

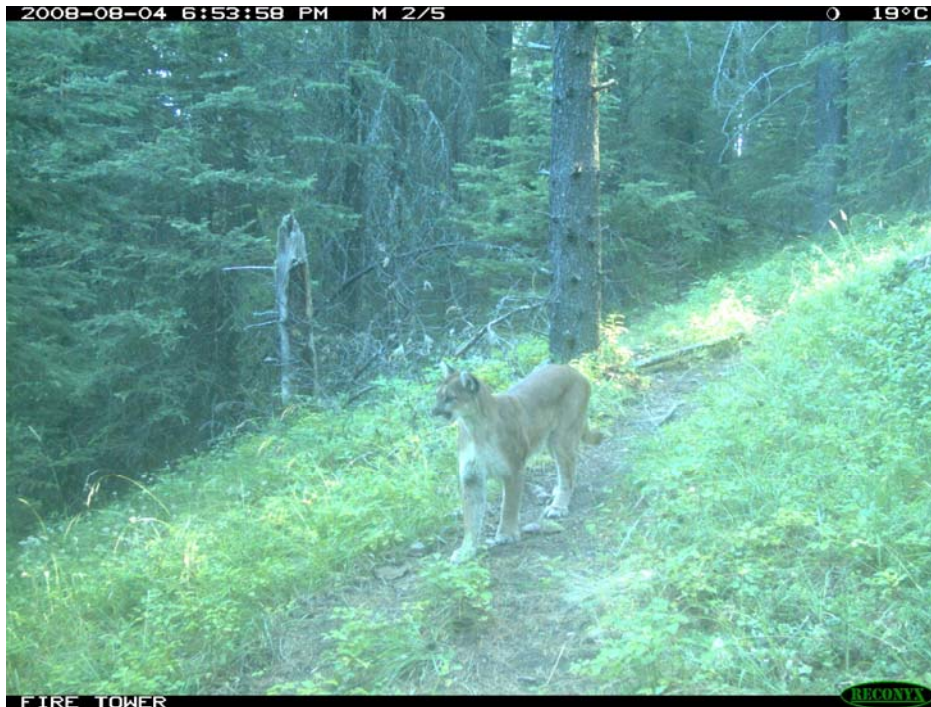
# The ECF Update

Newsletter of the Eastern Cougar Foundation

*Bringing Back a Legend*

September 2008

2008: No. 3



**Reconyx remote camera photo from the Cypress Hills, home of Canada's easternmost breeding population. See article on Page 12. Thanks to Michelle Bacon for sharing.**

## ***Inside.....***

Do wild cougars inhabit the eastern United States? - Page 1

Two new confirmations from the Gaspé Peninsula of Quebec – Page 10

President's message – Page 11

**Hawk Mountain presentation in Pennsylvania, Oct. 11th – Page 11**

Cypress Hills cougars – Page 12

ECF News – Page 13

Wild Felid Workshop in the Berkshires – Page 14

News from the blank space – Page 15

Introducing our new science Advisor John Laundré – Page 16

In memory of Dave Maehr – Page 16

In memory of Dana Hurt – Page 17

Book Review: *Where the Wild Things Were* – Page 18

Florida: Reintroduction timeline needed – Page 19

References – Page 21

Application of Head-Body ratios – Back page

## DO WILD COUGARS EXIST IN THE EAST? WHY THE ECF IS DE-EMPHASIZING SEARCH-RELATED ACTIVITIES

Helen McGinnis and Jay Tischendorf

**Introduction:** The Eastern Cougar Foundation (ECF) was founded in 1998 by Todd Lester, one of perhaps only two people who said he saw a cougar—in 1983—and 13 years later was successful in documenting one<sup>1</sup>. Later he took the lead in writing a grant proposal and got funding for 20 remote cameras, which he set out in the southern part of West Virginia’s Monongahela National Forest. Despite his heroic dedication and field expertise, he has never scored another confirmation.

The purpose of this article is to explain why for the past year ECF has been placing more focus on cougar conservation, recovery, and education-oriented activity and less emphasis on searching. Some of us have taken literally decades to realize that searching will do nothing for cougar recovery. Hopefully this article will condense what we have learned in a few pages.

Thousands of people have reported cougar sightings in the East since 1900.\* I first became seriously interested in cougars in the East when I was studying coyotes in Pennsylvania in the mid 1970s. Coyotes had just started to become well established in the state. I would ask people if they had ever seen a wild coyote in Pennsylvania. They always said No. But several of them reported mountain lion sightings: Was I interested in them? So I started collecting cougar sightings, through interviews and by searching for written accounts going back to 1900. Within a few years I had accumulated more than 300 reports<sup>2</sup>. As a native of the West, I knew how rare cougar sightings are, so interviewing people first hand was a great vicarious experience. I left Pennsylvania before I had time to start looking for sign in the field, but I was sure that within a few years undoubted evidence would begin to accumulate.

**CONFIRMATIONS OF COUGARS IN THE  
EASTERN UNITED STATES: 1990-DATE**  
(MN, WI, MI, AND FL not included)

2008: Chicago, Illinois - N  
2004: Western Illinois near Mississippi River – N  
2000: Monmouth, Maine – O  
2000: Southwestern Illinois near Mississippi River –  
N  
1997: Quabbin Reservoir, Massachusetts – O  
1997: Floyd County, eastern Kentucky – N&S  
1996: Wyoming County, southern West Virginia – O  
1995: Cape Elizabeth, Maine – O  
1993: Keene Valley, eastern New York - O

**Ancestry as revealed by DNA Analysis:** O –  
Unknown or unavailable; N – North American; S -  
South American

Twenty years later I moved back to the region. *Not one piece of evidence* had turned up in Pennsylvania, but when I told people who lived in rural areas of West Virginia and Pennsylvania about my interest, they usually responded by relating their own sighting or those of friends or relatives. But there has been only one confirmation in Pennsylvania since 1900, when a young female was killed in Crawford County in 1967. A larger individual that accompanied her may have been killed two months later<sup>3</sup>. I personally investigated that incident and concluded that the young female was a former captive. Two cougars were killed in Pocahontas County, WV in 1976, but the preponderance of evidence indicates they were released from captivity. Something was wrong.

Where was the evidence of even a few of all these cougars people claimed to be seeing?

\* For the purposes of the rest of this paper, “East” is defined as all states east of the Mississippi River with the exception of Minnesota, Wisconsin, Michigan, and Florida.

People in other eastern states and Canadian provinces were also collecting reports of sightings, expecting evidence to surface at any time. Among the better known chroniclers were Henry Shoemaker in the early 1900s in Pennsylvania<sup>4</sup>; Harold Hitchcock, a professor of Biology at Middlebury College in Vermont from 1943 to 1968; and Bruce Wright, a professional wildlife biologist in New Brunswick. Wright's two books, *The Ghost of North America* (1959)<sup>5</sup> and *The Eastern Panther: A Question of Survival* (1972)<sup>6</sup> were the inspiration of at least two active members of ECF—Jay Tischendorf and myself.

In 1954, Herbert Sass wrote a popular article on eastern sightings for the *Saturday Evening Post*<sup>7</sup>. It was the first of many. Smithsonian magazine and the periodicals of several eastern state wildlife agencies ran articles on the return of the cougar in the 1970s on into the early 1990s<sup>9, 10, 11, 12, 13, 14, 15, 16, 17, 18</sup>. You don't see articles of this type today.

***Assumed Cougar—Actually Bobcat.***  
**Northern Pennsylvania, 2005.**  
**Bobcats mistaken for cougars often lack obvious spots.**



Why? Because, despite all those reports, hard evidence has confirmed the existence of cougars in the East in only a few instances in the last 100 years. The only search officially sanctioned by the US Fish and Wildlife Service, conducted by noted biologist and ECF Advisor Emeritus Robert Downing with cooperating individuals in the late 1970s, failed<sup>19</sup>.

Various groups, including the ECF as well as many individuals, have searched for evidence in the field and solicited it from others. A few claim they have evidence but refuse to let experts and skeptics examine it. If they do have evidence, which seems doubtful, they are doing nothing to help the cougar by hiding it. In essence, then, we are aware of only six well-documented, credible confirmations of seemingly wild cougars in the “Far East” United States outside of Florida since 1990.



The situation is different in eastern Canada, where at least 16 widely scattered confirmations have been recorded from southern Ontario, Quebec and New Brunswick since 1990. This article focuses on the eastern United States.

***Assumed Cougar—Actually Housecat.*** North Carolina. David Howell and friends went to the site with a yardstick and demonstrated that the cat was too small to be a cougar.

**Sightings By Themselves are Useless as Evidence:** How could anyone mistake a large, long-tailed tawny cougar for anything else, except

perhaps an African lioness? We have learned that they can. Some people certainly have seen cougars in the East. Three of ECF's most active members have been inspired by sightings. But actual sightings are in the minority of those who believe they've seen them.

Paul Beier was one of the first scientists to sound a note of caution about sightings in a 1993 report<sup>20</sup>. He and his co-workers conducted a long term study of the cougars of the Santa Ana Mountain range in southern California. They state, “Most cougar sightings are bogus and do not need validating: In our experiences during 1988-1992, at least 75% and perhaps as many as 95% of the routine sightings were cases where the observer has misidentified a bobcat, coyote, domestic dog, domestic cat, raccoon, or deer. The following 3 examples illustrate that even people with extensive experience with animals mistakenly identify other animals as cougars, even under ideal viewing conditions.”



Here is one of the three examples: “Rancho Carillo is a community completely surrounded by designated wilderness areas, inhabited by about 70 families who have chosen a remote lifestyle. They live in the middle of cougar habitat, and we tended to believe many of their reports of cougar sightings. In July 1989, a resident of Rancho Carillo reported that for 2 days a cougar had been resting near a woodpile and trailer about 200 feet from his house. He had watched the animal several times, during the daytime, using a spotting scope, and several of his neighbors had also seen it. When 2 members of the study team went to investigate on the morning of July 28, 1989, the informant and several other observers said they had just seen the cougar bed down behind the trailer. The informant stood by his spotting scope while we went to investigate. As we approached the trailer, a house cat ran out from under the trailer and the observers shouted: “There goes the lion.”

***Assumed Cougar—Actually Bobcat.*** The white spot on the back of the ear is diagnostic of bobcats. North Carolina, 2007. Photo submitted by Fred Lindsay to ECF, 2007.

**Analysis of Photographs and Videos of Living Cats:** As an active member of the ECF, which shares photographs of evidence with the Ontario Puma Foundation (OPF), I have been privy to seeing presumed evidence of cougars in the East--photographs, videos and video stills of animals, and photographs of tracks and track casts.



***Assumed Cougar—Actually Housecat.*** A fat Siamese checks out a backyard trash pile. Ontario, 2007. Submitted to OPF.

Photos and videos of assumed cougars tend to be distant and fuzzy. If the image was clearly that of a cat, we originally thought it would be necessary to determine its size. This proved extremely difficult

when there was no object near the animal that could be measured. Joseph A. Lankalis compared the body and head proportion, tail carriage and sitting posture of cougars and leopards in comparison to house cats. At the same time, Dr. Fred W. Scott, retired Curator at the Acadia Wildlife Museum in Nova Scotia, developed a method of distinguishing images of cougars from house cats by calculating their head-body ratios. The differences in the ratios (see back page of this newsletter) are based on the fact that cougars have long necks and small heads in comparison to house cats. Applying these techniques, it was apparent that many of the assumed cougars were actually house cats. Clearly people sometimes grossly overestimate the size of a distant animal.



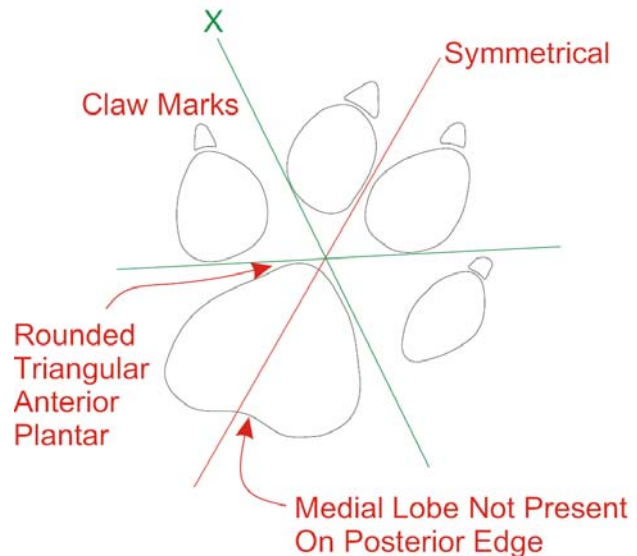
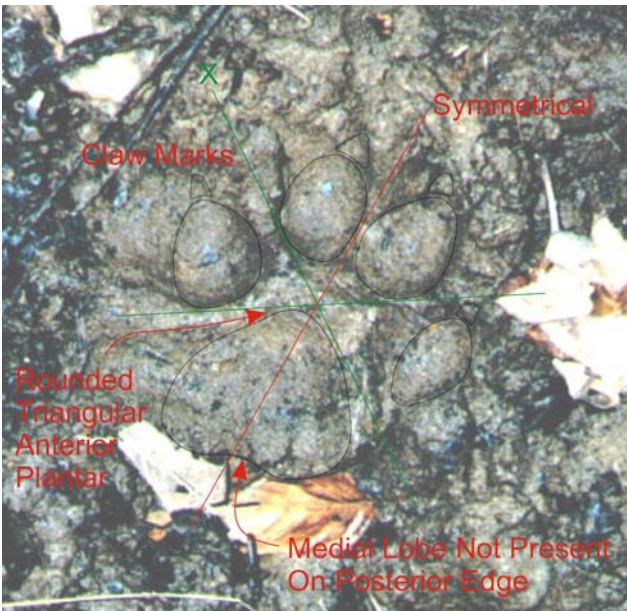
Most of the other cats were bobcats. Shouldn't John Q. Public be able to distinguish a relatively small bobcat--short-tailed and possessing sideburns--from a cougar? Apparently not—perhaps 60% of the photos and videos we in ECF and OPF have analyzed are bobcats. Bobcats in the northeastern states sometimes have no visible

*Assumed Cougar—Actually Bear. From Algonquin Park, Ontario. Taken by Tammy Donaldson, submitted to OPF.*

spots, so people assume they are tawny pumas. Also, few seem to be aware that bobcats have prominent white spots bordered by black on

the backs of their ears; cougar ears are blackish in back.

**Tracks:** Very few bona fide cougar tracks have been found in the eastern US. To be sure, tracking conditions in the East are terrible compared to conditions in the West, where dusty roads and trails



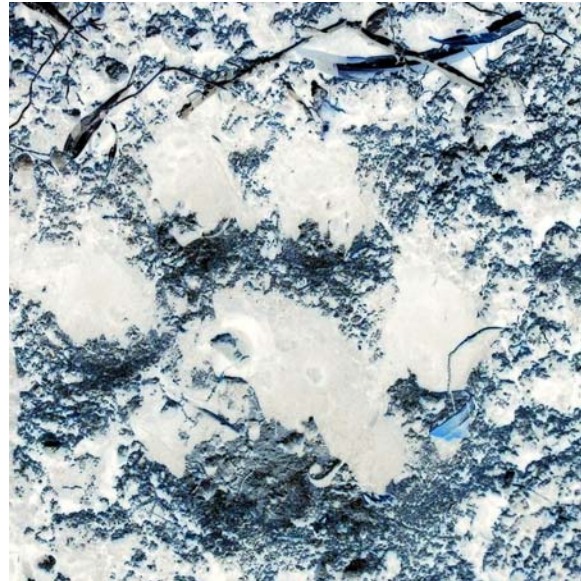
*Presumed Cougar—Actually Dog. Stuart Kenn's analysis of a track from Virginia, 2007.*

may provide perfect tracking conditions, and winter snow lasts for months. But still, good tracking opportunities do exist.

Many believe they have found cougar tracks, usually because they are very large and “round.” Neither of these features are diagnostic of cougars. As late as the 1970s no one had described the diagnostic differences in the tracks of cougars compared to dogs, so Bruce Wright can be forgiven for identifying dog tracks in snow as those of a cougar in his publications. As the decade progressed, Robert C. (Chris) Belden<sup>21</sup> and Robert Downing<sup>22</sup> learned how to describe the differences in words and diagrams.

Some tracks *might* be cougar, but the diagnostic characters are not visible. In such instances, we can only say that the track is indeterminate. Also, in most instances, a single track cannot be accepted as confirmation of a cougar. Any dog with cougar-sized feet is capable of leaving a perfect “cougar track” from time to time as its feet slip and slide.

Most of the assumed cougar tracks that have been submitted to the ECF and OPF are dog; a few are bear. Few cougar tracks have been documented in the eastern US outside of Florida since 1990 with the exception of Todd Lester’s 1996 find in West Virginia. Two others have been accepted in conjunction with a sighting and/or scat.



***Assumed Cougar—Is Cougar! From New Mexico. Sometimes a negative image enhances details. Photo by Rick Rosatte.***

**Scats:** Although a perfect felid scat can be distinguished from perfect canid or bear scat, objects are rarely perfect in nature. Before the advent of DNA analysis of tissue sloughed off in the gut as food passes through, the only way to determine if a scat had been deposited by a cougar was to tease it apart and look for cougar hairs that the big cat ingested when it groomed itself. This method was used to positively identify a scat associated with tracks in 1992 in New Brunswick<sup>23</sup>.

DNA analysis is now the preferred method of identifying scats beyond reasonable doubt, but not all scat samples are suitable for analysis. Not much has been said about the use of scats to identify cougars since an incident in Michigan. In 2001, Dr. Patrick Rusz, Director of Wildlife Programs of what is now the Michigan Wildlife Conservancy, issued a report that concluded that cougars occur on both the Upper and Lower Peninsulas of the state<sup>24</sup>. The principal evidence were scats collected from several

localities. In a second report, several of the scats were illustrated and localities were provided<sup>25</sup>. Ruzs' reports were met with skepticism from the state Department of Natural Resources and many others.

The scats were turned over to Dr. Brad Swanson at Central Michigan University. Swanson was able to identify only ten of 297 scats from 12 areas as cougar<sup>26</sup>. One of those was determined to be from a North American cougar; the ancestry of the others could not be determined. A rebuttal from Allen Kurta and Michael Schwartz followed<sup>27</sup>. Kurta and Schwartz decided that Swanson had been unable to identify most of the scats because of improper methodology. Their conclusion: "...their results are improbable, especially in light of no other evidence in the scientific literature suggested the existence of a population of cougars in Michigan." Since that uproar, little has been said about the use of DNA analysis of scats as a method of confirming cougars.



**Cougar-Killed Deer.** Note the abdominal breach, the sheared ribs, and plucked hair. The carcass had been dragged 80 yards from the kill site. Golden, Colorado. Originally published in Ramon Bisque's book **THE LIONS OF THE LYONS**<sup>32</sup>.

**Deer Kills:** If cougars indeed occur in the East, they are consuming prey and defecating. When a cougar kills a deer and consumes it over a period of days, it leaves many scats.

Where are those deer kills and nearby scats?

Millions of people live in rural areas in the East, and many of them hike, hunt or fish in undeveloped areas. Yet only a single deer kill has been confirmed since 1990<sup>28</sup>. We know of only one other possible cougar deer kill that is currently under investigation in eastern North America. It was discovered in July 2008 in southern Ontario not far from Toronto<sup>29</sup>.

**Alleged Depredation on Livestock:** Another mystery is the lack of confirmed livestock kills. Several people have blamed cougars for attacks on horses in Michigan and western New York, but none of these have been verified. Some of the assumed attacks can be blamed on free ranging dogs, others on encounters with barbed wire. In the West, sheep and goats are by far the main victims of cougars. Yet in the East, no claim of cougar depredation on sheep or goats since 1990 has made it into print, to the best of our knowledge.

**Screams, Tree Scratches and Scrapes:** Many people have heard screams in the night—perhaps sounding a woman in distress, or maybe just weird, unusual, or frightening. Cougars are rarely heard “screaming” in the West, and when they do, the sound usually resembles that of an extremely large, hoarse house cat. Bobcats, owls and other animals are almost certainly responsible for most such noises in the East. Attributing a call or cry, no matter how unusual or cat-like (whatever that may be to the individual and his/her ears), to what is arguably the rarest animal in the woods without actually seeing the creature make the sound, is simply not wise. A few people who care for cougars in eastern

sanctuaries and zoos have reported nearby vocalizations; these reports can be taken more seriously. But again, without some hard evidence, even their reports fall into the "unvalidated" or "unprovable" category.

***Deer kill showing how a cougar crushes the skull to remove the brains. Taken in Idaho. Photo by John Laundré. The cougar was named Chloe.***

Cougars claw trees, just as house cats do, but the tree scratches we have seen in the East were made by the broad claws of bears. Cougars scrape up mounds of leaves, pine needles and debris with their hind feet. They may defecate or urinate on or near the pile. Scrapes are messages to other cougars: a warning from an adult male to others to keep out of its territory and perhaps from one sex to the other to advertise their existence and state of sexual readiness. Fresh scrapes are distinctive, but no one has ever submitted proof of a scrape east of the Mississippi River. Older, weathered scrapes are indistinct; without other evidence, such as a scat or nearby tracks, a scrape would be almost impossible to confirm.



**Hoaxes:** In recent years, largely with the advent of the internet, the search for evidence of cougars in the East is plagued by hoaxes. Most are easy to recognize—the hoaxer comes upon a photo of a very large cougar in the West or one that is striking in another way (the photos from Lander, Wyoming of a cougar peering thru a sliding glass door comes to mind). Mundane photos of subadults are not used.

A couple of hoaxes involved plaster casts. One set from the Berkshires of western Massachusetts, now in Harvard University's Museum of Comparative Zoology, was clearly fabricated. Another well-publicized cougar "confirmation", allegedly from northern West Virginia, was made from a latex mold of an actual cougar foot that can be purchased online.

The existence of hoaxes means that every photo of a cougar must be ground-truthed. Not all of them can be. A series of remote camera photos and video stills, allegedly taken in Louisiana, show a cougar walking along a gravel road with no identifiable landscape features<sup>30</sup>. Even if they are genuine, there is no way to prove it. The documented hoax from northern West Virginia suggests that every possible set of cougar tracks should be seen in the ground by a professional wildlife biologist. Given that most people cannot identify a cougar track, it would not be surprising if officials would not want to take the time to look at every alleged cougar track in the field. Anything can be hoaxed if the hoaxer is determined and intelligent enough, so all confirmations ultimately must be based on trust.

**Lack of Remote Camera Documentation:** No cougars have been captured by trail cameras in the East outside of Florida. Some remote cameras can now be purchased for less than \$100. It's safe to say that deer hunters, naturalists and professional biologists have set up hundreds or even thousands of such cameras in the East. Indeed, multiple intensive camera-trapping studies have been conducted,

notably in the Adirondacks and the Appalachians. Why haven't they captured any cougars? Some of us have heard stories of cougars being killed in various eastern states. As I write these words, all wild cougars are protected in the East, so it's understandable why details of illegal kills are not forthcoming. But why would someone withhold a remote camera photo? Wouldn't most people want to proclaim their "catch" to the world? In contrast, the capture of cougars in seemingly credible remote camera photographs, and even on hand-held video, is now relatively common in the central US. Again, why not in the East?

**Hair Traps:** The only attractant that has proved successful in inducing a cougar to rub against a pad that captures hair for DNA analysis is the pheromone lure developed by Dr. Marc Gauthier, which has produced a few scattered confirmations in Quebec and New Brunswick<sup>31</sup>. The cost of the lure prevents others from employing it. Also, given the present low cost of remote cameras, any good lure that brings a cougar into camera range without rubbing should be more effective.

**Last Confirmation in the East was in September 2000: Why?** It came from southern Maine, when a hunter spotted a female with kittens<sup>28</sup>. MDIF&W biologist Keel Kemper confirmed the tracks as cougar. The two Maine confirmations that the Cougar Network recognizes may be related to the scattered confirmations across eastern Canada. If breeding populations of cougars are indeed building up, an increasing number of confirmations will occur, as is the case in the Dakotas and Nebraska over the past decade.

It is not happening. State wildlife agencies and other skeptics in the East claim that any cougars that are seen or documented are former captives, escaped or deliberately released. They may be correct. Increasingly, state legislatures are passing laws banning private ownership of large cats such as lions, tigers, leopards and cougars. The US Congress passed the Captive Wildlife Safety Act in 2003, making it illegal to import, export, transport, sell, receive, acquire, or purchase big cats in interstate or foreign commerce. The law was not actually implemented until August 2007. These laws undoubtedly—thankfully—have reduced the supply of big cats available to private owners, even if some are still being held illegally in remote rural areas. Fewer "pet" cougars mean fewer will escape or be released by their owners. The ECF strongly opposes private ownership of cougars and other wildlife.



**Assumed Cougar--Actually Bobcat.** Note the diagnostic white spot on the back of one ear and the thin tail ending in a black tip. Virginia. Received for identification by Cougar Quest - Virginia in January 2008. The rock was visited and a dog put in place of the cat, demonstrating the cat was too small to be an adult cougar.

**Meanwhile, in the central United States and in central and eastern Canada, people also report sightings.** Some wrongfully believe cougars are numerous in these regions and that they've been in there for decades. Most observations are clearly erroneous, but more than a few cougars are turning up. You can see the locations of confirmations that have occurred in the past 18 years on maps prepared by the Cougar Network. In the matter of a mere decade or so in South and North Dakota,

breeding populations have recovered in the Black Hills and the Badlands and yearly hunting seasons have begun. Not only are hunters killing cougars, but we know they exist because they are being killed on highways and by trains, by ranchers and in traps and snares. Remote cameras also continue to regularly capture their images.

**What is a Breeding Population?** Six cougars have been confirmed in the eastern US since 1990, discounting the three in Illinois, which were almost certainly dispersers from areas further west. Undoubtedly, some reported sightings in the East are genuine. Three of the ECF's most active members have seen cougars in the East--life changing experiences for them. But these cougars are likely wandering individuals.

Two of the actual confirmations involved a mother with one or two kittens, but these in themselves do not indicate a breeding population. A viable breeding population contains enough adults that the cats establish home ranges, usually defend territories, and regularly produce kittens, some of which disperse as subadults. The easternmost breeding populations in the US are in the Black Hills of South Dakota, the Badlands of North Dakota, probably in the northwestern corner of Nebraska, and along the Rio Grande River of Texas. The easternmost population in Canada is in the Cypress Hills on the southern Alberta-Saskatchewan border, featured in another article in this newsletter.

**Why the ECF is De-Emphasizing Efforts to Find Evidence?** If any undoubted evidence of cougars does turn up in the East in the future, it probably won't be because of the ECF's efforts. A few of the millions of people who live there are likely to be the ones who find it. We continue to solicit evidence from others and evaluate what we receive. Our official field research project, involving deployment of remote cameras in the Land Between the Lakes National Recreation Area in western Kentucky and Tennessee, is ongoing. Its location, not far from puma confirmations in Missouri and Illinois, plus the excellent habitat it provides—more than 170,000 contiguous acres without human habitation and crossed by only one highway—makes it a prime area for monitoring for the presence of the species.

Increasingly, we will turn our attention to promoting active cougar recovery and restoration and letting the public know that co-existence with cougars is not only possible but desirable. To this end we will be making full use of public speaking programs, our informative, up-to-date website, and through pending books and publications. We especially want to develop and expand educational, conservation-oriented material for school children. We will link the recovery of the cougar with the need to control development and preserve habitat for all wildlife across the East, supporting our public lands and the establishment of land trusts and public acquisition for additional key areas. We welcome the involvement of ECF members in these endeavors.

***References Cited on Pages 21-22.***

**Two More Confirmations from the Gaspé Peninsula of Quebec:** Nathalie Tessier of the Dept Sciences biologiques, Université de Montréal, reports that hair poles baited with Marc Gauthier's pheromone lure have snagged two more cougar hair samples. The samples may be from the same individual because the hair poles are not far apart.. So now, researchers at the university have 12 confirmations from Quebec and New Brunswick. The article submitted last year was returned for further work and will be re-submitted for publication.

## PRESIDENT'S COMMENTS: Bringing Back a Legend.....

Jay Tischendorf

The subject of cougars in the East and Midwest continues to generate great interest, and rightfully so. Few animals are as magnificent, or so able to capture the essence of the wild, as the remarkable and adaptable cougar. Our members should proudly note that the Eastern Cougar Foundation, through its website, newsletter, and public speaking programs, continues to lead the charge in terms of factual, conservation-oriented information related to recovery of this fascinating felid. On that note, your Directors and Officers here at ECF hope you will find this month's newsletter informative. We continue striving to make your newsletter better and better, and hopefully you agree we are succeeding. And if you haven't checked out your ECF website lately, please do. Recently updated, it is better than ever before!



If you are anywhere near **Hawk Mountain Sanctuary, which is in east-central Pennsylvania, on Saturday, October 11<sup>th</sup>, please join ECF Vice President Kerry Gyekis and me for an evening presentation on cougars in the East.** The audience for this much-anticipated presentation will be among our largest to date. **The free program kicks off at 6 PM.** You can find more information at [www.HawkMountain.org](http://www.HawkMountain.org), or call the Sanctuary at (610) 756-6961. It will be the peak of autumn colors and the Mountain, world famous for its migrating raptors, will be beautiful. We hope to see you there!

Autumn, with its change of seasons, seems a fitting time to announce that I'll be stepping down from the ECF presidency. It has been a good hitch, as they say, thanks to all of you who continue to support the ECF mission and namesake cat. I step down to pursue some other critical, and exciting, ECF-related activities. Some of these are discussed in this issue and others will be updated on the ECF website and in future newsletters. The organization remains in capable hands. At our last Board of Directors and Officers meeting in August, it was agreed that Chris Spatz, one of our respected Directors, will be taking the ECF helm as its 3<sup>rd</sup> president. Chris is a thoughtful, energetic fellow with a strong conservation ethic and critical mind. An excellent writer and outdoors person, I have no doubt Chris will keep ECF moving forward on "the track of the cat."

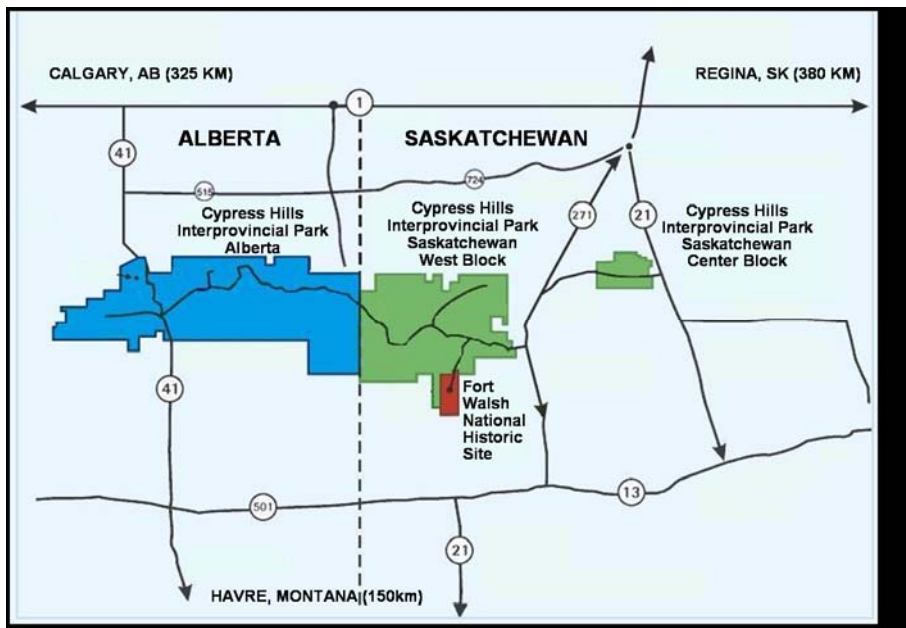


In closing, I'd like to share some thoughtful words about the cougar, or mountain lion, from the Nebraska Game and Parks Commission. Nebraska is now home to—in all likelihood—a small, recovering population of these cats, and their website ([www.ngpc.state.ne.us/wildlife/mountainlion.asp](http://www.ngpc.state.ne.us/wildlife/mountainlion.asp)) features some quality information on the species. As wild cougars continue to show up in strange places at strange times, and the species' recovery becomes more of a reality, hopefully other states will embrace Nebraskans' well-stated sentiments: "A combination of understanding and tolerance will allow us to coexist with mountain lions and prevent us from repeating the mistake of extirpating this magnificent feline...once again."

# The Cypress Hills Cougar: Examining the Habitat and Prey Selection of Cougars in Eastern Alberta and Western Saskatchewan

Michelle Bacon, M.Sc. Candidate, University of Alberta, Canada

Studies in Yellowstone National Park and Zion National Park have shown that the lack of a top carnivore (wolves and cougars, respectively) can allow a high-density ungulate population to persist, limiting the native vegetation. Likewise, those studies also have indicated that the relocation and recolonization of carnivores into an area can have a rapid effect on restoring the system<sup>33</sup>. The relationship between humans and carnivores is complicated, however. The values, attitudes and perceptions that humans have towards carnivores are often influenced not by their own experiences, but by the values and attitudes of past generations. This in turn influences the conflict resolutions and management practices exhibited by government officials as well as local citizens.



Throughout the past 10 years, cougars have begun re-appearing in their former range. Because their current habitats in North America are both naturally and artificially fragmented, cougars may exhibit metapopulation status throughout much of their range<sup>33,34</sup>. If this is so, small patches may have a higher risk of extinction, but also can serve as stepping stone populations facilitating gene flow to more distant populations. Our 160 square mile research site in southeastern Alberta and southwestern Saskatchewan, Cypress Hills Interprovincial Park, is an isolated island of forest in the middle of the prairies, rising nearly 2000 feet. No large carnivores existed in the area—a protected park surrounded by private ranches—for over 100 years before the return of cougars. These cats likely arrived via coulees leading from —Rocky Mountains in Alberta and/or the Sweet Grass Hills, Bear Paw Mountains and Little Rocky Mountains in Montana, all of which are within 180 miles. The cougar population in Cypress Hills is currently the most eastern confirmed breeding population of cougars in Canada.

Cougars were historically distributed throughout Alberta. However it is believed that in the early 1900s eradication efforts, seen in much of their North American range<sup>35, 36, 37</sup>, limited them to the southwest region of the province. Cougars are currently listed as a "big game species"<sup>38</sup> in Alberta. In 2007, changes to provincial law permitted private landowners to hunt cougars, without a license, on their own land<sup>39</sup>. In Saskatchewan there is very little published information about cougar presence and prevalence. The large cat is listed as a protected species under provincial laws, and hunting of cougars is illegal. Biologists with Saskatchewan Environment have stated that there are currently less than 300 cougars in the province (S. Burke, pers. comm., August 2007). With the return of a top predator into the Cypress Hills ecosystem, a change can be expected to occur from both ecological and human

Cougars were historically distributed throughout Alberta. However it is believed that in the early 1900s eradication efforts, seen in much of their North American range<sup>35, 36, 37</sup>, limited them to the southwest region of the province. Cougars are currently listed as a "big game species"<sup>38</sup> in Alberta. In 2007, changes to provincial law permitted private landowners to hunt cougars, without a license, on their own land<sup>39</sup>. In Saskatchewan there is very little published information about cougar presence and prevalence. The large cat is listed as a protected species under provincial laws, and hunting of cougars is illegal. Biologists with Saskatchewan Environment have stated that there are currently less than 300 cougars in the province (S. Burke, pers. comm., August 2007). With the return of a top predator into the Cypress Hills ecosystem, a change can be expected to occur from both ecological and human

dimension perspectives. Evaluating the current habitat and prey selection of the cougar population will help gain an understanding of the factors that contribute to the restoration of a large carnivore, and can lead to a management and conservation plan for cougars that will allow them to coexist with wildlife, livestock and human populations in the region.

We are using Lotek 4400 Global Positioning System radiocollars to track long-term movements of cougars. We will examine seasonal effects and movements relative to the park town sites, as well as assess natality, mortality, recruitment and dispersal within the population<sup>40</sup>. Following methods developed in cougar research in Wyoming<sup>41</sup>, utilized successfully at the Central East Slopes-Alberta Cougar Project field sites, we are monitoring radiotelemetry data collected by the GPS collars to find clusters of site<sup>42</sup> locations; these clusters are investigated as potential kill sites and if a kill is found, the information is used to determine prey selection.

In April 2008, we caught and placed radiocollars on two cougars, a 180 lb male and a 95 lb female. Throughout the summer we tracked and located kill sites for the two cougars, and in 18 weeks of monitoring we found 22 kills by the male and 20 kills by the female. Our male has a summer home range of 95 mile<sup>2</sup> and has been preying on deer, elk and moose. We believe him to be the "King of the Hills" and doubt there is another male as big as him or using as much space as he does in this region.

Our female cougar has a summer home range of 12 square miles, has been preying primarily on deer, and provided us with an exciting discovery in mid-July. While searching a small cluster of GPS points, we heard a low growl accompanied by quiet whimpering. Surprised due to the small number of GPS points at the cluster (we would expect a female to be at her den nearly constantly), we quickly left the area and returned the next day with telemetry equipment. After ensuring she was not there, we approached and unexpectedly found four kittens, still with their eyes closed. After downloading the GPS data the next day, we determined that the kittens were only 11 days old; the female had been investigating sites earlier in the month and chose to return to this area to den. She has since stayed close to the den at all times, with the exception of short departures to eat deer fawns, her form of "fast food!" It will be interesting to assess the kittens' survival with snow tracking this winter. We also hope to catch another four cougars this winter to further evaluate the population in the Cypress Hills, which we estimate at this time to be between 8 and 12 resident adults.

The return of a large carnivore to this region signifies a change to the agriculture-based ecosystem of the Canadian prairies. As cougars expand their range eastward, an adaptive management plan is needed to resolve inevitable conflicts between wildlife and human stakeholders. By studying this isolated area, we can gain insight into the ecological significance of habitat patches and understand how divergent interests can co-exist within them.

*References on Page 22.*

## ECF NEWS

### **Presentation at Hawk Mountain, eastern Pennsylvania, Thursday, October 11th:**

See the President's Message on Page 11 for details.

**Land Between the Lakes Remote Camera Project:** Judy Tipton removed the remote cameras in early September. She is now working on a report on the site surveys of the areas in which each camera was set—including the dates the cameras were set out and removed and related

information such as: GPS readings, zone number; dominant vegetation, habitat setting; scent/attractant used, hair trap if set out, camera site diagram, and what was captured. The three scent posts baited with Gauthier's pheromone lure are still up and are being checked every two months.

**Kerry Gyekis** spoke at Prince Gallitzin and Ricketts Glen State Parks in late August, bringing the number of presentations he's given in Pennsylvania and adjacent areas up to 29. His next talk is scheduled at the **Schuylkill Center for Environmental Education in Philadelphia on Thursday, November 6th**. He'll also be at Hawk Mountain on October 11th.

On August 28th Kerry was interviewed by a reporter for TV channel WENY in Horseheads/Elmira, New York. Before agreeing to do the interview, Kerry gave his complete presentation to her so that she could ask intelligent questions. The program, *Twin Tiers Sunday*, was aired on Sunday, August 31st. Kerry says that the interview went well. But reporters are mainly interested in sightings because that's what viewers want to see. He's hoping to shift the focus to habitat preservation.

**Website Revisions:** Chris Spatz and Jim Solley are taking the lead in a thorough revision of our website. Check out the "What's New" section on our Home page and the "Cougar News" blog, a cross-referenced repository. We are posting news items about cougars in eastern and central North America we feel are *significant*, in contrast to the easterncougar Yahoo! group, which runs many articles on unconfirmed sightings, stories about cougars in the West, and occasional items about other species of wild cats. We are also posting announcements of conferences and workshops on "What's New."

## **WORKSHOP: WILD CATS OF THE NORTHEAST: Bobcat, Canada Lynx & Cougar. At the Rowe Camp and Conference Center near North Adams in the Berkshires of Western Massachusetts, Friday-Sunday, Nov. 21-23, 2008**

This workshop, conducted by ECF's Science Advisor Susan C. Morse—forester, wildlife ecologist, professional tracker and photographer—is the first of its kind, open to a mix of people including professional resource managers and those who just want to learn. More than 75 million acres of forested habitat remain in the northeastern US and contiguous Canada, so there is an extraordinary opportunity to define conservation priorities boldly, while there is still time. Bobcats, lynx and pumas are "umbrella species," top-of-the-food-chain, wide-ranging carnivores that need extensive wildlands to thrive.



The program will include an introduction to identifying and documenting the tracks and sign of these cats. Small groups will explore the nearby forest to learn about habitat, food and cover. There will be slide shows of Sue's awesome photographs, and she will share her knowledge on subtleties to look for the field, including tracks and sign associated with scent markings and prey caches, and hands-on inspection of pelts, mounted specimens, skulls and freeze-dried feet. A \$15 charge will cover the cost of a full-color booklet, *Wild Felids of the Northeast: Tracks and Signs*.

In addition to the \$15.00 fee mentioned above, there is a program cost based on gross family income, and additional costs for meals, lodging and/or camping. For more information and registration, visit

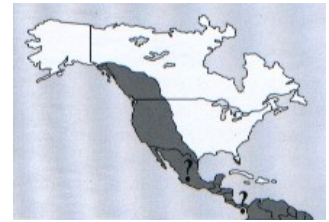
the Rowe Center website at [www.rowecenter.org](http://www.rowecenter.org) and click on the Calendar of Events or call (413) 339-4954. The quota of 40 people almost certainly will be filled, so act soon if you want to participate.



## NEWS FROM THE BLANK SPACE

←Historic range of the cougar.

Range of the cougar ca. 1990→



Maps of the cougar's range produced in the 1990s show a vast blank space in eastern and central North America—habitat that the big cat used to occupy before it was eliminated by persecution and near-elimination of its natural prey—the white-tailed deer. Above are maps from Kevin Hansen's 1992 book [Cougar: The American Lion](#). The Eastern Cougar Foundation is dedicated to the restoration of cougar populations in suitable areas of the eastern portion of that blank space and advocates responsible management when they recolonize former habitat.

**Minnesota Confirmation:** The Cougar Network has announced that a trail camera captured a cougar near Brownsville in the southeastern corner of the state in late October 2007. You can see the photograph and read more about recent confirmations in the Breaking News section of CN's website, [www.cougarnet.org](http://www.cougarnet.org).

**The Dakotas—Pity the Dispersers:** The **South Dakota** Department of Game, Fish and Parks (DGFP) quota for Black Hills cougar hunting season will remain 35 (or 15 females, whichever comes first). The season has been delayed in hope of reducing the number of orphaned kittens. It will start on January 1, 2009 and end on March 31st. The delay in the season to the dead of winter may reduce the cougar harvest.

The DGFP is “managing the Black Hills for cougars”—in other words, for sport hunting. They are not managing the rest of the state for cougars. Out on the prairie, any landowner can now purchase a license for \$15.00 and kill one cougar on his property. He or she cannot take another unless that cougar is attacking his livestock, in a pen with livestock or threatening the safety of humans. The reason for the unlimited quota is rancher concern about possible livestock depredation. But only a single sheep has been killed, and that incident was close to the edge of the Black Hills.

Early this year HR 1171 was introduced to state legislature. It would have classified cougars on the prairie as varmints that could be killed at any time for any reason (or no reason). This bill failed to pass. John Kanta, with the DGFP, explained that a bill similar to HR 1171 is likely to be introduced next year. By making it legal for land owners to kill a cougar, the likelihood of this bill passing will be lessened.

Kanta reiterated the DGFP's offer, first made to the ECF in 2003, to ship cougars to any eastern state that agrees to reintroduce them.

The quota for the Badlands in the southwestern part of **North Dakota** has been raised from 5 to 8. There is no limit in the rest of the state. The cougar hunting season opened on August 29th and will close on March 31, 2009. As September 27th, two cougars had been harvested in the Badlands.

## Introducing John Laundré, the ECF's Newest Advisor

Dr. Laundré has joined Susan C. Morse, Mark Jenkins and Dr. Marcella Kelly on the ECF Advisory Board. This summer he moved to Oswego, New York, where his wife, Dr. Lucinda Hernandez, is an Assistant Professor and Director of the Rice Creek Station at Oswego State University of New York. Recently, the editor interviewed John via email:

**Editor:** Where did you grow up?

**Laundré:** In Green Bay, Wisconsin on a dairy farm.

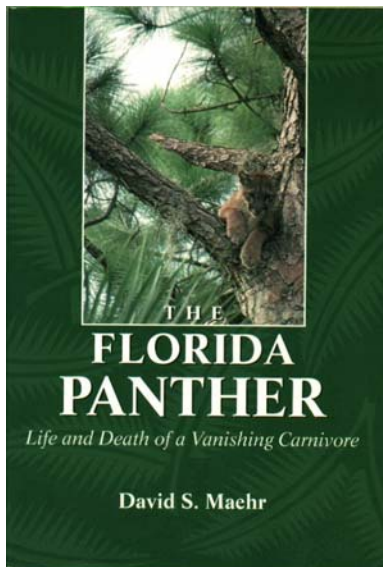
**Editor:** Where did you get your PhD?

**Laundré:** From Idaho State University in 1979. I worked on coyotes.

**Editor:** What do you hope or plan to be doing now that you live in New York?

**Laundré:** To be involved in carnivore research. I have several ideas on possible

studies of coyotes. (I know there are some good studies already going on but there is always room for more.) I also would like to work with bobcats and some of the other medium to small carnivores. My main research focus is in the area of predation risk and fear and how that affects habitat use and behavior of prey and predator. I am particularly interested in pursuing this regarding coyotes and deer. I also want to be active in issues surrounding cougars and wolves. I am hoping that I can play a role in their possible recovery in the Northeast. What that role is depends on the needs. I see current needs as primarily education, which I can contribute to because of my experience with cougars and wolves. I look forward to working with all the people involved in these species in the region and lending my expertise where it might be needed.



### ❧ In Memoriam ❧

#### DAVE MAEHR

It is with tremendous regret and sadness that we share with our members news of the June 20<sup>th</sup> death of our longtime board member and advisor, wildlife biologist Dr. David Maehr. Along with pilot Mason Smoak, Dave was killed in a plane crash in Florida while radiotracking black bears, a research project Dave had been involved in for many years. Dave was 52 and leaves behind his wife Diane and

two grown children, Clifton and Erin. Our thoughts and prayers go out to both the Smoak and Maehr families.

During his all-too-short career, Dave worked, among other positions, as a biologist for the Florida Game and Fresh Water Fish Commission, where for over a decade he intensively studied the Florida panther. More recently—since 1997, after earning his PhD—he served as an associate professor of wildlife and conservation biology in the University of Kentucky Department of Forestry. His conservation and scientific legacy live on in the animals he studied, the numerous scientific articles he wrote, and the many field biologists and graduate and undergraduate students he influenced.

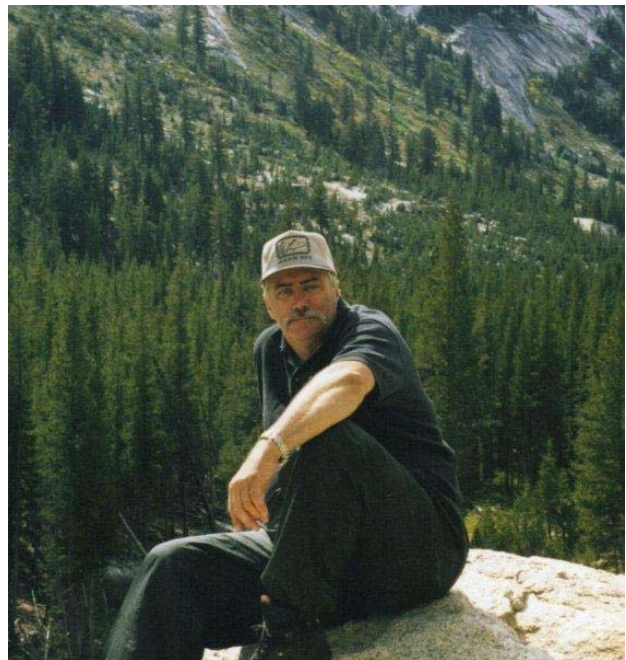
A “biologist for all seasons”, in addition to his work with carnivores Dave was an accomplished author and artist, as well as an ornithologist. His books, “The Florida Panther” and “Florida’s Birds,” are considered classics. A fellow with the Rewilding Institute and one of only a handful of scientists recognized as Aldo Leopold Fellows, Dave was an integral part of ECF since its inception in 1999. As such a well-respected researcher of both the Florida panther and black bear, his presence provided credibility to our fledgling organization.

A much more complete biography can be found on the ECF website home page. Please take a moment to read about Dave and join us in celebrating his remarkable life, work, and contributions to conservation. Truly we have lost a great friend. Donations to sustain his legacy can be made to the Dave Maehr Memorial Fund, University of Kentucky Office for Advancement, College of Agriculture, E.S. Good Barn, 1451 University Drive, Lexington, KY 40546-0097. Checks should be made out to the University of Kentucky.

## ❧ In Memoriam ❧

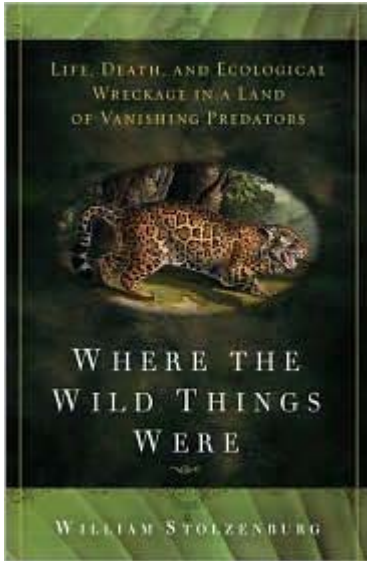
### DANA HURT

Dana Hurt aka Gray Wolf, lost his long but heroic battle with liver disease on Sunday, June 8th. Dana was an instrumental part of the ongoing remote camera surveys conducted by the ECF in Kentucky. Dana had various career pursuits during his lifetime, from owning a company to working in health care services. He had tremendous caring and patience for the sick and elderly, and was often an angel to those at their end of lives. Dana loved traveling, being in the outdoors, finding a Mom & Pop restaurant that served county style breakfast, playing tennis, and mostly having fun. Dana was a great friend, and a caring owner to his dog, Shadow. Dana was 56 years young at the time of his passing. He will be missed.



# Wild Things, You Make My Heart Sing

Christopher Spatz



During the past year, Japanese stilt grass, an invasive species first introduced to Tennessee, has crept down stream corridors and road shoulders from the Shawangunk Ridge, filling the bed of the derelict canal behind the house, working its way up the bank and into our yard. Stilt grass represents everything that is wrong with eastern ecosystems. Forests that have famously regenerated in the last century are now being reduced to a monoculture of weeds and invasives increasingly bereft of bird-song. From Maine to Georgia and west to the Mississippi, forest succession is under siege, a vast, living graveyard producing embattled heirs, cropped in the bud by a plague of white-tailed deer, overrun with bird-decimating raccoons, opossums, and housecats.

In *Where the Wild Things Were*, science writer Will Stolzenburg stacks the evidence that what Appalachian forests, California chaparral, Amazon canopies – anywhere across the globe you care to look – are suffering from is an absence of big carnivores. Where these keystone predators aren't, smaller predators and herbivores rule, ground-nesting birds vanish, and forests can't regenerate. What my backyard ridge in southern New York State is critically missing are wolves and cougars.

*Wild Things* stretches to book-length a chapter surveying the evolution of ecology studies, and then some, covered in David Quammen's 2003 opus on alpha predators, *Monster of God*. 1930s Russian test-tubes pitting paramecia against bacteria-imbibing protozoa; Robert Paine hurling starfish off the Olympic Peninsula, triggering a march of mollusks and a retreat of species in the inter-tidal zone; re-colonizing otters salvaging sea urchin-ravaged Aleutian kelp beds; leaf-cutting ants toppling nascent island jungles leaking predators behind a Venezuelan hydroelectric dam – a dynamic John Terborg comes home to find hauntingly re-enacted in the deer, tick, and stilt grass-infested woods of his boyhood haunts outside Washington, DC.

In prose lithe and agile as a voling coyote, Stolzenburg chronicles the charm of monotonous field-censuses turning theory into insights, insights into facts; the people, prey, and predators that have given us terms like *green world*, *food webs*, *trophic cascades*, and *keystone species*. Here, too, is a guano oasis on the Arctic rock of Spitsbergen launching modern ecology studies, Aldo Leopold and the Kaibab Plateau revisited, Hairston, Smith and Slobodkin (HSS), the case of an African hominid murder cracked by a crowned eagle scalping, famished killer whales suddenly crashing the sea otter celebrations, Clovis man-induced exterminations and the mother of all theoretical restorations, a North American Pleistocene rewilding featuring cheetahs, camels, and Asian elephants. Those of us arm-chaired on the ecology sidelines have likely gotten wind that it all culminates in the watershed covenant of the field, *Wild Things'* denouement, the *landscape of fear*.

More important than direct predation, the presence of big predators roaming the land affects prey behavior, of where and how herbivores browse. The transplanted wolves of Yellowstone and the remnant lions of Zion – species long hunted and hounded as demon vermin – emerge as the engines of ecological balance, making obsolescent ungulates run again for a living. Where the wild things are, aspen, willow, and wildflowers, beaver, fish and frogs, birds and butterflies revive. Vilified alpha predators are the archangels of ecosystem restoration.

Critics have noted that a number of worthy researchers have been overlooked by Stolzenburg, and that the very source of the *landscape of fear's* origin cited in the book is suspect. What this layman has noticed is that there's no coincidence *Wild Things* shares many of *Monster of God's* subjects. On dovetailing missions, two of our finest ecology interpreters (Stolzenburg is every bit the rabid archivist and pithy stylist as Quammen, the reigning champ of American outdoor literature) writing for the rest of us have tapped the pantheon of landmark research in the fields of ecology and conservation biology. *Wild Things's* gargantuan bibliography credits those left out in a text of 218 pages. To the latter charge, ECF members will be treated to a first-hand account of the *landscape of fear's* genesis by our newest and welcomed scientific advisor, John Laundré, in our next newsletter.

A Shawangunk land stewardship committee I have the privilege to participate in has been sweating our loss of chestnut oaks and warblers, our invasions of purple loose strife and Japanese stilt grass. The answer: increasing the local deer harvest. But as *Wild Things* exasperatingly illustrates, sport hunting only works for a season. The remaining herd is free to dine un-pressured the rest of the year, and can re-double fast as rabbits. The muscle needed to reduce the East's herds will require a monumental, inter-agency, inter-state effort, to say nothing of selling that one to hunters whose license fees and gear taxes are the cash cows funding state wildlife programs. White-tailed deer are our blessing and our curse, and ultimately, they're not the problem. We are.

The high-minded notion by well-meaning easterners (me included) of returning wolves and cougars to our forests, that they deserve to be restored by birthright to their former range, is preciously dated. And wildlife managers need a jolt of stiff science. Alpha predator recovery is no longer a matter of redemption; it is an ecological imperative. The East's forests are dying without them. For my part, I'll start by recommending *Where The Wild Things Were* to the stewardship committee, and to anyone else willing to listen.

***Stolzenburg, William. 2008. Where the Wild Things Were: Life, Death and Ecological Wreckage in a Land of Vanishing Predators. New York; Bloomsbury. 291 pp.***

## **FLORIDA: WANTED—A TIMELINE FOR REINTRODUCTION**

Stephen Williams, President, Florida Panther Society

*Although roadkills of Florida panthers have been periodically reported by the media over the past few years, and conflicts between homeowners and panthers have surfaced, little actual progress in protecting panther habitat and assuring their continued survival was announced until this past summer. The following comments were given during an interview with Board members of ECF and are offered in response in the order in which the questions were asked. —Editor*

The final draft of the 3<sup>rd</sup> Revision of the Florida panther recovery plan was submitted in late 2005 and sent by the United States Fish and Wildlife Service's (USFWS) Naples office to Dr. Sam Hamilton in the USFWS Atlanta office. Chris Belden was the lead USFWS person in the development of the plan. Until July 2008 there had been little progress in the finalization and approval of the plan. In mid-May of this year, Dr. Hamilton addressed some questions to the Naples office, and as of July 25th the Naples office had indicated that they had responded to the questions of the Atlanta office. The plan will be finalized and approved when this process is complete and Dr. Hamilton signs the plan.

The USFWS anticipates reintroducing panthers into three areas outside of southern Florida. Their goal is to bring the combined total panther population up to at least 240 cats per population. Associated

federal and state biologists, various agencies and a number of non-government organizations (NGOs) have developed a good plan, which will give NGOs opportunities for input. Since 1995 two different studies by Thatcher et al. considered nine possible re-introduction sites in the panther's former range. The second study submitted in April 2005<sup>43</sup> determined that southeastern Georgia / northeastern Florida is the best potential reintroduction site. Two other areas of combined public and private lands in Alabama and Arkansas are also found to be favorable reintroduction sites. The study and recommendations are based on road densities, human population and types of activity, prey base and other habitat considerations.

In order for reintroduction plans to be put in motion, the USFWS must include a timeline in their recovery plan. NGOs involved in developing the recovery plan have requested this, but so far none has been approved. Under the current political climate at the state, and especially at the federal level, little progress regarding endangered species has taken place. After 41 years of being listed as endangered, it is evident that unless the agencies can demonstrate the political will to move the process forward with a scheduled plan of action, they are unlikely to accomplish the mandated task of recovery in the foreseeable future.

The Florida Panther Translocation Feasibility Study from July 1, 1992 thru June 30, 1995 was an unqualified success scientifically but not politically. Over this time period, 19 cats were used in the study in the Osceola National Forest. The goals were to determine if the prey base and range were adequate, compare performance of wild caught and captive-raised animals and study the feasibility of adding new animals to an established population. The agencies did not, however, adequately develop a base of public support in northern Florida and were totally unprepared to address public concerns in an effective way. In spite of these failures the study was a biological success. A statewide survey in 1995 by Duda and Young<sup>44</sup> indicated that 91% of the respondents supported efforts to save the panther from extinction. A subsequent one by Cramer<sup>45</sup> in the study area of the releases indicated 80.7% support.

Recently an extensive agreement to control development in Collier County in southern Florida and to preserve panther habitat and dispersal corridors was announced. Defenders of Wildlife and the Florida Wildlife Federation have taken a lead in this project. This is an important positive step in dealing with habitat issues in the area. Unfortunately, I feel that many leading environmental and conservation interests involved in the panther issue do not have panther recovery as their primary goal. Much of their effort is expended trying to protect the South Florida landscape from urbanization and various forms of commercial exploitation and development. The panther issue is used as tool in this regard and the goal of recovery is not as forcefully pursued. Major national organizations have certainly put far less effort into recovery of the panther than that of other megafauna. Why is that the case?

Recovery of the panther will not be accomplished without reintroduction into former portions of its range, leading to the establishment of viable populations totaling at least 1,000 animals.

Once the final draft of the recovery plan is issued, NGOs can work with communities outside southern Florida. But this won't be effective or even possible unless a timeline is included in the recovery plan.

Susan Jacobson and Cynthia Langin<sup>44</sup> of the University of Florida have finished their quantitative study of public support for the Florida panther. As with the Duda and Young study<sup>45</sup>, and one by Cramer<sup>46</sup>, the new study will indicate public support levels for the re-introduction process.

Some hunters and hunting groups are supportive of the re-introduction / recovery of panthers, including those in the National Wildlife Federation and Florida Wildlife Federation and the Florida

Still Hunters Association. Some other hunters are not, including groups who lease large tracts of land and practice “feed lot hunting.” The Florida Farm Bureau is stridently opposed to reintroduction and recovery as is the American Farm Federation and various livestock groups along with NIMBY interests as well.

In summary, the Florida Panther Society is waiting for the release of the final draft of the Recovery Plan with a timeline. If there is no timeline, then the NGOs and general public must become more involved to move the process forward. Enlisting the support of the primary and secondary levels of school children in Florida (and the South in general) would be most effective. Thanks to their efforts in 1982, the panther was selected to be the Florida state mammal.

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\*Lakota word for cougar  
 \*\*Cherokee for cougar (Lord of the Forest)

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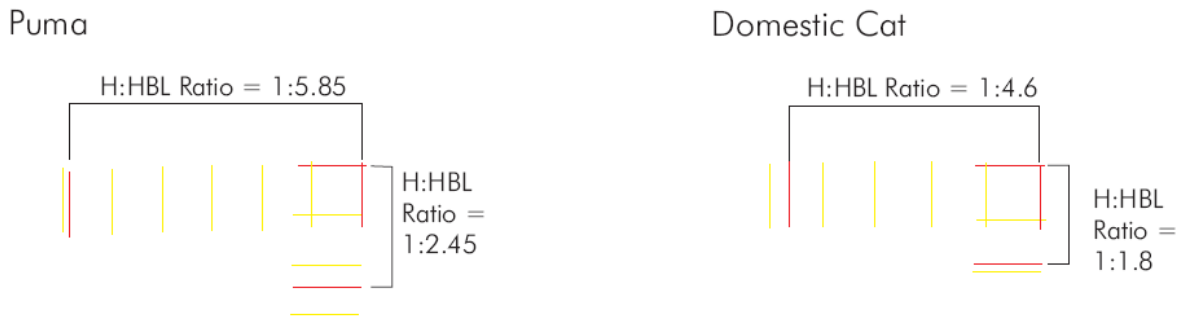
affecting the recovery of cougars in central and eastern North America.



**Use of Head-Body ratios to evaluate a video taken in the spring of 2007 at Fortierville, Quebec, about one third of the way between Montreal and Quebec. The ratio indicates the animal was a house cat, not a cougar. Applied by Stuart Kenn, Ontario Puma Foundation. See Page 4 of this newsletter.**

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Head to Body Length and Height of Puma vs. Domestic Cat by Fred W. Scott



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