



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
CARSON CITY DISTRICT OFFICE
1050 E. William St., Suite 335
Carson City, Nevada 89701

IN REPLY REFER TO:

4700
(NV-033)

FEB 20 1985

Dawn Y. Lappin, Director
Wild Horse Organized Assistance
P.O. Box 555
Reno, NV 89504

Dear Mrs. Lappin:

Your Freedom of Information Act Request has been received, however due to the pending litigation of Sweetwater Ranch Company vs. Clark et. al., I must confer with the Department of Interior, Office of the Solicitor on the first three items requested. I will provide you with the requested information as soon as I obtain approval for release of this information.

Information pertaining to the last four requests is as follows:

- Inventory of wild horses or burros in Garfield Flats.

1975 - 253 head, actual count
March 1979 - 245 head, actual count
Sept. 14, 1983 - 538 head, actual count, 585 Lincoln/Peterson estimate
Feb. 5, 1985 - 84 head, actual count

- Proposed number for reduction in Garfield Flats.

425 head

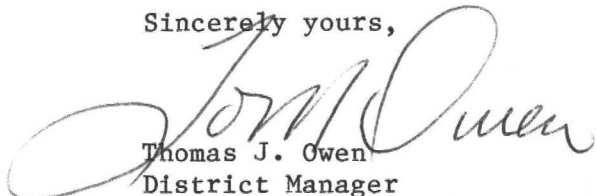
- Number of wild horses and burros removed in Garfield Flats.

1977 - 182
1985 - 380

- Number of wild horses and burros remaining in Garfield Flats.

The most recent census (Feb. 5, 1985) resulted in 84 head being counted.

Sincerely yours,


Thomas J. Owen
District Manager

cc: Office of the Solicitor
Nevada State Office (NV-930, NV-950)

Telephone (702) 883-3200
Carson City, Nevada 89701
502 N. Division St.
Attorneys At Law
SMITH & GAMBLE, LTD.

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JULIAN C. SMITH, JR., LTD.
JULIAN C. SMITH, JR.
502 N. Division St.
Carson City, NV 89701
Telephone: (702) 883-3200

Attorney for Plaintiffs

RECEIVED
MAR 9 12 10 PM '81
BY CAROL C. FITZGERALD
DEPUTY CLERK

UNITED STATES DISTRICT COURT
DISTRICT OF NEVADA

SWEETWATER RANCH COMPANY, a
general partnership,

Plaintiff,

CV-R = 84 - 79 - ECR
Case No. _____

v.

COMPLAINT
FOR MANDAMUS

WILLIAM CLARK, Secretary of
the Interior; ROBERT BURFORD,
Director, Bureau of Land
Management; EDWARD SPANG,
Nevada State Director, Bureau
of Land Management; THOMAS J.
OWEN, District Manager, Bureau
of Land Management,

Defendants.

COMES NOW, plaintiff, by and through its attorney,
JULIAN C. SMITH, JR., and complains and alleges as follows:

JURISDICTION AND PARTIES

I

This is an action, the nature of mandamus for
relief against defendants' failure and refusal to perform
the duty owed plaintiff by 16 U.S.C. §1334. Jurisdiction
and venue are founded upon 28 U.S.C. §1391(e). This claim

1 arose in this district and the real property described is
2 situated in this district.

3 II

4 Plaintiff is a general partnership organized under
5 the laws of the State of California, consisting of Wellington
6 Beef, Inc., a Nevada corporation, and Carl and Tina Rodi
7 Family Trust, a California trust. Plaintiff owns that
8 certain ranch commonly known as the Sweetwater Ranch in
9 Mineral County, Nevada, the legal description of which is
10 attached hereto as Exhibit "A" and made a part hereof.
11 Plaintiff also owns certain water rights in Mineral County,
12 Nevada, more particularly described on Exhibit "B", pages 1
13 through 3 and made a part hereof.

14 III

15 Defendant, WILLIAM CLARK, is the United States
16 Secretary of Interior. Defendant, ROBERT BURFORD, is Director
17 of the Bureau of Land Management of the United States
18 Department of Interior. Defendant, EDWARD SPANG, is the
19 Nevada State Director of the Bureau of Land Management of
20 the United States Department of Interior. Defendant, THOMAS
21 OWEN, is the Carson City District Manager of the Bureau of
22 Land Management of the United States Department of Interior,
23 the District in which plaintiff's property is located.

24 CLAIM FOR RELIEF

25 IV

26 At the present time and for some years past, a
27 large number of wild and free roaming horses as defined in
28 16 U.S.C. §1332(b) have strayed from public lands of the

1 United States onto the plaintiff's ranch lands and have
2 consumed water that is subject to a certificate of appro-
3 priation to plaintiff.

4 V

5 Said wild free roaming horses have caused, in the
6 past, and are continuing to cause, substantial, permanent
7 and irreparable damage and harm to plaintiff's land and
8 water rights.

9 VI

10 On August 1, 1983, and again on September 21,
11 1983, plaintiff has informed the defendants of the foregoing
12 facts and requested and demanded defendants to immediately
13 remove said animals from plaintiff's land and water rights
14 as required by 16 U.S.C. §1334.

15 VII

16 Defendants who are responsible for enforcing the
17 provisions of Chapter 30 of Title 16 of the United States
18 Code, specifically including §1331 through §1340 of said
19 Code, inclusive, have failed and refused to act in accordance
20 with 16 U.S.C. §1334 even though said section imposes the
21 duty upon said defendants to perform the ministerial and
22 nondiscretionary act of arranging to have the animals removed.

23 VIII

24 The failure and refusal of defendants to act in
25 accordance with their duty has caused and is presently
26 causing plaintiff irreparable injury for which plaintiff has
27 no adequate remedy at law.

