

Loudoun County Bird Atlas Handbook



Loudoun Wildlife Conservancy

Revised October 2011

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Fundraising

The Loudoun Wildlife Conservancy is funding a major portion of this atlas project with money raised from their 2008–2013 International Migratory Bird Day Birdathons. However, additional funding is needed to produce a final product worthy of the effort involved. Please contact the Atlas Coordinator with any fundraising ideas. Tax-deductible contributions are greatly appreciated and can be mailed to: Loudoun Wildlife Conservancy, P.O. Box 2088, Purcellville, VA 20134-2088.

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The Loudoun County Bird Atlas Website can be found at:
http://www.loudounwildlife.org/Bird_Atlas.htm

This handbook was modeled after the Maryland/DC (2002-2006) and Delaware (2008-2012) Breeding Bird Atlas Handbooks. Links to both handbooks are located on the BBA (Breeding Bird Atlas) Explorer website (<http://www.pwrc.usgs.gov/bba/>).

Welcome to the Loudoun County Bird Atlas 2009–2013!

The Loudoun County Bird Atlas is a citizen science project to establish a comprehensive list of birds in Loudoun County, including their breeding status and distribution throughout the county. Most bird atlases are statewide and limit data collection to the breeding season for the species of interest. Our atlas is unique in that it's on a smaller, county-wide scale and will collect data year-round for both breeding and non-breeding birds.

Birds play a key role in our ecosystem and are important indicators of the overall health of our environment. Loudoun's diverse habitats, ranging from forests and wetlands to suburban parks, make this county an important breeding and wintering site for numerous birds. Many changes have occurred throughout Loudoun over the past two decades. We have observed a decline of some species, such as the Northern Bobwhite, and an increase in other species, such as the Bald Eagle. By comparing our atlas results to data from the 1985–1989 Virginia Breeding Bird Atlas as well as future Christmas/Migratory Bird counts, monitoring programs, and atlases, we can begin to understand how development and growth in Loudoun County is impacting the birds and their habitat. Our atlas project will create a baseline of information that can also be used to indicate important bird areas. We can then design conservation strategies to permanently protect these areas.

This atlas project is organized and funded by the Loudoun Wildlife Conservancy (LWC), a non-profit group of volunteers dedicated to promoting the preservation and proliferation of healthy wildlife habitats in Loudoun County. From April 2009 through December 2013 you have the unique opportunity to contribute valuable data to the atlas while doing something you love – birdwatching! Your contributions of time and knowledge, no matter how big or small, are key to making our atlas project a success. We welcome birders of all levels to join us for this exciting and important project.

Atlas Structure

There are three main roles in our atlas project – atlasers, Regional Coordinators, and an Atlas Coordinator. Atlasers are expected to spend time in their block observing and recording data on field cards for as many species as possible. Several atlasers may collect data for a block, but only one person has ownership of the block. The atlasers report the data they collect using an online data entry system (or submit their field cards to the Regional Coordinator for data entry), which is saved to the database for verification.

The Regional Coordinators have responsibilities in addition to those of the atlasers. The main role of a Regional Coordinator is to serve as the primary contact for each region, supporting the work of the atlasers and being available to answer questions and resolve issues. Regional Coordinators are also responsible for reviewing and verifying the data entered by atlasers in their region as well as helping to recruit block owners.

The Atlas Coordinator is responsible for organizing the atlas project and providing support to the atlasers and Regional Coordinators as needed. The Atlas Coordinator is also responsible for ensuring that all participants have the tools they need to make this atlas a success. Logistical issues of the atlas, including data analysis and publication of the atlas results, are handled by the Atlas Coordinator.

Atlas Objectives

- Determine the distribution of all bird species throughout Loudoun County from April 2009 through December 2013. The distribution of species within seven specially designated areas will also be determined.
- Identify important bird areas throughout the county.
- Generate information on the status and distribution of Species of Special Interest within Loudoun County.
- Provide a baseline of information to assist environmental planners in making sound decisions regarding the use and management of natural resources in the county.
- Provide a baseline of information that can be used to measure the success of future conservation activities and provide a comparison for future atlases.
- Adjust the current list of safe dates for Virginia birds to apply specifically to Loudoun County birds (safe dates indicate the dates during the breeding season that a species is no longer in migration and can be presumed to be on breeding territory).
- Actively engage birders, landowners, and other citizens in data collecting.
- Educate Loudoun County residents about the importance of protecting birds and their habitat.

Products Anticipated from the Loudoun County Bird Atlas

- Distribution maps for all bird species in Loudoun County.
- Conservation recommendations for areas identified as important bird areas in Loudoun County.
- List of safe dates tailored to birds in Loudoun County.
- Permanent records of the data collected that are electronically and conventionally published and readily available to all interested parties.

The ABCs of the Loudoun County Bird Atlas

The Atlas Block

The U.S. Geological Survey developed a map for the entire country using a grid that divides the land into 7.5-minute quadrangles (quads). The quads are bordered on the north and south by lines of latitude and on the east and west by lines of longitude. Quads are typically named for a town located within them. Each quad can be divided into 6 blocks representing the northwest, northeast, center west, center east, southwest, and southeast sections of the quad. Each block measures 5 km by 5 km and has an area of 25 square km or approximately 10 square miles.

Loudoun County is contained entirely or partially within 20 quadrangles and 75 blocks. One of our atlas goals is to provide coverage for every block. A few blocks contain only a small portion of the county. When blocks cross state or county lines, atlasers should cover only the portion in Loudoun County. The one exception to this rule involves observations of birds on or over the Potomac River, which should be entered for the atlas.

All atlas blocks have been assigned a permanent name and number for easy reference. This name and number will be used during data analysis to clearly identify blocks in a standardized manner. The block name is the name of the quadrangle and the number is the block's position within the quadrangle (northwest is 1, northeast is 2, center west is 3, center east is 4, southwest is 5, and southeast is 6).

Below is a map of the Leesburg quad. The block containing Banshee Reeks Nature Preserve is named "Leesburg 5" because it is in the Leesburg quad in the 5th or southwest position. The block directly above it is named "Leesburg 3" because it is in the Leesburg quad in the 3rd or center west position. This logic applies to all the blocks and quads throughout the county. Refer to Appendices 1 and 2 for maps of the county showing the 75 blocks and 8 regions.



If you are interested in taking ownership of a block or have questions about the block names, please contact the Atlas Coordinator or the appropriate Regional Coordinator (see page 17 for the list of coordinators). Once you've signed up for a block, you can move on to the important task of getting to know your block.

Getting to Know Your Block

We highly recommend these four simple ways to become familiar with your block before you begin atlasing:

- 1) Review the map of your block provided in your participant packet and, if possible, obtain a detailed road map for Loudoun County (such as an ADC map). These maps will help you identify habitat, possible species, and potential access points. If you are interested in viewing terrain and satellite images of your block, check out free mapping programs such as Google Maps (<http://maps.google.com>), Google Earth (<http://earth.google.com>), or MapQuest (www.mapquest.com). The following link provides an overlay of the atlas block system on Google Maps: <http://data.mapchannels.com/embed/loudounbba.htm>. You may want to use the “zoom” feature to view details of specific areas within Loudoun County.
- 2) Visit your block before you begin atlasing. Pre-atlas scouting will help familiarize you with your block’s boundaries and any road obstructions such as washed-out bridges or major construction. Scouting in the winter, before the start of each atlas year, also provides an opportunity to look for potential nesting sites without the spring/summer foliage and allows you to record habitat notes on your map or field card. Take note of places to pull over and stop as well as access points into hard-to-access areas.
- 3) Determine areas in your block that require special permission to enter or have limited access. Take every opportunity to make contact with landowners and discuss the atlas project with them (refer to section on Land Access for details). Even if the landowner declines your request to atlas on their land, they may share information about nesting birds on their property which will save you valuable field time. Please record the name and location of anyone who provides data for your block so we can acknowledge their assistance.
- 4) Familiarize yourself with the species you may encounter in your block. Review the selected references in Appendix 3 as needed.

When to Go Atlasing

The Loudoun County Bird Atlas is a year-round project. However, the majority of effort will occur in May, June, and July when most birds are vocalizing on their territory and tending to their noisy fledglings. Keep in mind that some species, such as the Great Horned Owl and Bald Eagle, nest earlier in the year while other species, such as the American Goldfinch and Indigo Bunting, nest later in the year. To ensure adequate coverage of your block, we recommend atlasing once every 10–15 days during the peak breeding months (May through August) and once a month during the remaining months (September through April).

Early morning and early evening are often the best times to go atlasing because the birds are most active then. If possible, try to atlas your block at times when human traffic and activity are lowest and the weather is good (no heavy precipitation or strong winds). Most blocks host birds that are active at night, such as owls and nightjars. Search your block for suitable habitat during the day and return after dark to record these species. If you don't hear any birds upon your night arrival, you may use call recordings to elicit a response. Terminate any call recordings immediately after hearing a response. Consider night atlasing in teams for safety and efficiency. Contact the Atlas Coordinator if you are not able to survey your block after dark.

Safe Dates

During migratory season (primarily May and September), it is easy to confuse a migrant with a possible breeder. To eliminate some of the confusion and maintain data accuracy, we have compiled a list of "safe dates" for each species. Safe dates indicate the dates during the breeding season that a species is no longer in migration and can be presumed to be on breeding territory. These dates are NOT nesting or egg dates. Safe dates are relevant for birds that breed here in Loudoun County and are intended as a general guideline to help determine whether an individual bird is a possible breeder or a migrant. For information regarding arrival and departure dates for non-breeding birds, refer to the Maryland Ornithological Society's Yellowbook (available upon request).

