

# Reflections on Redefinitions, Untruths & Misinformation: Countering the Propaganda with Science & Reason

By Jody Haynes

*When you look at what most people know, or think they know, about canines (both our domestic companions and their cousins in the wild), it becomes apparent that there is a basic lack of knowledge and understanding. Many common sources of information are full of confusion—even misinformation. From all varieties of sources there may be ‘quality control’ problems. Anything—from the Internet, to books, to TV, to our friends, and even professionals—our sources of information can be biased, incorrect, or completely wrong.... There is truth everywhere, but finding it through all the clutter is the key, and misunderstanding is the enemy.*

~Monty Sloan (2012)

## INTRODUCTION

Misrepresentation has always been rampant in the wolfdog community. Over the last few decades, many ‘wolfdog’ breeders have raised the percentage of ‘wolf’ in their animals, with some elevating their mixed-breed dogs to wolfdog status to sell mutts that no one would otherwise buy. Unethical wolfdog breeders have also raised the content of their animals, selling their low- or mid-content wolfdogs as high-content wolfdogs or pure wolves to unsuspecting buyers. These buyers are either ignorant and/or naïve or simply choose to ignore the animals’ phenotype, buying solely on the allure of the ‘wolf’.

Wolfdog aficionados are aware of the problem of breeders raising wolf content as a common type of misrepresentation. Various animal control agencies, rescue sanctuaries, and law enforcement agencies (e.g., Fish & Wildlife, Department of Natural Resources, etc.) are also aware of this unethical practice. On numerous occasions, these agencies have sent an officer to investigate the ‘wolf’ at someone’s home only to find a dog or a wolfdog.

Over the last couple of years, however, misrepresentation of wolves/wolfdogs has taken a dramatic—and potentially much more dangerous—turn. A small faction within the wolf/wolfdog community have begun to downgrade percentages or ‘domesticate’ wolves (both in the wild and in captivity) and high-content wolfdogs. These individuals have done this (and continue to do this), in part, by intentionally over-generalizing, disseminating misinformation, misinterpreting science, and attempting to redefine such well-established terms as ‘wolf’, ‘dog’, ‘wolfdog’, ‘domestication’, ‘tame’, ‘wild’, etc.

While redefining terms to suit an agenda is becoming more and more commonplace in politics, it is still completely unacceptable in almost every other facet of society, especially science. Some people new to the wolfdog world are beginning to believe the erroneous information. New buyers tend to believe breeders, so when irresponsible breeders tell their buyers that their 98% wolfdog is an F8 or F15 or that their high-content wolfdog can live inside an apartment like a poodle, it sets the stage for po-

tential disaster. In fact, this movement has gained so much support that it has resulted in unbelievably absurd public statements such as (or similar to) the following:

1. An F4 (or F3 or F2) wolfdog is a ‘dog’ regardless of its wolf content.
2. Filial numbers are irrelevant in wolfdogs.
3. All pure wolves in captivity came from fur farms, and since some fur farmers mixed in northern breed dogs to improve the coats and behavior of their animals, all ‘pure wolves’ in captivity are, therefore, just wolfdogs.
4. Wolves bred and raised in captivity for many generations are domesticated animals, are no different from dogs in temperament and behavior, and should be allowed to be kept as pets.
5. It is possible to breed a line of canines that looks exactly like wild wolves but behaves just like dogs.
6. There are no more ‘pure wolves’ in nature.
7. All wolves in Yellowstone are wolfdogs.
8. “The dog... is any captive variant of the wild species, *Canis lupus* selectively bred by man to create any differences in appearance and/or temperament from the wild wolf” (Klempner, 2011).
9. The statement that “the melanistic *K* locus mutation in North American wolves derives from past hybridization with domestic dogs” (Anderson *et al.*, 2009) means that, because wild wolves have bred with dogs at some point in the past, they are now just wolfdogs.

Although seeming to make sense to some, such statements actually have absolutely no basis in fact and are not supported by published scientific findings. Objectively, one might think (hope even) that this faction of the wolfdog community is acting ‘in the best interests of the wolfdog’ by magnanimously attempting to make it easier for those who want to own wolfdogs to do so. Sadly, though, it seems that at least some of their efforts may, in fact, demonstrate a complete disregard for the animals as well as potential new owners—not to mention local, state, federal, and/or international laws.

As a director of a non-profit educational organization dedicated to providing **factual** information about wolves and wolfdogs, I find this type of misinformation completely unacceptable (and potentially catastrophic). However, if it is, in fact, being done for no other reason than personal gain (e.g., to grow one's bank account, to acquire an animal that looks like a wolf, etc.), then it is nothing short of disgraceful and reprehensible. Thus, it is my goal in this article to counter the propaganda by providing scientifically rigorous definitions of the pertinent terms and factual, scientifically sound information obtained from published scientific research, international conservation organizations, and an occasional internationally renowned expert in the field.

## JUSTIFICATION

There are numerous reasons why I felt this article needed to be written, but topmost among them are situations where breeders misrepresenting the content of their animals may result in serious negative or adverse impacts on both the animals and their new owners—as well as rescues and sanctuaries at some point in the future. I could go on and on here with real-world examples of how misrepresenting pure wolves or high-content wolfdogs as mid- or low-content wolfdogs is detrimental to the animals and their owners, but it is perhaps better that I let one such owner who was sold a misrepresented animal speak for himself (see the article by Kent Ferrell on page 6 of this issue).



**Wolf: Courtesy National Park**

## DEFINITIONS

This section is divided into subsections providing scientifically rigorous definitions of some terms that a few in the wolfdog community are attempting to redefine.

### Wolf

A wolf, in general, is any of various large predatory, carnivorous mammals of the Family Canidae, the most notable and well-known being the gray wolf, *Canis lupus*. In Addams and Miller's (2012) new book, wolves are defined as "any canids which exhibit primarily *wolf* behavior—behavior which is commonly expected of a wild animal." Nowak (2003) asserts that "[a]lthough the term 'wolf' has been applied to various kinds of canids and to other animals as well, here it is restricted to *Canis lupus* and a few other living and extinct species of *Canis* that probably arose from a common ancestor."

### Definition of Gray Wolf

A gray wolf is taxonomically defined as any large canid that matches the morphological characteristics of *Canis lupus* as originally described by Carolus Linnaeus in 1758 (Linnaeus, 1758).

Mech and Boitani (2004) define the gray wolf as "the largest wild canid weighing up to 62kg" that in "[g]eneral appearance and proportions are not unlike a large German shepherd dog except legs [are] longer, feet [are] larger, ears [are] shorter, eyes [are] slanted ... and winter fur [is] longer and bushier, and with chin tufts in winter. Fur is thick and usually mottled grey, but can vary from nearly pure white, red, or brown to black." And the Smithsonian Institution (n.d.)—the largest museum and research facility in the world—states that gray wolves are

[t]he largest wild members of the dog family [that] generally have grizzled coats, with gray, black, and light brown fur covering their head and upper body, and yellowish white fur on the legs and belly. Some subspecies—not Mexican wolves—have pure white or black coats. Thick winter undercoats give them the appearance of added bulk; when they shed in the spring, they look thin. They have bushy tails, legs longer than coyotes' and dogs' legs, and oversized paws.... Gray wolves' head and body length is 40-58 inches (1-1.5 meters), plus a tail 13-20 inches long (one-third to half a meter). Their weight varies greatly by subspecies, ranging from 40-175 pounds (18-79 kg), with an average between 60-100 pounds (27-45 kg).

### Wolfdog

The narrow definition of a wolfdog is the offspring of a breeding between a domestic dog and a wolf. However, this fails to address the most commonly accepted definition of 'wolfdog' in the wolfdog community (which, not coincidentally, is the most common real-world situation), which is the offspring of a pairing between two wolfdogs. A more comprehensive definition of wolfdog, then, is "a cross between wolf and dog when the wolf content within the animal is of a more recent inheritance than is typically found in most dog breeds. Wolfdogs are also incorrectly referred to as 'wolf hybrids'" (Florida Lupine Association, 2011).

The United States Department of Agriculture (USDA) (2009) considers "[c]rosses between wild animal species and domestic animals, such as dogs and wolves or buffalo and domestic cattle ... to be domestic animals." However, this definition vastly oversimplifies the wolfdog issue because—as most people in the wolfdog community know—some lower-content wolfdogs are little different from domestic dogs, whereas those that are higher content are often little different from tamed wolves. While the USDA definition is succinct, most scientists and many legislative

entities disagree with it (see the “Legal Issues” section on page 7).

## Dog

Domestic dogs are generally defined as “any canids which exhibit primarily *dog* behavior—behavior which is commonly expected of a domesticated pet” (Addams & Miller, 2012). The Scientific Working Group of Dog and Orthogonal Detector Guidelines (n.d.) at Florida International University asserts that the scientific definition of ‘dog’ is “[a] domestic canid (*Canis familiaris*) used in various work or companionship tasks.”

The taxonomic definition of dog has been controversial since it was changed almost twenty years ago, when the Smithsonian Institution and the American Society of Mammalogists reclassified the dog from its separate species designation of *Canis familiaris* to the subspecies status of *Canis lupus familiaris* (Wilson & Reeder, 1993; 2005). Even so, the dog is not technically a subspecies of gray wolf: “The use of subspecies names to describe geographic variants does not fit well as a description of domesticated forms. ‘Variant’ probably is a good term to use” (Pollak, 2000).

## Domesticated/Domestication

Domestication of an animal is not as simple as housing or breeding an animal in captivity. Koler-Matznick (2011) provides a succinct definition of a domesticated animal, distinguishing it from a captive-bred wild animal:

“Captive-bred wolves could theoretically be domesticated if selected strictly for tameness, for instance, but the selection must be directed and consistent, and with wolf generation time this would take most of someone’s lifetime and the outcome not guaranteed” (Koler-Matznick, 2011).

Domesticated has many definitions, but most include the following: the population is under human control of breeding (zoo animals qualify only in this) and [sic] the population has been artificially selected for traits desired by humans. Thus the Belyaev foxes are ‘domesticated’ (selected for coat color, tameness, whatever) but captive-bred lions are not (no selection for human desired traits other than ability to adapt to a captive environment).

*The Free Dictionary* (2009) defines the act of domestication in general terms, claiming that it is the ability “[t]o train or adapt (an animal or plant) to live in a human environment and be of use to humans.” Such a definition could also apply to the captive-raised lion, but no scientist or legislative entity would argue that a lion is a domesticated animal.

Ratliff (2011) provides a deeper and more scientific definition of domestication: “[It] ... is not a quality trained into an individual, but one bred into an entire population through generations of living in proximity to humans. Many if not most of the species’ wild instincts have long since been lost. Domestication, in other words, is mostly

in the genes.” In *Wikipedia* (2012), “domestication (from Latin *domesticus*) is the process whereby a population of animals or plants, through a process of artificial selection, is changed at the genetic level, accentuating traits desired by humans. It differs from taming in that a change in the phenotypical expression and genotype of the animal occurs, whereas *taming* is simply the process by which animals become acclimatized to human presence.”

## Dog-specific Definitions of Domestication

Hirst (n.d.) asserts that “dog domestication was a long process, which started far longer ago than was believed even as recently as 2008. Based on evidence from Goyet and Chauvet caves in Europe, the dog domestication process probably began as long ago as 30,000 years.” In the following excerpt from a recent article in *Scientific American* entitled “The Woof at the Door,” Shipman (2009) clarifies dog domestication in much greater detail:

Domestication was one of the most brilliant accidents in the entire history of humankind. What’s more, we got it right the first time: Dogs were the original trial animal, and successful product, of such an accident—the happy outcome of years of unwitting experiments and dumb luck.

How long does domestication take? Nobody knows. In an experiment, Russian biologists kept a breeding colony of silver foxes and intentionally selected for breeding those with the least fear and the least aggression toward humans. After 10 generations, 18 percent of the foxes sought human contact and showed little fear. After 30 or so generations, a ‘domesticated fox’ had been created.

The catch is that this experiment was deliberate and strictly controlled. The foxes could not breed with wild foxes and dilute the changing gene pool. Human contact was minimized so animals could not be tamed by their handlers. And because of the experiment’s scientific intent, no one could say, ‘Oh this one is so cute, let’s let it breed even if it is a little aggressive.’ So in the case of dogs, without all these controls, the process could have taken much longer.

## Tame

Though the general definition of tame(d) is often synonymous with domestic(ated), the two are actually defined differently when we look beyond the general application of the two words. First, an individual animal can be tamed but cannot be domesticated, while domestication applies to a population, not an individual; in addition, domestication is a long process:

A great difference exists between a tame animal and a domesticated animal. The term 'domesticated' refers to an entire species or variety while the term 'tame' can refer to just one individual within a species or variety. Humans have tamed many thousands of animals that have never been truly domesticated. These include the elephant, giraffes, and bears. There is debate over whether some species have been domesticated or just tamed. Some state that the elephant has been domesticated, while others argue the cat has never been.

Dividing lines include whether a specimen born to wild parents would differ in appearance or behavior from one born to domesticated parents. For instance a dog is certainly domesticated because even a wolf (genetically the origin of all dogs) raised from a pup would be very different from a dog, in both appearance and behavior. (Wikipedia, 2012)

### Wild

A general definition of a wild animal is one that lives in nature, not in captivity or in close proximity to humans. *The Free Dictionary* (2003) defines a wild animal as one that is "living in a natural state" and "not domesticated, cultivated, or tamed." Koler-Matznick (2011) provides a scientific definition of a wild animal that also embraces the general definition: "In my and most biological definitions of 'wild' this means an animal that in general makes a living without any direct assistance from humans and its movements and breeding are not under human control. A wild animal can be feral (come from a domesticated population) or non-feral." Reynolds (2011) simplifies this definition: "I am very much of the 'handsome is as handsome does' persuasion: if it persists in the wild, it is wild." Such broad definitions as these fail to address zebras, tigers, bears, wolves, etc., living in captivity in zoos, facilities, and homes. Are these wild animals or domesticated animals? Neither; they are animals that have been tamed to varying degrees.

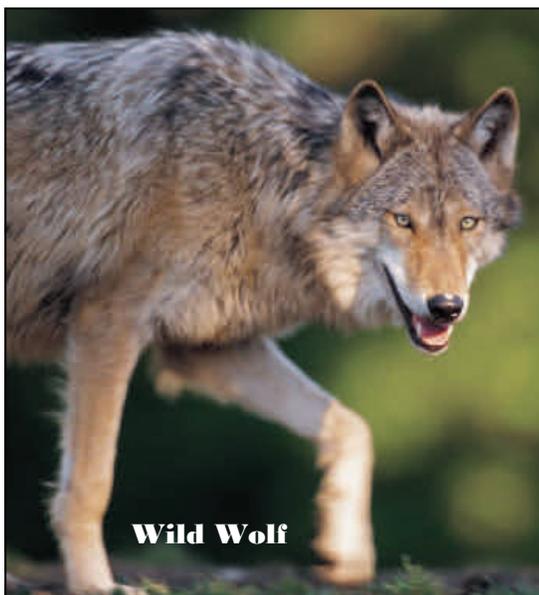
### Summation

People who ignore the above well-established definitions and try to promote their own are bound to failure. While their newly-defined terminology might work within their small social group of 'followers', it will not work in the broader social context or in the scientific or legal realm. It brings to mind something Abraham Lincoln once said: "How many legs does a dog have if you call the tail a leg? Four. Calling a tail a leg doesn't make it a leg" (BrainyQuotes.com, 2011).

## STATE & FEDERAL DEFINITIONS & REGULATIONS

Some individuals have attempted to invoke state laws or federal definitions to support their false or illogical arguments. However, doing so is silly at best because governmental definitions and regulations regarding wolfdogs vary from one extreme to the other and rarely have a scientific basis. Even though the USDA (2009) defines a wolfdog as a domestic dog—"Dog means any live or dead dog (*Canis familiaris*) or any dog-hybrid cross"—the USDA is not a federal law enforcement agency, and, while some states do accept federal classifications and base their laws on them, it is not mandated that states recognize USDA classifications or definitions.

There are no federal regulations on wolfdog ownership. Instead, each state can define and regulate wolves, wolfdogs, and dogs as they wish. At one end of the spectrum lie states like Colorado, Kansas, Texas, Utah, Vermont, and West Virginia, which all consider and regulate wolfdogs (or 'wolf hybrids') of any content or F number as domestic dogs (HybridLaw.com, 2008). In Colorado,



for example, "[t]he Colorado Division of Wildlife does not regulate ownership of [w]olf [h]ybrids as they are considered domestic animals" (National Wolfdog Alliance, n.d.). Additionally, Florida and Louisiana regulate animals only if they are considered "indistinguishable from a wolf" (HybridLaw.com, 2011; 2008).

In the middle of the spectrum lie states like California, in which "[w]olves and first generation hybrids are restricted from possession ... but [n]o state permit is required to possess the progeny of F1 generation wolf hybrids" (HybridLaw.com, 2008). And in Montana "regulations define 'wolf' as 'any canine which is one-half or more wolf'. All 50% or greater crosses and pure wolves are required to be tattooed and registered" (HybridLaw.com, 2008).

At the opposite end of the spectrum lie states like Georgia, where wolfdogs are considered 'wild animals' in the extreme: "'Wild animal' means any animal which is not wildlife and is not normally a domestic species in this state. This term specifically includes any hybrid or cross between any combination of a wild animal, wildlife, and a domestic animal. Offspring from all subsequent generations of such crosses or hybrids are wild animals" (HybridLaw.com, 2011).

Quite obviously, the broad diversity of state laws defining and affecting wolfdogs suggests that using such 'definitions' to support a particular position is nothing short of folly. The next section will more firmly solidify the

foolhardiness of the position being taken by a minority in the wolfdog community.

## COUNTERING THE PROPAGANDA

In this section I offer several statements that I received from specialists and scientists involved in the study of wolves, dogs, and other canids during the course of researching this article. Each entry below was offered in response to, and in contradiction of, one or more of the fallacious statements listed in the Introduction—which, as explained above, originated from those individuals who are attempting to spread misinformation about wolves and wolfdogs.

The following responses were prompted when I asked a group of wolf specialists if wolves bred and raised in captivity for many generations were domesticated animals or if it was possible to breed a line of canines that looked exactly like wild wolves but behaved just like dogs (*i.e.*, statements #4 and #5 in the Introduction):

Dr. L. David Mech—well-known wolf researcher and author of several books and numerous scientific articles on wolves; Senior Scientist, Biological Resources Division, U.S. Geological Survey; Adjunct Professor, Departments of Fisheries, Wildlife & Conservation Biology and Ecology, Evolution & Behavior, University of Minnesota—stated that “[a] domesticated animal is not just one kept as a pet or kept in captivity for ‘x’ no. of generations. Domestication involves selective breeding over long periods to change the animal genetically to some other type” (Mech, 2011).

Dr. Janice Koler-Matznick—author and member of the IUCN/SSC Canid Specialist Group—stated that “[c]aptive-bred wolves could theoretically be domesticated if selected strictly for tameness, for instance, but the selection must be directed and consistent, and with wolf generation time this would take most of someone’s lifetime and the outcome not guaranteed” (Koler-Matznick, 2011).

Ms. Jessica Addams—Animal Behaviorist, Former Keeper at Wolf Park & Coauthor of *Between Dog and Wolf: Understanding the Connection and the Confusion* from Dogwise Publishing—stated that “it takes either many, many generations or a serious breeding program—much like Belyaev’s farm fox experiment—to produce a domesticated version of a wild animal. Even Belyaev’s intensively selected foxes took about 10 generations—with hundreds of individuals culled each generation—to show domesticated traits. No known individual wolf breeding program has yet reached this goal, or is even following a similar proto-

col” (Addams, 2011). Addams (2011) further stated that “[i]t took thousands of years to breed dogs from wolves. Estimates will vary depending on theory, but we’re talking on the order of 6,000 years at least. To my knowledge, there are no bloodlines of captive

“Wild wolves have bred with dogs in the past, yes. This also means that dogs have bred with wild wolves in the past. Neither fact means that one species has suddenly become identical to the other. It means gene transfer is taking place between two still distinct groups” (Addams, 2011).

wolves which are 6,000 years old. We have not yet created a second race of dogs out of any captive wolf bloodlines. What we have done is breed some wolves which are extremely mellow—for wolves. These bloodlines ... are not a domestication of the wolf. They are families of related wolves which exhibit some carefully bred-for characteristics. Individual wolves from [these] bloodlines have been ... doglike in behavior. This does not make them dogs, any more than my peeling a banana makes me a chimpanzee.”

I obtained the following responses when I explained that there are individuals in the wolfdog community asserting that all of the wolves in Yellowstone are wolfdogs and that there are no more wild or pure wolves in nature (*i.e.*, statements #6 and #7 in the Introduction):

Ms. Addams (2011) stated that “any closely related species can continue to interbreed when not separated by geography or behavioral differences. Speciation is a gradual process taking thousands of years and, arguably, in wolves and dogs it is not even complete. (The traditional definition of ‘species’ is groups of animals which cannot interbreed.) Wild wolves have bred with dogs in the past, yes. This also means that dogs have bred with wild wolves in the past. Neither fact means that one species has suddenly become identical to the other. It means gene transfer is taking place between two still distinct groups, because it is possible for the groups to interbreed. This happens between hundreds, if not thousands, of pairs of extremely similar species all the time. That’s the process of speciation.”

Mr. Kent Laudon—Wolf Biologist, Montana Fish, Wildlife & Parks—wrote that “[s]tatements that there are no more wild wolves in Yellowstone ... are curious to me. As you probably well know, the world of wolves can be very controversial, and it seems to be the case that controversial topics tend to attract ‘fringe’ types. Those folks are what they are. And I don’t think any words, even to the extent of published articles in prestigious journals, can sway those folks back into reality” (Laudon, 2011).

Dr. Mech (2011) stated that “[a]nyone who disputes that wolves are no longer wild does not deserve to be listened to.”

And when I informed canid experts that “the melanis-

tic *K* locus mutation in North American wolves derives from past hybridization with domestic dogs" (Anderson *et al.*, 2009) is being interpreted as evidence for all wolves now being just wolfdogs (*i.e.*, statement #9 in the Introduction), I received the following replies:

Dr. Mech (2011) stated that "the origin of black in wolves is still a theory and may not be supported in the future. Molecular genetics is a very young field in which there is much controversy. Note that the Anderson article indicated that black wolves were only in North America and Italy. However, they are also known in the Himalayas and Iran and probably exist all over wolf range. It takes far more than one study to support a finding as new and revolutionary as the origin of black in wolves."

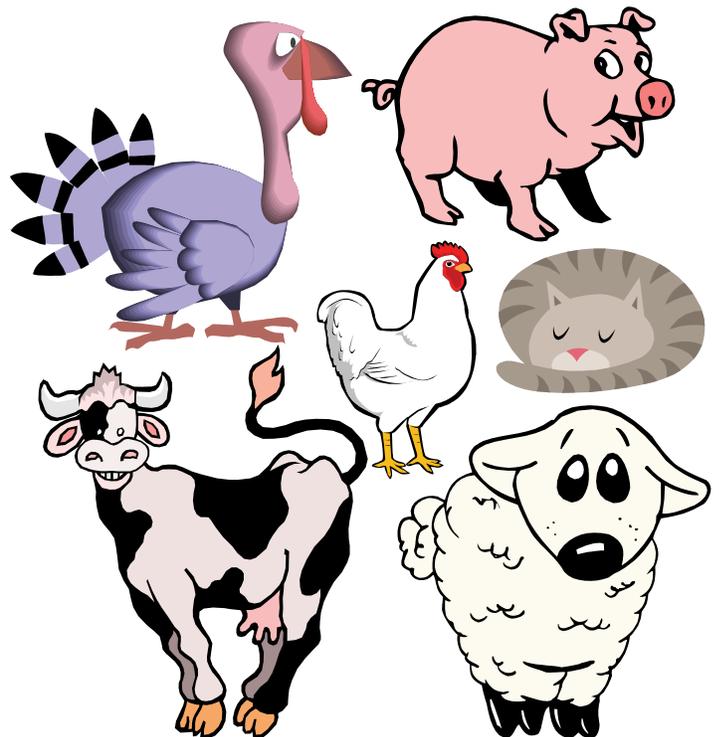
Dr. Koler-Matznick (2011) stated, "[t]he paper that said the *K* locus introgressed from dog to wolf ALSO said that it could not be ruled out that the mutation happened before the wolf/dog split."

Dr. Ben Sacks—Director, Canid Diversity Conservation Group, Veterinary Genetics Laboratory, University of California, Davis—stated that "the main conclusion of that paper ... was that the particular *K* allele that putatively originated from dogs is found in a frequency far higher than would be expected based on the overall level of genomic introgression from dogs because it conferred some selective advantage. That is, it is not reflective of the overall amount of introgression from dogs, which is comparatively very little" (Sacks, 2011). Sacks (2011) went on to say that "if someone chooses to interpret that any degree of introgression from one species (or 'subspecies' in this case) makes two species (subspecies) the same, they are a Neanderthal. I may sound worked up, but I am being calmly literal. If we are to consider wolves to be dogs by virtue of the apparent fact that modern wolf populations carry varying degrees of dog DNA, then we must also consider ourselves (at least those of us of Eurasian descent) to be Neanderthals because the DNA evidence makes a pretty good case that *Homo sapiens* carries introgressive DNA from *Homo neanderthalensis* (*e.g.*, Green *et al.* 2010. A draft sequence of the Neanderthal genome. *Science* 328:710-722)."

## DOMESTICATION & THE MORPHOLOGY-BEHAVIOR CONNECTION

In addition to the definitions and responses from various scientists and specialists provided above—which effectively counter much of the misinformation currently being circulated around the wolf/wolfdog community—there are a couple of other pertinent issues that have not yet been addressed herein, but that I believe are important to mention. The first is that those individuals who have been issuing false claims regarding the existence of 'domesticated wolves' apparently fail to understand that

behavior and morphology are inextricably linked, and that any attempt to change one aspect of morphology or behavior will result in a concomitant change in the other. As Raymond and Lorna Coppinger put it in their book entitled *Dogs: A New Understanding of Canine Origin, Behavior, and Evolution*, "[h]ow a dog looks ... is intricately tied to how it behaves, from its molecular to its holistic levels" (Coppinger & Coppinger, 2001). This is why there are no domesticated animals (dogs included) that look exactly like their wild progenitors. Belyaev's domesticated foxes represent a classic (recent) example of this phenomenon; other (older) examples include domestic cats, sheep, cows, goats, ducks, turkeys, chickens, etc. In every case, the domestic version of the animal is distinctly different in behavior and morphology from its wild counterpart. As ex-



plained in a recent *National Geographic* article entitled "Taming the Wild,"

[d]omesticated animals are known to share a common set of characteristics, a fact documented by Darwin in *The Variation of Animals and Plants Under Domestication*. They tend to be smaller, with floppier ears and curlier tails than their untamed progenitors. Such traits tend to make animals appear appealingly juvenile to humans. Their coats are sometimes spotted—piebald, in scientific terminology—while their wild ancestors' coats are solid. These and other traits, sometimes referred to as the domestication phenotype, exist in varying degrees across a remarkably wide range of species, from dogs, pigs, and cows to some non-mammalians like chickens, and even a few fish. (Ratliff, 2011)

At the beginning of his seminal fox domestication experiment, Dr. Dmitry Belyaev “suspected that as the foxes became domesticated, they too might begin to show aspects of a domestication phenotype” (Ratliff, 2011). Belyaev was right. The selection of “which foxes to breed based solely on how well they got along with humans seemed to alter their physical appearance along with their dispositions. After only nine generations, the researchers recorded fox kits born with floppier ears. Piebald patterns appeared on their coats” (Ratliff, 2011). Belyaev postulated that there was “a collection of genes that conferred a propensity to tameness—a genotype that the foxes perhaps shared with any species that could be domesticated” (Ratliff, 2011). Many decades after Belyaev began his fox experiment, geneticists are now searching for precisely those genes in Belyaev’s foxes, as well as in pigs, chickens, horses, and other domesticated species, in an effort to “pinpoint the genetic differences that came to distinguish them from their ancestors” (Ratliff, 2011). The fox breeding experiment in Siberia is now a joint Russian-American research program operating under the hypothesis that “the genes guiding the animals’ behavior do so by altering chemicals in their brains. Changes to those neurochemicals, in turn, have ‘downstream’ impacts on the animals’ physical appearance” (Ratliff, 2011).

With regard to the original domestication of the dog, Addams and Miller (2012) stated that “as ... wolves became more and more genetically human-tolerant, the accidental, but linked, traits like floppy ears, curly tails, and white patches of fur (all of which are seen in many dogs) happened to proliferate alongside the increased manifestation of human tolerance.” Further, in an article on the Wolf Park website (reprinted with permission in the Fall 2011 issue of the *Florida Lupine News*) entitled “On Selection, Traits and Inheritance,” Jill Moore and Monty Sloan (n.d.) estimated that “it would take two working human lifetimes, or about 80 years of VERY CAREFUL SELECTIVE breeding to create a line of wolves that would approach domestication.” Even then, scientific evidence predicts that ‘domesticated wolves’ would no longer look like wolves, but rather would look more like dogs—which are, not coincidentally, the original domesticated wolves.

## LEGAL ISSUES

In addition to disseminating myths and untruths about wolves and wolfdogs, certain members of the wolf/wolfdog community are also perpetuating untruths about the laws as they pertain to wolves and/or wolfdogs. While opponents of the recent spate of wolf/wolfdog misrepresentation have voiced their concerns about this issue, supporters have quickly and curtly pushed them aside. As a result, I feel that it is important to include this section addressing both national and international laws as they pertain to wolves and wolfdogs.



First, it is imperative to note that any species listed as ‘Threatened’ or ‘Endangered’ by the U.S. Fish & Wildlife Service (USFWS) is prohibited from being transported across state borders by the Lacey Act. Second, any species listed in Appendix I or Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is prohibited from being transported across national borders without special permits. As of this writing, the gray wolf, *Canis lupus*, is listed as Endangered in most states in the U.S., and is listed as Threatened in Minnesota (USFWS, 2011), and the gray wolf is listed in either Appendix I or Appendix II of CITES, depending on the population/location (UNEP-WCMC, 2011). Below are separate subsections addressing in detail the various national and international laws and regulations that pertain to the movement of wolves and wolfdogs between states and countries.



### Lacey Act

The Lacey Act “provides that it is unlawful for any person to import, export, transport, sell, receive, acquire, or purchase any fish or wildlife or plant taken, possessed, transported, or sold in violation of any law, treaty, or regulation of the United States or in violation of any Indian tribal law whether in interstate or foreign commerce” (Animal Legal & Historical Center [ALHC], 2011). For purposes of the Lacey Act, ‘wildlife’ refers to “any wild animal, whether alive or dead, including without limitation any wild mammal, bird, reptile, amphibian, fish, mollusk, crustacean, arthropod, coelenterate, or other invertebrate, whether or not bred, hatched, or born in captivity [sic], and includes any part, product, egg, or offspring thereof [sic]” (ALHC, 2011). The Lacey Act covers any species listed as Threatened or Endangered under the Endangered Species Act of 1973—which currently includes the gray wolf—and violation can result in civil penalties up to \$10,000 for each violation or maximum criminal sanctions of \$20,000 in fines and/or up to five years imprisonment (ALHC, 2011). In lay terms, this means that the transport of any pure wolf or F1 wolfdog across state borders is in violation of the Lacey Act and is punishable by federal law.

### CITES

Many wildlife species are also protected by CITES, which is a treaty among nations that “regulates trade in listed species, including hybrids and captive-bred specimens, through a system of permits and certificates” (USFWS, 2003). According to CITES Resolution Conf. 10.17—which is



the most recent resolution involving animal hybrids—“hybrid animals that have in their recent lineage one or more specimens of species included in Appendix I or II

shall be subject to the provisions of the Convention just as if they were full species, even if the hybrid concerned is not specifically included in the Appendices” and “the words ‘recent lineage’, as used in this Resolution, shall generally be interpreted to refer to the previous four generations of the lineage” (CITES, 2007; see also ECFR, 2012). While CITES is not a law per se, each of the 175 signatory nations to the convention has “its own domestic legislation to ensure that CITES is implemented at the national level” (CITES, n.d.).

In the U.S., CITES is implemented through the Endangered Species Act (ESA) and is administered by the Division of Management Authority of the USFWS. According to the USFWS (2010), “[y]ou do not need a CITES or ESA permit from us to import or export most domestic dogs (*Canis domesticus*). Dog/wolf hybrids, however, are regulated by CITES and require a CITES permit... You must import or export your pet dog/wolf hybrid through a designated port ... and [y]ou must notify the FWS wildlife inspection office at the port of entry or exit at least 48 hours in advance, present our declaration form to the wildlife inspectors, and receive clearance from us prior to export or at the time of import.” In addition, any CITES-listed species—including pure wolf or wolf-dog hybrid puppies—shipped out of the country must come from a CITES-certified facility, and failure to abide by CITES laws here in the U.S. is a federal offense (USFWS, 2003; USFWS, 2011).

### Specific International Import Regulations

CITES import and export permits are required to import any F1-F4 hybrids into any country in the European Union (EU), but for F5 and higher generations, a CITES permit is not needed (HybridLaw.com, 2011). In addition to the general EU import requirements, each country in the EU also has its own (different) regulations for importing and keeping hybrids (including wolfdogs). For example, in some EU countries (e.g., Norway and Sweden), F1-F4 hybrids are banned completely, and F5s or later are either required to be put into a four-month quarantine or have proof of rabies vaccination at three months of age (HybridLaw.com, 2011). For the United Kingdom and Northern Ireland, all hybrids must undergo a six-month quarantine, and F1s & F2s are considered wild animals and also require a special wild animal permit (DEFRA, n.d.).



**Wolfdog**

### Summation

Considering the rather strict regulations for importing pure wolves and high-content/low F-number wolfdogs into other countries, the simplest way for a wolf or high-content wolfdog breeder in the U.S. to get around them would be to claim that his/her puppies are F5 or higher hybrids (or just plain dogs) rather than what they actually are. Because breeders can sell pure/high-content puppies for upwards of \$5,000 each to buyers in places like Europe, there is a significant monetary incentive for misrepresenting one’s animals when shipping them overseas.

Other than the obvious problem that such an unethical practice breaks numerous federal and international laws, there is also the less obvious issue that in two to three years when authorities in other countries realize that the animals coming into their countries are not what the breeders reported them to be, the governments of those countries are likely to crack down even more on the importation of wolfdogs (and possibly hybrids of any kind). There is also the very real possibility of creating a delicate international political situation between the importing and exporting (*i.e.*, the U.S.) countries.

There are surely those who think the above scenarios are impossible or implausible. However, one can only wonder if they *could* happen and, if so, if it would all result because of irresponsible breeders and owners who care more about doing what they want than about the rest of the wolf/wolfdog community.

### CONCLUSION

Claims that there are no more pure wolves in nature or that certain captive lines of wolves or high-content wolfdogs are ‘domesticated’ are scientifically baseless. Equally baseless are the recent efforts by individuals in the wolf/

wolfdog community to redefine certain terms for some type of self-serving motivation. It is my hope that authors and supporters of this misinformation will ‘see the light’ after reading this article and will put the well-being of the animals and their current or future owners above irresponsible individuals/breeders involved in creating or spreading misinformation. It is my even greater hope that irresponsible breeders will stop misrepresenting their animals, stop trying to redefine terms to suit their personal agendas, stop disseminating misinformation about wolves and wolfdogs, stop shipping their animals internationally without the proper permits, and stop claiming that their pure wolves and high-content wolfdogs are suitable pets for the general public—before some unsuspecting owner (or their or a neighbor’s child) gets seriously injured or killed AND before additional bans on wolfdogs are put into place.

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