Michigan Association for Purebred Dogs

Michigan Hunting Dog Federation

Position Paper
House Bill 4065

This bill is intended to penalize the custodian of an animal that has bitten a person for leaving the scene.

The actions required of the custodian of the animal by HB 4065 is necessary for the injured party to seek successful treatment for the wounds inflicted. They are what a reasonable person would voluntarily do to assist the injured. For these reasons we support the bill.

We would, however, ask you to delete the term "wolf-dog cross" from the language of the bill for the following reasons, possibly making it apply to any animal whether dog, cat, ferret, horse, etc.

A.. The term "wolf-dog cross" does not identify a distinct, definable subspecies of the genus Canis. In Public Act 246 of 2000 the definition "Wolf-dog cross" means a canid resulting from the breeding of any of the following:

(i) A wolf with a dog.
(ii) A wolf-dog cross with a wolf.
(iii) A wolf-dog cross with a dog.
(iv) A wolf-dog cross with a wolf-dog cross.

The current academic opinion, based on mitochondrial DNA, is that the wolf is the sole ancestor of domestic dogs. According to (iii & iv) all domestic dogs are wolf-dog crosses. In fact some of the recognized breeds of dogs with the international dog registry (Federation Cynologique Internationale – FCI) can be traced back to the original mating of two wolves.

B. The accurate identification of a dog as a wolf-dog cross, based on appearance, is very difficult if not impossible. There are a number of purebred dogs, and mixed breed dogs, that can easily be misidentified as wolf-dog crosses. The present DNA tests cannot distinguish between individual dogs as to breed or mixture. This definition puts many purebred and mixed breed pet dogs in peril. Animal control officers are required to confiscate a dog that is a wolf-dog cross (state law). This may have to be done at the scene of the accident, particularly under circumstances listed under (C) below.

C. The vaccine used to prevent rabies must be labeled for use in each species. The current rabies vaccine is NOT labeled to be used in wolf-dog crosses. This makes the positive identification of the dog critical (whether dog or wolf-dog cross), even though the owner has a valid rabies certificate. Even if the dog has a valid rabies certificate, the

victim could be required to take the prophylactic treatment if there is a question about the ancestry of the biter (dog or wolf-dog cross) even though the vaccine is widely used in wild carnivores in zoos without any rabies outbreaks, it is still not an acceptable immunization

Since there was a bill introduced, in the 2006 session, (HB 6237 assigned to the Agriculture Committee, to repeal Public Act 246 of 2000 (Wolf-Dog Cross Act) it may be well for the Judiciary Committee to examine this act to assess the possibility of unintended consequences.

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In memory of
Peter Cannell, Charles O. Handley, Jr., and Karl F. Koopman

ORDER CARNIVORA

by W. Christopher Wozencraft

ORDER CARNIVORA Bowdich, 1821.

COMMENTS: Higher taxonomic arrangement follows that of McKenna and Bell (1997), except that Ailuridae, Eupleridae, Mephitidae, and Odobenidae are raised to Family rank.

SUBORDER FELIFORMIA Kretzoi, 1945.

Family Felidae Fischer de Waldheim, 1817. Mém. Soc. Imp. Nat. Moscow, 5:372.

SYNONYMS: Euailuroida Kretzoi, 1929; Felinoidea Brunet, 1979; Feloidae Hay, 1930; Feloidea Simpson, 1931; Lyncina Gray, 1867.

COMMENTS: Revised by Pocock (1917*a*, *b*, 1951), Weigel (1961), de Beaumont (1964), Hemmer (1978), Král and Zima (1980), Kratochvil (1982*c*), Groves (1982*a*), Collier and O'Brien (1985), Salles (1992), Johnson and O'Brien (1997), McKenna and Bell (1997), Bininda-Emonds et al. (1999), and Mattern and McLennan (2000). Some (Honacki et al., 1982; McKenna and Bell, 1997; Van Gelder, 1977*b*) have followed Simpson (1945) and placed the majority of taxa in *Felis*, except for the large cats (i.e., *Panthera* and *Acinonyx*); however, this is not well supported by primary systematic studies and only poorly represents relationships below the family level. Most studies agree on the clear separation of the "big cats" (i.e., *Panthera*, *Neofelis*, *Uncia*) from the remainder. However, within the remaining group, there does not appear to be a clear consensus. Even the cheetah's (*Acinonyx*) traditional position has been called into question (Bininda-Emonds et al., 1999; Mattern and McLennan, 2000). For these reasons, only two subfamilies of cats are recognized, and taxa are listed alphabetically within each subfamily. Synonyms allocated according to McKenna and Bell (1997) and Kitchener (pers. comm.). Species distributions were suplemented by Kristin Nowell, IUCN/SSC Cat Specialist Group (pers. comm.). For an excellent review of the biology of the felids, see Sunquist and Sunquist (2002)

Subfamily Felinae Fischer de Waldheim, 1817. Mém. Soc. Imp. Nat. Moscow, 5:372.

SYNONYMS: Acinonychinae Pocock, 1917; Guepardina Gray, 1867; Lyncini Kalandadze and Rautian, 1992; Profelina Kalandadze and Rautian, 1992; Therailurini Kalandadze and Rautian, 1992.

COMMENTS: A comparison of four recent phylogenetic analyses of the non-pantherine cats shows little consensus at branch points other than those that might be recognized as genera. For this reason all non-pantherine cats are tentatively grouped together in the Felinae. Synonyms allocated according to McKenna and Bell (1997).

Acinonyx Brookes, 1828. Cat. Anat. Zool. Mus. Joshua Brookes, London, p. 16, 33.

TYPE SPECIES: *Acinonyx venator* Brookes, 1828 (= *Felis jubata* Schreber, 1775), by monotypy (International Commission on Zoological Nomenclature, 1956*a*; Melville and Smith, 1987).

SYNONYMS: *Acinonyx* de Beaumont, 1964; *Cynaelurus* Gloger, 1841; *Cynailurus* Wagner, 1830; *Cynofelis* Lesson, 1842; *Guepar* Boitard, 1842; *Guepardo* Gray, 1843; *Guepardus* Duvernoy, 1834; *Paracinonyx* Kretzoi, 1929.

COMMENTS: Wozencraft (1993) placed *Acinonyx* in the monophyletic subfamily Acinonychinae. Salles (1992), Johnson and O'Brien (1997), Bininda-Emonds et al. (1999), and Mattern and McLennan (2000) considered *Acinonyx*, *Puma concolor*, and *Puma* (= *Herpailurus*) *yagouaroundi* to represent close sister groups. Synonyms allocated according to McKenna and Bell (1997).

Acinonyx jubatus (Schreber, 1775). Die Säugethiere, 2(15):pl. 105[1775]; text 3(22):392 [1777].

COMMON NAME: Cheetah.

TYPE LOCALITY: "südliche Afrika; man bekömmt die Felle vom Vorgebirge der guten Hofnung" [South Africa, Western Cape Province, Cape of Good Hope].

DISTRIBUTION: Algeria, Angola, Benin, Botswana, Burkina Faso, Cameroon, Central African

Israel, Kenya, Libya, Mali, Morocco, Nepal, Nigeria, Pakistan, Saudia Arabia, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Turkmenistan, Uzbekistan, Yemen.

STATUS: U.S. ESA and IUCN – Data Deficient as *H. hyaena barbara*, otherwise Lower Risk (nt).

SYNONYMS: *antiquorum* (Temminck, 1820); *barbara* de Blainville, 1844; *bergeri* Matschie, 1910; *bilkiewiczi* Satunin, 1905; *bokcharensis* Satunin, 1905; *dubbah* Meyer, 1793; *dubia* Schinz, 1821; *fasciata* Thunberg, 1820; *hienomelas* Matschie, 1900; *hyaenomelas* (Bruce, *in* Desmarest, 1820); *indica* de Blainville, 1844; *orientalis* Tiedemann, 1808; *rendilis* Lönnberg, 1912; *saturini* Matschie, 1910; *schillingsi* Matschie, 1900; *striata* Zimmermann, 1777; *sulla* Filippi, 1853; *sultana* Pocock, 1934; *syriaca* Matschie, 1900; *virgata* Ogilby, 1840; *vulgaris* Desmarest, 1820; *zanudnyi* Satunin, 1905.

COMMENTS: Reviewed by Rieger (1981) and Jenks and Werdelin (1998). Pocock (1934*a*) and Jenks and Werdelin (1998) argued that at present neither morphological nor molecular studies have supported the recognition of subspecies. Synonyms according to Rieger (1981) and Jenks and Werdelin (1998).

Proteles I. Geoffroy Saint-Hilaire, 1824. Bull. Sci. Soc. Philom. Paris, 1824:139.

TYPE SPECIES: *Proteles lalandii* I. Geoffroy Saint-Hilaire, 1824 (= *Viverra cristata* Sparrman, 1783), by original designation (Melville and Smith, 1987).

SYNONYMS: *Geocyon* Wagler, 1830.

Proteles cristata (Sparrman, 1783). Resa Goda-Hopps-Udden., I. 1:581.

COMMON NAME: Aardwolf.

TYPE LOCALITY: English translation (Sparrman, 1786) of original locality: "Agter-Bruntjes hoogte . . . which takes in the upper part of Kleine Visch-rivier, and is separated from Camdebo by Bruntjes hoogtens . . ."; listed in G. M. Allen (1939) as "Near Little Fish River, Somerset East, Cape Colony" [South Africa].

DISTRIBUTION: Angola, Botswana, Central African Republic, Egypt, Ethiopia, Kenya, Mozambique, Namibia, Somalia, South Africa, Sudan, Tanzania, Uganda, Zambia, Zimbabwe.

STATUS: CITES – Appendix III (Botswana); IUCN – Lower Risk (lc).

SYNONYMS: *canescens* Shortridge and Carter, 1938; *harrisoni* Rothschild, 1902; *hyenoides* (Desmarest, 1821); *lalandii* I. Geoffroy Saint-Hilaire, 1824; *pallidior* Cabrera, 1910; *septentrionalis* Rothschild, 1902; *tennes* Heller, 1913; *transvaalensis* Roberts, 1932; *typicus* A. Smith, 1834.

COMMENTS: Reviewed by Koehler and Richardson (1990) and Jenks and Werdelin (1998) who demonstrated that subspecies are not well defined and probably should not be recognized. Synonyms according to Jenks and Werdelin (1998).

SUBORDER CANIFORMIA Kretzoi, 1938.

Family Canidae Fischer, 1817. Mém. Soc. Imp. Nat. Moscow, 5:372.

COMMENTS: Conservation status and distribution reviewed by Ginsberg and Macdonald (1990). Reviewed by Langguth (1975), Stains (1975), Tedford et al. (1995), and Wayne et al. (1997). Revisions by Langguth (1969), Clutton-Brock et al. (1976), Van Gelder (1978), Berta (1985, 1988), Wayne and O'Brien (1987), Wayne (1993), and Wayne et al. (1987*a*, *b*, 1989, 1997) gave little support to the subfamilies recognized by Simpson (1945); therefore, no subfamilies are recognized here. There are considerable questions regarding the validity of the South American genera (Xiaoming Wang et al., 1999; Wayne et al., 1997). Van Gelder's (1978) hybridization criteria for generic classification resulted in the recognition of only a few genera, including some paraphyletic groups.

Atelocynus Cabrera, 1940. Notas Mus. La Plata, 5:14.

TYPE SPECIES: *Canis microtis* Sclater, 1883, by original designation.

SYNONYMS: *Canis* Sclater, 1883 (preoccupied by *Canis* Linnaeus, 1758); *Carcinocyon* J. A. Allen, 1905.

COMMENTS: See comments under *Dusicyon*. Placed in *Atelocynus* by Cabrera (1931, 1957), Langguth (1975), Stains (1975), Berta (1985, 1986, 1988) and McKenna and Bell (1997).

Van Gelder (1978) considered *Atelocynus* a subgenus of *Canis*. Tedford et al. (1995) placed it as the sister taxon to *Speothos*.

Atelocynus microtis (Sclater, 1883). Proc. Zool. Soc. Lond., 1882:631 [1883].
COMMON NAME: Short-eared Dog.
TYPE LOCALITY: "Amazons," restricted by Hershkovitz (1957*a*) to "south bank of the Rio Amazonas, Pará, Brazil."
DISTRIBUTION: Amazonian basin: Bolivia (see Anderson, 1997), Brazil, Colombia, Ecuador, Peru, Venezuela (?).
STATUS: IUCN – Data Deficient.
SYNONYMS: *sclateri* J. A. Allen, 1905
COMMENTS: Reviewed by Hershkovitz (1961*a*) and Berta (1986).

Canis Linnaeus, 1758. Syst. Nat., 10th ed., 1:38.
TYPE SPECIES: *Canis familiaris* Linnaeus, 1758 (= *Canis lupus* Linnaeus, 1758), by Linnean tautonomy (Melville and Smith, 1987).
SYNONYMS: *Alopedon* Hilzheimer, 1906; *Alopsis* Rafinesque, 1815; *Chacn* C. E. H. Smith, 1839; *Dasycyon* Krumbiegel, 1953; *Dieba* Bray, 1869; *Lupulella* Hilzheimer, 1906; *Lupulus* Gervais, 1855; *Lupus* Oken, 1816; *Lycisous* C. E. H. Smith, 1839; *Mamcanisus* Herrera, 1899; *Neocyon* Gray, 1868; *Oreocyon* Krumbiegel, 1949; *Oxygous* Hodgson, 1841; *Sacalius* C. E. H. Smith, 1839; *Schaeffia* Hilzheimer, 1906; *Simenia* Gray, 1868; *Thos* Oken, 1816; *Vulpicanis* de Blainville, 1837.
COMMENTS: Van Gelder (1978) included *Alopex*, *Atelocynus*, *Cerdocyon*, *Pseudalopex*, *Lycalopex*, *Dusicyon*, and *Vulpes* as subgenera, however, this arrangement is not currently employed by most mammalogists (Berta, 1987, 1988; Corbet, 1978; Corbet and Hill, 1980; Gromov and Baranova, 1981; Hall, 1981; McKenna and Bell, 1997; Wozencraft, 1989). Synonyms allocated according to McKenna and Bell (1997).

Canis adustus Sundevall, 1847. Ofv. K. Svenska Vet.-Akad. Forhandl., Stockholm, 3:121.
COMMON NAME: Side-striped Jackal.
TYPE LOCALITY: "Caffraria Interiore"; listed as "Magaliesberg" [South Africa] by Sclater (1900).
DISTRIBUTION: Angola, Botswana, Cameroon, Central African Republic, Dem. Rep. Congo, Ethiopia, Gabon, Kenya, Malawi, Mozambique, Namibia, Niger, Nigeria, Republic of Congo, Senegal, South Africa, Sudan, Tanzania, Uganda, Zambia, Zimbabwe.
STATUS: IUCN – Lower Risk (lc).
SYNONYMS: *holubi* Lorenz, 1895; *wunderlichi* Noack, 1897; *bweha* Heller, 1914; *centralis* Schwarz, 1915; *grayi* Hilzheimer, 1906; *kaffensis* Neumann, 1902; *lateralis* P. L. Sclater, 1870; *notatus* Heller, 1914.
COMMENTS: Synonyms allocated according to G. M. Allen (1939) and Ellerman et al. (1953).

Canis aureus Linnaeus, 1758. Syst. Nat., 10th ed., 1:40.
COMMON NAME: Golden Jackal.
TYPE LOCALITY: "oriente", restricted by Thomas (1911*a*) to "Bennâ Mts., Laristan, S. Persia" [Iran].
DISTRIBUTION: Afghanistan, Albania, Algeria, Bangladesh, Burma, Chad, Coatia, Egypt, Eritrea, Ethiopia, Greece, Iran, Iraq, Israel, Italy, Jordan, Kenya, Lebanon, Libya, Macedonia, Mali, Mauritania, Morocco, Niger, Nigeria, Oman, Pakistan, Saudia Arabia, Senegal, Slovenia, Somalia, Sri Lanka, Sudan, Syria, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Western Sahara, Yemen.
STATUS: CITES – Appendix III (India); IUCN – Lower Risk (lc).
SYNONYMS: *balcanicus* Brusina, 1892; *caucasica* Kolenati, 1858; *dalmatinus* Wagner, 1841; *hadramauticus* Noack, 1896; *hungaricus* Ehik, 1938; *kola* Wroughton, 1916; *lanka* Wroughton, 1916; *maroccanus* (Cabrera, 1921); *typicus* Kolenati, 1858; *vulgaris* Wagner, 1841; *algirensis* Wagner, 1841; *barbarus* (C. E. H. Smith, 1839) [preoccupied]; *grayi* Hilzheimer, 1906; *tripolitanus* Wagner, 1841; *anthus* F. Cuvier, 1820; *senegalensis* (C. E. H. Smith, 1839); *bea* Heller, 1914; *cruesemanni* Matschie, 1900; *ecsedensis* (Kretzoi, 1947); *minor* Mojsisovics, 1897 [preoccupied]; *indicus* Hodgson, 1833;

lupaster Hemprich and Ehrenberg, 1833; *sacer* Hemprich and Ehrenberg, 1833; ***moreotica*** I. Geoffroy Saint-Hilaire, 1835; *graecus* Wagner, 1841; ***naria*** Wroughton, 1916; *riparius* Hemprich and Ehrenberg, 1832; *hagenbecki* Noack, 1897; *mengesi* Noack, 1897; *somalicus* Lorenz, 1906; ***soudanicus*** Thomas, 1903; ***doederleini*** Hilzheimer, 1906; *nubianus* (Cabrera, 1921); ***thooides*** Hilzheimer, 1906; *variegatus* Cretzschmar, 1826 [preoccupied]; *syriacus* Hemprich and Ehrenberg, 1833.

COMMENTS: Synonyms allocated according to G. M. Allen (1939) and Ellerman and Morrison-Scott (1951).

Canis latrans Say, 1823. *In* James, Account Exped. Pittsburgh to Rocky Mtns, 1:168.

COMMON NAME: Coyote.

TYPE LOCALITY: "Engineer cantonment" reported at "latitude 41°25'N, and longitude . . . 95°47'30"W" (p. XVIII, vol. 2). Reported in Honacki et al. (1982) as "U.S.A., Nebraska, Washington Co., Engineer Cantonment, about 12 mi. (19.2 km) S. E. Blair".

DISTRIBUTION: Canada, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, USA. Introduced to Florida and Georgia and currently widespread throughout Northern and Central America (Beckoff, 1977, 1999).

STATUS: IUCN – Lower Risk (lc).

SYNONYMS: *nebracensis* Merriam, 1898; *pallidus* Merriam, 1897; ***cagottis*** C. E. H. Smith, 1839; ***clepticus*** Elliot, 1903; ***dickeyi*** Nelson, 1932; ***frustror*** Woodhouse, 1851; ***goldmani*** Merriam, 1904; ***hondurensis*** Goldman, 1936; ***impavidus*** J. A. Allen, 1903; ***incolatus*** Hall, 1934; ***jamesi*** Townsend, 1912; ***lestes*** Merriam, 1897; ***mearnsi*** Merriam, 1897; ***estor*** Merriam, 1897; ***microdon*** Merriam, 1897; ***ochropus*** Eschscholtz, 1829; ***peninsulae*** Merriam, 1897; ***texensis*** Bailey, 1905; ***thamnos*** Jackson, 1949; ***umpquensis*** Jackson, 1949; ***vigilis*** Merriam, 1897.

COMMENTS: Revised by Young (1951) and reviewed by Beckoff (1977). Synonyms allocated according to Beckoff (1977) and Hall (1981).

Canis lupus Linnaeus, 1758. Syst. Nat., 10th ed., 1:39.

COMMON NAME: Wolf.

TYPE LOCALITY: "Europae sylvis, etiam frigidioribus", restricted by Thomas (1911*a*) to "Sweden".

DISTRIBUTION: Throughout the N hemisphere: North America south to 20°N in Oaxaca (Mexico); Europe; Asia, including the Arabian Peninsula and Japan, excluding Indochina and S India. Extirpated from most of the continental USA, Europe, and SE China and Indochina (Ginsburg and Macdonald, 1990). Afghanistan, Albania, Armenia, Azerbaijan, Belarus, Bhutan, Bulgaria, Canada, China, Egypt (?), Estonia, Finland, France, Georgia, Greece, Greenland, Hungary, India, Iran, Iraq, Israel, Jordan, Kyrgyzstan, Latvia, Lebanon (?), Lithuania, Macedonia, Mexico, Mongolia, Nepal, Norway, Pakistan, Poland, Portugal, Romania, Russia, Saudia Arabia, Serbia and Montenegro, Slovakia, Spain, Sweden, Syria, Tajikistan, Turkey, Turkmenistan, Ukraine, USA (see status below), Uzbekistan.

STATUS: CITES – Appendix I (Indian, Pakistan, Bhutan, and Nepal populations); otherwise Appendix II. U.S. ESA – as *C. lupus* varies by population: 1) Endangered in Southwestern Distinct Population Segment – Mexico and USA (AZ, NM, CO south of Interstate Highway 70, UT south of U.S. Highway 50, OK and TX, except those parts of OK and TX east of Interstate Highway 35; except where listed as an experimental population); 2) Threatened in Western Distinct Population Segment – USA (CA, ID, MT, NV, OR, WA, WY, UT north of U.S. Highway 50, and CO north of Interstate Highway 70, except where listed as an experimental population); 3) Threatened in Eastern Distinct Population Segment – USA (CT, IA, IL, IN, KS, MA, ME, MI, MN, MO, ND, NE, NH, NJ, NY, OH, PA, RI, SD, VT, and WI); 4) Experimental populations in portions of USA (WY and portions of ID and MT; portions of AZ, NM, and TX); otherwise, U.S. ESA – Delisted Taxa in USA (Delaware, West Virginia, Virginia, Maryland, District of Columbia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, parts of Oklahoma and Texas east of Interstate Highway 35; delisting of all other lower 48 states or portions of lower 48 states not otherwise included in the 3 distinct population segments). U.S. ESA – as *C. rufus* Endangered in en-

tire range except in portions of NC and TN (USA), where listed as experimental populations. IUCN – Lower Risk (lc), except for Mexican subpopulation, which is Extinct in the Wild, Italian subpopulation, which is Vulnerable, Spanish-Portuguese subpopulation, which is Lower Risk (cd), and as *Canis rufus*, which is Critically Endangered.

SYNONYMS: *altaicus* (Noack, 1911); *argunensis* Dybowski, 1922; *canus* de Sélys Longchamps, 1839; *communis* Dwigubski 1804; *deitanus* Cabrera, 1907; *desertorum* Bogdanov, 1882; *flavus* Kerr, 1792; *fulvus* de Sélys Longchamps, 1839; *italicus* Altobello, 1921; *kurjak* Bolkay, 1925; *lycaon* Trouessart, 1910; *major* Ogérien, 1863; *minor* Ogerien, 1863; *niger* Hermann, 1804; *orientalis* (Wagner, 1841); *orientalis* Dybowski, 1922; *signatus* Cabrera, 1907; *albus* Kerr, 1792; *dybowskii* Domaniewski, 1926; *kamtschaticus* Dybowski, 1922; *turuchanensis* Ognev, 1923; *alces* Goldman, 1941; *arabs* Pocock, 1934; *arctos* Pocock, 1935; *baileyi* Nelson and Goldman, 1929; *beothucus* G. M. Allen and Barbour, 1937; *bernardi* Anderson, 1943; *banksianus* Anderson, 1943; *campestris* Dwigubski, 1804; *bactrianus* Laptev, 1929; *cubanenesis* Ognev, 1923; *desertorum* Bogdanov, 1882; *chanco* Gray, 1863; *coreanus* Abe, 1923; *dorogostaiskii* Skalon, 1936; *karanorensis* (Matschie, 1907); [preoccupied]; *niger* Sclater, 1874; *tschiliensis* (Matschie, 1907); *columbianus* Goldman, 1941; *crassodon* Hall, 1932; *dingo* Meyer, 1793 [domestic dog]; *antarcticus* Kerr, 1792[suppressed, ICZN, O. 451]; *australasiae* Desmarest, 1820; *australiae* Grav, Voigt, 1831; *papuensis* Ramsay, 1879; *tenggerana* Kohlbrugge, 1896; *hallstromi* Troughton, 1957; *harappensis* Prashad, 1936; *familiaris* Linnaeus, 1758 [domestic dog]; *aegyptius* Linnaeus, 1758; *alco* C. E. H. Smith, 1839; *americanus* Gmelin, 1792; *anglicus* Gmelin, 1792; *antarcticus* Gmelin, 1792; *aprinus* Gmelin, 1792; *aquaticus* Linnaeus, 1758; *aquatilis* Gmelin, 1792, *avicularis* Gmelin, 1792; *borealis* C. E. H. Smith, 1839; *brevipilis* Gmelin, 1792; *cursorius* Gmelin, 1792; *domesticus* Linnaeus, 1758; *extrarius* Gmelin, 1792; *ferus* C. E. H. Smith, 1839; *fricator* Gmelin, 1792; *fricatrix* Linnaeus, 1758; *fuillus* Gmelin, 1792; *gallicus* Gmelin, 1792; *glaucus* C. E. H. Smith, 1839; *graius* Linnaeus, 1758; *grajus* Gmelin, 1792; *hagenbecki* Krumbiegel, 1950; *hanicus* C. E. H. Smith, 1839; *hibernicus* Gmelin, 1792; *hirsutus* Gmelin, 1792; *hyrcanus* Gmelin, 1792; *islandicus* Gmelin, 1792; *italicus* Gmelin, 1792; *laniarius* Gmelin, 1792 *leonimus* Gmelin, 1792; *leporarius* C. E. H. Smith, 1839; *major* Gmelin, 1792; *major* Gmelin, 1792; *mastinus* Linnaeus, 1758; *melitacus* Gmelin, 1792; *melitacus* Linnaeus, 1758; *minor* Gmelin, 1792; *molossus* Gmelin, 1792; *mustelinus* Linnaeus, 1758; *obesus* Gmelin, 1792; *orientalis* Gmelin, 1792; *pacificus* C. E. H. Smith, 1839; *plancus* Gmelin, 1792; *pomeranus* Gmelin, 1792; *sagaces* C. E. H. Smith, 1839; *sanguinarius* C. E. H. Smith, 1839; *sagax* Linnaeus, 1758; *scoticus* Gmelin, 1792; *sibiricus* Gmelin, 1792; *sutilus* C. E. H. Smith, 1839; *terraenovae* C. E. H. Smith, 1839; *terrarius* C. E. H. Smith, 1839; *turcicus* Gmelin, 1792; *urcani* C. E. H. Smith, 1839; *variegatus* Gmelin, 1792; *venaticus* Gmelin, 1792; *vertegus* Gmelin, 1792; *filchnevi* (Matschie, 1907); *laniger* (Hodgson, 1847); *floridanus* Miller, 1912; *fuscus* Richardson, 1839; *gigas* (Townsend, 1850); *gregoryi* Goldman, 1937; *griseoalbus* Baird, 1858; *knightii* Anderson, 1945; *hattai* Kishida, 1931; *rex* Pocock, 1935; *hodophilax* Temminck, 1839; *hodopylax* Temminck, 1844; *japonicus* Nehring, 1885; *hudsonicus* Goldman, 1941; *irremotus* Goldman, 1937; *labradorius* Goldman, 1937; *ligoni* Goldman, 1937; *lycaon* Schreber, 1775; *canadensis* de Blainville, 1843; *ungavensis* Comeau, 1940; *mackenzii* Anderson, 1943; *manningi* Anderson, 1943; *mogollonensis* Goldman, 1937; *monstrabilis* Goldman, 1937; *niger* Bartram, 1791; *nubilus* Say, 1823; *variabilis* Wied-Neuwied, 1841; *occidentalis* Richardson, 1829; *ater* Richardson, 1829, *sticte* Richardson, 1829; *orion* Pocock, 1935; *pallipes* Sykes, 1831; *pambasileus* Elliot, 1905; *rufus* Audubon and Bachman, 1851; *tundrarum* Miller, 1912; *youngi* Goldman, 1937.

COMMENTS: Reviewed by Mech, 1974. Opinion 2027 of the International Commission on Zoological Nomenclature (March, 2003*a*) ruled that *lupus* is not invalid by virtue of being pre-dated by a name based on a domestic form. Includes the domestic dog as a subspecies, with the dingo provisionally separate—artificial variants created by domestication and selective breeding (Vilá et al., 1999; Wayne and Ostrander, 1999;

