

# EARLY MOVEMENTS AND HABITAT PREFERENCES OF RELEASED DEER AND TURKEY ON THE BEAVER CREEK AREA, KENTUCKY

FREDERICK C. HARDY, Federal Aid Division, Kentucky Division of Game and Fish

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When species of game with relatively high annual mobility such as white-tailed deer and wild turkey are released in strange territory it is only natural that they will select the most desirable portion of the territory of their range. In the absence of other data, these early preferences must serve as a guide in planning habitat management on restoration or refuge areas.

The Beaver Creek Wildlife Management Area, located in McCreary County on the Cumberland National Forest, is one of four restoration areas stocked with deer in Eastern Kentucky. It is the one area of the four selected for stocking with wild turkey. The Area is typical Cumberland Plateau Mixed Forest. Most of the virgin timber was removed from the tract around 1900. Between that date and the early 1930's the Area was subjected to periodic cutting, frequent fires, and heavy use by domestic livestock. Today large portions of the Area are occupied by subclimax hardwood and pine associations. Present methods of selective cutting, devised primarily to encourage desirable timber species, tend to hold uniformly mixed and dense cover conditions. No turkey and not more than two deer were present on the Area prior to restocking.

During the period from October 1946 to March 1948 forty-nine white-tailed deer and nine wild turkey were released on the area. Releases of the wild-trapped deer and turkey were made a short time following capture on the Kentucky Woodlands National Wildlife Refuge.

## Deer Movements and Indicated Preferred Areas

Following the release of 31 deer in the fall of 1946 sign was seen most frequently in the central old field section of the Area. After February 1, a movement to the lower portion of the refuge was noted. In the late spring and summer months, tracks were numerous near the mouth of Beaver Creek on the Cumberland River. During this period use of the central and upper sections of the Area was very light. Reports of deer outside the Area at locations up to five miles from the boundary indicated a movement away from the Area, both down the river and to the west of the boundary.

In October, a movement into the refuge from the north and west was noted. Food patches planted in the central field section were not used during the fall, but in January and February 1947 wheat fields were grazed lightly. Heavier use of wheat was made in March and April. Sign incidence in the central section dropped sharply in the latter part of April and increased on the Cumberland River.

Preference by deer for the lower one-half of the Area is clearly demonstrated. The central field area seems to receive heaviest use during fall and winter months, while the Cumberland River section is favored for the remainder of the year.

## Turkey Movements and Indicated Preferred Areas

Movements of two turkey hens released in December 1946 and two gobblers released in March 1947 were apparently confined to the central field area and the adjoining Bowman Ridge-Lick Fork Sections. During the summer, no sign of the birds was found until September when two birds were seen in the east-central area and one bird was flushed in the central field section. Five turkeys were released in September and early October. During the period from October 1 to December 31, thirteen turkeys were flushed. Eleven of the flushes were made in the central field area; three were made on Bowman Ridge. All but one of the flushes were made near cleared or old field areas. Evidence of turkey incidence increased during January, February and March. A study of movements during this period disclosed that a flock of from 9 to 14 birds was ranging over the east central-northeast section of the Area and that two birds were confining their movements to the Bowman Ridge-Lick Fork section. Six of 21 separate incidence records were made outside the boundary in the northeast section. Fourteen of the 21 incidences occurred on ridge tops. Sixteen of the 21 incidences occurred in or near old fields. Bottomland fields of sprouting wheat were traversed but were used only sparingly. No use of bottomland fields of cowpens, buckwheat and millet was noted.

The range made up of the central field and east central-northeast sections of the refuge is definitely favored by released turkey. A preference for upland areas during the winter and early spring months is evident.

## Description of Preferred Areas

From the above discussion it is apparent that more frequent habitat conditions for both deer and turkey are found on the lower one-half of the Beaver Creek Area. A comparison of the two halves of the refuge reveals marked differences in vegetative cover. Ninety per cent of clearings and old fields are found in the lower portion. Ridges in the lower section are broader and carry older timber in a more open condition than is generally found in the upper section. The ratio of hardwood to pine in the overstory in the lower one-half is higher.

The northeast section, which seemed to be particularly favored by turkey, is characterized by more clearings and an even higher hardwood-pine ratio than is found in the northwest quarter of the refuge. The operation of several truck mines in the northwest section is an additional factor limiting use of this area by turkey. The northeast section is subject to very little human disturbance. Human activity on the area has apparently had no restraining effect on the movements of deer.

## Management Needs Suggested by Movements and Preferences

The need for habitat improvement on the Area is indicated by movements of released game from the Area. The movement of turkey has been restricted as pointed out above by human activity in adjacent territory. Deer, however, have scattered widely, usually toward settled and more diversified sections.

At least two habitat deficiencies, the paucity of openings and the dense and inferior nature of timber growth, are indicated by movements within the Area and demonstrated preference for particular ranges by deer and turkey. These conditions

can be corrected through proper management. Acreage recommendations for permanent openings must be arbitrary, but a minimum of 10% of the total area in interspersed clearings is probably needed. To provide a more diversified timber cover with a higher ratio of desirable species, revised silvicultural policies will be necessary. In selection, the emphasis must be shifted from single trees to tree groups. Desirable wildlife tree species must be favored in planning timber management as it affects composition.

Since temporary food plots, planted in bottoms to attract initial releases of game, have failed to benefit turkey, future game food plantings should be located both on ridges and in bottoms.

To assure maximum use of all portions of the refuge by turkey, it will be necessary to hold human disturbance to a minimum.

Increased knowledge of early movements and preferences of released game will be of value in selecting new restoration areas as well as in planning the management of established units.