The safe dates listed in Appendix 4 are taken from the Virginia Breeding Bird Atlas (1985–1989). One objective of our atlas project is to adjust this list of safe dates for Virginia birds to apply specifically to birds in Loudoun County. This objective will be met by combining breeding data with data collected on migration and dispersal of potential breeders.

While recognizing safe dates is important, do NOT use safe dates as a primary reference for when to atlas. Keep in mind that some of the evidence codes are only applicable within the safe dates, while other codes apply regardless of the date. Refer to the Collecting Data section below for more information and specific situations.

Where to Go Atlasing

As you examine your atlas block, focus on natural public areas such as county parks. These areas often host a large number of species and are easy to access at a variety of times. Privately owned lands are more restricted, but can provide a wide range of habitats and species and are also very important to cover. Please remember to get permission from the landowner before surveying the land (refer to section on Land Access). Keep in mind that some churches have acres of land and schools often have a border of trees, ponds, or other favorable habitat.

Surveying the less-attractive habitat within your block is also very important. Weedy cornfields, retention ponds in subdivisions, brush piles, old farm buildings and silos, horse pastures, bridges, and highway signs all present potential nesting sites. Check suburban and rural areas for bluebird boxes and martin houses, which can be occupied by other species as well. Don't dismiss housing developments – the end of a street may allow you to see and hear birds on adjacent property that you may not otherwise have access to.

Collecting Data

Using the Field Card

Take a blank field card with you every time you go atlasing. Feel free to make copies of the field card, download additional copies from the atlas website, or obtain blank cards from the Atlas Coordinator as needed. The field card lists species that may be observed in Loudoun County, with potential breeders denoted by an asterisk. As you survey your block, you'll use the field card to record data on each species you encounter. The card has four columns to choose from when describing the behavior of a species: Observed (O), Possible Breeder (PO), Probable Breeder (PR), and Confirmed Breeder (CO). Refer to the front of the field card for a list of descriptive codes for each category. An explanation of each code with examples is provided on pages 8-15. If you are not sure which code to use, take detailed notes and then ask your Regional Coordinator or the Atlas Coordinator for assistance.

Do not put data from two or more blocks or two or more visits on the same field card. Be sure to fill in all appropriate sections on each card, including your name, date (with the year), and assigned block. Fill in the appropriate columns with the appropriate codes (not check marks or numbers), taking care to put your data on the correct line. The field card is a convenient way to ensure the data you collect is accurately recorded and not based on your memory of events from a week or month ago.

We recommend that you take a notebook with you in the field to record valuable information that cannot be included on the field card, such as drawings and notes about locations of singing males or ideal habitats. The notebook serves as a backup in case you lose one of your field cards or want to recall details about your block in previous atlas years or details of a sighting needing confirmation by the Regional Coordinator. The notebook also provides a convenient place to record names and addresses of landowners and people that may be interested in volunteering with the atlas project.

Species of Special Interest

A panel of bird experts selected 28 species as Species of Special Interest for this atlas project (listed on page 8). The purpose of this list is to draw attention to rare species that repeatedly use habitats in Loudoun County for breeding, migrating, or over-wintering. The rapidly declining habitats of these birds are likely to be designated as important bird areas and, thus, a focus of conservation efforts.

The Species of Special Interest are placed into one of three categories (A, B, or C). If you observe a bird in Category A you need to complete a Verification Form (see Appendix 5) to submit to the Atlas Coordinator as soon as possible. These birds are in bold and italics font on the field card. Category B includes only two birds, the Northern Goshawk and Peregrine Falcon, which require a Verification Form **UNLESS** the sighting is from a hawk watch or banding site within the county. These birds are also in bold and italics font on the field card. If you observe a bird in Category C, you do **NOT** need to complete a Verification Form **UNLESS** you observe evidence of breeding. These birds are in bold font on the field card.

Please complete a Verification Form if you find probable or confirmed breeding evidence in any species not previously thought to breed in Loudoun County, regardless of a special status. This applies to any species without an asterisk behind its name, as shown in Appendix 4 and on the field card. If you observe a species from the Virginia Avian Records Committee review list (<http://www.varcom.org/reviewlist.html>) please submit a copy of the documentation to the Atlas Coordinator. As you enter your data, keep in mind that the results for a few of the rarer and more sensitive species (for example, the Upland Sandpiper and Long-eared Owl) will be masked from the public to protect the birds' well being.

| Species of Special Interest * = potential breeder | Category |
|---|-----------------|
| Black Rail | A |
| Upland Sandpiper* | A |
| Long-eared Owl | A |
| Northern Saw-whet Owl | A |
| Henslow's Sparrow* | A |
| Little Blue Heron | A |
| Least Tern | A |
| Forster's Tern | A |
| Alder Flycatcher | A |
| Sedge Wren* | A |
| Golden-winged Warbler | A |
| Dickcissel* | A |
| Rusty Blackbird | A |
| Red Crossbill | A |
| Northern Goshawk | B |
| Peregrine Falcon | B |
| Ruffed Grouse* | C |
| Northern Bobwhite* | C |
| Bald Eagle* | C |
| Barn Owl* | C |
| Common Nighthawk* | C |
| Whip-poor-will* | C |
| Loggerhead Shrike* | C |
| Horned Lark* | C |
| Red-breasted Nuthatch* | C |
| Cerulean Warbler* | C |
| Savannah Sparrow* | C |
| Bobolink* | C |

Key to Categories:

A – requires Verification Form

B – requires Verification Form UNLESS the sighting is from a hawk watch or banding site within the county

C – no Verification Form required UNLESS evidence of breeding observed

Evidence Codes with Definitions and Examples

The Loudoun County Bird Atlas will collect two types of data over the five-year period – occurrence data and breeding evidence. The behaviors you observe for each species will fit into one of the following four categories: Observed, Possible Breeder, Probable Breeder, or Confirmed Breeder. Each category is divided into one or more codes. Please spend time watching the birds you encounter – a few extra minutes of observation (from a respectful distance) may reveal a behavior that raises the species from a code in the Observed category to a code in one of the breeding categories. Atlas work only requires that you determine the presence of a species and its nesting status, if applicable. *Please*

record any new data you have for bird species that have already been documented as nesting, but do not go out of your way to pursue this kind of data.

While atlasng, you may observe more than one code within a category for a breeding species. For example, you observe a Northern Cardinal on her nest with eggs and record NE (nest with eggs) in the Confirmed (CO) column on your field card. Later that same day in your block you happen to observe another Northern Cardinal on her nest with young and want to record a different code from the Confirmed category (the NY, nest with young, code). In this instance, you would report the NE code as daily field card data and the NY code as incidental data (see Incidental Reporting Card section for details). If the two Northern Cardinal nests are observed on different days, report each observation as daily field card data.

| Category | Code* | Observed Behavior |
|-----------|-------|---|
| Observed | E | Observed outside of safe dates, not exhibiting breeding behavior (includes winter birds and migrants) |
| Observed | O | Observed within safe dates, not in breeding habitat |
| Possible | X | Heard or seen in breeding habitat within safe dates |
| Probable | A | Agitated behavior or anxiety calls |
| Probable | P | Pair seen within safe dates |
| Probable | T | Bird holding territory (counter-singing, chasing, etc.) |
| Probable | C | Courtship or copulation |
| Probable | N | Bird visiting a probable nest site |
| Probable | B | Adult wren or woodpecker carrying nesting material or nest building |
| Confirmed | NB | Adult carrying nesting material or nest building (except wrens and woodpeckers) |
| Confirmed | DD | Distraction display |
| Confirmed | UN | Used nest or eggshells found |
| Confirmed | FL | Recently fledged young |
| Confirmed | CF | Parent carrying food, feeding young, or removing fecal sac |
| Confirmed | RC | Raptor performing a courting display or repeatedly carrying food to a specific area |
| Confirmed | ON | Parent leaving/entering nest site or on nest |
| Confirmed | NE | Nest with eggs |
| Confirmed | NY | Nest with young |

*Note that only the Confirmed codes are two-letter codes. All other evidence codes are one-letter codes.

Observed

This category includes birds with no evidence of breeding observed. The code you use depends on whether you observe the bird within or outside the species' safe dates. The codes in this category will help us adjust the current safe dates to apply specifically to Loudoun County birds.

E – Encounter with an individual of any species that may breed in Loudoun County, but observed *outside of safe dates* and not exhibiting breeding behavior. This code also applies to birds that are not thought to breed in Loudoun County (winter birds and migrants).

Examples:

- Great Crested Flycatcher perched in a tree along the edge of a field three weeks prior to safe dates.
- Pied-billed Grebe swimming in the Dulles Wetlands outside of safe dates.
- Ruby-crowned Kinglet gleaning food from a tree branch. This species is not thought to breed in Loudoun County so safe dates do not apply.

O – An individual of a species observed or heard in a block *within safe dates*, but not exhibiting breeding behavior and not in suitable breeding habitat (see Appendix 4 for list of breeding habitats). This code includes a wide range of species such as vultures, immature raptors, and colonial nesting species not at the nesting colony.

Examples:

- Soaring Turkey or Black Vultures.
- Foraging or fly-over herons and egrets known to cover long distances away from the nest site.
- The occasional observation of a bird out of place, but within safe dates, such as a Sandhill Crane.
- Any fly-over birds not using habitat within the block, such as crows, foraging swallows, and pigeons.

