

# **GARRET MOUNTAIN RESERVATION BREEDING BIRD SURVEY REPORT**

**May through mid-July 2022  
Garret Mountain Reservation  
Passaic County, New Jersey**



*Kingbird Family over Barbour's Pond June 2022*

*Photo by Fred Pfeifer*

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## **Introduction**

Garret Mountain Reservation(GMR) is a green clifftop oasis amongst the surrounding towns and bright lights of Paterson. It is a National Natural Landmark and an important part of the Passaic County Park System and the Watchung Mountain range. The mountain is also located along the Atlantic Flyway, one of 3 major migration routes in the USA. It attracts large numbers of migrating birds who rest and refuel during their yearly migrations between such far-flung locations as South and Central America and the Arctic. Key stopover points, like GMR, help to support bird populations during the challenging undertaking of spring and fall migration.

The National Audubon Society, in conjunction with New Jersey Audubon, designate GMR as an IBBA (Important Bird and Birding Area) and refer to its “legendary reputation as a critical site for migratory birds.”<sup>i</sup> The Garret Mountain IBBA includes both GMR and Rifle Camp Park. The IBBA Program “identifies areas that provide essential habitats for sustaining bird populations (Bird Areas) as well as areas that are exceptional for bird watching (Birding Areas). The objectives of the NJ IBBA Program include:

- Identification of a network of sites that will help sustain naturally occurring populations of birds in NJ and sites that are exceptional for bird watching.
- Ensuring the continued viability of these areas through conservation and ecotourism efforts. Raising public awareness of the value of habitat for birds and other native wildlife.
- Generating increased support for conservation by educating private industry, landowners, and other stakeholders about the economic and educational value of birdwatching.”<sup>ii</sup>

Although GMR is known for being a migratory stopover, the extent of breeding activity in the park was less well known or documented. Thus, the Friends of Garret Mountain Reservation (FOGMR) proposed and coordinated a breeding bird survey. This survey is FOGMR’s first official breeding survey. The participants included:

**Benita Fishbein  
Christine Toth  
Dianne Conner  
Fred Pfeifer**

## **Goals**

- Obtain knowledge about the species and numbers of breeding birds at GMR
- Make recommendations to help breeding birds
- Document a baseline record of the breeding bird population

## **Methods**

For this study, GMR was divided into sections. Four of the sections were included. Participants completed at least two surveys in each section during the month of May, and at least two surveys in each section during the period of June 1 to July 15. Data was recorded via eBird for all birds showing confirmed, probable, and possible breeding statuses. The breeding statuses used in the survey are shown below:

### **Confirmed**

- NY nest with young
- FS carrying fecal sac
- FY feeding young
- FL recently fledged young
- CF carrying food
- NE nest with eggs
- ON occupied nest
- DD distraction display
- ND nest building
- CN Carrying nesting material