28 ----

Telephone (702) 883-3200

Carson City, Nevada 89701

502 N. Division St.

Attorneys At Law

SMITH & GAMBLE, LTD.

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IX

Plaintiff has exhausted administrative remedies.

WHEREFORE, plaintiff demands judgment as follows:

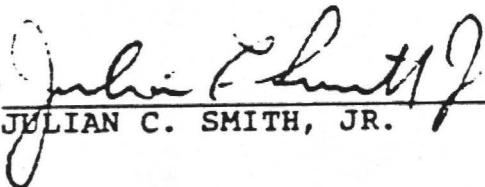
1. Ordering defendants to immediately arrange to have the aforesaid wild and free roaming horses removed from plaintiff's land and consumption of plaintiff's water.

2. Ordering defendants to take all necessary steps to prevent the said wild and free roaming horses from straying from the public lands of the United States onto the privately owned lands and water of plaintiffs at any time in the future.

3. Granting such other and further relief as to the court may seem just and proper.

DATED this 8th day of March, 1984.

JULIAN C. SMITH, JR., LTD.

By 
JULIAN C. SMITH, JR.

SITUATE IN MINERAL COUNTY, STATE OF NEVADA AND DESCRIBED AS FOLLOWS:

Mount Diablo Base and Meridian:

TOWNSHIP 6 NORTH, RANGE 26 EAST,

- Section 36, NW 1/4


TOWNSHIP 6 NORTH, RANGE 27 EAST,

- Section 19, SE 1/4 SE 1/4
- Section 27, SE 1/4 SE 1/4
- Section 29, SW 1/4 NW 1/4
- Section 30, NE 1/4 NE 1/4
- Section 32, E 1/2 NW 1/4; NE 1/4 SE 1/4
- Section 33, N 1/2 SW 1/4; SE 1/4 SE 1/4

TOWNSHIP 5 NORTH, RANGE 29 EAST,

- Section 1, SW 1/4 SE 1/4
- Section 2, SW 1/4 NW 1/4
- Section 3, Lot 1 of NE 1/4
- Section 12, NW 1/4 NE 1/4

TOWNSHIP 6 NORTH, RANGE 29 EAST,

- Section 34, SE 1/4 NE 1/4
- Section 35, SW 1/4 NW 1/4 - out 

TOWNSHIP 5 NORTH, RANGE 30 EAST,

- Section 2, SW 1/4 NW 1/4 - in
- Section 3, Lots 3 and 4 of NW 1/4 - out
- Section 6, NE 1/4 SW 1/4 - out

TOWNSHIP 5 NORTH, RANGE 31 EAST,

- Section 3, Lot 2; Lot 4 of NW 1/4; NE 1/4 NW 1/4; S 1/2 NW 1/4; N 1/2 SW 1/4
- Section 4, NE 1/4; N 1/2 NW 1/4; SE 1/4 NW 1/4; N 1/2 SE 1/4; SW 1/4 SE 1/4; E 1/2 SW 1/4

TOWNSHIP 6 NORTH, RANGE 31 EAST,

- Section 8, SE 1/4 NW 1/4
- Section 17, S 1/2 SE 1/4; SW 1/4 NE 1/4
- Section 20, NE 1/4; SE 1/4; SE 1/4 SW 1/4
- Section 21, SW 1/4 SW 1/4
- Section 27, S 1/2 SW 1/4
- Section 28, W 1/2 NE 1/4; NW 1/4 SE 1/4; S 1/2 SE 1/4; NW 1/4; SW 1/4
- Section 29, NE 1/4; E 1/2 SE 1/4; NE 1/4 NW 1/4
- Section 32, E 1/2 NE 1/4; E 1/2 SE 1/4
- Section 33, ALL
- Section 34, NW 1/4; SW 1/4

TOWNSHIP 4 NORTH, RANGE 32 EAST,

- Section 35, SE 1/4 SW 1/4 — out (1/4 — 1/4)

TOWNSHIP 6 NORTH, RANGE 32 EAST,

— Section 35, SW 1/4 NW 1/4 — ?

TOWNSHIP 5 NORTH, RANGE 33 EAST,

— Section 3, NW 1/4 SE 1/4

TOWNSHIP 6 NORTH, RANGE 33 EAST,

— Section 20, S 1/2 NW 1/4; SW 1/4 NE 1/4

— Section 26, SE 1/4 SE 1/4

— Section 35, NW 1/4 NE 1/4; S 1/2 NE 1/4; NE 1/4 SE 1/4

THE STATE OF NEVADA
CERTIFICATE OF APPROPRIATION OF WATER

WHEREAS Walter G. Reid has presented to the State Engineer of the State of Nevada Proof of Application of Water to Beneficial Use, from Garfield Spring through dams, pipelines and troughs for Stockwatering and domestic

purposes. The point of diversion of water from the source is as follows: N^{1/2} NE^{1/4} Section 35, T. 6 N., R. 33 E., M.D.B.&M., or at a point from which the S^{1/2} corner of Section 36, T. 6 N., R. 33 E., bears S. 47° 19' E., 6,053 feet situated in Mineral County, State of Nevada.

Now Know YE, That the State Engineer, under the provisions of Section 72, Chapter 46, Statutes of 1937 has determined the date, source, purpose and amount of such appropriation, together with the place to which such water is appurtenant, as follows:

Name of appropriator Sweetwater Ranch Company
Post-office address Wellington, Nevada
Amount of appropriation 0.01 c.f.s. or sufficient to water 400 cattle and 6/ horses
Period of use, from October 1st to May 1st of each year
Date of priority of appropriation September 16, 1952

Description of works of diversion, manner and place of use: Water is diverted from Garfield Spring by means of a dam and is conveyed through pipelines to the SW^{1/4} SE^{1/4} Section 26, T. 6 N., R. 33 E., M.D.B.&M., where it is used in a home for domestic purposes and in corrals for the watering of 400 cattle and 6 horses.