Possible Breeder

This category includes birds that are possibly breeding in your block and is applicable only within safe dates. Observations of birds in this category lack specific breeding evidence necessary to assign a Probable or Confirmed code.

X – An individual of a species observed or heard in suitable breeding habitat *within safe dates*, but not exhibiting any of the breeding behaviors described in the Probable or Confirmed categories.

Examples:

- Female Goldfinch observed in suitable nesting habitat in Algonkian Park within safe dates and in absence of a singing male.
- Red-tailed Hawk perched in a tree in suitable nesting habitat within safe dates.

- Singing American Redstart heard in suitable nesting habitat within safe dates. If singing is repeated in the same general location on a different visit at least five days apart, this code can be upgraded to code T in the Probable category.

Probable Breeder

This category includes birds with evidence suggesting they are probably breeding in your block, but not confirmed. With the exception of the P code, safe dates do NOT apply to the Probable category. Many species exhibit breeding behavior well outside of safe dates.

A – Agitated behavior or anxiety calls from adult. Parent birds respond to threats from other species with distress calls or by attacking intruders. This does not include response to “pishing” or tape playing.

Example:

- Northern Cardinal giving an alarm call as a Sharp-shinned Hawk flies into the area.

P – Pair (male and female) of a species observed in suitable breeding habitat *within safe dates* in close proximity to and/or interacting non-aggressively with one another. Use this code with caution and try to use it infrequently. *This code cannot be used for species where the sexes are not separable (Blue Jay, Chickadee, etc.).*

Examples:

- Male and female Scarlet Tanagers observed together several times in the same area within safe dates, but no nest or young ever seen.
- Pair of Great Horned Owls dueting (female is lower pitch) within safe dates.

T – Territorial behavior observed, including counter-singing, woodpecker drumming, aggressive interaction between individuals of the same species, or a singing male in the same location on visits separated by at least five days.

Examples:

- Two Mockingbirds chasing each other around your yard.
- Pileated Woodpecker heard drumming along a wooded trail at Banshee Reeks Nature Preserve.
- Male Song Sparrow singing in the same general location on two different visits that are at least five days apart.

C – Courtship behavior or copulation observed between two birds. This includes displays, courtship feeding, and birds mating. *This code does not apply to raptors* (use code RC in the Confirmed category for observations of courtship behavior in raptors).

Examples:

- Male House Finch feeding a female.
- Displaying tom Turkeys.
- Woodcock courtship flights.

N – Bird visiting a probable nest site. *Primarily applies to cavity nesters.* This code applies when a bird is repeatedly observed flying into and out of a particular area where the bird may potentially nest, but no further evidence is seen. Use this code with caution and after repeated visits in cases where no other breeding evidence is available.

Examples:

- Wood Duck making multiple quick visits to a hole in a tree or nest box.
- Barn Swallow or Eastern Phoebe making repeated quick trips under a bridge, but there is no access to see the actual nest. With patient observation, this code may easily be upgraded to a CF code in the Confirmed category.

B – Adult wrens carrying nesting material or nest building or woodpeckers excavating holes. Both groups build dummy or roosting nests at the same time they are building a real one. However, an unmated male will exhibit the same behavior, so this code is in the Probable category.

Example:

- Male House Wren singing throughout the summer and filling nest boxes with sticks (no evidence of a mate).

Confirmed Breeder

The Confirmed category is applicable whenever evidence is found that indicates actual breeding or a breeding attempt by a species in your block. Safe dates do NOT apply to this category.

The following species can only be confirmed by observing a nest: colonial waterbirds, Bald Eagle, Osprey, Peregrine Falcon, and Bank Swallow. The only valid evidence codes for these species, known to forage far from the nest site, are in the Observed (E, O) and Confirmed (NB, UN, ON, NE, NY) categories.

NB – Adult carrying nesting material, such as sticks or grass, or nest building. Carrying sticks is part of the courtship ritual (code C in the Probable category) for some species, so be cautious with this code. *This code cannot be used for wrens or woodpeckers* (use code B in the Probable category). *This code does not apply to raptors, crows, or colonial waterbirds unless they are observed building or returning to a nest.*

Examples:

- Two Pine Warblers observed at the Blue Ridge Center for Environmental Stewardship outside of safe dates. One is foraging and singing, but nothing more. It's outside of safe dates, so the bird may be a migrant and can only be counted as code E in the Observed category. However, a second Pine Warbler is observed carrying nesting material and making repeated trips to the same area in the same tree. You can now upgrade this species from code E (Observed) to code NB (Confirmed).
- Female Red-winged Blackbird flying into a group of cattails with grass in her beak.

DD – Distraction display (especially injury-feigning) or apparent direct defense of unobserved nest and/or young. Agitated behavior can be mistaken for distraction, but is code A in the Probable category.

Example:

- Killdeer faking an injured wing to lead predators away from the nest.

UN – Used nest or eggshells found. Use this code very seldom and with extreme caution – nests of many species are difficult to identify, and used nests (especially in protected settings) can persist for years. If unsure, do not record anything. Do not collect the nest or shells (a permit is required).

Example:

- Baltimore Oriole and American Goldfinch nests can often be found after the leaves have fallen.
- Fresh Wild Turkey egg shell found while hiking at the Blue Ridge Center.

FL – Recently fledged young or downy young incapable of sustained flight and restricted to an area through limited mobility. Be cautious of species that range widely soon after fledging. Young Brown-headed Cowbirds begging for food confirm both the Cowbird and the host species.

Examples:

- Observation of downy young of precocial birds such as Mallards on a retention pond in Hamilton.
- Observation of stub-tailed juveniles of altricial species such as Cedar Waxwings.

CF – Adult carrying food for young, feeding young, or removing fecal sacs from the nest site. *This code does not apply to raptors, gulls, terns, or crows unless they are observed returning to a nest.* These species feed their young long after wandering from the nest site or carry food a long distance. Keep in mind that some birds engage in courtship feeding, which should be recorded as code C in the Probable category.

Examples:

- A Chipping Sparrow flying toward an evergreen, shrub, or other potential nest site with food in its beak.
- An Indigo Bunting flying out of the nest with a fecal sac (white membranous sac) in its beak.

RC – Raptor performing a courting display or *repeated* observations of a raptor carrying food to a specific area. Many raptors are prone to abandon their nest when disturbed by human activity, even if young are present. Please do not disturb raptors, especially if either one of these observations is made.

Examples:

- *Repeated* sightings of a Red-shouldered Hawk carrying food to a specific area (males carry food to females during the incubation period).
- Red-tailed Hawk performing an aerial courting display.

ON – Occupied nest, including parents entering and leaving the nest cavity and sitting birds which may be brooding young or incubating eggs. This code is intended for cavity nesters and nests too high to see the contents.

Examples:

- Head or tail of an Orchard Oriole observed sticking out of a nest high in a tree for several minutes.
- Female Bluebird entering a nest box along the bluebird trail at Franklin Park and remaining inside for a few minutes or longer.

NE – Nest with eggs, including parents incubating eggs. Caution – the eggs must be carefully identified. A nest containing Brown-headed Cowbird eggs should count as code NE for both host species and Cowbird.

Examples:

- Mourning Dove nest in the wreath on your front door positioned where you can clearly observe the eggs.
- Canada Goose protecting her nest with eggs along a pond at Claude Moore Park.

NY – Nest with young seen or heard. A Brown-headed Cowbird chick in a nest confirms the Cowbird and the host species.

Example:

- American Goldfinch nest positioned where you can observe the young or hear them begging for food.

Sample Field Card

Here's an easy way to practice applying the evidence codes you've just learned. Let's say the portion of the field card shown below was completed on 5/05/09. What information does this tell us?

| Species | Safe Dates | OB | PO | PR | CO |
|---------------------------------|------------|----|----|----|----|
| Eastern Towhee* | 5/20-8/31 | | | | NB |
| Pileated Woodpecker* | 3/15-8/31 | | | T | |
| <i>Upland Sandpiper*</i> | 5/20-6/25 | E | | | |
| Red-tailed Hawk* | 5/1-8/31 | | X | | |

This portion of the field card tells us the following:

Eastern Towhee observed carrying nesting material or nest building. The NB code applies in the CO (Confirmed) column regardless of safe dates.

Pileated Woodpecker heard drumming in the same location on at least two occasions separated by five or more days. The T code applies in the PR (Probable) column because this is territorial behavior (safe dates do not apply here).

Upland Sandpiper observed foraging in suitable breeding habitat. While you may be tempted to use the X code from the Possible Breeder category, the E code applies in the OB (Observed) column because the bird was observed outside of safe dates. This species is in bold and italics, which indicates it is a Species of Special Interest and requires submission of an Atlas Verification Form (Appendix 5).

Red-tailed Hawk observed perching in a tree in suitable nesting habitat. The X code applies in the PO (Possible) column because the bird is observed in breeding habitat within safe dates, but is not exhibiting any of the breeding behaviors described in the Probable or Confirmed categories.

Still confused by evidence codes? Please feel free to contact your Regional Coordinator or the Atlas Coordinator with any questions or concerns. Refer to your participant packet for a copy of the entire field card. The field card can also be downloaded and printed from the atlas website at http://www.loudounwildlife.org/Bird_Atlas.htm.

