WHAT'S HATCHING?

Official Newsletter of the Maryland & DC Breeding Bird Atlas 3

ISSUE NO 3 | APR 2020

Photo credit: Mark R. Johnson

CONTENTS

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BIRD OF THE MONTH

Where do Purple Martins nest…other than in Purple Martin houses??

TIPS AND TRICKS

Complete checklists are critical for Atlas data analysis. Learn why they're worth the extra effort.

FROM THE FIELD

Daniel shares his perspective on the benefits of atlasing, while Katherine tells us about her observations while on an early-spring walk.

This spring continues to surprise with successful, exceptionally early nesting. On March 30, Simon Best found a trio of American Robin fledglings chasing their parents across Johns Hopkins Hospital campus, begging for food. The existing earliest egg date for robins in Maryland and DC is March 26. Robins incubate their eggs for about 13 days and the chicks fledge about 13 days after hatching; this puts the first egg date for a clutch of three at March 3, at least—over three weeks earlier than previously recorded.

Photo credit: Simon Best

"Birds have wings; they're free; they can fly where they want when they want. They have the kind of mobility many people envy."

- Roger Tory Peterson

The last few weeks may have clipped our wings, but all is not lost. No matter where you are, it is likely that there is a bird attempting to nest somewhere nearby. Keep your chin up and your eyes peeled; nothing brightens a day like seeing a bird carrying nesting material!

UPCOMING EVENTS

****** PLEASE NOTE ******

Since upcoming events have been postponed, we've been going digital! Check out the Training links at ebird.org/atlasmddc/about/training. You can also find information about events at ebird.org/atlasmddc/about/events.

From the Coordinator

Some things about atlasing are subjective… and that's okay.

Fundamentally, participating in a breeding bird atlas is straightforward. Identify a bird, code its behavior, and submit the observation to the database. But within that basic framework lies a good deal of nuance. As just one example, code P is, "a male-female pair observed in suitable nesting habitat during the breeding season." That seems simple enough, at first. But what about when you see a species with males and females that look the same? How do you know if they're actually a pair intending to breed? The questions can quickly stack up.

Photo credit: Gabriel Foley

I'd love to tell you, "Don't worry, just use this one trick to cut out all the confusion", but unfortunately, it's not that easy. Some things are subjective. To determine if you are indeed looking at a breeding pair, you need to use a combination of clues, including time of year, age, sex, species, and behavior. This can be confusing, and it can seem overwhelming, and that's okay. The opportunity to learn about bird behavior and natural history is part of the value of an atlas. As a participant, possessing enthusiasm to learn is more important than having a great deal of expertise.

Excellent resources exist on the subject of bird behavior. If you are like me and enjoy adding to your library, *The Sibley Guide to Bird Life & Behavior* is an outstanding resource on each bird family's behavior. Another more species-specific option is *Nests, Eggs, and Nestlings of North American Birds*; be sure to get the second edition. A third book, albeit published in 1988 and with a rather confusing layout, is *The Birder's Handbook: a field guide to the natural history of North American birds*.

But you don't need to restrict yourself to paper and ink. The website allaboutbirds.org has an easy to read format with identification and life history information summaries. If you are willing to pay for a subscription, birdsoftheworld.org is a comprehensive collection of literature reviews for every bird species; many of Maryland and DC's breeding species are well-studied and a tremendous amount of information is available here. And let's not forget the venerable Yellowbook by Marshall Iliff, Bob Ringler, and Jim Stasz (also known as the *Field List of the Birds of Maryland*). The Yellowbook contains detailed, regional information on Maryland's birds that you can't find elsewhere; a pdf of this publication is available at mdbirds.org/publications/the-yellowbook.

Maryland and DC are home to a welcoming community of exceptionally knowledgeable naturalists happy to share what they know. One way to get involved with this community is through the Atlas Facebook discussion group—search @mddcbba3 on Facebook to find it.

Finally, don't overlook simply taking the time to stop and watch a bird and what it is doing. With that method, you will never exhaust opportunities to learn.

