

# **WILD HORSE POPULATION GROWTH**

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April 25, 2014**



## **INTRODUCTION**

The recent National Academy of Science (NAS) report on the Wild Horse and Burro Program determined that the Bureau of Land Management (BLM) has no evidence of excess wild horses and burros; because the BLM has failed to use scientifically sound methods to estimate the populations (NAS, 2013). The NAS cited two chief criticisms of the Wild Horse and Burro Program: unsubstantiated population estimates in herd management areas (HMA), and management decisions that are not based in science (NAS, 2013).

Effective wild horse and burro management is dependent on accurate population counts and defensible assumptions. The Bureau of Land Management (BLM) routinely uses the assumption that wild horse and burro herds increase annually at an average rate of 20%. However, our review of available scientific literature combined with an analysis of BLM data for 5,859 wild horses found that approximately 50% of the foals survived to the age of 1 year, which indicates a 10% population growth rate based on yearling survival rates.

## METHODS AND DATA

The data and analysis is based on the BLM's wild horse and burro removal and processing documents acquired under the Freedom of Information Act. The data sets were evaluated separately, and then combined to total 5,859 wild horses, captured, aged, and branded by BLM. This data is the basis for the analysis in this report and the accompanying chart in table 1 below.

Burro data was also calculated for foal and yearling survival. That data indicated a 7% population growth rate for burros based on yearling survival, but that data is not included here as burros are not present in all of the HMAs.

The data was collected from 4 herds captured by BLM in Nevada and California in 2010 and 2011. The data below in table 1 shows the individual herds and accumulated age structure data which supports the overall conclusion. Wild horse foals and yearlings were tallied for population increases and in all four samples, recorded a combined foaling rate of less than 20%, but only half or 50% survived to the age of 1 year (see table 1 below).

**Table 1 Age Structure Yearling Survival Rate**

Herd Area	ROUNDUP DATE	HORSES PROCESSED PER FOIA	TOTAL FOALS CAPTURED	% OF FOALS	TOTAL YEARLINGS CAPTURED	% OF YEARLINGS	SURVIVAL RATE OF FOALS REACHING ONE YEAR
Calico	Dec 2009-Jan 2010	1848	378	0.2045	248	0.1342	0.6561
Twin Peaks	Aug-Sept 2010	1535	302	0.1967	147	0.0958	0.4868
Triple B	Jul-Aug 2011	1226	243	0.1982	134	0.1093	0.5514
High Rock/Fox Hog	Oct-Nov 2011	1250	245	0.1960	81	0.0648	0.3306
Totals		5859	1168	0.7955	610	0.4041	2.0249
Averages				0.1989		0.1010	0.5062
				average herd increase using foal rate		average herd increase using yearling rate	average yearling survival rate

## DISCUSSION

This research does not include or reflect the additional adult mortality rates due to the complexity of population dynamics, but does raise serious questions about the validity of the BLM's assumed 20% annual herd population growth rate. Furthermore, the BLMs assumption fails to consider that wild horse populations are dynamic due to isolation and have varied rates of reproduction and survival due to changing climates, forage, competition, disturbance and environmental conditions. All these are factors that can lead to varied herd growth rates and each herd should be evaluated separately.

This research paper is supported by previous studies using age structure data completed by Michael L. Wolfe, Jr. in 1980 titled "Feral Horse Demography: A Preliminary Report". Mr. Wolfe cited observations in 12 HMAs, over a period of 2 to 5 years, and covered a much broader range over six Western states. He questioned the annual rate increase of 20%, and found that first-year survival rates to range between 50% and 70% (Wolfe, 1980).

Other supporting research includes The National Academy of Science National Wild and Free-Roaming Horse and Burro report of 1982, which states, "...several biases in the (BLM) census data, cited or calculated rates of increase based on a number of published values for reproduction and survival rates, as well as sex and age ratios, and concluded annual rates of increase of ten percent or less" (NAS, 1982).

The NAS 2013 report also used age structure data to estimate population growth. However, the report used foaling rates to draw conclusions about the population growth; rather than first year survival rates (NAS, pg.51-52 2013). This and other studies challenge the assumption that the 20% foaling rate provides an adequate measure of population growth.

The BLM bases their management decisions on environmental assessments that cite inflated population estimates. As shown in this study and previous research, the BLM's assumption of a 20% annual wild horse population growth rate is not based in science; leading to unsubstantiated population estimates with no evidence of excess wild horses.

## REFERENCES

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