Reporting Data

The Loudoun County Bird Atlas partnered with the U.S. Geological Survey at Patuxent Wildlife Research Center to provide atlasers with an online interactive atlas database

called BBA (Breeding Bird Atlas) Explorer. All registered atlasers can view current atlas results and enter data directly into the database (<http://www.pwrc.usgs.gov/bba/>). The database also provides a link to the Atlas Handbook and other atlas documents. We'll provide you with the necessary training to log onto the system and enter, edit, and review your data during the scheduled atlas training sessions. Please contact the Atlas Coordinator with any questions about entering data online.

While each block has one owner, it is likely that multiple atlasers will help collect data within a block. Data can either be submitted to the block owner for entry into the online atlas database or entered separately by the non-block owners as incidental data (see Incidental Reporting Card section for details). Entering your data as often as possible, preferably the same day as a survey, provides several advantages and is highly recommended. Entering your data often allows us to update the atlas database as the atlas progresses. In addition, entering data while it's fresh in your mind will help you decipher any scribbles in your field book and recall particular behaviors you observed. Taking 15 or 20 minutes to enter your data on the day you atlas is easier than accumulating hours worth of data entry for the end of the season and will likely result in fewer errors.

If you do not have a computer at home or work to use for data entry, consider using a computer at a local library or asking a friend to enter the data for you. If you prefer not to enter your data online, you can mail your field cards and notes to the Atlas Coordinator who will enter the data for you. If you choose to save your field cards and mail them at the end of the season, please report any Species of Special Interest to your Regional Coordinator as soon as possible.

All atlasers need to provide all of their completed fields cards to the Atlas Coordinator by April 30 each year. We need this information to validate particular records or obtain missing data.

Coordinators

The Loudoun County Bird Atlas depends on the help of many volunteer atlasers to be a success. Eight Regional Coordinators and an Atlas Coordinator are available to assist the atlasers in all aspects of the project. The Regional Coordinators are volunteers and have outside responsibilities in addition to the atlas, so if you need immediate support, please contact the Atlas Coordinator. Refer to Appendix 2 for a map of the county showing the eight regions.

ATLAS COORDINATOR:

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Region 7

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Region 6

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Region 8

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billbr50@msn.com

When Is a Block Complete?

Though this is a five-year project, you are not being asked to make a five-year commitment. According to the results from the 1985-1989 Virginia Breeding Bird Atlas, most blocks in Loudoun County contain between 40 and 65 breeding bird species. A list of the breeding species found in each block during the Virginia atlas is provided on the atlas website. Atlasers should attempt to equal or, if possible, exceed this number of breeding species for their block (this does not include non-breeders in the Observed category that you may encounter). The Virginia Breeding Bird Atlas was conducted over 20 years ago, and changes in habitat or access may make it impossible to achieve these numbers. However, the target lists provide a useful goal for each block. As you atlas, emphasis should be placed on building a good species list for your block rather than confirming all species.

We recommend using the following as a general guideline to determine when your block is complete:

- At least 50 *breeding* species are documented for the block or you are missing less than 10% of the species from the target list
- 75% of the *breeding* species are listed as Probable or Confirmed Breeders
- 25% of the species are listed as non-breeders (migrants and winter birds)

Most birds will be encountered in the first few visits to your block, while the last few species will present more of a challenge. Completing a block should take between 25 and 40 hours, depending on the habitat and the atlasers' experience. These hours will be spread throughout the four seasons, since we are interested in collecting year-round data on both breeding and non-breeding birds. Emphasis should be placed on spending time in all available habitats within your block. A block with uniform habitat requires less time to cover than a block with a diversity of habitats. It may take two or three years to gather good results for a block.

Take every opportunity to obtain information on the species within your block. Talking with neighbors or friends at social and school events can be a great way to obtain valuable data. Be sure to document the exact location of the sighting and the individual's name so proper credit can be given.

Contact your Regional Coordinator for confirmation once you think your block is complete. Upon completion of your block, you are not required to collect any more data. Please consider taking ownership of a new block or assisting with a block that needs additional coverage.

Special Cards and Surveys

Incidental Reporting Card

The Incidental Reporting Card is used to report data collected outside of your block but within county limits. You will probably collect incidental data while going about your daily activities. For example, gardening in your backyard (if your house is within county limits, but not within your assigned block) or watching a child's soccer game may lead to valuable sightings. Data collected from Christmas and migratory bird counts can be reported as incidental data (coordinate with your sector leader to ensure the data is reported only once). As discussed in the Evidence Codes section, records of more than one Confirmed breeding code for the same species in the same day in your block should also be entered as incidental data. If you collect incidental data anytime throughout the atlas, complete an Incidental Reporting Card (found in your participant packet and on the atlas website) and enter the data in the online atlas database. All Incidental Reporting Cards should be sent to the Atlas Coordinator along with your daily field cards by April 30 of each atlas year.

Special Areas

The following seven areas have been selected as Special Areas within the county: Banshee Reeks Nature Preserve (Leesburg), Dulles Wetlands (Leesburg), Blue Ridge Center for Environmental Stewardship (Neersville), Horsepen Preserve (Sterling), Algonkian Regional Park (Sterling), Claude Moore Park (Sterling), and Bles Park (Ashburn). We want to determine which species are found within these areas, regardless of the blocks that often divide them. If your block includes a portion or all of a Special Area, you will receive notification in your participant packet and have no additional responsibilities (other than surveying the area contained within the borders of your block). *Use a new field card when surveying the Special Area to prevent data mix-ups.* We recommend writing the Special Area name on the front of the card to help you distinguish it from your other field cards. When entering your data online, there will be an option to indicate that you surveyed a Special Area within your block. Data entered for Special Areas will be used for both the Special Area and the block. Once data collection for the atlas is complete, we will generate a new and improved species list for each Special Area.

Special Surveys

A special survey will be conducted to increase our chances of detecting and confirming owls and nightjars, species that are active at night and often difficult to detect. Additional special surveys, called mini-routes, will also be conducted to estimate the abundance of the more common and widespread species. All special surveys will be conducted throughout

the county during the five-year atlas period. As an atlaser, you are not responsible for participating in these surveys. Data collected from the surveys is meant to supplement data collected by the atlasers. If you are interested in volunteering to help with a special survey, please contact the Atlas Coordinator.

Atlasing Ethics

It is extremely important that all birdwatchers respect the birds and their environment. When atlasing, please consider the effect your actions will have on the birds, their habitat, and the rights of other people.

When atlasing, PLEASE:

- Keep habitat disturbance to a minimum by staying on roads, trails, and paths and picking up all of your trash.
- Do not enter private property without permission. Assure landowners that you will not damage crops, disturb livestock, or leave gates open.
- Do not approach a nest too closely, flush nesting birds (by tree whacking, throwing things, or any other method), or handle eggs or young.
- Limit the use of recordings and other methods of attracting birds (including “pishing”), especially during the breeding season and with uncommon species.
- Do not advertise the presence of a rare bird until you have evaluated the potential for disturbance to the bird and its surroundings. Report the bird to the proper conservation authority only if the disturbance is minimized and the landowner has given permission. Contact your Regional Coordinator for guidance if needed.
- Respect the law and the rights of others.

If you would like more information on this topic, please review the American Birding Association’s Code of Birding Ethics (<http://www.americanbirding.org/bigday/ethics.pdf>) or contact the Atlas Coordinator.

Land Access

At some point during your atlasing, you will most likely want to atlas on privately owned land or areas with limited access. Be sure to obtain permission before entering these private areas. If you are not sure if you have permission to enter a particular area, contact the landowner or Atlas Coordinator before entering. Remember to obey all posted signs on both private and public lands.

Please contact the appropriate Regional Coordinator if you or someone you know owns any land in Loudoun County that can be made accessible to atlasers. This information

may allow atlasers to collect data in otherwise inaccessible habitats and will save contact time with each landowner.

