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AN INVENTORY IN 1957 OF THE DISTRIBUTION
OF THE WILD TURKEY (Meleagris gallopavo
silvestris Vieillot) IN THE OZARK
PLATEAU REGION OF ARKANSAS

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The only previous evaluation of the distribution and abundance of the wild turkey (Meleagris gallopavo silvestris Vieillot) in the Ozark Plateau Region of Arkansas was made between 1942 and 1946 (Holder, 1951; Tolar, 1948). That survey, like the present one, came at a time of aroused interest in restoring the wild turkey to the formerly occupied parts of its range. In view of the current renewed interest in restoration attempts it is important to a proper evaluation of the efficacy of the procedures employed to know first the changes in the extant populations during the last decade.

The story of the wild turkey in the Ozarks, although not documented accurately, is a history of declining abundance resulting from the gradual deprecation of the mature forest habitat through excessive lumbering and subsequent agricultural land-use practices. Apparently, this process began before the turn of the century and culminated about 1920, which is both the median and modal year for the disappearance of the wild turkey in the counties where it was completely exterminated (Holder, 1951), and the modal year for the peaks in rural human populations in counties concerned (Metzler, 1940; Tarver, 1950; Holder, *ibid.*). The changes which have produced the current interest in returning the turkey to its former range originated with the beginning of the general exodus in the human population from the mountainous parts of the Ozark Plateau, and simultaneous expansion of the Ozark National Forest. Both of these events were favorable to the rehabilitation of the forested turkey habitat.

This investigation is a part of a cooperative research project jointly sponsored by the Arkansas Game and Fish Commission, the University of Arkansas and the U. S. Fish and Wildlife Service. Spe-

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cial acknowledgement is due the personnel of the Arkansas Game and Fish Commission, Arkansas Forest Service and U. S. Forest Service who responded to the inquiry concerning the wild turkey, and to Harold E. Alexander for his valuable assistance.

METHODS AND RESULTS

A questionnaire (Fig. 1) together with a letter of explanation was mailed to the personnel of the Arkansas Game and Fish Commission, Arkansas Forest Service and U.S. Forest Service who were employed in the Ozark Plateau Region. This included the following counties: Baxter, Benton, Boone, Carroll, Crawford, Franklin, Johnson, Logan, Madison, Marion, Newton, Pope, Sebastian, Searcy, Stone, Van Buren and Washington. The date of the mailing was in early 1958 so that the whole of 1957 could be included in the census period.

Thirty-nine questionnaires were returned from a total of sixty-three which were distributed. Thirty of these documented the occurrence of wild turkeys, and the remaining nine reported the absence of turkeys. Table I is a county by county analysis of the replies which reported turkeys, and the distribution of these turkeys is shown in Fig. 2. The symbols which mark turkey occurrences (Fig. 2) represent at least one township of occupied area regardless of the number of flocks, or individuals, which may have been reported in the area. Therefore, the symbols definitely do not represent the relative densities of populations, but merely mark areas where turkeys occur which are at least six miles from other occupied areas. The intervening area also may have contained turkeys.

In making a fair comparison between the current distribution of wild turkeys and that described by Holder (1951) and Tolar (1948) it was necessary to distinguish between the populations remaining from the original Ozark birds and those established by feral turkeys transplanted from the Shumaker Naval Ammunition Depot near Bearden, Arkansas. This was mandatory because the program of restocking with feral birds began in 1950, during the interval since the previous survey. However, in three cases it was difficult to decide about the origin of the populations (Fig. 2). Since Tolar (1948) did not show turkeys along the White River where it forms the Marion-Baxter County boundaries it is conjectural

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Project W-50-R-1
 Wild Turkey
 Investigations
 Form No. 1

Arkansas Game & Fish
 Commission
 University of Arkansas
 Cooperative Research
 Projects - 1958

TURKEY CENSUS QUESTIONNAIRE

Did you see any Wild Turkeys in your
 area in 1957? _____

How many actual sightings were made? _____

How many flocks would you say there
 were in your area? _____

If turkeys were not seen, did any
 other evidence of their presence,
 such as tracks or feathers, come
 to your attention? _____

Did you receive reports from sports-
 men or local residents concerning
 turkey observations? _____

If possible, designate in the space
 below the approximate location of
 known flocks and other information
 which might be of interest. Thank
 you.

Return Form to:

John R. Preston
 Department of Zoology
 University of Arkansas
 Fayetteville, Arkansas

Signed _____
 Address _____

 Date _____

Figure I. Turkey Questionnaire.

