

# Listen to the (Northern) Mockingbird

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One of my oldest memories involves Northern Mockingbirds. I was three or four years old, and I had walked out into my yard carrying our cat. In a flash, I was dive-bombed by mockingbirds, which flew down so close to my face that they almost touched me. My mother explained that they were upset by the cat, but I doubted her explanation since the birds continued to attack me even when I went out without the cat. My mother said this was because mockingbirds have good memories. I was most eager to grow up, since the birds never seemed to attack my elders. Perhaps their larger size was intimidating. Young ones are quick to note the advantages of being large.

Older family and friends often called attention to the mockingbird's song. My aunt swears that some years before I was born, one of the local mockingbirds used to repeat the melody of an etude by Chopin that she was fond of playing. All the adults would remark about how happy the birds sounded. After a bad dream, if I woke in the middle of the night, I often heard them singing. I wondered why they should be so especially happy in the middle of the night.

There are two other outstanding mockingbirds in my history:

The first was a bird in Mount Auburn Cemetery in Cambridge that copied the songs of other species quite literally. By this time in my life, I could recognize many bird species by their songs, but when one hears a mockingbird mimicking these songs, one normally hears extreme liberties being taken with the basic themes. Not so for this bird. That year we warned many birders not to identify birds by song when they were near the wet dell. With extreme concentration to detail, it was usually possible to detect slight differences in the mockingbird's version, but it did require a real focusing on the overall timbre of the sound. The thematic pattern was quite accurate. We began to regard this bird as a herald of recent changes in the local avian population. On the date that Scarlet Tanagers arrived, he would already be singing their song. Some days he would sing a new song, and frustratingly we could not yet find that species. All of us remained baffled about one song, however, when one morning the bird let out the *Kick, kick, kick, kiddick, kiddick...* of a Virginia Rail. We wondered whether this mockingbird was in any way more successful in excluding the various species he was mimicking from his territory by virtue of his greater accuracy in rendition.

The second outstanding bird was one that lived in the shrubbery around Brookline High School and its neighboring houses. In the spring there was often an American Kestrel that would pass a few days with us at the High School, and the kestrel would chase the mockingbird once or twice each day. The reaction of the mocker was to dive into the thickest shrubs, and then, safely ensconced inside, he would belt out the kestrel's own call. But he never succeeded in forcing the kestrel out of his territory.

It's time to drop my pretense. The facts above are all true and properly stated, but I have deliberately attempted to lure you into interpretations of these facts that are at best quite unlikely, if not entirely wrong. Here is the real story:

Both male and female Northern Mockingbirds sing, and they sing in both spring and summer (February - August) and then again in the fall (late September - early November). They occasionally sing even in the winter. The biggest surprise for me was that the spring and fall repertoires are thought to share only 1 percent of the various song types. Moreover, the repertoires vary from year to year, even though they continue to grow. The birds keep, at a minimum, from 35 percent to 63 percent of the song types from year to year.

The female tends to sing very softly, with a smaller repertory in the spring. At this season she sings only when the male is off territory. In the fall, female song varies from individual to individual, according to her plans for a winter territory. If she sets up her own separate territory, she sings loudly and forcefully. If she joins with her mate in maintaining a common territory, she sings less frequently, for a shorter period, and with fewer constituent melodies.

Two of the four calls of the Northern Mockingbird are the ones you surely will know: the chat call and the chatburst. The first is explosive, short, loud, a broad spectrum of tones all together. It is typically the first sound made in the morning, and it seems to spread from mockingbird to mockingbird.

In joint defense of a common territory in the fall, the two birds wander around over a larger area than they claimed in the spring. In this season, conflicting territorial pretensions are likely to evoke chatbursts (a series of 2-8 chat notes, separated by only 50 milliseconds). This is the common vocalization used against territorial intrusions by nonneighboring conspecifics. (Neighbors fairly often sneak into each other's territories to gain access to abundant sources of fruit.)

I could find nothing specific in the literature about fall song for the male, so I spent time this past year in Dorchester with the window open, even after the temperature had dropped. The male's fall song seems to be constructed out of many different song types, all of which resemble alarm calls or other calls of local species. In simple terms, in the spring the male sings mostly songs of other species, in the fall he sings mostly their calls. Most constituent elements of the vocalizations are shorter in the fall, and so I rarely could pin down exactly which species the male was mimicking. It all sounded rather birdy, and not very recognizable.

