

Mid-Atlantic Network Breeding Bird Monitoring: Safety Plan

Mid-Atlantic Network Breeding Bird Monitoring Program
Version 1.1 (May 2019)

Overview

The Mid-Atlantic Network (MIDN) considers the occupational health and safety of its employees and volunteers to be of utmost importance, and is committed to ensuring that all personnel receive adequate training on National Park Service (NPS) safety procedures, incident reporting, and emergency response prior to field work. This SOP and supporting appendices were designed to provide a summary of safety issues that should be reviewed and understood by anyone participating in the Breeding Bird Monitoring protocol, and to serve as a reference in case of an incident. In general, the MIDN will follow park safety protocols already established in the park, but at a minimum must meet the guidance documented in this SOP.

Topics covered include emergency procedures and contacts, incident reporting, field preparation, safe field procedures, vehicle safety, and workers compensation procedures. A Job Safety Analysis (JSA), which documents hazards associated with this protocol and recommends approaches to mitigate these hazards, is included as an appendix to this SOP (Appendix A). The JSA must be read and signed by all monitoring participants (i.e. park employees and volunteers) that conduct field work for this protocol. Forms that go along with this SOP (Safety Acknowledgment, Volunteer Safety Form) are provided in Appendix C. This SOP does not cover first aid. A Green-Amber Red Risk Assessment (GAR) has also been conducted for this protocol and is included as an appendix (Appendix B).

Responding to an Incident

Life-Threatening Medical Emergency

1. **Call 9-1-1 or park emergency number.** Administer first aid to the best of your knowledge, ability and training. If appropriate, transport to emergency room. It is highly recommended that prior to going into the field to sample, each participant should determine directions to the hospital closest to where you are sampling. Additionally, your park contact should supply each participant with park-specific emergency contact procedures and can advise participants on the location s of hospitals that are closest to your park.
2. As soon as it is practical to do so, inform your park contact (i.e. resource manager or project lead) of the incident.
3. Complete Worker's Compensation paperwork within 48 hours of incident.

Non-Emergency Incidents

1. Notify your park contact immediately after the incident.
2. Seek medical attention, if needed.
3. Complete Worker's Compensation paperwork within 48 hours of incident.

NOTE: Never discard original paperwork related to workers compensation claims (including information from doctor's visits, CA-1, CA-2, CA-16 or CA-17 forms).

Field Preparation

Everyone participating in the Breeding Bird Monitoring Program is responsible for maintaining a safe work environment for themselves and others.

Job Safety

An important tool used to promote safe conduct is the Job Safety Analysis (JSA; sometimes called a Job Hazard Analysis or JHA). This approach is consistent with NPS Director's Order 50 and Reference Manual 50B for Occupational Health and Safety. The JSA process is to (1) identify hazards associated with field and laboratory settings, as appropriate, and (2) develop approaches to mitigate those hazards. All monitoring staff must sign an acknowledgment that they have read the JSA in Appendix A. In addition, it is highly recommended that all participants in this protocol read the entire Safety SOP before conducting field work.

First Aid Kits and Training

The MIDN strongly encourages all monitoring participants to carry a backpacking first aid kit with them in the field. It is also strongly encouraged that all monitoring participants obtain basic first aid and CPR training, particularly if they have not been certified in the past 5 years.

Teamwork

Since much of the monitoring for this protocol is off-trail in somewhat inaccessible areas, the 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 a participant is unable to find a partner and would like to work with one, the park contact should be notified and they will determine if field partners are available.

Daily Communication and Planning

Monitoring participants are expected to carry a reliable cell phone, and must check that it is fully charged and tested at the beginning of each day. Monitoring participants should follow check-in/check-out procedures determined by each park. At a minimum the participants must notify the park contact (i.e. resource manager or project lead) with expected dates and locations of field work. The park resource manager or project lead must be contacted prior to the day of field work and be provided with the monitoring participants name, cell phone number, and vehicle license plate number. Park law enforcement personnel will be notified when participants are sampling and will keep an eye out for potential incidents (e.g. if participants car has not been moved for an extended period of time). Participants are also highly encouraged to notify another person (e.g. friend or family member) who can monitor their safe return.

Personal Gear

Monitoring participants are responsible for ensuring they are wearing field appropriate clothing and footwear such as long pants, a hat and hiking boots. Depending on the weather, rain gear or warm clothing should be taken into the field and it is recommended that an extra set of clothing be kept in the vehicle. Monitoring participants should take care to avoid over exposure to the sun

by wearing sunscreen and/or protective clothing. Participants should always carry ample water (2-3 liters) and food when working in the field.

Field Safety

Slip, Trip, Fall Prevention

Uneven terrain, slippery rocks, dense brush, and fatigue are all hazards that could result in a slip, trip, or fall. The following guidelines should be obeyed by monitoring participants to avoid injury from slips, trips, or falls:

- Always wear appropriate footwear such as sturdy hiking boots
- Pay attention to where you are going, and remain alert of potential hazards
- Walk at an appropriate pace and adjust pace for changes in terrain (e.g., slow down and take smaller steps on slippery surfaces)
- When hiking long distances, take breaks to avoid fatigue
- When navigating to a location off trail, choose the safest route (this may not be the shortest route). Avoid river crossings, excessively steep terrain and sudden drop-offs. Always be careful when navigating over piles of scree, and alert others of falling rocks.

