

ARTICLES

LONGTIME RECAPTURE OF A TIMBER RATTLESNAKE (*CROTALUS HORRIDUS*) IN KANSAS

HENRY S. FITCH

Superintendent of the Natural History Reservation
2060 East 1600 Road
Lawrence, Kansas 66044

GEORGE R. PISANI

Research Associate
University of Kansas Field Station and Ecological Reserves
350 Wild Horse Road
Lawrence, Kansas 66044
gpisani@ku.edu

Beginning on 1 July 1948, ecological studies of snakes have been pursued on the Fitch Natural History Reservation (FNHR) and adjoining areas for the past 54 years. The most significant records are those of snakes marked and recaptured after substantial intervals, revealing facts concerning their growth, survival, and longtime movements. One such record was of an adult male Timber Rattlesnake, *Crotalus horridus*, from Jefferson County, Kansas, captured by HSF on 14 October 1978, marked by clipping subcaudals (2 left: 5 right), and recaptured by GRP on 22 May 2002 (Figure 1). At first capture, data recorded were: S–V 995 mm, tail 86 mm, rattle string seven segments plus button. At recapture, data were: S–V 1200 mm, tail 100 mm, weight 1.6 kg, rattle string ten uniform segments.

This recapture record was of unusual significance. Only 16 (7.9%) recaptures of Timber Rattlesnakes have been made over a period of nearly 54 years (as of 1 July 2002). In contrast, other species of snakes studied on the same area had much higher recapture ratios: Milk Snake 85.0%, Great Plains Rat Snake 58.0%, Eastern Racer 42.5%, Prairie Kingsnake 36.9%, Copperhead 29.6%, Common Garter Snake 27.0%, Bullsnae 25.0%, Eastern Rat Snake 23.0%, and Northern Water Snake 13.3% (Fitch 1992, 1999). Adult rattlesnakes were mostly too bulky to enter the funnel traps in which other snakes were caught (funnel openings of about one inch diameter). So, the rattlesnakes trapped were mostly first-year or second-year young. Adult rattlesnakes were mostly found by random encounters.

By about the mid-1980s, Timber Rattlesnakes seemed to have disappeared from the FNHR, but were still present on the Nelson Environmental Study Area and adjoining private land, so that they were still captured at about the same rate as in previous years. Development of forest with

an unbroken canopy on FNHR constituted habitat deterioration, but the Nelson Tract and adjoining areas retained some grassland and part of it was mowed annually or at more frequent intervals. The snakes were often found in the vicinity of buildings. The recaptured snake was in an area of experimental ponds of 6.7 hectares that were built in 1991 and enclosed by a “snake-proof” fence in March 1992. This perimeter currently has a number of potential access points for adult rattlesnakes, and additionally lacks suitable hibernacula for a snake of this size. Thus it is unlikely that the animal was confined when the fence was built. The recapture was believed to have been about a quarter mile from the original capture site. At the time of recapture, on the berm between two of the ponds, the snake was coated with dried algae and obviously had been in one of the ponds.

If this snake had gained new rattle segments at the rate typical of adult males (about two per year), and had retained all of them, it would have had a string of more than 50 segments at the time of recapture. The rattle string that it possessed in 2002 suggested that it had not gained in size appreciably over the past several years, as all ten segments were approximately the same diameter. However, snakes that have stopped gaining in length may continue to increase in weight. The recaptured snake weighed 1.6kg, and only two Timber Rattlesnakes captured were heavier. A male of 1270 mm S–V on 2 June 1953 weighed 1.89 kg, and a male of 1220 mm S–V on 21 June 1955 weighed 1.74 kg.

Timber Rattlesnakes have been described as: “long-lived, late maturing” (Martin 1992) and “long natural lifespan (approximately 25 years)” (Brown 1993). Snider and Bowler (1992) recorded a captive aged 30 years 2 months and 1 day (male, acquired date unknown as an



Figure 1. An adult male Timber Rattlesnake, *Crotalus horridus*, from Jefferson County, Kansas, captured by HSF on 14 October 1978, marked by clipping subcaudals, and recaptured by GRP on 22 May 2002. At first capture, data recorded were: S–V 995 mm, tail 86 mm, rattle string seven segments plus button. At recapture, data were: S–V 1200 mm, tail 100 mm, weight 1.6 kg, rattle string ten uniform segments.

adult). The recaptured snake may have been about 27 years old, and if so is well within the potential life span.

Acknowledgments

We express our sincere thanks to Galen Pittman (Station Manager/Biologist) and Scott Campbell (Research Associate), University of Kansas Field Station and Ecological Reserves (KSR) for many kindnesses over the course of our snake studies on the KSR areas. Additionally, GRP is grateful to Galen Pittman for assistance with the recapture of the marked snake.

Literature Cited

- Brown, William S. 1993. Biology, status and management of the Timber Rattlesnake (*Crotalus horridus*): A guide for conservation. SSAR Herpetological Circular No. 22: 1–78.
- Fitch, Henry S. 1992. Methods of sampling snake populations and their relative success. *Herpetological Review* 23(1): 17–18.
- Fitch, Henry S. 1999. A Kansas Snake Community: Composition and Changes Over 50 Years. Krieger Publishing Company, Malabar, Florida. xi + 165 pp.
- Martin, W. H. 1992. Phenology of the Timber Rattlesnake (*Crotalus horridus*) in an unglaciated section of the Appalachian Mountains. Pp. 259–277. In *Biology of the Pitvipers* (Jonathan A. Campbell and Edmund D. Brodie, Jr., eds.). Selva.
- Snider, Andrew T. and J. Kevin Bowler. 1992. Longevity of amphibians and reptiles in North American collections. Second Ed. SSAR Herpetological Circular No. 22:1–40.