### **Probable**

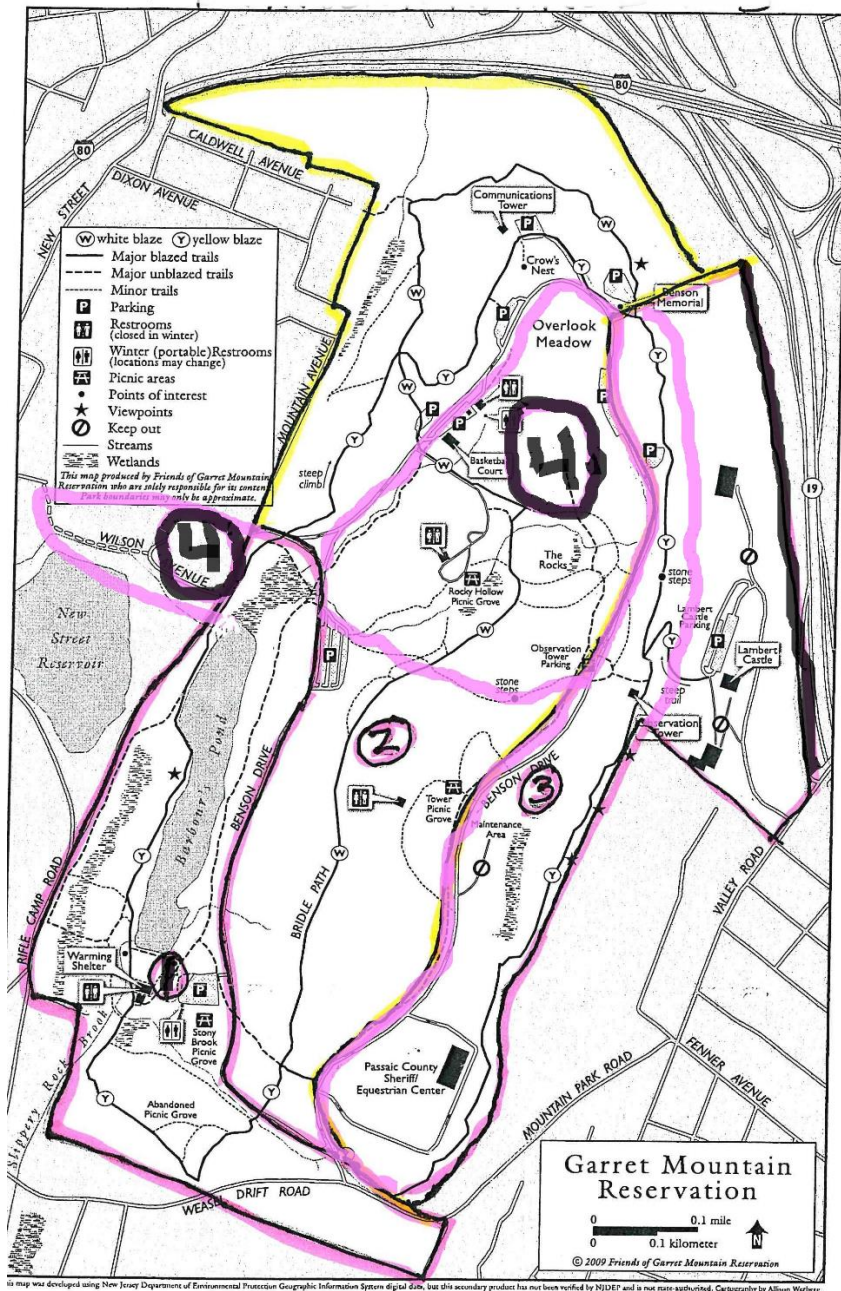
- N visiting probable nesting site
- C Courtship Display or Copulation
- T Territorial defense
- P Pair in suitable habitat
- M 7+ singing males seen on site
- S7 bird singing 7+ days apart

### **Possible**

- S singing bird
- H bird in appropriate habitat

Although the actual bird breeding season lasts from February through September, this survey captures only the portion of the 2022 breeding season from May until mid-July. More birds and species would be in the results if the entire breeding season was covered. For example, a fledgling Great Horned Owl was seen in mid-April by the stables. Similarly, Barn Swallows were seen carrying mud to make their nests before May and in August, they were observed feeding newly fledged young. In late July, three orphaned Mallard ducklings were spotted on Barbour's Pond. None of these birds appear in the survey results. Likewise, other late breeders, such as the American Goldfinch, and other species of birds would probably have appeared in the results and in greater numbers if the entire breeding season was covered.

The survey concentrated on sections 1, 2, 3 and 4 encircled in pink.



Section 1 consists of the area around Barbour's Pond and the areas south of the boathouse, including Slippy Rock Brook. It also includes the surrounding wetlands and forested hillside. Section 2 consists of a large area in the center of the park, including the deer enclosure, tower picnic area and the butterfly garden. Section 3 extends from the road up to the ridge, and includes the Equestrian Center, Lambert's Tower, and the rock outcrop ridge up to the Benson Memorial. Lastly, Section 4 contains Wilson Ave. (bordering New Street Reservoir), Rocky Hollow, Overlook Meadow, and the surrounding forest areas.

**Results** Breeding Bird(BB) counts with ‘confirmed’ or ‘probable’ status are shown below:

Species/Total BB Count	Notes	Breeding Status (Highest Observed)	BB Count by Section
American Robin(34)		NY Nest with Young (Confirmed)	S1(9), S2(8), S3(12), S4(4)
Baltimore Oriole(4)	<i>Medium to long-distance migrant</i>	CN Carrying Nesting Material (Confirmed)	S1(1), S2(1), S3(1), S4(1)
Black-capped Chickadee(2)	<i>Cavity nester</i>	N Visiting Probable Nest Site (Probable)	S2(1), S4(1)
Blue Jay(3)		FY Feeding Young (Confirmed)	S1(1), S2(1), S4(1)
<b>Brown Thrasher (3)</b>	<b><i>Species of Special Concern in NJ</i></b>	<b>FL Recently Fledged Young (Confirmed)</b>	<b>S1(1), S2(2)</b>
Brown-headed Cowbird(2)		S7 Singing Bird Present 7+ days (Probable)	S1(1), S3(1)
Carolina Wren(3)		A Agitated Behavior (Probable)	S1(1), S2(1), S3(1)
Chipping Sparrow(2)		FL Recently Fledged Young (Confirmed)	S1(1), S3(1)
Downy Woodpecker(1)	<i>Cavity nester</i>	FL Recently Fledged Young (Confirmed)	S3(1)
Eastern Kingbird (1)	<i>Long-distance migrant</i>	NY Nest with Young (Confirmed)	S1(1)
Eastern Phoebe (1)		S7 Singing Bird Present 7+ days (Probable)	S1(1)
Eastern Screech-Owl(1)	<i>Photographer magnet</i>	FL Recently Fledged Young (Confirmed)	S2(1)
Eastern Wood-Pewee(3)	<i>Long-distance migrant</i>	N Visiting Probable Nest Site (Probable)	S1(1), S2(1), S3(1)
European Starling(4)		FL Recently Fledged Young (Confirmed)	S1(1), S2(1), S4(2)
Gray Catbird(3)		FY Feeding Young (Confirmed)	S1(1), S2(1), S3(1)
Great Crested Flycatcher(2)	<i>Medium to long-distance migrant</i>	P Pair in Suitable Habitat (Probable)	S1(1), S2(1)
Hairy Woodpecker(3)	<i>Cavity nester</i>	FY Feeding Young (Confirmed)	S2(2), S3(1)
House Sparrow(20)		ON Occupied Nest (Confirmed)	S1(3), S2(4), S3(10), S4(3)
House Wren(1)		S7 Singing Bird Present 7+ days (Probable)	S3(1)
Mourning Dove(4)		ON Occupied Nest (Confirmed)	S1(2), S2(1), S3(1)
Northern Cardinal(5)		FL Recently Fledged Young (Confirmed)	S1(2), S2(1), S3(1), S4(1)
Northern Flicker(3)	<i>Cavity nester</i>	FY Feeding Young (Confirmed)	S1(1), S3(1),S4(1)
Northern Mockingbird(1)		P Pair in Suitable Habitat (Probable)	S1(1)
No. Rough-winged Swallow(1)		C Courtship or Copulation (Probable)	S1(1)
Pileated Woodpecker (1)	<i>Photographer magnet</i>	NY Nest with Young (Confirmed)	S1(1)
Red-bellied Woodpecker(4)	<i>Cavity nester</i>	ON Occupied Nest (Confirmed)	S1(1), S2(1), S3(1),S4(1)
Red-eyed Vireo(3)	<i>Long-distance migrant</i>	ON Occupied Nest (Confirmed)	S1(1), S2(1), S3(1)
Red-tailed Hawk (1)	<i>Photographer magnet</i>	NY Nest with Young (Confirmed)	S3(1)
Red-winged Blackbird(1)		FY Feeding Young (Confirmed)	S1(1)
Song Sparrow(1)		A Agitated Behavior (Probable)	S3(1)
Tufted Titmouse(1)	<i>Cavity nester</i>	C Courtship or Copulation (Probable)	S2(1)
Warbling Vireo(4)	<i>Medium to long-distance migrant</i>	ON Occupied Nest (Confirmed)	S1(4)
White-breasted Nuthatch(1)	<i>Cavity nester</i>	N Visiting Probable Nest Site (Probable)	S1(1)
Wild Turkey (1)		FL Recently Fledged Young (Confirmed)	S4(1)
Wood Duck (1)	<i>Cavity nester</i>	FL Recently Fledged Young (Confirmed)	S1(1)
<b>Wood Thrush(4)</b>	<b><i>Species of Special Concern in NJ</i></b>	<b>FL Recently Fledged Young (Confirmed)</b>	<b>S1(3), S3(1)</b>
Yellow-Billed Cuckoo(1)	<i>Long-distance migrant</i>	S7 Singing Bird Present 7+ days (Probable)	S2(1)

\*\* American Robin and House Sparrow breeding counts were estimated.

	<u>S1</u>	<u>S2</u>	<u>S3</u>	<u>S4</u>	<u>All Sections</u>
<b>Total breeding observations:</b>	45	30	39	16	130
<b>Number of distinct species:</b>	29	18	19	10	76

***Additional Species with 'possible' breeding status at GMR:***

<i>Species</i>	<i>Notes</i>	<i>Breeding Status</i>	<i>Section</i>
American Redstart		S Singing Bird (Possible)	S3
<b>Black-throated Blue Warbler</b>	<b><i>Species of Special Concern in NJ</i></b>	<b>S Singing Bird (Possible)</b>	<b>S4</b>
Cedar Waxwing		S Singing Bird (Possible)	S3
Common Yellowthroat		S Singing Bird (Possible)	S2
Eastern Towhee		S Singing Bird (Possible)	S4
Ovenbird		S Singing Bird (Possible)	S3
White-throated Sparrow		S Singing Bird (Possible)	S4





**Wood Duck Family in  
Barbour's Pond June 2022**

*Photo by Fred Pfeifer*



**Fledgling Mourning Dove near  
Barbour's Pond Path May 2022**

*Photo by Christine Toth*



**Brown Thrasher - NJ Species of Special  
Concern carrying food near Barbour's  
Pond June 2022**

*Photo by Christine Toth*



**Wild Turkey Parent and Poult  
New St. June 2022**

*Photo by Fred Pfeifer*



*Unknown Nest at GMR*



*Baltimore Orioles weave a nest like a basket and suspended like a basketball net.*



*Warbling Vireos weave a rough, slightly rounded hanging cup nest.*



*Northern Flickers generally nest in holes in trees like Woodpeckers.*



## Discussion

The results of this study indicate that there is substantial breeding bird activity at GMR. Confirmed breeding activity, including nests with young, have been observed in all sections included in the study. The area that had the most breeding activity and diversity was Section 1, the area around Barbour's Pond. The significant amount of breeding activity around Barbour's Pond highlights the importance of having a well-vegetated shoreline.

The substantial number and diversity of the breeding observations throughout multiple sections of the park show the importance of maintaining the bird habitat throughout GMR. Of critical importance is the maintenance of as many native plants as possible. Native plants attract more insects, which birds require to feed their young, than non-native plants. For example, there were several sightings of Brown Thrashers near the native plant butterfly garden. The Brown Thrasher is a Species of Special Concern<sup>iii</sup> that is a confirmed breeder at GMR. A Thrasher appeared inside the garden on multiple occasions picking through the dry leaves at the edge of the garden fence. A fledgling Thrasher came by the garden entrance. And a pair of Thrashers enjoyed serviceberries on the newly planted trees behind the garden. These sightings underscore the importance of designated native plant areas at GMR.

The Division of Fish and Wildlife maintains the New Jersey Endangered and Threatened Wildlife list and defines Special Concern as follows:

*"Special Concern: Applies to species that warrant special attention because of inherent vulnerability to environmental deterioration or habitat modification that would result in its becoming threatened if conditions surrounding the species begin or continue to deteriorate. Factors that can lead to classification as special concern include, but are not limited to, species rarity in the State, highly specialized food and/or habitat requirements, low reproductive rate, isolated populations of the species within the State and/or other characteristics that make the species particularly susceptible to environmental or habitat changes. This category includes a species that meets the foregoing criteria and for which there is little understanding of its current population status in the state."*<sup>iv</sup>

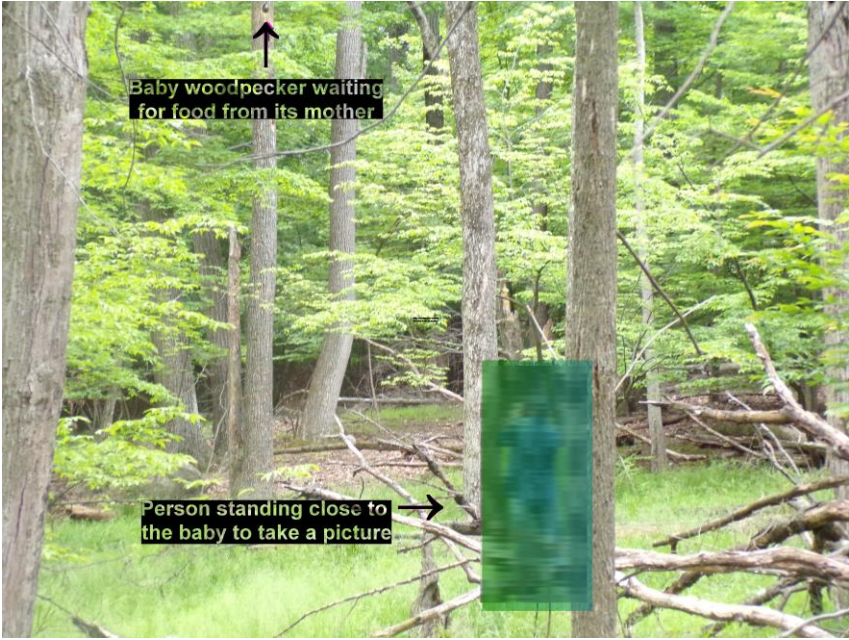
The Brown Thrasher is a fox red colored bird. It sings beautifully and, like the Northern Mockingbird, imitates other birds. It spends much of its time on the ground preferring dense thickets and shrub areas within deciduous forest clearings and edge. They nest in low trees or thorny shrubs. The Brown Thrasher has been experiencing declines in its population likely due to habitat loss. The Wood Thrush, another NJ Species of Special Concern, is known for its magical flutelike songs. The destruction and fragmentation of forests are major factors in its decline. They are also vulnerable to nest parasitism by Brown-headed Cowbirds, which lay their eggs in other birds' nests. The Wood Thrush is a confirmed breeder at GMR (Sections 1 and 3). Although breeding status has not been confirmed, two other species of concern are the Black-throated Blue Warbler, which was observed in section 4, and a Great Blue Heron at the adjacent reservoir. Both were seen in late May.

Each of the different species of birds in the survey results is remarkable. A few examples are described below. The Yellow-Billed Cuckoo and the Red-eyed Vireo are long-distance migrants that winter in South America and breed in North America. The American Robin is abundant in North America and, indeed, a large number nested at GMR. They have an amazing ability to forage and thrive in almost any habitat. Red-tailed Hawks

usually put their nests in the crowns of tall trees where they have a commanding view of the landscape. The GMR hawk nest was easily visible from the basalt cliffs that make the park a National Natural Landmark. Male Eastern Screech-Owls maintain and defend multiple nesting sites. During mating season, they store food in each of them and the females choose a particular nest. Black-Capped Chickadees don't have the same type of strong bills as woodpeckers, yet they can manage to drill their own nest cavities in the rotten wood of old trees. Inside the tree, they build a soft nest made of animal fur or moss. Wood Ducks, stunningly beautiful waterfowl, also nest in cavities in trees near water. Shortly after hatching, the Ducklings jump down from the nest tree and make their way to water.

There were several other interesting unofficial observations. In the section of the map that was not surveyed and is highlighted in yellow, a pair of Wood Thrush were seen in the forest near a wet area at the bottom of a rocky cliff. A Brown Thrasher was also seen in that section flying into small tree in a brushy area near a rock outcrop. An Indigo Bunting was seen singing from an area of small trees by the Crow's Nest overlook. In late May, a Chimney Swift was seen drinking from New St. Reservoir. And in late June, a pair of Belted Kingfishers were observed in suitable breeding habitat at Rifle Camp Park. Two fancy Rock Pigeons were observed several times at GMR. In the later observations they did not appear to be doing well. Pet birds generally do not survive in the wild, not having learned the required skills to find food and stay safe from predators.

Birds already face numerous challenges for survival including habitat loss, climate change, and invasive species. It is not uncommon for nests to fail or for chicks to not survive. For example, at GMR a Pileated Woodpecker family started out with five members including two parents and three chicks. However, the father disappeared, and it was called into question whether the three chicks fledged successfully. The exact cause of the father's disappearance is undetermined. Birds sometimes abandon nests or die from natural causes. But it's possible for human factors to contribute to their failure as well. It's important to give them their best possible chance of survival by limiting potential additional complications for them. Members of the public often congregate around and get too close to certain nests. Parent birds may delay feeding when people are too close to the nest, either due to fear or instinctive reluctance to draw attention to the nest by returning to it. According to the National Audubon Society, "The consequences of getting too close to a nest can be severe. Birds can abandon nests if disturbed or harassed, dooming eggs and hatchlings. Less obvious, repeated human visits close to a nest or nesting area can leave a path or scent trail for predators to follow."<sup>v</sup> The picture on the next page shows an individual off path and close to a nest at GMR:



Another potential hazard for breeding birds is fishing line. Birds sometimes use fishing line and netting fragments as nesting material, which can lead to entanglement of both the parents and chicks. A Kingbird's nest(left) and a Robin's nest(right) are shown below.



## **Recommendations for Breeding Birds:**

### **Improve Shoreline of Barbour's Pond**

Since the most diverse and abundant breeding activity took place around Barbour's Pond, it is recommended to plant, maintain, and preserve the existing native trees, grasses, and shrubs along the riparian edge of the pond to provide food and critical habitat for many bird species.

### **Plant and Protect Native Plants**

- Plant and protect more native plants throughout GMR.
- Consider large scale restorations projects such as the recent restoration project done at Teaneck Creek Park.<sup>vi</sup> This type of restoration could benefit the wet area at the north end of Barbour's Pond or the area behind the boathouse.
- Create additional enclosure areas, such as a sunny meadow enclosure, for plants that require direct light. Breeding birds will benefit from the insects attracted to a meadow enclosure.
- Continue to manage the existing deer enclosure by planting natives and removing invasives.

### **Install Nest Boxes**

Install nest boxes at GMR, which could benefit birds such as owls, Bluebirds, Wood ducks, or Tree swallows. Different species prefer specific sizes and placement of the boxes.

### **Promote public awareness**

- Create a nest display to show the variety of nests found at GMR to the public.
- Encourage the public to stay on the paths at GMR and install signage.
- Educate the public that when encountering a breeding bird, it's best practice to quickly take a few pictures from a distance away, and then keep moving along. Also, being discreet when sharing pictures on social media helps prevent crowds from disturbing the nesting birds.
- Install signage around the pond reminding anglers to dispose of their lines properly.
- Create a fishing line recycling program, installing boxes in which to place discarded fishing line.

### **Protect Trees**

Avoid cutting down trees during breeding season. Thoroughly check trees before doing maintenance or wait until the late fall, after the nesting season, to do tree work. Preserve trees with holes/cavities to provide nesting sites for cavity dwellers such as Woodpeckers, Owls, Wood Ducks and Chickadees.

### **Leave Fields and Leaves**

Assign specific fields in the park to remain un-mown and allow leaves to remain on the ground in designated areas. This would support a more diverse and robust insect population on which breeding, migrating, and wintering birds could feed.

### **Remove Invasive Water Plants**

Remove invasive plants, such as European Water Chestnut, from open water. This will keep Barbour's Pond from becoming choked with invasive plants and will best support a diverse insect population on which birds and fish can feed.

### **Preserve Open Water and Natural Areas**

Keep an open body of water at New Street Reservoir. The additional open water attracts a variety of bird species, many of which do not frequent Barbour's Pond, and it also supports insect populations for feeding birds. Efforts should also be made to preserve additional open space, including undeveloped woodlands, cliffs, and natural areas adjacent to GMR and Rifle Camp Park.

### **Recommendations for Future Surveys**

Going forward, annual surveys would be helpful for recording and tracking changes in the breeding bird population. If possible, survey Rifle Camp Park and all of GMR, including the area that stretches down to Route 80. Extend the survey for the entire breeding season.

### **Conclusion**

Garret Mountain is truly a green clifftop oasis amongst the surrounding towns and cities. Indeed, it is legendary for providing a critical rest-stop for hundreds of migratory songbirds.

But for many birds, GMR is not merely a stopover point, but also breeding habitat. As shown in the survey results, the extent of breeding activity present at GMR is substantial. Further developing and maintaining habitat at GMR would help existing breeding birds and encourage even more biodiversity in the future. Maintaining habitat to support birds also benefits the entire ecosystem. For example, the Oak trees that support birds also support many caterpillar species, squirrels, and other animals. And birds themselves play a direct role in maintaining a healthy ecosystem, distributing seeds, and helping to control insect populations.

"Since the 1970s, the continent has lost 3 billion birds, nearly 30% of the total, and even common birds such as sparrows and blackbirds are in decline."<sup>vii</sup> Preserving and improving quality habitat, such as that found at GMR, is critical to stemming this decline and supporting bird populations now and in the future. The Kingbird shown on the title page photo showed up this spring after making a long journey from South America. The chicks began their lives here at Garret Mountain. It is incredible to think that if all goes as planned, they will make their first migration south in the fall to spend the winter eating fruit in the Amazon Rainforest. And, hopefully, the cycle will repeat. They are birds of Garret Mountain and birds of the Americas, who matter not only locally but for the entire western hemisphere.