Weather

Weather conditions in the eastern U.S. can be hazardous and can change quickly. Monitoring participants are responsible for planning their day according to the local weather forecast, and for being aware of their surroundings and changing conditions.

Thunderstorms

Storms that produce strong winds and lightning are dangerous and should be avoided in the field. Bird monitoring data should not be collected during a storm, however if you are caught in a lightning storm, seek shelter in a building or car as soon as possible. If no shelter is available, spread out and move to an open space. Squat low to the ground on the balls of your feet with your hands on your knees (do NOT lie flat on the ground). Avoid high elevations, conductive materials, and tall structures such as trees or telephone poles. If you are in the open and feel your hair stand on end (indicating lightning is about to strike), immediately make yourself the smallest target possible and minimize contact with the ground.

NOTE: A person struck by lightning can often be revived by prompt administration of CPR and oxygen.

Excessive Heat and Sun

Over exposure to heat and sun can cause dehydration, heat exhaustion, or heat stroke. When working in hot weather, be sure to drink plenty of water and eat foods that can replace electrolytes. Dehydration is a serious condition that can lead to more serious conditions if untreated, and should be avoided. It is important to drink liquids frequently to maintain hydration on a warm day, even if you don't feel thirsty. Wear loose and light colored clothing, including a hat to block the sun's rays. It may help to shift the field schedule to avoid working outside during the hottest part of the day.

WARNING: Signs of heat stroke include hot, red or spotted (usually dry) skin, and the sufferer may become mentally confused, delirious, have convulsions, or lose consciousness. If heat stroke is suspected, seek immediate medical attention!

Poor Air Quality

Summer ozone and particulate matter levels occasionally exceed federal health standards. Young children, seniors, and those suffering from asthma, chronic bronchitis, and chronic obstructive pulmonary disease or heart problems are especially sensitive to poor air quality and should minimize outdoor activity when poor air quality warnings are posted. The risks of occasional exposure to ozone and fine particulate matter are minimal for healthy individuals.

When poor air quality warnings occur, it is advisable for monitoring participants to avoid overly strenuous activity during the hottest part of the day (pollution levels tend to be lowest early in the morning), and to stick to lower elevations under a forest canopy.

To check local air quality forecasts, or learn more about health risks of air pollution, visit the AIRNow intergovernmental agency website: <http://www.airnow.gov/>.

Deer ticks and Lyme Disease

Several species of ticks are commonly encountered in eastern U.S. parks while working in the field (**Figure 1**). This includes the deer tick (*Ixodes scapularis*), which is a known vector of Lyme disease and Ehrlichiosis. Monitoring participants must take the precautions outlined below to help minimize the chances of having an embedded tick that could lead to illness:

- Clothes treated with tick and insect repellents have been found to be fairly effective tick repellent. Monitoring participants are strongly encouraged to treat their **clothing** with permethrin prior to conducting monitoring (do not spray directly on skin!). Monitoring participants should carefully follow the application instructions on the spray bottles to ensure their safety. Permethrin will remain active for several weeks and through several washings.
- Monitoring participants should take additional precautions to protect themselves from ticks, including tucking pants in socks and tucking in shirts. Long sleeves and gaiters have been found to help.
- Check clothes and skin for ticks at the end of every field day. Ticks typically need to be embedded for at least 24 hours for disease transmission to occur; therefore, the earlier ticks are found and removed, the lower your chances are of acquiring a tick-borne illness.
- If you find a tick that is already embedded, use fine-tipped tweezers to firmly grasp the tick close to your skin. Slowly and steadily pull the tick's body away from your skin. Be careful not to crush the tick's body to minimize the chances of it regurgitating fluids into the wound. Clean the bite area once the tick is removed with soap and water.
- Keep a tick log. If you receive a deer tick bite, document when it occurred, where you were bitten, and if possible tape the specimen to a page in your tick log.
- If you develop symptoms of lyme disease, notify the park resource manager or project lead, who will help you start a worker's compensation CA-1 claim to get a CA-16. Use the CA-16 to get medical treatment.
- Keep an eye out for any early symptoms of tick borne diseases. Symptoms may include a bull's eye rash around the tick bite (doesn't always occur), tingling or numbness in

extremities, a spotted rash on extremities, bad headaches, high fever, joint aches, stiff neck, fatigue, or swollen glands. If you develop a combination of these symptoms soon after a tick bite, seek medical attention.

