



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

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In Reply Refer To:

(NV-022.00)

November 14, 2000

Dear Interested Party:

A draft version of the Little Owyhee Herd Management Area Plan (HMAP) is enclosed for your review and comment. This document is a revision of the original Little Owyhee/Snowstorm HMAP approved August 6, 1987, for the Little Owyhee HMA only.

Please return comments to Rodger Bryan or Bryan Fuell of this office by January 14, 2001. Dave Stockdale, former wild horse and burro specialist who authored the document and compiled the data, can be reached for questions at Supervisor's Office, Malheur National Forest, P.O. Box 909, John Day, OR 97845, phone 541-575-3000 after December 4, 2000.

Sincerely yours,

Colin P. Christensen
ADM, Renewable Resources

Enclosure

LITTLE OWYHEE
WILD HORSE
HERD MANAGEMENT AREA PLAN

Winnemucca Field Office

2000

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Little Owyhee
Wild Horse Herd Management Area Plan

I. Introduction and Background Information

A. Location and Setting

This activity plan (HMAP) is developed to set forth management goals and objectives for the Little Owyhee HMA (NV200). Wild, free-roaming horses will be managed to achieve and maintain a thriving ecological balance on public lands (BLM). This document is a revision of the original HMAP approved August 6, 1987.

The geographical center of the HMA is located approximately 40 air miles northeast of Winnemucca, Nevada and 20 miles northeast of Paradise Valley, Nevada.

Prominent landmarks/features found within or near the HMA are the North Fork of the Little Humboldt River, the Santa Rosa Mountains, and the Little Owyhee River.

The area is located on lands managed by the Winnemucca Field Office of the BLM. The area consists of approximately 460,283 acres, of which about 95 percent is public (BLM) land. The east one-third of the area lies within the Elko BLM District, but all renewable resources occurring within this area are administered by the Winnemucca Field Office.

The Little Owyhee HMA is located within the Little Owyhee Allotment, and consists of the three spring/fall-winter pastures of that allotment: Fairbanks, Twin Valley Springs and Lake Creek Pastures. Refer to Appendix A maps for location of the HMA.

B. Relation to Planning Documents

An Allotment Management Plan (AMP) for the Little Owyhee Allotment was signed in 1969 and revised in 1972. This plan contains elements that conflict with wild horse use. This plan is currently suspended based on the allotment evaluation FMUD (see p. 6).

The Paradise-Denio Unit Resource Analysis (URA) was completed in 1979. The URA described the physical resources of the HMA, the conditions/problems of the wild horse population, and presented (in tabular form) the estimated population for the HMA. The primary condition/problems which were described were: fences that cause problems and injure horses; improper distribution of water sources; no specific use levels (AUMs) for wild horses; existence of wilderness study areas that could be potential problems (specifics were not addressed); and degradation of some riparian areas caused by over-utilization of forage. At the time the URA was prepared, it was estimated that there were 2,324 wild horses in the Little Owyhee HMA.

A Coordinated Resource Management and Planning (CRMP) Plan was developed and approved for the Little Owyhee Allotment in 1982. This plan is also suspended.

The Paradise-Denio land use plan (Management Framework Plan - Step III) was approved on July 7, 1982. This decision document established an Appropriate Management Level (AML) of 200 adult wild horses in the Little Owyhee HMA. Also of significance, the land use plan did not reserve any forage (AUMs) for wild horses. The decision was to make

future adjustments in grazing use levels based upon monitoring.

In June 1992, the BLM Washington Office issued "Strategic Plan for Management of Wild Horses and Burros on Public Lands" (hereafter Strategic Plan). This document called for control of wild horse numbers through selective removals and fertility control. In Nevada, the plan called for reaching appropriate management levels in 6 years by two removals (following an initial gather) at 3 year intervals, beginning in FY 93. During each gather, only animals 0-9 years of age would be removed from the range. Fertility control would be practiced on 50% of mares aged 4-9. The method of fertility control would be immunocontraception injections.

The goals of the 1992 Strategic Plan have not been reached. Current policy is contained in Washington Office Instruction Memorandum 99-053, dated February 2, 1999, which provides that only horses 5 years of age and younger will be removed from Herd Management Areas. Horses aged 6-9 years, if deemed adoptable, may also be gathered and shipped. Older horses from these areas must be returned to an HMA. Exceptions can be made in the case of an emergency removal for environmental reasons, such as fire or drought. Deviation from this policy is permitted only upon written approval from the Wild Horse and Burro National Program Office (NPO).

Funds have recently been appropriated for an initiative that would allow for horses of any age to be gathered and removed from the range, with older horses (10 and older) going to long term holding facilities, yet to be established, and younger horses moved into the adoption program. This initiative also calls for gathers at 4 year intervals, following fertility control on those mares to be released back into an HMA after gather operations.

C. Resource Information

1. Wild Horse and Burro Use History

a. Removal/inventory data

There are no burros in the HMA.

Since 1971, there have been eight BLM authorized removals:

<u>Calendar</u> <u>Year</u>	<u>No. Horses</u> <u>Removed</u>
1977	1065
1981	51
1983	342
1984	487
1985	726
1992	691
1993-94	421
1997	603
TOTAL REMOVED =	5748

Past removals have removed approximately 55% females and 45% males. Prior to 1992, horses were indiscriminately removed from all age classes. The 1992 gather removed only animals ≤ 9 years. In the 1993-94 gather, animals \leq age 5 were removed from the HMA (\leq age 9 were removed from areas outside the HMA). In 1997, the removal criteria was again horses aged nine and younger. All older animals were returned to the range, and some younger animals were also returned to the range.

For age, sex and color data from removals, see Appendix C.

The following table represents all known BLM flights conducted in the HMA. Counts are of total numbers of animals (adults and foals) and include small numbers of horses counted in the summer pastures of the Little Owyhee allotment which are outside the HMA boundaries.

Census flights (helicopter):		
<u>Date</u>	<u>Number of Animals (adults/foals)</u>	
6/74	1353	1106/247
3/77	1834	1774/60
6/79	1143	895/248
2/80	889	718/171
10/80	1480	1243/237
9/84	833	649/184
9/86	359	294/65
7/89	819	672/147
2/90	811	793/18
7/92	1398	1117/281
7/97	1164	957/207

Distribution flights (fixed wing):		
3/69	139	139*
3/72	537	486/51
5/72	799	689/110
1/73	522	435/87
6/75	1398	1166/232
7/76	1870	1519/351
8/78	610	512/98
1/82	793	793*
9/82	1104	1024/80
1/88	104	104*
2/88	172	170/2
3/89	304	304*
1/91	823	823/0
7/91	856	756/100
3/92	1280	1246/34
5/92	1138	978/160
1/93	380	365/15
5/93	603	546/57
10/93	785	665/120
8/94	355	279/76
9/96	651	516/135
12/97	359	354/5
8/00	717	626/91

* Total number of animals-the adult/foal breakdown was not reported.