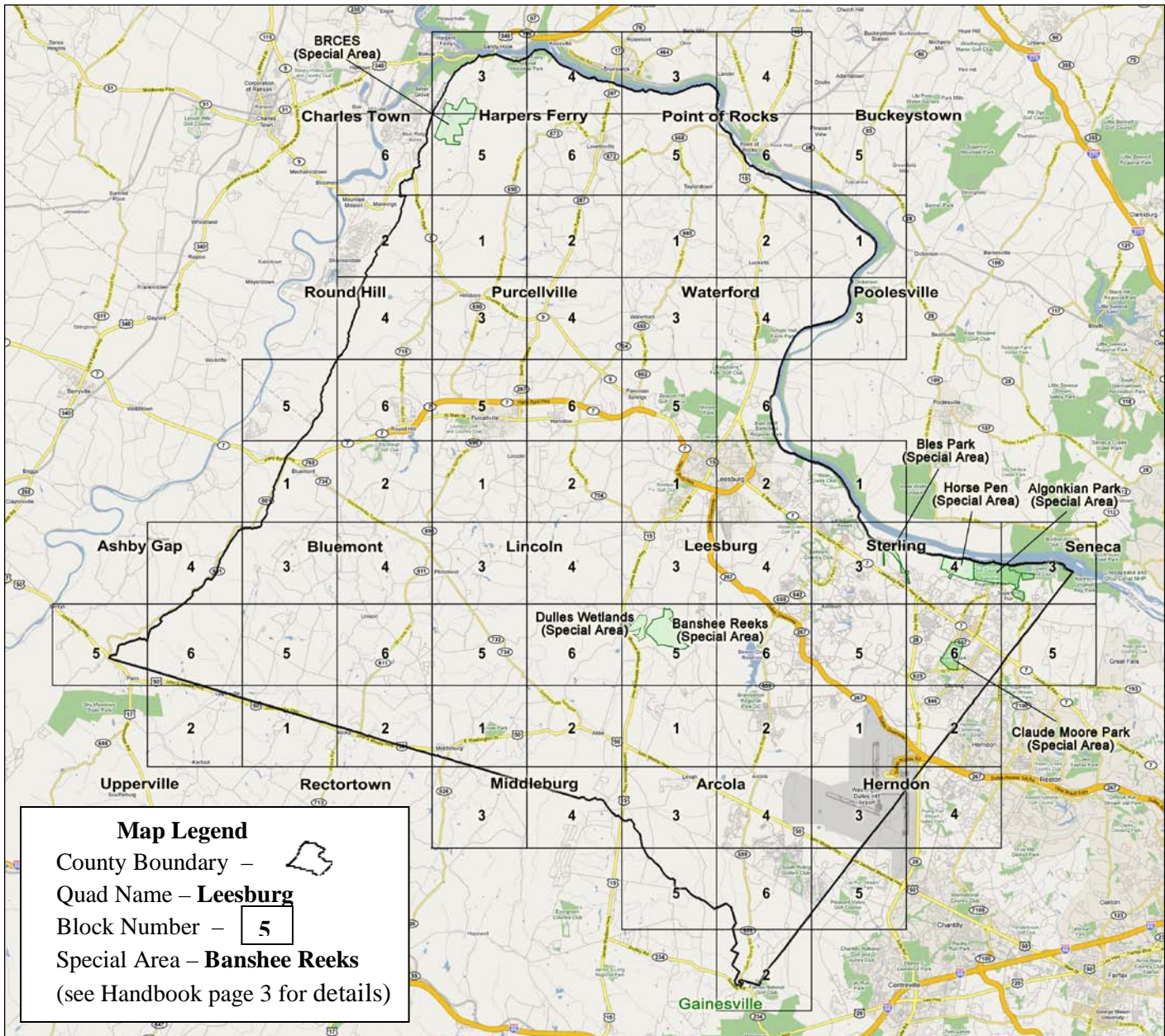
Landowner Permission and Thank You Letters

When approaching a landowner for permission to atlas on their land, please mail or hand them a copy of the landowner permission letter found in your participant packet. Additional copies of the landowner permission letter can be printed from the atlas website or obtained from the Atlas Coordinator. Provide each landowner with your name and telephone number for future reference, and remember to post the car window display (included in your participant packet) on the dashboard of your car to satisfy the concerns of most landowners, police, and other people you meet while atlasing.

A follow-up thank you letter is also included in the packet to use whenever you have been given permission to access someone's land. Please be polite and respectful, even if a landowner declines your request for access. If you are not given access to the land, ask the landowner about any birds that might be on their property, and provide them with field cards and your contact information in case they would like to report something.

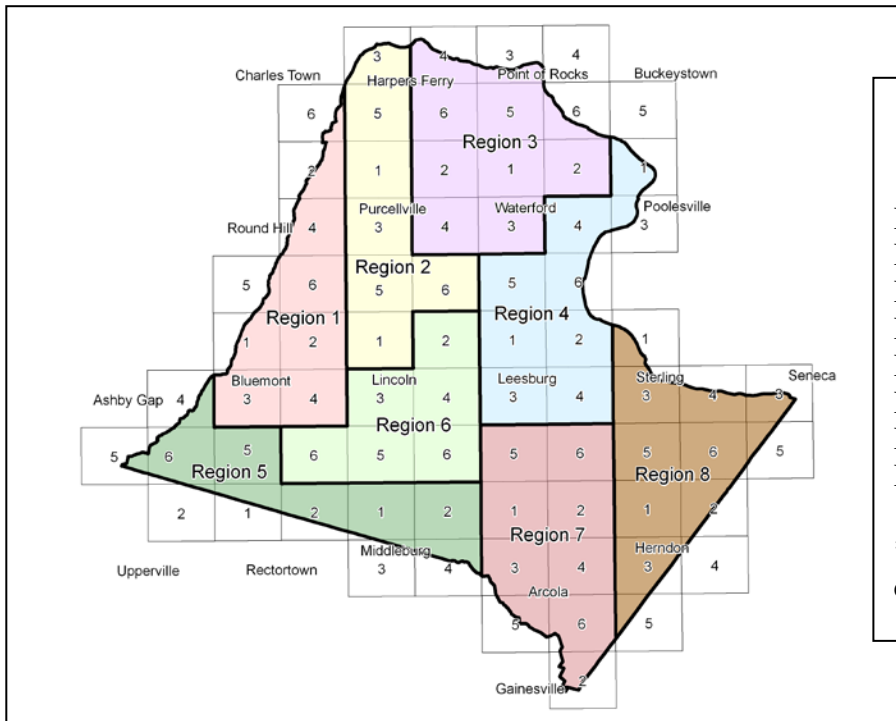
Thanks for your interest, enthusiasm, and dedication to the Loudoun County Bird Atlas Project. This important project would not be possible without your help! Your contributions will help us determine areas in need of conservation throughout the county, allowing us to protect these areas and preserve Loudoun's rich bird diversity for many generations to enjoy. Happy Atlasing!

Appendix 1: Loudoun County Map Showing Blocks



This map was created with ©2009 Google Maps, by USGS Patuxent Wildlife Research Center

Appendix 2: Loudoun County Map Showing Regions



REGIONAL COORDINATORS

Region 1 – Joe Coleman
 Region 2 – Mary Ann Good
 Region 3 – Tony/Ann Garvey
 Region 4 – Robert Daugherty
 Region 5 – Linda Millington
 Region 6 – Christine Perdue
 Region 7 – Bruce Hill
 Region 8 – Bill Brown

*See Handbook page 17 for
 contact information.

REGION 1

Bluemont – 1
 Bluemont – 2
 Bluemont – 3
 Bluemont – 4
 Charles Town – 6
 Round Hill – 2
 Round Hill – 4
 Round Hill – 5
 Round Hill – 6

REGION 2

Harpers Ferry – 3
 Harpers Ferry – 5
 Lincoln – 1
 Purcellville – 1
 Purcellville – 3
 Purcellville – 5
 Purcellville – 6

REGION 3

Harpers Ferry – 4
 Harpers Ferry – 6
 Point of Rocks – 3
 Point of Rocks – 4
 Point of Rocks – 5
 Point of Rocks – 6
 Purcellville – 2
 Purcellville – 4
 Waterford – 1
 Waterford – 2
 Waterford – 3

REGION 4

Buckeystown – 5
 Leesburg – 1
 Leesburg – 2
 Leesburg – 3
 Leesburg – 4
 Poolesville – 1
 Poolesville – 3
 Waterford – 4
 Waterford – 5
 Waterford – 6

REGION 5

Ashby Gap – 4
 Ashby Gap – 5
 Ashby Gap – 6
 Bluemont – 5
 Middleburg – 1
 Middleburg – 2
 Middleburg – 3
 Middleburg – 4
 Rectortown – 1
 Rectortown – 2
 Upperville – 2

REGION 6

Bluemont – 6
 Lincoln – 2
 Lincoln – 3
 Lincoln – 4
 Lincoln – 5
 Lincoln – 6

REGION 7

Arcola – 1
 Arcola – 2
 Arcola – 3
 Arcola – 4
 Arcola – 5
 Arcola – 6
 Gainesville – 2
 Leesburg – 5
 Leesburg – 6

REGION 8

Herndon – 1
 Herndon – 2
 Herndon – 3
 Herndon – 4
 Herndon – 5
 Seneca – 3
 Seneca – 5
 Sterling – 1
 Sterling – 3
 Sterling – 4
 Sterling – 5
 Sterling – 6

Appendix 3: Selected References

The following list is not intended to be exhaustive, but should cover the basics needed to complete your atlas work.

Identification of Nests, Eggs, and Nestlings

Baicich, Paul J., and Colin J. O. Harrison. 1997. *Nests, Eggs, and Nestlings of North American Birds*. Princeton University Press, Princeton.

Harrison, Hal H. 1975. *Field Guide: Eastern Birds' Nests*. Houghton Mifflin, Boston.

Behavior

Bent, A. C. 1968. *Life Histories of North American Birds*. U.S. Nat'l Mus. Bull. 107. 237. Reprinted by Dover, 1963 ff.

Dunne, Peter, Clay Sutton, and David A. Sibley. 1988. *Hawks in Flight: The Flight Identification of North American Migrant Raptors*. Houghton Mifflin, Boston.

Ehrlich, Paul R., David S. Dobkin, and Darryl Wheye. 1988. *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*. Simon & Schuster, New York.

Sibley, David A. 2001. *The Sibley Guide to Bird Life & Behavior*. Alfred A. Knopf, New York.

Sparks, John. 1970. *Bird Behavior*. Grosset & Dunlap, New York.

Stokes, Donald W. 1979. *A Guide to the Behavior of Common Birds*. Little, Brown & Co., Boston.

Stokes, Donald W., and Lillian Q. Stokes. 1983. *A Guide to Bird Behavior, Vol. 2*. Little Brown & Co., Boston.

Stokes, Donald W., and Lillian Q. Stokes. 1989. *A Guide to Bird Behavior, Vol. 3*. Little Brown & Co., Boston.