The right to water hereby determined is limited to the amount which can be beneficially used, not to exceed the amount above specified, and the use is restricted to the place where acquired and to the purpose for which acquired.

IN TESTIMONY WHEREOF, I HUGH A. SHANBERGER, State Engineer

of Nevada, have hereunto set my hand and the seal of my office, this 21st day of NOVEMBER, A.D. 1956

Hugh A. Shanberger
State Engineer.

Numbered 14531

THE STATE OF NEVADA
CERTIFICATE OF APPROPRIATION OF WATER

WHEREAS, Walter G. Reid, Agent has presented to the State Engineer of the State of Nevada Proof of Application of Water to Beneficial Use, from Pepper Spring through collection pipe, tank and trough to Stockwater and Domestic purposes. The point of diversion of water from the source is as follows: NW 1/4 NW 1/4 Section 6, T.5N., R.34E., M.D.B.&M., or at a point from which the S 1/4 corner of Section 36, T.6N., R.33E., bears N. 63° 50' W., a distance of 1,280 feet. situated in Mineral County, State of Nevada.

Now Know Ye, That the State Engineer, under the provisions of NRS 533.425, has determined the date source, purpose, amount of appropriation, and the place where such water is appurtenant, as follows:

Name of appropriator Sweetwater Ranch Co.
Post-office address Virginia City, Nevada
Amount of appropriation 0.018 c.f.s., or sufficient to water 800 head of cattle and horses
Period of use, from January 1st to December 31st of each year
Date of priority of appropriation December 22, 1952

Description of works of diversion, manner of use and place of use:
Water is developed by means of a redwood collection box, thence a tank and 600' of 1 1/2" pipe to a watering basin located within the NW 1/4 NW 1/4 Section 6, T.5N., R.34E., M.D.B.&M., where the water is used for watering 800 head of cattle and horses.


This certificate is issued subject to the terms of the permit.

RECEIVED

JUN - 4 1982

The right to water hereby determined is limited to the amount which can be beneficially used, not to exceed the amount above specified, and the use is restricted to the place and for the purpose as set forth herein.

IN TESTIMONY WHEREOF, I, PETER G. MORROS, State Engineer

Compared bc/bd of Nevada, have hereunto set my hand and the seal of my office, this 1st day of JUNE, A.D. 19 82
Recorded at Page
 County Records

State Engineer

THE STATE OF NEVADA
CERTIFICATE OF APPROPRIATION OF WATER

WHEREAS, Karl B. Rodi, Agent has presented to the State Engineer of the State of Nevada Proof of Application of Water to Beneficial Use, from Pepper Spring through a collection box, pipelines and watering troughs for stockwatering purposes. The point of diversion of water from the source is as follows: NW1/4 NW1/4 (Lot 4) Section 6, T.5N., R.34E., M.D.B.&M., or at a point from which the S1/4 corner of Sec. 36, T.6N., R.33E., M.D.B.&M., bears N. 63°50' W., a distance of 1780 Feet situated in Mineral County, State of Nevada.

Now Know Ye, That the State Engineer, under the provisions of NRS 533.425, has determined the date, source, purpose, amount of appropriation, and the place where such water is appurtenant, as follows:

Name of appropriator Sweetwater Ranch Company
Post-office address Los Angeles, California
Amount of appropriation 0.018 c.f.s. or sufficient water to water 800 head OF CATTLE
Period of use, from November 1st to April 15th of each year
Date of priority of appropriation August 21, 1968

Description of works of diversion, manner and place of use:

Water is developed in the spring then piped to watering troughs and used for stockwatering purposes located in the:
NW1/4 NW1/4 Sec. 6, T.5N., R.34E., M.D.B.&M.
NW1/4 SW1/4 Sec. 8, T.5N., R.34E., M.D.B.&M.
SE1/4 NW1/4 Sec. 25, T.7N., R.32E., M.D.B.&M.
SE1/4 SE1/4 Sec. 26, T.6N., R.33E., M.D.B.&M.

This certificate is issued subject to the terms of the permit.

The right to water hereby determined is limited to the amount which can be beneficially used, not to exceed the amount above specified, and the use is restricted to the place and for the purpose as set forth herein.

IN TESTIMONY WHEREOF, I PETER G. MORROS, State Engineer

Compared bl/bc of Nevada, have hereunto set my hand and the seal of my office, this
Recorded _____ at _____ Page _____ 27th day of JANUARY, A.D. 19 82

County Records
Peter G. Morros
State Engineer

RECEIVED
FEB -1 1987



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
CARSON CITY DISTRICT OFFICE

1050 E. William St., Suite 935
Carson City, Nevada 89701

BLM FORM 11

4700
(NV-033)

JAN 23 1985

Sweetwater Ranch Company
c/o Benny Romero, General Manager
8 Cottonwood Lane
Yerington, NV 89447

Dear Mr. Romero:

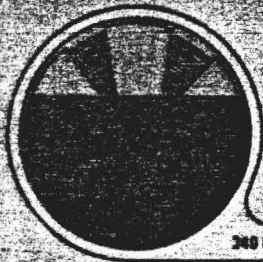
Response to the Draft Garfield Flat Wild Horse Removal Plan and Environmental Assessment was minimal. All comments received supported a reduction of wild horse numbers in the Garfield Flat Wild Horse Herd Area. Two respondents supported a greater reduction. Their comments, however, were directed at setting a management level for wild horses. That question is being considered in the development of the Final Walker Resource Management Plan. The Removal Plan and Environmental Assessment here simply deal with an interim measure to restore an ecological balance in the area while the land use planning process comes to a close. Accordingly, the comments of the two respondents advocating a management level for wild horses will be considered in the Final Walker Resource Management Plan.