According to the Paradise-Denio URA, there were 37 horses in the Little Owyhee area in 1951. No indication was given of the method of inventory, or any other documentation. This translates into an 18% annual rate of increase from 1951 to 1977 (the date of the first BLM removal).

The purpose of the winter 1988 flight was to relocate horses released into the HMA from other areas.

Two flights were flown in August 2000. A distribution flight was flown on August 14, counting a total of 632 horses (555 adults 77 foals), of which 100 (88/12) were seen the southern part of Lake Creek pasture. Due to conflicting reports as to the numbers of horses in this area, it was flown again on

August 28 in a helicopter, after the census of the Snowstorm HMA. On this flight a total of 185 horses (159/26) were observed. The total of 717 horses in the table above was obtained by subtracting the 100 animals seen in south Lake Creek on 8/14 from the total of 632 and adding 185 from 8/28.

For details on census flights and numbers of horses by pasture, refer to the Little Owyhee Allotment Evaluation, available for review in the Winnemucca Field Office, and Appendix A maps.

Research conducted by Siniff et al. (Census methods for wild horses and burros. Univ. Minn. Dep. Ecol. and Behav. Final Rep. to BLM on Contract AA858-CTO-52. 83 pp., 1982) suggests that when conducting an aerial census, only a percentage of the total number of animals are ever counted. An analysis of past inventories in the HMA further suggests some factors which may have influenced the accuracy of census data in the HMA. The primary factors to consider are:

- 1) Different types of aircraft were used.
- 2) Number of observers varied from one to two in succeeding years.
- 3) Observers of different experience levels were used.
- 4) Census was not conducted at the same time period each year.
- 5) The entire area was not always flown.
- 6) Flights were flown at different heights above ground level.
- 7) Prior to 1979, animals which were counted in the southern portion of the Lake Creek Pasture (Little Owyhee HMA) were added to the Snowstorm HMA. Those counts should have been added to the Little Owyhee data.
- 8) There may be periodic emigration and immigration occurring into and out of the HMA. Horses may be coming into the HMA from adjacent HMAs.

The obvious concern with continuing immigration is that it is difficult to reach appropriate management levels (AMLs). Another problem associated with fluctuations in population numbers concerns the monitoring and removal processes. For example, if an aerial census indicates there are X number of wild horses in an HMA, and shortly thereafter an additional unknown number enter from another HMA, there would be no reliable population information for monitoring and removal decisions.

The allotment boundary fences and interior division fences require maintenance, and lack of fence maintenance has been a documented cause of fluctuations in numbers in the past.

b. Current conditions

The major limiting factor affecting wild horses is the lack of adequate water in the summer. In the Little Owyhee HMA, there are only three permanent, publicly owned water sources, all situated in the southern portion of the HMA. These are the North Fork of the Little Humboldt River (NFLH) in Fairbanks pasture, a seep at the mouth of Milligan Creek gorge in Twin Valley Springs pasture, and the South Fork of the Little

Humboldt River (Rodear Flat) in Lake Creek pasture. In addition, water from the Maiden Springs pipeline (a private water right) has been available from breaks in the line, and at places provided by the permittee. Chukar and Little Mud springs, in southern Fairbanks pasture, may also be perennial.

In addition to the lack of water in summer, the lack of exposed forage during certain times in winter can be a problem.

Horse movements and migrations are determined by the availability of water. Horses move toward and are concentrated around permanent water in summer, and disperse as ephemeral water sources become available in fall, winter and spring. In the Little Owyhee, this means movement southward in summer and northward in winter (the reverse for horses around the Maiden Springs Pipeline).

Another factor affecting horse movements is fences. Approximately 60 miles of interior fence were installed in the Little Owyhee Allotment in the late 1970's. These fences have impeded and restricted the movement of wild horses. An inventory was conducted in 1982 to determine what maintenance was necessary for these fences. The inventory revealed almost 50 holes in the fences. The holes were created by wild horses because the fences disrupted their normal movement and distribution patterns.

Horses now appear to have adapted to the fences. Gates have been installed to facilitate horse movements, but it is not apparent that horses are using them.

There has been very little recent documented movement of wild horses from the Little Owyhee to the Snowstorm Mountains HMA, and vice versa. One freeze marked Little Owyhee horse (see p. 11) was captured in the Snowstorm HMA in October 1996. No freeze marked Snowstorm horses have been seen in the Little Owyhee HMA. There are two fences which physically separate the two HMAs. These fences require maintenance, and if some movement does occur between the two HMAs, it is a result of movement through these fences. The Rodear Flat area, where horses from both HMAs water in summer, is another possible site for migration; however horses from the two HMAs water at different places. There has been no evidence of movement into the HMA from the adjacent Elko District HMA.

Demographic characteristics, i.e. sex ratio and age structure, have been developed for the HMA from data obtained during gather operations. During the past three gathers between 1992 and 1997, almost all horses were captured and restrained in a portable chute to determine age. The 1992 demographic data showed a relatively young herd, with 69.6% of the population being 5 years old and younger, 15.6% aged 6-9, and 14.8% aged 10 and older. As all older (10+) animals were returned to the range (and following the 1993-94 gather, the 6+ age classes), these ratios changed. Following the 1997 gather, the percentages were approximately 6.0, 6.3 and 87.7 for 0-5, 6-9 and 10+ age classes respectively. Foal crops in 1998 and following years will increase the percentage in the younger age class and decrease it in the older age classes.

The selective removal policy in place since 1992 has resulted in sweeping changes in the age structure of the herd. Three selective removals have caused the virtual elimination of the middle age classes (5-8 in 1997, currently (2000) the 8-11 age

class).

The majority of the horses in the HMA exhibit a bay, sorrel, roan or gray color pattern. During the winter of 1987-88, 15 horses (7 pintos, 6 buckskins, 1 palomino-paint and 1 palomino) were introduced into the Twin Valley pasture. These animals and their descendants are part of the Milligan Creek (southern Twin Valley) herd.

2. Reference to Land Use Plan

An AMP for the Little Owyhee Allotment was signed in 1972. CRMP recommendations were developed and approved for the allotment in 1982. The monitoring plan for the Little Owyhee Allotment was completed in 1986. These documents are located in the Field Office files and can be reviewed upon request.