Virginia Bird Books

Rottenborn, Stephen C. and Edward S. Brinkley. 2007. *Virginia's Birdlife: An Annotated Checklist*. 4th edition. Virginia Society of Ornithology.

Bird Song CDs and Videos

Elliott, Lang. 1994. *Know Your Bird Sounds, Vol. 1 (Birds of City, Gardens, Suburbs) and 2 (Birds of the Countryside)*. Northward Prod., Minocqua, Wis. (cassettes discontinued, CDs only). 35 species in each volume; 65 minutes each. Includes behavioral meanings of each vocalization.

Male, Michael, and Judy Fieth. 1990. *Watching Warblers: A Video Guide to the Warblers of Eastern North America*. Blue Earth Films. 60 min.

Male, Michael, and Judy Fieth. 1999. *Watching Waders: A Video Guide to the Waders of North America*. Blue Earth Films. 95 min.

Websites

<http://birdsbybent.netfirms.com/> Web-based electronic book collection of *Life Histories of North American Birds*, selected from the hundreds of species biographies assembled and written by Arthur Cleveland Bent and his collaborators and published in a 21-volume series between 1919 and 1968 by the United States Government Printing Office.

<http://www.uwgb.edu/birds/wbba/speciesimages.htm> Species image library maintained by the Wisconsin Breeding Bird Atlas.

<http://www.uwgb.edu/birds/wbba/speciesaudios.htm> Species audio library maintained by the Wisconsin Breeding Bird Atlas. To play the audio recordings, you must have an MP3 player installed on your computer such as Real Player or Winamp.

<http://www.pwrc.usgs.gov/bba/> Provides information on over 30 state and county bird atlases, including the Loudoun County Bird Atlas.

Loudoun County Bird Lists

Birds of Loudoun County list. 2008. Sponsored by Loudoun Wildlife Conservancy. Compiled by Spring Ligi. Available at http://www.loudounwildlife.org/PDF_Files/LWC_Bird_List_2008.pdf.

The Birds of Banshee Reeks list. Available at Banshee Reeks Nature Preserve, or contact the Atlas Coordinator for a copy.

The Blue Ridge Center for Environmental Stewardship bird list. Available at the Blue Ridge Center, or contact the Atlas Coordinator for a copy.

Mapping Information

Google Maps (<http://maps.google.com>), Google Earth (<http://earth.google.com>), and MapQuest (www.mapquest.com) are mapping programs and sites that allow you to view terrain and satellite images of your block. These web-based programs are free and should not require you to download any software.

<http://data.mapchannels.com/embed/loudounbba.htm> Provides an overlay of the atlas block system on Google Maps. You may want to use the “zoom” feature to view details of specific areas within Loudoun County.

ADC Loudoun County, Virginia Atlas and Street Map Book. 2007. Published by ADC The Map People. Paperback available for just under \$10.

Appendix 4: Safe Dates and Breeding Habitat for Loudoun County Birds

The Safe Dates listed below indicate the dates during the breeding season that a species is no longer in migration and can be presumed to be on breeding territory (these are NOT nest dates). For information regarding arrival and departure dates for non-breeding birds, refer to the Maryland Ornithological Society's Yellowbook (available upon request). Refer to the safe dates below when entering a code from the Observed or Possible Breeder categories. Safe dates do not apply to codes in the Probable (with the exception of the P code) or Confirmed Breeder categories.

| Species * = potential breeder | Safe Dates | Breeding Habitat |
|---|-------------------|--|
| Greater White-fronted Goose | | Reservoirs, rivers, ponds, muddy fields |
| Snow Goose | | Muddy fields (plowed, harvested), fresh marshes |
| Cackling Goose | | Marshes, floodplains, islands in small ponds, agricultural areas |
| Canada Goose* | 5/10-8/20 | Shore or islands in any water body |
| Mute Swan | | Shore or islands in any water body |
| Tundra Swan | | Muddy fields, reservoirs, rivers, ponds |
| Wood Duck* | 5/1-8/15 | Wooded swamps, fresh marshes, streams |
| Gadwall | | High ground near water |
| American Wigeon | | Marshes, reservoirs, rivers, ponds |
| American Black Duck | | High ground near water, often woods |
| Mallard* | 5/15-8/10 | High ground near water, often woods |
| Blue-winged Teal | | High ground near water |
| Northern Shoveler | | Marshes, reservoirs, rivers, ponds |
| Northern Pintail | | Marshes, reservoirs, rivers, ponds |
| Green-winged Teal | | High ground near water |
| Canvasback | | Reservoirs, rivers, ponds |
| Redhead | | Reservoirs, rivers, ponds |
| Ring-necked Duck | | Reservoirs, rivers, ponds, fresh marshes |
| Greater Scaup | | Reservoirs, rivers, ponds |
| Lesser Scaup | | Reservoirs, rivers, ponds |
| Surf Scoter | | Reservoirs, rivers, ponds |
| White-winged Scoter | | Reservoirs, rivers, ponds |
| Black Scoter | | Reservoirs, rivers, ponds |
| Long-tailed Duck | | Ponds, streams, wetlands, large lakes |
| Bufflehead | | Reservoirs, rivers, ponds |
| Common Goldeneye | | Reservoirs, rivers, ponds |
| Hooded Merganser* | 6/1-8/15 | Wooded swamps, fresh marshes, streams |
| Common Merganser | | Reservoirs, rivers, ponds |
| Red-breasted Merganser | | Reservoirs, rivers, ponds |
| Ruddy Duck | | Dense marshes with open water |
| Northern Bobwhite* | 4/15-9/30 | Hayfields, abandoned fields, wood margins, hedgerows |
| Ring-necked Pheasant* | 4/15-9/30 | Open country, pastures, fields |
| Ruffed Grouse* | 4/1-7/31 | Mixed upland woods |
| Wild Turkey* | 4/15-9/30 | Mature deciduous forests, edges |
| Red-throated Loon | | Wetlands, bogs, ponds in forests, large lakes |

| | | |
|----------------------------|-----------|--|
| Common Loon | | Reservoirs, rivers, ponds, |
| Pied-billed Grebe* | 5/15-7/15 | Reservoirs, rivers, ponds, fresh marshes |
| Horned Grebe | | Reservoirs, rivers, ponds |
| Red-necked Grebe | | Reservoirs, rivers, ponds |
| Eared Grebe | | Reservoirs, rivers, ponds |
| Double-crested Cormorant | | Reservoirs, rivers, ponds |
| American Bittern | | Marshes |
| Least Bittern | | Freshwater or brackish marshes with tall vegetation |
| Great Blue Heron* | 5/15-6/30 | Reservoirs, rivers, ponds, marshes, bottomland forests, floodplains |
| Great Egret | | Marshes, reservoirs, rivers, ponds |
| Snowy Egret | | Marshes, reservoirs, rivers, ponds |
| Little Blue Heron | | Marshes, reservoirs, rivers, ponds |
| Green Heron* | 5/1-7/15 | Reservoirs, rivers, ponds, bottomland forests, floodplains, marshes |
| Black-crowned Night-Heron | | Marshes, reservoirs, rivers, ponds |
| Yellow-crowned Night-Heron | | Wooded habitats, usually near water |
| White Ibis | | Marshes, reservoirs, rivers, ponds, wetlands |
| Black Vulture* | 5/1-8/1 | Woods, cliffs, caves, buildings |
| Turkey Vulture* | 4/10-8/1 | Woods, cliffs, caves, buildings |
| Osprey | | Reservoirs, rivers, ponds |
| Mississippi Kite | | Riparian and open woodland, old growth forests |
| Bald Eagle* | 4/15-8/5 | Tall trees near lakes, marshes, rivers |
| Northern Harrier | | Marshes, wet pastures and meadows |
| Sharp-shinned Hawk* | 6/1-8/10 | Conifers in extensive woodlands |
| Cooper's Hawk* | 5/20-8/20 | Mixed woodlands, groves |
| Northern Goshawk | | Large mature mixed woodlands |
| Red-shouldered Hawk* | 5/1-8/31 | Wet mixed forests, swamps |
| Broad-winged Hawk* | 6/5-8/10 | Hilly woodlands |
| Red-tailed Hawk* | 5/1-8/31 | Mature forests, often near edges |
| Rough-legged Hawk | | Open coniferous forest, grasslands, abandoned fields |
| Golden Eagle | | Open coniferous forests, abandoned fields |
| American Kestrel* | 5/20-7/31 | Open country, scattered trees, edge |
| Merlin | | Open coniferous woodland, grasslands, hedgerows, wood margins, scrub |
| Peregrine Falcon | | Variety of open habitats |
| Black Rail | | Marshes, wet meadows, floodplains |
| King Rail | | Fresh and brackish marshes |
| Virginia Rail* | 5/20-8/15 | Fresh and brackish marshes |
| Sora | | Fresh marshes, wet meadows |
| Common Gallinule | | Marshes with open water |
| American Coot | | Marshes with open water |
| Sandhill Crane | | Cow or horse pastures, muddy fields |
| Black-bellied Plover | | Flooded pastures, agricultural areas |
| American Golden-Plover | | Prairie, pastures, farmland, golf courses, airports |
| Semipalmated Plover | | Reservoirs, rivers, ponds |
| Killdeer* | 4/20-7/5 | Most open, sparsely vegetated areas |
| Spotted Sandpiper | | Reservoirs, rivers, ponds, rocky streams |
| Solitary Sandpiper | | Reservoirs, rivers, ponds, marshes, muddy fields |
| Greater Yellowlegs | | Reservoirs, rivers, ponds, marshes, muddy fields |

