



*Michigan
Fox Squirrel
Management*

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October, 1943

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Game Division Publication 100

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by

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With 212 illustrations, including photographs by the author and others and 28 drawings by Oscar Warbach.

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Lansing, Michigan



It is simple to explain it in this way—possibly too simple. Three-quarters of a century later we are not troubled by the same complexities which plague a first-hand investigator. But periodic migrations to relieve overpopulation have been observed among other animals (24, 80) and this is the logical explanation of the gray squirrel movements.

Early decline of the black squirrel

For some unknown reason, the proportion of black to gray squirrels conspicuously decreased after the coming of the white man to the midwest. Kennicott (64) stated that originally there were places in Illinois where the squirrels were all black, although this was rare. In 1869 Rufus Haymond (54) recorded that "The black squirrels were common—forming about one-third of the total number of squirrels in southeastern Indiana at the period of first settlement. Now they have completely disappeared." In accounting for this phenomenon, Hahn (49) considered hunting to be an important factor: "In other states, also, it has been found that the black squirrels are the first to disappear. This is no doubt due, in part, to the fact that they are more conspicuous and are therefore killed off more quickly. It is possible, also, that they are, in a way, abnormal and lack the vitality necessary to continue their kind under adverse circumstances. In southern Porter and northern Jasper Counties in 1905, the black or partially black squirrels were nearly as numerous as the gray."

Regardless of the cause, there is evidence that in Michigan, also, the black color phase of the gray squirrel was plentiful in the early days and disappeared more rapidly than the light phase after forest clearing and heavy (?) hunting began. Under the direction of Conservation Commissioner Harold Titus, the Michigan writers project of the Works Progress Administration collected kill records, estimates, and recollections on Michigan game species from older residents in every part of the state. Three reports from Eaton County deal with black, gray, and fox squirrels killed from 1866 to 1915. All show the trend in the yearly bag from black to gray and from gray to fox squirrels as the timber was cleared and the country became more settled. Probably some of these records are only estimates of the relative numbers of black, gray, and fox squirrels killed in some years, but their agreement is so striking that there

is no reason to doubt their general significance. In fig. 3 the kill reports of three long-time residents of Eaton County are lumped,



and the percentages of black, gray, and fox squirrels in the total annual bag are plotted. These reports cover a total (presumably in part estimated) kill of 4,168 black, 1,357 gray, and 1,148 fox squirrels over periods of 38, 19, and 51 years respectively for the three hunters. From these records, it appears that in Eaton County black squirrels predominated in the days before extensive clearing operations. In the eighties, black squirrels were definitely on the decline, and the gray phase

predominated. Fox squirrels were becoming numerous enough to figure conspicuously in the kill at this time. By the end of the century, black squirrels had practically disappeared in the county, and grays were also diminishing. There are statements in Appendix B from observers in the southern counties which bear out the trend shown in these records. In the northern half of the lower peninsula black squirrels fared better, and in some forested areas they at present far outnumber the grays.

This evident lesser ability of the black color phase to survive in the face of civilization was reflected in the Michigan game laws. From 1897 to 1911 all three squirrels were included in the regulations on open season. There was no bag limit. In 1911 the season on all squirrels was closed until 1919 when it was opened on fox squirrels. Gray squirrels were not again legally hunted until 1939, when a restricted area was opened to hunting of the gray, but not the black, phase. There has been no open season on black squirrels since 1911.

The fox squirrel in early Michigan

In contrast with the gray, the fox squirrel does not favor deep woodland. Originally it was a creature of the prairie edge. Its range was the transition zone between the eastern deciduous forests and the prairies. Oak-covered ridges, which represented the western outposts of forest in Illinois prairies, and "oak openings" which were the eastern vestiges of prairie in the woodlands of northern Indiana, Wisconsin, and southwestern Michigan, were its favorite habitat (64). Thus it is easy to understand why the fox squirrel