--Gabriel

bird of the month:

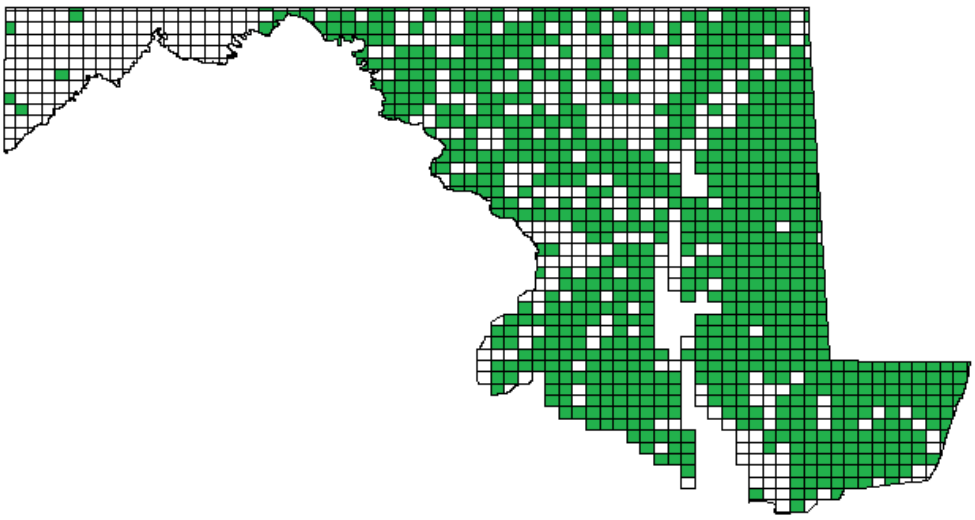
PURPLE MARTIN

Photo credit: George Jett

The Purple Martin, a dashing aerial speedster and the largest of North America's swallows, is familiar to most bird enthusiasts in eastern North America. If asked, "Where do Purple Martins build their nests and raise their young?", I suspect most enthusiasts would confidently answer, "In Purple Martin houses", and they would be quite correct. In 1831, John James Audubon said that, "Almost every country tavern has a martin box on the upper part of its sign-board; and I have observed that the handsomer the box, the better does the inn generally prove to be". Later in 1895, Kirkwood reported that returning martins are "generally first observed at the bird boxes" based on observations made around Baltimore in the late 1880s and early 1890s.

But Purple Martin houses are modern, human-made, wooden or metal nesting structures. Where did Purple Martins nest before these artificial sites were available? Prior to European settlement in North American, some eastern and southeastern Native Americans, such as Chickasaw, Choctaw, Chippewa, and Delaware, also provided artificial sites. They hung clusters of hollowed-out gourds around their villages, providing a cavity for martins to nest inside, and it appears European settlers copied this tradition with martin nest boxes across the region.

Of course, Purple Martins didn't always exclusively nest in gourds or bird boxes. Ralph Waldo Jackson wrote in the Breeding Birds of Cambridge (1941), "Purple Martin. An abundant nesting bird where suitable boxes are provided. However, in the vast marsh area of this county, I have found them nesting in original habitat in hollow trees." The majority of Jackson's Dorchester observations were made a century ago,



Purple Martin distribution map from the Maryland & DC Breeding Bird Atlas 2.

PURPLE MARTIN

Martins are easy to Confirm, but get them early.

Purple Martins are widespread in Maryland and DC, with the exception of Allegany and Garrett Counties. Their distinctive chirps and triangular shapes are easy to distinguish, and they almost always nest in backyard Purple Martin houses. If you find a martin in late spring or early summer, you can follow it back to its nest box. But be aware that as soon as the chicks can fly, the parents lead them away from the nest box. Soon after, martins begin forming large flocks of adults and juveniles; once the juveniles are part of these large flocks, they are no longer eligible for code FL (fledged young) since you won't know which block they hatched in. Confirming Purple Martins isn't difficult, but it should be done early in the year.

Despite being a common backyard bird, Purple Martins are experiencing significant declines (37% between 1966 and 2015). One of the best ways to help is to put up a martin box—you learn how at nestwatch.org/learn/all-about-birdhouses.

from 1910 to 1926.

In the *Atlas of the Breeding Birds of Maryland and the District of Columbia* (Robbins 1996), Kathleen Klimkiewicz reported that the last observed Purple Martin nesting in a natural cavity "was in a dead tree in Montgomery County in the early 1970s." In the *Birds of North America* (Brown 1997) reported that martins are, "Extremely popular and well known to much of the public, this species in eastern North America now breeds almost entirely in backyard birdhouses."

Purple Martin fledgling. Photo credit: Jordan Rutter

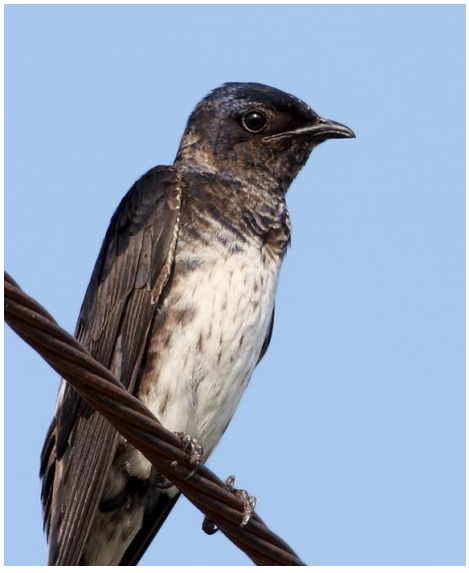
In eastern North America, there have been few recent records of natural cavity nesting, but even the use of other anthropogenic nest sites, such as crevices in buildings, has practically disappeared. In western North America, martins are not so dependent on nest boxes. This reflects what was likely their original range-wide behavior; each pair nests in a natural cavity and maintains distances of at least 300 ft from other martin pairs (granted, often in cactus—an unlikely scenario in Maryland or DC!). Martins may have occasionally nested in groups in large snags with many woodpecker holes, but subtleties in their behavior reflect more of a solitary evolutionary past: they engage in high-risk predator deterrence behavior, each bird responding individually rather than the mob showing any concerted defense, and parents are unable to recognize their own offspring. This can result in older chicks occupying another nest with younger chicks and accepting food from the co-opted foster parents, starving the younger, smaller chicks.

Stewart and Robbins (1958) reported extreme egg dates for Maryland martins as May 29 and July 9. They typically lay 4–5 eggs and raise a single brood each year, although they will renest if their first attempt fails. Males are the first to arrive, establishing territories that consist of multiple nest box holes (they do not arrive early as 'scouts' for other martins, as one popular myth espouses). A single pair of martins with multiple nest box holes within their territory will use different holes for roosting than their nest hole. Females appear to select the site, rather than the male, and once their pair bond is formed the male proceeds to guard his territory and his mate from other males. Intruders attempting to take over one of his claimed nest box holes always lose, but they repeat their intrusions and, through a war of attrition, may eventually succeed in claiming a hole; eventually the defender appears to grow tired of defending so many nest box holes and simply gives in.

Purple Martins at a backyard martin nest box. Photo credit: George Jett

Purple Martins generally begin building their nest shortly after pair formation. The male may begin the nest-building process, but his primary occupation of mate-guarding tends to take priority over the more mundane nest building, and his time is spent following and watching her build their nest. Older males are unlikely to have other males copulate with their mate, but first-year males, whose plumage closely resembles females, are at high risk of 'extra-pair copulations'; in one study, 43% of the offspring of first-year males was unrelated to them, compared to only 4% of older males. These extra-pair copulations appear to be forced and most often take place when a female lands on the ground to gather nest material, hence the need for intensive mate-guarding during the nest-building period.

Purple Martins line the front of their nest with mud, collect sticks, and line the nest with green leaves. The function of these green leaves is not understood, but the martin pair removes them once they dry out and replaces them with fresh leaves. The female lays an egg a day, and partial incubation during laying results in slightly staggered hatching 15–18 days later. Both sexes incubate, but the female does most of it, and the chicks fledge from the nest 28 days after hatching. Other adults—breeding and non-breeding alike—engage in an unusual behavior, dive-bombing juveniles and driving them away, even attempting to knock them off their perches. There are no good explanations for why adults, particularly non-breeding adults, do this, but parents lead their chicks away from the nest site during the day, returning only to roost at night.



"I have just flown from Brazil; where should I nest this year? Where did my mother and grandmother nest?" Photo credit: Bill Hubick

Prolonged cold weather has a negative impact on regional populations and is responsible for the lack of martins in the Appalachians. But it is introduced cavity nesters, European Starlings and House Sparrows, that have the largest impact on martin nest success and they appear to have been responsible for the population-wide shift towards artificial nest sites. Martins cannot defend their nest site against starlings; starlings will even trap the martin in the nest box and kill it. House Sparrows take a less directly nefarious, but still effective, approach and plug nest box holes with grass, rendering the hole useless to a martin. Ironically, there are records of each of these species all inadvertently feeding each other's chicks: starlings and sparrows have fed martin chicks, and martins have fed starling and sparrow chicks.

So, do Purple Martins still build nests and raise their young in natural cavities in Maryland and DC, or have invasive species created an obligate dependency on artificial nest boxes? If you find martins far from human settlement in your Atlas block, might they still be nesting in natural tree cavities? Is that flying Purple Martin, just a code 'H' or are they actually nesting nearby? Your observations might add important Purple Martin life history information while you are participating in the Atlas. At the completion of the Maryland and DC Breeding Bird Atlas 3 will we conclude that our Purple Martins occasionally still use natural cavities, or are they restricted to backyard boxes?

Authors: David Bridge and Gabriel Foley

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ATLASER SPOTLIGHT

Cathy Staropoli, from Howard County, is a member of the Howard County Bird Club.

How did you become interested in birds?

I am a new birder. About 2 years ago, I started an email correspondence with my uncle who lives in Rochester, NY. I found out he is a birder and one who started later in life. I jokingly made fun of him about birding. Then I started listening in my own yard. I realized how many different bird sounds there were and how little I knew about the birds around me. My uncle helped me along as I sent pictures of cardinals and blue jays. He suggested that I join the local bird club, which I did. I've learned so much from the knowledgeable and kind members of the Howard County Bird Club and, of course, my uncle.

Now, we email each other our lists and tell each other about our birding adventures. He's my virtual birding partner and teacher and I'm so thankful we got in touch. He shared a wonderful hobby with me that I very much enjoy.

If you went atlasing and could only bring binoculars, a field guide, and one other item, what would you bring?

My phone so I'd have Merlin. I'm going to need that when the warblers come and I'm on my own this year!

If you could pick anyone to go atlasing with for a day, who would it be?

My uncle, of course.

Have you been involved with any other atlases?

No, I haven't.

What bird do you particularly like?

I have many favorite birds. I like to watch the Ospreys dive and the Green Herons lurk. Carolina Wrens are always singing. There are just so many good birds to like.

Where is your favorite place to atlas?

The various lakes around Columbia. There is always a lot to see.

What do you think is the best thing about atlasing?

Atlasing gives me more things to look for and observe.

Photo credit: Simon Best

The Cornell Lab NestWatch

Want to submit more information about the nests you find?

Check out Nestwatch.org

BLOCK PARTY

Galena SW, Kent County

The Galena quadrangle's six blocks span central Kent County from the Sassafras River in the north to the Chester River (just barely) in the south. The quadrangle has a few small population centers including the towns of Galena and Kennedyville. A large percentage of the land in the quadrangle is dedicated to crop farming, rendering the landscape open with mostly small and scattered woodlots. Despite these limitations, all but one of the six blocks had seventy or more species recorded during the second breeding bird atlas.

One such block was Galena SW, about four miles northeast of Chestertown on MD 291, which had 74 bird species with 52 Probable and Confirmed breeders. MD 291 runs across the southern part of the block and Morgnec Road crosses the center; several side roads, including Kennedyville Road and MD 298 connect these two and provide access to northern portions of the block.

Birding in blocks with lots of open and private land requires roadside birding and careful interpretation of maps and satellite images to locate accessible habitat, especially wooded areas and small bodies of water. Identifying and contacting landowners for permission to access less common habitats away from roads can also be useful. With Bay protection efforts, stream crossings are usually wooded and are the best places to look for woodland birds. During the last atlas, forest birds such as Pileated Woodpecker, Acadian Flycatcher, Red-eyed Vireo, and Wood Thrush were found, but the block also had only one warbler (Common Yellowthroat), lost two warblers from the 1980s, and lacked White-breasted Nuthatch.

With so much cropland, finding diverse open land habitats is also challenging, but they can be found by looking for field buffer strips, pastureland, the occasional fallow field, and reforestation projects. Galena SW had a good selection of open and shrub-land birds in the last atlas including Northern Bobwhite, American Kestrel, Horned Lark, Yellow-breasted Chat, Eastern Meadowlark, and Field and Grasshopper sparrows. Dickcissel was Confirmed nesting in this block since the last atlas project.