The Little Owyhee CRMP Committee recommended an initial AML of 200 adult wild horses for the Little Owyhee Allotment. The Winnemucca District Manager approved this recommendation, and the Elko BLM District concurred with the AML numbers. These numbers represented the initial AML for the HMA.

The land use plan (MFP III) did not establish levels of use (in AUMs). From 1982 to 1993, the use of forage of all consumptive users (wildlife, wild horses, and livestock) for both allotments was based upon CRMP recommendations. These forage use levels were used until adjustments were indicated by monitoring data.

The Little Owyhee Allotment Evaluation and Final Multiple Use Decision (FMUD) were issued in 1993. The allotment was re-evaluated and a new FMUD issued in 1999. The carrying capacity for the HMA was determined to be 25,038 AUMs (in times of maximum water availability), which was allocated as 21,462 AUMs for livestock and 3,576 AUMs for wild horses. These numbers did not change between evaluations. In times of limited water availability, wild horses will retain their total AUM allocation.

The Little Owyhee Allotment evaluation and re-evaluation are on file and available for review in the Winnemucca Field Office. These documents suspended the existing AMP and CRMP plans.

On June 7, 1989, the Interior Board of Land Appeals (IBLA) issued a ruling invalidating all AMLs which were not based on monitoring data. "The Board will set aside a BLM decision to remove wild horses from a herd management area where removal is not properly predicated on an appropriate determination that removal is necessary to restore the range to a thriving natural ecological balance and prevent a deterioration of the range, in accordance with sec. 3(b) of the Wild Free-Roaming Horses and Burros Act. . . we conclude that section 3(b) of the Act does not authorize the removal of wild horses in order to achieve an AML which has been established for administrative reasons, rather than in terms of the optimum number which results in a thriving natural ecological balance and avoids a deterioration of the range" (109 IBLA 112,119).

Accordingly, the AML for the HMA has been established based on resource monitoring, primarily in terms of available year-round

water. The final AML, forage use levels and grazing systems for the allotment have been determined by the Assistant Field Manager for Renewable Resources in his final multiple-use decision, based on the Little Owyhee Allotment evaluation. The AML established for the Little Owyhee HMA is 298 wild horses.

3. Other Resources

In addition to wild horses, other important resource values in the HMA are: wildlife, watershed, fisheries, recreation, Wilderness Study Areas, and riparian values. All of these resources are considered to be of equal value to one another and any activity plan must be formulated to consider all multiple-use values.

Wildlife species currently found within the HMA are many and varied. However, those which principally compete with domestic livestock and wild horses for forage are limited to mule deer (Odocoileus hemionus), antelope (Antilocapra americana), rodents, and lagomorphs. No threatened species occurs in the HMA. Other important game species found within the HMA are quail, brook trout, chukar partridge, and sage grouse.

The North Fork of the Little Humboldt River WSA (NV-020-827) lies within the Little Owyhee HMA. See Appendix A maps for location of the WSA.

II. Objectives

A. Habitat objectives

1. Maintain the forage use levels for all herbivores within the HMA at a level which does not exceed proper use of key forage plant species as identified by the Little Owyhee Monitoring Plan, and which meets the vegetation objectives and standards for rangeland health established in the allotment's Final Multiple Use Decision. See Appendix D for the vegetation objectives.
2. Ensure adequate year-round water is available for wild horses to maintain the appropriate management level.
3. Determine the home ranges and distribution/movement patterns of the animals in the HMA to facilitate evaluation of effects of range improvements.

B. Animal objectives

1. Manage horses within a range of 40% below AML to AML in the HMA. This range is 179 to 298 wild horses.
2. Manage horses so as to return the current age-skewed population to an age structure more closely resembling an historical age structure. See Appendix C for data on historical age structures.
3. Determine population parameters of natality, mortality, sex ratios, and rate of increase in the horse population.
4. Maintain a healthy, viable population of horses.

III. Management Methods

A. Habitat Objective Number:

1. Provide forage for 298 wild horses in the Little Owyhee HMA.
2. Develop additional water sources for wild horses by improving existing springs and reservoirs, and/or constructing large ungulate guzzlers for horses.
3. Conduct studies designed to collect information regarding wild horse distribution and movement patterns. Conduct seasonal distribution flights each year, depending on funding.

B. Animal Objective Number:

1. A total count census, by helicopter, will be conducted every three years to determine whether actual wild horse numbers exceed the AML range in the HMA.

Once AML has been reached in the HMA, it will need to be gathered again periodically to maintain the population within the AML range.

The interval between gathers will be a minimum of 4 years, or according to wild horse and burro program national policy.

Population modeling will help to determine the timing of and elements included in the next removal. Subsequent gathers may take only a portion of individuals in each age and/or sex class. The effects of any proposed action will be analyzed through modeling.

When technologically feasible, fertility control may be performed on mares as per national policy. The number and age classes of mares on which to perform fertility control will be determined based on population modeling.

2. Historic age structure of the Little Owyhee HMA was determined (by analysis of capture data from 1984, 1985 and 1992, gathers previous to the selective removal policy) to be approximately 65% age 0-5, 20% age 6-9, and 15% aged 10 and older. During gather operations, remove and/or release animals to achieve this ratio. Refer to Appendix C for specific age structure data.
3. Following removals, the herd composition will be analyzed based on the following factors: the age structure of the herd after the previous gather (available from capture data), and recruitment and mortality in the interim, estimated by computerized population modeling and "ground-truthed" when possible by aerial census and/or distribution flights.

For more details on types, frequency and intensity of study methods, refer to Section IV, Evaluation and Revision.

4. Historically, based on anecdotal evidence, horses from this area were bred for draft stock, and large, well-proportioned horses were the norm. Therefore, during removal operations, horses within the age group targeted for removal, meeting these size and conformational characteristics, may be released back into the HMA to provide continued genetic diversity: height 14-15 hands, weight 950-1100 pounds, prominent withers, short

back, straight legs, head proportional to body.

During removal operations, take blood samples from approximately 25% of release animals of each sex from each pasture, and subject these to laboratory analysis for variants in blood protein systems. Results will be compared against blood samples taken in previous years.

C. Objectives Implemented

The following animal and habitat objectives of the original HMAP and CRMP plans have been fully or partially implemented.

