

*Wildlife Damage Management, Internet Center for
Great Plains Wildlife Damage Control
Workshop Proceedings*

University of Nebraska - Lincoln

Year 1995

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IN OKLAHOMA

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Abstract: The Oklahoma Department of Wildlife Conservation (ODWC) estimated the state's beaver (*Castor canadensis*) population at 1,245 animals in 1951-52. That same year, ODWC relocated 29 beaver from 5 western counties to Department lands in 4 eastern counties. Beaver populations in Oklahoma have since grown as a result of changes in available habitat. In response to the growing number of beavers, ODWC opened an annual beaver season from 1 December to 31 January, in 1960-1961. The season was opened year-round in 1983. Although beaver activities benefit many wildlife species, their activities have had a negative economic impact on the state. Complicating this problem is the low value of Oklahoma beaver pelts. Restrictions on trapping devices have also contributed to the limited beaver sport harvest. To help reduce beaver damage, a multi-procedural approach to beaver control was taken, including preventative measures as well as direct removal of nuisance individuals. Because harvesting beaver actually increases their reproductive potential, the goal of ODWC's nuisance beaver control program is to relieve the damage caused by beavers to human property without concentrating on a population reduction scheme. Under ODWC's program, nuisance beaver control permits allowed beaver to be taken on private or public lands with body-gripping traps or by night shooting.

Pages 70-72 in R.E. Masters and J.G. Huggins, eds. Twelfth Great Plains Wildl. Damage Control Workshop Proc., Published by Noble Foundation, Ardmore, Okla.

Key words: beaver, *Castor canadensis*, control, Oklahoma, trapping.

The distribution of beaver (*Castor canadensis*) in 19th century Oklahoma is not well documented. Oklahoma never played a major role in the beaver fur trade which dominated North America from circa 1550 to 1850 (Ray 1987). One early record showed 387 shipped in 1824 from the old Choteau Trading Post in what is now Wagoner County (Jones 1953). It is conceivable that Oklahoma historically never supported large beaver populations. The beaver was considered to be extirpated from Oklahoma as recently as 1920 (Cross 1917, Blair 1939). In the early 1950's the beaver population in Oklahoma was estimated at 344 families with 1,245 individuals (Jones 1953). Most of Oklahoma's beavers were found in the western part of the state, mainly along the Washita and North Canadian Rivers, in very low abundance (Hatcher 1984). In 1951-52, 29 beaver were relocated by the Oklahoma Department of Wildlife Conservation (ODWC) from Beaver, Ellis, Beckham, Greer, and Oklahoma counties to department game management areas in Cherokee, Cleveland, Pushmataha, and McCurtain counties (Jones 1953).

Beaver populations in Oklahoma have since grown as a result of changes in available habitat. Since the early to mid-1900's, streams and rivers in Oklahoma have been channelized and impounded. The Flood Control Act of 1944 provided for the construction of flood control impoundments in the state. Between 1952 and 1967, the Soil Conservation Service (SCS) had constructed 1,692 flood control impoundments, creating beaver habitat all over the state (Hatcher 1984). Additionally, 145 major reservoirs have been developed in Oklahoma, significantly increasing the amount of surface water and shoreline in the state. With the modifications in the natural watersheds came changes in vegetation. The availabil-

ity of cottonwoods (*Populus deltoides*) has expanded, particularly in the short- and mixed-grass plains regions. The result has been a natural population increase and range expansion of beavers in Oklahoma.

In response to the growing number of beavers in Oklahoma, ODWC opened an annual beaver season from 1 December to 31 January, in 1960-1961. During the first season, 95 beavers were reportedly harvested, increasing to 504 beaver taken in 1961-1962. By the mid-1970s, beaver were distributed statewide in proportion to suitable habitat, being most abundant in southeastern Oklahoma (Hatcher 1984). Annual harvests ranged from 1,000 to 3,000 animals, and beaver nuisance complaints were becoming common (Hatcher 1984). In 1977, the beaver harvest season was extended through February, and the season opened year-round in 1983.