Savolainen et al., 2002). Although this may stretch the subspecies concept, it retains the correct allocation of synonyms. Corbet and Hill (1992) suggested treating the domestic dog as a separate species in SE Asia. Synonyms allocated according to Ellerman and Morrison-Scott (1951), Mech (1974), and Hall (1981). Provisionally includes *rufus* (recognized by Paradiso, 1968; Paradiso and Nowak, 1972; Atkins and Dillion, 1971; Paradiso and Nowak, 1972; Nowak, 1979, 1992, 2002) although this problematic group (*rufus*, *floridanus*, *gregoryi*) should probably be best listed as *incertae sedis*. The widely used name *C. niger* is invalid (International Commission on Zoological Nomenclature, 1957*a*). The validity of *rufus* as a full species was questioned by Clutton-Brock et al. (1976), and Lawrence and Bossert (1967, 1975), due to the existence of natural hybrids with *lupus* and *latrans*. Natural hybridization may be a consequence of habitat disruption by man (Paradiso and Nowak, 1972, 2002). All specimens examined by Wayne and Jenks (1991) had either a *lupus* or *latrans* mtDNA genotype and there appears to be a growing consensus that all historical specimens are a product of hybridization (Nowak, 2002; Reich et al., 1999; Roy et al., 1994, 1996; Wayne et al., 1992, 1998). Hybridization between wolf and coyote has long been recognized (Nowak, 2002). Two recent studies make the strongest case for separation. Wilson et al. (2000) argued for separation of the Eastern Canadian Wolf (as *Canis lycaon*) and the Red Wolf (as *Canis rufus*) as separate species based on mtDNA, but see Nowak (2002) who could not find support for this in a morphometric study. Nowak (2002) in an extensive analysis of tooth morphology concluded that there was a distinct population intermediate between traditionally recognized wolves and coyotes, which warranted full species recognition (*C. rufus*). The red wolf is here considered a hybrid after Wayne and Jenks (1991), Wayne (1992, 1995), and Wayne et al. (1992). Although hybrids are not normally recognized as subspecies, I have chosen as a compromise to retain *rufus* because of its uncertain status. Also see Roy et al. (1994, 1996), Vilá et al. (1999), and Nowak (2002) who provided an excellent review of the situation.

Canis mesomelas Schreber, 1775. Die Säugethiere, 2(14):pl. 95[1775]: text, 3(21):370[1776], 586[1777].

COMMON NAME: **Black-backed Jackal.**

TYPE LOCALITY: "Vorgebirge der guten Hofnung" [South Africa, Western Cape Prov., Cape of Good Hope].

DISTRIBUTION: Allopatric south and east African populations: Angola, Botswana, Ethiopia, Kenya, Mozambique, Namibia, Somalia, Sudan, Tanzania, Uganda, Zimbabwe.

STATUS: IUCN – Lower Risk (lc).

SYNONYMS: *achrotes* (Thomas, 1925); *arenarum* (Thomas, 1926); *variegatoides* A. Smith, 1833; *schmidti* Noack, 1897; *elgonae* Heller, 1914; *mcmillani*, Heller, 1914.

COMMENTS: Reviewed by Walton and Joly (2003).

Canis simensis Rüppell, 1840. Neue Wirbelt. Fauna Abyssin. Gehörig. Saugeth., 1:39, pl. 14.

COMMON NAME: **Ethiopian Wolf.**

TYPE LOCALITY: "Wir beobachteten diesen wolfsartigen Hund in den Bergen von Simen . . ." [Ethiopia, mountains of Simen].

DISTRIBUTION: C Ethiopia.

STATUS: U.S. ESA – Endangered; IUCN – Critically Endangered.

SYNONYMS: *crinensis* (Erlanger and Neumann, 1900); *semiensis* Heuglin, 1862; *simensis* (Gray, 1869); *walgi* Heuglin, 1862; *citernii* de Beaux, 1922.

COMMENTS: Sometimes placed in subgenus *Simicuna* Gray, 1868. Reviewed by Sillero-Zubiri and Gottelli (1994).

Cerdocyon C. E. H. Smith, 1839. Jardine's Natur. Libr., 9:259-267.

TYPE SPECIES: *Canis azarae* Wied, 1824 (= *Canis Thous* Linnaeus, 1766) by subsequent designation (Thomas, 1914*a*).

SYNONYMS: *Carcinocyon* J. A. Allen, 1905; *Thous* J. E. Gray, 1868.

COMMENTS: Tedford et al. (1995) considered *Cerdocyon* and *Nyctereutes* to be sister taxa.