| | | |
|-------------------------|-----------|---|
| Willet | | Marshes, mudflats |
| Lesser Yellowlegs | | Reservoirs, rivers, ponds, marshes, muddy fields |
| Upland Sandpiper* | 5/20-6/25 | Open grasslands and meadows |
| Whimbrel | | Marshes, mudflats |
| Semipalmated Sandpiper | | Shores of lakes and ponds, mudflats, wet meadows |
| Western Sandpiper | | Shores of lakes and ponds, mudflats, wet meadows |
| Least Sandpiper | | Wet meadows, mudflats, flooded fields, shores of ponds and lakes |
| White-rumped Sandpiper | | Mudflats, grassy marshes, dry grassy areas near lakes and ponds |
| Baird's Sandpiper | | Mudflats, grassy marshes, dry grassy areas near lakes and ponds |
| Pectoral Sandpiper | | Wet meadows, mudflats, flooded fields, shores of ponds and lakes |
| Dunlin | | Mudflats, marshes, flooded fields, shores of lakes and ponds |
| Stilt Sandpiper | | Mudflats, marshes, flooded fields, shores of lakes and ponds |
| Buff-breasted Sandpiper | | Dry grasslands (usually short grass), pastures, plowed fields |
| Short-billed Dowitcher | | Mudflats, flooded agricultural fields |
| Long-billed Dowitcher | | Mudflats, edges of ponds and marshes |
| Wilson's Snipe | | Marshy edges of ponds, rivers, and brooks, wet meadows, fields |
| American Woodcock* | 4/15-9/10 | Forest edges, shrubby areas |
| Wilson's Phalarope | | Grassy borders of shallow lakes, marshes, and reservoirs |
| Bonaparte's Gull | | Lakes, rivers, marshes |
| Little Gull | | Large lakes, rivers, marshes |
| Laughing Gull | | Marshes, lakes, rivers, landfills |
| Franklin's Gull | | Marshes, lakes |
| Ring-billed Gull | | Rivers, ponds, landfills, golf courses, agricultural fields, shopping areas |
| Herring Gull | | Rivers, ponds, mudflats, landfills, parking lots, fields, airports |
| Glaucous Gull | | Landfills, freshwater lakes, agricultural areas |
| Great Black-backed Gull | | Landfills, salt marshes |
| Least Tern | | Reservoirs, rivers, ponds, lakes |
| Caspian Tern | | Large rivers and lakes |
| Black Tern | | Reservoirs, rivers, lakes, ponds, marshes |
| Common Tern | | Marshes, lakes, islands |
| Forster's Tern | | Marshes, lakes, rivers |
| Rock Pigeon* | All Year | Urban areas, gardens, orchards, farmland, muddy fields |
| Mourning Dove* | 5/1-7/20 | Gardens, orchards, farmland, wood margins, hedgerows, scrub |
| Yellow-billed Cuckoo* | 6/15-7/31 | Deciduous forests, floodplains, wood margins, hedgerows, scrub |
| Black-billed Cuckoo | | Deciduous forests, wood margins, hedgerows, scrub |
| Barn Owl* | 5/1-9/30 | Abandoned and agricultural fields, open grassland, wood margins |
| Eastern Screech-Owl* | 4/1-8/15 | Mixed woodlands, riparian woods along wetlands, meadows, suburban areas |

| | | |
|----------------------------|------------|--|
| Great Horned Owl* | 12/15-8/31 | Open and secondary-growth woodlands, agricultural areas, suburban areas |
| Snowy Owl | | Abandoned fields, agricultural areas, airports |
| Barred Owl* | 1/15-8/31 | Bottomlands, swamps, moist woods |
| Long-eared Owl | | Dense vegetation adjacent to open grassland or shrubland, open forests |
| Short-eared Owl | | Open pastureland, marshes, meadows |
| Northern Saw-whet Owl | | Mixed moist woods, with conifers |
| Common Nighthawk* | 6/5-7/15 | Barren country and flat roofs |
| Eastern Whip-poor-will* | 5/10-7/15 | Dry open upland woods |
| Chimney Swift* | 5/20-8/15 | Primarily in towns |
| Ruby-throated Hummingbird* | 5/25-7/31 | Mixed woodlands, deciduous forest, gardens, orchards |
| Rufous Hummingbird | | Forested and brushy habitats, gardens |
| Belted Kingfisher* | 4/10-7/20 | Along streams, or lakes with banks |
| Red-headed Woodpecker* | 5/25-8/20 | Open country with scattered trees |
| Red-bellied Woodpecker* | 3/15-8/31 | Variety of woodland habitats |
| Yellow-bellied Sapsucker | | Mixed woods, swamps, bogs |
| Downy Woodpecker* | 3/15-8/31 | Variety of woodland habitats, wood margins |
| Hairy Woodpecker* | 3/15-8/31 | Deep woods, primarily deciduous |
| Northern Flicker* | 5/10-8/25 | Open woods, scattered trees, edges |
| Pileated Woodpecker* | 3/15-8/31 | Deep woods, some secondary growth |
| Olive-sided Flycatcher | | Northern conifers |
| Eastern Wood-Pewee* | 6/5-8/15 | All woodland habitats |
| Yellow-bellied Flycatcher | | Variety of forests and semi-open habitat |
| Acadian Flycatcher* | 5/25-8/5 | Moist woods, bottomlands |
| Alder Flycatcher | | Wet thickets (alder, maple, birch), wood margins, hedgerows, scrub |
| Willow Flycatcher* | 6/10-7/20 | Wet to fairly dry brushy areas |
| Least Flycatcher | | Wood edges, open deciduous woods |
| Eastern Phoebe* | 5/1-8/31 | Near water, bridges, buildings |
| Great Crested Flycatcher* | 5/25-7/31 | Variety of woodland habitats |
| Eastern Kingbird* | 5/25-7/15 | Open areas, edges, often near water |
| Loggerhead Shrike* | 4/20-7/20 | Open country and grasslands with scattered trees and shrubs |
| Northern Shrike | | Open county with medium or tall trees and shrubs, forest edges |
| White-eyed Vireo* | 5/25-8/15 | Brushy areas, often near water |
| Yellow-throated Vireo* | 5/25-8/15 | Tall deciduous trees |
| Blue-headed Vireo | | Coniferous or mixed woodlands |
| Warbling Vireo* | 6/10-8/10 | Open deciduous or riverside woods |
| Philadelphia Vireo | | Early and mid-successional deciduous woods and parklands |
| Red-eyed Vireo* | 6/1-7/31 | Deciduous and mixed deciduous forests, urban areas, parks with large trees |
| Blue Jay* | 6/10-8/15 | Variety of woodland habitats, suburbs |
| American Crow* | 5/1-8/31 | Open areas, edges, farms, parks |
| Fish Crow* | 5/10-8/15 | Wood edges, farms, tidewater areas |
| Common Raven* | 3/1-6/30 | Variety of woodland habitats, grasslands, farmland, urban areas, nests on cliffs |
| Horned Lark* | 4/10-9/5 | Open barren country, prefers bare ground to short grass |

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| Purple Martin* | 6/1-6/25 | Gardens, orchards, farmland, nest houses near water |
| Tree Swallow* | 5/25-6/25 | Open areas near water and fields |
| Northern Rough-winged Swallow* | 6/1-6/25 | Variety of open habitats, grassland, meadows, wood margins, rivers, ponds |
| Bank Swallow* | 5/25-6/25 | Riverbanks, creeks, lakes, ponds |
| Cliff Swallow* | 6/5-6/25 | Variety of habitats with open foraging areas especially near water, uses cliffs or buildings for nesting |
| Cave Swallow | | Variety of habitats with open foraging areas especially near water |
| Barn Swallow* | 5/25-6/25 | Variety of habitats with open foraging areas, agricultural areas, urban areas |
| Carolina Chickadee* | 3/1-8/31 | Mixed deciduous-coniferous woodlands, riparian and urban areas, gardens |
| Black-capped Chickadee | | Mixed deciduous-coniferous woodlands, wood margins, suburban areas, parks |
| Tufted Titmouse* | 3/1-8/31 | Deciduous forests, parks, orchards, gardens, and suburban areas |
| Red-breasted Nuthatch* | 6/1-8/5 | Mature coniferous forests, suburban area with sufficient conifers |
| White-breasted Nuthatch* | 5/10-8/15 | Mature deciduous forests near openings and edges, parks, suburban areas |
| Brown Creeper | | Coniferous and mixed coniferous/deciduous forests |
| Carolina Wren* | 3/1-9/30 | Wood margins, scrub, gardens, orchards, farmland, bottomland forests |
| House Wren* | 5/20-8/15 | Wood margins, hedgerows, scrub, gardens, orchards, farmland |
| Winter Wren | | Coniferous and deciduous forests, bottomland forests |
| Sedge Wren* | 6/10-9/20 | Wet meadows, hayfields, marshes |
| Marsh Wren | | Variety of marshes with dense reeds |
| Blue-gray Gnatcatcher* | 5/15-7/31 | Variety of wooded habitats, especially near water |
| Golden-crowned Kinglet | | Mixed coniferous-deciduous forests, especially where spruce or fir are present |
| Ruby-crowned Kinglet | | Mixed coniferous-deciduous forests, wood margins, scrub, abandoned fields |
| Eastern Bluebird* | 5/15-8/31 | Abandoned and agricultural fields, wood margins, hedgerows, scrub |
| Veery | | Deciduous forests, riparian habitats, shrubby habitats |
| Gray-cheeked Thrush | | Deciduous and bottomland forests, wood margins, hedgerows, scrub |
| Bicknell's Thrush | | Mountainous forests and secondary woodlands |
| Swainson's Thrush | | Northern conifers, especially spruce |
| Hermit Thrush | | Damp forests with hemlocks |
| Wood Thrush* | 5/25-8/20 | Variety of woodland habitats |
| American Robin* | 5/1-8/31 | Everywhere, except very urban areas |
| Gray Catbird* | 5/25-8/31 | Dense thickets, shrubs, hedgerows |
| Northern Mockingbird* | 4/1-9/10 | Open country, hedgerows, suburbs |
| Brown Thrasher* | 5/15-8/31 | Dense thickets, shrubs, hedgerows |
| European Starling* | 4/1-9/5 | Everywhere |
| American Pipit | | Muddy or recently plowed fields, lake shores, river sandbars, grasslands |
| Cedar Waxwing* | 6/15-7/31 | Open woodland, shade trees, streams |

