

RESOURCE NOTES

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Wild Horse and Burro Population Viability

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The first in a series of 13 Resource Notes based on transactions from the Wild Horse and Burro Population Viability Forum, a Bureau of Land Management Sponsored Event, April 21, 1999, Fort Collins, Colorado

Background

The intent of the Forum was to provide a unique opportunity for useful discussion and strategy development on important conceptual and practical topics pertaining to population viability. Our approach included thought-provoking, science-based presentations, followed by in-depth question and answer sessions between scientific researchers, Bureau of Land Management Horse Program specialists and managers, Advisory Board members, and interested members of the public. Program organization and facilitation was handled by Linda Coates-Markle, Montana/Dakotas State Program Specialist. This Resource Note is the first in a series of thirteen Notes to summarize the issues of the Forum. It serves as an index guide for Notes in the series.

Goals and Focus for the Forum

Session 1 (Resource Notes 24-26): Identify and define the equine resource. Are there unique genetic resources, and/or smaller populations, in need of genetic conservation efforts or are we dealing primarily with larger metapopulations where genetic conservation is not a critical issue? Draw inference from wild equids of Africa and Asia. In other words, comparisons to other wild equid populations may help us to define and further understand critical inbreeding and/or density dependent issues.

Resource Note #24 - Conservation Issues for Wild Zebras, Asses, and Horses in Africa and Asia- Dr. Patricia Moehlman, IUCN/SSC Equid Specialist Group.

Resource Note #25 - Deciding Which Feral Horse Populations Qualify as Genetic Resources - Dr. Phil Sponenberg, Virginia-Maryland Regional College of Veterinary Medicine.

Resource Note #26 - Density Dependence in Population Dynamics of Feral Horses - Dr. Stephen Jenkins, University of Nevada, Reno.

Session 2 (Resource Notes 27-29): Clarify genetic terms and issues such as Effective Genetic Population (N_e) size and Minimum Viable Population size. What is meant

by genetic diversity or heterozygosity and how does it relate to levels of inbreeding within a population? These are all terms used by researchers and interested public requesting information about BLM herds, and it is important that we both understand these concepts and their applicability to populations and management decisions.

Resource Note #27 - Genetic Variation in Horse Populations - Dr. Gus Cothran, University of Kentucky.

Resource Note #28 - Genetic Management of Small Populations: The Special Case of Feral Horses - Dr. Oliver Ryder, University of California, San Diego.

Resource Note #29 - Genetic Effective Population Size in the Pryor Mountain Wild Horse Herd - Dr. Francis Singer and Linda Zeigenfuss, Biological Resources Division, USGS.

Session 3 (Resource Notes 30-32): Define Population Viability Analysis (PVA) and identify possible benefits and limitations to modeling efforts. What types of demographic, genetic and/or ecological data are needed for these models? Compare and contrast different methods of population monitoring which are used to provide the necessary data to estimate viability.

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Resource Note #30 - Population Viability Analysis - General Principles and Applications - Drs. Barry Noon, Fred Sampson and Nels Johnson, Colorado State University.

Resource Note #31 - Methods to Collect Required Data to Develop Rigorous PVA Models - Dr. Gary White, Colorado State University.

Resource Note #32 - Development and Assessment of Tools that Managers Could Use to Monitor Wild Horse Populations - Drs. Francis Singer and Ron Osborne, Biological Resources Division, USGS.

Session 4 (Resource Notes 33-35): Finally, use PVA to evaluate

real-life scenarios involving wild horse populations. What are the consequences of different management alternatives? Compare and contrast the complexities of herd management, using both removals and immunocontraception, for two very different populations. Demonstrate the potential for enhancing the adaptive decision-making process through the use of PVA.

Resource Note #33 - Viability of Feral Horse Populations on Atlantic Coastal Barrier Islands: Implications for Management - Dr. Brian Underwood, USGS Patuxent Wildlife Research Center.

Resource Note #34 - Effects of Contraception and Removal Treatments on Pryor Mountain Wild Horse Population Demographics and

Genetics - Dr. John Gross, Natural Resource Ecology Laboratory, Colorado State University.

Resource Note #35 - Summary Recommendations of the Wild Horse and Burro Population Viability Forum - Linda Coates-Markle, Montana/Dakotas Wild Horse and Burro Specialist, Bureau of Land Management.

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