Genetic and morphological differentiation of wolves (Canis lupus) and coyotes (Canis latrans) in northeastern Ontario

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January 31, 2009

Secretary Ken Salazar
U.S. Department of Interior
1849 C. St. NW
Washington, D.C. 20240

Dear Secretary Salazar:

Congratulations on your appointment. I'm pleased that you want to "clean up the mess" at the Department of Interior and I wish you well. One of the many messes within the U.S. Fish and Wildlife Service ("Service") involves its failure/refusal to adequately protect federally endangered wolves in the Northeast. As a result, wolves continue to be killed with nothing done to promote their natural recolonization.

On August 24, 2007, pursuant to the United States Endangered Species Act (ESA), 16 U.S.C. §§ 1531-1544, I (John M. Glowa, Sr.), along with Walter L. Pepperman, II, Christine L. Schadler, and Joseph Butera (residents of Maine, Vermont, New Hampshire and New York , respectively) petitioned the Secretaries of Interior and Commerce to regulate, in accordance with 16 U.S.C. § 1533(e), the commerce or taking, and to treat as endangered or threatened species in the states of New York, Vermont, New Hampshire and Maine, coyotes (*Canis latrans*), coyote/gray wolf hybrids (*Canis latrans x Canis lupus*), eastern wolves (*Canis lycaon*), eastern wolf/gray wolf hybrids (*Canis lycaon x Canis lupus*), coyote/eastern wolf hybrids (*Canis latrans x Canis lycaon*), and coyote/eastern wolf/gray wolf hybrids (*Canis latrans x Canis lycaon x Canis lupus*) because of their close resemblance to the federally endangered and protected gray wolf. This regulation of commerce or taking of these unlisted species and species hybrids is needed because: (1) they so closely resemble gray wolves, including "eastern gray wolves" (Wilson et al. 2000) that enforcement personnel would have substantial difficulty in attempting to differentiate these animals from gray and/or "eastern gray wolves"; (2) the effect of this substantial difficulty is an additional threat to gray and/or "eastern gray wolves"; and, (3) this regulation will substantially facilitate the enforcement and further the policy of Title 16, Chapter 35.

In a letter dated November 27, 2007, Acting Northeast Regional Director, Marvin E. Moriarty responded to the petition by stating that, "Because the petition provisions of the ESA are limited to listing, delisting, and reclassifying species and revising critical habitat, and because a similarity of appearance designation is not a listing, your requested action is not petitionable under the ESA." He continued, "However, we consider your petition as a petition under the Administrative Procedure Act (APA). We will evaluate your petition and respond when we complete our evaluation." In a letter dated July 9, 2008, we received the second response from Mr. Moriarty to our petition in a one page letter that showed little or no effort on the Service's part to provide a substantive review of the facts as presented. In it he stated, "We have determined that consideration of a similarity of appearance (S/A) designation of coyotes and other wolf-like canids is premature. The U. S. Fish and Wildlife Service (Service) must first complete an analysis of the currently listed gray wolf entity. We must examine its taxonomic identity(ies), population structure(s), and range(s) to determine the need and appropriate scale(s) for recovery planning. This analysis is necessary to determine whether recovery of the listed entity requires the restoration of a wolf population in the northeastern United States. Because we have not yet determined whether restoration of a wolf population in the Northeast is necessary for recovery of the listed entity, it is premature to consider what actions might be effective, practicable, necessary, and advisable to achieve that objective." ***Accordingly, approximately eighteen months after submittal of the petition, the Service has still taken no action to either***

approve or deny it. What is its status? What is the status of any efforts by the Service to answer the questions and the issues raised in Mr. Moriarty's letter of July 9, 2008?

I would also remind you that in 2000, the Service proposed to create the Northeastern Gray Wolf Distinct Population Segment consisting of the states of New York, Vermont, New Hampshire and Maine. At that time the Service also stated that it "…will consider developing a recovery plan (for wolves in the northeast)."

The corruption within the Bush administration has been well documented and we believe effectively contributed to derailment of a northeast wolf recovery plan. *In the spirit of President Obama's plea that Americans help to remake the nation, and in consideration of his public pronouncement that the government will restore science to its "rightful place", my fellow petitioners and I submit to you this new fact and science-based petition in accordance with the U.S.Endangered Species Act and the Administrative Procedures Act.* It is not intended as a replacement for the petition dated August 24, 2007. It is a new petition also requiring a response from your agency. This petition is as follows:

PETITION

In accordance with the Administrative Procedures Act and/or the Endangered Species Act, we hereby petition the U.S. Department of Interior and the Service to regulate the commerce or taking, and treat as endangered species in the States of New York, Vermont, New Hampshire, Maine and Massachusetts, coyotes (*Canis latrans*), coyote/gray wolf hybrids (*Canis latrans x Canis lupus*), eastern wolves (*Canis lycaon*), eastern wolf/gray wolf hybrids (*Canis lycaon x* Canis lupus), coyote/eastern wolf hybrids (*Canis latrans x Canis lycaon*), and coyote/eastern wolf/gray wolf hybrids (*Canis latrans x Canis lycaon x Canis lupus*) because of their close resemblance to the federally endangered and protected gray wolf.

In accordance with the Administrative Procedures Act and/or the U.S. Endangered Species Act, we also hereby petition the U.S. Department of Interior and the Service: (1) to establish a Northeastern Gray Wolf Distinct Population Segment consisting of the States of New York, Vermont New Hampshire, Maine and Massachusetts; and, (2) to develop and implement a Northeastern Gray Wolf Recovery Plan.

Background Information

Wolves are native to the States of New York, Vermont, New Hampshire, Maine and Massachusetts. It is generally believed that they became extirpated in the northeast U.S. (although scattered wolf sightings were documented well into the 20th century) by about 1900 due to the effects of unregulated killing by humans, habitat loss, and greatly reduced availability of natural prey including beaver, moose, deer and caribou. At present, there is some question in the scientific community regarding which wolf species or subspecies occupied the Northeast U.S. (Wilson et al.2000, Wilson et al. 2003). According to The Recovery Plan for the Eastern Timber Wolf, the States of New York, Vermont, New Hampshire, Maine and Massachusetts are within the original range of the eastern timber wolf (*Canis lupus lycaon*). The Recovery Plan has as a goal to "…maintain and re-establish viable populations of the eastern timber wolf in as much of its former range as possible…" and it outlines a three-point plan to "…re-establish (a) wolf population in Adirondack Mountains (New York), northwestern Maine/adjacent New Hampshire, and/or northeastern Maine" (U.S. Fish and Wildlife Service 1992).

There is growing evidence that wolves are attempting naturally to recolonize the Northeastern United States from neighboring populations in Canada and perhaps the Great Lakes states. Unfortunately, this evidence is in the form of dead wolves, owing to the failure of the federal and state governments both to recognize the likely existence of wolves in the Northeast and to provide adequate protection that might allow for natural recolonization. There is also

evidence of false, misleading and unsubstantiated statements by state fish and wildlife officials downplaying the presence of naturally occurring wolves, presumably to promote a public mindset that these animals likely are escaped/released captives.

It is estimated that the States of New York, Vermont, New Hampshire, Maine and Massachusetts combined contain more than 30,000 square miles of potential core and dispersal habitat for wolves (Harrison and Chapin 1998). Combined they contain tens of thousands of moose, many thousands of beaver and hundreds of thousands of white tailed deer. The availability of wolf prey and habitat is not an issue that would prevent/impede wolf recovery in the Northeast as both are abundant in this region.

The primary purpose of this Petition is simply to allow wolves coming into the Northeastern U.S. to live as intended by the ESA. The problem for wolves is that the resemblance of "coyotes" to wolves can make it difficult for hunters, trappers and state and federal enforcement personnel to differentiate the two without DNA analysis, especially given the large body size and probable hybrid (wolf-coyote) status of the eastern coyotes living in the Northeast (Way and Proietto 2005, Way 2007, Way et al. submitted). Morphological "overlap" between eastern Canadian wolves and eastern coyotes has been documented in a study by David S. Pennock, formerly with Fort Hays State University and currently executive director of the Museum of Idaho (Wilson et al. 2004) and by Way (2007). This resemblance places any wolves at great risk. Because both the federal government and the states have heretofore failed to provide wolves with adequate legal protection, the federal government must regulate the commerce or taking of "coyotes", eastern wolves, and wolf/coyote hybrids in order to comply with the intent of the ESA.

The Potential for Natural Recolonization

Some wolves have been documented to travel hundreds of miles during dispersal. Of 298 published dispersal distances for North American wolves, ten wolves traveled a straight line distance of more than 300 miles with the greatest straight line dispersal being some 530 miles (Linnell et al. 2005). Given the ability of wolves to travel great distances, all of the eastern U.S. at least as far south and east as Virginia is within potential dispersal distance of wolves from eastern Canada. Occupied wolf range in eastern Canada runs north of the St. Lawrence River across southern Quebec and Ontario. Occupied wolf range in Quebec is as close as approximately forty five miles from potential core wolf habitat in Maine (Harrison and Chapin 1998), and less than sixty miles from the New York border, in and around Quebec's Papineau-Labelle Reserve. A well known and protected wolf population also lives in and around Ontario's Algonquin Provincial Park, some 120 miles from New York. The recovering and expanding gray wolf population around the Great Lakes is also well within range of natural wolf dispersal to the Northeastern U.S.

The St. Lawrence River lies between wolf range in Canada and potential wolf habitat in southern Canada and the Northeastern U.S. The St. Lawrence River is not a barrier to wildlife dispersal, but rather a filter. There are several potential dispersal corridors through which wolves may cross the St. Lawrence River. One is located west of Quebec City where occasional freezing of the river may allow wolves to cross. Another is located east of Quebec City where animals such as white-tailed deer have been observed successfully crossing the St. Lawrence (Harrison and Chapin 1998). West of Quebec City, in the Lac St. Pierre region, periodic ice jams block the entire width of the river and may allow wolf dispersal in the vicinity of Trois-Rivieres.

The eighty miles between Gananoque and Cornwall, Ontario contain one or more potential wolf dispersal corridors. During the winter months the St. Lawrence River in this area may freeze completely as the shipping channel is not maintained. The area is known as the Frontenac Link which contains the Frontenac Axis. One possible corridor extends from Algonquin Provincial Park in Ontario to Adirondack Park in New York, with wolves potentially

crossing the St. Lawrence River in the Thousand Islands area (Quinby et al. 1999).

Various wildlife species have been documented crossing the St. Lawrence River into Ontario from New York (Smith 2004). A radio-collared moose crossed the St. Lawrence River from New York and spent the rest of its life in Ontario in the vicinity of Algonquin Provincial Park. Fishers from New York's Adirondacks crossed the St. Lawrence River and recolonized southern Ontario. A lynx transplanted to New York during an attempted reintroduction, traveled out of New York and was found north of the St. Lawrence River, in Ottawa. Given the wolf's intelligence and ability to travel long distances, as well as the number and geographic range of dead wolves, it is far more likely than not that wolves can and regularly do disperse south from Canada into the Northeastern U.S.

Physical Evidence of Wolves Killed South of the St. Lawrence River

The state and federal governments regularly deny the presence of both the eastern cougar (*Puma concolor cougar*) and the gray wolf in the Northeastern U.S. There are two important differences between these two species, however. Simply put, *we have documented dead wolves in the U.S. and resident wolf populations in Canada are within dispersal range of the Northeastern U.S.* There is anecdotal evidence that full-bodied wolves have been roaming the Northeastern U.S. since at least the 1930's. There is physical evidence of their presence since at least the 1960's. Wolves are not mythical beasts of a bygone era. They are both very real and very important to our northern forest ecosystem. After having been allegedly extirpated some one hundred years ago, the wolves as well as their habitat and prey have returned. The evidence that this is true only continues to grow over time and includes the following:

1) An adult male gray wolf was killed by an automobile on January 10, 1968, on Route 10, Royal Mountain Ski Area, near Rockwood, New York. A check with the New York State Department of Environmental Conservation (NYSDEC) found no evidence that a wolf had escaped from persons who had a permit to keep a wolf. The wolf measured 71 inches from nose to tip of tail and weighed 84 pounds (Paradiso and Schierbaum 1969). The ski area is located in Fulton County, at the southern end of Adirondack Park, approximately twenty five miles from where a wolf was killed in December 2001. The USFWS is aware of the skull of the 1968 wolf (USFWS file #INV 2003503276 page 0053) which is currently housed in the Museum of Natural History, Smithsonian Institution, Washington, D.C. (Smithsonian website catalog #289933). As an aside, the skull of a second New York wolf from the Adirondacks, killed by R. Clark (Smithsonian website catalog #A1804) is also in the Smithsonian Institution. It was catalogued there on April 25, 1855 (Craig Ludwig, personal communication). The latter specimen may prove to be a valuable source of DNA to aid in determining which species of wolf is/are native to the northeast.

2) On August 30, 1993, Allen J. Groft of Hanover, Pennsylvania shot and killed a young, 67 pound black female gray wolf in Maine, north of Moosehead Lake. The identity of the animal was verified through DNA testing at the USFWS lab in Ashland, Oregon. A DNA examination of the animal by Dr. Bradley White of Trent University in Ontario showed that the DNA of the animal most closely resembled wolves that live in a band across Ontario and Quebec. The shooter of the animal and his guide were both successfully prosecuted by the USFWS. Claims by the Maine Dept. of Inland Fisheries and Wildlife that the animal was likely a released/escaped pet are unfounded. The behavior of the animal (it was observed and photographed at a campsite several days before it was shot) although not typical for a wild wolf, was not evidence that it had been a released captive, since some wild wolves do frequent areas of human activity, especially if they associate humans with food. In Ontario's Algonquin Park, known wild wolves have been documented to frequent campsites.

3) On or about November 2, 1996, William Bourgoin trapped and killed an 82 pound male wolf in T28 MD, some thirty miles east of Bangor, Maine. The trapper claimed that the animal was a coyote and he reported that he had seen its tracks for three years and that it had driven the (other) coyotes out of the area. He also reported that he had lost another large animal from a trap some 20-25 miles east of T28 MD four years prior (U.S. Fish and Wildlife Service Report of Investigation 1997). Initial DNA analysis of the 1996 canid was inconclusive (Fish and Wildlife Service SEROLOGY EXAMINATION REPORT dated March 11, 1997). However, it stated that the mtDNA of the animal "is consistent with a wolf, domestic dog or wolf-dog hybrid origin." Furthermore, craniometrics of the animal (Fish and Wildlife Service MORPHOLOGY EXAMINATION REPORT dated April 9, 1997) stated in part, "Craniometrics of this specimen conform in six out of 15 published averages for wolves (*Canis lupus*), and exceed in all instances those published for domestic dog (*Canis familiaris*), wolf/dog hybrids, red wolf (*Canis rufus*), and coyotes (*Canis latrans*). In or about 2006, biologist Walter Jakubas of the Maine Dept. of Inland Fisheries and Wildlife (email from Walter Jakubas to John Glowa dated 10/4/06) had the DNA of this animal re-analyzed. The examination results are as follows:

> *Species Identification by Mitochondrial DNA*
> The mtDNA sequence of individual 96-679 was most similar to the mtDNA of coyote reference standards and differed significantly from reference mtDNAs of domestic dogs, red wolf (*Canis rufus*), grey wolf and fox (*Vulpes vulpes*).
>
> *Species Identification by Nuclear DNA*
> The STR genotype of individual 96-679 is most similar to that of grey wolves, but closely associated with coyote reference standards.
>
> The Y-STR haplotype of individual 96-679 is characteristic of grey wolves.

A DNA examination of the same animal conducted by Dr. Bradley White concluded that the DNA of the animal most closely resembled wolves that live in a band across Ontario and Quebec (Bradley White, personal communication). The petitioners maintain and hereby request a determination that this animal was legally a gray wolf based upon several factors including behavior, location, DNA analyses, morphology, and legal precedent. There is legal precedent for considering wolf/coyote hybrids to be wolves. The Recovery Plan for the Eastern Timber Wolf, page 12 states in part, "Genetic analyses of 86 wolves from Minnesota indicate that more than half of the population have mitochondrial DNA (mtDNA) derived from coyotes." Note that the Recovery Plan refers to wolf/coyote hybrids as "wolves". During the attempted federal de-listing of wolves in the Western Great Lakes Distinct Population Segment, the USFWS did not differentiate wolves from wolf/coyote hybrids for purposes of counting the number of wolves in order that they might be de-listed. In that de-listing action, the USFWS considered all wolf/coyote hybrids to be wolves. The legal precedent set by the federal government during the wolf de-listing process raises serious legal questions about the legality of killing so-called "coyotes" in the Northeastern U.S. given the high percentage of "coyotes" with wolf DNA that have been identified in Maine (Wilson et al. 2000, 2003, 2004; Way et al. submitted).

4) In November 1998, Eric Potter shot and killed an apparent 72 pound male wolf in Glover, Vermont (Zimmerman 2005). This animal was killed approximately twenty miles southeast of where a possible wolf was killed in Vermont in October 2006 (see below, #8). An analysis of its mitochondrial DNA conducted at the University of California at Los Angeles (UCLA) as noted in an undated letter from Jennifer Leonard of UCLA to Thomas Decker of the Vermont Dept. of Fish and Wildlife concluded, "…the control region of the mitochondria was amplified and

sequenced…(and the)…sequence matches that of the wolf *(Canis lupus lycaon)* endemic to the north east of the United States, and the south east of Canada…." The DNA of this animal was later analyzed by the USFWS. In a letter dated January 16, 2002 from Dyan J. Straughan, Forensic Specialist at the National Fish and Wildlife Forensics Laboratory, to Thomas Decker, Ms. Straughan stated, "The mitochondrial DNA type of this canid is most similar to that of coyote standards, but has also been observed in grey wolves in Southeastern Canada and Northeastern United States." The actual examination results (Genetics Examination Report dated January 16, 2002) for mitochondrial DNA were as follows, " The mtDNA sequence of item LAB-2 differed significantly from reference mtDNAs of domestic dogs, red wolf *(Canis rufus),* grey wolf and fox, but was most similar to the mtDNA of coyote reference standards." The results for Nuclear DNA were as follows, "The STR genotype of LAB-2 was intermediate between the coyote and Alaskan malamute reference samples included in the analysis." We, the petitioners, respectfully disagree with and hereby challenge the USFWS' interpretation of its DNA data regarding this animal. We refer to a November 26, 2001 email from Dr. Paul Wilson of the Natural Resources DNA Profiling & Forensic Center at Trent University in Ontario, Canada to Walter Jakubas, wildlife biologist with the Maine Dept. of Inland Fisheries and Wildlife. In his email, Dr. Wilson wrote, "The interpretation of the data depends on what evolutionary model one uses as a framework. All of the laboratories may generate exactly the same DNA seqeunce (sic). A mtDNA from lycaon will be interpreted as a coyote if the facility does not consider the newly proposed evolution of the eastern timber wolf/red wolf. The USFWS may not have classified their DNA sequences with a second North American wolf species in mind. The UCLA and USFWS results are entirely consistent with each other. We can all have the same databases and standardized approaches but the interpretation will always be laboratory-dependent." To our knowledge, the State of Vermont has never officially acknowledged that the subject canid was not a wolf and they continue to question the DNA assessment generated by the USFWS. We refer to an October 24, 2003 email from Kim Royar, wildlife biologist with the Vermont Department of Fish and Wildlife, to Michael Amaral, a USFWS biologist in Concord, New Hampshire. Ms. Royar writes, "As far as we are concerned the genetic background of this animal is still unclear. We did send samples to 3 labs: UCLA, Ashland (USFWS), and Ontario (Wilson). UCLA extracted mitochondrial DNA and determined that the sequence matched that of "Canis lupus lycaon". The mitochondrial results from Ashland suggested coyote but they only used 1 coyote reference and I'm not sure if any of their wolf references were from Canis lycaon (or from eastern Canada). Their nuclear DNA test suggested coyote and Alaskan malamute. I did review these results with a geneticist from UVM who felt their reference sizes were pretty low and suggested I ask for log likelihood scores…. They were not able to supply me with this information. I have yet to hear from Wilson." "Anyway, you can see why we are still holding off regarding the labeling of this animal." We, the petitioners, encourage additional DNA analyses of this animal and we maintain that the animal was a wolf, consistent with the aforementioned legal precedent for wolves in the Western Great Lakes DPS and known morphometric ranges for wolves.

5) On or about December 19, 2001, Russell Lawrence of Edinburg, New York, shot and killed an 85 pound male gray wolf in Day, New York. He killed the animal approximately twenty five miles northeast of where the January 1968 wolf was killed (see #1 above). He claimed the animal was a coyote. He also stated that he saw another set of very large tracks in the area a week after he killed the wolf. The killing of this animal and the subsequent actions/inactions by NYSDEC epitomize why this petition must be approved. The animal was first reported by NYSDEC to be a "60 pound coyote with 25 pounds of venison in its stomach" (Kolodziej 2004) and later to be a wolf/dog hybrid (Kolodziej 2002). <u>The animal was not reported by NYSDEC to the USFWS Special Agent for identification and/or possible prosecution.</u> In fact, USFWS Special Agent Robert Garabedian in Albany, New York did not know about this animal until June 2003 when it

was reported to him by John M. Glowa, Sr., a private citizen and resident of South China, Maine. Mr. Glowa learned about the animal while doing an internet search. The USFWS subsequently initiated an investigation which included the confiscation of the pelt from Mr. Lawrence's home by USFWS Special Agent Garabedian on January 8, 2004. According to the NOTICE OF SEIZURE AND PROPOSED FORFEITURE dated February 20, 2004, "The laboratory findings indicate that the skull, tissue sample and skin are all consistent with a gray wolf (*Canis lupus*). The DNA examination report 03-000535 dated December 19, 2003 stated, "The mtDNA sequence of LAB-2 differed significantly from reference mtDNAs of domestic dogs, red wolf (*Canis rufus*), coyote and fox (*Vulpes vulpes*), but was identical to the mtDNA of gray wolf reference standards….The STR genotype of LAB-2 and the resulting analysis was consistent with gray wolves originating from the Minnesota, Michigan and Wisconsin area of the United States." An examination and comparison of the animal's teeth and toenails with other wolf specimens failed to find any evidence that the animal had been a released captive. According to USFWS spokesperson Diana Weaver, this animal was, "…the fifth wolf in eastern North America confirmed by the Fish and Wildlife labs…(t)wo from Maine, in 1993 and 1996; one from Vermont in 1997, and one from Quebec in 2002" (LeBrun 2004).

6) In January 2002, Laurent Cloutier, a Quebec trapper, killed a 64 pound gray wolf in/near Ste. Marguerite de Lingwick, some 20 miles from the Maine-New Hampshire border. This was the first confirmed occurrence of a wolf in Quebec south of the St. Lawrence River in more than 100 years (Villemure and Jolicoeur 2004). The trapper reportedly stated that there were at least three additional wolves in the area (Ring 2002).

7) On April 12, 2005, John Yuhas of Sterling, New York shot and killed a 99 pound male wolf as it attacked the family dog (Dickstein 2005). According to a July 14, 2005, letter from Sree Kanthaswamy, Ph.D., of the Veterinary Genetics Laboratory at the University of California, Davis, a hair sample collected from a small house inside an animal pen near the Yuhas property had mtDNA that was identical to the mtDNA of the wolf. According to the DRAFT Genetics Examination Report from the National Fish and Wildlife Forensic Laboratory (Lab Case #05-000186), the examination results of this canid are as follows:

> *Canid Species Identification by Mitochondrial DNA*
> The mtDNA sequence of item LAB-1 differed significantly from reference mtDNAs of domestic dogs, red wolf (*Canis rufus*), coyote and fox (*Vulpes vulpes*), but was identical to the mtDNA of grey wolf reference standards originating from the Western Distinct Population Segment (DPS; Northern Rockies of the United States and Canada).
>
> *Canid Species Identification by Nuclear DNA*
> The STR genotype of item LAB-1 and the resulting analysis was consistent with grey wolves originating from the Eastern DPS (Michigan, Minnesota and Wisconsin region of the United States).
>
> The Y-STR analysis of item LAB-1 was consistent with grey wolves originating from the Northern Rockies of the United States and Canada. The mtDNA sequence and the Y-STR type from item LAB-1 have not been observed in wolves from the Eastern DPS.
>
> Conclusions
> The individual represented by item LAB-1 is a domestic cross between grey wolves from the Western DPS and Eastern DPS. The result is indicative of a domestic hybrid origin for the animal represented by item LAB-1.

We, the petitioners, question both the conclusions of the report and the reported DNA match with hair found in a nearby pen. The conclusion that the animal is a "domestic cross" is apparently based on the allegation that such wolves have not been previously documented in what was the Eastern DPS. We point out that wolves from the northern Rockies and the Great Lakes states are within dispersal distance of each other and that wolves in the Great Lakes states are within dispersal distance of New York. We remind you of the wolf killed in New York on December 19, 2001. We also point out that we have seen no evidence to indicate where or how anyone would have acquired wolves either from, or identical to wolves from, the northern Rockies and Great Lakes states that purportedly would have been bred in captivity to produce this animal. While we are not presently alleging that this was a wild wolf, we believe that possibility has not been ruled out and it is our position that the evidence does not support the conclusion that it was a "domestic cross". We are concerned about the precedent set by this conclusion, given the expansion of wolf range and population in both the northern Rockies and in the Great Lakes states in recent years. The DNA results of this animal generate more questions than answers. For example, was the wolf a descendant of one of the wolves transplanted to Yellowstone or Idaho? If so, how does the USFWS support its conclusion that it was a "domestic cross"?

8) On or about October 1, 2006, Charles L. Hammond of Newport Center, Vermont shot and killed a 91 pound male wolf in North Troy, Vermont. The animal was killed within twenty miles of a wolf pack that was being monitored by "wildlife workers" in Quebec, just north of the Vermont border (Harrigan 2005). We know of no evidence that the Vermont Fish & Wildlife Department, the USFWS, or the government of Quebec took actions to protect these animals. According to the Veterinary Medical Examination Report dated June 29, 2007, "The large canid carcass is a gray wolf according to both morphological and genetic studies." Furthermore, according to a September 18, 2007 email from Dr. Roland Kays of the New York State Museum, this animal had "…the exact same mtDNA sequence…" as the the wolf killed by Russell Lawrence in 2001. The fact that both animals had the same mtDNA sequence may be evidence of a breeding population of wolves south of the St. Lawrence River.

On October 9, 2007, the Vermont Agency of Natural Resources issued a press release that falsely claimed that, "The lab concluded that this animal was of captive origin." In fact, the National Fish and Wildlife Forensics Laboratory concluded in its June 27, 2007 Genetics Examination Report that this "…male gray wolf is ***most likely*** of domestic origin." A cover letter from the laboratory dated June 29, 2007, stated that, "…the animal is a gray wolf but ***perhaps*** from a domesticated origin." The Vermont press release made no mention of the mtDNA match of the Vermont wolf with the 2001 New York wolf. It also made no mention of the October 5, 2006 email from Canadian Field Research Scientist Brent Patterson of Ontario's Trent University that the face of the animal had "clear features of eastern wolves (but the over-all size and mass more typical of gray wolves)." The June 27, 2007 Genetics Examination Report from the Service stated that the mtDNA sequence was "…identical to the mtDNA of gray wolf reference standards found…in the western Great Lakes States DPS…." It also stated that the "…STR genotype…is most similar to gray wolf reference standards from the northern Rocky Mountain DPS" and that the "…Y-STR haplotype…is similar to that observed among gray wolves from…the Western Great Lakes DPS…(h)owever, the…haplotype is unique and has not been observed in our database." We question and challenge any opinion/conclusion that this animal was "most likely of domestic origin" given its morphology, DNA, and diet (whitetailed deer) and we disagree with this opinion, given the animal's matrilineal relationship to the wolf killed in New York in 2001.

As noted in the Service's Report of Investigation, INV #: 2006505308 Report #3, "If the animal is determined to be a wolf it seems unlikely under the circumstances that federal prosecution would be sought pursuant to United States v. McKittrick. The subject indicated (he) believed the animal to be a coyote at the time (he) was pursuing it." This is precisely why the commerce or taking of coyotes and wolf/coyote hybrids needs to be regulated due to their

similarity of appearance to wolves, especially given the documented large body size of eastern coyotes (Way and Proietto 2005, Way 2007). Simply saying that you "thought the animal was a coyote" serves as a blank check when it comes to killing wolves. Mr. Hammond was subsequently not prosecuted for killing the animal. The McKittrick Instruction itself needs to be re-visited. It mistakenly requires that the killer of an endangered species must have known its biological identity before prosecution can take place.

9) On October 13, 2007, a person who has not been publicly identified shot and killed an 85 pound male wolf in Shelburne, Massachusetts. According to a March 4, 2008 press release from the Service, "Forensics scientists compared the Shelburne canids' DNA to DNA from wolves of known origin and concluded that the individual was an eastern gray wolf." According to Special Agent in Charge-Thomas J. Healy, "We have no indication that this wolf was ever held in captivity." According to the Report of Investigation INV#2007505077, the Massachusetts Division of Fisheries and Wildlife first learned of a wolf-like canid that had killed livestock in the area on September 10, 2007. According to press reports, a Massachusetts state wildlife biologist visited the area on October 13, 2007, observed the animal's tracks and then gave permission to shoot it because it had attacked or killed livestock. According to a Massachusetts Division of Fisheries and Wildlife memo dated October 16, 2007, after seeing tracks and dead sheep, the biologist, "…told the (redacted) that this was a large domestic dog killing the lambs and if it comes back to kill more that night it could be treated as a domestic dog killing livestock…." There was apparently no attempt made to observe or capture the wolf alive. After the wolf was killed, Massachusetts officials stated that it had likely been a captive animal. It was killed just some eighty miles southeast of the where the Day, New York wolf was killed in 2001. The Service's Genetics Examination Report dated February 26, 2008 reads as follows:

EXAMINATION RESULTS:
Canid Species Identification by Mitochondrial DNA
The mtDNA sequence of LAB-1 is identical to the mtDNA of North American gray wolf reference standards found throughout North America.

Canid Species Identification by Nuclear DNA
The STR genotype of LAB-1 is unlike that of gray wolves from western North America (Alaska, Alberta, British Columbia, Idahp, Montana and Yellowstone National Park), Mexican wolves, domestic dogs and wolf-dog hybrids. Althoughit was similar to gray wolves from the Great Lakes region of the United States, the analysis indicates that the individual from LAB-1 did not originate there. Rather, its similarity to both eastern gray wolves and eastern coyotes suggest that it is from a population not represented in the database (e.g. gray wolves from southern Ontario or Quebec).

The Y-STR genotype of LAB-1 is characteristic of male gray wolves found throughout North America.

CONCLUSIONS:

The individual represented by LAB-1 is an eastern gray wolf (Canis lupus lycaon).

Has the Service made any attempt to learn the origin of this animal? If so, what are the results of this effort? Given the growing number of dead wolves in the Northeast, it would be prudent for the Service to locate and include in its DNA database samples from wolves from eastern Ontario and southern Quebec, especially given recent evidence of a unique population of wolves living there (Wilson et al. 2000, 2003). We urge the Service to analyze and compare the

DNA of the wolves noted in this Petition to assist in determining their origins and any relationships to each other in order to develop a better understanding of the present status of wolves in the Northeast.

Additional Possible Evidence of Wolves South of the St. Lawrence River

We recognize that this Petition must be based on science and we believe we have demonstrated, using science and facts, that the species and hybrids that are the subject of this Petition need to be regulated and treated as endangered or threatened if the gray wolf is to receive the protection to which it is legally entitled in accordance with the ESA. In addition to scientific evidence, however, we believe it is also important to provide other evidence of the possible presence of wolves in the Northeastern U.S., since claims by both state and federal governments that wolves are not present have served as a basis for a failed attempt by the federal government to de-list wolves in the northeast U.S. and have continued to serve as a basis for the state and federal governments' failure to take adequate measures to protect them. There is much evidence of the possible past and present occurrence of wolves in the Northeastern U.S. We include a small portion of that evidence in this Petition. We strongly encourage the state and federal governments to search public and private archives for evidence of wolves in the Northeast. In New York, for example, the Northern New York Library Network maintains an excellent archive of northern New York historical newspapers on the internet at http://news.nnyln.net/. There is readily available evidence of the possible presence of wolves in the Northeast for least seventy five years. We also encourage the state and federal governments to attempt to locate any surviving wolf relics for analysis. For example, as noted below, the head of a reported wolf killed in New York by Francis Betters was preserved and displayed in Mr. Betters' home. In addition to newspaper accounts, there are many sighting reports of possible wolves in the Northeast, including dozens in the files of The Maine Wolf Coalition, Inc. These reports were received primarily in the 1990's when the organization operated a Wolf Sighting Hotline and actively solicited sighting reports. In fact, sightings of possible wolves continue to be received by the Coalition. State fish and wildlife agencies receive sighting reports as well. Below is listed some of the additional evidence we have compiled of possible wolves in the northeast:

1) As reported in the Ausable Forks Record-Post in February 1931, "Seven lean and gaunt iron gray wolves…are reported to be roaming the Adirondack wilds. They were seen traveling south through the foothills near Malone a few days ago….(Wolves) were traveling along the bank of the Trout River, having crossed the frozen St. Lawrence River from the Ontario district to find imprisoned deer and other choice food in the Adirondacks." A resident of the area, Silas Ellis reportedly trapped a five foot long, 75 pound canid in Chasm Falls, New York at around that time (Lynch 2006).

2) In an article titled *ISSUES CALL FOR 75 HUNTERS TO EXTERMINATE ADIRONDACK WOLVES*, the January 5, 1933 Chateaugay Record of New York reported that "the situation created by the re-appearance of wolves in the Adirondack section has almost reached a crisis in the opinion of Conservation Commissioner Lithgow Osborne…." The article noted that wolves had attacked two farm hands near Fort Covington, New York which is close to the St. Lawrence River and the New York/Quebec border. One of the wolves was reported killed.

3) As reported in the 2000 edition of "Paper Talks" magazine from Washington County (Maine), in November 1953, "Bud" Leighton shot and killed an 80 pound female wolf in the vicinity of Cherryfield, Maine. Photographs of this animal are available. A specimen from a wolf reported to have been killed in Cherryfield, Maine in the early 1900s is in the University of Maine natural history collection. That animal was reportedly determined to have been an escaped

New Brunswick captive (Hayden 1996). Efforts should be made to determine if the Leighton canid and the wolf at the University of Maine are one and the same. DNA and morphometric analyses should be conducted on the specimen at UMaine.

4) The Adirondack Daily Enterprise of March 16, 1955 reported that a possible wolf was shot and killed by a state trooper next to the New York State Thruway in Utica. Utica is within twenty miles of the southwest border of Adirondack Park. The animal was "lying helpless on the mall of the superhighway" and may have initially been hit by a motor vehicle. Its carcass was to have been examined by the Conservation Department "to determine whether it was a wolf." According to Superintendent Robert Boundy of the Stevens-Swan Humane Society Shelter, the animal was "definitely a wolf." An effort should be made to determine if the NYSDEC has records pertaining to this animal.

5) On August 12, and September 5, 1963, the Adirondack Daily Enterprise reported about a wolf killed in New York by Francis "Bud" Betters on December 3, 1962 near Deer Pond. As noted in the August 12, 1963 edition, "The State of New York alleges that there hasn't been a legitimate wolf whelper (sic) within its boundaries in 50 years but Bud Betters of Saranac Lake is declaring openly that he killed one and has the head hanging in his living room to prove it." The animal was a male that weighed 65-70 pounds. At the time, Mr. Betters was a sergeant with the Saranac Lake Police Department. A photograph of him posing with the mounted head is contained in the August 12 article. He also submitted the story about shooting the animal to Outdoor Life magazine and the story was accepted for publication. Mr. Betters is presently living in AuSable Forks, New York (Catherine Moore, personal communication). He now denies ever having killed a wolf, however, he states that he has seen two wolves in New York within the past ten years (Peter O'Shea, personal communication). We believe that an effort should be made to collect a sample from this animal for analysis.

6) On October 13, 1965 the Adirondack Daily Enterprise reported a "wolf-type animal shot by Steve Ransom, Jr. near Moose Pond…" on Monday October 11, 1965. The article contains a photo of the animal with a local taxidermist who stated that it "outweighs most coydogs or wolf family specimens that he had mounted." An attempt should be made to locate this animal for analysis.

7) On February 24, 1966, the Adirondack Daily Enterprise reported that Game Protector (warden) Richard Emperor shot a wolf in a deer yard at Deer River Flow the previous day. The animal weighed 75 pounds and "measured about six and a half feet from tip to tail to the muzzle." The article reported that Emperor, "…will be out on the trail again tomorrow seeking more of the wildlife slayers." The carcass of the canid was reportedly disposed of in an incinerator. The article contains a photograph of the animal which appears to be a wolf.

8) As reported in the New York Daily News (Kenney) in 1974 or 1975, an animal believed to have been a wolf was struck and killed by a motor vehicle in/near Massena, New York. Massena is some sixty miles south of a documented wolf population at Quebec's Papineau-Labelle Reserve. We are currently attempting to locate this newspaper column in the archives at the Boston Public Library.

9) Several years ago (date unknown), Donald Laroque of Lyndonville, Vermont shot and killed an estimated 60 pound female "coyote" in East Barnet, Vermont. Its DNA was analyzed and it was found to be "part wolf" (Zimmerman 2005).

10) A canid scat, more than one inch in diameter and collected near Rangeley, Maine in 2005

had a "gray wolf sequence" in its mtDNA. The scat was analyzed by Dr. Bradley White of Ontario's Trent University (Bradley White, personal communication).

11) In May 2006, naturalist Peter O'Shea reported that a canid estimated to weigh 100 pounds was observed for several weeks by "many" people in New York's Adirondack Park High Peaks Wilderness Area (Peter O'Shea, personal communication).

"Coyote" and Wolf Management by the States

We have put the term "coyote" in quotes because none of the five states differentiates coyotes from wolf/coyote hybrids even though emerging evidence indicates that the eastern coyote is a coyote-wolf hybrid (Wilson et al. 2000, Way et al. submitted) and morphologically similar to the relatively small eastern wolf (Way 2007). By default, all allow wolf/coyote hybrids to be killed as coyotes. As noted earlier, wolf/coyote hybrids are considered wolves in Minnesota, Wisconsin and Michigan for the purpose of de-listing by the federal government. There is effectively no coyote management in all five states, three of which allow hunting of coyotes year-round. None of the states have sufficient precautions in place to protect wolves from being killed accidentally or intentionally. None acknowledges the presence or likely presence of wolves. To our knowledge, none of the five states has a management plan to address the potential return of wolves. Night hunting is allowed and is an accepted practice that unnecessarily places wolves at risk, since it would be difficult if not impossible to differentiate a wolf from a coyote while hunting at night. According to the results of a research project comparing 100 Maine "coyotes" with wolves and coyotes from other parts of the U.S. and Canada, the morphology of an animal "…may not always give a clear indication of the species of the animal (Wilson et al. 2004). Both wolves and coyotes may be killed and not even reported, such as in Maine where unlimited hunting of coyotes is permitted and no reporting or tagging is required of animals that are hunted. None of the five states acknowledge the presence of wolves or are, to our knowledge, taking any action to protect wolves or promote their recovery. However, four states include wolves in their wildlife action plans with some looking upon the wolf more favorably than others.

<u>New York</u>

New York permits coyote hunting statewide with the exception of Long Island and NYC (coyotes are not known to occupy Long Island) from October 1-March 30, 24 hours/day with no limits. New York permits coyote trapping statewide with the exception of Long Island and NYC. Trapping is permitted from 10/25-12/10 in the Adirondacks, and from 10/25-2/15 in the rest of the open area of the state. There are also no bag limits for trapping coyotes. More than 2,000 coyotes are reported killed annually during the hunting and trapping seasons.

New York's Comprehensive Wildlife Conservation Strategy states that the wolf is still perceived as a threat. It recommends a No Action Alternative for wolves that will "maintain the status quo" (NYSDEC 2005). Unfortunately the status quo is resulting in dead wolves. NYSDEC apparently does not consider wolves to be "socially acceptable".

<u>Vermont</u>

Vermont permits coyote hunting year round and trapping from the 4th Saturday in October until December 31. There are no bag limits during either season. Vermont does not regulate so-called "coyote killing derbies". While Vermont doesn't acknowledge the possible presence of wolves, it does list the wolf in its furbearer rule as No Open Season.

Vermont's Wildlife Action Plan treats wolves somewhat more kindly than New York. The plan states in part, "(Wolves are)…believed to be extirpated in Vermont…but a regional

population exists in Canada with potential for migrants to arrive in Vermont within (the) next 20 years…." The report goes on to state, "Connectivity with other wolf packs in the region is important to recovery of wolves in the northeast." It rates the wolf as a medium priority (VDFW 2005).

New Hampshire

New Hampshire permits coyote hunting year round and night hunting of coyotes from 1/1-3/31, with no bag limits. Coyote trapping is permitted from 10/15-3/31 or from 11/1-3/31 depending on the location, with no bag limits. Like Vermont, New Hampshire doesn't acknowledge the possible presence of wolves, yet they include the wolf in their trapping rules as No Open Season.

New Hampshire's Wildlife Action Plan openly states, "The recent expansion of wolf populations in Europe and the midwestern states suggests that the potential for a natural recolonization of wolves in New Hampshire should be taken seriously." It goes on to state, "Any increase in wolf dispersal (from Quebec or Ontario) would increase the likelihood of a natural wolf recolonization of the northeastern U.S. A wolf population that establishes in Maine would be likely to expand into northern New Hampshire…(therefore)…New Hampshire should look to (Minnesota, Wisconsin and Michigan)…for guidance in the preparation of a strategy for dealing with the potential return of wolves." The plan concludes, "The potential for natural wolf recolonization may currently be limited by the year round open season on coyotes in New Hampshire. Closer monitoring of coyotes harvested in the state would increase the likelihood of intercepting wolves that cross the border" (NHFGD 2005).

Maine

Maine permits coyote hunting year round (except Sundays) with no closed season and no limits. Night hunting for coyotes is permitted from 1/1-4/30, and coyote trapping is permitted from 10/15-12/31, both with no bag limits. Until recently, Maine permitted recreational coyote snaring under the guise of coyote control. This practice has been stopped, at least temporarily, under threat of a citizen lawsuit, due to the potential for incidental take of lynx, bald eagles and wolves. The Maine Dept. of Inland Fisheries and Wildlife is presently working to try to secure an incidental take permit from the USFWS to resume snaring of coyotes.

Maine's Comprehensive Wildlife Conservation Strategy lists the gray wolf's status "Occasional, no known breeding population" but also states that it is "…state listed as Extirpated" (MDIFW 2005). It gives the gray wolf a 2 (high priority) ranking among mammals of greatest conservation need, but ranks it a 3 (moderate-the lowest priority) ranking for funding.

Massachusetts

Massachusetts permits hunting and trapping of coyotes. Hunting is permitted from 10/15-3/7 with no limit and trapping is permitted from 11/1-11/30 also with no limit. Night hunting for coyotes is permitted. The Massachusetts Comprehensive Wildlife Conservation Strategy contains no mention of wolves.

Conclusion

This Petition satisfies all requirements of the ESA and the APA. First, the species and hybrids that are the subject hereof (*Canis latrans, Canis latrans x Canis lupus, Canis latrans x Canis lycaon, Canis lycaon, Canis lycaon x Canis lupus, and Canis lycaon x Canis lupus x Canis latrans*), can all have very similar physical characteristics (Way 2007). Some of these animals may so closely resemble each other and gray wolves that enforcement personnel would have substantial difficulty in attempting to differentiate them from gray and/or eastern gray wolves.

Actual case histories have been referred to in this Petition that prove this to be true. The effect of this substantial difficulty is an additional threat to gray and/or eastern gray wolves. We have documented that wolves have recently been present in the Northeastern U.S. and are likely present now. We have documented that wolves have been killed in the Northeastern U.S., in part because of liberal coyote/coywolf killing policies and their resemblance to coyotes and/or coyote x wolf hybrids. The regulation of the commerce or taking of "coyotes" and coyote x wolf hybrids will substantially facilitate the enforcement of Title 16, given that there is, for all practical purposes, little or no effective regulation of their taking at present, and given our belief that wolves continue to be illegally killed in numbers that are probably much greater than reported. It is a fact that wolves have been and continue to be killed in the Northeastern U.S. in violation of the Endangered Species Act.

We hereby request that, in regulating the commerce or taking of, and in treating as endangered or threatened, the aforementioned mammals in the States of New York, Vermont, New Hampshire, Maine and Massachusetts, the federal government take the following actions wherever wolves may be found, where wolves have been found in recent years, and in all potential wolf core and/or dispersal habitat:

1) Require hunters and trappers to report and present all canids killed to their respective state fish and wildlife agencies and/or the U.S. Fish and Wildlife Service for possible DNA and/or morphological examination;
2) Establish a moratorium on, limit, and/or closely regulate the hunting and trapping of canids that currently inhabit the northeast;
3) Establish a moratorium on all night hunting of canids;
4) Require that all wild canids taken with firearms or traps be tagged and prohibit the possession and sale of untagged wild canids;
5) Prohibit so-called "coyote killing derbies"; and,
6) Prohibit all recreational snaring of canids.

In addition, and in furtherance of the ESA and wolf recovery in the Northeast, we also request that the federal government work in conjunction with Canadian governments (as appropriate) by taking the following actions in New York, Vermont, New Hampshire, Maine, Massachusetts and Canada:

1) Establish a formal program to proactively seek wolves in the Northeast (including baiting and live trapping for possible DNA analyses and radio and/or satellite telemetry collaring) and to solicit and respond to sightings of large canids;
2) Develop a Bi-National Wolf Recovery Plan with the Canadian government including the provinces of Quebec and Ontario, and in partnership with the tribes of the Northeast U.S., to include providing sufficient protection for wolves in Canada in order to maximize their potential for natural recolonization via dispersal from Canada into the Northeastern U.S.;
3) Closely monitor wolf populations (using tagging and collaring) and/or suspected wolves and wolf packs in southern Quebec and Ontario, north and south of the St. Lawrence River, to document dispersal south across the St. Lawrence River and into the Northeastern U.S.;
4) Identify and protect corridors for wildlife movement between the Northeastern U.S. and Canada north of the St. Lawrence River, such as the A2A (Adirondack to Algonquin) corridor; and,
5) Conduct a comprehensive and thorough examination of all wolves known to have been killed south of the St. Lawrence River since 1900, including DNA analysis and comparison to determine their origins, relationship to each other and wolves in Canada and the U.S. and to determine the status/existence of wolf populations south of the St.

Lawrence River.

With regard to the creation of a Northeastern Gray Wolf Distinct Population Segment, the Service has already made such a proposal which it rescinded due to political interference. The proposal must be renewed. We believe creation of this DPS along with development and implementation of a recovery plan are essential if wolves are to recover in the Northeast.

In closing, President Obama wants to restore science to its "rightful place" in our government. He also states, "My administration will not deny facts, we will be guided by them." Please put president Obama's words into action. Wolves not only have science on their side, but they also have public opinion and the economic benefits that will accrue from wolf-related ecotourism in their favor. The simple fact is that wolves are attempting to recolonize the Northeast and some are dying in the attempt. The question we are asking and the question that must be addressed is how many more wolves must die in the Northeast before they are given the protection to which they are legally entitled?

Sincerely,

John M.Glowa, Sr., B.S. Economics, M.P.A.
30 Meadow Wood Drive
South China, ME 04358

On my own behalf and on behalf of:

Walter L. Pepperman, II, B.S. Economics, LLB, Lt(SC)USNR, Registered Maine Guide, Arbitrator-National Arbitration Forum
P.O. Box 1234
Middletown Springs, VT 05757

Christine L. Schadler, M.S. Conservation Biology
151 Back Canaan Rd.
Strafford, NH 03884

Joseph Butera, B.S. Environmental Science, President and Founder Northeast Ecological Recovery Society
83-37 267 St.
Floral Park, NY 11004

Jonathan G. Way, Ph. D.
Eastern Coyote Research
89 Ebenezer Road
Osterville, MA 02655

Cc: President Barack H. Obama, 1600 Pennsylvania Avenue NW, Washington, D.C. 20500

Marvin Moriarty-Director, Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035-9589

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