SHOULD THE SUFFIELD WILD HORSES REMAIN WILD?

Why the Impending Round-Up Must Be Stopped.

A scientific challenge to the Department of National Defence's decision to remove the wild horses from Canadian Forces Base Suffield.

Zoocheck Canada
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It seems decisions were made in a vacuum without the necessary hard, sound scientific data background.
• **Ronald R. Keiper, PhD**

The entire section on immunocontraception...lacks scientific validity, ignores an immense body of published literature and in my estimation, is a poor attempt to discredit an established scientific discipline....If the advocates of Suffield horse removals feel strongly about getting rid of the horses they should be honest about their feelings and reasons, instead of trying to fabricate rather pathetic arguments against an established scientific discipline about which they know little and with which they have no experience.
• **Jay F. Kirkpatrick, PhD**

In my view, the biological justification for the removal of all horses from CFB Suffield is extremely weak. The report contains no evidence at all that horses are reducing biodiversity or harming endangered species on Suffield. What it contains is rhetorical sleight-of-hand...
• **Allen T. Rutberg, PhD**

Make no mistake about it, if the Suffield horses are removed, many and perhaps the majority of them will go to slaughter....
• **Anna E. Charlton, JD**

...the report weaves a biased perception that horses are negatively affecting the range. There is not sufficient data to support this bias. The reader feels as though the consultants were hired to "show that horses were having a negative impact on the range" by drawing conclusions based on subjective observations and feelings, not on objective scientific data.
• **Mary Ann C. Simonds, MA**

...I had a difficult time finding sound biological arguments to support the removal of all the horses. Given the prominence of numerous Canadian university scientists, many with experience with large grazing mammals, I was shocked that none were members of the Citizens' Advisory Committee. As a result of this omission and the coincident lack of professional scientific input, it is impossible to conclude anything about ecological impacts.
• **Joel Berger, PhD**

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INTRODUCTION

Purpose

The purpose of this report is to present an objective and expert analysis of the decision to round up and dispose of all wild horses currently living on Canadian Forces Base (CFB) Suffield near Medicine Hat, Alberta as rationalized by the Department of National Defence (DND) on the basis of the *Final Report of the Citizens' Advisory Committee CFB Suffield Feral Horses* (26 June, 1993) and the *Range Assessment of the Northeast Quadrant Canadian Forces Base Suffield* (Weerstra & Wilkinson: August, 1993).

Methodology

In preparing the current report, a number of recognized experts from diverse disciplines relevant to wildlife conservation or wild horse behaviour, ecology and management were contacted between August and December 1993 and asked to comment on the above.

No contributor was selected or rejected from consideration on the basis of his or her known support or opposition to wild horse removal. This holds true for Barry Kent MacKay, a director of Zoocheck Canada, and Dawn Dickinson, a representative of the Society of Grasslands Naturalists, who contributed to this report as recognized experts in their fields.

Each contributor received the *Final Report of the Citizens' Advisory Committee CFB Suffield Feral Horses* and the *Range Assessment of the Northeast Quadrant Canadian Forces Base Suffield*, and in some cases additional background documentation, by mail or courier. Ten responses were received by Zoocheck Canada in time for inclusion in this report. Dr. Bill Clark's remarks were taken from an unsolicited letter sent by Dr. Clark directly to CFB Base Commander Colonel K.T. Eddy, and reproduced here with the permission of the author.

The submissions have been edited only to the extent of excluding personal information or for the sake of clarity.

Results

Each contributor to the current report concluded that the decision to remove the entire Suffield wild horse population lacked scientific merit. A compilation of the authors' arguments in favour of this position is contained in the Zoocheck Canada position statement on pp. 5 & 6.

Synopsis of Events

In the spring of 1992, the DND and Environment Canada signed a Memorandum of Understanding (MOU) to set aside 420 square kilometres of CFB Suffield as a National Wildlife Area (NWA). The designated area supports a wide variety of wildlife species including pronghorn antelope, mule deer, ferruginous hawk, prairie falcon, burrowing owl and wild horses.

In 1991, before the MOU was signed, two committees which provide advice to the CFB Suffield Base Commander on environmental issues had voiced concern about the impact wild horses were having on the range. In February 1992, the DND announced plans to cull approximately 500 of the 700 wild horses thought to exist

on the base. The general public, including a number of animal protection organizations, expressed concern over the proposed cull.

In July 1992, the Canadian Wildlife Service (CWS) conducted a 2- day inspection of the Suffield range. In its report, *Site Inspection of Feral Horse Ranges Canadian Forces Base Suffield* (7-8 July 1992), the CWS recommended reducing the wild horse population to 100 animals.

A peer review of the CWS document, commissioned by the DND, was conducted by Dr. George Mitchell of Spencer Environmental Management Services Ltd. Dr. Mitchell's analysis entitled *Peer Review of CWS Document "Site Inspection of Feral Horse Ranges Canadian Forces Base Suffield, 7-8 July 1992"* (October 1992) found no evidence to support the CWS recommendation of 100 animals. Instead, Mitchell suggested that the wild horses be permitted to remain in the area, but that the herd be stabilized by a cull equivalent to the annual increase estimated to be 150-200 animals until the data needed to determine a long term population goal could be determined.

In September 1992, CFB Suffield agreed to carry out a formal environmental assessment according to *Environmental Assessment And Review Process Guidelines Order (SOR/84-467)* and announced a moratorium on the cull until the assessment was completed.

In December 1992, CFB Suffield Base Commander Colonel Keith Eddy invited a number of private citizens and representatives from organizations to form a Citizens' Advisory Committee (CAC) to examine the wild horse issue and to propose recommendations to deal with the alleged problems of range damage.

The committee was heavily criticized as being disproportionately comprised of individuals and groups whose interests came into conflict with those of the wild horses. In addition, none of the committee members had expertise in the behaviour, ecology or management of wild horses.

The CAC was also criticized for excluding the organizations that first brought the wild horse issue to public attention; for operating in relative secrecy by refusing public and media access to meetings; and for denying requests to hold public hearings.

In the spring of 1993, CFB Suffield retained B.G. Weerstra and K.E. Wilkinson of Biota Consultants to conduct an assessment of the range of the northeast quadrant of the base, one of the areas used by the wild horses. Field sampling for the assessment took place from June 8 until July 15, 1993. Their report entitled *Range Assessment of the Northeast Quadrant Canadian Forces Base Suffield* concluded that the wild horses were having a negative impact on the range.

The choice of Biota consultants was heavily criticized as a conflict of interest. Mr. Weerstra was a member of the CAC. He completed his range assessment, concluding that the Suffield wild horses were damaging the range, weeks after supporting the CAC recommendation to remove them.

On June 26, 1993, the CAC presented a Majority Report to Colonel Eddy which called for the humane removal of all wild horses from CFB Suffield. A Minority Report, written by the committee member representing the Grasslands Naturalists,

recommended further study and the stabilization of the wild horse herd at 600 head. The criticisms contained in the Minority Report were generally based on the lack of scientific data available to the committee and the inappropriate use of agricultural parameters to assess "wild" range conditions.

The CAC Majority Report was heavily criticized by outside individuals and organizations as being biased, misleading and based on subjective assumptions rather than sound scientific data.

On August 19, 1993, a public information meeting hosted by the DND was held in Medicine Hat, Alberta. More than 400 people were in attendance. Since Colonel Eddy stated in his opening remarks that he had already accepted the recommendation of the CAC to remove all of the wild horses from CFB Suffield and would be forwarding this recommendation to his superiors, the meeting was widely criticized as being a DND public relations exercise.

On December 7, 1993, the Department of National Defence issued a press statement announcing that a wild horse round-up would proceed once a contractor and adopt-a-horse program was put into effect.

* * * * *

Zoocheck Canada's Position Statement

Proponents of the plan to remove the entire wild horse population from Canadian Forces Base Suffield have claimed that failure to do so will result in the destruction of the Middle Sandhills ecosystem.

Predictions about the ruination of the winter range of the mule and whitetail deer; desertification of the Middle Sandhills; and the decline of endangered species simply do not stand up to scrutiny. There is no legitimate scientific rationale supporting the complete removal of the Suffield wild horse population. In fact, the loss of this large, mammalian grazer from the Middle Sandhills ecosystem might be the most destructive action for the environment that the Department of National Defence could take.

The Environmental Assessment Review Process Guidelines Order (SOR/84-467), under which the DND conducted its evaluation of the wild horse issue, clearly states that the potential environmental effects of a proposal must be fully considered, and that a public review must take place if there is significant public concern about a proposal. Zoocheck Canada does not believe that either obligation has been met.

Despite substantial public interest about the future of the Suffield wild horses from individuals and organizations throughout Canada, at no time did the Minister of National Defence order a public review as required in such situations by the EARP Guideline Order. Zoocheck Canada submits that a comprehensive public consultation process with full disclosure and legitimate consideration of public concerns is warranted.

