
Subsection Zoology

A Casualty Count of Wildlife Following a Fire

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There has been much speculation regarding the effect or damage done to wildlife by prairie or woodland fires. This report will attempt to show the apparent impact from a prairie-woodland fire. The burn area observed resulted from a fire of August 6, 1964, four miles west and one-half south of Stillwater, Payne County, Oklahoma. The burned-over area consisted of approximately 200 acres of post oak-blackjack woods and 200 acres of range and pasture land. One intermittent stream and two farm ponds are within the limits of the burn area. The range and pasture land had at one time been in cultivation but was retired prior to 1938 (personal communication with Soil Conservation Service personnel). About 100 acres of the post oak-blackjack woods had been sprayed with a herbicide and much of it was in a decaying condition. The range and pasture land had been extensively grazed prior to the conflagration. Carrying capacity is estimated to be about 12 acres per animal unit. The area is on shallow savannah-red clay prairie soil.

¹Oklahoma Department of Wildlife Conservation, Oklahoma State University, U. S. Fish and Wildlife Service, and Wildlife Management Institute cooperating. Contribution No. 404, Department of Zoology, Oklahoma State University.

Method of Analysis

The entire burn area and its periphery were observed. This was accomplished by the three investigators walking north-south line transects so as to be able to visually scrutinize the area. By walking about 40 feet apart the investigators were able to detect by sight and/or smell the presence of wildlife fire casualties. Both living and dead specimens in the area were observed and recorded.

Discussion and Results

At the time of the fire the vegetation and soil was very dry. Table I summarizes the climatological data for the Stillwater area from April to the time of the fire.

It is of considerable significance that from June 24, 1964 to the time of the fire, August 6, 1964, only 0.27 inches of precipitation was recorded in the Stillwater area. During all of this period of time evaporation rates on the days of precipitation were in excess of the recorded rainfall amounts. In addition, the relative humidity was low on the day of the fire. The combination of all the known contributing factors made for a low kindling point of the combustibles of the area at that time.

On August 7, 1964, 0.27 of an inch of rain fell on the burn area. This helped to cool the area and settled the ash. On the morning of August 10, 1964, we walked the entire area and observed a smoke free burn. It was readily apparent that there were no carrion feeding birds in the area.

The record of wildlife species observed is as follows:

No.	Species (Dead)
25	Box turtle (<i>Terrapene ornata</i> , <i>T. carolina</i>)
1	Rattlesnake (<i>Crotalus</i> sp.)
1	Copperhead (<i>Ancistrodon contortrix</i>)
No.	Species (Alive)
3	Box Turtle (<i>Terrapene ornata</i> , <i>T. carolina</i>)
1	Eastern Coachwhip (<i>Masticophis flagellum</i>)
1	Black Rat Snake (<i>Elaphe obsoleta</i>)
8 (covey)	Bobwhite Quail (<i>Colinus virginianus</i>)
5 (covey)	Bobwhite Quail (<i>Colinus virginianus</i>)
1	Cottontail Rabbit (<i>Sylvilagus floridanus</i>)

The Stillwater News-Press reported that a local fireman witnessed a cottontail rabbit, its tail on fire, run from the fire into a clump of brush, catching that area on fire.

This report is contrary to previous observations of the authors of this paper. Rabbits that have been observed caught in forest and prairie fires, or in burning brush piles have only been singed and scorched. Flame was never detected in any instance. Dead cottontail rabbits that had been collected for research purposes were used in an effort to see if the fur would flame. Both freshly killed specimens and those that had been kept in a deep freeze unit and then exposed to direct sunlight were used. In the attempts to burn the rabbit fur it would smolder or scorch, but would not flame.

Conclusion

The low precipitation and high temperatures preceding the fire had the area in a prime condition for a hot, wild fire. The average wind velocity for August 6, 1964, was 11 miles per hour with little gustiness. For the most part the fire traveled at a relatively slow rate of speed. Firemen fought the conflagration for six hours. During this time it did not get farther than a mile from its point of origin. There was no evidence of any burned rodents or birds following the fire. Apparently the

TABLE I. Climatological Data for the Stillwater Area.
 Maxima, minima and overall temperatures are averages in Fahrenheit.

	TEMPERATURE					PRECIPITATION				
	Max.	Min.	Overall	Range	Days 90F or above	Departure from normal	Total	Departure from normal	Days of Precip.	Daily range
April	77.3	51.5	64.4	27-90	1	+3.8	1.71	-1.15	—	—
May	82.4	60.0	71.1	42-94	3	+2.5	4.04	-.58	—	—
June	89.3	65.6	77.5	47-97	21	-.40	1.17	-3.07	9	.01-.37
July	99.1	71.4	85.3	55-107	30	+2.8	.27	-3.25	5	.03-.10
August (1-10)	103.9	74.1	89.0	57-109	10	—	—	—	2	.10-.27

speedier vertebrates escaped the flames as small rodents and cottontail rabbits were seen fleeing from the burning area. However, the population of small mammals and birds was probably low due to the drought condition of the area. One can infer on the basis of this report that a wild fire under these or quite similar conditions is highly selective against slow moving reptiles.

LITERATURE CITED

- Newlin, Paul. 1964. Scout lodge, farm are saved as fire spreads. Stillwater News-Press. Aug. 7, p. 1.
- U.S. Dept. of Commerce, Weather Bureau. 1964. Climatological data for Oklahoma. 73, (4, 5, 6, 7, and 8).
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