1. Monitoring plans have been developed for the HMA.
2. Thirty-two reservoirs have been maintained back to serviceable condition. Two wells were repaired. Three miles of water pipelines were maintained. Nine new miles of water pipelines were installed. One new reservoir was constructed.
3. Interior gates were lengthened for easier movement of wild horses.
4. Seven Pintos, two Palominos and six Buckskins were relocated to the Little Owyhee HMA. This new infusion of genetic pool, mixing with the existing gene pool, has resulted in changes in the color patterns in the HMA.

IV. Evaluation and Revision

The following studies have been established to evaluate the effectiveness of the management methods identified in this plan to meet the objectives.

A. Habitat Study Methods

1. Climatological

Climatological data will be obtained from the Antelope Lake Remote Automated Weather Station located 1.5 miles east of the Little Owyhee Allotment boundary fence in Elko County. This data can be supplemented by data published by the National Oceanic and Atmospheric Administration. This data will be obtained on a yearly basis and will consist of average monthly precipitation, temperature, wind speed and humidity.

2. Frequency and Trend

One of the parameters to show changes in plant composition (trend) is frequency. Frequency data will be collected using the quadrat-frequency method as described in the Nevada Range Monitoring Handbook (1984). Data will be stored and analyzed using standard statistical analysis procedures. When a statistically significant change in frequency data is noted, a double-sampling transect will be read. Frequency data will be used in combination with the ecological status to determine trend. This data will be collected at key areas on a yearly basis.

Refer to Appendix A map which shows key area locations.

3. Ecological Status

Ecological status (formerly referred to as "ecological range condition") was determined in FY 1986 in the Little Owyhee Allotment on all of the key management areas discussed in the monitoring plan. The double-sampling methods as described in the National Range Handbook (SCS 1976) were used to determine ecological status.

The ecological status for the Little Owyhee HMA is summarized below. ESI categories are as follows: Early seral (0-25%), Mid seral (26-50%), Late seral (51-75%), and potential natural community (PNC) (76-100%).

Little Owyhee HMA			
<u>PNC</u>	<u>Late Seral</u>	<u>Mid Seral</u>	<u>Early Seral</u>
1168 acres (0.2%)	110,089 acres (24.0%)	326,287 acres (71.0%)	21,981 acres (4.8%)

See Appendix A map for ecological site inventory.

4. Utilization

Vegetation utilization data, which includes utilization made by livestock, wildlife and wild horses will be collected using the key forage plant or landscape appearance method, which are also described in the Range Monitoring Handbook. Utilization cages will be placed on all key areas for calibration purposes.

Additional key areas have been established on areas of specific horse concentrations.

Utilization data will be collected twice a year, once just prior to livestock turnout, and once just after livestock are removed. Utilization taken before livestock turnout would show use by wild horses when livestock are absent from specific pastures. Utilization taken after livestock removal would show the total utilization which occurred during that period, but will not be able to differentiate use made by any particular species.

5. Water Inventory

All water sources will be physically inspected in the spring to determine which are holding water, and to estimate how long the water in that source will last. Those water sources found to contain water will be re-inspected at least once during the summer, and more often in drought conditions, to determine if adequate water is available for the horses in the HMA.

The water inventory will be mapped and the results placed in the permanent HMA files.

Refer to Appendix A map and Appendix B for a list of water sources.

B. Wild Horse Population Study Methods

1. Home Range and Seasonal Movements

During 1992-97, a freeze marking program was conducted on the HMA. During removal operations, horses to be released back in the HMA were freeze marked on the left hip. In 1992, the identifying mark was an X (for males) and an XX (for females). In 1993-94, animals were identified by sex and area of capture as follows:

<u>Pasture</u>	<u>Males</u>	<u>Females</u>
Fairbanks	01	02
Twin Valley	03	04
Lake Creek	05	06
Outside HMA	07	08

Note that the first digit represents the last digit of the HMA number, and the second digit indicates sex (odd for males, even for females) and area of capture.

In 1997, an additional 21 horses were marked according to the above scheme.

See Appendix E for a detailed discussion of the freeze marking program. Currently marked animals will be followed through their lifespans in subsequent capture operations, but no further marks will be placed on horses in this HMA.

2. Productivity, Survival and Population Estimates

a. Productivity and Survival

General productivity indices will be estimated from the relative age composition (percent foals) of the HMA's population as per NSO Manual 4730. The desired data will be secured from aerial census and ground observations no later than every third year until the indices become established and are predictable. Aerial censuses designed to obtain wild horse home range and seasonal movement patterns can also supply relative age composition.

Survival rates will be estimated from age structures obtained during gather operations. Tracking of freeze marked animals will also be used to estimate survival.

b. Population Estimates

Population estimates will be developed no later than every third year. These estimates will be derived by conducting an aerial census using a Bell 47B1 helicopter or equivalent.

These estimates can be analyzed with other wild horse studies to obtain a more reliable data base of population estimates. The census will place the animals in adult and foal categories.

Locations of the wild horses, weather conditions, flight period and flight patterns will be recorded as described in NSO Manual Supplement 4730.

3. Sex Ratio--Age Structure Determination

Both the sex ratio and age structure of the population of the wild horses in the HMA will be estimated from an analysis of capture data obtained whenever excess animals are removed.

Computerized population modeling will be used to predict population changes over time. The parameters used in the model (age-specific survival and fecundity, and sex-specific survival) will be derived from capture data. If such data from this HMA is inadequate, capture data from other HMAs within the district or state will be used to estimate the parameters.

4. Animal Condition

Since the general condition of the animals is also an indicator of the population health and habitat conditions, during any on-the-ground observations or aerial census, all negative animal conditions will be recorded. Some of the conditions that will be recorded are deformities within individual bands, glossiness of coat, and fleshiness of animals.

C. Revision

Revision of this plan may be necessary when adequate studies data is gathered which indicates that changes to the grazing system, Monitoring Plan, and/or the AML of animals are warranted because key area and/or resource objectives are not being met. This will normally be determined during Little Owyhee allotment evaluations , and any necessary changes implemented in the final multiple use decision. This plan may also be modified or changed if experience gained in the operation of the plan indicates that a change is necessary to meet resource and/or management objectives. This will be determined by the Assistant Field Manager for Renewable Resources, Supervisory Rangeland Management Specialist, and Field Office Wild Horse and Burro Specialists in consultation with affected interests.

V. Coordination and Cooperation in Management

Approximately one-third of the HMA is located within the administrative boundary of the Elko BLM District. An agreement (CN-020-33) for the Administration of Resource between the Winnemucca and Elko Districts was signed on August 19, 1977. This agreement allows the Winnemucca District to administer the wild horses for the entire HMA.