TABLE I
ANALYSIS OF THE REPLIES WHICH REPORTED TURKEYS

County	Number Of Replies	Recipients Observed Turkeys	Turkey Signs Observed	Turkeys Reported To Recipient	Estimated Number Of Flocks 1957	Estimated Population 1942-1946 [#]	Probable Change In Last Decade
Baxter	3	2	2	3	7	210	Decrease
Benton*	4*	3*	3*	4*	2*	25	No Change
Boone	1	1	1	1	5	536	Decrease
Carroll	1	0	0	1	1	42	Decrease
Crawford	3	3	2	3	2	0	Increase
Franklin	1	1	1	1	4	0	Increase
Johnson	2	0	0	2	1	6	No Change
Logan	4	2	3	3	2+	0	Increase
Madison					0	0	No Change
Marion	2	0	2	2	4	103	Decrease
Newton	1	0	1	0	1	0	Increase
Pope					0	6	Decrease
Sebastian					0	35	Decrease
Searcy	3	0	3	1	2	0	Increase
Stone	6	6	2	6	8	0	Increase
Van Buren					0	0	No Change
Washington*	4*	3*	3*	4*	2*	10	No Change
						6	Decrease
						6	Increase
						5	No Change

*The data is duplicated in Benton and Washington Counties because the turkeys occupy an area which overlaps the county boundaries.

[#]From Holder, 1951.

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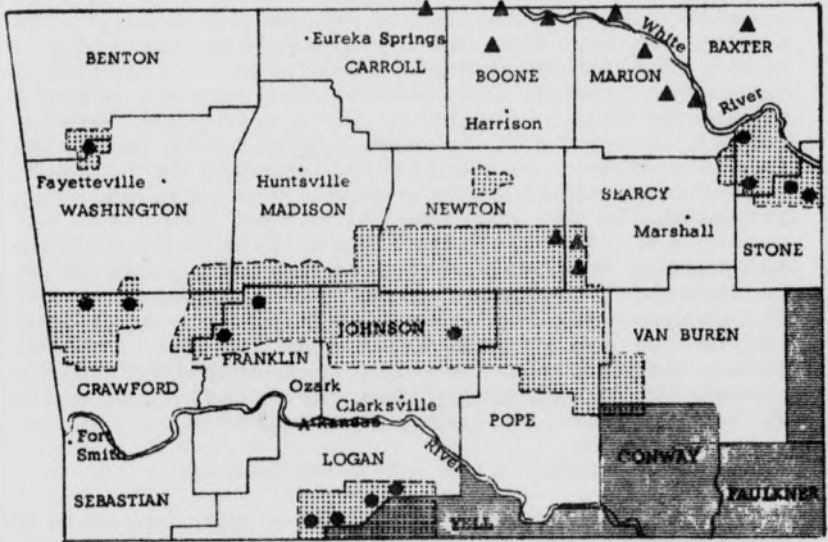


Figure 2. The distribution in 1957 of the wild turkey in the Ozark Plateau Region of Arkansas. The symbols designate the areas occupied by turkeys. Areas which are separated by at least six miles are indicated separately. However, a representation of population density is not intended. The triangles (▲) represent residual populations of the original Ozark stock. The circles (●) are populations which were established after the release of feral birds transported from southern Arkansas. The stippled areas are within the Ozark National Forest, and the lined areas were excluded from the turkey inquiry.

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whether this area was occupied by the native Ozark stock, or as the result of the releases in southern Baxter County and northern Stone County. The situation concerning the birds in Newton and Searcy Counties was puzzling because Tolar (*ibid.*) showed the locations of turkeys in east-central Newton County, whereas Holder (1951) stated that the population was zero in Newton County as well as in Searcy County. Yet, in another place Holder (*ibid.*) finds that the wild turkey was never exterminated in Newton County. Considering the general failure of the release in the early 1940's of wild turkeys raised in captivity (Holder, *ibid.*), it is doubtful that five of these birds liberated in northern Pope County could have produced the population in question. In the end the opinion of Tolar was accepted and it was assumed that turkeys he indicated were a residual native population. Differing in detail, the same sort of ambiguities pervaded the Johnson County record, which is complicated further by the release in 1950 of two male and one female feral birds near the area concerned (Alexander, 1957). It was decided arbitrarily that these latter produced the present population.

