

## Q and A CORNER

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*Editor's Note: This is a new feature which I hope will appeal to Bird Observer readers and serve to generate further discussion of topics covered in recent issues. The idea was suggested by a subscriber whose question is featured here. And Chris Neill has graciously provided our first answer. Your further contributions will be welcome.*

### **To the Editor:**

I would love to question Christopher Neill, author of the fascinating June article about coyotes [Coyotes and the Food Chain, *Bird Observer* 32 (3) pp 172-3], about whether the studies he cites considered the effect of coyotes on large ground-nesting birds — specifically the “chickens.” We live on 67 rural acres of mostly pine woods. When we moved here in 1985, the Ruffed Grouse population was sizable but has been obviously declining in recent years. The number of mesopredators seems not to have changed substantially, but coyotes have recently moved in, to which we had been attributing the decline.

Bob Boehm  
Gallupville, NY

### **Author's response:**

Coyotes have been blamed historically for many things. Where I live on Cape Cod, for example, I have heard birders cite increasing coyote numbers as the cause of the decline of Northern Bobwhites during roughly the same time period. Cape Cod Christmas Bird Counts in the 1960s often tallied more than 200 Bobwhites, while counts since the late 1990s typically record less than ten. However, linking those changes, or the changes in Ruffed Grouse numbers that Mr. Boehm sees near his home in New York, is much more difficult to document.


Do coyotes depress numbers of large ground-nesting birds such as grouse or quail? Answering this question definitively in any specific location is difficult for a number of reasons. First, coyote populations are hard to measure and have been documented in relatively few places. They have large home ranges, travel long distances, and are often visible, making it appear populations in developed regions are higher than they are. Second, New England's suburbanizing landscape has changed dramatically in recent decades. During the period of bobwhite decline on Cape Cod, the human population tripled, from 70,268 in 1960 to 222,230 in 2000. The number of new houses and land converted from fields and woodlands to residential and commercial uses has increased at an even faster rate.

Second, coyotes interact with medium-sized mammalian predators and birds in different ways. Kevin Crooks and Michael Soulé, whose paper in *Nature* I cited in my article, found that the presence of coyotes in southern California chaparral fragments

was associated with lower numbers of opossums, raccoons, gray foxes, and domestic cats, but not of striped skunks. Songbird diversity was higher where coyotes were present and numbers of mesopredators were lower. In the prairie pothole region of North Dakota, Doug Johnson, Alan Sargent, and Raymond Greenwood found that coyotes excluded red foxes, which are very effective predators on duck nests. Marsha Sovada, Sargent, and James Greier compared duck nesting success in areas where foxes or coyotes were the principal canid predator, and found that duck nesting success was double (32% v. 17%) in areas where coyotes dominated. They went so far as to argue that duck nest success throughout that region would be improved by encouraging expansion of the coyote population.

There are also examples where coyote predation leads to direct reduction of bird populations. The most convincing examples occur when coyotes are present on islands. A long-term study of Canada Goose populations in the Hanford Reach of the Columbia River showed that counts of goose nests declined when coyotes were consistently present on historic goose nesting islands. On Monomoy Island, Massachusetts, the U. S. Fish and Wildlife Service has removed coyotes that colonized the island refuge because they pose a threat to nesting terns and Piping Plovers.

There are currently no published data that I am aware of from the eastern United States that relate coyote presence or abundance to the numbers of Ruffed Grouse, Northern Bobwhites, or any other bird species. We now recognize that trophic cascades among top carnivores, mesopredators, and birds can have important implications for bird conservation. An attempt to sort out the complex effects of historical land use, forest fragmentation, the abundance of native and introduced mesopredators, and trends in populations of different bird species would be an excellent subject for a doctoral dissertation for an enterprising graduate student who shares Mr. Boehm's curiosity about the forces that drive changes in bird populations. I have no doubt that the large amount of data on bird populations compiled by amateur birders in the form of Christmas Counts, Breeding Bird Surveys, and other systematic counts will make a significant contribution to that future research.

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