After consultation with recognized authorities in the fields of range science and wild equid biology, behaviour, ecology and management, Zoocheck Canada has identified the following principle areas of concern regarding the Department of National Defence's decision to remove the entire wild horse population from CFB Suffield:

- the absence of objective, rigorous scientific data supporting the claim that the wild horses are currently causing or reasonably expected in the future to cause sufficient range or wildlife habitat degradation in the area to warrant their complete or majority removal

- the gross misunderstanding and misrepresentation of the merits and use of immunocontraception as an effective means of population control

- the absence of any scientific examination of the potential benefits that may be derived by the presence of wild equids on the Suffield range (such as seed dispersal; opening winter water holes and pathways for other animals; and plant growth stimulation to name a few) and the potential negative effect on biodiversity that may be incurred by their complete removal

- the dismissal of scientific opinion (including that of the United States National Academy of Science Subcommittee on Wild Horses) that wild horses are a native species (not exotic or feral) in North America, evolving over millennia, with numerous extirpations and returns, continuing today as a "re"introduced native species; that isolated populations of wild equids may have survived extinction in

North America; that the Suffield wild horses may not be entirely descended from domestic livestock; that the wild horses of CFB Suffield fill a legitimate ecological niche; and that important genetic traits may be lost if the horses are removed

- the appalling track record of wild horse removal programs in jurisdictions where this management strategy is extensively practised (namely those managed by the United States Bureau of Land Management) which attests to the inhumane nature of wild horse round-ups and the high probability of many, if not a majority, of these animals eventually ending up in slaughterhouses

- the existence of many tested, successful, humane alternatives for managing free-roaming horse populations such as the removal of branded horses and trespass grazers; the use of immunocontraception; and physical infrastructure strategies such as exclusionary fencing and the establishment of alternative watering sites.

As articulated time and time again by the expert contributors in this report, there was an appalling lack of scientific merit in the decision to remove the entire, or even the majority, of the Suffield wild horse population.

Responsibility for this state of affairs rests squarely with the CFB Suffield Base Commander, the Minister of National Defence and the Prime Minister of Canada.

We submit that this report clearly demonstrates the need for an unbiased, scientifically-valid review. Considering the concerns that many individuals and organizations have expressed about this matter, and considering the lack of scientific data, the availability of effective alternatives, the inhumane nature of wild horse round-ups and the high risk of captured wild horses eventually being slaughtered, we make the following recommendation:

That the Department of National Defence declare a moratorium on the removal of the Suffield wild horses and conduct a legitimate environmental assessment of the issue, including a public consultation process with full disclosure and legitimate consideration of public concerns .

* * * * *

CONTRIBUTORS' SUBMISSIONS

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Joel Berger is an associate professor of wildlife ecology at the University of Nevada in Reno and a research associate of the Smithsonian Institution's Conservation and Research Center.

For five years, Berger studied the wild horses of the great Basin Desert of Nevada in an area protected from human encroachment and cattle grazing. Living in tents and conducting fieldwork entirely on foot, Berger and his colleagues observed a population through all seasons of the year. Berger's book Wild Horses of the Great Basin, Social Competition and Population Size, *published in 1986 by The University of Chicago Press, is the first thorough study of the biology and ecology of American wild horses, a book with insights for all biologists and important implications and recommendations for conservationists and range managers.*

Intended both for scientists and general readers, Wild Horses of the Great Basin *includes discussions of the history and controversies surrounding horses as well as background on their behavioural ecology and natural history. Berger concludes by considering the policy issues and conservation dilemmas centered on the wild horses, and he outlines a plan for preserving some wild horses as well as some areas of the unique Great Basin ecosystem.*

Berger is now conducting field research in Namibia to determine whether dehorning rhinos makes biological sense as a conservation strategy.

* * * * *

Let me begin by stating that, although I am a Research Fellow for the Smithsonian, the views I present here are my own. Having lived and worked in Canada, in part on an officially-approved research project with the British Columbian government, and having spent a good deal of time in Alberta, I have a great fondness for the Canadian people and landscape. I am also familiar with feral horses having studied them for more than 5 years and having published a 1986 University of Chicago Press book, *Wild Horses of the Great Basin*. I want to add that I am not an animal rights advocate; in my book I attempted balance but suggested removing about 90% of America's feral horses on public lands. But, that is far from the issue here. I am deeply concerned at the brevity given by the Citizens' Advisory Committee to scientific and conservation issues concerning the feral horses on the base at Suffield. It seems that anything as critical as the removal of an entire population requires more than a cursory review of literature. My concerns lie in three principal areas.

First, I had a difficult time finding sound biological arguments to support the removal of all the horses. Given the prominence of numerous Canadian university scientists, many with experience with large grazing mammals, I was shocked that none were members of the Citizens' Advisory Committee. As a result of this omission and the coincident lack of professional scientific input, it is impossible to conclude anything about ecological impacts. I want to be clear that I am not claiming that impacts are lacking. But, based on the evidence presented, it seems

that the more prudent action would be to learn what the magnitude of the impacts are prior to recommending action. Since horses have already been there for at least 50 years, I cannot understand the claim that damage will be immediate and irreparable unless horses are removed immediately. The age old adage, that scientists simply wish to study situations more, really is a weak sister to the more general issue of determining the actual magnitude of effects.

My second point concerns the assessment and projection of changes in biodiversity. In shortgrass prairie ecosystems some level of grazing tends to increase the biodiversity of higher vertebrates. This is clear from work done by Dan Uresk and his colleagues on shortgrass prairies in South Dakota. Unfortunately this topic was given little attention by the Committee, a topic unlikely to have been missed had the committee consisted of some university ecologists.

Finally, I wish to recognize that whether the ultimate decision is to limit or remove the population it should not be based on claims of biological impact in the absence of appropriate supporting evidence. One of the courses I teach involves the role of science in conservation and it would seem that the Suffield example is a case in point but unfortunately one in the wrong direction. The existence of feral horses will always be controversial and will not be resolved by science alone. But scientific evidence should be a critical part in the formulation of any sound management plan.

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SHOULD THE SUFFIELD WILD HORSES REMAIN WILD?

Anna E. Charlton, JD
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Anna E. Charlton is Associate Director of the Rutgers Animal Rights Law Center. Ms. Charlton took her BA from the University of Virginia in 1981, and her JD degree from the University of Pennsylvania Law School in 1989. She served as Executive Editor of the University of Pennsylvania Law Review.

After graduation, she was associated with the law firm of Simpson, Thacher & Bartlett in New York City. She became Associate Director of the Center in the Spring of 1991. She returned to the Center in 1992 after taking a one-year leave of absence to serve as law clerk to Judge Leonard Garth, United States Court of Appeals for the Third Circuit.

Ms. Charlton has served as Vice-Chair of the Animal Protection Committee of the American Bar Association, and Editor of the Animal Law Reporter. *She has been involved in a number of legal actions aimed at protecting America's wild horses.*

* * * * *

I have reviewed the materials...concerning the CFB Suffield wild horses....I have studied at great length the programs instituted by the United States Bureau of Land Management [BLM] to manage wild horses on federal public lands in the US. These studies have formed the basis for challenges to the administration of public lands before the US Interior Board of Land Appeals and in the federal courts.

I am, therefore, extremely distressed to see many of the inadequacies of the US federal programs about to be repeated in Canada. The US program, which has been operating since the passage of the Wild and Free-Roaming Horses and Burros Act in 1971 and its amending legislation, and the regulations promulgated pursuant to these statutes, has been the subject of intense criticism. Indeed, the US General Accounting Office, which operates as a "watchdog" over Congress, has published numerous reports that have criticized the basis for and execution of BLM management decisions. For example, the August, 1990 report entitled *Improvements Needed in Federal Wild Horse Program* contains such sections as:

"Wild Horse Removals Are Not Linked to Rangeland Conditions"

"Mass Disposal Led to Inhumane Treatment and Commercial Exploitation [slaughter]"

"BLM Lacks Adequate Data to Make Informed Wild Horse Removal Decisions"

"Basis for BLM's Wild Horse Removals Is Inappropriate"

"Wild Horse Removals Have Not Significantly Improved Range Conditions"

"Recent Wild Horse Removal Levels Have Exceeded Disposal Capabilities".

From all indications, it would seem likely that the Canadian government will be able to echo such a report if the Suffield wild horse removal goes ahead.

One of the primary problems with the BLM program is that it is based on a management goal that fits a livestock grazing model rather than a wild life model. Wild horse numbers are factored into "multiple use decisions" for livestock grazing allotments, and "appropriate management levels" are set for wild horse Herd Management Areas. It is clear, however, that livestock represent an economic interest that is paramount. Horses do, indeed, detract from the profitability of cattle and sheep grazing. Hence, the preference for the livestock grazing model. While different facts are at issue in the Suffield situation, the problem of an inappropriate grazing model is evidenced in the Suffield reports.

The last wild horse herds in the United States are concentrated in Nevada, where there are 48 million acres of public land. Approximately 530,000 cattle are competing for the scant forage on this land, which has suffered during the long drought in the area. Some 225,000 sheep also graze on the same sparse ranges. While commercial interests maintain over three quarters of a million grazing animals--destined to be slaughtered for food--on the public land in Nevada, the BLM has decided that a few thousand wild horses are the real "problem" and must be removed. The number of wild horses is strongly contested. BLM has maintained that there are approximately 34,000; an independent census commissioned by the Public Lands Resource Council whom I have represented, found only 8,000 horses.

