



Chairman, Conservation Affairs Committee  
 New Mexico Chapter of the Wildlife Society  
 9016 Freedom Way N.E.  
 Albuquerque, New Mexico 87109

November 21, 2015

Chairman Paul Kienzle III, New Mexico Game Commission  
 and  
 Alexandra Sandoval, Director, New Mexico Department of Game and Fish  
 P.O. Box 25112  
 Santa Fe, New Mexico 87504

The release of captive Mexican wolves (*Canis lupus baileyi*) in New Mexico is crucial to the recovery of the endangered Mexican wolf. We encourage the New Mexico Department of Game and Fish (Department) to immediately issue permits to the U.S. Fish and Wildlife Service (Service) for the release of wolves in New Mexico. In addition, we encourage the Department to issue permits to Ted Turners ranch that supports valuable captive Mexican wolves that will contribute to the recovery of this species.

The Service's request for permits was recently denied at your Commission meeting September 29, 2015 (Albuquerque Journal 2015). In a statement provided to the New Mexico Game Commission meeting of August 27 the US Fish and Wildlife Service made clear why releases should occur soon to provide genetic diversity to the established population.

"...This population has exhibited strong growth over the last four years, and additional releases from the more genetically diverse captive population are required to improve the genetic health of the wild population..."

"...Releasing new wolves to improve population genetics is more effective when the population is still small, thus it is imperative that we – the US Fish and Wildlife Service and the State of New Mexico work swiftly to resolve the issues pertaining to State permits for the release of Mexican wolves..."

Recovery of the Mexican wolf population should include close scrutiny of the genetic makeup of individual wolves. The wolves in captivity are closely monitored for genetics to ensure that reintroductions can improve wild populations. Genetics of the current wild population can be improved through release of captive wolves in New Mexico. Little genetic variation in populations may cause reduced vigor, reproduction, and survival as well as the poor ability to adapt to environmental changes (IUCN 2013). Benoit Goossens (2002) summarized many genetic considerations and stated that low

genetic diversity may lead to inbreeding depression and reduced fitness (e.g. Jiménez *et al.* 1994; Keller *et al.* 1994; Bancroft *et al.* 1995; Madsen, Stille and Shine 1996; Lacy 1997; Saccheri *et al.* 1998; Westemeier *et al.* 1998; Frankham *et al.* 1999; and Hedrick and Kalinowski 2000). In Texas, the state bison herd is in jeopardy of extinction because of low genetic diversity and heterozygosity (Halbert, *et al.* 2004).

The presence of predators, such as the Mexican wolf, is an integral part of the ecosystem. Predators are essential to natural ecosystems (Ripple *et al.* 2001; and Jędrzejewski *et al.* 2002). Recent research shows extensive cascading effects of the disappearance of large apex consumers (Estes *et al.* 2011; Jędrzejewski *et al.* 2002). Loss of apex consumers can impact processes such as biogeochemical cycles, invasion by exotic species, carbon sequestration, and the dynamics of disease (Estes *et al.* 2011). A study of five National Parks in western United States concluded that the absence of predators resulted in major impacts to woody plant communities as a result of increased ungulate populations (Beschta and Ripple 2009). When predation is removed in the natural environment, herbivore populations increase, diseases may increase and biodiversity may be diminished (Berger 1999). In the Greater Yellowstone Ecosystem, lack of predators resulted in the alteration of riparian structure and density and the reduction of avian neotropical migrants in willow communities (Berger *et al.* 2001). When wolves were reintroduced into Yellowstone National Park, aspens, willow and cottonwood browse species began recovery (Beschta and Ripple 2009). Both in Yellowstone National Park and the upper Gallatin Range of southwestern Montana, willow (Ripple and Beschta 2004) and aspen (Ripple and Beschta 2007) are recovering following the reintroduction of wolves. In one study in Banff National Park in Canada, beaver and birds benefited from improvements in local vegetation that resulted from predator activity of wolves that recolonized the park in 1986 (Hebblewhite *et al.* 2005). Ripple and Beschta (2004) state "...wolf recovery may represent a management option for helping to restore riparian plant communities and conserve biodiversity."

We, the New Mexico Chapter of the Wildlife Society, encourage the Department to assist the recovery of this endangered species under the authority of the New Mexico Wildlife Conservation Act (17-2-37 through 17-2-46 NMSA 1978). To ensure the survival of the endangered Mexican wolf, the Department should issue permits to the Service for their proposed work and issue permits to Ted Turner's Ranch to continue active, effective, captive wolf management.

The New Mexico Chapter of the Wildlife Society is composed over 100 members ([www.wildlife.org/nm](http://www.wildlife.org/nm)). The Wildlife Society's mission is to represent and serve the professional community of scientists, managers, educators, technicians, planners, and others who work actively to study, manage, and conserve wildlife and its habitats worldwide.

Let us know if we can assist you.

Respectfully,



Brian Hanson, Chairman

Conservation Affairs Committee, New Mexico Chapter of the Wildlife Society

## References

- Albuquerque Journal. September 29, 2015. <http://www.abqjournal.com/650869/news/state-wildlife-panel-to-decide-on-mexican-wolf-permit-appeal.html>.
- Bancroft, D., J. Pemberton, S. Albon, A. Robertson, A. MacColl, J. Smith, I. Stevenson, and T. Clutton-Brock. 1995. Molecular genetic variation and individual survival during population crashes of an unmanaged ungulate population. *Phil. Trans. R. Soc. Lond. Ser. B* 347: 263–273.
- Berger, J., P. Stacy, L. Bellis and M. Johnson. 2001. A mammalian predator-prey imbalance: grizzly bear and wolf extinction affect avian neotropical migrants. *Ecological Applications* 11(4): 947-960.
- Berger, J. 1999. Anthropogenic extinction of top carnivores and interspecific animal behavior: implications of the rapid decoupling of a web involving wolves, bears, moose and ravens. *Proceedings of the Royal Society of London* 266: 2261-2267.
- Beschta, R. and W. Ripple. 2009. Large predators and trophic cascades in terrestrial ecosystems of the western United States. *Biological Conservation*, 142: 2401-2414. [www.elsevier.com/locate/biocon](http://www.elsevier.com/locate/biocon).
- Estes, J., J. Terborgh, J. Brashares, M. Power, J. Berger, W. Bond, S. Carpenter, T. Essington, R. Holt, J. Jackson, R. Marquis, L. Oksanen, T. Oksanen, R. Paine, E. Pickett, W. Ripple, S. Sandin, M. Scheffer, T. Schoener, J. Shurin, A. Sinclair, M. Soulé, R. Virtanen, and D. Wardle. July 2011. Trophic downgrading of planet earth. *Science* vol 333; 301-306. [www.sciencemag.org](http://www.sciencemag.org)
- Frankham, R. and K. Ralls. 1998. Conservation biology – inbreeding leads to extinction. *Nature* 392: 441–442.
- Goossens, B., S. Funk, C. Vidal, S. Latour, A. Jamart, M. Ancrenaz, E. Wickings, C. Tutin, and M. Bruford. 2002. Measuring genetic diversity in translocation programmes: principles and application to a chimpanzee release project. *Animal Conservation* 5, 225–236. DOI:10.1017/S1367943002002275.
- Halbert, N., T. Raudsepp, B. Chowdhary and J. Derr. 2004. Conservation genetic analysis of the Texas State bison herd. *Mammalogy*, 85(5): 924-931.
- Hebblewhite, M., C. White, C. Nietvelt, J. McKenzie, T. Hurd, J. Fryxell, S. Bayley, and P. Paquet. 2005. Human activity mediates a trophic cascade caused by wolves. *Ecology* 86(8) 2135-2144. [http://scholarworks.umt.edu/biosci\\_pubs/288](http://scholarworks.umt.edu/biosci_pubs/288).
- Hedrick, P. and S. Kalinowski. 2000. Inbreeding depression in conservation biology. *Ann. Rev. Ecol. Syst.* 31:139–162.
- International Union for Conservation of Nature. 2013. Guidelines for reintroductions and other conservation translocations. Version 1.0. Gland, Switzerland: IUCN Species Survival Commission. 57 pp. <https://portals.iucn.org/library/efiles/documents/2013-009.pdf>.

Jedrzejewski, W., K. Schmid, J. Theuerkauf, B. Jedrzejewski, N. Selva, K. Sub, and L. Szymura. 2002. Kill rates and predation by wolves on ungulate populations in Bialowieza primeval forest (Poland). *Ecology* 83:1341-1356.

Jiménez, A., K. Hughes, G. Alaks, L. Graham, and R. Lacy. 1994. An experimental study of inbreeding depression in a natural habitat. *Science* 266: 271–273.

Keller, L., P. Arcese, J. Smith, W. Hochachka, and S. Stearns. 1994. Selection against inbred song sparrows during a natural-population bottleneck. *Nature* 372: 356–357.

Lacy, R. 1997. Importance of genetic variation to the viability of mammalian populations. *J. Mammal.* 78: 320–335.

Madsen, T., B. Stille, and R. Shine. 1996. Inbreeding depression in an isolated population of adders *Vipera berus*. *Biological Conservation* 75: 113–118. [www.elsevier.com/locate/foreco](http://www.elsevier.com/locate/foreco).

Ripple, W. and R. Beschta. 2007. Restoring Yellowstone's aspens with wolves. *Biological Conservation* 138: 514-519. [www.elsevier.com/locate/biocon](http://www.elsevier.com/locate/biocon).

Ripple, W. and R. Beschta. 2004. Wolves, elk, willow and trophic cascades in the upper Gallatin Range of Southwestern Montana USA. *Forest Ecology and Management* 200: 161-181. [www.elsevier.com/locate/foreco](http://www.elsevier.com/locate/foreco).

Ripple, W., E. Larsen, R. Rankin, and D. Smith. 2001. Trophic cascades among wolves, elk and aspen on Yellowstone National Park's northern range. *Biological Conservation* 102: 227-234.

Saccheri, I., M. Kuussaari, M. Kankare, P. Vikman, W. Fortelius, and I. Hanski. 1998. Inbreeding and extinction in a butterfly metapopulation. *Nature* 392: 491–494.

U.S. Fish and Wildlife Service, Southwest Region. August 27, 2015. Statement of the U.S. Fish and Wildlife Service before the New Mexico State Game Commission regarding the appeal of permit denials for the release of Mexican wolves in New Mexico. Albuquerque, New Mexico.

Westemeier, R. L., J. Brawn, S. Simpson, T. Esker, R. Jansen, J. Walk, E. Kershner, J. Bouzat, and K. Paige. 1998. Tracking the long-term decline and recovery of an isolated population. *Science* 282: 1695–1698.