Wild Horses Ecological Balance

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Ecological Balance

The *Bureau of Land Management* recently proclaimed, "to ensure they [i.e., the wild horses of the Western United States] [1] are there forever for us to enjoy, the Bureau of Land Management (BLM) must protect and manage the land and the animals in a thriving natural ecological balance." [2] It's an admirable goal. The wild horses are a living national treasure which remind us of and represent our continuity with our past.

But what about this business of managing the animals in "a thriving natural ecological balance?" Is the BLM sincere about this? I hope so. Or is it just window dressing? I suppose that remains to be seen. But there are components of the proposed BLM management plan [3] which makes me wonder. One thing is for sure, the BLM

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[1] Bracketed words were added by the author.

[2] *Working Toward Sustainable Management of America's Wild Horses and Burros: Draft Goals, Objectives and Possible Management Actions*, Bureau of Land Management, Department of the Interior, June 2010.

[3] ibid.

won't successfully establish trust and partnerships with the diverse parties interested in the wild horses by subterfuge or by just telling people want they want to hear.

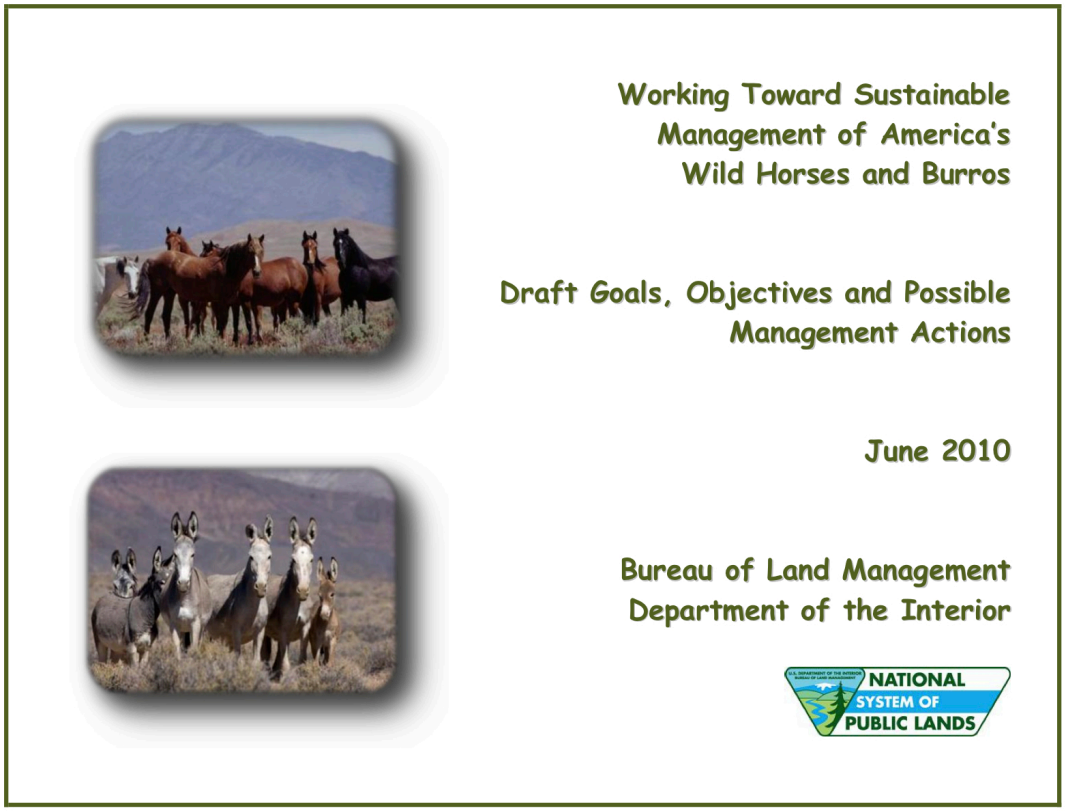
You see, the dictionary on my computer defines ecology as "the branch of biology that deals with the relations of organisms to one another and to their physical environment." Hmmm! the "relations of organisms to one another?" Couldn't one argue management itself is incompatible with "a thriving natural ecological balance"? I think so. But I don't want to get carried away right off the bat. I'm not a radical. I'd really like to help find an amicable solution for preserving the wild horses.

But, if the goal is to establish "a thriving natural ecological balance," then it seems to me management practices which disrupt social interactions within a herd or alter herd structure are automatically eliminated. There's no question such things would unnaturally affect the "relations of organisms to one another." It just makes sense. You can't have a natural ecological balance by doing things that cause unnatural social interactions or social disruption, like adding or taking away herd members. Oops! It's funny where logic sometimes takes you. One way or another taking away and adding to herds seems to be a significant aspect of the BLM management strategy.

But let's not make matters even worse by trying to alter herd composition. Horses normally form stable breeding groups made up of one adult male, one or more adult females and their offspring.[4] The overall ratio of males to females is generally about

[4] H. Klingel: Social organization of feral horses. J. Reprod. Fert. Suppl. 32:l-7, 1982.

50/50. [5] "The similarity of social organization in populations living in a variety of different habitats indicates that feral horses have reverted to the habits of their wild ancestors, and that domestication has had no influence on this basic behavioral feature." [6] Yet, based on their recent document, *Working Toward Sustainable Management of America's Wild Horses and Burros: Draft Goals, Objectives and Possible Management Actions* [7], the BLM appears to believe it is possible to adjust the gender ratio of wild herds to 60/40 males to females. How?



[5] Brian Hampson, Postgraduate PhD scholar, School of Veterinary Sciences, The University of Queensland. Personal communication.

[6] ibid. Abstract.

[7] *Working Toward Sustainable Management of America's Wild Horses and Burros: Draft Goals, Objectives and Possible Management Actions*, Bureau of Land Management, Department of the Interior, June 2010.

To my knowledge there is no reason to believe a herd of such composition will be stable. More than likely, the excess males will be socially ostracized … booted out by the lead stallion. "Water seeks its own level" as the old saying goes. In the mean time, what do you have? Unnatural competition for resources, including mares. Social disruption … a very powerful stressor. And, those who read my previous article [8] know what that means. Accelerated deterioration, especially if the social unrest persists for a prolonged period.

Moreover, there is nothing about this possible strategy to suggest "a thriving natural ecological balance." Or perhaps I'm confused about the meaning of the terms natural, ecological and balance. None of those terms seem to apply to an artificially produced atypical male to female sex ratio. Frankly, it is difficult to envision anyone with even a superficial understanding of animal behavior and herd dynamics suggesting this as a possible "sustainable" management practice.

Then, there is the suggestion of possibly gelding males (removing their testes) and spaying females (removing their ovaries) before returning them to the range. Do you think that might affect ecological balance … i.e., "the relations of organisms to one another and to their physical environment"? The testes and ovaries produce powerful steroid hormones, the so-called sex hormones. The ovaries produce estrogen, e.g.,

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[8] B. Nock, PhD, Neurobiologist, Washington University School of Medicine: *Wild Horses—The Stress of Captivity*. Liberated Horsemanship Press. Commissioned by *The American Wild Horse Preservation Campaign*. March 16, 2010.

estradiol-17ß, and progestins, e.g., progesterone. The testes produce androgens, e.g., testosterone. These hormones are powerful agents which function to coordinate behavior and physiology with the external world. Take out the ovaries and testes and … well, so much for "a thriving natural ecological balance."

You may be thinking, "Yes, but we geld domesticated horses all the time." True. Why? Principally to make them more manageable, right? That alone should tell you something about how powerful androgens are. But let me tell you a little more.

Androgens have a wide range of biological actions. Their classic effects are on the induction and maintenance of secondary sexual characteristics and reproductive behaviors, and the inhibition of gonadotropin secretion. But, they are also anabolic steroids. You know the stuff that gets baseball players and other athletes into all sorts of trouble because it gives them an unfair athletic advantage … it makes them bigger, stronger, and faster.

So, the idea, according to the BLM, is to send gelded horses back out to the range. The problem is, gelding has the opposite effect of taking steroids to boost athletic performance. It will decrease the horse's muscle mass and strength, reduce bone density and increase his frailty. It's not a good position to be in if you are striving for survival and competing with stallions for resources. And they will compete, even for mares. Anyone who maintains a domesticated herd composed of geldings and mares knows gelding doesn't necessarily reduce the inclination to possess mares. They just can't carry

the process through to fruition. But, on the range, a gelding would be at a serious disadvantage if matched up against a stallion.

Here's something else to consider. Taking out the ovaries or the testes doesn't just remove the sex hormones. There's more to it … a lot more. These hormones influence many neural circuits in the brain by binding to transcription factors which regulate the activity of certain genes. They also affect other endocrine systems. My endocrinology professor in graduate school, Dr. Alan Leshner PhD [9], drove home time and again the point that "No hormone works independently of other hormones." It's a fact. Endocrine function and physiology are very complex. Take away one hormone and it affects all of the other endocrine systems. Remove the sex hormones and pituitary hormone releasing and inhibiting hormone activity changes, gonadotropic hormone levels go up, adrenocorticotrophic hormone levels go up, cortisol levels go up, thyroid hormone levels go down, and so on and so on.

So gonadectomy has an array of consequences, either through direct actions or by altering other endocrine or neural systems. Sure gelded and spayed horses seem to do OK in captivity. But how does such an unnatural physiology affect their ability to survive and compete in the wild? Hard to say. But it doesn't sound to me like it should be part of a plan to create "a thriving natural ecological balance." There is no question it

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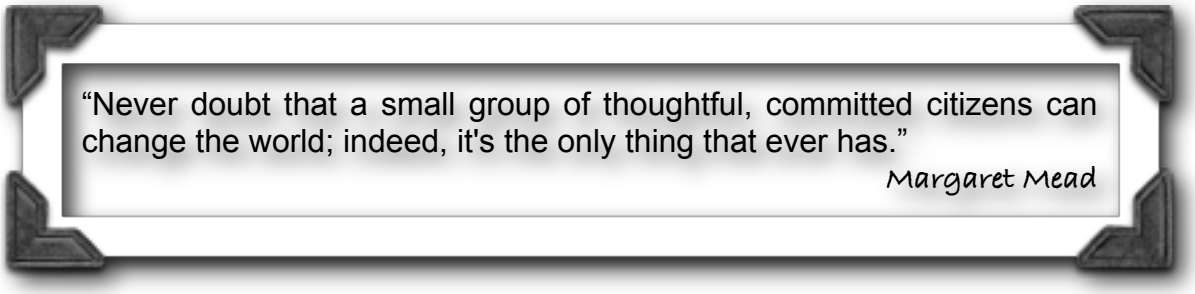
[9] Dr. Leshner has been Chief Executive Officer of the *American Association for the Advancement of Science* and Executive Publisher of the journal *Science* since 2001. Prior to that he was the director of the *National Institute on Drug Abuse*.

will affect "the relations of organisms to one another and to their physical environment."

So, I'm concerned on two counts. First, I'm not convinced the BLM is sincere about preserving our wild horses in anything resembling "a thriving natural ecological balance." Is this just rhetoric to gain public support? I hope not. Second, I'm not convinced the right people are in place to work toward management which produces "a thriving natural ecological balance." The examples of possible management strategies discussed above suggests a need for stronger input about how management strategies affect physiology and behavior. At this point the BLM appears to have tunnel vision, focusing principally, if not entirely, on the numbers. That's not good enough in my opinion. The longterm impact of management practices on the welfare of individual horses and herds should also be considered while assuring a viable level of genetic diversity. *Bruce - 314-740-5847 BruceNock@mac.com*



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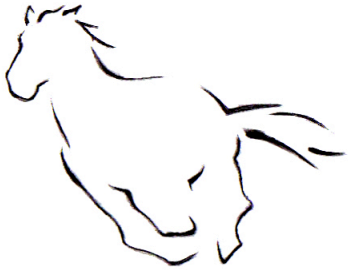

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