Despite the obvious conclusion that screams from these figures, the BLM maintains that it is managing the situation to achieve and maintain a "thriving natural ecological balance" as required by statute. The inherent problem with this approach was noted by D.M. Dickinson, Committee Representative for the Society of Grassland Naturalists, in the *Minority Report on the CFB Suffield Feral Horses*. The report astutely notes:

> [E]valuation of grazing impacts also differs according to whether the objective is to achieve maximum weight gain of livestock in a pasture on a sustained yield basis, or to manage an area as a park or a reserve for wildlife. Grasslands that are considered overgrazed in the first instance may not be classed as such in the second (Houston 1971; Caughley 1976; Sinclair 1977). Almost all the remaining native grasslands in the Canadian prairies are managed to provide grazing for livestock. Many, but not all, wild life values can be accommodated under good range management practices on such grasslands. But since the grasslands and sandhills in question are not agricultural lands and are not grazed by cattle, wild life values should be paramount. The question then is whether by those criteria the horses are causing damage.

Although the free roaming horses were recently introduced to the Suffield area, there is considerable fossil evidence that ancestors of these horses roamed these areas, and indeed, these modern horses have largely replaced the wild ungulates that historically grazed the area. As the minority report notes, there is no evidence that horses have exceeded historic levels of grazing by bison, elk and grasshoppers.

It is in this context that one must evaluate the data and evidence (and I must note and emphasize that the data are extremely thin and speculative and have no baseline comparisons through which to evaluate the findings). I would conclude, agreeing with the minority report, that there has been insufficient analysis of the range degradation allegedly caused by the horses, that the horses are not shown to have exceeded the historical grazing level of bison, elk or grasshoppers (which was clearly severe at times), and there has been no analysis and evaluation of horse grazing impacting on other wildlife in the area, which have apparently also increased significantly in recent years.

The dismissive treatment ("analysis" is too complimentary a term) of the proposed alternatives is very reminiscent of BLM's attitudes. In preparing required environmental assessments, BLM is required to consider alternatives and present a rationale for choosing their management option over other possibilities. Repeatedly, when I have studied wild horse removal plans, there is a cursory section that examines only the "No Action Alternative." This consists of a parade of horribles if nothing is to be done. When I have appealed these decisions, BLM has in some instances adopted my suggestion of other alternatives which resulted in wild horses remaining free on the range, as "not unreasonable." BLM analyzes all data--to the extent that it collects data at all, or gives the data thorough analysis-- to favour removal of horses. If "management" is truly required, other options than removal must be considered. Horses removed from public lands begin a terrifying journey that takes them from the round-up to the slaughterhouse, even in instances in which safeguards for their "humane" treatment and preservation are built into the disposal options.

Even the BLM, however, has given more careful consideration than presented in the Suffield materials to the use of immunocontraception as a means of population control when herds of horses are found in areas where they are competing with cattle interests, and there are no natural predators (the US Forest Service having shot or poisoned most predators to protect cattle). Public pressure has forced BLM to work with Dr. Kirkpatrick and his team to study the future use of immuno-contraception. The whole issue of immunocontraception is a thorny one, and I have significant reservations on humane and ethical grounds about its use. I am also concerned in the US situation that it will be used to "manage" wild horse herds out of existence by creating genetically insupportable herds that will die out to make room for the ubiquitous cattle and sheep.

I have consulted with Dr. Kirkpatrick on this issue and have followed his research for a long time. I believe him to be a man of sound judgment in this area, although we have sharp differences concerning other animal issues. We must consider the efficacy of immunocontraception as a very flawed answer to the seemingly unassailable protection given to commercial and military interests. (As you probably know, some of the biggest wild horse removals in Nevada are from the Nellis air force range, where there is significant testing of armaments and bombing.) BLM is studying the methods, however, partly because it is more palatable to the public than the slaughter of wild horses.

Make no mistake about it, if the Suffield horses are removed, many and perhaps the majority of them will go to slaughter. The US adoption program has some safeguards built in, which the Suffield report considers in a cursory manner, but thousands of BLM horses end up in the slaughterhouse. Many of them, as you know, are indeed shipped to Canadian slaughterhouses. In the United States, an

adopter signs a care and maintenance agreement. If after one year, the adopter has provided adequate care to the wild horse, title passes from the United States to the adopter. The horse ceases to be considered a wild horse and loses all federal statutory protection. You will not be surprised to know that many thousands are then trucked to slaughter, and this has not been interpreted to be illegal.

Without question, mass disposal of wild horses just converts into a slaughter operation. The General Accounting Office Report to which I referred earlier states:

> Fee-Waiver Adoptions Led to Inhumane
> Treatment and Commercial Exploitation
>
> By 1985, BLM was removing thousands more wild horses yearly from the range than its adoption program could absorb. Faced with the escalating costs of maintaining these excess horses in holding facilities, the agency resorted to placing large numbers with individuals and Native American tribes under its so-called fee-waiver program. From 1984 through September 1988, BLM placed about 20,000 wild horses it deemed unadaptable with 79 individuals and 4 Native American tribes each of whom received from 16 to 2,456 wild horses. We found that hundreds of these horses died of starvation and dehydration during the 1 year probation period and that many adopters, primarily ranchers and farmers in the Midwest and Great Plains states, sold thousands more to slaughter after obtaining title from BLM.
>
> BLM terminated the program in September 1988 after negative publicity and pressure from Congress. It has not, however, rescinded the regulations authorizing such adoptions.

I am sure that you have already analyzed the ironic position of the military that professes to reject all options other than complete removal of the herds from Suffield in order to ensure the humane treatment of the horses. It is bizarre that a person who is intent on implementing a program that would send these animals to slaughter voices concern that immunocontraception may pose health risks to mares or that remote darting would be stressful to an animal. If he would like to see stress to an animal let him watch my videotapes of helicopter captures, transportation, and holding in corrals at the Palomino Valley wild horse adoption center in Nevada. The whole process is so terrifying to the horses that BLM has finally been forced to admit--but then it is hard to refute the evidence of corpses on the floor when the doors of the transporting trucks are opened--that wild horses die of stress-induced salmonella when they are transported.

It is similarly bizarre that the military, which uses the site for military operations that cause frequent massive fires, would be concerned about range conditions. Should we be surprised that cattle ranchers and the military react in similar ways to anything that is a threat or an inconvenience: "Just kill them."

I would be pleased to offer the lessons we have learned from dealing with BLM treatment of wild horses in any area in which such information may be of assistance.

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SHOULD THE SUFFIELD WILD HORSES REMAIN WILD?

Bill Clark, PhD
Wildlife Biologist
Nature Reserves Authority, Israel
International Projects Director
Friends of Animals

Dr. Bill Clark is an internationally renowned activist in the field of wildlife conservation. He currently serves as staff wildlife biologist for Israel's Nature Reserves Authority and is responsible for the rehabilitation and release into the wild of formally extirpated animal species, including the Asian Wild Ass.

A member of the International Union for the Conservation of Nature's Equid Specialist Group, Dr. Clark also serves as International Projects Director for Friends of Animals. He received his PhD in eco-ethology from Columbia Pacific University in California.

* * * * *

The following is a submission made by Dr. Clark directly to Colonel Eddy, Base Commander, Canadian Forces Base Suffield, and reproduced here with the permission of Dr. Clark.

I write...concerning the feral horses [on Canadian Forces Base Suffield]. I write...as a private individual to urge caution, as I have detected a number of inconsistencies and biases among these documents.

Of particular concern are the "points" which allegedly present "a more balanced perspective and correct some of the more obvious public misconceptions"--found in the "Backgrounder" [from the Department of National Defence] document dated 7 April 1993. In particular:

"The feral horses are not mustangs...." What difference would this make? Are mustangs sanctified and other feral horses not? Frankly, there is doubt that any pure "mustangs" survive. In a very narrow sense, a mustang is a direct descendent of the 15 horses lost by the Coronado expedition in 1541. Over the centuries, it is likely that this stock has interbred with many other horses. In a broader sense, "mustang" is simply a regional term describing feral horses. It is a corruption of the Spanish "mesteno" which means "ownerless". Elsewhere in America, they are known as "broncos", "broomtails", etc. Yet, for some reason, and one suspects it may be political, the Citizens' Advisory Committee chose an attempt to disassociate [the] base's feral horses from the fabled "mustangs" as their very first point to provide a "more balanced perspective".

Coincidentally, that same point charges the feral horses with "trespass" which is a legal term meaning, among other things "wrongful entry". Can a horse distinguish between right and wrong? In an attempt to denigrate the feral horses, your Citizens' Advisory Committee has brought the issue into a realm of rights and responsibilities--which is, of course, precisely where the animal rights people want it.

And on yet another matter related to this point--why were not animal rights societies permitted to participate in the Citizens' Advisory Committee? Are they not Canadian citizens also? Are they not concerned with this issue at a citizens level?

Singular exclusion of these people who are perhaps the horses' most devoted champions will certainly provide ammunition to those intent upon criticizing the Department of National Defence as having "stacked the deck" against the horses from the outset....

