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Nevada State Office
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Subject: Preliminary Environmental Assessment DOI-BLM-NV-0000-2020-001-EA

Oocyte Growth Factor Vaccine Study

Dear Ms. Thompson,

On behalf of The Cloud Foundation (TCF), a 501(c)3 nonprofit organization, and our hundreds of thousands of supporters throughout the United States, we would like to thank you for the opportunity to comment on the Oocyte Growth Factor Vaccine Study Preliminary EA.

TCF supports your goal of increasing time between traumatic helicopter roundups and decreasing the number of horses removed from the range. We do not take issue with a fertility control treatment with extended effect, as long as it is proven to be safe and reversible.

CONCERNS

Procedural Errors

In section 1.1 Introduction, this Preliminary Environmental Assessment (PEA) is called an “Environmental Assessment (EA)”. Please correct this before proceeding any further with the NEPA process to avoid confusing the interested public and/or the BLM staff involved in the study.

Permanent Infertility

First and foremost, TCF cannot support any plan to cause permanent sterilization in wild mares or jennies. The majority of our Western wild herds are already managed at AML numbers that fall below the minimum standard for genetic viability.

Equine geneticist Dr. Gus Cothran has long stated that in order to remain genetically viable, herds must consist of approximately 150-200 reproducing animals at a minimum. The **National Academy of Sciences Report** from 2013 cites Dr. Cothran’s work as a helpful tool for BLM management of herds.

“The Cothran studies are excellent tools for BLM to use in managing herds to **reduce the incidence of inbreeding...**”

National Academy of Sciences 2013 Report: Using Science to Improve the BLM Wild Horse and Burro Program – A Way Forward, p.192 (*emphasis added*)

Further decreasing the gene pool by rendering some individuals sterile could have a devastating effect on the ability of these herds to survive long term. Resilience of a species depends on a strong and varied genetic profile. (Ramsy Agha, Alina Gross, Thomas Rohrlack, Justyna Wolinska. [Adaptation of a Chytrid Parasite to Its Cyanobacterial Host Is Hampered by Host Intraspecific Diversity](#). *Frontiers in Microbiology*, 2018; 9 DOI: [10.3389/fmicb.2018.00921](#)) Doing anything to compromise that resilience and the survival of these federally protected animals would be a violation of the spirit of the 1971 Wild and Free-Roaming Horses and Burros Act.

According to the BLM's own Research Summary (Attachment 1) the Oocyte Growth Factor test vaccine "may result in permanent sterility through premature oocyte depletion. Long-term goal is to develop a vaccine that can cause permanent sterility after a single dose." (Wild Horse and Burro Research and Related Projects, page 1, #2)

Results from studies undertaken by Colorado State University demonstrated that "In 2018, ten mares were vaccinated against a combined vaccine with both proteins. Behavioral and ultrasound observations in 2018 indicated that: **none of the mares ovulated...**" (Wild Horse and Burro Research and Related Projects, page 1, #2 – emphasis added)

Based on this limited study in domestic mares, the oocyte growth factor vaccine appears to be highly effective, as all ten experimental subjects experienced infertility as a result of injection. As noted in the PEA "A previously tested version of the vaccine caused contraception for at least 2 years, but it used a weak adjuvant that required multiple doses to be effective." (PEA pg 5 section 1.3) It is not noted, however, if any of these ten mares were rendered permanently infertile as a result of treatment, and this is a key piece of information.

As stated earlier, TCF cannot support any fertility control strategy that would result in permanent infertility in a wild horse population. The majority of herds have AMLs set at levels lower than the minimum viable population level to maintain genetic variability. Further loss of genetic lines could put our herds at risk of negative biological and physiological effects.

A vaccine that could result in permanent sterility must be used with the utmost caution and BLM has not shown a willingness to do the meticulous documentation a product and project such as this would require. It's simply not acceptable to randomly select mares to make infertile. An understanding of the herd is also necessary, including its genetic health, which genetic lines need to be preserved (lest they be lost), and which mares have already contributed to the gene pool – as well as those who have not.

Documentation such as this has been done in certain herds – in the Pryor Mountains for example – by volunteers and wild horse advocates. It's a labor of love and dedication and has taken decades to develop. If BLM isn't willing to invest the same time and energy into each of our western herds, it would be best - and safest - to stick with reversible methods of fertility control.

Preservation of Natural Behaviors

“Although fertility control treatments on individual wild horses may be associated with some potential physiological, behavioral, demographic, and genetic effects, those impacts are generally minor and transient, do not of themselves prevent overall maintenance of a self-sustaining population, and do not generally outweigh the benefits of using contraceptive treatments...” (PEA pg 4 section 1.2)

We have strong and valid concerns that a vaccine which could render wild mares permanently infertile would disrupt the very behaviors that make wild horses ‘wild’ and keep the family unit together. We question how *any* permanently inflicted condition could be trivialized as “minor and transient”. It isn’t minor *or* transient for the individual who will never be able to fulfill her biologic and genetic mandate to reproduce.

While the PZP vaccine temporarily triggers an immune response in the ovary, a treated mare continues to cycle in estrus, and engages in all the typical hormone-driven behaviors an untreated, unpregnant mare would engage in. She is still very much a part of the family unit, and engages with her band stallion in certain rituals, such as mutual grooming and mating, which strengthen the family bonds.

These natural social behaviors, and the social structure of the herd, are what makes wild horses wild – and it is this which has allowed them to survive through the millennia. These natural social behaviors feed their complex social structure, which is centered around rearing young and cementing familial bonds. Anything that alters those behaviors disrupts the very fabric of wild horse society. Rendering a mare infertile by compromising her ovaries, also alters her hormonal makeup, affects her behavior within the family unit, and thus compromises the family band itself.

If family bands break down, a herd becomes just a collection of individuals who no longer exhibit the behaviors natural to wild, unmanipulated equids. The BLM-commissioned National Academy of Sciences report takes care to reinforce this: “Preserving natural behaviors is important”. (**National Academy of Sciences 2013 Report: Using Science to Improve the BLM Wild Horse and Burro Program – A Way Forward, pg 7**).

It would be essential to observe if and how this OGF vaccine effects those natural behaviors, and this can hardly be done in a 200-foot x 100-foot corral. The GonaCon study referenced in this PEA, which also tested a potential long-lasting fertility control product, was conducted on free-roaming mares in Teddy Roosevelt National Park. Wild equids, in the wild, can travel many miles a day and are free to choose their mates, their companions, and engage in natural social behaviors. Since it would be nearly impossible to assess through observation of horses in a pen if true natural behaviors are maintained, this experiment appears to be a waste of time and taxpayer dollars.

NAS Report

The NAS quote cited in this preliminary EA (page 3, section 1.2) was taken out of context and is incomplete. This is a misrepresentation and BLM should issue a public correction. The full quote is:

“In cases in which **reversibility is important** and repeated treatment is practical, one of the vaccines (*referring to PZP, PZP 22, GonaCon*) would be preferable, with the caution that treatment for more than a few years may prolong recovery of fertility. A single treatment that induces lifetime infertility **could be** preferable in other situations.”

National Academy of Sciences 2013 Report: Using Science to Improve the BLM Wild Horse and Burro Program – A Way Forward (emphasis added)

This full quote implies that a shot which induces lifetime infertility would *only* be preferable in situations in which reversibility is not important. We would argue that reversibility is *always* important for mares who have yet to make a contribution to the genetics of a herd. A vaccine that may cause permanent infertility is inappropriate for such mares.

The only situation in which reversibility *might* not be important, is in the case of an older mare who has contributed significantly to the herd and whose offspring have also contributed to the herd. To make this determination, each herd would need to be thoroughly documented. Otherwise, if managed at the current AMLs (i.e. the majority of HMAs have AMLs set below the genetically viable minimum) herds with a significant percentage of sterile females could die out over time, due to lack of genetic resilience and other biologic and/or physiologic effects of inbreeding. This was certainly **not** the intent of the Wild Horse and Burro Act.

There are numerous examples of successful fertility control programs and BLM/volunteer partnerships – McCullough Peaks, Challis, Sand Wash Basin, Spring Creek Basin, Little Book Cliffs and the Pryor Mountains, to name a few. If such partnerships were formed for every HMA, and enthusiastically supported by BLM, humane, reversible fertility control could be applied en masse and population growth slowed or even halted – ending the costly and tragic roundup and removal cycle.

BLM has long protested that some of the HMAs are vast and the horses flee at the sight of people. And yet, even in remote HMAs where the horses are extremely “wild” and unapproachable, such as Hog Creek in Oregon; and in expansive ranges such as the Virginia Range in Nevada; volunteer teams are successfully making it work. Where there’s a will, there’s a way. What appears to be missing in areas where fertility control vaccines are not being used is the BLM will to make it happen. The Cloud Foundation would be eager to assist in the creation of fertility control programs in HMAs with BLM support.

Law

“By law, BLM is required to control any overpopulation of excess animals.” (PEA, pg. 3 section 1.2) While it’s true that BLM is tasked with managing our iconic wild herds, nowhere is it stated what constitutes “overpopulation” or “excess animals”.

BLM’s arbitrary Appropriate Management Level has repeatedly come under fire as a scientifically unsupported figure. Even the **National Academy of Sciences** stated:

"How Appropriate Management Levels are established, monitored, and adjusted is not transparent to stakeholders, **supported by scientific information**, or amenable to adaptation with new information and environmental and social change."

National Academy of Sciences 2013 Report: Using Science to Improve the BLM Wild Horse & Burro Program - A Way Forward (emphasis added)

In order to deem a herd “overpopulated” BLM should be required to reveal the basis upon which that claim is made. Simply throwing a number out without justification, completely unsupported, is tantamount to “fake news”. “Because we say so” is not a valid or acceptable explanation to the public, who unwillingly fund exorbitantly costly roundups and warehousing of wild horses and burros with their tax dollars.

BLM is accountable to the public which it serves and should be made to produce a valid scientific explanation of AML for each HMA. BLM must also explain how they arrived at the national AML, which appears to be close to the number of horses which existed in the West in 1971 when the Act was passed - a number which prompted Congress to act **unanimously** to protect them, lest they disappear forever.

Another term that has never been adequately defined is “thriving natural ecological balance.” (PEA pg. 4, section 1.2) What constitutes a “thriving natural ecological balance” should be made available to the public, whose public lands and wild horses these are. (**Note:** this has been widely discussed in court cases)

Again, presenting these terms without any data to support them is not enough to characterize a herd as overpopulated or a range as degraded. Further, the impacts of *all* rangeland users must be considered; wild equids cannot be scapegoated as the destroyers of the western ranges when they only exist on barely 12% of BLM lands, compared to the millions of head of privately-owned cattle, which graze on 88% of BLM-managed lands.

A fair allocation of forage for our federally protected wild horses and burros may go a long way towards solving the purported “overpopulation.” If forage were divided equitably between wild equids and private livestock, AMLs could be raised across the board and roundups which cost millions of dollars and cause injury, trauma and death to the animals could be minimized.

As stated in this PEA, according to the 1971 WFRHB Act, “BLM is charged with maintaining self-reproducing populations of wild horses and burros.” (PEA pg 15,

section 4.4.1) In the very same paragraph, the idea that some HMAs could be managed as non-reproducing is presented. This is exactly the antithesis of managing a “self-reproducing” population and a direct contradiction of the Act.

The idea that these herds could be managed as a metapopulation is erroneous. Each herd, where there is little or no interchange with adjacent herds, has evolved with its own unique demographic and genetic structure. They are not interchangeable. The Pryor Mountain herd, for example, has genetic lines that trace back to Spanish colonial horses. An introduction of random horses from the outside would alter and threaten those unique genetics. We must respect each herd as a unique evolution of the wild equid and preserve them, intact. This means managing each herd with care so as not to lose meaningful genetic lines, characteristics and colors that contribute to the tapestry that makes the herd unique - or making sure, where geography allows and genetic profiles are similar - that interchange is possible (fence removal, wildlife corridors, etc.)

Meaningful Observation

According to this PEA, “There is no public access to the areas of the NNCC where the study would take place.” (PEA pg. 9, section 3.1). As this is an experiment paid for by citizen tax dollars and to be performed on wild mares that belong to the American public, the American public must be able to exercise their First Amendment rights to **meaningful observation** of the experiments their government agency is conducting. To entirely restrict access to the citizens who are funding the study is unconstitutional. If this is not possible at the selected facility, perhaps the location should be switched to one that would allow the public to observe the project and the care provided to the horses.

Unknown Effects

As this is an untested formula taking what were four different injections and making them into a single dose, we have concerns about how this could affect the overall health of the mares in this study. Based on what is stated in this EA, the outcome and effects are virtually unknown.

“Treated mares may become only temporarily infertile, or may remain infertile for many years...Over the course of the proposed 3-year study, it may not be possible to determine whether the one-dose version of the oocyte growth factor vaccine would cause permanent sterility, because mares can live well over 20 years.” (PEA pg 12, section 4.2.1)

If it is impossible to determine the long-term effects of this vaccine, what, then is the possible justification for undertaking this experiment? BLM cannot, in good conscience, use en masse a product on wild mares that may or may not result in sterility. If this vaccine *does* cause sterility in the majority of animals treated, our wild herd populations could crash and never recover. This would be a catastrophic annihilation event - and be absolutely counter to the mandate BLM has to protect and manage healthy, self-sustaining populations of wild horses.

The Adjuvant used in the oocyte growth factor vaccine (and also used in GonaCon) has been shown to cause injection site reactions whether injected by hand or by dart. (EA pg. 12, section 4.2.1) If the intended ultimate application is in the field, we would question if this is an appropriate and safe adjuvant to be used, when observation may potentially be limited or nonexistent.

Recommendations

1. We recommend this study not be conducted, as the proposed vaccine has been documented to affect the ovulation and thus the hormone production of mares studied.
2. Since wild horse society depends on familial bonds which are formed through natural behaviors driven by hormones that would be affected by this vaccine, The Cloud Foundation cannot neither support the product nor the project.
3. We believe BLM efforts would be better placed on developing a long-lasting, single injection PZP product (PZP 22 has shown much promise in terms of longevity) as well as ways to treat and retreat mares on-the-range.
4. BLM would be wise to form local teams of volunteers and begin to create fertility control programs for each HMA. The American public is sick of seeing their horses rounded up, maimed and killed. And Congress is no longer supportive of the catastrophically costly roundup-removal-warehouse plan which stimulates higher reproduction rates amongst the horses left on the range. On-range, humane and reversible fertility control is infinitely more cost-effective and palatable to both the US government and the American public.

Sincerely,

Ginger Kathrens
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