The Elko District RMP and the Paradise-Denio LUP were coordinated. There are no discrepancies between the two documents with reference to the areas of use and number of animals.

There is an agreement between the Bureau of Land Management and the State Department of Agriculture. State brand inspections will be conducted to determine if horses captured during roundups should be released to the state and transferred to private owners under estray laws. Unbranded horses will be considered wild with the exception of those which can be shown, to the satisfaction of the BLM authorized officer, after consultation with the state brand inspector, to be privately owned.

VI. Appendices

A. Maps

Refer to Appendix A. Census maps are not available for 1972-77, February 1980, January 1982, September 1984, and March 1989.

B. Range Improvements and Water Sources

Refer to Appendix B. All the existing improvements were installed for the benefit of livestock.

C. Assorted Population Data and Color Types

Refer to Appendix C. No data is available for the 1981 removal. Data for color types only is available for the 1977 removal.

D. Allotment Management Objectives

Refer to Appendix D.

E. Freeze Marking Program, 1992-97

Refer to Appendix E.

VII. Funding

All actions undertaken pursuant to this plan are contingent upon available funding. Funding for range improvement projects will be secured from various Bureau programs, the District Advisory Board, and contributed monies from livestock permittees. The possibility also exists that some funding may be provided by the Nevada Commission for the Preservation of Wild Horses, appointed to administer the Heil Fund bequest. These monies could be used for animal and habitat studies, and project developments.

VIII. Signatures

Prepared by:

Wild horse and burro specialist
Winnemucca Field Office

Date

Reviewed by:

Supervisory WH&B/Wildlife Biologist
Winnemucca Field Office

Date

Approved by:

Assistant Field Manager, Renewable Resources
Winnemucca Field Office

Date

Concurred by:

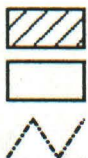
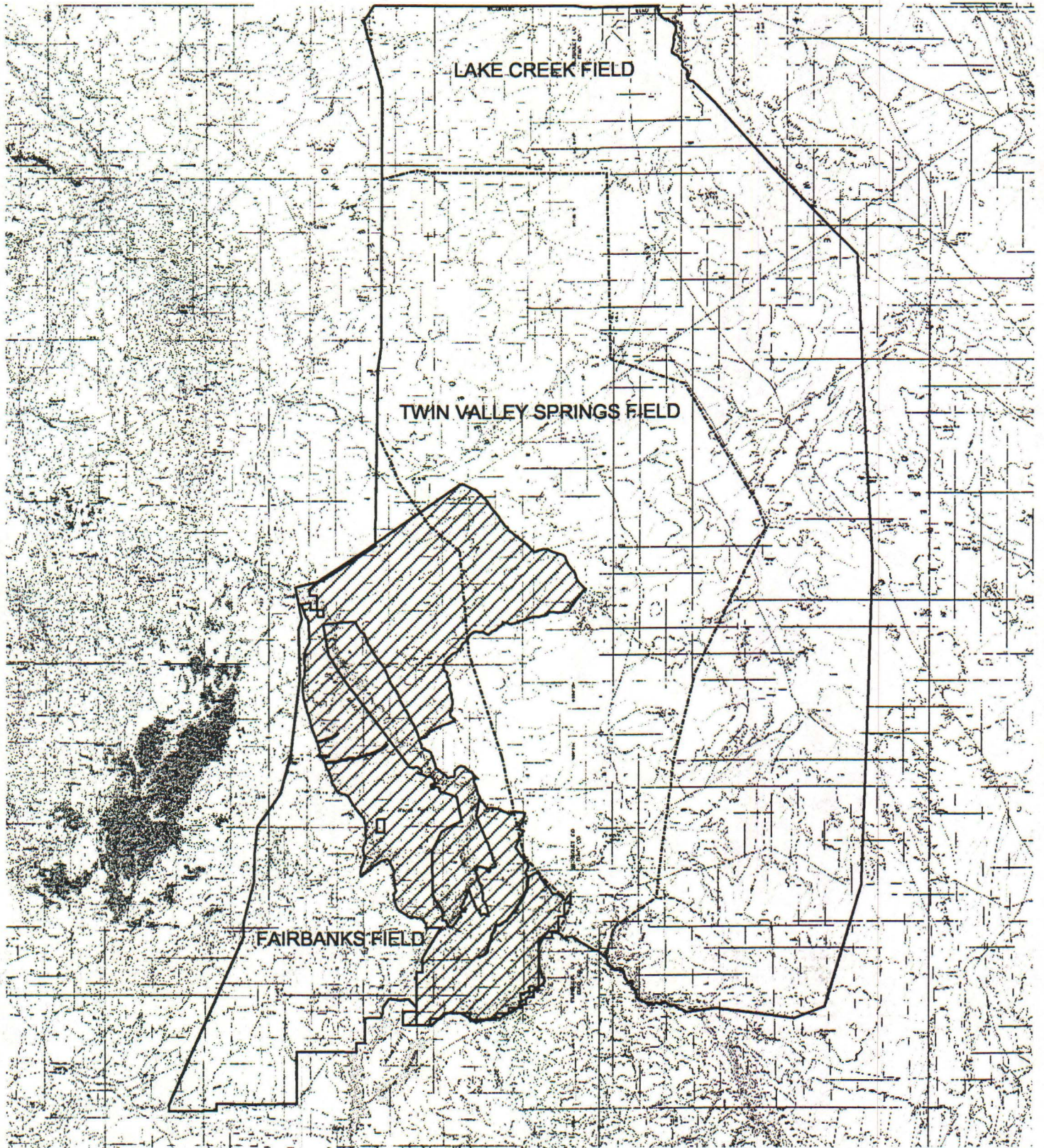
Winnemucca Field Office Manager