DISCUSSION AND CONCLUSIONS

It was emphasized repeatedly at the recent wild Turkey Symposium in Memphis, Tennessee (February 13 and 14, 1959), that because of their secretive habits the eastern subspecies of the wild turkey were impossible to census accurately using the usual methods. Although this did not seem to be too great a problem in the western subspecies, it was a factor which made suspect population estimates in the areas inhabited by the forms silvestris and osceola. This is the position which is accepted when it is emphasized that the symbols in Fig. 2 are not intended to represent population densities, but merely indicate areas of occurrence. The nature of the inventory makes even the distribution data liable to error. The job-associated interests of the personnel contacted probably increased the relative number of replies where turkey occurrences were actually known. However, it cannot be assumed that the failures to reply were merely cases where turkey locations were not known. There was no follow-up request for information which is sometimes used to evaluate the accuracy

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in replies in systems involving mailed request for the report of game killed by hunters. Also, a large part of the human population in the turkey areas, the rural inhabitant, was not contacted at all. Although the forester and wildlife employee probably is well informed about the distribution of game it should not be expected that he will always know every occurrence. Finally, no attempt was made to verify the reports of turkeys as proposed by Dalke, Leopold and Spencer (1946) by requiring multiple reports of each flock, personally interviewing residents in the critical areas, and checking in the field. This latter source of error would overestimate the number of occupied areas, the rest would produce an underestimated value. These possible misjudgments must be recognized in interpreting the results.

One conspicuous change demonstrated by the current inventory was the occurrence of turkeys in areas within the Ozark National Forest (Fig. 2) where previously they were extinct or nearly so. All of these populations were the result of transplanted feral birds and involved the following counties: Benton-Washington, Crawford, Franklin, Johnson, Baxter-Stone and Logan. Another noteworthy difference between the two surveys was the current relative scarcity of occupied areas in Boone, Marion and Baxter Counties compared with those on the map prepared by Tolar (1948). It is interesting to note that Baxter County, where the diminution of turkey range was spectacular, was the only one which had an increase in the rural human population in each of the two decades preceding 1950 (Tarver, 1950; Holder, 1951). Also, most of the turkey areas in Boone and Marion Counties were inundated by, or were adjacent to, the recently constructed Bull Shoals Lake. This region has probably experienced an increment in human population through development as a resort center. The turkeys involved in these areas were the native Ozark stock and were contiguous in distribution with the areas of high density in 1942 in the Ozark Region of Missouri (Dalke, Leopold and Spencer, 1946).

It would be permissible to evaluate the changes in the total population of turkeys if the two surveys were subject to the same kinds of errors, thus producing a comparable index to abundance. Apparently, the previous survey was more intensive than the present one. But it was also more extensive

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in covering the whole state, which may have counteracted the advantage of intensification. Fortunately, most of the differences shown in Table I are of such large magnitude that the changes are obvious. In determining the number of individuals represented by the flocks reported in 1957 a value of eight individuals per flock was used, which is the average of twenty-six observations throughout the year in Crawford and Franklin Counties. This average agrees well with the 9.6 value which was the average of 291 flocks in Missouri (Dalke, Leopold and Spencer, 1946). A total of six counties where decreases in turkey populations have occurred, six where increases have occurred, and five involving no change (Table I) suggests stability during the last decade. However, inspection of the data reveals that most of the decreases have been greater than the increases. This is amplified by the combined estimates for the whole Ozark Plateau Region; the current index to abundance was 312, while it was 937 in the previous survey. Because the areas where major decreases were experienced are occupied by native populations the future of the wild turkey in the Ozark Plateau Region of Arkansas seems to rest with the feral populations which have been re-introduced into the formerly occupied areas.

LITERATURE CITED

- Alexander, H. E. 1957. Turkey releases. MS.
- Dalke, P. D., A. S. Leopold and D. L. Spencer. 1946. The ecology and management of the wild turkey in Missouri. Mo. Conserv. Comm. Tech. Bul., No. 1, 86 pp.
- Holder, T. H. 1951. A survey of Arkansas game. Ark. Game and Fish Comm., 155 pp.
- Metzler, W. H. 1940. Population trends and adjustments in Arkansas. Univ. of Ark. Agri. Exp. Sta. Bul., No. 338, 59 pp.
- Tarver, J. D. 1950 Changes in Arkansas population. Univ. of Ark. Agri. Exp. Sta. Rept. Ser., No. 21, 20 pp.
- Tolar, F. M. 1948. Wildlife and cover map of Arkansas. Ark. Game and Fish Comm.
- (NOTE: "Feral" does not mean prior domestication, but refers to wild turkeys released in the Ozark region, distinguishing them from the native birds and the ones raised in captivity.)