SQUIRREL KILL OF THREE EATON COUNTY HUNTERS - 1866-1915

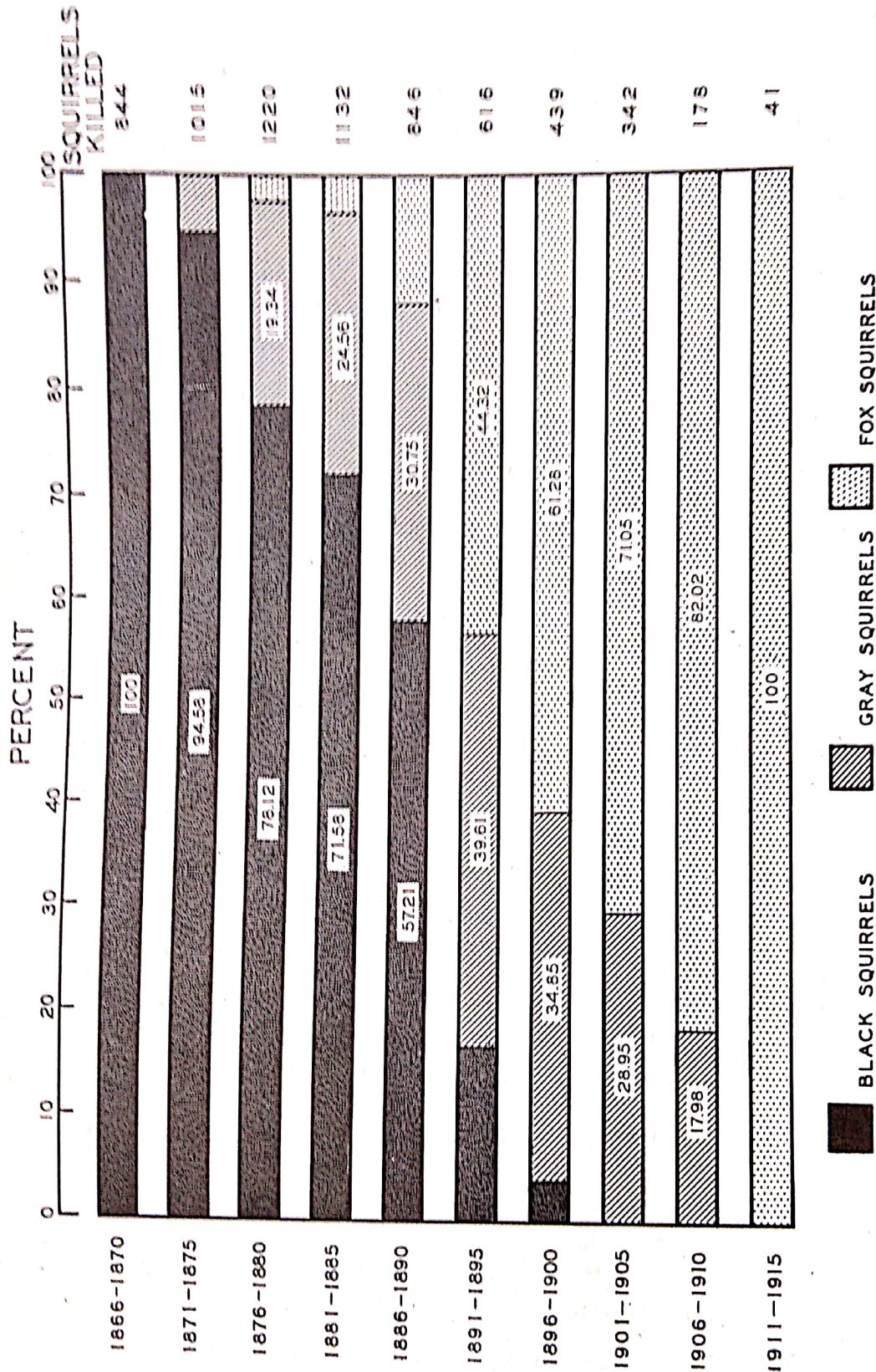


Fig. 3. In the midwestern gray squirrel population a century ago a high proportion of the animals were of the black phase. It was first noted in Indiana that the clearing of the forest and hunting resulted in a decrease in the proportion of black squirrels and an increase in gray-phase animals. Many reports indicate that the same thing took place in Michigan, and the squirrel kill of three Eaton County hunters, as given to the writers project of the Works Progress Administration, illustrates the trend. The hunters and the period for which they reported are as follows: Scott Boyer, 1866-1915; Savey Goodrich, 1875-1893; Benjamin Darwin, 1870-1907. There undoubtedly were some gray squirrels in the population, although in the first 5-year period Mr. Boyer did not report killing any in the locality where he hunted. By 1895 black squirrels were rapidly disappearing in southern Michigan, and the gray phase was also declining.

has been evident in these studies that pheasants are cropped for the most part early in the season and that hunting of that species is subject to rapidly diminishing returns as the season advances.

This does not appear to be true of squirrel hunting. Owing to the competition of pheasants for the hunter's attention, squirrels do not have the heavy first-day hunting that the birds experience. Hunting is more uniform and the yield of squirrels also quite uniform, being maintained to the end of the shooting period. In the case of the pheasant, adding a week to the season would mean few more birds killed. This same measure applied to squirrels would raise the kill considerably.

There has been some consideration of an extension of the pheasant season to 30 days. There is no doubt that these birds could easily sustain another week of hunting. But until more is learned on the subject, it appears prudent to leave the squirrel season as it is. There are doubtless many areas where another week of squirrel hunting would not result in overshooting, but in others it might. It is apparent that, in the case of squirrels, regulating the length of the season is a good way to regulate the kill. And from the data now at hand, the 22-day season from October 15 to November 5 is of a satisfactory length, and it comes at the proper time.

Bag Limit

The Michigan bag limit on game squirrels is 5 per day, 10 in possession, and 25 for the season. This regulation is now the same as when the first bag limit for squirrels was declared in 1921. It applies to fox squirrels, grays, or both combined. The majority of hunters appear to be satisfied with this limit and for the present it probably should be left as it is. Eventually season limits probably will be discarded. They can not be enforced, and few hunters exceed them anyway.