The "Backgrounder" notes there are 173 indigenous species in the National Wildlife Area, 31 of which are of concern, threatened or endangered. Do the horses pose a negative impact on any of these 31? And if so, have alternative approaches--such as erected exclusion fences around rare plants--been considered? Such alternatives may be more in the interest of the rare species because it is unlikely that horses alone can cause them damage. Other herbivores may also be dining in the area.

I am familiar with the IUCN [International Union for the Conservation of Nature] position statement on the translocation of living organisms. But one should be cautious of IUCN as well, for there are many position statements issued by that organisation. And sometimes one finds contradictions. For example, IUCN's Equid Specialist Group has recently issued a conservation strategy for the equids of the world, and this strategy is not unfavourable toward feral horses. Indeed, the strategy suggests that in some cases, feral horses may actually be of benefit!

The chairman of the IUCN Equid Specialist Group is Dr. Patrick Duncan, who is perhaps best known for his studies of feral horses in the Camargue, in southern France. Coincidentally, I am also a member of the IUCN Equid Specialist Group, although my technical experience is oriented more toward truly wild equids, particularly Asian onagers.

I should like to note, however, that the study of the equid's evolutionary history demonstrates the genus as having passed many millennia on the North American continent. The fossil record demonstrates wild equids on North America from at least 700,000 years ago until about 10,000 years ago (and some scholars argue until about 3,000 years ago). Thus, for at least 690,000 of the past 700,000 years [there have been] horses, or their ancestors, on North America. So it is difficult to claim the genus is precisely a foreign element.

American prairies co-evolved, for a very long time, with equids. Indeed, the success of feral equids today is one testimony to this compatibility. And, it is worth noting at this point, there are some who suggest that the American wild equids did not actually vanish into extinction. True, there is no substantial record of American horses between 100 BC and 1541 AD. But this must not be taken as hard evidence that they did not exist. One school conjectures that perhaps isolated populations of horses did survive, but their uniqueness vanished when they started interbreeding with the feral horses which escaped Coronado and others.

Another point notes that the US Wild Free-Roaming Horse and Burro Act "only pertains to Federal Public Land designated for multi-purpose public use." It does not explain, however, that this type of land classification comprises the vast majority of lands of the US West. And don't be so certain that feral horses are "aggressively removed" from US equivalents of National Wildlife Areas. There are many US military installations, which serve also as good wildlife habitat, which also support feral horses. And even world famous US National Parks, such as Grand Canyon, continue to support feral equids.

Nevertheless, it is extraordinary how Canadians sometimes like to use US policies to justify what they want to do, and at other times criticise US policies to justify things they don't want to do!

Further, no matter what one's opinion is of US policy, the US Bureau of Land Management is hardly the model agency to select for conservation comparisons.

The final point claims "CFB Suffield is a military base, not a national park...." Does this not negate most of the preceding points which apply to national parks and similar areas? If you claim to be neither morally nor legally bound to be open to the public, are you morally or legally bound to follow the prescriptions of that "stacked deck" Citizens' Advisory Committee?

On a related matter I would like to point out that here in Israel--where military bases are very well used indeed--there has been a good and successful accommodation with nature conservation interests. Some of our Nature Reserves lie entirely within military bases, and there is public access to them. It is a matter of multiple-use management. Certainly, hikers are not permitted into areas where explosives might be lying about, but our use of explosives training is confined to specific sites--and certainly not to areas of ecological significance. If you would like more information about compatibility schemes I would be pleased to gather it for you.

In the peer review document prepared by Spencer Environmental Management Services Ltd. [*Peer Review of CWS Document "Site Inspection of Feral Horse Ranges Canadian Forces Base Suffield 7-8 July 1992"*] I detect a greater level of caution. Nevertheless, there is bias, and I count it as another "stacked deck". For example, on page 2-19 we find a listing of some of the negative aspects attributed to feral horses, from threats of malthusian overpopulations to the potential to destroy nesting and roosting habitats of rare avians. I doubt the validity of these criticisms and I suspect the authors do as well, for they have couched them in equivocal and qualifying terms such as "have the potential to..." and "can reduce the viability of...". As a soldier, I am certain you are aware the Canadian Army has "the potential to...." do unpleasant things--but such phrases hardly reflect reality or even probability.

But why is there no mention of the benefits brought by the equid to the natural habitat? For example:

Equids have relatively simple digestive systems, particularly when compared to the ruminant systems of the pronghorns, mule deer and white-tailed deer. The equine's digestion is much less efficient, and this means many seeds pass without digestion. And not only do they pass, but they are deposited with a nice supply of fertilizer! This enhances seed dispersal, which is a key function of biological diversity. Certainly horses eat plants, but they also help plants--and more so than many other herbivores.

In winter, the heavy horses can, and do, break ice on standing water, and thus make it available for drinking to many other mammals and birds.

Also in winter, horses can push through deep snows better than many other animals. They create paths in their habitat, and if you assign a few soldiers to scout these paths, I am sure tracks in the snow will confirm that many other less-strong species use these paths to move about--including those ruminants which the peer

review says "perhaps even now, horses will compete with these species for key wintering habitat." An argument can be made that the horses are improving the winter habitat for these species. I should also point out that numerous studies of foraging habitats in feral horses (grazers) confirm the dietary overlap with native wildlife (browsers) is minimal. There isn't much competition at all.

Equids have single, flat hooves, which often intrude less on the soil than the split and pointed hooves of the ruminants. Also, equids have both upper and lower incisors, which means they can bite grasses relatively cleanly (thus stimulating growth of the plant, much as mowing can stimulate growth of a lawn). The ruminants do not have this dentition, and grazers tend to tear the grasses more, disturbing root systems and suppressing growth. Horses and cows do not impose the same burdens or benefits on habitat.

Genetically, the ability of these horses to adapt to harsh winter conditions, and endure these selective pressures, is even today having a genetic influence which produces an increasingly hardier stock. Another genetic aspect involves the horses' behaviour, which very likely adopts the ancestral breeding regime, which in turn is demonstrated as being particularly effective in avoidance of inbreeding difficulties. The hardiness and the out-bred characteristics of this population might be an important genetic reservoir which some day could be of great interest to Canadian horse breeders.

There are many other arguments, pro and con. I have emphasized the "pro" side to a greater extent because I fear they have been totally, and perhaps deliberately, ignored.

Many people have a great admiration for equids, including feral horses. The feral horses in particular manifest a very powerful symbolism. I suspect this may be a reflection of society's growing anxiety at being divorced from "Nature". Most people live in towns and cities. But the feral horse has escaped the constraints of domestication and returned to its natural element.

This idea of "wildness" and distaste for the constraints of society is very ancient. Although I am not "religious" in the conventional sense of the term, I do acknowledge the merit and perceptiveness of scripture. And I would refer you to one passage, in Job (39: 5-8), about the equids I know best--the onagers--which are translated as "wild ass" in most versions:

> Who hath sent out the wild ass free? Or who hath loosed the bands of the wild ass? Whose house I have made the wilderness and the barren land his dwellings. He scorneth the multitude of the city, neither regardeth he the crying of the driver. The range of the mountains is his pasture, and he searcheth after every green thing.

The admiration for wild equids is very ancient and profound. One tampers with it at one's peril. I urge you to resolve this issue amicably, and in consultation with the full range of Canadian citizens concerned.

* * * * *

SHOULD THE SUFFIELD WILD HORSES REMAIN WILD?

Dawn Dickinson, BSc
Chair, Lands and Wildlife Committee
Society of Grasslands Naturalists

Dawn Dickinson graduated from the University of Alberta in 1976 with a first class honours BSc in zoology. She is presently working as a consultant biologist in Medicine Hat, Alberta, where she has been engaged in wild ungulate studies. She chairs the Lands and Wildlife Committee of the Society of Grasslands Naturalists, a group which encourages the study, conservation and protection of wildlife and wild lands in southeastern Alberta.

* * * * *

The following is a summary of Dawn Dickinson's Minority Report to the Citizens' Advisory Committee on the CFB Suffield Feral Horses.

In this century, the existence of wild (feral) horses on the present CFB Suffield lands has been documented at least since the 1920s, with some indication that they have been present since the turn of the century. Like all wild horses in North America, they are descended from domestic stock. The CFB Suffield horses have maintained themselves for nearly three quarters of a century without human intervention other than intermittent culling by local residents. They are the only herd of wild horses in the Canadian prairies. Because of trespass grazing practised by ranchers since 1941, there are reports of branded animals within the population. The number of these is unknown.

The horses have unrestricted access to about 780 square miles (2020 km^2) of the 1040 square miles (2690 km^2) of the Base including 86 square miles (223 km^2) of the Middle Sandhills National Wildlife Area (NWA). They have been observed throughout these lands, however, no research into the seasonal distribution of horses on the Base has ever been undertaken. No data were presented to the Committee to allow evaluation of the availability of water, forage and shelter, and the effects of military activities as possible constraints on such distribution. Most, but not all, of the permanent freshwater sources (springs and dugouts) are in the northeast quadrant of the Base; an area of about 288 square miles (746 km^2). All but eight of these springs and four of these dugouts are outside the NWA. Heavy grazing and trampling were observed by committee members at three of four springs in the NWA, and this is a cause of concern.