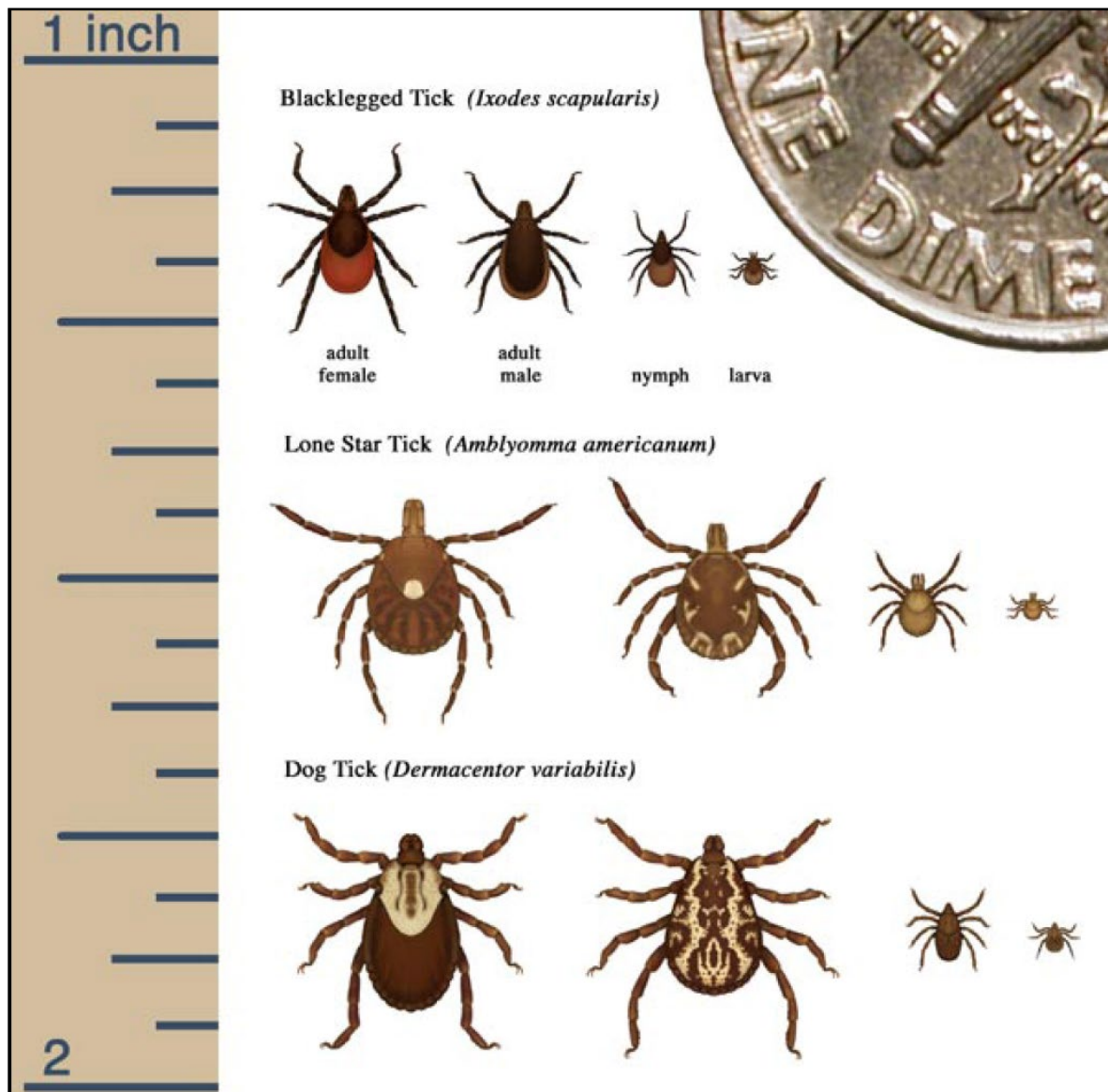


Figure 1. Tick species found in the eastern US.

Considerations for using repellents containing DEET:

- DEET products have been widely used for many years; these products have occasionally been associated with some adverse reactions. Frequently, reported reactions are about skin or eye irritation. There have been reports of central nervous system problems.
- By using products with lower concentrations of DEET and by applying as little of the product as needed for your outdoor work, you can reduce your exposure to DEET.

- Products with about 20 - 30% DEET are considered effective for most insects, but do not seem to be effective against the black-legged or deer tick (*Ixodes scapularis*)
- Generally, products with about 20 - 30% DEET are considered safe for adults (except for those with allergies to DEET products) when applied as directed.

Considerations for using repellents containing permethrin:

- Products containing permethrin are for use on **clothing only – not for use on skin.**
- Permethrin kills ticks that come in contact with treated clothing and one application lasts two weeks or more. Do not treat the clothing more than once every two weeks.
- Carefully read and follow manufacturer's instructions for application, and refer to the MSDS sheet if you have questions.
- Do not apply while clothing is being worn.
- Apply to clothing item in a well-ventilated outdoor area, protected from wind.
- Lightly moisten the fabric with permethrin – do not saturate the fabric.
- Allow clothing item to dry outdoors for at least two hours before wearing (4 hours in humid conditions).
- Keep treated clothes in a separate bag for storage and transport.
- Launder treated clothing, separately from other clothing.