Although beaver activities benefit many wildlife species, beaver have had a negative economic impact in Oklahoma. Nearly \$900,000 worth of beaver damage has been reported annually in Oklahoma since 1989 (Leland and Hoagland 1993). Compounding this problem is the low price that southern beaver pelts command (Obbard 1987). Beaver pelt prices were at their zenith in the U.S. during the 1920's to 1940's (Ray 1987). In Oklahoma, the average pelt price for beaver was greatest in 1980 at \$12.05 with a harvest of 2,894 beaver. Beaver harvest, however, did not peak in Oklahoma until 1987, when 4,184 beaver brought an average pelt price of \$8.27. This suggests that beaver trapping in Oklahoma is motivated more by an overall strong fur market rather than by high pelt prices for beaver alone. Therefore, southern trappers often find it uneconomical to trap beavers (Novak 1987). Restrictions on trapping devices in Oklahoma have also contrib-

uted to the reduced amount of sport harvest of beaver in the state.

No single control strategy will solve the nuisance beaver situation in Oklahoma. Likewise, no damage control measure will actually control beaver populations in the state. Therefore, a realistic program was developed that contained several components for controlling beaver damage economically. The 2 basic strategies for dealing with nuisance beaver situations include habitat alteration, which makes an area undesirable for beaver or minimizes damage caused by beaver, and removal of part or all of the beaver from an area (Hatcher 1984). Because harvesting beaver actually increases their reproductive potential (Novak 1987), the goal of ODWC's Nuisance Beaver Control Program is to relieve the damage caused by beavers to human property without concentrating on a population reduction scheme. The center of the ODWC approach to nuisance beaver damage control is a permit which allows private individuals to use body-gripping traps and night shooting (otherwise illegal methods in Oklahoma) to control nuisance beaver.

METHODS

Beginning in February 1994, ODWC issued nuisance beaver control permits to private individuals that allowed the taking of beaver that were causing damage to human property with body-gripping traps or by night shooting on private or public lands. Permits were required by those private individuals who wished to control beaver on their own property or on property owned by other private individuals. Because of restrictions placed on the program by the state legislature to control who, when, and where beaver control operations were to take place, permits were issued to individual landowners experiencing beaver problems. Landowners could request authorization to control their own beaver problems or they could list other private individuals to do the control work for them. Applicants had to be at least 18 years of age. Persons night-shooting beaver had to possess a valid Oklahoma hunting license. Night-shooters, born on or after 1 January 1972, were required to complete a hunter safety course. Trappers had to complete a fur harvester education course, and possess valid Oklahoma hunting and trapping licenses.

Permittees had to maintain records and submit a report to ODWC within 10 working days following the expiration of the permit, showing the name, address, and telephone number of the permittee; name(s), address(es), and telephone number(s) of any additional personnel; number of beaver harvested; county of harvest; and whether or not harvested beaver were sold. All beaver taken by the permittees were to be killed. Beaver pelts, carcasses, and castor taken could be sold for profit.

A copy of each permit application was sent to the county game warden, who had 3 business days in which to notify Game Division if a permit should not be issued. Violations of the Oklahoma Wildlife Conservation Code (Oklahoma Statutes, Title 29) during the 3 yrs prior to application for a permit, was grounds for refusal to issue the permit. Any violation of the permit provisions was considered a violation to Oklahoma Wildlife Conservation Code (Oklahoma Statutes,

Title 29), and would be prosecuted as such.

No individual operating under the permit was allowed to take or attempt to take, or have in possession any wildlife or wildlife parts, except beaver, while operating under the permit. This, however, did not preclude the taking of furbearers under the general regulations during the legal open general furbearer harvest season.

Body-gripping traps with a jaw-spread no greater than 25.4 cm on a side if square, and 30.5 cm if round, could be used for underwater sets only. There was no restriction on the number of traps a permittee could have set for beaver at any given time. All traps had to be visited and all animals captured removed at least every 24 hours. All traps had to be identified and signs posted in conspicuous locations. Persons trapping on their own property did not need to post their property. In order to protect river otter populations, southeastern counties were closed to body-gripping traps between 15 January and 28 February, annually. Any river otters accidentally taken under this permit were turned over to ODWC. Permittees could night shoot nuisance beaver by using shotgun only with BB size shot or smaller. No person could be engaged in the night shooting of beaver while in pursuit of hounds, except during the legal open general furbearer harvest season.