There has been some increase in sand dune activity in the NWA between 1985 and 1991 as evidenced by air photo comparison. Increase in sand dune activity in other regions has been correlated with periods of drought. The 1980s were a decade of generally below average precipitations and in particular 1987-1990 were years of severe drought according to the fifty years of records kept in the Base. In 1987 a fire burned throughout the northeast portion of the NWA sandhills.

From the available evidence, drought and fire appear to have been the major causes of some destabilisation of the sandhills--although undoubtedly horses have had an additional impact in some areas. From the ecological perspective of maintaining a dynamic range of habitat diversity for native plants and animals, active dunes are an essential component of a sandhill landscape.

To answer the question of whether the obvious signs of grazing and trampling by horses in some areas mean damage to the biological diversity and functioning of several ecosystems requires consideration first, of the percentage of the total landscape/ecosystems impacted, and second, of the range of conditions within which these systems and species evolved over the last few thousand years. Periods of drought, grass fires and grazing were and are major selective forces in the mixed grass prairie region to which native plants and animals have adapted to various degrees. The interaction of these and other natural processes results in a dynamically shifting range of conditions and a mosaic of different habitats within which a diversity of species finds "living space".

There are no data on the relative proportions of heavily grazed, moderately grazed, lightly grazed, or ungrazed areas within the landscape. Nor was any evidence presented to show that levels of grazing by horses exceeded those exerted by nomadic or migrant plains bison herds, as well as by relatively sedentary herds of plains bison and elk which are believed to have remained in habitats such as sandhills and river valleys year-round. Some indication that historic grazing levels have been exceeded might be found if there were evidence that any native species had declined in abundance during the last ten or fifteen years of horse population growth. No such evidence exists. The only available comparative information indicated that antelope, mule deer and white-tailed deer populations have increased dramatically over the last fifteen years.

Finally, no research has been initiated, and therefore no additional data generated for the Committee to consider, since Mitchell in his peer review [*Peer Review of CWS Document "Site Inspection of Feral Horse Ranges Canadian Forces Base Suffield 7-8 July 1992"*] concluded that there were insufficient data to quantify the impacts of feral horses on the ecology of the area, and therefore there was no evidence to support the population goal of 100 animals recommended in 1992 by CWS.

In conclusion:

1. The horses have had a severe impact on vegetation and soils in some areas, particularly around some springs; but the critical question of how widespread this impact has been, remains unanswered.

2. There is currently no evidence that the horses have exceeded historic levels of grazing by bison, elk and grasshoppers.

3. There are presently no data on the effects of grazing by horses on the relative abundance of any wildlife species within the Base.

Therefore, I cannot agree with the opinion expressed in the Majority Report that "the horses are severely damaging the ecosystem".

To address concerns about localised impact by horses the following two recommendations are made:

1. The population should be stabilised at 600 head until acquisition of essential data allows informed decisions to be made about future population goals. The rationale for that number, which follows the method developed by Wroe et al (1988), is presented in the report. It assumes a more limited area than the

horses actually use, and a lighter stocking rate than that recommended by Wroe in 1991.

2. Consideration should be given to fencing off some or all of the eight springs in the NWA to exclude horses while allowing access to all other wildlife. Gates in the fences would allow rotational flexibility; and there are at least twenty springs and numerous dugouts outside the NWA to which the horses have access. This measure would limit the use of the NWA by horses during summer, while allowing them access during the snow cover of winter.

Other recommendations relating to research and its funding, selective removal of horses and evaluation of immunocontraception are briefly presented in the report.

* * * * *

Ronald R. Keiper, PhD
Distinguished Professor of Biology
Pennsylvania State University

Dr. Ronald R. Keiper received his BS degree from Muhlenberg College in Biology in 1963. He then pursued graduate work at the University of Massachusetts in Amherst, obtaining an MS in Wildlife Biology in 1966 and a PhD in Zoology, with a specialty in animal behaviour, in 1968. In September 1968 Dr. Keiper joined the Pennsylvania State University as Assistant Professor of Biology. He was promoted to Associate Professor in 1973, to Professor in 1982 and to Distinguished Professor in 1990.

Since 1975 Dr. Keiper has been studying the behaviour and ecology of free-ranging horses living on Assateague Island, a 61 km long barrier island along the Atlantic coast of Maryland and Virginia. This work, supported by grants from the National Park Service, the US Fish and Wildlife Service and the Center for Field Research has resulted in more than forty scientific papers as well as three books. Dr. Keiper has also received a full-year senior research fellowship from the joint US-Federal Republic of Germany Fulbright Commission to study Przewalski horses in Europe.

* * * * *

I have reviewed the *Final Report Citizens' Advisory Committee CFB Suffield Feral Horses* and have the following comments:

1. While Professor Hudson is mentioned briefly in the report, neither he nor Dr. Salter, who did research on a population of feral horses living in Alberta, were members of the committee. In fact, while the committee talked with grassland specialists, there seems to be no record of the group soliciting input from scientists who have studied feral horse populations. Since the mid-1970s scientists in both the US and Canada have conducted studies of the behaviour and ecology of feral horses. This group includes Dr. Joel Berger, Dr. Dan Rubenstein, Dr. Ronald Keiper, Dr. Daniel Welsh, Dr. Lee Boyd, Dr. R. Denniston, Dr. Jay Kirkpatrick, Dr. Allen Rutberg, etc.

2. There seems to be a lack of quantitative study of the grazing and trampling effects of the horses, although brief subjective observations seem to have been made. It is important, however, to have hard data that has been subjected to rigorous statistical analyses. Therefore, I would recommend that long-term, comprehensive, quantitative studies be conducted using exclusion cage techniques.

3. No information was presented on the age and sexual composition of the horse herd. Likewise, there seemed to be no knowledge of the causes and annual rate of mortality or any information on birth rate, other than the prediction that a population of 850 horses would result in the birth of 150 foals in 1993. What is the average life span of the population? My seventeen year research on a population of feral horses on Assateague Island has shown that the annual foaling for sexually mature mares averaged about 57%. Since no mares foaled before they were three years old, sexually mature mares were defined as those three years and older. Furthermore, the foaling rate varied with age. Three year old mares only foaled at a rate of 23%. For four year olds the rate was 45.5% and only at five years of age did the rate rise to 53% (Keiper and Houpt,

"Reproduction in Feral Horses: an Eight-Year Study". *Amer. Jour., Vet. Med.* 45:991-995). For horses living in the much harsher climate of Alberta I would expect the higher mortality rates that we have on Assateague (about 5% annually) and a lower rate of fertility.

4. Despite the fact that one of the picture captions mentions horse territories, virtually every scientific study of feral horse populations has found no evidence of territoriality. Horses occupy a definite home range but they do not defend territorial boundaries. Instead a stallion defends his harem of mares. I must wonder about the accuracy of other information the committee used when even this basic bit of horse behavior was not clearly known.

5. There seems to be no data on size and composition of the home ranges for each horse band. Do these change in size or location annually? Similarly what is known about the diet of the horses? Other studies have shown little competition between horses and wildlife species. Does the horse diet change seasonally? On Assateague horses are primarily grazers but in late winter obtain most of their food by browsing.

It seems decisions were made in a vacuum without the necessary hard, sound scientific data background. I urge that no permanent decision be made until the relevant data are available.

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Jay F. Kirkpatrick, PhD
Senior Staff Scientist
Deaconess Research Institute

Dr. Jay F. Kirkpatrick earned a PhD in reproductive physiology from the School of Veterinary Medicine at Cornell University in 1971. He holds an academic appointment in the Department of Reproduction, School of Veterinary Medicine, University of California at Davis. He is a Senior Staff Scientist with the Deaconess Research Institute in Billings, and is the Director of Science and Conservation Biology at ZooMontana, in Billings. Dr. Kirkpatrick is also a consultant for The Humane Society of the United States. He has served on the National Animal Damage Control Advisory Committee for the Secretary of Agriculture. He is a member of the Equid Taxonomic Advisory Committee for the American Association of Zoological Parks and Aquariums, and a Director for the organization In Defense of Endangered Species.

For the past 20 years, Dr. Kirkpatrick has carried out research on fertility control for wildlife for the purpose of developing non-lethal and humane methods of controlling wildlife populations in urban areas and refuges. He has also participated in non-capture methods for studying reproduction in free-roaming wildlife. Dr. Kirkpatrick is probably best known for his contraceptive research with the feral horses of Assateague Island, and for the study of reproduction in the bison of Yellowstone National Park.

* * * * *

I have read the *Final Report Citizens' Advisory Committee CFB Suffield Feral Horses*.... I have 12 points to make in response to this report. They follow.

1. I cannot pass judgment on the condition of the range or the possible impact of the horses on this range. I am not a range biologist.

2. The methodologies for range assessment and for ascribing damage to horses described in this report would not pass muster with the US National Park Service, the US Forest Service, or the Bureau of Land Management. I have worked with these agencies for over 20 years, on the subject of possible horse impact on range conditions, and I can say that there is no rigor or very much scientific merit in the report. I can say with assurance that the methodologies described in this report could never be published in a peer-reviewed journal. This represents a second reason that prevents me from passing judgment on the validity of the studies.