More information on insect repellents:

<https://www.epa.gov/insect-repellents>

More information on Lyme Disease and Ticks:

Center for Disease Control:

<http://www.cdc.gov/lyme/>

(also a free webinar on tickborne diseases)

American Lyme Disease Foundation:

<http://www.aldf.com/>

Tick Management Handbook:

<http://www.ct.gov/caes/lib/caes/documents/publications/bulletins/b1010.pdf>

Poisonous Plants and Animals

Both for safety and protection of park resources, it is never advisable for monitoring participants to eat wild plants while working in a National Park, regardless of their confidence in plant identification. Keep a safe distance from all wildlife encountered during monitoring.

Poison Ivy

Poison ivy (*Toxicodendron* spp.) is present in all MIDN parks, and can be very abundant in localized areas. When working in areas with poison ivy, it is advisable that monitoring participants learn to recognize this plant and take precautions to avoid skin contact with any part of it. Using a pre-exposure cream and wearing long sleeves and long pants can help reduce the amount of skin contact with the plant. If needed, use poison ivy wipes after contact. Monitoring participants should be careful not to rub their faces when working around poison ivy. After

working in an area with abundant poison ivy, monitoring participants should gently wash exposed skin in cool water with poison ivy soap, and should change into fresh field clothes. At the end of a field day, monitoring participants should also wash potentially contaminated equipment (e.g., backpack, binoculars, etc.). If a severe allergic reaction occurs, the affected individual should seek medical attention, notify the park resource manager or project lead as soon as possible, and file a workers compensation claim.

Venomous Snakes

The following species of venomous snakes may occur in some MIDN parks: copperhead (*Agkistrodon contortrix*), cottonmouth (*Agkistrodon piscivorus*), and timber rattlesnake (*Crotalus horridus*). The best course of action is to avoid all snakes by keeping them at a safe distance. Most snake bites occur because people try to handle or harass them rather through accidental encounters. However, when in poisonous snake country, pay attention to where you put your hands and feet, and be aware around rock piles and bedrock outcrops. Note that many snake bites are purely defensive, and contain no venom. Bites from immature snakes are much more likely to contain a more dangerous amount of venom than bites from adult snakes. Should you receive a snake bite from a potentially poisonous snake, follow the procedure below:

- Time is of the essence, it is better to spend your available time getting to proper medical treatment facilities than it is to fumble with field therapy and wait for assistance to reach you.
- Treat all bites as if envenomation has occurred.
- If working in a team, assign one person to use a cell phone to call for assistance. Identify the call as a snakebite incident, and identify the victim's location and the closest possible point of access for responders.
- Quickly remove any restrictive clothing, rings, watches, shoes etc., near the bite before swelling begins.
- Immobilize the bitten limb firmly with a splinted elastic (Ace) bandage and get the victim out of the field and to a hospital as quickly as possible.
- **Do not** use thin circulation restrictive cords, or pack with ice for long periods (more than five minutes), or attempt to cut open or otherwise enlarge the fang punctures. This may lead to additional tissue damage to the bitten area.
- Reassure the victim that they will be OK and otherwise attempt to maintain calm both for the victim and for all others involved.
- If working in a team, begin leading the victim slowly out of the woods as soon as the bitten limb has been immobilized. **Move as slow as necessary to maintain a normal heart rate for the victim.** Waiting for assistance will only prolong the process of getting proper medical treatment.
- In a solitary situation, establish radio or telephone contact and relay the necessary information as you walk slowly out of the woods. Focus on remaining calm and maintaining a normal heart rate.

The range of the copperhead covers all MIDN parks currently monitoring birds: Appomattox Court House NHP (APCO), Booker T. Washington NM (BOWA), Fredericksburg and Spotsylvania NMP (FRSP), Petersburg NB (PETE), Richmond NBP (RICH), and Valley Forge

NHP (VAFO). The likelihood of encountering a copperhead is low, but be especially alert in rocky areas, wood piles, or old homesteads. Copperhead bites are not typically considered life threatening, and in most cases antivenin is not administered.

The range of the cottonmouth only covers the Southeastern corner of Virginia, and is listed by NatureServe as "vulnerable" (S3). Parks where this species may occur include Richmond NBP (RICH) and Petersburg NB (PETE). Cottonmouth bites that are defensive typically do not contain venom. However, cottonmouth bites are capable of delivering a lethal dose. The likelihood of encountering a cottonmouth is extremely low, but be alert in wetland areas.

The range of the timber rattlesnake covers all MIDN parks, but is more likely to occur in the MIDN parks located in Virginia such as, Appomattox Courthouse NHP (APCO), Booker T. Washington NM (BOWA), Fredericksburg and Spotsylvania NMP (FRSP), Petersburg NB (PETE), and Richmond NBP (RICH), where the species is listed as "apparently secure" (S4) by NatureServe. Adult timber rattlesnakes are capable of delivering a lethal dose of venom.

