THE MEXICAN WOLF RECOVERY PROGRAM

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by

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The Mexican wolf (*Canis lupus baileyi*) was listed as an endangered species on April 28, 1976. As a subspecies of the gray wolf, the Mexican wolf is recognized as the southern most form of its species. Historically it occurred in southeast Arizona, southern New Mexico, west Texas, and then southward through Central Mexico to the State of Queretaro. In addition to the Mexican wolf, only two other subspecies of gray wolf exist south of the United States border with Canada, these being the eastern timber wolf (*C. l. lycaon*) and the northern rocky mountain wolf (*C. l. irremotus*).

Although it is often thought of as the smallest of the gray wolf subspecies, size and weight records for the Mexican wolf do overlap the size and weight averages recorded for the eastern timber wolf. Although rare, a few Mexican wolves will weigh as much as 100 pounds. In captivity, the weights have ranged from 45 pounds for a female to 102 pounds for a male.

Although we occasionally receive unconfirmed reports of Mexican wolves in New Mexico and Arizona, the subspecies is presumed to be extinct in the United States. Due to the often confused nature of unconfirmed reports, we have adopted a policy of not accepting reports as valid unless they can be supported by positive evidence. This policy has become necessary because of known occurrences of illegal releases of wolves by private citizens and the fact that public reports of sightings of a number of species are often biased by the observer's imagination and wishful thinking.

Due to both real and imagined fears, the decline of the wolf in the United States is largely the result of organized predator control activities initiated early in this century. We now know that many of the fears that led to the persecution of the wolf were imagined. Our enlightened view at this time is that wolves are not the notoriously vicious animals that they were once thought to be; however, we also understand that in some situations they can directly conflict with man's efforts to produce food and fibre. We do not consider wolves in North America to be a direct threat to man.

It is the understanding of the U.S. Fish and Wildlife Service and the Mexican Wolf Recovery Team that a few wolves may still exist in isolated areas of Mexico. However, their numbers are thought to be so low that for all practical purposes the species may already be biologically extinct. It is thought that most dispersing young-of-the-year soon die after venturing into livestock areas where they encounter private predator control activities directed toward coyotes. Perhaps due to their more primitive nature, wolves appear to be highly susceptable to predator control activities. Although an extensive public education program might yet save the wolf in it's final range, it is thought that such an effort may already be too late. It may be that the only salvation for the animal will be a lengthy process of increasing it's numbers in captivity and then reestablishing it in protected areas within its historic range.

To address the possibility of recovering the Mexican wolf, in cooperation with the government of Mexico, the U.S. Fish and Wildlife Service organized a Mexican Wolf Workshop in February of 1979. At that time there were only four wild caught confirmed Mexican wolves in captivity. All of the animals had been captured by Mr. Roy McBride of Alpine, Texas, under a contract issued by the U.S. Fish and Wildlife Service as part of a cooperative agreement that was then in force with the government of Mexico. The Mexican Government had arranged the necessary permits for the capture and export of the animals for the purpose of establishing an official captive breeding program. The four animals were three males; #AF001 captured 50 km west-southwest of Durango, Mexico, in December 1972; #AF002 captured 100 km north and 70 km west of Durango in October 1977; and #AF004 captured in the same area as #AF002 in March 1978, along with a female #AF005. A fourth male, #AF003, captured in Chihuahua, Mexico, in November 1977 died in captivity in March of 1978. Although it cannot be confirmed, it is possible that #AF005 is the mother of male #AF002, and that #AF004 was her mate.

One fortunate event was that the female wolf was pregnant when captured. The pregnancy resulted in the birth of one female and four male pups on May 8, 1978, at the Arizona-Sonora Desert Museum, Tucson, Arizona. The female pup died shortly after birth; however, the four males are still in the program today as #AF007, #AF008, #AF009, and #AF010. At the time of the 1979 workshop all but one of the animals, male #AF002, were housed at the Arizona-Sonora Desert Museum. In July of that year the Service had established a cooperative agreement with the museum for the receipt, maintenance, and breeding of all wolves coming out of Mexico. Male #AF002 was being temporarily housed at the San Diego Zoo in California.

Having reviewed the status of the Mexican wolf in the wild, the workshop participants began addressing the status of alleged Mexican wolves in captivity. <u>One thing that must be understood about the identification of wolf subspecies is that at this time</u>

there is no taxonomic means that will allow classification of individual animals to subspecies. One must know where the animal or its captive ancestors origiated to know the subspecies of wolf it represents. If the individual animal is from a breeding line that has been in captivity for several generations, one must trace the breeding history of each animal in the line to be certain that other unidentifiable wolves have not been used in the line. To represent a "pure" subspecies, an individual wolf must have a complete and traceable ancestry that leads back to the original wild stock that was used to establish the breeding line. A thorough investigation of breeding records is necessiatated by the fact that many wolves are known to have been hybridized in captivity. Private breeders, even today, are known to breed wolves to dogs and sell resultant offspring as true wolves. In the past, some zoos have unknowingly bred wolves of differing subspecies and distributed offsping to other zoos and private citizens as well. In addition, breeding records have often been poorly maintained. As a result, many wolves in captivity are not identifiable to subspecies and are probably hybrid forms.

At the time of the workshop there were two captive groups of alleged Mexican wolves. One breeding line was known as the Arizona-Sonora Desert Museum - Ghost Ranch lineage, which has become commonly referred to as the ASDM-GR line. The line was started by two animals that were said to have been Mexican wolves. Investigation of the records showed that the founding male was captured near Tumacacori, Arizona, in 1959. The records also recorded undocumented statements that the animal was actually a dog-wolf hybrid. After siring a litter of seven pups at ASDM, the male escaped in 1964 and was later killed. It was recorded that the animal's skull, a key item in the identification of wolves, had been preserved; however, the skull has never been located and does not seem to be available for examination.

The founding female of the ASDM-GR line was said to have been captured as a pup near Yecora, Sonora, Mexico, in 1961. She was donated to ASDM by a tourist passing through Tucson, Arizona, on a motorcycle trip. The tourist was concerned the pup would not survive the motorcycle journey. In 1963, with the founding male, she produced a litter of seven pups. With the death of the founding male, she was bred in subsequent years with several of her sons from the 1963 litter. She and her offspring produced a number of litters which ended up widely distributed to zoos, in the United States and Mexico, as Mexican wolves. An unfortunate occurrence in the distribution of the animals to zoos, was that in most instances brother-sister pairs were usually sent to the new facilities. These pairs were usually bred and their offspring were distributed as brother-sister pairs as well. In short, there is a high degree of inbreeding in the ASDM-GR line.

Today representatives of this line are known to exist in facilities at Window Rock, Arizona, and Ghost Ranch, Santa Fe, and Carlsbad, New Mexico. For the most part, breeding in the

line has been halted until it's value to the recovery of the Mexican wolf can be determined. Skulls of animals born to the line show definite dog, as well as, wild canine characteristics. It has not been determined if the dog characters in the skulls are due to a dog heritage or the result of successive generations raised in captivity. Although members of the ASDM-GR line are known to be at only four facilities, due to the wide and sometimes unrecorded distribution of the animals, it is possible that other members are in other facilities as well.

The other group of alleged Mexican wolves in captivity during the 1979 workshop was a group maintained by the Wild Canid Survival and Research Center (WCSRC) at Eureka, Missouri. The founding pair of wolves for this line was purchased by a private citizen from a California animal dealer in 1965. The citizen had a "standing order" with the dealer for Mexican gray wolves for several years. The original story behind the animals was that the dealer purchased them from a man in Texas, who said he dug them out of a den somewhere in the Chihuahuan Desert in 1963. A story that later developed was that the dealer purchased the young wolves at an auction, because they reminded him of a picture he once saw of Mexican gray wolf pups. Of course, we know that wolf pups all look much the same, they like adults, certainly cannot be identified to subspecies on the basis of appearance. Efforts to confirm the origin of the animals resulted in the animal dealer reporting that he could not recall the animals or their acquisition. Unfortunately, all of his written records were reported destroyed in a flood in the late 1960's. Therefore, there is no way the origin of this line can now be confirmed.

The founders of the WCSRC line produced their first litter in 1965. The pups were returned to the animal dealer who supposedly sold them. It is not known if they were sold as Mexican wolves. In a second litter, one pup was sent to an individual in St. Louis, Missouri, where it died a short time later. A male and female from the litter were sent to an individual in Salem, Oregon. The final disposition of this pair or any offspring they might have produced is not known. A third litter of unknown size was traded back to the animal dealer for a pair of alleged "Texas Red Wolves". It is assumed the dealer sold these pups as well. From the red wolf recovery program we know that the alleged "Texas Red Wolves" were red wolf-coyote hybrids. The fourth litter produced by the founding animals died, and the fifth litter, born in 1973, was sent to WCSRC with the founding pair in August of that year. Another litter was born at WCSRC in 1974, and then the organization stopped the breeding of the line due to lack of space. No members of this line have left WCSRC.

The workshop concluded that there are a number of unanswerable questions about the origins and identity of the founders of both the ASDM-GR and WCSRC lineages. Wanting to protect the genetic purity of the wolves used as founders for the Mexican Wolf Recovery

Program, it was also concluded that for the time being, the only wolves that can be accepted by the program are those that come from the wild range of the subspecies in Mexico, if there are not indications of coyote and/or dog hybridization in the wild population.

We hope this summary of the known history of the ASDM-GR and WCSRC wolf lineages demonstrates that it is imperative that the breeding records of individual wolves be thoroughly examined before they are accepted as representing any specific form of wolf. Through our efforts in examining these and other lineages, we are amazed at how common wolf-like canids are in captivity, how wide spread a captive lineage can become in a short time, and how easily these animals are accepted by individuals and institutions on the basis of unsupported verbal assurance that they represent specific subspecies of wolves. Unfortunately, in the serious effort of attempting to recover endangered subspecies, our experiences have led us to understand that under no circumstances can an individual wolf be accepted at face value. Unfortunately, this same precept must be applied to wild animals as well. Although, we have no indication of such happenings in Mexico as yet, we do know that captive wolves have occassionally been illegally released in the United States. Therefore, even wild captured wolves are standardly examined for tattoos and other indications of having been raised in captivity, as well as, indications of hybridization. In short, out of necessity, we have learned that one must be skeptical of each new wolf that is to be added to the founding stock of a breeding program.

In the fall of 1979, the U.S. Fish and Wildlife Service appointed a recovery team for the Mexican wolf. Endangered species recovery teams do not directly manage listed species, but serve as advisors to the U.S. Fish and Wildlife Service in establishing and conducting recovery programs. The work with the animals is either conducted by Fish and Wildlife Service personnel, personnel of cooperating government agencies, or contracted to appropriate institutions or individuals. The entire recovery effort is overseen by the U.S. Fish and Wildlife Service.

Members of recovery teams are selected on the basis of their knowledge of the species and the problems with which it is confronted. Recovery teams only address the problems of the species and make recommendations to the U.S. Fish and Wildlife Service. They do not become involved in the politics that may surround recovery actions, nor do they actively campaign for the species. Their primary objective is to develop a written recovery plan that will result in the eventual recovery of the species and its removal from the Federal list of endangered species. Once a recovery plan is developed and approved, the recovery team may be disbanded or it may be retained to further advise on the implementation of the plan. As a recovery program evolves, the membership of the team may be changed to add new expertise on new activities and to remove individuals who have served the program's needs on past actions.

The Mexican Wolf Recovery Team, chaired by Ms. Norma Ames of Santa Fe, New Mexico, completed the task of developing an approved recovery plan on September 15, 1982. The primary objective of the recovery plan is to ensure the survival of the Mexican wolf by maintaining a captive breeding program and reestablishing a viable population in the species historic range. Although the plan outlines quite a number of recovery steps, it basically consists of two parts: 1) establishment and maintenance of a captive breeding program, and; 2) reestablishment of the species in the wild. It is important to understand that captive breeding is only part of the program and that it's purpose is to provide animals for the long range objective of reestablishment in the wild. We do not intend to simply preserve animals in captivity.

While the recovery team was developing the recovery plan, Mr. Roy McBride captured another male wolf in Mexico. This animal, #AF011, was captured on the Las Minas Ranch, 30 km south and 10 km east of Buenaventura, Chihuahua, Mexico. Mr. McBride reported that the wolf had bred a ranch dog, who subsequently whelped a litter of hybrid pups. This was the first and only indication we received that hybridization might be taking place in the wild population. It is not known if any of the pups dispersed to the wild.

The newly captured wolf was flown to Tucson, Arizona, for quarantine at ASDM and subsequently transferred to the WCSRC at Eureka, Missouri. Mr. McBride continued monitoring wolf reports from his contacts in Mexico but did not receive any reports that he felt were valid enough to warrant attempting to capture additional animals. Lacking further verifiable wolf reports on which to act, and due to increased difficulty in obtaining permits that would allow capture and export of additional wolves, Mr. McBride declined renewal of his U.S. Fish and Wildlife Service contract in 1983.

Without success, several attempts were made at ASDM to breed the only female wolf in the program. Being a wild wolf, it was determined that the possibility of successfully breeding her could be enhanced by placing her in a more remote and larger breeding pen. After much discussion of the risks involved, and utilizing procedures developed by the Red Wolf Captive Breeding Program, female #AF005 was transferred to the WCSRC in June of 1980 for pairing with the newly captured male #AF011. Wild canids breed only once a year, have a 63-day gestation period, and normally whelp in April or May. On May 20, 1981, the female whelped in a brush pile in her large pen.

Although there may have been more born, four pups, a male and three females, were known to be in the litter. The actual litter size is not known because the pups were not examined until eight days after birth for fear of disturbing the female. All four pups were found to be quite healthy; however, to secure the future of the captive population, two of the female pups were

transferred to the St. Louis Zoo for hand rearing during the first few months of life. The remaining male and female were left with their mother. All four pups survived and the two zoo raised animals were returned to WCSRC in late July. Since 1981 there has not been any difficulty in breeding Mexican wolves in captivity. We now have 28 wolves distributed among ASDM (3 male, 4 female), WCSRC (6 male, 4 female), and the Rio Grande Zoological Park (4 male, 7 female) in Albuquerque, New Mexico. Several more facilities have expressed interest in maintaining wolves as part of the recovery program.

Since the genetic base of the Mexican Wolf Captive Breeding Program is only four wild caught animals, there is concern about potential inbreeding problems. Recognizing that long term success in the breeding program would require considerable coordination and careful management, the U.S. Fish and Wildlife Service petitioned the American Association of Zoological Parks and Aquariums (AAZPA) to establish a Species Survival Plan (SSP) and management group for the Mexican wolf. The AAZPA has established several SSP groups and plans for listed species being bred in captivity. The basis of such plans is to treat all captive members of the species as part of a single population regardless of their distribution among zoos. After lengthy deliberation, the AAZPA respectfully declined assumption of the responsibility for captive management of the Mexican wolf. Their rejection of the project was based on their need to prioritize the use of their limited resources by working only with full species and a concern that the genetic base of the population was too small for survival.

In lieu of establishment of a management group by the AAZPA, the U.S. Fish and Wildlife Service decided to sponsor a Mexican Wolf Captive Management Committee (MWCMC) based on the SSP program. The committee first met in November of 1985 and Mr. Kent Newton, of the Rio Grande Zoological Park, was elected as its chairman. The committee is composed of a member from each facility maintaining program wolves, as well as a representative of the Mexican Wolf Recovery Team and the U.S. Fish and Wildlife Service. The Mexican Wolf Management Committee will meet at least once each year for the purpose of determining which animals should be bred, which animals should be transferred to other facilities, confer on management problems of each participant, and evaluate zoos that wish to join the program. All animals in the program remain in the stewardship of the U.S. Fish and Wildlife Service. For a new facility to participate in the recovery program, the facility must agree to abide by the decisions of the MWCMC regarding breeding, transfer, and management of the animals placed in their care. Refusal to abide by a MWCMC decision could result in the U.S. Fish and Wildlife Service withdrawing the wolves and removing the facility from the program. We consider the establishment of the MWCMC to be a major step in the preservation of the Mexican wolf.

As discussed earlier, the long range objective of the recovery program is reestablishment of the Mexican wolf in the wild. At best, this will be a difficult objective to achieve. One reason it will be difficult is that the image of the wolf has been misrepresented to the public. From our perspective, the misrepresentation of the species has created an imaginary mystic animal in the mind of man. Because of misrepresentation, many people are convinced that wolves are extremely vicious and a severe danger to man, livestock, and huntable wildlife. To these people just the mention of reestablishing wolves can lead to highly vocal emotionally charged opposition. On the other hand, other misrepresentations have developed strongly pro-wolf individuals that see the animal as highly unique in its social organization, alleged loyalty to it's mate, and defense of it's young. Neither view is correct and individuals and agencies responsible for the recovery of the species often find themselves between two groups who vehemently oppose each others' views. The loser in these disputes is the wolf.

Each side will have to understand that the wolf is not entirely what they have been led to believe it is and that any reintroduction will have to result in a managed population. The reestablished wolf population will be monitored and managed much like other wildlife species. This means, as in other wildlife populations, there may be times that individual animals may cause local problems that will have to be tolerated. The situation would not be unlike other wildlife damaging crops in some areas at some times of the year. On the other hand, it will have to be accepted that some problems may have to be managed by population reductions or removal of specific animals. The price of saving the species will be the occasional inconvenience of some people and the occasional loss of a wolf.

All concerned parties will have to accept this fact if a reestablishment effort is to succeed. One must remember, our objective is not to save wolves, our objective is to save a species that is a part of our heritage. The reestablished population will have to become part of the ecosystem in which it is placed. For it's own survival it cannot be allowed to significantly impact any part of the ecosystem. Man is already a part of all earth ecosystems and cannot be significantly impacted.

It is not possible to address specific problems that might be associated with reestablishment until a specific site has been chosen and the ecosystem of the site has been evaluated. Once the site is evaluated, potential conflicts that might develop during the reestablishment effort will have to be addressed in a detailed project proposal. Contingencies will have to be developed for careful monitoring of the environment, as well as the wolves, and management concessions will have to be granted to make the reestablishment effort feasible.

The U.S. Fish and Wildlife Service is initiating an effort to evaluate potential reestablishment sites in the historic range of the Mexican wolf in the United States. In general, we will be seeking relatively large government managed lands on which there is limited human activity. Sites that initially appear suitable will be evaluated for current and proposed land use plans for livestock, hunting, and predator control, and their proximity to private lands. The prey base will be evaluated to determine its' density and stability, as well as how it is being impacted by existing predators. Information will also be gathered on the seasonal changes of the area, temperature extremes, water availability, snow depths, and accessability. Once each potential site has been evaluated, the apparent best site will be selected for development of a detailed project proposal and management plan.

It is difficult to put a minimum size on areas that should be considered for evaluation. However, in general, areas of less than 300 square miles would be questionable. The variable nature of each areas' terrain, prey base, seasonal changes, and current management will determine the suitability of the site. In some cases, the relationship of these variable elements may indicate that one of the smaller sites is more suitable than a larger site.

It is not likely that the species can be recovered by reestablishment of a managed population on a single site. The recovery effort will most likely involve reestablishment of several small populations on several widely dispersed areas. However, to accomplish this goal, a concerted effort will first have to be made to correct the human perception of wolves. At this time unreasonable poorly based biases, both for and against wolves, could prevent any possibility of reestablishment in the foreseeable future.

This has been a summary of the Mexican Wolf Recovery Program. A recovery team has been established and a recovery plan has been developed. A captive population has been secured, successful breeding has taken place, and a committee has been established to oversee the management of the animals. We are attempting to change the public perception of wolves and are initiating the process of selecting sites for reestablishment of managed populations in the wild. There is still much to be accomplished; however, we feel we have made a good start.

THE END