

## The Raccoon Management Investigation

The Raccoon Management Investigation which was begun here at the Swan Creek Wildlife Experiment Station February 1st of this year is a Pittman-Robertson project. The Pittman-Robertson Act is one passed by congress providing for the payment of ammunition and arms tax money to those states cooperating in the restoration of wildlife. Research projects for determining practicable management methods for game species is one type of project for which expenditures of this money is approved. The raccoon investigation is one of these. The project has been approved by the Biological Survey and is being financed by both state and federal money as provided for in the Act. As originally set up the study is to be carried on for two years. Results of the investigation are made available to both the Survey and the state, reports of progress being turned in quarterly with a final report of the completed project to be made at the end of the two years.

The reason for such a study as this of the raccoon should be evident to all who are in contact with wildlife work in the state. Before we can constructively manage any game animal to aid in its restoration, we must know as much as can possibly be found out about its habits and requirements. The raccoon is one about which we know very little at the present time.

Reports from hunters, trappers and fur-dealers indicate that there have been declines, locally at least, in raccoon numbers in parts of Michigan during the past twenty years. Those who are especially interested in the raccoon from the standpoint of sport, have expressed the opinion that something should be done about present conditions. Consequently it has been decided that the logical approach to the problem of handling the raccoon is to find

out more about its habits and requirements and test out certain management practices experimentally. After this has been done we should then be able to determine more dependably what should be done in the way of management in any given area.

Certain objectives were set up for this study at the beginning. Briefly these are, to obtain information concerning the den situation, the relationship between raccoons and opossums and the value of restocking, and to learn as much as possible about the breeding habits, range, food and mortality of the raccoon. Populations and economic relations are also included in the study.

The den situation is at present a big question mark. Is there a lack of dens limiting the raccoon population? If there is, can we do anything about it? Can den sites be supplied profitably? Is there any way to prevent the destruction of den trees? These are some of the questions which need to be answered. Hunters claim that there is a lack of dens. Many believe that 'coons can no longer find any refuge places and are too easily taken with dogs. This along with the fact that many hunters presumably chop out trees to get the 'coons is believed to be one reason for the decrease in numbers.

In order to obtain information on denning, a rather intensive study of areas supporting den trees is being made. A separate record card is made out for each den when located and measurements and other observations are recorded. To date on two different areas of approximately one quarter section each, twenty-eight and eighteen dens have been located. From the studies so far, it seems that the number of available dens is easily sufficient for the population of raccoons present. In the oak upland only two of twenty-eight dens showed evidence of being used by raccoons, while about one third of those in the lowland showed signs of use. In an effort this spring to

locate young, a large number of dens have also been located in other areas. Every den located is marked with a metal tag and if time allows, other data taken at that time. In all cases the tree can be found later for further observations. Over seventy hollows have been tagged at the present time.

The opossum, favored by few sportsmen, is also blacklisted by the raccoon hunters. Though they perhaps are not just sure how this species affects raccoons, they do know that their dogs are often given a chase by an opossum instead of their favorite quarry. This in itself has probably set many of them against this lowly invader. Data on the relationship between the two are being gathered during the study. Opossums are plentiful on the area, as a large number have been caught in both 'coon and rabbit traps. That it is a prolific species is shown by the fact that litters of as high as eleven have been found in the pouch of a female. Some of these adults carrying young, weigh less than three pounds themselves. Large males weighing up to eight pounds have been taken. So far no serious conflict between the two species has been observed. A number of holes, dug out last winter, yielded several opossums and a number of ground dens now in use by them are known. Further evidence that the opossum is not a competitor for tree dens is indicated by the fact that no evidence of use by them has been found in any of the seventy trees examined so far.