Date

Nevada State Director

Date

APPENDIX A
Little Owyhee HMA
Wilderness Study Area



N. Fork of the Little Humboldt WSA

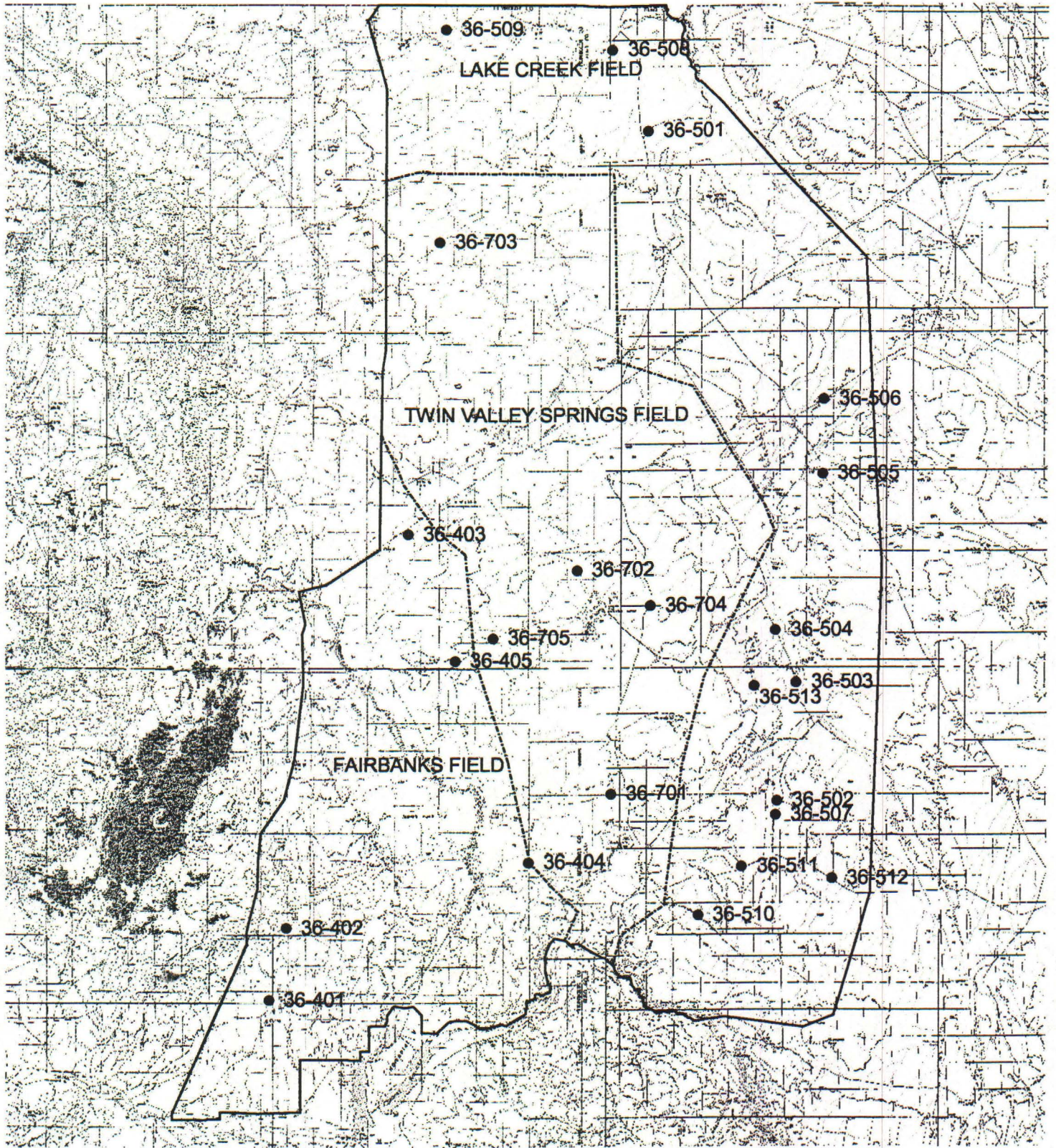
Little Owyhee HMA

Pasture fences

5 0 5 Miles



APPENDIX A
Little Owyhee HMA
Key Management Areas



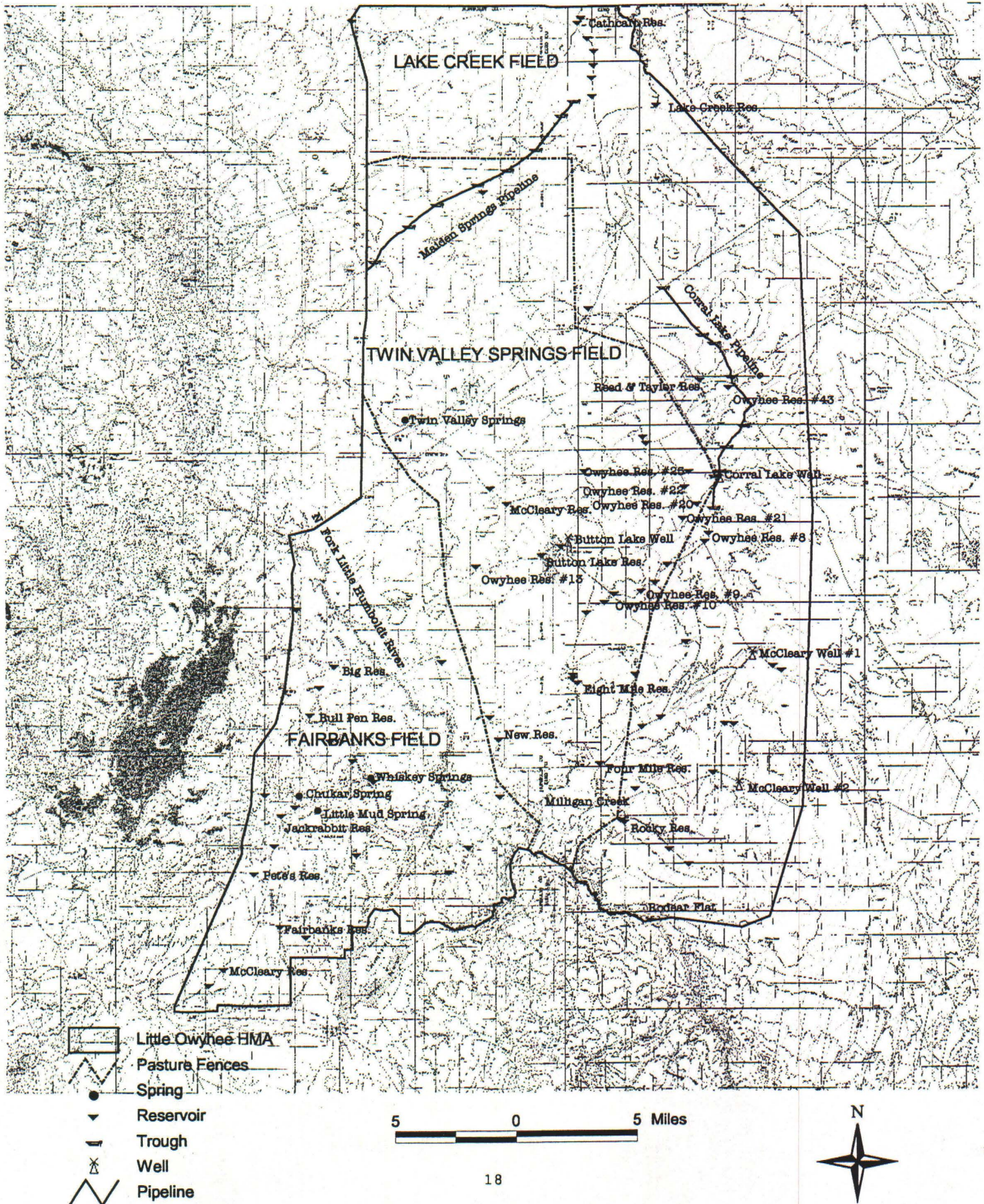
- Key Management Area Number
- Little Owyhee HMA
- ⚡ Pasture fences