In the spring, many of the song types will be derived from the advertising songs of other species in the immediate vicinity. Listen carefully, and you should have no trouble hearing the song of Eastern Kingbirds (morning song), American Robin, Tufted Titmouse, Northern Cardinal, Carolina Wren, White-breasted Nuthatch, etc. Several studies have discovered no relationship between intrusions into the territory by birds of other species, attack frequency by mockingbirds, and dietary overlap. In addition, there are few data and little compelling evidence to argue that the spring or fall songs are directed *against* birds of a different species. Ornithologists conclude

that Northern Mockingbirds do not maintain interspecific territories, i.e., they make no effort to prevent individuals of other species from entering their territories. (There is one notable exception here: Northern Mockingbirds repel Cedar Waxwings from fruiting trees in their territories and occasionally even kill them [Hedrick and Woody 1983].)

Males sing from the tops of isolated trees, from concealed perches in the trees, on the ground, in flight, during the flight display, while foraging, with food in their mouths, even while copulating. Males have not been heard singing from a completed nest as vireos do, although they occasionally sing from the nesting site at a low volume when the nest is first started. Males that have the greatest versatility (variety) and the shortest length for individual song types are the ones most likely to attract mates and begin nesting. Younger males may have only about 45 different song types; older birds often have over 300 different types in their repertoires.

The individual song types are acquired from the songs and calls of other birds (including other mockingbirds), the sounds of nonavian species, and mechanical sounds (so much for Chopin melodies). They also incorporate the calls of their own young into their repertory (or perhaps they remember these calls from their own youth).

Derrickson (1988) studied the variability in repertory over time, relating it to stages in the nesting cycle, behavioral situation, and individual. All of the versatility measures varied synchronously (over time), and they all increased from year to year. It was noted that approximately 25 percent of the song types were heard only once (as was the case with the Virginia Rail imitation in Mount Auburn). "I tried that song, didn't like it." Bout length (the number of times that an individual motif is repeated before switching to a new theme) increased over time, peaking during the time when the offspring were fledging. One could speculate that this has to do with the necessity of teaching the young birds a minimal list of song types. The recurrence interval (number of intervening bouts before an abandoned song type is again repeated) was shortest during patrolling bouts and while countersinging with other males, longer during the nesting and fledging stages, and longest during the courting stage (Derrickson 1987).

In summation, the most accurate metaphor I can think of to explain male mockingbird song is that he is serenading his mate. Although he may sing in response to other stimuli, he does not do so consistently, nor will he employ as large a repertory.

Mockingbirds usually produce more than one brood of offspring per year (occasionally up to four broods in some places, but presumably not so many in New England). The broods overlap in timing, i.e., the male will be feeding one brood, while the female incubates a second clutch of eggs. Occasionally, a male will acquire a second mate. If a male neighbor dies, for example, it is common for the male survivor to incorporate the neighbor's territory into his own, taking over responsibilities for the other female. Also, if a male possesses an unusually large territory of his own at the outset in the spring, then infrequently a second lone female

will appear, which the male courts. He will choose a nest site for her on the outskirts of his territory (as far as feasible from the already resident female) (Derrickson 1989). Thus, lone unmated females are essentially nonexistent among Northern Mockingbirds. If a researcher removes a female from the pair, there is no ready replacement, and the male normally remains unmated for some time.

The bigamous practices of some of the males, together with a sex ratio biased in favor of more males, means that there will often be an unmated male in our neighborhood. An unmated male shows his eagerness to find a mate by singing at night, most frequently from midnight to four o'clock. The bird is definitely not "happy." Since singing is related to light intensity, birds living in artificial environments that have extra lighting sing more at night. This is mainly true for unmated males, but occasionally, if the light is bright enough, mated males will also sing. The same is true for the nights immediately before, during, and after a full moon. An unmated male projects his song in many different directions, but often outward from his territory, as if broadcasting for any possible available female. Mated males project their songs more frequently into their own territories.

It remains to discuss the attack on me and my cat. Surely it is possible that the attack on the two of us was indeed triggered by the cat, especially since I was holding her a few feet up, more nearly at the level of the possible nest, and surely this was the most intense of the assaults I endured. Sprunt (1964) remarks on the tendency of Northern Mockingbirds to "bedevil" cats and dogs, with repeated dive-bombing and very close approach. However, some ornithologists question whether this is serious nest defense or possibly a form of play, attacking animals of the right size that are not normally successful predators against them and their young. A more important point is that the attacks on me may well have been triggered before the cat incident. Possibly I ignored the bird's protests until they reached a certain level of intensity. Adult birds certainly learn individual humans who repeatedly enter their territories. They will selectively attack these humans who seem to be potential predators, while completely tolerating other humans who enter the territory less frequently or who seem to pose less of a threat. Merritt (1984) discusses this case and notes that you can put yourself on the enemy list by approaching the nest much too closely, or approaching it when the fledglings are in it or nearby. He was able to get off the enemy list of one pair of birds by wearing a hat. Presumably adding a crest to your plumage makes you a different individual (species?).

