

Clark Mountain Wild Burros
Equus Asinus

By Certified Mail

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**U.S. Fish and Wildlife
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**) Immediate Emergency Petition for a
) Rule to List the Clark Mountain
) Burro (*Equus asinus*) as Endangered
) under the Endangered Species Act,
) 16 U.S.C. § 1531 et seq. (1973 a
) amended) within the United
) States**

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Introduction

Public Lands for Public Use, Public Lands for the People, Wild Burro Rescue, Coyote Canyon Caballos D'Anza, and Cindy MacDonald, petition the United States Fish and Wildlife Service (“FWS” or “the Service”) to list as “imminently endangered”, the Distinct Population Segment, commonly referred to as the Clark Mountain Burros of the (*equus asinus*) species and to designate “critical habitat” under the Endangered Species Act (“ESA”) as pursuant to SEC 2 (a) (1), SEC 2 (a) (2), SEC 2 (a) (3), SEC 2 (c) (1), SEC 2 (c) (2), SEC 3 (1), SEC 3 (5) (C), SEC 3 (6), SEC 3 (8), SEC 3 (15), SEC 4 (a) (1), SEC 4 (a) (A), SEC 4 (a) (B), SEC 4 (a) (C), SEC 4 (a) (D), SEC 4 (a) (E), SEC 4 (2) (b) (2), and SEC 4 (C) (7).

The Clark Mountain Burro is a medium size burro that was re-introduced to North America approximately four hundred years ago and has naturalized itself within the arid regions of the Southwest of the United States. Placed under protection by Congress in 1971 through the Wild Free-Roaming Horse and Burro Act of 1971 and under the authority of the Department of the Interior through the Bureau of Land Management (“BLM”) and subject to protected status and species management since.

Cumulative impacts of management actions and decisions regarding all wild burros within the United States under BLM jurisdiction have resulted in significant loss of both habitat and populations across the West. The Clark Mountain wild burro, within the framework of these actions, has been subjected to a variety of federal agency policies and decisions over recent years that have resulted in the total elimination of their historic range, the denial of access to their

historic and critical habitat requirement, the only natural spring source in the area, and the recently issued decision by the BLM to permanently remove the remaining population and thereby finalizing the extinction of this historic herd.

This petition is filed under the authority of the Endangered Species Act, which give interested persons the right to petition for issuance of a rule listing a species and any class of mammal as endangered on an emergency basis.

Petition Context

Existing regulatory mechanisms that were implemented to insure wild horses and burros and their designated habitat for future generations through Public Law 92-195, have proven ineffective in the preservation and protection of the Clark Mountain wild burros and their habitat. Additionally, no existing regulations or laws are capable of requiring other federal and state agencies to cooperate and coordinate public resources to provide the critical habitat requirements necessary to insure the Clark Mountain wild burros continued survival.

There is further complications with designated critical habitat and recovery plans for the currently listed Threatened species, the Desert Tortoise (*Gopherus agassizii*), which share some of the Clark Mountain wild burros historic range and were a significant factor in decisions that ultimately resulted in the impending extinction of this herd.

One other major contributor to the critical state of extinction the Clark Mountain wild burros now face, as well as all wild burros on public lands, is the noted competition for habitat and resources of all species of bighorn sheep. The spectacular success of bighorn sheep re-introductions in a wide variety of ranges in North America has been fueled, in part, by extensive funding received from the sale and auction of hunting tags that can command exorbitant sums of

money totaling millions of dollars annually. Resource decisions have favored unbalanced allocations that exclude wild burros to reduce competition in efforts to maximize bighorn populations and habitats for further expansion and funding.

The combination of these factors has led to both the expatriation of wild burros within California and the certainty of extinction for the Clark Mountain wild burros, a historic herd that has been tested and identified as containing unique genetic adaptations brought about by hundreds of years of naturalization, mutations and reproductive isolation, if intercession and protection is not granted under the Endangered Species Act.

To our knowledge, never before has the FWS considered listing a species whose distinct population has been so rapidly decimated that their extinction is assured without emergency endangerment listing of the highest priority.

In the present petition, a wide variety of data, statistics, studies and arguments are presented to demonstrate the value and necessity of preserving this diverse species of *equus asinus* as a distinct population segment of wild asses, not only locally within the State of California, but Nationally and Internationally as well. We urge FWS to review this petition on an expedited basis as called for under the emergency listing provision of the Endangered Species Act and its implementing regulations.

We propose that conservation measures be taken immediately to protect the Clark Mountain wild burros, both through the immediate intervention of the dispersal of the majority of this distinct herd now poised for “processing” at the BLM California Ridgecrest holding and adoption facilities that will result in dispersal of this herd resulting in irreparable harm to the remaining gene pool, as well as protection of their historic habitat and range.

Petitioners have pursued other potential avenues such as attempting to secure critical habitat requirements of water through voluntary labor and supplies, as well as rejected requests to re-establish the Clark Mountain wild burros historic range through land use and resource amendments.

Emergency Listing is Warranted

The ESA empowers the Secretary to act immediately to list a species whenever “any Emergency pos[es] a significant risk to the well-being, without limitation, of any species of mammal. This provision permits the Secretary to list a species upon notification to the affected States and publication of a regulation to that effect in the Federal Register (Id.). Such listing would remain in effect for 240 days while FWS compiles with its ordinary rulemaking procedures under the ESA (Id.).

As this petition details, an emergency situation clearly exists with respect to the Clark Mountain wild burro of unprecedented magnitude. Not only is the remaining population and their distinctive gene pool critically imperiled but their historic habitat and range have been eliminated solely based on manmade factors and inadequacies. Immediate action to list this species distinct population segment, intervention in herd dispersal, and coordination of federal agencies management activities and policies to support reinstatement of their historic range and critical habitat requirements is required if the Clark Mountain wild burro is to have any chance of preservation and survival.

Endangered Species Act Implementing Regulations

Several sections of the regulations implementing the Endangered Species Act are applicable to this petition. Those concerning the listing of the Clark Mountain wild burro, *equus asinus*, as an endangered species include:

SEC. 2 (a) (1) “various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untempered by adequate concern and conservation;”

SEC. 2 (a) (2) “other species of fish, wildlife, and plants have been so depleted numbers that they are in danger of or threatened with extinction;”

SEC. 2 (a) (3) “ these species of fish, wildlife, and plants are of aesthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people;”

SEC. 2 (c) (1) “It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act.”

SEC. 3 (1) “The term “alternative courses of action” means all alternatives and thus is not limited to original project objectives and agency jurisdiction.”

SEC. 3 (19) “Endangered species” means a species that is in danger of extinction throughout all or a significant portion of its range.”

SEC. 3 (8) “The term “fish or wildlife” means any member of the animal kingdom, including without limitation any mammal, fish, bird”....

SEC. 3 (15) “The term “species” includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature.”

SEC. 4 (a) (1) “A species shall be listed....because of any one or a combination of the following factors:”

1. The present or threatened destruction, modification, or curtailment of its habitat or range;
2. Overutilization for commercial, recreational, scientific, or educational purposes;
3. Disease or predation;
4. The inadequacy of existing regulatory mechanisms;
5. Other natural or manmade factors affecting its continued existence.

All five of the major factors and criteria are applicable to the present status of the Clark Mountain wild burros and their imperiled status.

Based on the documentation provided below, the petitioners contend that these provisions compel the emergency listing of the Clark Mountain wild burros as “endangered” and its historic habitat within the United States (“U.S.”). Additionally, after emergency listing, FWS should take appropriate action to designate “critical habitat” for this Distinct Population Segment of the species *equus asinus* to preserve their evolutionary significant and unique gene pool for future generations.

Petitioners

Public Lands for Public Use is a 501(c) (3) not-for-profit membership organization Dedicated to the preservation..... and represent some 40,000 members and organizations nationwide.

Kenneth and Jennifer Foster are private citizens of the United States who have a long and vested interest in the preservation of the Clark Mountain wild burros, both from the burros significance as a historical herd and natural heritage resource as well as in the interest of the preservation of biological diversity within the Nation. Long-standing members of the organization, Public Lands for Public Use, as well as the founders of Public Lands for the People, they have consistently advocated and been active in securing public rights to access, utilize, and preserve public lands and resources for the citizens of the United States and future generations.

Wild Burro Rescue is a 501(c) (3) not-for-profit membership organization with over 3,000 standing members dedicated to the preservation and humane treatment of wild burros on public lands . Dianna Chontose, founder, long-time wild burro advocate, and sanctuary facilitator, is one of the modern pioneers for raising public awareness of treatment of wild burros on public lands. Responsible for orchestrating humane treatment and removals of wild burros in Death Valley National Monument by negotiating wild burro rescue efforts that deterred National Park Services management agenda of rounding up wild burro herds and shooting them in “mass disposal” implementation, she now oversees a wild burro sanctuary in California and continues to advocate the preservation of wild burros Nationally.

Cindy MacDonald represents the citizenry of the United States and a member of the interested public devoted to seeing the preservation and protection of significant historical, cultural and aesthetic biological diversity of our National resources.

Overview

Part I of this petition presents what is presently known about the biology and current status of the distinct population segment commonly referred to as Clark Mountain burros of the ass species *equus sinus*. Part II details the reasons for considering an emergency listing under the Endangered Species Act.

Part I: Current Status

Taxonomy

The Wild Ass belongs to the Class Mammalia, Order Perissodactyla, Family Equidae, Genus *Equus Asinus*. There are two main species of wild asses recognized today. The first is the Asian Wild Ass (*equus hermionus*) with six known subspecies; the Tibetan Wild Ass-Kiang (*Equus kiang*), the Persian Wild Ass-Onager (*Equus hemionus onager*), the Indian Wild Ass-Khur (*Equus hemionus khur*), two species of the Mongolian Wild Ass, Khulan (*Equus hemionus hemionus*), Gobi kulan (*equus hemionus luteus*) and the Syrian Wild Ass (*equus hemionus hemippus*) listed as extinct since 1927.

The second is the African Wild Ass (*equus africanus*), believed to be the ancestor of the modern domestic ass, with two recognized subspecies; the Somalian Wild Ass (*equus africanus somaliensis*) and the Nubian Wild Ass (*E. africanus africanus*), which is believed to be extinct in the wild.

An additional species of wild ass, known as the Yukon Wild Ass (*equus asinus lambei*), was believed to have roamed northern North America until about thirteen thousand years ago but has since been cited as extinct. Since the Yukon Wild Ass was initially identified, debate has

commenced as to whether this species belongs to the ass or horse genus.

The Perissodactyla is an order of mammal in decline. All of its surviving families were formerly more abundant, diverse and widespread than they are today.

The genus *Equus* has been documented as evolving and residing in North America for 56 million years (Gingerich 1989, 1991; Froehlich 2002) and it is considered the birthplace of the *equus* family, since almost all of its evolution and history took place there. (Haemig 2006) No other continent ever produced such a great diversity of horses as North America did which, during the peak of the horse evolution in the Miocene, comprised at least a dozen contemporaneous genera that numerically dominated ungulate communities. (MacFadden 1992, 2005)

It was during the Miocene epoch (24 million years ago and ended 5 million years ago) that *Equus* made significant evolutionary changes which included anatomy, locomotion and diets, switching from primarily browsers to grazers. (MacFadden 2005)

The extinction of this species is estimated to have occurred somewhere near the beginning of the Holocene period (the period we currently live in) between 8,000 to 10,000 years ago, a time when many other large mammals became extinct throughout North and South America. (Haemig, 2006) Though genetic diversity was cited as low at that time, they were still very abundant animals and continued to numerically dominate ungulate communities in North America. (Guthrie 2003)

In July 2006, a fossil was recently found near the Black Rock Desert in Nevada of a three toed horse dating back 15 million years ago and is now on display at the Sierra College Natural History Museum. Dick Hilton, Professor of Geology and Chairman of the museum states that at

that time, these animals roamed Nevada and the West Coast due to lush landscapes that looked more like the plains of Africa before the rise of the Sierra Nevadas and surrounding mountain ranges that have since blocked rain from penetrating further inland.

The reasons for the extinction of the *Equus* species in North America is still unknown. The two most popular hypotheses are climate change, overhunting by humans for food, or a combination of the two. (Haemig, 2006)

Globally, the majority of wild equids still remaining have been listed with varying degrees of endangerment, most critically so, such as the African Wild Ass listed in 1970 whose wild populations is cited as only a few hundred individuals remaining and one of the rarest animals in the world. (IUCN, 2006)

Wild burros within the United States have also been steadily declining due to a variety of state and federal actions. The current national population target for all wild burros is now less than three thousand individuals (BLM 2006) a number that by itself, would be considered as qualifying most species for threatened or endangered status.

It is believed that wild asses were domesticated somewhere around 6,000 years ago. (Huggins, B. 2002) Their hardy nature made them the preferred animal for a variety of uses that included serving as transportation, pack animals, agriculture utilizations, guard animals, food, and medicinal and spiritual purposes, etc.

Since this domestication, adequate concern for wild species has appreciably diminished with the majority of emphasis placed on domestic breeds and populations. This has resulted in citing the majority of wild populations as feral and therefore, inconsequential or deserving of significant study or preservation. As the domestic ass became less useful, resource competition,

most notably with livestock, has paved the way for the current trend of citing them as an invasive species anywhere they are currently found outside the original ranges of Africa and Asia.

The Clark Mountain wild burro is one such species determined to be disposable due to the current popular trend of citing all asses as feral, irregardless of history, lineage, known unique genetic markers, adaptations and gene pool, and has therefore been dismissed from further analysis as to their potential evolutionary significance to the wild ass species.

The purpose of this petition is to focus on the potential of the Clark Mountain wild burro gene pool, which initial studies indicate further examination is warranted before permanent manmade extinction is implemented.

Description of Species

Historical Background

It is generally accepted that all species of *equus* no longer inhabited North America when the Europeans first arrived to the New World. The Spanish colonization of the Americas began in 1492 and spanned four centuries. The Spaniards first entry into California is documented as occurring in 1530. (Mexico, Carracoso, 1702) with the re-introduction of horses and burros estimated within the 1500's. (Perryman, Muchlinski 1987) In New Mexico, the first spanish settlers and livestock grazing has been documented as beginning in 1598. (Scurlock and Finch, 1997)

While many documents assert that the majority of wild burros residing in California were brought from miners and settlers during the Gold Rush era, the Clark Mountain wild burros are believed to be part of the original asses of the Spanish colonization period. The initial genetic testing of wild burro herds throughout the West support this assertion due to the Clark Mountain

wild burros known genetic similarities with the Poitou donkey.

Appearance

The Clark Mountain wild burro is a small sized ass that measures approximately 102 cm (40 in) and weighs around 158 to 204kg (350-450 lbs). As with all the *equus asinus*, they are a hoofed ungulate characterized by a large head, long ears, cow-like tail, spiky, erect manes, the most narrow hooves of all equids, and unlike most horses (*equus caballus*), have only five lumbar vertebrae.

Colors range from dun, tan, fawn, varying shades of gray, but they are most noted for a “pink” which fades to white bellies and noses. They often exhibit the unique black and white leg stripes and black shoulder stripe reminiscent of their African ancestors, *equus africanus somalicus*. A true Clark Mountain wild burros appearance is very similar to this ancient ancestor but the initial genetic tests done by Dr. Gus Cothran show the highest genetic similarity is to a now rare French donkey known as the Poitou or the Baudet du Poitou.

The origins of the Poitou are unclear but are documented as well established by the Seventeenth century. Once widely prolific with an estimated population of thirty thousand at the height of their breeding history, there has since seen a dramatic decline with a worldwide population estimated in 1977 at only forty-four known purebreds remaining. The breed itself was classified as endangered and recovery efforts were made by breeders to re-establish a viable population that today is estimated at one hundred eighty purebred individuals.

Clark Mountain foals have been seen to exhibit the most well known trait of the Poitou, its remarkably distinctive long and shaggy coat. It is here that the Poitou lineage becomes most visible. As they mature, this exceptional coat sheds, never to return, and their coats assume the short, slick surface shared by many species of asses.

Genetic Distinctiveness

According to genetic tests done on the Clark Mountain wild burros, the initial results state that Clark Mountain wild burros had a high proportion of rare variants in the herd (Cothran, 2003).

Many of the Clark Mountain wild burros physical characteristics closely resembles that of the Somalian wild ass (*equus africanus somalicus*) whose true genetic relationships are presently unknown (Moehlman, 2002).

The environmental assessment that proposed the extinction of this wild herd as well as the decision issued of finding no significant impact to their permanent removal from their historical range, recognized their unique genetic characteristics citing them as “this species” and that the proposed action would permanently eliminate their gene pool. (BLM 2006-2007)

Additionally, these initial genetic tests indicate that the Clark Mountain burros genetic make up most closely resembles a rare French donkey breed known as the Poitou. In the genetic “tree” of wild burro herds, only the Clark Mountain burros exhibited this relation and connection so closely.

It is hypothesized that the Clark Mountain wild burros, though genetically similar to the Poitou donkey, have undergone genetic adaptations and variations over the last four hundred years which has resulted in the high proportion of rare variants cited within this species.

This hypothesis is further supported by a recently released study of the karyotype evolution of the genus *Equus* which stated that five cases of centromere repositioning (CR) have occurred in the donkey after its divergence from the zebra in a very short evolutionary time (approximately one million years). These findings suggest that in some species, the CR

phenomenon could have played an important role in karyotype shaping, with potential consequences on population dynamics and speciation. (Genomic, 2006, Volume 87)

This study suggests that the genus *equus asinus*, more than any other species of equid, is capable of rapid adaptation, genetic mutation, and species specialization.

Life Span and Reproduction

Life Span

Average lifespan for wild species is estimated at twenty-five to thirty years while domestic breeds have been recorded at ages as high as forty to fifty years. (Nowak, 1997)

Reproduction

Wild asses, donkeys and wild burros have no significant distinctions in appearance between the sexes. The females reach sexual or reproductive maturity at an average age of two years though limited data indicates that female wild asses will have her first foal at 3-4 years of age and will typically have one surviving foal every other year. The range of lactating females is restricted due to water availability because of the need to drink daily. (Moehlman 2002)

Males, though reproductively capable at two years of age, are usually unable to exhibit the dominate control required to begin mating until about 4 years of age. (Duncan 1992)

Wild asses generally mate during the wet season, domestic donkey's can mate year-round as do some wild burro populations. (Huggins, B. 2002) No studies have yet been published on whether the Clark Mountain wild burros reproduction follows wild or domestic cycles.

The gestation period is usually twelve months ranging from 330-365 days (Moehlman 2002) with foals weighing between nineteen and thirty pounds (8.6 to 13.6 kg) at birth.

Born fully developed, foals can usually stand and nurse within thirty minutes and will continue to nurse for approximately five months before weaning (Huggins, B. 2002).

The most common reproductive rates still quoted by the Bureau of Land Management, U.S. Forest Service and other land/wildlife management agencies for wild horse and burro populations is an annual reproductive rate that ranges from 16-25%. This “standard” defies the conclusion of the 1982 report issued by National Academy of Sciences (NAS), a fully accredited, independent and unbiased institution who cited annual reproduction and survival rates for wild populations as only 10% or less (NSA Final Report, 1982).

Additionally, computer simulations for equids indicate that if all females four years and older regularly produced foals, the survival rate would have to be 70% for foals and 85% for adults to enable the population to increase at a rate of 4% percent per year. This would allow the population to double in eighteen years. (Wolfe 1980)

Behavior

Wild asses are social animals and generally travel in herds of several individuals to up to one hundred, with an average group size of 4.7 animals. The smaller herds are generally made up of one male and several females while larger herds have multiple males and females. Herds are noted to be highly flexible and often break up and reform on an almost daily basis with the only consistent bond being between the nursing female and her foal (Norwak, 1997). However, it has been noted that water and forage supplies are key factors in the stability of associations and spacing of equids (Duncan 1983; Rubenstein 1986, 1994; Ginsberg 1988). When water and

forage availability allow females to form stable groups, these groups tend to form strong bonds even in the absence or removal of the dominant male (Imanishi 1950, Tyler 1972).

Dominant male wild asses can defend large territories and while they will tolerate other males within their territory, they reserve the right for exclusive mating privileges. Herds operate under a polygyny mating system and social structure typical of most equids that live in arid habitats. (Moehlman, 2002)

Habitat Requirements and Range

Wild asses, wild burros and donkeys are physiologically well adapted to life in arid habitats. The size of a wild burro's home range is variable and dependent on the proximity of four essential habitat requirements; grazing area, shelter, water, and shade. When all these requirements are close together, the size of the home range is smaller than when they are widely dispersed. Female home ranges vary from 320 to 4,600 acres while male home ranges are generally larger, varying from 576 to 10,000 acres (Zarn and others, 1977) Zarn, M., Heller, T.; Collins, K. 1977. Wild, free-roaming burros, status of present knowledge. Bureau of Land Management and USDA Forest Service - Technical Note.

An adult wild burro requires approximately five and a half gallons of water per day while lactating females can require a little more. During the summer months, they generally need to drink once a day while in cooler months, they drink every other day. They are capable of going as long as three days without drinking as forage is capable of providing some moisture for them. They can sustain a water loss of up to 30% of their body weight and can drink enough water in two to five minutes to restore fluid loss (Maloiy 1970; Maloiy and Boarer 1971).

Their most critical habitat requirements are access to water and forage. African wild asses were always observed within 20 to 30km (12-18 miles) of known water sources (Stephenson 1976). Nowak (1997) estimated the mean annual home range at 19.2 square km (7.4 square miles) while BLM wild horse and burro specialist of thirty years, Art Di Grazzia, stated a study done in the mid-eighties using radio collars found wild burros as far as 80-96km (50-60 miles)

away from known water sources. Though they range through a wide variety of desert habitats, it is generally accepted that they need to be within 16km (10 miles) of drinking water (Royo, 1997). Royo, A.R. 1997. Wild burro: *Equus asinus*. [Homepage of Desert USA], [Online]. Available: http://www.desertusa.com/magjan98/jan_pap/du_wildburro.html.

According to available data, the Clark Mountain wild burros historic range was established at 233,370 acres in the North Eastern Mojave Desert. This area was established by Public Law 92-195, commonly referred to as the Wild Free-Roaming Horse and Burro Act of 1971, to ensure protected habitat for the Nations wild horses and burros for continued preservation and future generations. Management decisions through the land use planning process reduced this protected and critical habitat to 75,349 acres, a loss of 158,021 acres, which also included the transfer of their most critical habitat requirement, the only known year-round spring source in their historic range. This was again reduced to zero acres in further land use planning decisions.

Feeding

Wild burros consume between 6.8-7.7 kg (10-15 lbs) of forage daily or approximately 2,722 kg (6,000 lbs) annually. (Stubbs, 1999). The consumption forage rate for wild burros is estimated as half the consumption rate for wild horses. BLM environmental assessments have cited wild horses require a maximum of twenty-five acres per month of available forage. Based on this formula, wild burros would require a maximum of twelve and a half acres per month or one hundred fifty acres of forage per wild burro annually.

Wild burros will utilize a wide variety of forage species and have been known to eat anything from tender young tree shoots to prickly cactus. They are opportunistic herbivores that roam across large areas in search of food resources (Stephenson and Calcarone 1999). Stephenson, J.R.; Calcarone, G.M. 1999. Southern California mountains and foothills assessment: Habitat and species conservation issues. General Technical Report GTR-PSW-172. Albany, CA: Pacific

Southwest Research Station, Forest Service, U.S. Department of Agriculture. Vegetation includes various grasses, brush and trees. They prefer Indian ricegrass and four-wing saltbush, palo verde and mormon tea. Studies of wild burros from Cottonwood Canyon of Death Valley showed that forbs comprised about 65% of the spring diet, and browse comprised more than 75% of the fall diet (Zarn and others, 1977). Zarn, M., Heller, T.; Collins, K. 1977. Wild, free-roaming burros, status of present knowledge. Bureau of Land Management and USDA Forest Service - Technical Note.

In a study of feral donkeys in Arizona, they were found to eat 33% forbs and 40% browse. (Nowak, 1997). Nowak, R. 1997. *Walker's Mammals of the World*. Baltimore: The Johns Hopkins University Press.

65% overlap with bighorn diet

Predator Prey

No information is available on predation of wild burros. Mountain lion is the only predator that occurs within the range of the wild burro that is capable of killing and adult. Coyotes could potentially kill newborn or young burros that have been left unprotected (Zarn and other, 1977).

National Academy of Science Report- Final Report, 1982
Wild and Free-Roaming Horses and Burros: Final Report. Committee on Wild and Free-Roaming Horses and Burros, Board on Agriculture and Renewable Resources, National Research Council, National Academy Press, Washington D.C., 1982
[Executive Summary, page 1, paragraph 4].

Moehlman, Patricia D. (ed.). (2002). *Equids: Zebras, Asses and Horses. Status Survey and Conservation Action Plan*. IUCN/SSC Equid Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK. ix + 190 pp.

Wolfe, M.L. 1980. Feral horse demography: A preliminary report. *J. Range Mangmt.*, 33(5), 354–360.

Duncan, P. 1983. Determinants of the use of habitat by horses in a Mediterranean wetland. *J. Anim. Ecol.*, 52, 93–109.
Emlen, S.T.

Rubenstein, D.I. 1986. Ecology and sociality in horses and zebras. Pp. 282–302 in: *Ecological aspects of social evolution* (eds. D.I. Rubenstein and R.W. Wrangham). Princeton University Press, Princeton, New Jersey.

Ginsberg, J.R. 1988. *Social organization and mating strategies of an arid adapted equid: The Grévy's zebra*. PhD thesis, Princeton University, Princeton, New Jersey. 268pp.

Imanishi, K. 1950. Social life of semi-wild horse in Toimisaki, III. Summary for three surveys undertaken in 1948–1949. *Physiol. and Ecol. (Japan)*, 4, 29–42.

Tyler, S. 1972. The behavior and social organization of the New Forest ponies. *Anim. Beh. Monogr.*, 5(2), 1–196.
Watson, M. 1982. *Draft report on the African wild ass*.

Maloiy, G.M.O. 1970. Water economy of the Somali donkey. *Amer. J. Physiol.*, 219(5), 1522–1527.

Maloiy, G.M.O. and Boarer, D.H. 1971. Response of the Somali donkey to dehydration hematological changes. *Amer. J. Physiol.*, 221, 37–41.

Stephenson, J.G. 1976. *The Somali wild ass (Equus africanus somalicus) in Ethiopia: A survey of its current status in the southern Danakil locality and recommendations on its conservation*. Report to the Ethiopian Wildlife Conservation Organization, Addis Ababa, Ethiopia. 22pp.

