

# RESOURCE NOTES

NO. 32

DATE 07/31/00

## ***Development and Assessment of Tools That Managers Could use to Monitor Wild Horse Populations***

*By: Francis J. Singer and Ronald Osborne  
Midcontinent Ecological Science Center, US Geological Survey*

***The tenth in a series of 13, Session 3***

### **Background**

Management will be more effective with modern, defensible, rapid, easy to use techniques for the counting, demographic analysis, and removal analysis of wild horse populations. The Midcontinent Ecological Science Center is committed to assisting in development of such tools for managers. We have reviewed a selection of techniques which could be developed and applied to important information needs relative to wild horses. Several of these techniques have been used in the Pryor Mountain and Book Cliffs wild horse herds by the Bureau of Land Management and the

Midcontinent Ecological Science Center, US Geological Survey.

### **Discussion**

Attempts were made at complete identification and enumeration of both herds through two different techniques. First, a unique marking system was developed, based on visual markings, that is computer compatible. This system is rapid, inexpensive, easy to use and requires only a PC computer and a data entry program such as QPRO, EXCEL, ACCESS, or DBASE. It is probably useful only for herds with excellent access and easy to observe animals. Second, a computerized photo-ID system (WHIMS) is being developed for greater accuracy in identification of animals. It is also only practical for use in herds of <200 animals, that are accessible and easy to photograph. The WHIMS system would be very useful for contraceptive application where individual recognition is critical.

### **Conclusion**

Many populations do not meet the criteria for a complete census of the animals, and an aerial technique is required. The technique

should meet the criteria of defensible, tested, and accurate, yet be relatively easy to use and not require extensive capture or handling of animals. Four likely candidates are: (1) mark-resight using some individually recognizable animals (this proved to be biased in the Pryor Mountains), (2) mark resight of entire herd based on photos, recognition during a pre-survey prior to the survey (this was used in one herd and shows promise), (3) the Idaho sightability model - tested and used extensively on elk in many areas of the western US, and (4) population reconstruction models. Several population models are also available that could easily be applied to wild horse herds, including several that are based on marked animals in the herd (White, G. C. 1996) or in herds with no marked animals (Wild Horse Population Model-University of Nevada, POPII).

### **Source**

White, G. C. 1996. NORE-MARK: population estimation from mark-resighting surveys. Wildlife Society Bulletin. 24:50-52.

WILD HORSE AND  
BURRO PROGRAM

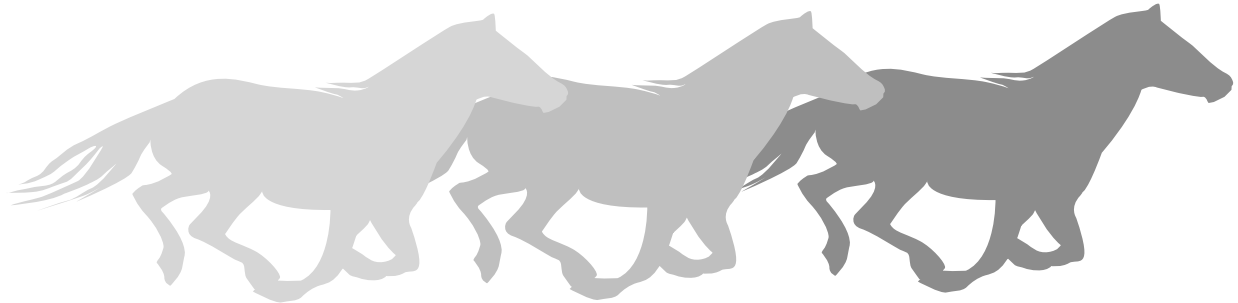


---

**Contact**  
Francis Singer, PhD.  
Biological Resources Division  
USGS Midcontinent  
Ecological Science Center,  
USGS, and Natural

Resource Ecology Lab  
Colorado State University  
4512 McMurray Avenue  
Fort Collins, Colorado,  
80523-1499  
phone 970-491-7056

fax 970-491-1965  
email:  
francis@nrel.colostate.edu.





RESOURCE NOTES are intended to be early announcements of technical and informational topics for Bureau of Land Management personnel and some of their customers. Information in this RESOURCE NOTE is based on the opinion and experience of the author and has not been peer-reviewed. Conclusions and opinions expressed herein do not necessarily represent those of BLM. Use of trade names does not imply U.S. Government endorsement of commercial products.

If you have received a copy of or found out about RESOURCE NOTES in an indirect way and would like to be included in future mailings, please send the following:

NAME, TITLE, MAILING ADDRESS and a list of the two or three subject areas that you are most interested in or that most directly relate to your job. Send this information to Phil Dittberner, BLM, RS-140, P.O. Box 25047, Denver, CO. 80225-0047 or phil\_dittberner@blm.gov or FAX 303-236-3508.

If you would like to prepare a RESOURCE NOTE for distribution, or you have an idea and author in mind for a good RESOURCE NOTE, please contact Phil Dittberner at 303-236-1833, FAX 303-236-3508 or phil\_dittberner@blm.gov with the topic and the name of writer, including an address, phone number, and e-mail address.

Thank you for your interest in RESOURCE NOTES.

 National Science & Technology Center   
*Bureau of Land Management*