Considerable data on some of the habits of raccoons have been obtained by live-trapping. Catching the animals in this way for marking and handling has been in progress for some time. Preliminary studies prior to the beginning of this investigation as a Pittman-Robertson project were made the past two summers. During that time seventy three raccoons were handled. Although several were taken by dogs at night and one family was taken from a chicken coop near Holland, the rest were caught in the traps. Many of

the animals have repeated in the traps several times so that raccoons were handled approximately 120 times. The traps used for the work are of the box type, about one foot in both width and height and about two feet long. A sixteen guage netting as covering for the traps is necessary to prevent a raccoon from going out through the side. Ear corn and salted, smoked herring or "blind robbins" have been used as a bait combination. The dike running the length of the farm, bayous and ditches seem to be about the best locations for traps. As many as seven raccoons were caught in one night last summer when the young were travelling about. Quite a large number of opossums woodchucks and fox squirrels are caught as well as the raccoons. In order to subdue the raccoons for taking weights, marking and making other observations, I have used a "cone" constructed of a large mesh fox-netting. By letting the animals run into this, one can easily make his observations with little danger of being bitten or scratched if he is careful.

Trapping has shown that adult raccoons are markedly down in weight in spring. Many of both the males and females being caught at the present time weigh only between eight and ten pounds. These animals are thin and will likely weigh about twenty pounds by next fall. During the late summer last year they averaged heavier than those caught now. Young raccoons, when first getting out of the den to help hunt food for themselves in early summer, weigh between three and four pounds. By early September they had reached the six and seven pound mark and some taken by hunters in fall were reported to be twelve and fourteen pounders.

Some very interesting information has been obtained on the distances which raccoons go, from the returns of tags of marked animals in the fall by hunters. The longest travels so far recorded have been those of two raccoons, young of the year, which were taken in the fall approximately eighteen miles from where marked in summer. Whether these two individuals had a touch

of wanderlust not common to others of the species, or whether such long travels are the usual thing is not yet known. However it is known that, in fall at least, they do move around considerably or some of them spread out considerable distances to remain there. Several others on which returns were obtained had gone three, four and five miles from where marked. Still others however, were within one quarter to one half mile of where they had been known to be in summer. Indications are that the young have a greater desire or need to move around more widely than the adults. No returns from old animals have been received from farther than one mile.

It does <sup>not</sup> seem likely that those young raccoons which went nearly eighteen miles would come back to their old home territory to raise their own young. However at least some of those marked last summer have been found to raise theirs in the same locality in which they themselves grew up. Although trapping was resumed in March of this year, very few raccoons were taken until May. This suggests the possibility that they may not become very active until after the young are born. Since about the first week of May, nine individuals have been handled by me fifteen times and Haugen had taken several in his rabbit traps. From examinations of these, some information has been obtained on breeding. Of those handled, seven have been females, three of which were lactating and one was pregnant. It seems that some of the young, but not all, breed their first year. Four, known to be juveniles last year did breed this spring, while three others which appeared to be young of last year failed to do so.

Litters of young 'coons for which records were obtained this spring are four. Observations of these has been limited to the one handling, except for one litter born in captivity, as the young have been moved after discovery in every case. The first two were removed from the den, weighed and marked. The next day they were gone. A third den, located late one

afternoon, contained one deserted young 'coon out of a litter of three the next morning. In this instance the female was not even with the young when the den was first examined. The fourth litter was born in captivity, to a female caught a few days after being bred in the wild. These young are being handled regularly to check on weights and other developments. From the data on these, since the day they were born, it has been possible to make very close estimates as to the ages of the other litters. I believe all were born very nearly during the middle of April. This would make the breeding season come during the first part of February. Young taken in late July last year, weighing about three pounds, check with this. In size the litters numbered three, three, four and five. By using a dog to trail females to their dens, it is hoped that more young can be located yet this year before they leave the dens.

In order to check of food habits, fecal material is collected at dens and feeding grounds. The Ottawa marsh seems to be a good place to collect the scats especially in the fall. Stomachs are also to be collected from hunters.

Raccoons have already been given a chance to try out artificial dens. Last fall forty-four wood duck nest boxes were placed in trees along the bayou. These are one foot square, two feet high and have an opening measuring four and one half inches in diameter. Compared to the dens in which young have been found, these nest boxes should be plenty large enough, if raccoons were inclined to use them. Upon examination of the boxes the first week in May, however, none showed any evidence of use by raccoons. Starlings and fox squirrels were using several and three contained wood duck nests.

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