Sincerely yours,

A handwritten signature in cursive script, reading "J. Matthiessen", is written over the typed name.

John Matthiessen
Area Manager
Walker Resource Area

cc: Alan Brock
Office of the Solicitor



RESOURCE CONCEPTS INC.

ENGINEERING • ECONOMICS
RESOURCE PLANNING

240 N. MINNESOTA ST. • CARSON CITY, NEVADA 89701 • (702) 883-1888

BUR OF LAND MANAGEMENT
CARSON CITY DIST OFFICE

JAN 7 1 34 PM '85

January 7, 1985

Mr. Tom Owen
District Manager
Bureau of Land Management
1050 E. William Street, Suite 335
Carson City, Nevada 89701

LOGGED

	Info. Only	Take Action	COPY TO	DATE	BY
DIR					
ASST DIR					
PLN/ENR					
ADMIN					
RESOURCES					
WALKER RA				1-7	
OPREC					
LABORATOR RA					
OPERATIONS					
PLANNING VC					

RE: Sweetwater Ranch Company Comments to the Draft Garfield Flat Interim Wild Horse Removal Plan and Environmental Assessment

Dear Mr. Owen:

Resource Concepts, Inc. (RCI), on behalf of the Sweetwater Ranch Company (SRC), submits the following comments to the Draft Garfield Flat Interim Wild Horse Removal Plan and Environmental Assessment. The SRC is very much in concurrence with the BLM that an immediate reduction in wild horse numbers is necessary on the Garfield Flat Allotment. However, the SRC does not consider the proposed removal of 425 head of sufficient magnitude in which to alleviate wild horse problems on the allotment. The following comments represent the SRC specific concerns with the proposed interim gathering plan and associated environmental assessment.

- The environmental assessment does not clearly state the need for the wild horse reduction. The introduction should indicate that 1) wild horses have overgrazed key forage species during the critical growing season for a number of years, 2) the amount of forage consumed by horses prior to livestock arrival is increasing at an alarming rate and impacting the ranch, 3) wild horses are abusing private lands and privately owned water sources, and 4) that only by removing wild horses can the BLM attempt to resolve these problems.
- There is no discussion of wild horse use of private lands nor horse dependency upon the ranch's water sources for existence. The BLM's 1977 Garfield Flat Interim Gathering Plan clearly demonstrates the wild horse dependency on private water sources and documents the abuse of these waters resulting from wild horses. This situation should be discussed under the Existing Situation section of the draft gathering plan.

Mr. Tom Owen
January 7, 1985
Page 2

- The environmental assessment states "The cattle and wild horse grazing use overlap somewhat, but the permittee has kept this to a minimum by grazing his cattle away from the horse use area as much as possible". This statement should be replaced by the following: "Wild horses have severely utilized available forage within important areas of the historic livestock use area. As a result, cattle have been unable to use these areas. This problem has existed since 1974 (BLM Garfield Flat AMP, 1982) and has continued to expand. Estimated wild horse forage demand in 1979 was 2,940 ADMs and has grown to nearly 8,000 ADMs in 1984, while livestock forage demand has averaged 2,672 ADMs." The existing statement in the environmental assessment indicates that wild horses are not competing with cattle for forage. The SRC has maintained for a number of years that the major threat to their livestock operation has been the increasing horse population.
- The BLM proposes to allocate all allowable use of forage to wild horses prior to livestock turnout into the pasture. This proposal is not consistent with the BLM's multiple use mandate. The southwest portion of Garfield Flat was once an important source of livestock forage. It has since been rendered unusable to cattle due to the degree of forage consumed by wild horses prior to livestock arrival on the allotment. The SRC has been unable to pump the well in this area due to the lack of forage. The BLM is attempting to allow this situation to continue by allocating all allowable use of forage to horses.
- The Bureau is totally disregarding previous data, the 1977 Interim Gathering Plan, and the 1982 Garfield Flat AMP by advocating a 235-364 head management range. Based on this information, the BLM would intentionally allow overgrazing to continue on the allotment. The BLM has already documented that 245 head of horses would result in overgrazing.
- The SRC maintains that the range of 235-364 head is excessive and unacceptable in terms of wild horse use of private lands and waters.

The SRC would appreciate a written response to each of the following questions:

- When is the proposed gather scheduled to occur?
- Why was the 1973 aerial census of 184 head not included in the "population estimates" portion of the environmental assessment?

- How can the BLM support their prediction that 364 head will properly utilize the HUA, when the Bureau had already documented in 1979 that 245 head of horses will overgraze the same area?
- How was the "95 percent confidence level" applied to the regression analysis?
- Why was there no mention of the SRC's (owner of the private land and private waters) request to have wild horses removed from the private lands and private waters?
- Why was there no attempt to coordinate the 1982 Garfield Flat AMP with the Interim Removal Plan and Environmental Assessment? Is the proposed management range of 235-364 head in contradiction to the statements relating to wild horses and objectives in the AMP?
- The draft Walker RMP predicts no change in trend and forage condition on the Garfield Flat Allotment regardless of the numbers of horses or cattle. The removal plan's environmental assessment indicates a downward trend and declining forage condition if the "no action" alternative or the "live-stock elimination" alternatives are implemented. Which document is accurate?
- Why was there no attempt to discuss with the SRC the economic impacts to their livestock operation resulting from the implementation of the various alternatives?
- The Nevada State Director, while commenting to the Buck and Bald Wild Horse Capture Plan, stated ". . . your wild horse specialist estimates that the Buck/Bald Wild Horse population is increasing at the rate of 13 percent per year. Since this rate exceeds the biological potential of the animals, except under extremely unusual conditions, we suggest the statement to be eliminated unless it is based upon an analysis of data as contained in NSO Manual Supplement 4730.1A5". Was the 12 percent annual rate of increase used in the environmental assessment based on methodology presented in NSO Manual Supplement No. 4730.1A5? Does the Carson City BLM contend that the Garfield Flat Herd has experienced "extremely unusual conditions" which would allow them to increase at an average of 12 percent per year?