Bees, Wasps, and Yellow Jackets

If any monitoring participants are allergic to bee stings, they should alert their Park contact and colleagues, and make sure to carry appropriate medications at all times. If they carry an epinephrine injector and are working in a team, they should make sure their colleague knows where it is carried. Be alert to potential hive and nest locations while hiking to plots and working on plots. Look for insects travelling in and out of one location (e.g., brush, ground holes, and hollow logs). If someone is stung, Benadryl and a cold compress may bring relief. If stinger is left behind, scrape it off of skin. Do not use tweezers as this squeezes the venom sack, worsening the injury. If the victim develops hives, asthmatic breathing, tissue swelling or a drop in blood pressure, seek medical help immediately.

Black Bears

Black bears range throughout the Northeast, but an encounter with a bear in the field is not likely since bears generally avoid people. Nevertheless, be alert for bears near dawn or dusk, and be especially aware of mother bears with cubs. Never approach cubs or come between a mother bear and her cubs. If a bear is encountered, face the animal and continually make noise – do not freeze or remain silent. Appear larger by standing tall, waving arms or jacket over your head, and slowly back away. Never run from a black bear; if charged or attacked, throw objects and shout loudly, and fight back aggressively.

Vehicle Safety

Responsibilities of Vehicle Operators

Virtually all monitoring participants for the bird monitoring protocol will be using their personal vehicles to get to and from their monitoring sites. Monitoring participants are responsible for inspecting their vehicles before every use to ensure the vehicles are in safe working condition. This includes visually checking tire pressure, adjusting mirrors, and making sure equipment is secure, as well as taking care of preventative maintenance in a timely manner. It is strongly recommended that monitoring participants obey the following rules (these rules are mandatory for users of government vehicles):

- Wear a seat belt.
- Do not use cell phones (both talking and texting) while driving.
- Adhere to all federal and state vehicle regulations, including all posted speed limits.
- If walking along a road, wear a fluorescent safety vest or brightly colored clothing.

Procedures for reporting a motor vehicle accident (for Government Vehicles only)

Volunteers will be using personal vehicles for monitoring which are excluded from this section. NPS staff should follow NPS accident reporting procedures. The NPS procedures are as follows:

1. Stop immediately and turn on emergency flashers.
2. Take steps to prevent another accident at the scene.
3. Call 911 or ambulance if necessary.
4. Notify police, NPS law enforcement and the park contact (e.g. resource manager or project lead).
5. In the event of death, actual or potential serious injury, or significant property damage (damage greater than \$2,500), the participant involved must convey this information as soon as is practical to MIDN staff, so that the NPS Regional Tort Claims Officer (TCO), can be notified.
6. In reporting an accident, the employee should state the facts to the best of his/her knowledge. **Conclusions as to fault or responsibility should not be stated.** The employee should report the accident only to authorized representatives of the Government, their insurance company, and police officers investigating the accident. The employee shall also file any report required by law.
7. Obtain the name and address of a witness (preferably two witnesses). Ask any witnesses to complete Standard Form (SF) 94, Statement of Witness, if the form is available.
8. State/provide your name, address, place of employment (or park where volunteering), name of your supervisor, and, upon request, show your driver's license and vehicle registration information.
9. Complete Standard Form (SF) 91, Motor Vehicle Accident Report as soon as practical. If conditions prevent this, make notes of the following:
 - a. Registration information for other vehicle(s) (owner's name, owner's address, tag number, VIN, and vehicle description)
 - b. Information on other drivers (name, address, operator's permit, and expiration date)
 - c. Name and address of each person involved and extent of injury, in any.

- d. Name and address of company insuring other vehicle(s) and insurance policy number
 - e. General information such as location, time, measurements, weather, damage, etc.
10. Encourage police to provide a Police Report and, if available, submit a copy with SF 91.
 11. If you have a camera, take pictures of the accident scene and any damage to the vehicles involved. Submit along with SF 91.
 12. If vehicle is unsafe to operate, arrange for towing services (if using a government vehicle, pay using the vehicle gas card).
 13. Submit all reports and data to the MIDN Program Manager within one working day.
 14. If a federal employee or volunteer is injured, the workers compensation process needs to be initiated within 48 hours of incident. MIDN staff will assist with this process. It is important for injured monitoring staff to receive prompt medical treatment. Make sure the employee sees a doctor, not a nurse, nurse practitioner, or physician's assistant.
 15. MIDN staff will submit copies of all reports and data to the NPS regional TORT Claims Officer (TCO) as soon as possible but no later than 10 calendar days after the accident.

Accident/collision reports should be filed for:

1. All motor vehicle accidents involving federally owned or leased vehicles and employee-owned or rented vehicles while being used on official business, regardless of the amount of damage.
2. All public/visitor accidents will be reported on a SF-91 when a government-owned vehicle is involved, government property is damaged, fatality occurs, medical treatment is required and/or a reasonable possibility of a tort claim is expected.
3. Thefts and Vandalism should be reported to Park Law Enforcement Officials rather than reported on SF-91.
4. Reporting Multiple Vehicle Accidents – when a privately owned vehicle damages Government property, two reports (SF-91) are required: one report for the Government property and one for the private operator.