Regulations on Gray and Black Squirrels

From 1911 to 1939 neither gray nor black squirrels were legal game in Michigan. But this species became plentiful in the northwest counties of the lower peninsula, and this region (see map, p. 64) was opened to the hunting of the gray phase in 1939.

During recent years gray squirrels have also "come back" conspicuously where extensive woodlands are developing on southern submarginal areas. In some regions, distinguishing between gray and fox squirrels became a problem to hunters and Conservation Officers. As a result of this situation, in 1941 the entire lower peninsula was opened to the hunting of both gray and fox squirrels, although this did not include the black phase of the gray. There is no apparent reason why this general open season should not be retained.

The question is now arising in some northern districts whether or not an open season on black squirrels is justified. There is no doubt that many blacks are shot each year, being mistaken for legal game. There are now many places where they are periodically abundant and where they outnumber the gray phase. In these areas this animal could support at least an occasional open season. But the distribution of such localities appears to be rather "spotty," and if hunting really was the factor which caused the rapid decline of the blacks (p. 28) in the last century, this might recur.

The black squirrel probably has no peer in esthetic value among Michigan mammals. It may be jet black, frosted or flecked with white, or washed with tawny. Or it may appear to be intermediate between black and gray. Always it is an animal of outstanding beauty and one which should be preserved by any means necessary. Continued favorable conditions may warrant an open season on both phases of the gray squirrel in some counties. It would not be surprising if such were entirely successful. This will need to be done experimentally and evaluated before we will know the "score" regarding our northern black squirrels.

Identification of Game Squirrels

When the entire lower peninsula was opened to gray squirrel (light phase only) shooting in 1941, Conservation Officers were relieved of the necessity for proving the identification of animals in cases of the illegal shooting of grays. Future trends in populations may again call for discrimination between fox and gray squirrels, and it will be well to point out the differences between them.

Color variations in fox and gray

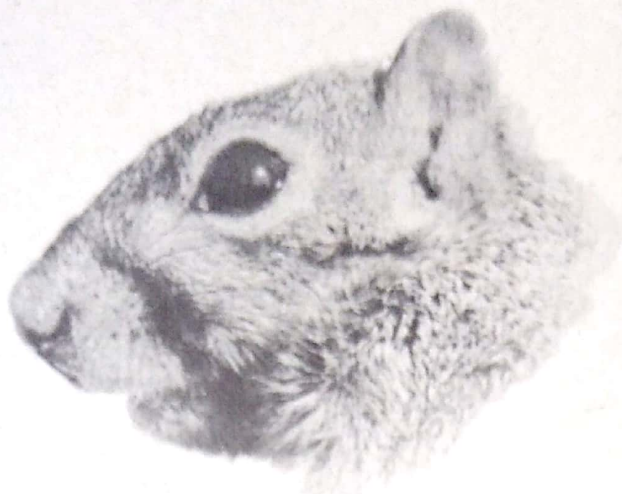
From the standpoint of color, both species appear to be genetically unstable. Fox squirrels are sometimes seen with the belly fur black instead of buff or "orange." This does not represent crossing, but is one of the genetic patterns expressed every once-in-so-many times. Another color phase, which I have not seen but have heard described from different sources, might be called the silver-tailed phase. There is more or less black on the head, and the body is dark on the forepart. The tail is distinctly light and, at least at a distance, silvery in color. Squirrel broods of this general description have been reported from Saginaw, Laingsburg, and Ann Arbor. In 1941, I examined a fox squirrel shot by a hunter in Lapeer County that was rust red and conspicuously different from the normally colored animals shot at the same time.

Gray squirrels are even more variable. The winter pelage is more hoary gray than that of summer, but there are marked differences between individuals. The head normally has much of the tan coloration of the fox squirrel, and there is often a narrow or broad tawny stripe down the back that spreads onto the legs. In southern Michigan the belly fur is usually white, but the Minnesota subspecies of the north usually has a greater or lesser amount of gray and buff-orange. On a specimen from Menominee County now in the museum at Ann Arbor, belly fur is not differentiated at all, the back pattern extending over the underparts. From the same area there is an animal with a gray-squirrel-colored body and a fox-squirrel-colored tail. In the collection of the Rose Lake experiment station, a Lapeer County gray squirrel has a normally-colored body and a rusty tail. Gray squirrels may also show traces or conspicuous areas of melanism. Such animals are, of course, commonly spoken of as "crosses" between blacks and grays.

Differences between fox and gray

As has been intimated, in rare cases it is practically impossible to prove beyond any doubt that a certain peculiarly-colored squirrel is either fox or gray. I have seen the skins of two such specimens, although more satisfaction might well have been obtained from them in the flesh.

Although such "freak" animals are occasionally encountered, an officer will very seldom be brought a squirrel that he cannot identify if he is well acquainted with the differences between the



Fox squirrel



Gray squirrel



Black squirrel

W. C. Gower

Fig. 130. The longer ear and more rounded profile of the gray squirrel (both color phases) is a good first-sight character for separating the two species.