Birth Control and Management of BLM Mustangs and Burros

August Luna

Abstract Feral horses roam across the United States' public lands. There are at present a total of 95,114 wild horses and burros on public land. With no natural predators, the population has the capacity to double every year. The Bureau of Land Management is charged with managing these feral horses and burros, but this has not been an easy task. The supply of feral horses greatly exceeds the demand for feral horses. Despite adoption incentives and horse shows to increase the popularity of these horses, the BLM is still in danger of these horses overtaking the public land. This has led the BLM to seek out methods of birth control. This study is to determine the effectiveness of brith control methods used on these mustangs.

Introduction Mustangs are not native to the Americas. The word mustang comes from the Spanish word *ustengo*, which means "horse without an owner." These horses were brought over by Spanish explorers. In 1971, the United States of America passed the Wild Free-Roaming Horse and Burro Act, which made it illegal to capture or kill these equines. Because they can readily reproduce without any predation, this has led to overpopulation issues. To combat these, the BLM has promoted the adoption and legal sale of these animals. While helpful, overpopulation is still a major concern. This has led the BLM to use contraceptive measures to promote the slowing or stabilizing of horse herd growth. However, equine contraceptives are not long term, and are difficult to administer.

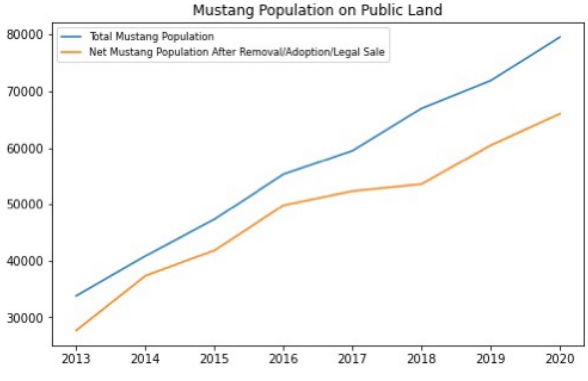


Figure 1. *This graph shows the total population of Mustangs compared to the actual amount of Mustangs after removal, public adoption and sales*

Methods For this study I gathered data from the Bureau of Land Management's Wild Horse and Burro Program. From their data, which was formatted as PDF files for current populations, previous years' populations, types of fertility control, wild horse and burro removals, adoptions, legal sales, horses and burros trained, and holding facility populations. This data was formatted into an excel file was made and then imported into python. Using MatplotLib, pandas, and python's integrated statistics I was able to analyze the data. Because contraceptives were only administered to mustangs, the research is focused on them.

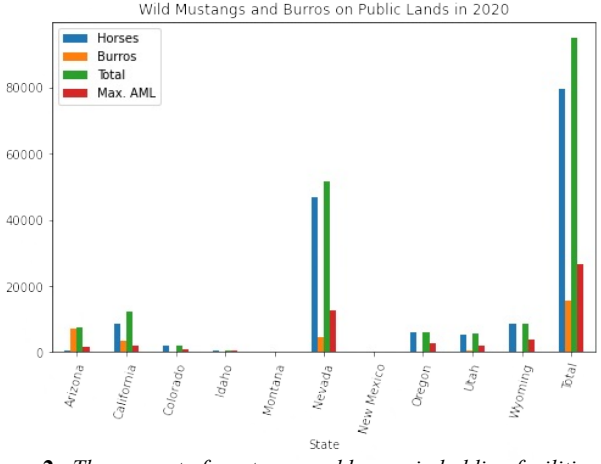
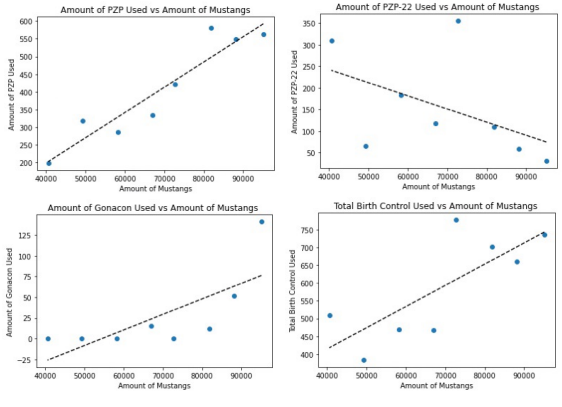


Figure 2. *The amount of mustangs and burros in holding facilities as of 2020*



Figures 3-6. *The figures show the correlation between types of birth control used and the amount of mustangs present.*

Type of Birth Control	P Value	R Value	Standard Error
PZP	0.0004	0.944	0.001
PZP-22	0.223	-0.484	0.002
Gonacon	0.040	0.728	0.0007
Total	0.024	0.771	0.002

Figure 7. *A table showing the P and R values, and the Standard Error of Birth control methods as compared to the increase of Mustang Population*

Results The results are pretty straight forward. As there is an increase of Mustangs, there is an increase in the use of contraceptives- with he exception of PZP-22, as it is being phased out and replaced with the superior, but still lacking Gonacon contraceptive. The issue with equine contraceptives is that they are not long term, with Gonacon lasting 4 to 5 years after the second dose is administered.
However, the mustang population is still on the rise. With their increase in numbers, mustangs are at risk of overpopulation.

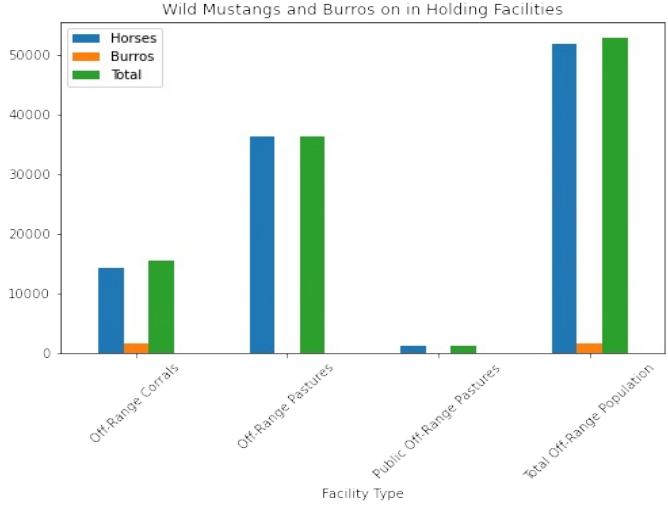


Figure 8. *A Bar chart depicting the amount of Mustangs and Burros in Holding Facilities*

Discussion With numbers that can nearly double every four years, it is important to have a strategy to combat mustang over population. A common fertility control in domestic horses is castration otherwise known as gelding, however this is not always feasible for feral horses, because castration involves the capture and containment of these stallions for a prolonged period of time. Castration also has the risk of infection.

These other methods of contraception, which are geared towards the mares are not perfect, but they can be administered through dart gun, and do not require the capture or containment of these feral horses. PZP the most common contraceptive, must be administered yearly, PZP-22 and Gonacon must be administered twice, but can last anywhere from 3 to 5 years.

The BLM does engage in efforts to advance the adoptions of these mustangs. With events such as the Extreme Mustang Makeover and Mustang Magic events used to promote these capable horses, however with the ever increasing cost of the equestrian sport, and the lack of accessibility to the sport, there is a decline in the need for horses in general.

Because of laws preventing the sale of mustangs to kill pens and other kill buyers, horses who could not be adopted, or who are past the age of 10, end up in BLM holding facilities for long term holding. This is an ideal outcome, however there is only a finite amount of space in these holding facilities, and they aware reaching their capacity.

A study done on inmates who worked with these mustangs had a lower rate of recidivism (Cushing et al., 1995). Perhaps, these mustangs might find themselves of of use in federal programs.

Figure 9. *A photo of BLM mustangs at an adoption event*

Cushing, J.L., Williams, J.D., Kronick, R.F., 1995. THE WILD MUSTANG PROGRAM: A CASE STUDY IN FACILITATED INMATE THERAPY. J. Offender Rehabil. 22, 95–112. https://doi.org/10.1300/J076v22n03_08

Fonner, R., Bohara, A.K., 2017. Optimal Control of Wild Horse Populations with Nonlethal Methods. Land Econ. 93, 390–412. https://doi.org/10.3368/le.93.3.390

Programs: Wild Horse and Burro | Bureau of Land Management [WWW Document], n.d. URL https://www.blm.gov/whb (accessed 4.28.21).