as it is completed, and return this sheet with equipment (by 15 August).

Initials	Date	Task	Due Date
		Attend Volunteer Training and/or read/review Volunteer Manual	Mid- to late-May
		Sign and return all safety documents	Mid to late - May
		Conduct 1 st field survey	25 May – 8 June
		Conduct 2 nd field survey (optional)	8– 22 June
		Conduct 3rd field survey (optional)	22 June – 6 July
		Conduct 4th field survey (optional)	6 – 15 July
		Enter field data into Bird Point Count Database (FRSP, RICH, BOWA) or transcribe data from Field Mapping Cards onto Data Sheets (APCO, VAFO)	Within 1 day of conducting field survey
		Total up volunteer hours contributed to project this season and enter below.	No later than 15 August
		Return Field Mapping Cards, Data Sheets (APCO, VAFO only), equipment, and this checklist to park contact.	No later than 15 August

Total Volunteer Hours:

Comments:

