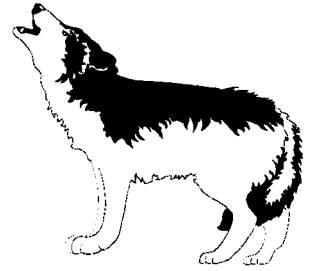


In My Opinion



Eastern cougar recovery is linked to the Florida panther: Cardoza and Langlois revisited

David S. Maehr, Marcella J. Kelly, Chris Bolgiano, Todd Lester, and Helen McGinnis

Key words cultural carrying capacity, eastern cougar, Florida panther, *Puma concolor*, recovery planning, restoration

For those of us living and working amid the ghosts of predators past, the eastern cougar (*Puma concolor cougar*) has maintained a remarkable presence despite its presumed extinction (Funkhouser 1925, Barbour and Davis 1974, McBride et al. 1993, Clark et al. 2002). Hardly a week goes by without someone reporting to local wildlife officials that one was spotted somewhere in the East. Cardoza and Langlois (2002) are to be commended for their objective and in-depth review of the current state of our knowledge and management of a species that lost most of its eastern breeding populations more than a century ago, but that continues to be the widespread subject of speculation and debate. Here we expand on their recommendations for a science-based approach to eastern cougar investigations and suggest that recovery efforts on behalf of a nearby conspecific are far from trivial to the return of the cougar in the East.

One aspect of cougar ecology that is becoming less debatable is its role in biotic communities. Whether in Florida or New Mexico, *P. concolor* has the potential to structure the distribution and demography of prey (Logan and Sweanor 2001, Maehr et al. 2001). Browse lines, highway colli-

sions, Lyme disease (Wilson and Childs 1997), loss of biodiversity (Alverson et al. 1988, Waller and Alverson 1997), and other problems associated with overabundant white-tailed deer (*Odocoileus virginianus*) hint at the benefits of returning such a predator to the East. Only in Florida can we be sure that the predator-prey relation between panther (*P. c. coryi*) and deer continues (Maehr 1997). Elsewhere, the scattered reports of an odd cougar here and there and even the confirmed cases of field evidence that are accumulating (Bolgiano et al. 2000) are unlikely sufficient to argue that these animals are influencing the landscape in any measurable way.

We might argue that the ecological benefits of predation should be enough to drive recovery efforts for the eastern cougar, but this is a fanciful notion, given a variety of grim political and sociological realities in the region (Maehr 2001). Perhaps of equal importance is the recovery status of the eastern cougar's closest extant subspecific relation. The Florida panther is relevant to the eastern cougar inasmuch as the greatest likelihood of achieving recovery of either eastern subspecies is where it can be unequivocally proven to exist. Although large expanses of northern Florida and

southern Georgia successfully supported an experimental cougar population (Belden and Hagedorn 1993), the study concluded that reintroduction was not feasible because a handful of people would not support what was perceived to be a dangerous animal. Thus, even where a well-known population exists, recovery is not guaranteed.

Since then, recovery efforts have focused almost exclusively on the single population in south Florida, even though the recovery plan calls for the establishment of 2 additional “self-sustaining populations within the historic range” (United States Fish and Wildlife Service 1987: 14), and despite the fact that several panthers have exhibited unprecedented long-distance movements into areas of potential colonization outside of south Florida (Maehr et al. 2002, Pittman 2003). We believe the odds of eastern cougar recovery will remain small so long as Florida panther recovery remains trapped in the southern tip of the state.

One of the messages resulting from the current approach to Florida panther recovery is that pedigree and taxonomy matter less than an *in situ* population of *P. concolor*. Similar philosophies led to the return of the peregrine falcon (*Falco peregrinus*) and elk (*Cervus elaphus*) to the eastern United States (Larkin et al. 2001, Tordoff and Redig 2001), but the options were more limited in these cases—either a closely related or reconstituted genome had to be used for reintroduction purposes or regional losses of these species would ensue. Several other choices were available for managing the Florida panther that would have reduced the need for introducing so much outside genetic material, including captive breeding, reintroduction, aggressive post-reproductive removals of donor Texas cougars (*P. c. stanleyana*), and a combination of these approaches (Maehr and Lacy 2002). Although the above actions are still possible, the currency of Florida panther expansion will be first and foremost a genome (and phenotype) that has been modified to ward off potential inbreeding problems.

These precedents should make the restoration of the eastern cougar more feasible, at least conceptually. *P. concolor* has exhibited a remarkable ability to inhabit a wide range of climates and landscapes, and to utilize a variety of prey (Sunquist and Sunquist 2002). It can also tolerate human activities and subsist in suburban settings if sufficient habitat is available nearby (Beier 1995, Maehr 1997, Cramer and Portier 2001). Thus, it is not strictly a



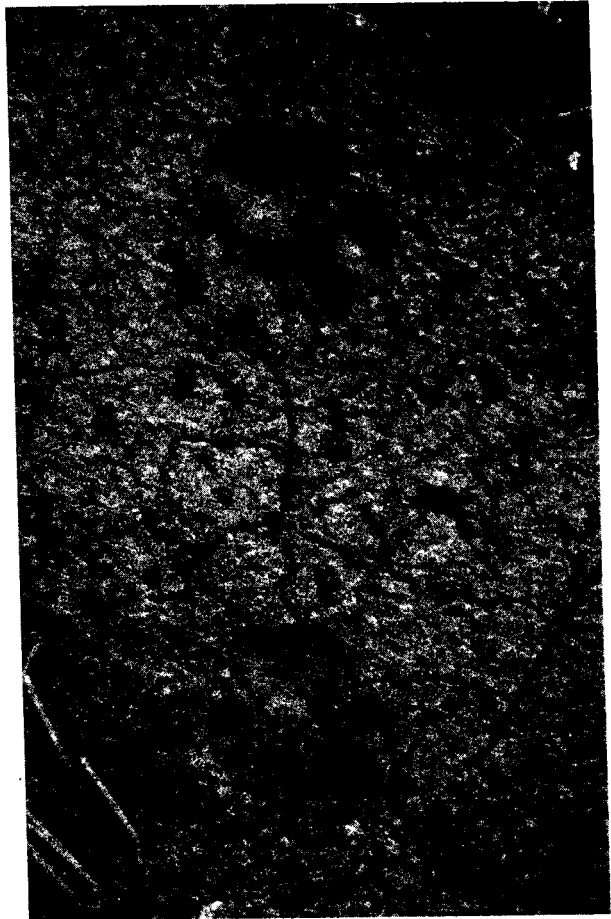
Adult male with Telinject dart (noted by arrow) in left leg; Highlands County, Florida.

wilderness obligate, even though, like many large mammals, it embodies wilderness values (Shaw 1989, Ewing and Grossman 1999, Noss 2001). As experimental work in Florida has demonstrated (Belden and Hagedorn 1993), there is little doubt that the species can survive and reproduce successfully in forested landscapes that support a variety of human activities. In the central Appalachians, United States Forest Service lands alone account for nearly 1.6×10^6 ha of mostly contiguous forests in West Virginia, Virginia, and North Carolina (United States Forest Service 1997, Chiras et al. 2002). This is almost 10% more public land area than is found in all of the panther's occupied range in south Florida (Maehr 1990), and it does not include national parks, state parks, wildlife management areas, and other conservation lands that

would contribute to a regional network capable of supporting the species.

No one knows whether recovery agencies have the will and resolve to enlist the public in restoration efforts. This will require significant investments in education at all levels of school and government. The recommendations of Cardoza and Langlois (2002) are particularly useful with respect to holding workshops, providing training, and enlisting public involvement, even when agency biases argue against such outreach. Such an approach is increasingly essential for "improving the social-cultural component of the management environment" (Decker et al. 2001: 155). This cultural carrying capacity may be even more important than the ecological carrying capacity of a potential cougar restoration zone. So far, public resistance as perceived by politicians and agency administrators has done more to stall population expansion of the Florida panther than limited budgets and insufficient biological information. A recent survey of public opinion revealed that most Floridians support efforts to save the panther from extinction, including reintroduction in north Florida (Duda and Young 1995). But even with public support, does the absence of a known breeding population in the East render the natural recovery of any cougar population unrealistic? Consider the primary difficulty in establishing a population in the absence of deliberate reintroduction: the need for simultaneous colonizations by at least one male and one female. While this may not be such a feat for wind-borne seeds, ants, termites, and some birds, it is another matter altogether for a flightless terrestrial species that rarely breaks the mold of female philopatry. The longest known dispersal of a female Florida panther is just over 30 km, versus >240 km for a male (Maehr et al. 2002). The existing population in extreme south Florida is so profoundly isolated, and its social fabric is so challenged by male-biased dispersal, that human-assisted colonization may be the only practical way to help it overcome nearly 5 centuries of anthropogenic landscape change and range reduction.

Florida has been aggressive in protecting its sensitive ecological heritage and landscapes (Hector et al. 2000), but it must redouble efforts to generate support for panther reintroduction. The adaptive research management (ARM) and public involvement approaches recommended for the eastern cougar (Cardoza and Langlois 2002) seem of more significance in the case of the panther. If success



Front and rear pugmarks of an adult female Florida panther in Collier County, Florida.

can be demonstrated in Florida, where a population already exists and is making spectacular efforts to escape the boundaries of constrained space (Maehr et al. 2002, Horn 2003, Pittman 2003; E.D. Land, Florida Fish and Wildlife Conservation Commission, personal communication), it will be the precedent needed to drive the human-assisted return of the eastern cougar. Without this step, it will be too easy for unmotivated agencies and a misinformed public to deny the ecological and sociological benefits of restoring populations of large carnivores by correctly observing that if it can't be done in Florida, it can't happen anywhere in the East.

Finally, Cardoza and Langlois (2002) recommend that improved documentation and standardized reporting must precede a comprehensive ARM approach that includes the active participation of private interest groups. In at least one area, the foundation for eastern cougar recovery has been

initiated by a small nongovernmental organization. The 1998 establishment of the Eastern Cougar Foundation (ECF), a West Virginia-based citizen-science nonprofit organization, indicates that there is some grass-roots advocacy for recovery of the cougar in the East. ECF also has initiated field studies with remote-activated cameras and serves as a conduit for public educational materials. The ECF and similar organizations are potential links between governmental agencies and the public for building educational outreach efforts. As constructive as such organizations may be, however, without proactive leadership on the part of government agencies and successful range expansion of the Florida panther, the eastern cougar and its ecological services will remain "The ghost of North America" (Wright 1959).

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full-time coal miner for Mingo-Logan Coal Company. He helped establish the Eastern Cougar Foundation (ECF), which seeks the return of this species in the eastern US. He also established and maintains the ECF website: <http://www.easterncougar.org>. Todd is currently conducting a remote camera survey for large mammals in the wilds of West Virginia. **Helen McGinnis** is retired after serving as a curatorial assistant in vertebrate paleontology at the University of California, Berkeley, the Smithsonian Institution, and the Carnegie Museum of Natural History. She holds an M.A. in paleontology from the University of California at Berkeley and an M.S. in wildlife management from Pennsylvania State University. For more than 30 years she has been interested in the return of the cougar to eastern wild areas and in the preservation of wilderness on federal land in the East. Helen has examined alleged sightings in Pennsylvania and has searched for evidence of panthers in Mississippi. She is also the author of the 1994 book *Hiking Mississippi: A Guide to Trails and Natural Areas*, and is an active member of the Eastern Cougar Foundation.