Appendix A. Job Safety Analysis (JSA)

JOB SAFETY ANALYSIS (JSA)		Date: 3/10/12	New
Department: Mid-Atlantic Network	Division:	Branch:	Location:
JOB TITLE: Breeding Bird Monitoring Participant		JHA Number:	Page <u> 1 </u> of <u> 2 </u>
Job Performed By: Bird Survey Volunteers / NPS Staff	Analysis By: Sarah Wakamiya, MIDN Biologist	Supervisor: Jim Comiskey, MIDN Program Manager	Approved By:
Required Standards and General Notes:	At least one method of communication (cell phone), GPS unit. Alert others of travel plans. Recommend bringing water and first aid kit.		
Required Personal Protective Equipment:	Dress appropriately for the weather conditions and hiking off trail (close-toed shoes)		
Tools and Equipment:	None		
Activities	Potential Hazards/ Injuries	Safe Action or Procedure	
Planning and Communication	1. Not being prepared. 2. Communication breakdowns.	- Plan ahead. Know where you will be going, particular hazards associated with travel routes, and sites to be visited that day. Check expected weather and stream conditions for day and sites to be visited. - Make sure to notify others prior to field work with a trip plan, and after field work to confirm the work is safely completed. - Ensure you have park staff contact information	

		• Carry a cell phone – check to make sure you get reception and verify it has full charge before beginning work.
Emergency Preparedness	1. Not knowing emergency procedures. 2. Not having emergency supplies.	• Know who to contact and how to reach them in the event of a life-threatening or non-life-threatening emergency. • Have current CPR and first aid certification. • Carry a well-maintained first aid kit.
Walking on trails	1. Falls 2. Overexertion	• Be aware of trail surface conditions. Sections of the trail are uneven and rocky and may be wet or muddy. Walk cautiously over the trail and be alert to conditions. • Walk at a pace suitable to your physical condition.
Walking off-trail	1. Falls 2. Eye injuries 3. Injury from falling hazardous trees and limbs. 4. Becoming lost	• Walk carefully and be alert to avoid holes, stumps, fallen branches, etc. that may pose tripping hazards. • Beware of limbs or branches at eye level when moving through the forest. Push branches away and do not let branches swing behind you if another person is following. • Avoid passing under trees or limbs that are dead, leaning or possess obvious defects. • Plan out your trip, use the GPS unit, carry a map, and know your location at

		all times. GPS your car if necessary if you have no other land marker to return to.
Working in areas not frequented by park staff	1. Suspicious activity	• If suspicious activities are noted, do not attempt to intercede or investigate. Quickly, but safely, leave the area and immediately notify park staff. If any emergency situation is noted, immediately call 911 then notify park staff.
Weather conditions	1. Thunderstorms	• Listen to the weather forecast each morning (park radio and/or internet). • Breeding bird monitoring is not conducted when it is raining or windy. • Plan or adjust field work to avoid being out in thunderstorms. • Postpone work if safety will be compromised by storm conditions. If you see or hear a thunderstorm coming, retreat from high ground and exposed areas. Go inside a sturdy building or vehicle, if possible. • If you can't get inside and if you feel your hair stand on end, lightning is about to strike. • Make yourself the smallest target possible and minimize contact with the ground.

	2. Severe heat	Crouch down on your pack on the balls of your feet and keep your feet close together. Place your hands on your knees and lower your head. • During a thunderstorm, individuals should stay separated by at least ten feet. • Know the predicted high temperature for the day before starting the survey. • Be aware of symptoms of heat exhaustion • Carry water with you. • Start field surveys early and stop working before it gets too hot.
Natural Hazards	1. Ticks 2. Wasps/Bees	• Inspect for ticks on skin & clothing during and after completing any field work. • Spray insect repellent containing DEET on clothes and on exposed skin (except face). Treat clothes with Permanone tick repellent (not for use on skin). • Follow tick avoidance procedures, including tucking pants into socks and shirt into pants. • Be alert to potential bee/wasp sites • If allergic carry appropriate self-medication

	3. Poison Ivy/Briers/Thorny Plants 4. Wild/feral animals	• Identify plants & be aware of surroundings • Use IvyBlock® or similar to minimize exposure to poison ivy oils • Minimize touching plants • Wear long sleeves/pants • Wash with Tecnu® or similar if exposed to poison ivy • Maintain safe distance from animals • Be especially cautious around young animals • Avoid and report animals with odd behavior • Seek medical help if injured by venomous snakes or mammals, especially rabies vectors (e.g. raccoons)
Vehicular Hazards	1. Driving	• Wear seat belts with shoulder harnesses whenever vehicle is in motion. • Do not use cell phones or text while driving. • Plan your travel before you start. Know your route. • Obey all traffic laws and speed limits. • Avoid distractions such as eating while driving. • Be alert for pedestrians or bicyclists using roadways. • Be watchful for wildlife crossing roads, especially at early morning, dusk, and after dark.