RESULTS

Nuisance beaver control permits were issued to 104 individuals in 1994, 19 (18%) of which were renewals of previous permits. Of the 19 renewals, 1 was reissued 3 times and 1 reissued 4 times. Thirty-seven permittees (44%) requested to use both trapping and night shooting to remove nuisance beaver, while 34 permittees (40%) requested to use only trapping techniques. Only 14 permittees (16%) requested to only night shoot their nuisance beaver. Eleven permittees did not request any additional personnel to assist them with removing their nuisance beaver. Forty-eight permittees requested 1 additional person, 17 requested 2, and 9 requested 3 additional persons to assist them in removing their nuisance beaver. Sixty-four percent (7) of the permittees that took care of their own beaver problems used night-shooting only, while 27% (3) used both night shooting and trapping. Only 9% (1) of permittees who solved their own beaver problems used trapping only.

Twenty-nine counties (38%) have had private individuals request nuisance beaver control permits. The permit distribution has been concentrated in the central Cross Timbers and northeastern Ozark Plateau regions of the state. An average of 3.5 permits have been issued per participating county (range 1 - 18). Reports have been received from 51 permittees in 17 counties. A total of 164 beaver have been harvested from 13 counties, ranging from 1 to 38 beavers harvested per county. Only 10 of the 164 beaver harvested under the permit have had their pelts sold for profit.

A survey of 56 permittees revealed that 36% of the permittees learned about the permit by word of mouth. ODWC offices and game wardens were responsible for 32% of the permittees learning about the nuisance beaver control program, and 24% learned about the availability of the permits from private beaver trappers. Forty-four percent of the respondents

had used the Oklahoma Animal Damage Control Program (ADC) to remove nuisance beaver in the past, while 48% had contacted ADC prior to contacting ODWC for a private permit. When asked to rank the usefulness of the permit, 52% responded that the permit was very helpful in solving their nuisance beaver problems, while 20% each responded that the permit was somewhat helpful or not helpful. Seventy-two percent, however, said that they would recommend the permit to a friend who was experiencing nuisance beaver problems.

DISCUSSION

Various control methods have been employed to curb beaver damage throughout the U.S., including overflow pipes (Laramie 1963), tree protection, shooting and trapping (Hill 1974, Miller 1983), dynamite (Woodward et al. 1976), electric fences (Woodward et al. 1976), as well as beaver birth control. A computer simulation model of the nuisance beaver problem in the southeastern U.S. concluded that continuous trapping, with a large number of traps and protracted intervals between trap checking, was the most efficient damage control method (Wigley 1981).

After 10 months, the ODWC beaver program has enjoyed limited success. Because of legislative constraints, the permit system has been rather convoluted. However, public comments regarding the permit system have been positive. Therefore, it has become easier to lessen some of the restrictions in the program. Beginning 1 January 1995, permits will be issued to individual trappers and night shooters rather than landowners, and will be valid for the entire calendar year. A landowner/lessee release form will have to be submitted by the permittee for each specific beaver control operation. Release forms will be valid for 30 days for night shooting, and 60 days for trapping. If additional beaver control work is required at a specific site, a new release form will have to be submitted. Persons wishing to receive a permit to trap nuisance beaver must complete a Beaver Trapping Training course, which will be a shortened version of the ODWC Fur Harvester Education Course. And, permittees, rather than landowners, will be responsible for keeping records of nuisance beaver control activities.

CONCLUSION

Beavers are a natural part of Oklahoma's wildlife heritage, whose activities benefit many other wildlife species. The goal of most nuisance beaver damage control programs is to relieve damage caused by beavers to human property without concentrating on a population reduction scheme. Reducing the beaver's population level is not a realistic goal. Oklahoma has never produced high quality pelts for the fur market, even when overall wild fur prices were high. Because harvesting beaver actually increases their reproductive potential, the population level is unlikely to be reduced by harvest pressure generated by both ADC and private fur harvesters.

Therefore, solutions to the current beaver situation were viewed in terms of controlling damage, rather than controlling beaver numbers. This was accomplished through a multi-procedural approach to beaver control which included preventative measures as well as direct removal of nuisance individuals under a nuisance beaver control permit.

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