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Tischendorf, Jay W. and Henderson, F. Robert , "THE PUMA IN THE CENTRAL MOUNTAINS AND GREAT PLAINS" (1995). *Great Plains Wildlife Damage Control Workshop Proceedings.* Paper 453.
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THE PUMA IN THE CENTRAL MOUNTAINS AND GREAT PLAINS[1]

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Abstract: Current status of the puma, *Felis concolor*, in the central mountains and Great Plains of Canada and the United States is discussed. Recent specimens and verified sightings are reviewed. Based on growing evidence, the puma has the potential to recolonize much of this region. Minor depredation problems can be expected, particularly as puma numbers increase and their range expands. This species is highly adaptable and extremely elusive, and its detection requires special skills. Professional wildlifers must be prepared to meet the dual challenges of managing both for recovery of this relatively rare carnivore and for its coexistence with humans.

Pages 99-102 *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: central mountains, depredation, *Felis concolor*, Great Plains, puma, recolonize, recovery, status.

Puma *(Felis concolor)* populations have been well documented and studied in the mountainous regions of Utah (Lindzey et al. 1989), Colorado (Anderson et al. 1992), Wyoming (Berg et al. 1983, Logan et al. 1986, Haines 1994), and other western states. These rugged, forested regions provide classic habitat for this large American cat, also known as the cougar or mountain lion.

However, in non-montane areas of these states, the status of this highly adaptable felid is questionable. Even more uncertain is the extent and nature of the species' occurrence in the provinces of Saskatchewan and Manitoba, and in the Plains states of North and South Dakota, Nebraska, and Kansas.

In these latter areas there is, for the most part, a long tradition of puma reports. The following is a synopsis of current knowledge and recent events relating to pumas in this region.

STATUS

Saskatchewan

W. Runge, biologist with the Saskatchewan Department of Parks, Recreation, and Culture, writes (pers. commun.), "In recent times the occurrence of the cougar in Saskatchewan was first verified in 1952. In this case, one animal was taken by a trapper in the Pasquia Hills. This specimen is now in the Museum of Natural History in Regina. "

"Cougars very likely lived in Saskatchewan prior to 1952, and it is very likely their existence extends uninterrupted all the way back to the population(s) documented for the pre-settlement period (pre-1800). During the past 20 years cougar sightings have been made sporadically throughout the southern half of the province. In most cases the animals were associated with drainage systems or blocks of upland woody cover, or in some instances the southern portions of the provincial boreal forest."

Runge estimates a provincial puma population of 20-100 individuals. The species is protected throughout the province. Comprehensive information on Saskatchewan cougars can be found in the works of the late Tom White, architect and self-taught biologist, especially his landmark 1982 report "Saskatchewan cougar—elusive cat."

Manitoba

In Manitoba, sporadic, unverified reports of puma kills extend back to 1879, when 1 was apparently taken in the Pembina Hills near North Dakota. Other accounts come almost exclusively from the Brandon and Birtle-Riding Mountain areas.

On Christmas day 1973, a puma was killed on a farm outside Stead, a small town 56 km (35 mi) northeast of Winnipeg. This cat, a 2-year-old male, was the first authenticated record for the province and it vindicated many people who over the years had, without proof, reported sighting large, tawny, long-tailed cats. The Stead specimen's skin and skull are maintained at the Manitoba Museum of Man and Nature.

Although some mammalogists question the existence of a Manitoban puma population, Nero and Wrigley (1977) estimated up to 50 animals in the province. Their follow-up work provides the definitive compendium on pumas in the province (Wrigley and Nero 1982). Currently the species is fully protected and puma reports continue to be made to Manitoba Museum and Department of Natural Resources (DNR) staff at a rate of 10-50 annually (Johnson 1991).

[1] This paper was originally published in *Blue Jay*, the journal of the Saskatchewan Natural History Society. It has been reprinted here with permission, in slightly modified form.

Minnesota And Wisconsin

In addition to the above mentioned reports, the presence of a small Manitoban population is further supported by at least 4 decades of intermittent but verified puma reports in northern Minnesota (Bue and Stenlund 1953, Magnus 1956, Kuyava 1959, Stenlund 1985) and growing numbers of reports from northern Wisconsin (Wydeven 1993). Based on these records and numerous unconfirmed but reliable reports, the DNR's in both Minnesota and Wisconsin believe their states may have small, resident populations of pumas.

North Dakota

There are very few pumas in North Dakota, and probably no resident, breeding population. Between 31 December 1990 and 4 January 1991, a 37 kg, 1-year-old female puma was shot by coyote (*Canis latrans*) hunters in a barn in Golden Valley County in the North Dakota Badlands (S. Allen, North Dakota Game and Fish Dep., pers. commun.). Generally, puma reports received by the North Dakota Fish and Game Department are infrequent and tend to come from west of the Missouri River and from the Turtle Mountains in the north central part of the state (Anonymous, North Dakota Game and Fish Department, pers. commun.).

In terms of prey and habitat, the potential for increased puma presence in North Dakota undoubtedly exists. Laws to protect the species were enacted 1 July 1992 (L. Huffman, North Dakota Game and Fish Department, pers. commun.).

South Dakota

The historical presence of pumas in South Dakota, particularly in the Black Hills, is well substantiated (see Young and Goldman 1946:34). In December 1957, a puma was killed on Elk Mountain (Mann 1959). Today a resident population is presumed to exist within the Black Hills National Forest-Custer State Park complex (E. Dowd, South Dakota Game, Fish and Parks Department, pers. commun.; Hafnor 1983).

In 1974, while conducting aerial hunting operations for coyotes, biologist L. Huffman observed an adult puma and its kitten along the White River near Winner. In December 1992, a young 41 kg puma was captured alive by a coyote trapper in eastern South Dakota near Lowery (T. Benzon, South Dakota Game, Fish and Parks Department, pers. commun.). It was radio-collared and released in the Black Hills. Tracking was discontinued after 7 days, largely due to concern over state liability if the cat were to become a depredator or nuisance animal.

In the last 30 years, pumas have also been sighted in the Badlands, Pine Ridge, and adjacent areas of southwestern South Dakota. Reports seem to be on the increase (T. Benzon, South Dakota Game, Fish and Parks Department, pers. commun.). The species is protected as a threatened animal under state laws.

Nebraska

In November 1991, a 36 kg female puma was shot and killed in the Nebraska panhandle (Meyer 1991). A month later a young male was discovered near Worthington in the intensively agricultural region of southwestern Minnesota. It was subsequently caught and translocated to Colorado (Anonymous 1992). It is quite possible that both these cats were dispersing from the isolated and presumably easily saturated Black Hills population. Another scenario has them originating in Wyoming or Colorado. In either case, the Nebraska cat, taken by a Dawes County deer (*Odocoileus* spp.) hunter, was the state's first confirmed kill in a century (Hayes 1991). The species is unprotected in Nebraska, and although puma reports have been made for decades (see Nowak 1976:118-119), these animals are probably transients.

Kansas

The pattern is much the same in Kansas, where puma reports, sometimes accompanied by photographs of the purported animal, persist despite the last verified puma kill occurring in Ellis County, central Kansas, in 1904 (Dill ca 1984). Also, pumas are frequently reported in eastern Kansas, a situation difficult to explain considering the nearest known populations are in Texas, New Mexico, Colorado, Wyoming, or South Dakota. Though their presence has yet to be verified, it is not unlikely that bordering Kansas there is a dispersed population of pumas utilizing a habitat complex encompassing the Ozark, Ouachita, and Mark Twain National Forests of Missouri and Arkansas (see Sealander and Gipson 1973, Tischendorf 1993).

Under Kansas state laws, the puma is protected. One should refer to Gabbert and Henderson (1990) for a full discussion of the species' history and status there. An official puma recordkeeping process was recently initiated at Kansas State University.

DISCUSSION

In summary, as deer populations have recovered and increased following early and mid-1900 lows, there have been concurrent increases in puma numbers. Decreases in the rural human population are also evident and this demographic shift has perhaps opened up habitat for these adaptable carnivores and their prey. The phenomenon of ephemeral, or cryptic pumas in areas where for many years they have been thought extirpated or rare is not new. In the East, the late Canadian ecologist Bruce Wright devoted 4 decades to this subject (Wright 1959, 1972).

A steadfast believer in the continued existence of the eastern puma, or panther, Wright was finally vindicated in November 1992 when a set of tracks and a scat found in a forested area of remote east central New Brunswick were confirmed as those of a puma (Cumberland 1993). This and other recent reports were discussed in detail at the Eastern Cougar Conference, 1994, held in June in Erie, Pennsylvania (Tischendorf and Ropski 1995).

The range of the white-tailed deer (*Odocoileus virginianus*) is expanding northward (Rue 1978, Geist 1995), and presumably along with it the puma. In the Kluane Lake region of the Yukon Territory, for instance, puma sightings are becoming more frequent (Cahalane 1964, Weddle 1965, U. Breitenmoser, pers. commun.), and on Alaska's Wrangell Island an adult male puma was shot in fall 1989 (C. Land, Alaska

Department of Fish and Game, pers. commun.).

The same situation may be unfolding in the eastern half of suspected puma range. In May 1992, 322 km (200 mi) south of James Bay, a puma was shot near Lake Abitibi on the Quebec-Ontario border. This area in the boreal forest has for years been a hotbed of puma reports (Gerson 1986) and is closer to the historic range of the endangered eastern puma, *Puma concolor couguar*, than that of any other race. The specimen, a small male, is presently being evaluated at the Canadian Museum of Man and Nature.

The question of puma subspecies classification (currently over 30), may be academic (Greenwell 1995). Most were classified by a small number of skins, skulls, and other parts in an era when taxonomic splitting were in vogue. Given the puma's widespread historic range and its propensity for wandering, many purported subspecific differences may be the result of small sample sizes and taxonomic splitting.

With the advent of DNA-based genetic evaluations, new light will soon be shed on this subject. This is especially important for endangered subspecies like *P. c. couguar* (eastern puma), *P. c. coryi* (southern puma), *P. c. schorgeri* (Wisconsin puma), *P. c. browni* (Yuma puma of Arizona-California), and *P. c. costaricensis* (Costa Rican puma).

The role of escaped or released captives is also an important factor in the issue of puma confirmations in areas not recently considered to be acceptable habitat. There are few instances in which the possibility of a former captive puma playing a role in a sighting, recolonization, or range expansion can be completely ruled out. In Kansas, for example, 18 people are licensed to breed and sell pumas. Additionally, many individuals maintain pumas as pets and until recently no license was required, making recordkeeping on the origin and fates of such pets extremely problematic. Such is the case in almost every state, with ownership of pumas and other wildlife a loosely regulated realm overseen by various local, county, and state agencies and departments.

It follows that some captive pumas, 1 way or another, eventually become feral. There is a high liklihood that feral pumas may become depredators and otherwise nuisance animals. Feral individuals can give the entire species a bad name and can negatively impact bonafide conservation and restoration efforts through adverse publicity.

Escaped or released captives that successfully adapt to the wild may deserve the same treatment afforded native, wild-born pumas or other translocated wildife, like otters (*Lutra canadensis*), trout (*Salmo* spp.), and wild turkeys (*Meleagris gallopavo*). Currently, full protection is offered to captive-born and hacked bald eagles (*Haliaeetus leucocephalus*) released in the United States. Endangered species laws providing protection to specific subspecies (e.g., *P. c. couguar*) need to be revamped if the species is ever to establish viable populations in regions where it is no longer extant.

It is unfortunate that in many cases the definitive proof of puma presence comes down to a carcass in hand. Often puma existence is not accepted despite years of independent but unverified and thus scientifically unacceptable sightings. Ironically, it is often only after a puma is killed in a jurisdiction that eyes are opened, the presence of the species is acknowledged, and the animals are granted official protection. History has repeatedly shown that where people are reporting pumas, chances are good that at least some of the animal sightings are pumas. Why should we wait?

Pumas leave distinctive sign: tracks, scrapes or scratches, kills, scat. Unfortunately, few conservation professionals in the Great Plains, Midwest, and East have experience looking for, finding, and interpreting this evidence. While —AERIE provides training in this area, a comprehensive field guide to puma sign, designed for the layperson, woodsman, and professional alike would be more useful. Currently, —AERIE is pursuing funds for this effort. Anyone with information on recent puma confirmations in the central mountains and Great Plains is urged to contact —AERIE or Kansas State University.

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