	2. Parking	• Only park in designated parking areas. • If you must stop on the road, use hazard lights and pull off as far as you can. • If you must step out of the car, make sure you are aware of your surroundings. Be alert for cars, bicyclists, or pedestrians before opening your door. • If going to be on side of road for any length of time, put on orange/lime green reflective vest or wear brightly colored clothes.
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Appendix B. Green-Amber-Red Risk Assessment

This appendix describes application of the GREEN-AMBER-RED (GAR) Risk Assessment Model as outlined in the NPS Operational Leadership Student Manual (Version 2; July 2011) to the MIDN Breeding Bird Monitoring Protocol. This GAR was written by the MIDN Biologist (Sarah Wakamiya) on 30 March 2012 and approved by the NPS Northeast Region I&M Program Manager (John Karish) in 2012 following discussions with the MIDN Program Manager (Jim Comiskey) and the park Resource Managers.

The GAR model allows for a general assessment of a task or operation and generates communication concerning the risks of an activity (in this case, conducting the field-based activities of the MIDN Breeding Bird Monitoring Protocol). The most important part of the process is the team discussions leading to an understanding of the risks and how they will be managed.

The GAR is a seven step process. Each step is defined and explained in the context of the MIDN Breeding Bird Monitoring Protocol below.

Step 1: Define the Mission or Task

The MIDN Breeding Bird Monitoring Protocol includes field-based monitoring: navigating to points in forests and fields and surveying birds. Monitoring participants are usually volunteers who work independently and are coordinated by the park resource manager or the MIDN project lead. Volunteers are encouraged to work in pairs and the NPS has agreed to help find partners for monitoring volunteers when the volunteers request a partner. Points are located at least 15m away from roads and trails. Navigation to and between points is also primarily off trail. Potential safety hazards (along with mitigation measures) have been identified in a Job Safety Analysis (JSA; Appendix A). Of specific concern is that volunteers will regularly be working in fairly remote areas with limited communication options in the event of an emergency. A serious injury due to walking through thick brush or a trip and fall while traversing uneven terrain are possible and are the most significant risks encountered when conducting this activity.

Step 2: Define the Threats

The threats/hazards for this activity along with mitigation measures are described in the associated JSA (Appendix A).

Step 3: Assess Risk and Assign a Numerical Value

The numerical ranks (**Table 1**) were assigned by the MIDN Biologist and the NPS project leader for the MIDN Breeding Bird Monitoring Protocol. MIDN staff and participating park resource managers reviewed the ratings and analysis and their suggestions were incorporated.

The GAR process is described in NPS Operational Leadership Student Manual (Version 2; July 2011). The activity risk can be visualized using the colors of a traffic light. If the total risk value falls in the GREEN ZONE (1-35), risk is rated as low. If the total risk value falls in the AMBER ZONE (36-60), risk is moderate and you should consider adopting procedures to minimize the risk. If the total value falls in the RED ZONE (61-80), you should implement measures to reduce the risk prior to starting the event or evolution.

The ability to assign numerical values or “color codes” to hazards using the GAR Model is not the most important part of risk assessment. What is critical are team discussions leading to an understanding of the risks and how they will be managed.

Table 1. MIDN Breeding Bird Monitoring Protocol assigned risk codes of 0 (For No Risk) through 10 (For Maximum Risk) to each of the eight Green-Amber-Red Risk Assessment elements.

Element	Rating
Supervision	5
Planning	2
Communication	5
Contingency Resources	6
Team Selection	5
Team Fitness	3
Environment	3
Incident Complexity	3
Total Risk Score	32

Step 4: Identify Risk Control Options

Supervision

Personnel, roles and responsibilities, and a chain of command have been clearly communicated to all members involved. A finalized protocol is needed to document these items; however, several SOPs on training and safety are available. The resource manager for each park, except FRSP (which is managed by the project lead), manages and coordinates the volunteers.

Volunteers are required to follow the safety procedures implemented by each park and are encouraged to work with a partner in the field but may opt to work alone. A score of 5 was assigned because of the lack of direct supervision, the lack of a finalized protocol, and the likelihood that many volunteers will work alone.

Planning

MIDN has a Breeding Bird Volunteer Manual, several SOPs describing training, safety, and emergency contacts, and a JSA that cover various aspects of safety. All volunteers must attend an annual training session prior to the monitoring season where field procedures, safety, and emergency procedures are reviewed. Volunteers are also asked to review the manual and safety documents on their own and are required to sign an acknowledgement stating that they have received and read the JSA. Due to this advance planning, written documentation, and training procedures, a score of 2 was assigned.

Communication

Routine and emergency contact information is provided to each volunteer. Volunteers are required to notify their park contact when and where they will be prior to sampling. Volunteers are also highly encouraged to check-in/check-out with another responsible party (e.g. friend or family) to ensure their safe return. Due to this advance planning, written documentation, and training procedures, but the fact that check-in/check-out is optional, a score of 5 was assigned.

Contingency Resources

Contingency resources include communication equipment and procedures that explicitly involve park rangers, park dispatch, and 9-1-1. Volunteers and other monitoring staff are required to carry a cell phone. All parks have good cell phone coverage except in the most remote areas. Contingency plans are in place in the event of an emergency and all parks have good response

times for emergency resources. In the worst case scenario, an incident involving a solo individual, who did not establish a check-in/check-out contact, in an area with no cell phone coverage, could result in a long delay before emergency services are alerted. However, park law enforcement officers regularly patrol the parks and would notice if a volunteer's vehicle had not moved and could initiate a search. Because the park coordinator knows the volunteer's route, the individual should be located on the same day and within a few hours of starting a search. A score of 6 was assigned for this worst-case scenario.