In conclusion, the SRC contends that the BLM did not 1) use all the available information in determining the proposed management level of 235-364 head, 2) accurately address wild horse impacts to the livestock operation, and 3) consider the importance of private

Mr. Tom Owen
January 7, 1985
Page 4

lands and waters to the wild horse population existence. The SRC agrees that a reduction in the horse population is essential to maintaining the health of both public and private lands on the Garfield Flat Allotment. However, the SRC firmly believes that the management range of 235-364 head would not resolve the problems at hand. Please find attached a detailed analysis of the BLM's proposed management range and the SRC alternative. This attachment should be considered as part of the SRC's official comments to the Draft Garfield Flat Intermin Wild Horse Removal Plan.

Sincerely,



John L. McClain, Principal
Certified Range Management Consultant

JLM:lf

Enclosure

cc: Julian Smith
Bruce Jones
Benny Romero

APPROPRIATE WILD HORSE NUMBERS ON THE
THE GARFIELD FLAT ALLOTMENT: A Discussion of
BLM and Sweetwater Ranch Company Proposals

The Sweetwater Ranch Company (SRC) has initiated litigation against the Bureau of Land Management (BLM) concerning wild horse abuse of the ranch's private lands and waters. Of equal concern to the SRC is the increasing rate at which wild horses are consuming forage on the Garfield Flat Allotment prior to livestock use. The BLM is in concurrence with the SRC that a reduction in wild horse numbers on the allotment is warranted. However, the parties disagree as to the necessary number of horses to be removed. In the Draft Garfield Flat Wild Horse Removal Plan, the BLM proposed an interim management range of 230-364 head of horses. The SRC considers a range of 96-190 head as an appropriate permanent management level. The most recent aerial census, 1983, inventoried 585 head of horses within the Garfield Flat Herd Use Area.

BLM PROPOSAL

The Bureau's "appropriate number" was determined by performing a linear regression analysis based on existing census data to derive an assumed rate of increase, predicting a 1984 population level, and using the Proper Utilization Stocking Rate Formula (PUSRF) to estimate the number of wild horses that would achieve proper utilization of forage. The results of this analysis are presented below:

1983 Wild Horse Census:	585 Head	
Assumed Rate of Increase:	12% Per Year	
1984 Predicted Population:	655 Head	
Key Spring/Summer Horse Area Utilization Results:	90% Utilization	
Proper Utilization Stocking Rate Formula:	$\frac{655 \text{ Horses}}{90\% \text{ Utilization}}$	$= \frac{"x" \text{ Horses}}{50\% \text{ Utilization}}$

"x" = 364 Horses

According to these results, the Bureau predicts that a 50 percent degree of use (proper use) will be achieved in this key area by a population of 364 head of horses. By assuming a constant rate of increase of 12 percent annually and a gathering interval of every four years, the BLM proposes an initial reduction to 230 head.

DISCUSSION

The Bureau's approach and rationale for deriving the proposed 364 head management level contains numerous significant flaws. These errors are discussed below under the headings "Regression Analysis" and "Proper Utilization Stocking Rate Formula".

Regression Analysis: The 1984 population figure of 655 horses presented in the Interim Gathering Plan was based on a simple linear regression. Input for the analysis consisted of three data points (x,y pairs):

<u>x</u>	<u>y</u>	
75	253	x = Year
79	427	y = Number of Horses
83	767	

The 1979 and 1983 "y" values were based upon aerial census counts plus 182 horses which were removed in 1977. This "corrected count" was an attempt to maintain the linearity of the data (Reuwsatt, personal communication). The resulting linear equation was:

$$y = -4144.96 + 58.375x$$

The percent annual increase in herd population was then estimated by dividing the midpoint of the regression line into 58.375. The BLM calculations were:

$$\frac{58.375}{468} = .1247$$

The BLM interpretation of these results was "at a 95 percent confidence level, it is estimated that the population has increased 12 percent annually". The analysis further predicts that based upon the 1983 census, at a rate of 12 percent increase, the 1984 herd size is 655 horses (Reuwsatt, personal communication).

The following are BLM analyses errors:

- 1) This analysis assumes a linear relationship in population growth. Based upon current knowledge of population dynamics, it is agreed that population growth is exponential rather than linear. A scatter diagram of the BLM data also supports this conclusion.
- 2) On assuming a linear relationship, the population increase would be a constant number of horses rather than a percentage value. This constant is directly provided from the

linear equation as the slope of the line. The direct interpretation from the BLM analysis is that the herd increases by 58.375 horses per year, regardless if the herd size is 100 or 500 horses.

- 3) It is unclear how the midpoint of the regression line was determined. It is a mathematical fact that the least squares line goes through the point (X, Y), which in this case would be a population size of 482 rather than 468. Further, it is unclear why the midpoint of the regression line is significant in determining annual herd increase, since a linear relationship and thus a constant increase in number of horses has been assumed.
- 4) Based upon the direct interpretation from the regression equation, the 1984 herd size would be estimated at 759 rather than 655 horses:

$$y = -4144.96 + 58.375x$$

where: y = population estimate
x = year

then,

$$y = -4144.96 + 58.375(84)$$

$$y = 758.9$$

- 5) In order for the 1975, 1979, and 1983 census counts to be related, and result in an 1984 population size of 655 horses, given the 182 head gather in 1977, the population increase would have to be at the rate of 20 percent annually.

	<u>Observed</u>	<u>Herd Size at 20% Increase</u>
1975	253	253
1976		304
1977	(-182 gathered)	364 - 182 = 182
1978		218
1979	245	262
1980		314
1981		377
1982		453
1983	585	543
1984		652

- 6) There can be no significance level associated with this procedure as is alluded to in the Interim Gathering Plan.

Current accepted statistical procedures for estimating animal abundance involves a log transformation of the exponential population curve into a linear form (Conley, 1978; Wolfe, 1980; Book, 1984). A regression analysis on the transformed data results in fitting the least squares line to the data points. The resulting slope of the line in the linear model is the percent annual increase of the population, i.e., the change in the population estimate per year. The resulting linear equation from the data shown in the Interim Gathering Plan with this approach is:

$$y = 5.5236 + .1386x$$

where e^y = Estimated population size at year "x".

Given the following data:

<u>Year</u>	<u>x</u>	<u>Population Size</u>
1975 = Year 0	0	253 Horses
1976	1	
1977	2	
1978	3	
1979	4	427 (245 from census + 182 from gather)
1980	5	
1981	6	
1982	7	
1983	8	767 (585 from census + 182 from gather)
1984	9	

From this analysis, it is estimated that the population is increasing at 13.86 percent annually. Solving the equation for year "9", the 1984 population size would be estimated at 872 horses.

Either application of statistical regression procedures must make the following assumptions:

- 1) The herd census counts are accurate.
- 2) The population has achieved a stable age distribution and increases at a finite rate per unit time, which is not density or climatically dependent.
- 3) There is no immigration or emigration in the population.
- 4) The 182 horses added back to the census counts for 1979 and 1983 did not contribute to the annual population increase over the eight year period from 1977 to 1983.

Not enough information on horse population demographics is known to verify the above assumptions. Furthermore, any regression analysis based on only three data points is unreliable.

Therefore, while the annual population increase could be reasonably estimated at a "ballpark figure" of 10 to 15 percent, it cannot be said that this figure is statistically substantiated. The 1984 population estimate of 655 horses presented in the Interim Gathering Plan is nothing more than an improper mathematical manipulation.

Proper Utilization Stocking Rate Formula (PUSRF): The appropriate management level should represent the number of horses which can properly graze the Herd Use Area yearlong in conjunction with winter livestock use during normal forage production years. The Bureau's figure of 364 head represents only the number of horses which can properly graze the Herd Use Area for approximately six months during exceptional forage production years without regard to livestock forage demand. The major problems associated with the BLM's use of the PUSRF in establishing their appropriate management level are as follows:

- 1) There were three years in which the PUSRF could have been applied to determine appropriate wild horse numbers: 1984, 1979, and 1976. By using the same method and the Bureau's own data, the 1979 results indicate that only 175 head of horses would have grazed the area to a level of 50 percent utilization as opposed to the 364 head indicated in the 1984 analysis (Table 1). If the BLM considers the PUSRF results of one year legitimate for establishing a stocking rate, then the 1979 data should have been used instead of 1984 as supported with the following:
 - a) 1979 was a "typical" year in terms of spring/summer precipitation (99 percent of normal) and forage production, while 1984 spring/summer precipitation was 50 percent above normal. The determination of proper stocking rates should be based on years of average forage production and not on exceptional ones.
 - b) Numbers of head in the 1979 formula are based on direct observations from an aerial census as opposed to a projected population based on a highly questionable application of statistical analysis as was used in the 1984 analysis. The 1984 figure of 655 head used by the BLM is at best a rough approximation and is unsupported. The accuracy of actual use data, in this case numbers of head, is critical to the PUSRF.

Table 1. Proper Utilization Stocking Rate Formula calculations and precipitation data for wild horses on the Garfield Flat Allotment for 1984 and 1979.

Year	Proper Utilization Stocking Rate Formula Calculations	Appropriate Horse Numbers at 50% Utilization	Spring/Summer Precipitation
1984	$\frac{655 \text{ Head}}{90\% \text{ Utilization}} = \frac{\text{"x" Head}}{50\% \text{ Utilization}}$	364	Above Normal
1979	$\frac{245 \text{ Head}}{70\% \text{ Utilization}} = \frac{\text{"x" Head}}{50\% \text{ Utilization}}$	175	Normal

The 1979 analysis would have been a much more reliable year in which to apply the PUSRF if the BLM insists on using the formula.

- 2) The Bureau used number of head as opposed to actual use data (i.e. AUMs) in the PUSRF. As expressed in the Interim Gathering Plan, the BLM indicates that 655 head were responsible for 90 percent utilization. There is no reflection of time in this statement. Did the 90 percent utilization from 655 head occur from one month of use, three months, twelve months, etc.? Since the 1984 utilization data was collected on approximately October 1, it can be estimated that it took the 655 horses at most six months to utilize the key area to a level of 90 percent. The BLM predicts that by reducing horses to 364 head, a proper use figure of 50 percent can be attained during this same six month period. However, management of wild horses must be based on proper use for yearlong use (12 months). The BLM's PUSRF must be adjusted for a 12 month season of use. Table 2 presents the BLM's PUSRF results corrected for yearlong use. Based on the 1984 data, 200 head grazing yearlong would achieve proper use. By using the more reliable 1979 data, 108 head would result in proper use for a yearlong season of use.

The Bureau contends that it is not necessary to correct the data for a 12 month season of use since the utilization data was collected from a supposed key spring/summer horse use area. In addition, the BLM contends that using number of head and not actual use data is reasonable. The problems with this reasoning are as follows:

- a) The BLM assumes that once 50 percent utilization is achieved in this area, horses will move to other areas of the Herd Use Area.
- b) The BLM assumes that the Garfield Flat Herd is seasonally migratory. SRC personnel who are on the allotment daily during the winter disagree with this assumption. The reason for reduced horse use in this area during the fall/winter months is due to lack of forage (as indicated by a 90 percent utilization level in October).
- c) The BLM assumes that the entire 655 head of horses were responsible for the 90 percent degree of use in the area. In reality, it is not known how many horses actually grazed the area. This has direct bearing on determining the appropriate stocking rate.

Table 2. Proper Use Stocking Rate Formula results using corrected values based on the 1984 data.

APPROACH	PUSRP ^a CALCULATIONS		RESULT	INTERPRETATION
	655 Head 90% Utilization	"x" Head 50% Utilization ^b		
BLM Proposal	$\frac{655 \text{ Head}}{90\% \text{ Utilization}}$	$\frac{"x" \text{ Head}}{50\% \text{ Utilization}^b}$	x = 364 Head	655 head grazed the area to a degree of 90 percent utilization during a six month period (April 1 to October 1). Results indicate that a reduction to 364 head would achieve proper use in the same six month period.
Correcting for Yearlong Season of Use	$\frac{655 \text{ Head (6 mos)}}{90\% \text{ Utilization}}$	$\frac{"x" \text{ Head (12 mos)}}{55\% \text{ Utilization}^c}$	x = 200 Head	wild horse management in this case should be based on proper use achieved from yearlong use. Results indicate that 200 head grazing yearlong would achieve proper use.
Correcting for Livestock Use	$\frac{655 \text{ Head (6 mos)}}{90\% \text{ Utilization}}$	$\frac{"x" \text{ Head (12 mos)}}{27.5\% \text{ Utilization}^d}$	x = 81 Head	The BLM proposal allocates all proper use of forage to horses prior to livestock turnout. This calculation allocates half of the available forage to yearlong wild horse use and half to winter livestock use. Results indicate that 81 head of horses can graze use area yearlong in conjunction with winter cattle use.

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^a Proper Use Stocking Rate Formula.

^b Nevada Range Studies Task Group recommends 50 percent utilization as a guideline for proper use under spring/summer season of use.

^c Nevada Range Studies Task Group recommends 55 percent utilization as a guideline for proper use under yearlong season of use.

^d For analysis purposes, half of the available forage was allocated to wild horses. No attempt was made to proportion livestock actual use to wild horse actual use.

- d) The BLM assumes that 90 percent degree of use was accumulative through the month of October. Resource Concepts, Inc. (RCI), documentation in 1984 indicates that this area had already been overgrazed by horses in July.
 - e) To predict that 364 horses will graze to a proper use level by October ignores previous BLM observations. Based on the 1979 BLM utilization results, it is already known that 245 head of horses will overgraze the area within the same time period. In the 1982 Garfield Flat AMP, the BLM indicates that this area has been overgrazed since 1974 by a number of horses much less than the proposed 364 head.
- 3) The Bureau's analysis does not consider cattle use of the area. As presented in the Interim Gathering Plan, the BLM is attempting to allocate all allowable use of forage to horses prior to livestock use of the allotment. The SRC has been unable to pump the well in the southwest portion of Garfield Flat because the area has been rendered useless in terms of available livestock forage, due to prior severe wild horse use. By allocating the forage to wild horses prior to livestock turnout, the BLM is not resolving this situation. The PUSRF should be corrected to consider authorized winter livestock use. Table 2 presents the calculation for determining proper use of forage for year-long wild horse use in conjunction with winter livestock use. Based on this analysis the appropriate number of wild horses should be 81 head. Using this same approach, but with the 1979 data, the result would be 54 head.

SWEETWATER RANCH COMPANY PROPOSAL

The SRC proposes a permanent management level range of 96-190 head of horses with 135 head as the median. Horses would be initially reduced to a population of approximately 96 head. The horse herd would be allowed to increase until a level of approximately 190 head is reached. At that point, the horses would again be reduced to 96 head. Assuming a rate of increase of 12 percent annually, gathers would have to be accomplished at least once every eight years or when the numbers reached 190 under this scheme. The following example illustrates this point.

Year 1	Reduce to 96 Head
Year 2	108 Head
Year 3	121 Head
Year 4	135 Head*
Year 5	151 Head
Year 6	169 Head
Year 7	190 Head
Year 8	Reduce to 96 Head

* 135 head represents the median of population growth.

The SRC maintains that this management range of 96-190 head should represent the permanent management level of wild horses as opposed to an interim management level. This can be accomplished through a court order based upon both parties' consent. Furthermore, in the event that the BLM lacks funding to comply with the future gathering schedule, the SRC recommends that a stipulation be included in the Herd Management Plan which allows the ranch to gather the horses, under BLM supervision, with the reimbursement of ranch expenditures coming in the form of grazing fee credits.

DISCUSSION

Management Level: The SRC proposed management level of 96-190 is based upon a review of the pertinent BLM documents. This review revealed a variety of significant figures concerning wild horse numbers on the Garfield Flat Allotment which are portrayed in Table 3. It is evident that the appropriate management level for wild horses should be greater than 50 head (BLM established minimum level for a viable herd), but less than 226 head. (The 1982 AMP states that horses have overgrazed the pasture since 1974, and 226 head is the estimated 1974 population using a 12 percent annual rate of increase.) A variety of other BLM statements and documentation (e.g., October, 1979, utilization results) support the contention that horse numbers greater than 226 head are excessive.

The figure of 135 head of horses was selected as the median of the SRC appropriate management level for the following reasons:

- 1) It is an estimate of the horse number remaining after the 1977 interim gather, and the assumption is that the gather was initiated to resolve a serious resource problem attributed to excessive numbers of horses. Those horses remaining after the gather should have constituted a reasonable number of horses. It should be noted that a major reason for the gather was to prevent a probable horse die-off due to drought conditions.
- 2) It is approximately the midpoint of the appropriate management range constraint of 50 to <226 head.
- 3) It is compatible with the 1982 AMP objectives.
- 4) The SRC feels that level would be acceptable in terms of wild horse use of private property.