3. The argument that wild horses are "exotic" or "non-native" species has no scientific basis; it is only opinion. The modern horse evolved right here in North America, along with its environment. It is true they disappeared from the continent about 10,000 to 12,000 years ago, but then they disappeared several times before that too, in the preceding several millions years, only to return and continue their evolutionary journey. Their final disappearance coincided with an epochal event, that being the arrival of early man on the continent. No one has fully explained the last disappearance, but the prevailing thought today is that they were hunted to extinction, and thus were removed from the continent at the hand of man. When Cortez landed his horses on the shore of Mexico in 1519, he was in effect "re"introducing horses to the

continent--not introducing them-- and as such they represent a reintroduced native species that co-evolved with its habitat here in North America. This is not my opinion alone, but the conclusions of the National Academy of Science Subcommittee on Wild Horses (1979). Those who persist in describing the North American horse as exotic or feral have ignored history and logic. It is an argument that cannot be taken seriously, particularly when it is used to remove horses.

4. I agree that wild horse herds need to be controlled.

The entire section on immunocontraception (pp. 32-34) lacks scientific validity, ignores an immense body of published literature and in my estimation, is a poor attempt to discredit an established scientific discipline. My remarks on this section follow.

5. The issue of possible ovarian pathologies, as it is written in the report, represents a blatant form of scientific misrepresentation. I would go so far as to describe it as fraudulent. There is evidence that prolonged use of the PZP vaccine can deplete ovarian oocytes in some species. The vaccine hits rabbits and dogs particularly hard. It hits primates less hard, and the evidence to date suggest that it hits ungulates least hard. However, the depletion or decrease of ovarian oocytes, however severe or minor does not represent a debilitating pathology. It is no worse than a spay or neuter. The PZP vaccine is under investigation by a Texas company, for the development of a commercial contraceptive for dogs and cats and it would act by depleting ovarian oocytes. The wild horses of Assateague Island, which are now in their sixth year of PZP treatment, are the healthiest animals on the island, even though there is some evidence that they are not ovulating. We have used the vaccine on horses for over eight years, on white-tailed deer for five years, on feral donkeys for three years, and on over 40 species of captive exotic[s]...in zoos (to prevent surplus animal production) for one to four years and we have seen no adverse health effects of the vaccine. Additionally, the ovarian effects of the vaccine's antibodies are thought to be transient (see Ken Tung's work at the University of Virginia). We have documented reversibility of contraceptive effects after up to three years of treatment. The author of this section of the report cites two papers. There are over 150 papers published on PZP contraception, that go back as far as 20 years (p. 32).

6. To invoke ethical considerations over the side effects or use of test animals for PZP research while at the same time advocating rounding up and removing wild animals that are extremely social, is nothing short of hypocrisy (p. 32).

7. The allusions to the cost of the Nevada studies is another gross mis-representation (p. 32). The Nevada study is just that--a study. It is not a management attempt but a full blown research study. The cost of research greatly exceeds the cost of management. Consider, if you will, the cost of developing the polio vaccine, with all the necessary testing, versus the cost of simply producing the vaccine and using it. Research costs more than application.

8. Horses can be recaptured, about as many times as one needs to capture them (p. 33). There is 20 years of history to support that contention.

9. After 8 years of darting horses in the field, I and my co-workers have yet to experience anything remotely resembling "extreme hazards" (p. 33). I can't even image what they might be. We have also been very successful darting free-roaming white-tailed deer (there are now at least five such projects going on in the US). That didn't seem dangerous either.

10. Last year in Nevada we found nothing "difficult or dangerous to [either] human and horse" while delivering the vaccine to horses in corrals or chutes. Five hundred horses were gathered with only two mortalities and both of those occurred before the horses got near the corrals (one broke a leg in a gopher hole and another broke her neck). Nor was it "complicated, dangerous, or costly to immobilize large numbers of horses, mark them as treated and keep records of which ones have been done" (p. 33). No horses were immobilized nor is there a need to immobilize them. We didn't consider it dangerous to photograph horses, nor did it seem particularly dangerous to freeze brand them. Perhaps we overlooked something.

11. 850 horses is another misrepresentation (p. 33). Assuming a 50:50 sex ratio, there are only 425 mares. Assuming that half of the adult mares have foals (which do not need to be treated) we now have slightly less than 300 mares. Assuming that the Suffield wild horses are similar to other wild horses, those with foals at their sides will have a very low probability of getting pregnant (lactational anestrus), thus we now have about 150 mares that really need treatment. That is not the same as 850 horses. Keep in mind that out of 500 captured horses in Nevada, only 131 were mares between the ages of 5-12. I am about to leave for New Zealand, where the government is preparing to gather and treat about 600 feral horses.

12. The list of committee members does not include a single individual qualified to evaluate the subject of PZP immunocontraception. Not a single one has research training in reproductive physiology, endocrinology, theriogenology, or immunology, nor has a single member of the committee participated in any related research.

I will try to summarize here. It is important to understand that I have no vested interest in promoting the immunocontraception of Canada's wild horses. Before the decade is over, we will have contracepted thousands of horses in the US (as well as thousands of free-roaming white-tailed deer). There is no scientific validity to the report's section on immunocontraception and even the opponents of wildlife contraception here in the US would be embarrassed by the arguments and comments in this report. If the advocates of Suffield horse removals feel strongly about getting rid of the horses they should be honest about their feelings and reasons, instead of trying to fabricate rather pathetic arguments against an established scientific discipline about which they know little and with which they have no experience. My colleagues and I appreciate sound scientific discourse and the give and take of constructive critical evaluation. There is none of that in the report.

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SHOULD THE SUFFIELD WILD HORSES REMAIN WILD?

Dawn G. Lappin
Executive Director
Wild Horse Organized Assistance (WHOA)

Dawn Lappin began her involvement with wild horses in 1971 as a volunteer for Wild Horse Organized Assistance, an organization established by Wild Horse Annie.

From 1971 until 1979, Ms. Lappin coordinated WHOA's wild horse adoption program. From 1977 until 1979, the adoption program was run in conjunction with the United States Bureau of Land Management (BLM). In 1979, WHOA redirected its energies away from horse adoptions to concentrate on studying the role of wild horses in natural ecosystems and to monitor the activities of the BLM.

Ms. Lappin currently serves as Executive Director of WHOA, and is recognized in United States federal court as an expert on issues relating to wild horses.

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I hope some of my reflections [on the *Final Report Citizens' Advisory Committee CFB Suffield Feral Horses*] provide some assistance. When dealing with the complex issues of range management it is imperative to have the advice of the academics; however, as [occurred] in the US, these people fail to recognize the critical societal issues regarding humans' love of horses. The controversy always erupts when the scientists or academics make decisions that are not publicly supported. How then can the two views be resolved?

Whether by accident or intent, the feral animals have become wild. There is tremendous allure by the populist to admire anything that survives the land's harsh nature. If [CFB] Suffield is wise it will heed the public will and use sound advice of academics in how a base herd can be managed and supported logistically and fiscally.

I totally agree with the [Minority Report on the CFB Suffield Feral Horses by D.M. Dickinson] and feel this has grasped the public's perception and desires.

My recommendation is:

1. Capture all horses.
2. Develop a baseline herd representative of type.
3. Model this baseline herd to affect a known reproduction rate, i.e. age, sex ratios.
4. Return all identifiable animals to rightful owners, retrieving capture costs and establish a fine (high enough to prevent misuse) for future trespass.
5. Adopt all but baseline herd with fees to retrieve capture costs.
6. Destroy, humanely, all sick or lame animals.
7. Release baseline herd.
8. Remove, thereafter, a percentage of foals to maintain manageable number of horses.

Comments:

Failure to recognize societal desire to protect the horses "freedom" will cause even more monies and energies than management of a herd.

Calculate, depending on water and vegetative resources, the maximum level of horses those resources can support. Reduce to a 25% level below that to give time before next capture is due.

The US has been actively capturing wild horses in the field for nearly twenty years and they are still capturing excess, which proves that yes, horses do become accustomed to capture methods, but not to the point where it becomes impossible to do.

As a lay[person], I personally have fed trapped wild horses on private property and it is fairly easy to do and does not require the "cowboy" intellect, or background.

A positive result can be achieved by managing a small population while maintaining the fragile ecosystem. To try to eliminate the animals will and can be formidable and result in a negative attitude towards the base.

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SHOULD THE SUFFIELD WILD HORSES REMAIN WILD?

David M. Lavigne, PhD
Professor
College of Biological Science
University of Guelph

Dr. David M. Lavigne is a Professor of Zoology at the University of Guelph in Guelph, Ontario. He received his PhD in 1974 for work on vision in seals. While at Guelph, Dr. Lavigne has taught a number of courses, including mammalogy, ecology, biology, and a graduate course in marine mammal ecology. Well-respected in conservation circles, he is the author of numerous scientific articles and publications.

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I have reviewed the material...including, the *Final Report Citizens' Advisory Committee CFB Suffield Feral Horses*, the *Range Assessment of the Northeast Quadrant Canadian Forces Base Suffield*, the [Executive Summary of the]*Peer Review of CWS Document "Site Inspection of Feral Horse Ranges Canadian Forces Base Suffield 7-8 July 1992"*, and...letters from a variety of experts. I have also taken the liberty of consulting a few colleagues with varying degrees of knowledge on the subject.