Team Selection

Volunteers are experienced birders, many are retirees, and have a wide range of orienteering and hiking skills. Volunteers and monitoring staff are strongly encouraged to obtain basic first aid and CPR certification, and to work with a partner if they are concerned about their field experience. Coordinators also take into consideration each volunteer's hiking abilities and place them on routes that match their skill levels. There is a range in fitness levels, but they are taken into consideration when planning routes, so a score of 5 was assigned.

Team Fitness

The nature of the Breeding Bird Monitoring Protocol should ensure an overall high level of team fitness. Volunteers are only in the field for up to 5 hours per day (not including drive time to the park), and each individual typically surveys 10 to 12 points per year. Some individuals monitor multiple routes or monitor their points multiple times per year (with 2 weeks between sampling events), but they never survey longer than 5 hours per day. A score of 3 was assigned because the shifts are not long, even though the work can be strenuous and begins around dawn. Volunteers must be diligent about adequate rest and nourishment to ensure that fatigue does not become a factor.

Environment

The parks in MIDN are generally flat and easy to navigate; however, certain areas may have dense vegetation or downed snags creating tripping hazards. Activities may start before dawn and occur during a variety of weather conditions, but are cancelled by rain and high winds. A score of 3 was assigned.

Incident Complexity

Incident complexity was given a score of 3 because most areas of the parks in the MIDN are easily accessible and response time is good, but good judgment calls depend on the experience of the volunteer.

Step 5: Evaluate Risk vs. Gain

The scores for this assessment fall just under the "amber" zone, indicating low-medium risk. While it is theoretically possible to make changes to reduce risk even further, doing so will likely cause volunteers to leave the program due to the intrusive requirements. MIDN feels that the current procedures provide a good balance that encourages volunteers to be safe without being overly protective.

Step 6: Execute Decision

The decision made by MIDN staff is to conduct the activity in accordance with MIDN Breeding Bird Monitoring Protocol Standard Operating Procedures (SOPs).

Step 7: Supervise – Watch for Change

The project lead will continually solicits feedback from park resource managers and volunteers on safe execution of the protocol including risk control options not considered thus far.

Appendix C: Safety Forms

The following forms need to be completed once for each volunteer, prior to any field monitoring activities. These forms should be kept on file at the host Park, and copies sent to the protocol lead. An annual review of the Volunteer Training Manual and Job Safety Analysis is recommended for all volunteers.

Safety Acknowledgment Form

By signing below, I certify that I have read the safety section of the Volunteer Training Manual and the Breeding Bird Monitoring Job Safety Analysis. I have shared any safety concerns or suggestions with the Park coordinator (Park resource manager or project lead) and they have been addressed to my satisfaction.

Print Name: _____

Signature: _____

Date: _____

Please sign and return this form, along with the completed and signed NPS Agreement for Individual Voluntary Services, to your Park coordinator.

Volunteer Safety Form

This form must be completed and returned to your park coordinator (i.e. park resource manager or project lead) in advance of any field monitoring activities.

Name of volunteer: _____ Cell phone number: _____ - _____ - _____ Home phone number: _____ - _____ - _____
Emergency Contact Name: _____ Cell phone number: _____ - _____ - _____ Home phone number: _____ - _____ - _____
Vehicle make, model: _____ Vehicle license plate: _____ Planned parking location(s): _____

Revision History

The Mid-Atlantic Network Breeding Bird Monitoring Protocol consists of a narrative (Johnson and Wakamiya 2018), Standard Operating Procedures (SOPs) that outline specific aspects of the monitoring protocol, and a Quality Assurance Plan that establishes standards for data quality.

The latest version of each and additional supporting information can be accessed online at the National Park Service's Mid-Atlantic Network website (<https://www.nps.gov/im/midn>) and at the Service's integrated resource management information portal (<https://irma.nps.gov/DataStore/Reference/Profile/2256611>).

The narrative, each SOP, and the Quality Assurance Plan have respective revision history logs to document changes. The following revision history log is for the Safety Plan.

Version numbers will be incremented by a whole number (e.g., Version 1.0 to 2.0) when a change is made that significantly affects requirements or procedures. Version numbers will be incremented by decimals (e.g., Version 1.3 to Version 1.4) when there are minor modifications. Rows are added to the log as needed for each change or set of changes tied to an updated version number.

Prev. Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #
1.0	17-Oct-2018	Mark J. Johnson	Inserted Revision History page. Changed the word "stations" to "points".	Updated to align with other SOPs for this protocol	1.1

Literature Cited

Johnson, M. J., and S. M. Wakamiya. 2018. Breeding bird monitoring protocol for the Mid-Atlantic Network. Natural Resource Report NPS/MIDN/NRR—2018/1769. National Park Service, Fort Collins, Colorado.