Trying to develop information about the song habits of birds with such large repertoires is truly energy-intensive. Most of the researchers in this area have examined many hours of song, but their attention has been directed to very few individual birds. Do you have Northern Mockingbirds in your neighborhood? Are you able to distinguish (at least the common) species by song and call? If not, try learning the songs of your resident species, one or two at a time, and while you are at it, listen for the variations of that song within mockingbird serenades.

Remember that mockingbird songs have motifs that are usually repeated at least two times. The silent spaces between the repetitions of the motif are much shorter

than the spaces between these motifs. You should certainly experiment with transcribing the melody. In his new book, *Sibley's Birding Basics*, David Sibley devotes ten pages (Chapter 8) to material relating to song. He demonstrates a simple way of turning their songs into squiggles; pauses are naturally shown as spaces in the overall pattern. You do not need the speed of a shorthand stenographer. Mockingbirds repeat individual song types several times; you can simply append a number to your first drawing of the type.

Oh, yes, one last thing: I have dispersed 1800 miles from my natal territory, grown gray (Definitive Basic plumage), and become quite large, but my local resident Northern Mockingbird still attacks me. 🐦

## Sources

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The Introduction section of this article reviews other hypotheses concerning possible functions of mockingbird song. Intersexual attraction as a primary function of singing is widely viewed as the most likely explanation of the function of song, but it has not been verified as the only function to the exclusion of all other possibilities.

Derrickson, K.C. 1989. Bigamy in Northern Mockingbirds: Circumventing Female-Female Aggression. *Condor* 91 (3): 728-31. [Now available over the Internet at <http://elibrary.unm.edu/Condor/>]

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This is by far the best short and general treatment of the species. Much of the material above can be found in this text, together with the references to the original research covering the individual facts.

The fascicles of *The Birds of North America* typically are extremely clear and stylish; they are comprehensive in coverage; and they can function almost as an annotated bibliography. Some town libraries have purchased the series. You should try to locate a copy near you so that you can learn more about the species that interest you. If your local library does not own a set, perhaps you could persuade them to add it to their collection.

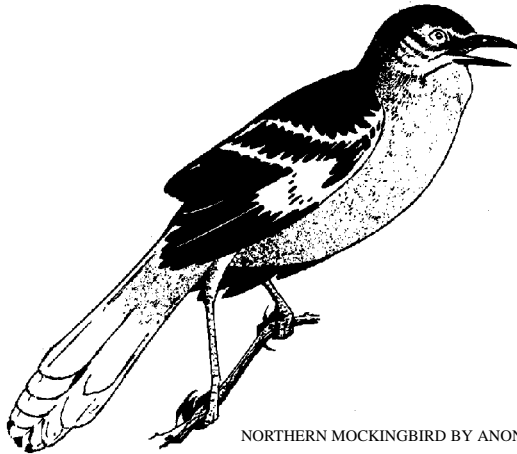
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EDITOR'S PAGE

NEW NAMES

As you will notice in the compilation in the April Summary, we are using the new names adopted by the thirty-second supplement to the American Ornithologists' Union Check List of North American Birds. A more detailed account will be published in a future edition. In brief, the following changes have been made:

Wilson's' Petrel	becomes	Wilson's' Storm Petrel
Common Egret	"	Great Egret
Widgeon	"	Wigeon
Shoveler	"	Northern Shoveler
Common Scoter	"	Black Scoter
Pigeon Hawk	"	Merlin
Sparrow Hawk	"	American Kestrel
Upland Plover	"	Upland Sandpiper
Yellow-shafted Flicker	"	Common Flicker
Traill's Flycatcher	splits	(Willow Flycatcher "fitz-bew"
		(Alder Flycatcher "fee-bee-o"
Catbird	becomes	Gray Catbird
Myrtle Warbler	"	Yellow-rumped Warbler
Baltimore Oriole	"	Northern Oriole
Slate-colored Junco	"	Dark-eyed Junco