As the Citizens' Advisory Committee noted, this is a controversial and an emotive issue. It seems to me, however, that the Committee's report might have shed more light on the issues had it included in its membership scientists who were intimately familiar with the situation. Dr. Keiper's review, for example, raises some important scientific questions that must be answered before any proper scientific assessment of the situation can be even contemplated. It must be emphasized that the anecdotal reports arising from "field trips" conducted by the Citizens' Advisory Committee do not provide any scientific basis for the committee's recommendations. Indeed, I would have to agree with Dr. George Mitchell (cited in Dawn Dickinson's letter of 24 August), that there are currently "insufficient data to quantify the impacts of feral horses in the area" (Ms. Dickinson was a member of the CAC).

From what I have seen of the evidence, I must also agree generally with Dr. Mitchell's findings, summarized in the Executive Summary of the Peer Review conducted by Spencer Environmental Management Services in October 1992 [*Peer Review of CWS Document "Site Inspection of Feral Horse Ranges Canadian Forces Base Suffield 7-8 July 1992"*]. One exception would be that I have been unable to find evidence to support Dr. Mitchell's conclusion that the feral horse population should be reduced because of its biological potential for increase. Indeed, I find this conclusion premature, given the lack of existing data that he has documented, and somewhat inconsistent, given his recommendations for further research, which include: "quantifiable data on range conditions, range trends, feral horse numbers, wild ungulate numbers...to establish the horse carrying capacity of the range...".

It seems clear from the documentation available to me that a decision to remove the wild horses from CFB Suffield cannot currently be justified on the available scientific evidence.

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Zoocheck Canada
SHOULD THE SUFFIELD WILD HORSES REMAIN WILD?

Barry Kent MacKay
Canadian Representative
Animal Protection Institute of America

Naturalist Barry Kent MacKay, an accomplished writer and wildlife artist, has been instrumental in the development of humane solutions to human-wildlife conflicts for many years. Consulted by all levels of government, MacKay offers a lifetime of practical experience and knowledge about wildlife issues. MacKay is well-known in international conservation circles and regularly attends meetings of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) as an NGO observer.

A prolific writer, MacKay's "Nature Trail" column is a regular feature of The Toronto Star. *His illustrations and articles are published by wildlife magazines throughout North America, and his second wildlife book will be published in the spring of 1994 by Key Porter Books.*

MacKay is currently the Canadian representative of the Animal Protection Institute of America, and a director of Animal Alliance of Canada and Zoocheck Canada. In recognition of his lifelong achievements, he was awarded a commemorative medal in 1993 by the Governor-General of Canada in honour of the 125th anniversary of the Confederation of Canada.

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According to C.R. Harrington, in his paper, "Quarternary Vertebrate Faunas of Canada and Alaska and Their Suggested Chronological Sequence", published in the *Syllogeus Series No. 15* by the National Museums of Canada, February, 1978, in the early mid-Wisconsin age, in the area of what is now Medicine Hat, Alberta, fossils associated with wood that was radiocarbon analyzed, were determined to come from a time between 37,000 and 38,700 BC. In what those same fossils "suggest [is] a prairie grassland habitat for this fauna" there were the remains of the following species:

Hare (*Lepus* cf. *townsend*)
Prairie dog (*Cynomys* cf. *ludovicianus*)
Richardson's ground squirrel (*Spermophilus richardson*)
Pocket gopher (*Thomomys* cf. *talpoides*)
Vole (*Microtus* sp.)
Coyote (*Canis* cf. *latrans*)
Spotted skunk (*Spilogale* cf. *putorius*)
Mammoth (*Mammuthus*)
Mexican Wild Ass (*Equus* (Asinus) *conversidens*)
Large Horse (*Equus* cf. *giganteus*)
Long-legged Llama (*Hemiauchenia* sp.)
Western Camel (*Camelops hesternus*)
Deer (*Odocoileus* sp.)
Prongbuck (?*Antilocarpa* of *americana*)
Bison (*Bison* sp.)

Every species of plant or animal has a scientific name which consists of a binomial (or a trinomial, which we needn't bother with). The first word of the binomial has a capital letter and represents the genus, for example, *Homo*. Obviously each

genus (plural genera) must have at least one species, and the species name is the second one in the binomial. The genus, *Homo*, has but one species, *sapiens*, hence the single member of that genus is called *Homo sapiens*. The Bison's name is *Bison bison*. The domestic horse is *Equus caballus*, the Przewalski's horse, an Asian wild horse, is *Equus przewalskii*, the common zebra is *Equus burchelli* and the African wild ass (from which we get the domestic donkey) is *Equus asinus*.

Genera are groupings of animals believed to be quite closely related. Sometimes they are so closely related they can interbreed. If you observe ducks at Toronto's waterfront you will see Mallard Ducks (*Anas platyrhychos*), black ducks (*Anas rubripes*) and hybrids between the two. These hybrids are perfectly fertile, leading to the belief that the more abundant mallard may some day "genetically swamp" the black duck to virtual extinction (although black duck genes will, of course, persist in what will eventually appear to be a purely mallard species.)

On the other hand, when *Equus caballus* mates with *E. asinus* we get a mule or a jenny which, however, is infertile. Put simply, mallards and blacks are more closely related to each other than are domestic horses and asses (or donkeys). Hybrids between something like a zebra and an ass are possible, but again, the offspring are probably infertile.

If you look at the above list of animals, you will note that for some there is just a genus name followed by "sp". That's shorthand for saying we know the genus; we aren't sure of the species. You will see "cf and "?" too, and all that they mean is that there is uncertainty in exact identification. Remember, we're dealing with remains that have been in the ground for well over thirty thousand years.

But, you will notice something else. Many of the genera, and even some of the actual species on the above list, are on the same list we have been told represents the very grassland small animals that the current herd of wild horses is supposed to be threatening.

And, as you look down the list you will see unfamiliar animals that were around at the same time and are now extinct...animals that were grazers (or tramplers).

The grasslands and their associated small mammals--ground squirrels, voles, pocket gophers, spotted skunks, coyotes, pronghorns, deer, prairie dogs, hares (jackrabbits)--they were all there consuming grasses. In addition, there were llamas, mammoth elephants and two species of horses.

If the grasslands could endure all that plus an intervening ice age, plus whatever led the larger animals to extinction (no one is quite sure why the larger animals died out and the smaller ones survived) and has not been destroyed until August 1993 , then how can we think that a few hundred horses are going to ruin the whole thing?

Note that of the current species of the genus *Equus*, it seems that all of the species are so closely related that they are in the same genus, so closely related that they can interbreed, but not so closely related that they can produce fertile hybrids.

But, note, as well, that the horses who used to live in North America were also from the genus *Equus* (except that some people put what is called the Mexican wild ass in a separate genus, *Asinus*, which is what is meant by writers when another generic name, in brackets, follows the first).

We cannot know if an extinct *Equus* was closely related enough to an extant (living) *Equus* to interbreed or not. They are separated by the gulf of time that can't be breached.

If they could interbreed and produce fertile young, then maybe, just maybe, they aren't even separate species.

There was a time, for example, when the red fox of Europe (*Vulpes vulpes*) was considered to be a species distinct from the red fox of North America, which was then called *Vulpes fulva*. Both these two species had wide distributions and were divided into many subspecies (using the trinomial we aren't going to be talking about). The point is that scientists felt that we had two distinct species and since they were separated by the Atlantic Ocean and the Pacific Ocean, there was no way to know if they were closely related enough to interbreed or not.

Hunters brought *Vulpes vulpes* from Europe to America. *Vulpes vulpes* interbred readily with *Vulpes fulva* and produced viable (fertile) offspring, who continued to breed with *V. vulpes* or *V. fulva*. The results were that the physical characteristics that separated what had been assumed to be two different species started to blend into a complex mixture of various characteristics so confusing that scientists dropped the separate species status and simply called everything *Vulpes vulpes*. Had the two types of red fox been kept separate for just a few more thousands, or hundreds of thousand, of years it is possible that they would have evolved into forms so different that hybridization would not occur, or would produce infertile canine equivalents of mules and jennies.

The point of all this is whether or not the genus *Equus* ever really became extinct in North America, no one can say with certainty that the *Equus* who was there in the beginning is a completely different species from the Equus caballus who is there now. It is likely that they are different species from the same genus. Even allowing this, it is still the closest thing we have or ever will have to what we lost. To simply dismiss these horses as a "feral", or "recent" or "alien" species is a myopic view of the situation.

The mindset we have here is exactly the same as the one that says:

We must kill cormorants because their excrement kills trees beneath their nests.

We must kill cormorants because they eat all the fish.

We must kill elephants because they destroy all the vegetation.

We must kill wolves because they destroy all the deer.

We must kill deer because they destroy all the vegetation.

We must kill kangaroos because they destroy all the vegetation.

We must kill seals because they destroy all the fish.

We must kill sharp-shinned hawks because they destroy all the songbirds.