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| Lapland Longspur | | Plowed fields, open grassland, pastures |
| Snow Bunting | | Open weedy and grassy fields, along shores of lakes |
| Ovenbird* | 5/20-8/5 | Open mature mixed upland forest |
| Worm-eating Warbler* | 5/20-7/20 | Deep deciduous woods |
| Louisiana Waterthrush* | 5/1-7/10 | Rocky streams, sluggish backwaters |
| Northern Waterthrush | | Swamps and bogs, pond edges |
| Golden-winged Warbler | | Damp, brushy fields, wood margins |
| Blue-winged Warbler* | 5/25-7/20 | Brushy fields, wood margins |
| Black-and-white Warbler* | 5/15-7/25 | Extensive deciduous or mixed woods |
| Prothonotary Warbler* | 5/10-7/20 | Swamps, bottomlands |
| Tennessee Warbler | | Coniferous or mixed woodland, especially spruce |
| Orange-crowned Warbler | | Thickets and shrubs along streams, forests, weedy fields |
| Nashville Warbler | | Swamp and bog areas |
| Connecticut Warbler | | Variety of forest, woodland, scrub, and thicket habitats |
| Mourning Warbler | | Brushy areas in woodlands or edges |
| Kentucky Warbler* | 5/25-7/15 | Moist deciduous woods, understory |
| Common Yellowthroat* | 5/25-8/10 | Brushy areas, preferably wet |
| Hooded Warbler* | 5/25-7/25 | Moist forests with dense understory |
| American Redstart* | 6/10-7/20 | Moist, deciduous forest |
| Cape May Warbler | | Coniferous forests |
| Cerulean Warbler* | 5/25-8/5 | Mature moist or riverside forests |
| Northern Parula* | 6/1-8/15 | Moist woods, bottomlands, spruces |
| Magnolia Warbler | | Coniferous forests |
| Bay-breasted Warbler | | Variety of forest types, generally remains in the canopy |
| Blackburnian Warbler | | Coniferous or mixed woods |
| Yellow Warbler* | 6/1-7/10 | Wet brushy areas, farmlands |
| Chestnut-sided Warbler | | Brushy, open second-growth, edges |
| Blackpoll Warbler | | Variety of forest, woodland, scrub, and brushy habitats |
| Black-throated Blue Warbler | | Mixed woods with heavy understory |
| Palm Warbler | | Variety of woodland, second growth and thicket habitats, open fields |
| Pine Warbler* | 4/20-8/10 | Variety of pine forests |
| Yellow-rumped Warbler | | Coniferous and mixed coniferous/deciduous woodlands, wood margins |
| Yellow-throated Warbler* | 5/1-7/15 | Loblolly pines, sycamores |
| Prairie Warbler* | 5/25-7/20 | Brushy fields, edges, small pines |
| Black-throated Green Warbler | | Coniferous or mixed woods |
| Canada Warbler | | Thick, moist forest undergrowth |
| Wilson's Warbler | | Fairly open woodlands with undergrowth or shrubs |
| Yellow-breasted Chat* | 5/25-8/5 | Brushy fields, thickets, wood edges |
| Eastern Towhee* | 5/20-8/31 | Dry open woodlands, edges, brush |
| American Tree Sparrow | | Fields, marshes, gardens, open forests |
| Chipping Sparrow* | 5/1-8/31 | Open woodlands with grass, river and lake shorelines, orchards, farms, parks |
| Clay-colored Sparrow | | Wood margins, hedgerows, scrub, abandoned fields |
| Field Sparrow* | 5/1-8/31 | Brushy, weedy fields, hedgerows |
| Vesper Sparrow* | 5/1-8/31 | Short grass areas, cultivated fields |
| Lark Sparrow | | Grass with low shrubs and open ground |
| Savannah Sparrow* | 6/1-8/15 | Hayfields, wet meadows, pastures |
| Grasshopper Sparrow* | 5/25-8/31 | Hayfields, grassy pastures |

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| Henslow's Sparrow* | 5/25-8/31 | Weedy fields, wet meadows |
| Fox Sparrow | | Thickets and edges of coniferous, mixed, or second-growth forests |
| Song Sparrow* | 5/1-9/10 | Brushy fields, marsh edges, suburban areas |
| Lincoln's Sparrow | | Wood margins, hedgerows, scrub, abandoned fields, bogs |
| Swamp Sparrow | | Marshes, wet brushy areas, bogs |
| White-throated Sparrow | | Wood margins, hedgerows, scrub, swamps, weedy fields, urban areas |
| White-crowned Sparrow | | Wood margins, hedgerows, scrub, abandoned fields |
| Dark-eyed Junco | | Edges of northern mixed forests |
| Summer Tanager* | 6/1-8/10 | Mixed dry upland woods |
| Scarlet Tanager* | 5/25-8/10 | Mature deciduous forests |
| Northern Cardinal* | 3/15-9/30 | Edge, brush, parks, suburbs |
| Rose-breasted Grosbeak* | 6/5-8/15 | Edges of moist deciduous woods |
| Blue Grosbeak* | 5/25-8/15 | Thickets, hedgerows, and edges |
| Indigo Bunting* | 6/1-8/15 | Edges, open forest, brush areas |
| Dickcissel* | 6/1-8/31 | Open country, especially alfalfa |
| Bobolink* | 6/15-7/10 | Fields, meadows, pastures |
| Red-winged Blackbird* | 5/1-7/10 | Marshes, ponds, meadows, hayfields |
| Eastern Meadowlark* | 5/1-9/10 | Hayfields, pastures |
| Yellow-headed Blackbird | | Muddy fields, cow or horse pastures |
| Rusty Blackbird | | Swamps, wet woodlands, pond edges |
| Brewer's Blackbird | | Farmland, open fields, parks, urban areas |
| Common Grackle* | 4/15-7/10 | Farmland, urban areas |
| Brown-headed Cowbird* | 5/1-7/10 | Everywhere, except urban areas |
| Orchard Oriole* | 6/1-7/5 | Edges, hedgerows, scattered trees |
| Baltimore Oriole* | 6/1-7/25 | Shade trees, open deciduous woods |
| Purple Finch | | Mixed woods, parklands, residential areas |
| House Finch* | 5/1-7/15 | Residential areas, especially evergreens |
| Red Crossbill | | Mature coniferous forests |
| White-winged Crossbill | | Coniferous forests, especially where spruce cones are found |
| Common Redpoll | | Open woodland, scrub, weedy fields, suburban areas |
| Pine Siskin | | Conifers, gardens, orchards, farmland |
| American Goldfinch* | 6/10-9/15 | Brushy fields, edges, hedgerows |
| Evening Grosbeak | | Coniferous or deciduous forests, suburban areas |
| House Sparrow* | 2/1-9/30 | Cities, farms, parks, suburbs |

Safe dates were taken from the Virginia Breeding Bird Atlas field card. Habitat information was taken from the Second Maryland/DC Breeding Bird Atlas Handbook and the Cornell Lab of Ornithology's online species accounts (<http://www.birds.cornell.edu/AllAboutBirds/BirdGuide/>).

Appendix 5: Loudoun County Bird Atlas Verification Form

To maintain the integrity of this atlas project, we ask for your cooperation in completing the following Verification Form if you observe a Species of Special Interest in the appropriate circumstances (refer to Species of Special Interest section of the Atlas Handbook for more information). *This form should also be completed for locally rare species not listed on the field card and for observations of probable or confirmed breeding behavior in species not thought to breed in Loudoun County* (no asterisk behind the name). Please complete this form as soon as possible and send to the Atlas Coordinator, Spring Ligi, 4615 Newington Road, Jefferson, MD 21755 or sligi@loudounwildlife.org. Please include sketches or photos if possible. We appreciate your assistance with this very important component of the atlas!

Species:

Observer and Address:

Phone:

Email:

Block Name:

Exact Location:

Date of Sighting:

Time of Sighting:

Did you already enter your sighting in the database? yes or no (circle one)

If not, do you want the sighting to be entered for you? yes or no (circle one)

Describe the habitat (both the general area and the specific habitat for the bird in question):

Provide information on plumage, song, call notes, size comparison, physical features, behavior, differences from similar species, and/or your previous experience with this species:

List the names of other observers and their phone numbers if applicable:

Additional Comments (length of time bird was observed, optical aids used, etc.):

Signature:

Date:

Signature of coordinator supporting this report: