

**United States Department of the Interior**

BUREAU OF LAND MANAGEMENT

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To: Field Managers and Deputy State Directors

From: Associate State Director

Subject: Wild Horse and Burro Inventory Procedures and Coordination

The Wyoming Bureau of Land Management (BLM) is responsible for the management of 16 wild horse herd management areas (HMAs) in Wyoming. Given the number and distribution of these populations, all wild horses are currently estimated from either a helicopter or a fixed-wing airplane. Wyoming BLM has and will continue to actively review and evaluate its census practices to improve our effectiveness and efficiency in producing accurate and credible population estimates.

A stated goal of the Wild Horse and Burro Program is to produce a reliable population estimate of each wild horse HMA at a minimum of every 3 years. In Wyoming, each HMA will be censused a minimum of 1 year prior to a scheduled gather operation based on the 3 year gather schedule found in Attachment 1. Wild horse specialists are under increasing pressure to produce accurate and credible population estimates of wild horses on which to base management decisions. To make these decisions, our wild horse and burro specialists and field managers need standardized, tested, defensible, cost effective, yet easy-to-use population estimation techniques for wild horses. The accuracy and precision of current wild horse survey methods (direct counts) has not been rigorously tested. Thus, a statistically valid estimation technique with confidence intervals is needed.

**Census Study :**

The Wild Horse and Burro strategic research planning process identified aerial survey techniques for wild horses and burros as a high research priority to benefit program management. The United States Geological Survey (USGS) - Biological Resource Division (BRD) and BLM have assembled an Aerial Survey Team to work on this topic. Team members include BRD researchers and field technicians, BLM field specialists, and a Colorado State University (CSU) research statistician. In FY 04, the Wyoming BLM began working with the USGS-BRD to investigate possible population estimation techniques to be used within

Wyoming.

A study plan was drafted in November 2003 and was reviewed by the BLM, the WH&B Research Advisory Team, as well as the Wyoming Game and Fish Department. Preliminary field work meetings were also held in Wyoming in January 2004.

The four most promising aerial techniques have been selected including: 1) simultaneous double-count, 2) the sight ability bias correction model, 3) distance sampling, and 4) mark-resight methods. The Aerial Survey Team is currently evaluating areas where these techniques can be tested against a known truth in population size. Truth can be defined as a known number of animals in a population, number of animals removed or gathered, etc. The truth in population size is now approximately known in the three individual-based fertility control field trial study areas, where individual animals are recognized by unique colors and markings ( Pryor Mountains, Little Book Cliffs, and McCullough Peaks HMAs). Flights conducted just before and just after the gather can provide an estimate of the known removal. As field work is in the preliminary stages at this time, no single technique has been singled out as the most promising.

In February/March 2004, a census protocol combining a simultaneous double-count with a sight ability bias correction model was tested within Wyoming's Muskrat Basin, Conant Creek, Rock Creek, Dishpan Butte, Adobe Town, and Salt Wells Creek HMAs. This technique design is very similar to the current direct counts that the BLM uses but differs in that two independent observers complete the survey. The actual size of the populations was not "known" at the time of the flights. Depending on each HMA's topography, the initial test flights were completed using either a fixed-wing aircraft or a helicopter. The preliminary results of these surveys provided a defensible range of values to assist the management needs of these HMAs.

### **Population Technique :**

Though census methodologies are still being further developed, improved, and tested , in an effort to standardize the methodology used, Wyoming BLM will be incorporating a methodology combining a simultaneous double-count with a sight ability bias correction model as the principal interim technique for completing our wild horse population estimates . This methodology is to be used on future HMA inventory flights that occur each year based upon available personnel and budget limitations. As part of this methodology, one or more specialists (aviation, resource specialist, etc.) will be identified, developed, and trained to serve as the independent observer within the State. The use of independent observers will provide a consistent reference to be used in the subsequent analysis of the data. The primary observer will ordinarily be the wild horse specialist from the Field Office.

Wyoming BLM will continue working with USGS-BRD to further develop and critique these techniques over the coming years. The data collected through our use of the methodology will provide the researchers with valuable data to aid in the population estimation of our wild horse populations Bureau-wide.

Attachment 2 describes the census procedures to be followed during all census operations.

**Inter-Field Office Inventory Coordination :**

Many of HMAs share a common boundary with a HMA(s) in the neighboring Field Office. To further refine our population estimates, inter-Field Office coordination of inventory operations is required. This coordination will reduce the potential to double-count or miss animals due to the movement of animals out of the HMA. All planning of inventories will schedule the flights to run consecutively, to the extent possible, so that horses that routinely travel between neighboring HMAs have the highest probability to be counted and to assure inventory accuracy.

**Conclusion :**

We look forward to working with our Field Offices, our partners at USGS-BRD, and CSU to further refine and improve these census techniques. Our continued cooperation and coordination will only improve the management of Wyoming's HMAs and our relations with our interested Publics.

If you have any questions, please contact Alan Shepherd, WH&B Program Lead, at (307) 775-6097.

/s/ Alan L. Kesterke

2 – Attachments

1 – [3 year Gather Cycle](#) (1 p.)

2 – [Census Procedures](#) (3 pp.)