My point is that there is something common to people which seems to refuse to acknowledge or accept that animals do interact with their environments, do alter their environments, do dictate the makeup of their environments, and of itself, that is not "wrong", does not have to be "stopped" or "managed".

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Dr. Allen T. Rutberg is Senior Scientist for Wildlife and Habitat Protection at The Humane Society of the United States (HSUS). Before coming to The HSUS in June 1991, Dr. Rutberg held positions on the biology faculties of Vassar College in New York and at Shippensburg University and Penn State University (Mont Alto campus) in Pennsylvania. At The HSUS, Dr. Rutberg is responsible for diverse issues, including endangered species, suburban deer management, wild horse management and national park policies.

Dr. Rutberg received his PhD in zoology in 1984 from the University of Washington, Seattle, where he specialized in behavioural ecology of large mammals. His PhD research focused on aggression, social organization, and the timing of reproduction in American bison cows, and was based on extensive field work at the National Bison Range in Montana and Yellowstone National Park.

After completing his PhD, Dr. Rutger spent four summers conducting field work on aggression and dispersal in feral horses on Assateague Island, Maryland, which produced a series of papers published in Animal Behaviour *and other journals. Most recently, Dr. Rutberg has been closely involved with research on the application of immunocontraception to suburban deer and wild horse populations.*

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On behalf of The Humane Society of the United States and Humane Society International (HSUS/HSI) I have carefully reviewed the *Final Report Citizens' Advisory Committee CFB Suffield Feral Horses.* Responding both as an HSUS/HSI representative and as a scientist who has published a number of articles on the behavioral ecology of feral horses, I am deeply disturbed by the weakness of the scientific evidence presented in the report, and by the apparent eagerness of its authors to dispose of any management strategy other than that of removing all horses from the range.

In my view, the biological justification for the removal of all horses from CFB Suffield is extremely weak. The report contains no evidence at all that horses are reducing biodiversity or harming endangered species on Suffield. What it contains is rhetorical sleight-of-hand: a conclusion of harm to biodiversity is drawn by pairing evidence of the presence of endangered and threatened species with unsystematic observations of localized "overgrazing", inappropriately defined by physiological (p. 24) and agricultural criteria. Loss of biodiversity cannot be inferred from the documented destabilization and expansion of sand dunes and observations of localized depletion of vegetation without supporting data.

In the absence of any native large mammalian grazer on the National Wildlife Area it is possible that the complete removal of the horses would reduce, rather than restore, biodiversity. This possibility is explicitly acknowledged in the CAC report (p. 36). In its zeal to justify the removal of all horses from the NWA, the report lists as a resulting benefit a test of the hypothesis that biodiversity will decrease over time in the absence of a large grazer.

My second major set of concerns revolves around the presentation of management alternatives to complete removal of the horses.

In my view, the safety, expense, practical difficulties and ethical concerns associated with the application of immunocontraception are seriously distorted in the report. All distortions have the effect of making immunocontraception appear unattractive as a management option.

With respect to safety, the PZP immunocontraceptive vaccine has now been applied for six years to feral mares on Assateague Island without harming the animals. The vaccine is fully reversible if not administered more than three years consecutively, and does not interfere with pregnancies in progress at the time administration.

The cost of applying contraception to the CFB Suffield horses is likely to be much lower than implied by the CAC report. The $200,000 per year figure cited in the report (p. 34) is the cost of a research project, not a management project, being carried out by the US Bureau of Land Management (BLM) in Nevada. This cost includes such items as personnel and travel costs for collecting samples for early pregnancy detection, cost of laboratory analysis of those samples, indirect costs for supporting academic institutions, costs of vaccine development, and other costs that would be irrelevant to management of wild horses at Suffield.

The Nevada BLM project has so far been carried off efficiently and safely. Approximately 500 horses were processed in this study, of which 130 received the vaccine or a control. There were three fatalities among 500 horses during the round-up and treatment; no human participants were injured. Identification and record keeping required by the research protocol involved two people, a set of numbered freeze-brands, some liquid nitrogen, a pen and index cards; a less elaborate system would likely be needed for a management protocol. As is typically the case with gathers of wild horses by the BLM, many of the horses involved had been rounded up previously.

While we appreciate the sensitivity of the CAC to ethical considerations, I observe that the ethical reservations expressed in the report (p. 32) have not, in the experience of HSUS/HSI, been raised by any major animal protection or animal rights group with respect to the application of immunocontraception to wildlife or wild horse populations in the US.

It is also our view that other less intrusive management options were not fairly considered in the CAC report. We encourage the DND to take a more serious look at limited fencing in coordination with development of additional or alternative water sources as a way to reverse habitat degradation in the vicinity of water holes. Gatedfences around heavily used water holes would allow temporary restriction of access, which would in turn reduce grazing pressure and trampling and allow recovery of surrounding vegetation. This system would be neither expensive to maintain nor complex to administer.

Contrary to the report's suggestion, wild horses are unlikely to try to knock down sturdy fences in order to gain access to water; rather they will search for alternative water sources, and find them if they are made available. The rather extensive scientific literature on the subject clearly indicates that, as a rule, wild horses are not rigidly territorial, and will move long distances to locate needed resources.

In the United States, the HSUS generally advocates the preservation of wild horses on public lands. Whether Canada and the DND wish to preserve and manage wild horses on CFB Suffield is essentially an internal matter. Nonetheless, the CAC report should not be allowed to mislead the DND about the supposed ecological damage done by the horses, or the cost and complexity of humane wild horse management.

Finally, HSUS/HSI strongly urges the DND to reach a solution that guarantees the well-being of the Suffield horses, on or off the range. Should some horses be removed from the range, which seems likely, strong and enforceable measures should be established to guarantee them suitable homes, and to protect them from commercial exploitation and death in the slaughterhouse.

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SHOULD THE SUFFIELD WILD HORSES REMAIN WILD?

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For almost 20 years Mary Ann Simonds has studied wild horse populations with an emphasis on behaviour and cognitive ethology throughout the Western US. She has assisted the American government through the Bureau of Land Management in developing a more positive wild horse and burro management program since 1970 by working directly or indirectly with various Areas and Districts. Ms. Simonds was selected and served on the National Wild Horse and Burro Advisory Board from 1990-1992 under the Secretary of the Interior and the Secretary of Agriculture. During her tenure with the Board, a series of management recommendations for the program were developed which are slowly being implemented.

Since 1976, after earning her BS in Wildlife Conservation and Management with a minor in Range Management from the University of Wyoming, Mary Ann Simonds has conducted range, wildlife, and reclamation studies for industry, government, and as a private consultant. Much of her work has been evaluating competitive species' use of range sites including horses, cattle, deer, antelope, and elk for various purposes. Ms. Simonds has a MA focused on Human-Animal Interactions. Currently, she consults on equine behaviour and natural health and conducts educational training workshops in whole ecosystems management. She is also on the Board of Directors for the International Society for the Protection of Mustangs and Burros and represents the organization in making the following comments.

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I have reviewed the *Range Assessment of the Northeast Quadrant Canadian Forces Base Suffield*, and have submitted the following comments:

1. The only conclusion that can be drawn from the study is that horses have a trampling effect on plants near water areas. There is insufficient data for making any other conclusions.

2. The summary indicated "horses are having a negative impact on wildlife habitat in these areas and the surrounding dry upland areas". This is a strong statement when there is no supporting data. In fact, the report indicates the abundance of wildlife observed at several riparian areas. Without comparative data this conclusion cannot be drawn.

3. The free-roaming horses are considered "livestock" from local ranches. Without genetic data this may be a false assumption. Dr. E. Gus Cothran from the University of Kentucky...and Dr. Phil Sponenberg from Virginia Technical Vet. School have been conducting genetic studies in the US on free-roaming horses. This may be a useful management tool for managing toward adaptation.

4. There is no data on the population dynamics, behaviour, seasonal use of plants or habitats, or movement/migration of free-roaming horses. This information is critical in determining impacts of horses on range condition and wildlife.

Limited observations by military personnel and range biologists appeared to be the only data used in this report.

5. All provincially rare species observed in the study area were in "healthy" condition. There appears to be no negative impacts by horses.

6. The data from the exclosures is questionable. In one case, because of the increased presence of globe-mallow, it was determined that the exclosure was in better condition than outside. In another exclosure, the report stated that the exclosure was in poorer condition than the outside area. This statement was then justified by saying it was because horses had trampled and grazed the portion of the exclosure where the transect was located. Several questions come to mind: 1. Why would horses enter an exclosure and only graze in a selected limited portion and leave the rest of the exclosure untouched? 2. Why was the transect located in the disturbed area if this was not a representative sample? Again, limited data can lead to false conclusions.

7. Although one can appreciate the range work completed by the consultants within the time frame, the report weaves a biased perception that horses are negatively affecting the range. There is not sufficient data to support this bias. The reader feels as though the consultants were hired to "show that horses were having a negative impact on the range" by drawing conclusions based on subjective observations and feelings, not on objective scientific data.

We live in a rapidly changing world which is ruled by our beliefs. If we see only problems, then we will have only problems. I hope the belief that horses are a "problem" on the Suffield Base will be replaced by an open attitude to manage a valuable species backed by good scientific data.

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