Despite limited habitat, waterbirds in the block included Wood and American Black ducks, Least Bittern, and Green Heron. These birds can best be sought by making an early morning visit on weekends to creek crossings, such as the ones along MD 291 (otherwise busy with fast-moving traffic).

All full-sized land blocks have a diverse array of bird species; they are often localized in landscapes largely dedicated to only a few land uses—but the birds are there and part of the fun of atlasing in such blocks is using your ingenuity to ferret them out.

Author: Walter Ellison

A red maple swamp in the Galena SW block. Photo credit: Nancy Martin

TIPS AND TRICKS

While collecting data, a positive result is easy to obtain; for example, you find a robin nesting in your backyard—a positive result! But negative results are messy; if you didn't find a robin nesting in your backyard, was that because you never detected it, or because it was never there? As you can imagine, this issue has hefty implications for a project like the Atlas. Fortunately, there are ways of accounting for this problem statistically—but only if the data meet certain requirements.

One of the solutions is calculating 'occupancy'. The idea of occupancy is simple: did an individual occupy a site? If a robin nested in your backyard, the answer is yes. But what if you never found the robin? You aren't sure if the absence is real, because the robin wasn't there, or if the absence is false, because you didn't detect the robin. This means that occupancy (the presence or absence of a species at a location) is based on detection of a species. Even if you are very skilled, you never find all of the birds at a location; detection for every species is less than 100%. The number of locations a species is reported from is lower than the number of locations the species actually occurs.

By using multiple visits at a location, you can determine how easy (or how hard) it is to detect a species. You can also incorporate things that impact the detection rate, like time of day or weather. Once you have calculated the detection rate for a species, you can use that number to predict, or model, how likely a bird is to occupy a given location.

But it isn't magic. Building that prediction, otherwise known as a model, requires data that meet certain requirements. For occupancy models, you need checklists that include all of the species you detected—in other words, what eBird calls a 'complete checklist'. If your checklist isn't complete, it can't be incorporated into the model. There are other limiting factors to consider as well, things statisticians would call 'assumptions'. One of the assumptions for an occupancy model is that your data must come from a 'closed population'. In other words, you assume that you have the same number of birds each time you visit a location. This would be a bad assumption during migration, but a good assumption during the breeding season when birds are on territory. Occupancy models have several assumptions like this; if the assumptions aren't met, then the model can't be calculated.

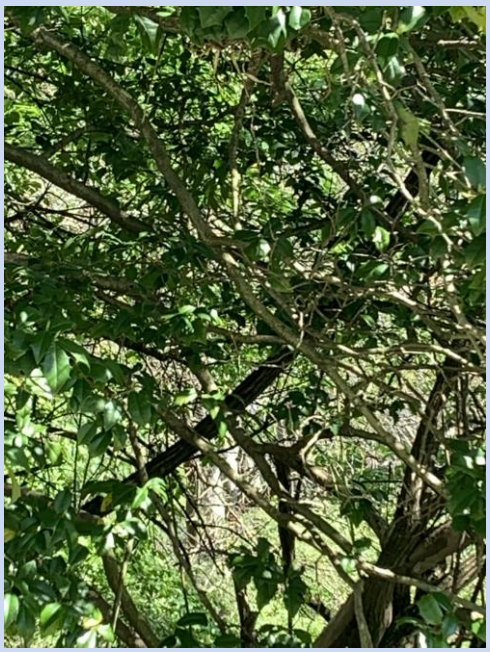

Photo credit: Gabriel Foley

Is there a bird in this shrub? Many birds go undetected, even by experts. For example, birding in the morning is considered better than birding in the afternoon because it is easier to detect birds in the morning, not because there are actually more birds in the morning. Calculating the 'detectability' of birds is a critical part of making predictions about bird populations. The calculation relies on reported effort and a full species list—in other words, a complete checklist.

Every contribution to the Atlas has value, regardless of what it is. But the most valuable contributions are complete checklists from specific locations that include abundance estimates for each species. We don't ask for these things just because that's what eBird wants; we ask for these things because they are critical to analysing the data that are collected in the most accurate and powerful way possible.

So, when you can, please submit complete checklists. Don't feel the need to fudge a bit and call a checklist 'complete' if it doesn't meet the definition; that's counter-productive to creating good predictions. But wherever you can, include exactly where you were, all the birds you detected, and how many of each of the birds there were.

