

RESOURCE NOTES

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Deciding Which Feral Horse Populations Qualify as a Genetic Resource

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Session 1*

Background

BLM managers responsible for feral horses are confronted by a host of divergent expectations and demands from a number of constituent groups. This makes decision-making for feral horse management contentious and adversarial at times. Many factors are important for feral horse management, including human societal, environmental, and a variety of equine factors. One of these factors is the status (or not) of a given herd as a genetic resource.

Only a few feral herds qualify as genetic resources that are unique and irreplaceable. The rationale and mechanism for designating them as such is important, because the management for those few herds should be tailored to accommodate conservation of the genetic resource as a fundamental goal.

Discussion

Feral horses in the US originate from a wide variety of breeds and types of horses. Most populations are influenced by several breeds, each of which has been common at some point in the US after European contact. These composite populations vary from one to the other, but generally represent horse types that are well represented in domesticated, managed horse herds. Such herds could easily be reconstituted from the resources in domesticated situations in the eventuality that the ferals descending from them become rare, extinct, or suffer from inbreeding. Since the domesticated populations of these breeds are large and readily accessible there is no need for programs specifically targeting the conservation of feral herds, descended from them, as genetic resources.

A very few feral populations remain that descend from types and breeds now otherwise rare or extinct, mainly the Colonial Spanish type. These few populations (Cerbat, Sulphur, Pryor, Kiger, perhaps others) are genetic resources of significance to horse biodiversity and warrant special consideration for conservation and management as unique resources. The North American Colonial Spanish breed type is otherwise very rare globally, and only a small reservoir exists in domestication. The few qualifying feral herds

are therefore an important component of equine biodiversity.

The analysis of candidate horse populations as to their status as genetic resources with a conservation priority can be straightforward and relatively simple. A first analysis is simply a visual phenotypic appraisal by several people familiar with different types and breeds of horses, and specifically with the Colonial Spanish type. A second, and usually concurrent, analysis is the history of the region and the horses as to foundation types and introductions. History must be evaluated carefully, since neutral observers are rarely the case and detractors will consistently insist on numerous recent introductions, while supporters will favor a pristine and isolated history. Neither extreme may be accurate, and the historical and visual assessments must therefore go hand-in-hand. Few populations survive this level of scrutiny, and can then be subjected to analysis of blood-types or DNA. This last level is expensive in time and resources, and need only be accomplished for candidate populations that are indeed likely to be unique genetic resources.

Conclusion

While breed origin makes some populations unique, all feral horses persist in environments in which natural selection is the major selection pressure. This

WILD HORSE AND
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selection environment is unique among equine environments, and its role in shaping the genetic composition of the herds is important as a biological process. While it shapes all populations, its role in shaping those that are unique by virtue of founder type is especially worth consideration since this

phenomenon is an ongoing, if unplanned, experiment that cannot be duplicated should these populations become extinct.

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