

*Carson City Dist.
Clan Alpha HWA*

2/23/82



UNIVERSITY OF MINNESOTA
TWIN CITIES

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February 23, 1982

Mr. Jeffrey Petrino
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5. *RLAS*
6.

Dear Jeff:

As I discussed with you our success immobilizing and collaring female horses was not exactly as great as we had anticipated but overall I think things went well. In summary, we put collars on 53 females, 41 on the Pah Rah area with the rest remaining in the Pine Nut study area. We killed five animals, 3 from drug related fatalities and 2 from broken legs. We successfully immobilized 77 animals with the additional animals being mostly males that were inadvertently taken because of misidentification.

The cost for immobilization per animal was higher than we anticipated. In spite of this, we decided to go with 1 helicopter for 2 days this past weekend and increased our sample on the Pine Nut area by 17 mares. As we discussed, we decided not to collect blood on this additional sample, as it was quicker, hence cheaper to just put on a collar and inject the antidote. The enclosed table gives our best estimate of horses with transmitters on the two areas. We plan on initializing our monitoring of these animals toward the end of March, and plan on contacting the instrumented animals at least once monthly to obtain data on foaling rates and foal survival until late July. We are reasonably confident that we will obtain fairly good data on these two population parameters.

In doing this work we have had several thoughts about long term considerations that BLM may wish to consider. The new transmitters we placed on the animals should last 4 years. There was very little additional cost in putting on a 1 year or 4 year transmitter, and it seemed when considering the overall cost of the project we might as well go with the long term transmitters. Thus it will be possible to monitor these animals, via telemetry, up to the spring and perhaps the summer of 1986. Of course, regardless of the state of the radio we could still use the collars as markers, hence would be able to find some number larger than those just transmitting.

*Dick's office
This is something
we need to
put on the
HWA
ND*

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To insure high probability of animals being selected for darting adult females, we chose animals either with last season's foal at its side and/or that were visibly pregnant. Thus a high proportion of our animals were lactating. In considering these data only over one season, it seems to me that the foaling rates that we will obtain next spring could be biased; depending on whether lactating females have a lower or higher foaling rates than "average" females. Thus in order to get a truer picture of what the actual foaling this may be one reason to consider longer term monitoring.

There are probably stronger arguments for continuing monitoring and these revolve around long term performance in relation to range conditions. Based on the physical characteristics of horse measurements as well as range conditions, horses in the Pah Rahts are in much better condition than those in the Pine Nut area. One might suppose that foaling rates in the Pine Nut area would be considerably lower than those in the Pah Rahts. The ability to contrast horse reproductive performance on these two areas in a natural situation could be valuable to BLM for management decisions. In the Pine Nut area, it would seem we are looking at as about as poor a range condition as could exist for a horse population. One would think that the reproduction here should be at a minimum if that range condition and nutritional status is a significant factor in reproduction.

At the present time it seems to me that reproductive rate is holding high even on the poor range. Thus we may be looking at a situation where range simply deteriorates to the point where total starvation may occur rather than a change in other demographic parameters. The adult female horses that we handled on the Pine Nut area were in extremely poor condition. I would expect adult mortality before the winter ends, depending on the weather, I suppose. If spring brings sufficient new growth of vegetation we may see a temporary rebound and they may live on for another year. These are all question marks in my mind and the year to year performance of animals in such a situation could be extremely interesting with respect to deciding about management policy. Lee Eberhardt has suggested that perhaps a sterilization program of females may be the only way to cut down a population growth. I have a notion that he may be correct in that I do not think we are likely to see any particular reduction in foaling rates until starvation occurs. However, at the moment these ideas that sound like hypotheses and are merely guesses.

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It would be relatively easy to measure the effect of range condition on demographic parameters, e.g. adult survival, reproduction performance, juvenile survival, and age of maturity over the next few years or so on both of these areas. The cost involved would be 2 part-time people and/or graduate students involved. I am uncertain as to what BLM's envisions for management policies with respect to wild horse herds but I would think that these data would be very important for most decisions.

We could also look at burro censusing in more detail if you think it important. From our brief look at burro censusing this past year it is obvious that social structure and habitat consideration present a very different censusing situation than for wild horses. Bureau personnel also seem to be hampered by some information provided to them in the past that was not entirely correct.

We realize that funds are extremely tight, but we thought we should point out what we feel are the most important considerations over the long term, and we are indeed keen about the project. I have sent copies of this to others I thought might be interested, and can offer advice with respect to these ideas. We would naturally be glad to discuss any of these points.

Best regards,



Donald B. Siniff
Professor

DBS:rr

cc:✓John Boyles, WO
Bob Springer, WSO
Fred Wagner
Mike Wolfe
Walt Conley
Lee Eberhardt
U.S. Seal
P. Moehlman

Estimated number of collared horses on Pah Rah Mustang Area and Pine Nut Mountains, Nevada as of 20 Feb. 1982.

AREA ¹	FEMALES		MALES	
	RADIO	MARKER	RADIO	MARKER
PAH RAH				
Oct. 80	23	21	9	12
Feb. 82	41	-	-	-
PINE NUTS				
Oct. 80, Mar. 81	26	17	20	13
Feb. 82	29	-	-	-
TOTALS	129	38	29	25

¹ Months given are when animals were collared. Radio collars put on in 1980-81 have a 2 1/2 year life expectancy. Radio collars put on in 1982 have a 4 year life expectancy.