Author: Gabriel Foley

FROM THE FIELD

I'm currently sitting in my rental car just outside of Pearblossom Park, listening to a Vermilion Flycatcher sing as the sun rises. If you're wondering which Atlas block I am in right now, it's one that's a few (thousand) miles west of Garrett County in Los Angeles County, California, where I lived for six years.

So, why am I writing about California in an article about atlasing in Maryland and DC? Birding can be a solitary pursuit that provides plenty of time to think while waiting for a target bird—or sometimes any bird at all. As I'm waiting for just enough light to be able to see that Vermilion Flycatcher, I have a few rare moments to let my mind wander. A breeding bird atlas has plenty of benefits, but the one I'm thinking about right now is how a large pursuit such as this can reorient someone. My desire to explore often gets me well outside of DC and one of my main reasons for taking part in this Atlas is to refocus my birding efforts closer to home.

While it would be nice to do some shore birding (either Delaware or South Jersey, doesn't matter), nearby hotspots like Fort Totten and Rock Creek Park Golf Course have been in need of attention. And I'm glad these and other oft-neglected places have been getting attention, because it's helped to remind me that seeing something cool doesn't need to involve a 100+ mile drive.

Atlasing doesn't just help us take stock on how birds are doing, it can also help us take stock on our surroundings and our love of the natural world.

Author: Daniel Sloan

Blue Jays are noisy most of the year, but pairs can be quiet and secretive while nesting. Photo credit: Jordan Rutter

A fuzzy Great Horned Owl chick peers out of its nest. Photo credit: Simon Best

On a sunny April morning I joined my boyfriend, his mother and their four-month-old Golden Labrador on a walk to Kinder Farm Park. As we entered the park, we were greeted by a Northern Cardinal singing in a nearby tree. Shortly after, we came across a drainage pond where I spotted a Red-tailed hawk being pursued by a European Starling, perhaps the Starling was trying to drive it away from the area. Within five minutes of our walk we already had three bird sightings, one of them a raptor. Little did I know that I was going to see more amazing sightings on that outing.

As we walked into the forest, I

observed dozens of American Robins foraging on the ground, heard the calls of a Red-bellied woodpecker and glimpsed at a Carolina Chickadee flitting through the treetops. As we approached another pond surrounded by trees and bamboo, I saw a large bird fly overhead. I brought out my binoculars and saw that it was a Red-tailed hawk. Walking only a few feet from that sighting we heard a loud *keeeer* call above us. I looked up and saw another Red-tailed hawk perched high in the trees calling rather loudly, as if we were intruding. We quickly hurried out of the hawk's range and continued our morning stroll.

We made our way to the sports fields and noticed a large nest-like structure in one of the stadium lights. It was quite messy looking, and my first thought was that it belonged to some sort of a raptor. My suspicion was confirmed when an Osprey flew overhead, with a large stick in its talons and landed in the nest. It then started to raise its wings and flatten its new nest material into its home. I have always loved Ospreys and I couldn't believe my luck that I saw one in the middle of this park, building a home for its future young.

After watching the Osprey, we made our way back home. Along the way we saw flashes of bluebirds fly by and listened to the songs of multiple Northern Cardinals. Back at the house I felt sense a calm, seeing all these birds brought me hope that even with challenging times are still ahead, but there are still wonders to behold in this world.

Author: Katherine Pauer

A Red-shouldered Hawk perches in Rockville's Redgate Park. Photo credit: Katherine Pauer

Do you have a story or photo you would like to see in What's Hatching? We'd love to hear it! Send your submissions to the editor at mddcbba3@mdbirds.org.

There are 22 breeding codes in total; some of these you will use on a daily basis (like code S, singing), while others you might never use (like code PE, physiological evidence).

A list of the 'Top Five' breeding codes could include just about any combination, but we picked these because if you spend much time atlasing, you'll almost certainly use each of these.

- Code H (habitat) and code S are used frequently, but aren't strong evidence of breeding. Try to upgrade these.

- Code P (pair) can be a bit subjective, so only use this code when you are confident you have a male-female pair that is intending to breed.

- Code FL (fledged young) is a great code for young birds, and one of the best ways to Confirm cowbirds.

- And finally, look for birds carrying food (code CF). There are a few exceptions, but most birds carrying food are taking it to their chicks.