Permanent Management Level: The SRC is not interested in dismissing the lawsuit or entering into a stipulation that calls for interim management of the Garfield Allotment when there is ample data available to establish permanent management levels. The SRC is mindful that all water for year around horse use either arises on SRC private lands or belongs to the SRC.

Table 3. Significant figures of wild horse numbers of the Garfield Flat Herd Use Area.

WILD HORSE NUMBERS	YEAR	SIGNIFICANCE	SUPPORT AS A MANAGEMENT LEVEL	SOURCE
0	-	The only level of wild horses which would insure no use of private lands or waters.	The WYHWS Act requires that wild horses be managed in those areas where found in 1971. However, the Act also states that wild horses will be removed from private lands.	---
35	1971	Represents wild horse numbers existing on the allotment when the WYHWS Act was passed.	The 1971 Garfield Flat AMP states that 35 head of horses did not pose any problems on the allotment and indicates that this number was compatible with other resource objectives. The AMP foresaw future problems with wild horses on the allotment if their numbers were not controlled.	BLM, 1971, Garfield Flat AMP.
50	-	BLM uses this level as the minimum number of wild horses in which a viable herd can be maintained.	Based on the National Academy of Science research, the BLM uses the 50 head minimum as a "rule of thumb". The assumption is that a herd less than 50 head in number will result in inbreeding and will ultimately reduce the aesthetic quality and health of the herd. Fifty head is used as the minimum management level for wild horse herds.	NAS, 1980, "Wild and Free-Roaming Horse and Burros". BLM, 1983, Lahontan HMP.
81	-	According to the 1984 range adjudication, there are 968 AUMs available above active preference for livestock. If these 968 AUMs were allocated to horses, it would provide forage to 81 head of horses.	The 1953 range survey estimated the carrying capacity of the Garfield Flat at 8,210 AUMs. The 1984 range adjudication allocated 4,242 AUMs to livestock. As a result, 968 AUMs were in surplus. There is currently a forage demand by horses of over 7,200 AUMs and a combined forage demand of livestock and horses of over 11,400 AUMs. Based on the survey results, the allotment forage demand is more than double the carrying capacity. While allocation based on range surveys is no longer used by the BLM, the Sweetwater Ranch active preference level was established by these results. If this approach is not acceptable for determining wild horse numbers, then what rationale is there to hold the ranch to active preference?	BLM, 1971, Garfield Flat AMP.
135	1977	Represents HCI's estimate of wild horse numbers remaining after the 1977 wild horse gather on the allotment.	It is assumed that the interim wild horse gather conducted in 1977 was initiated to resolve a wild horse overgrazing problem. It would be reasonable to assume that the number of horses remaining after the gather represented what the BLM considered to be an "appropriate management level".	HCI rationalizations, based on the BLM, 1982 Garfield Flat AMP.
245	1979	Represents the BLM's wild horse count on the Garfield Flat Allotment.	The appropriate management level for wild horses should be less than 245 head. The 1982 AMP states that until these numbers of horses (245 head) are reduced significantly, there will continue to be an overgrazing problem on the allotment. The BLM's 1979 utilization mapping results support this rationale.	BLM, 1982, Garfield Flat Allotment.
253	1975	Represents the first aerial census results of wild horses on the Garfield Flat Allotment.	Based on the BLM's 1982 Garfield Flat AMP, final appropriate management level of wild horse numbers would have to be less than 253 head. The 1982 AMP states that overgrazing by wild horses has been a problem on the allotment since 1974. Therefore, wild horses should be managed at levels less than the 1975 count.	BLM, 1982, Garfield Flat AMP.
585	1983	Represents the BLM's latest wild horse census on the Garfield Flat Allotment. It is the BLM's preferred management level for wild horses on the Garfield Flat Allotment according to the draft Walker HMP.	The BLM's preferred alternative of Walker HMP states that wild horse populations will be managed at the 1983 level during the short term. Final management numbers will be established through monitoring results. It is interesting to note that the 1983 population of 585 head is more than double the 1975 level (253) when horses were first identified as a problem.	BLM, 1984, Draft Walker HMP.

Grazing Fee Credits for Horse Removal: The SRC is aware that current BLM policy lacks the flexibility to allow grazing fee credits for wild horse removals. However, they feel that the feasibility of this approach deserves further investigation. If policy does not presently allow for this approach, then perhaps the BLM could pursue it through a CMA or Experimental Stewardship in the near future.

CONCLUSION

The Bureau approach is superficially based on limited resource data. However, there are serious flaws in the rationale which render the figure of 364 head as being meaningless. As demonstrated in the previous discussion, there are a variety of pertinent considerations which must be accounted for in establishing the appropriate wild horse numbers based on the PUSRF. While this correspondence presents the results of these considerations, the SRC does not advocate the implementation of any of the horse population figures derived from them. The SRC maintains that the BLM has contradicted previous monitoring results and the 1982 AMP by advocating a 364 interim population level of horses, which by their own data is excessive. If the 364 head level was established, the BLM would intentionally allow range abuse to occur by animals which are their responsibility.

The SRC contends that their proposed management range of 96-190 head of horses is:

- 1) In compliance with the Wild and Free-Roaming Horse and Burro Act of 1971.
- 2) Representative of the Bureau's multiple use mandate as established by FLPMA (the BLM's proposal is not multiple use oriented).
- 3) Compatible with the BLM's 1982 AMP objectives (the BLM's proposal is not).
- 4) Supportable by previous BLM data and documents (the BLM proposal is not).
- 5) Acceptable to SRC in terms of wild horse use of private lands and waters. The SRC does not consider the BLM's proposed management level acceptable.

In conclusion, the SRC can perceive no reason why the range of 96-190 head of horses should not be the appropriate number of horses on the Garfield Flat Allotment.

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