<sup>i</sup> (n.d.).NJ Audubon in cooperation with National Audubon Society and the NJ Endangered Non-game Species Program.Important Bird Areas Garret Mountain.Audubon. Retrieved 2022 Aug. 7 from <https://www.audubon.org/important-bird-areas/garret-mountain>

<sup>ii</sup> (n.d.).National Audubon Society, Important Bird Areas- New Jersey, Retrieved 2022 Aug. 7, from <https://www.audubon.org/important-bird-areas/state/new-jersey>

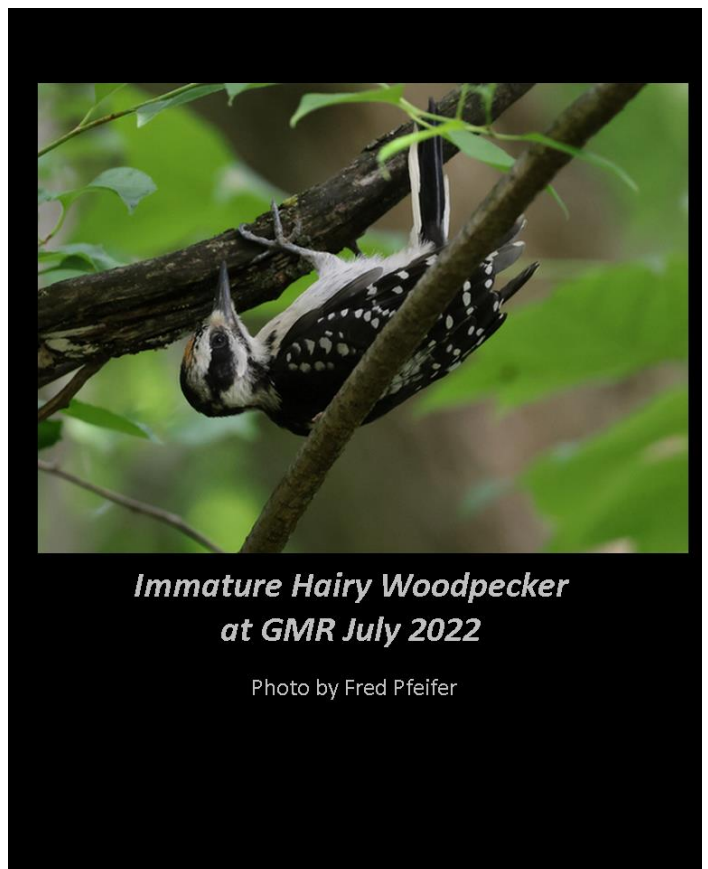
<sup>iii</sup> Clark,K. (2020, March 18). SPECIES STATUS REVIEW OF LAND BIRDS AND WATERBIRDS.New Jersey Department of Environmental Protection Division of Fish and Wildlife Endangered and Nongame Species Program. [https://dep.nj.gov/wp-content/uploads/njfw/land-water\\_birds\\_rprt.pdf](https://dep.nj.gov/wp-content/uploads/njfw/land-water_birds_rprt.pdf)

<sup>iv</sup> (2012,February,21). New Jersey Department of Environmental Protection Division of Fish and Wildlife Endangered and Nongame Species Program. NJ Endangered and Nongame Species Program Special Concern – Species Status Listing.<https://www.nj.gov/dep/fgw/ensp/pdf/spclsp.pdf>

<sup>v</sup> Lund,N. (2017, June 9). Birdist Rule #28: Know When Birds Think You're Too Close to Their Nests.National Audubon Society. <https://www.audubon.org/news/birdist-rule-28-know-when-birds-think-youre-too-close-their-nests>

<sup>vi</sup> Stoltz, M.(2020, September 1).Teaneck Creek Park undergoing \$5.6 million restoration project.northjersey.com.<https://www.northjersey.com/story/news/bergen/teaneck/2020/09/01/teaneck-creek-park-nj-undergoing-5-6-million-restoration/3449914001/>

<sup>vii</sup>Pennisi,E. (2019, September 9). Three billion North American birds have vanished since 1970, surveys show.Science. <https://www.science.org/content/article/three-billion-north-american-birds-have-vanished-1970-surveys-show>





*Fledgling Brown Thrasher  
near the GMR Butterfly Garden  
June 2022*

*Photo by Fred Pfeifer*



***American Robin Family at GMR July 2022***

Photo by Fred Pfeifer