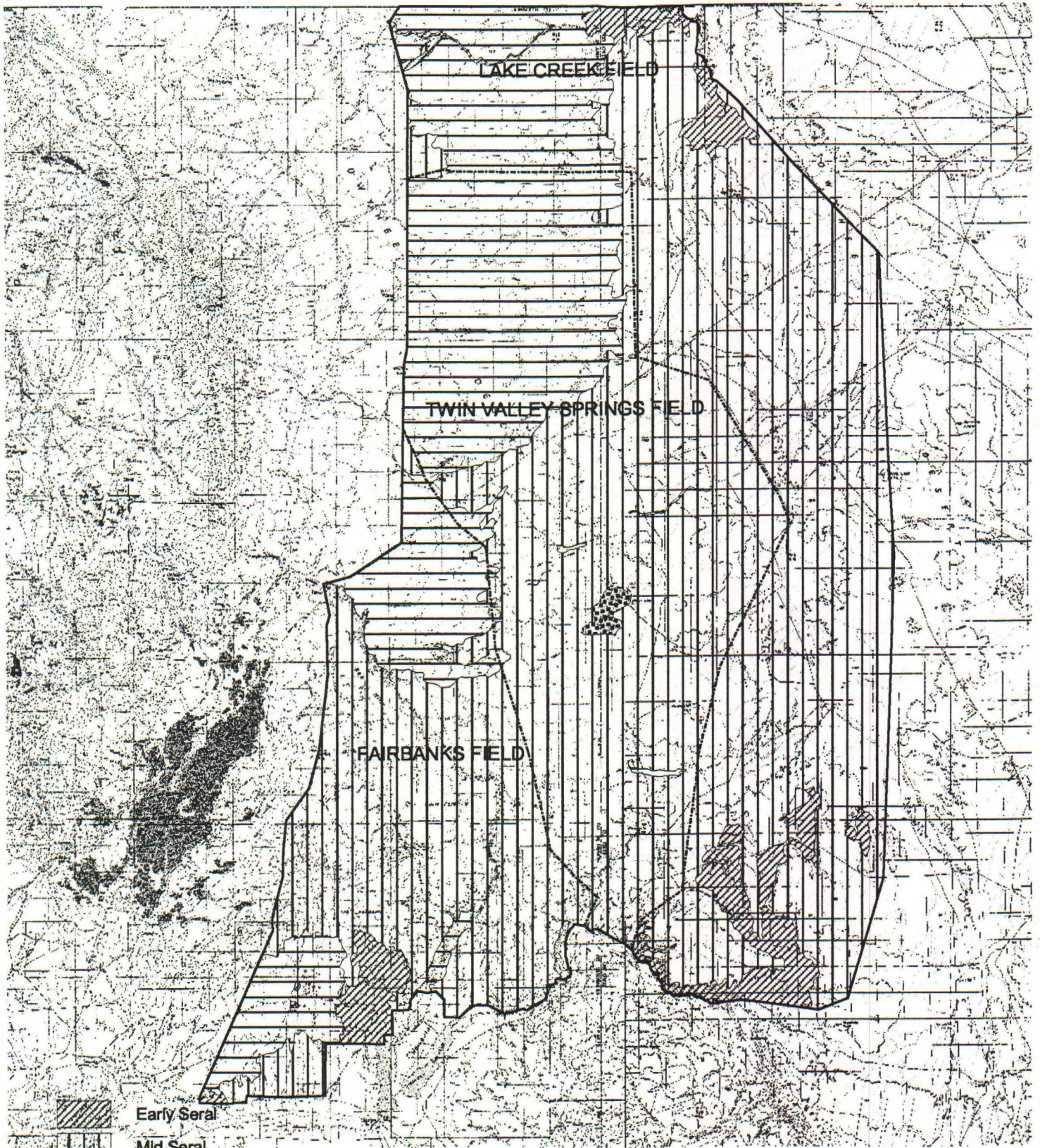
APPENDIX A







Little Owyhee HMA

Water Sources



APPENDIX A
Little Owyhee HMA
Ecological Site Inventory

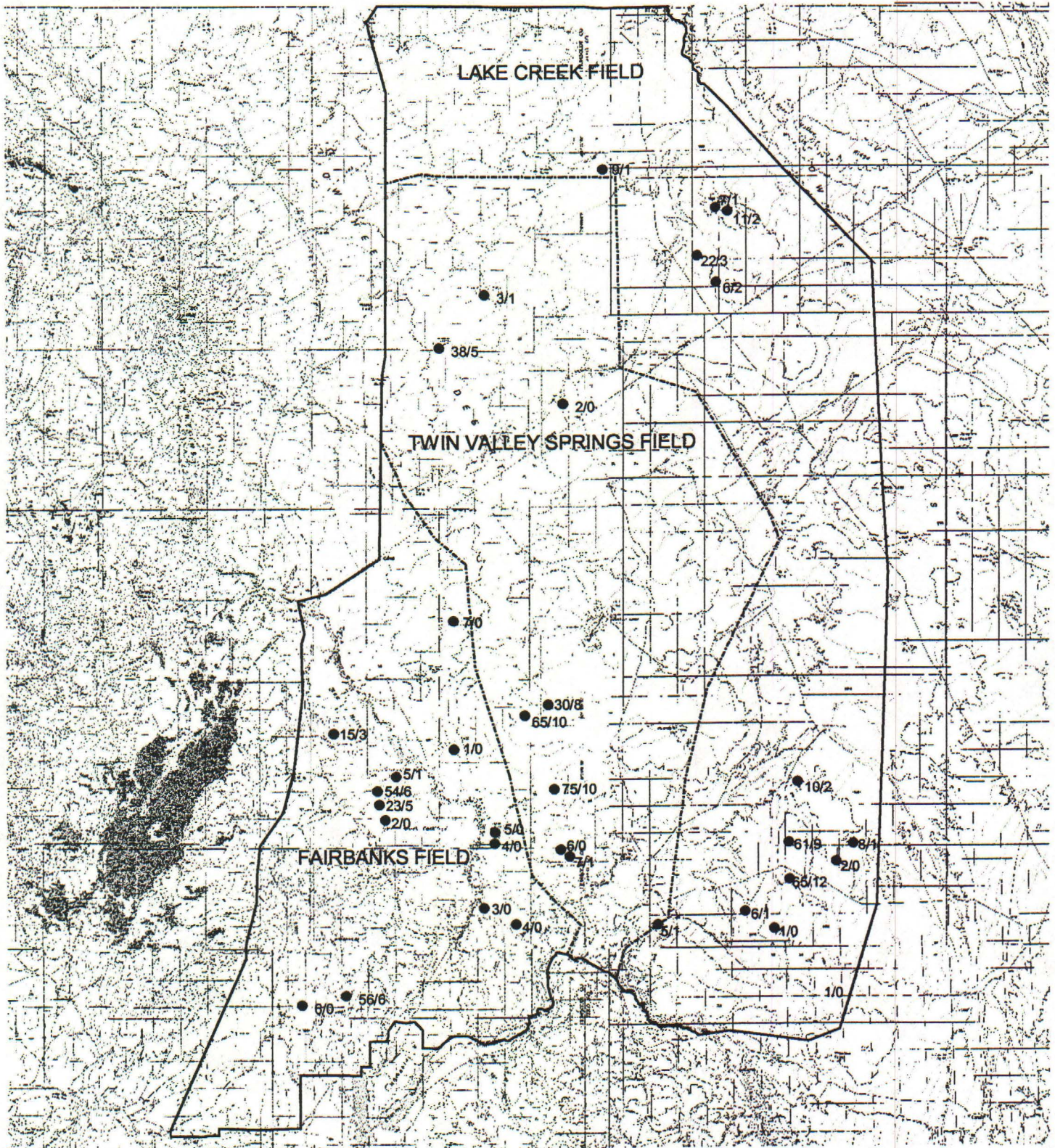


-  Early Seral
-  Mid Seral
-  Late Seral
-  PNC
-  Little Owyhee HMA
-  Pasture fences

5 0 5 Miles



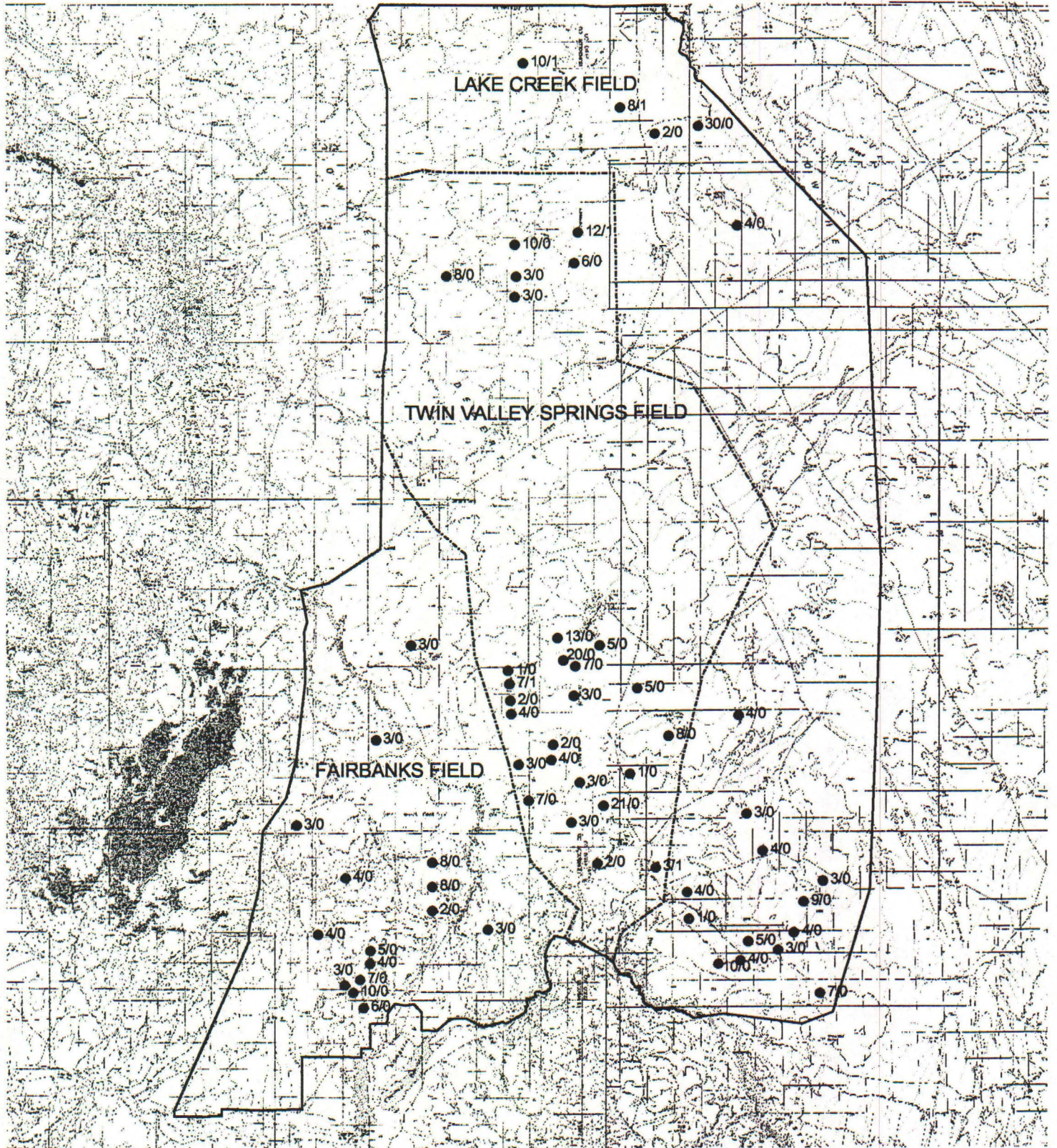
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - August 14, 2000
 (South Lake Creek - Census 8/28/00)
 Cessna 210/Bell Jet Ranger



- Wild horse locations (adults/foals)
- ▭ Little Owyhee HMA
- ⚡ Pasture fences



APPENDIX A
 Little Owyhee HMA
 Distribution Flight - December 4, 1997
 Cessna 210

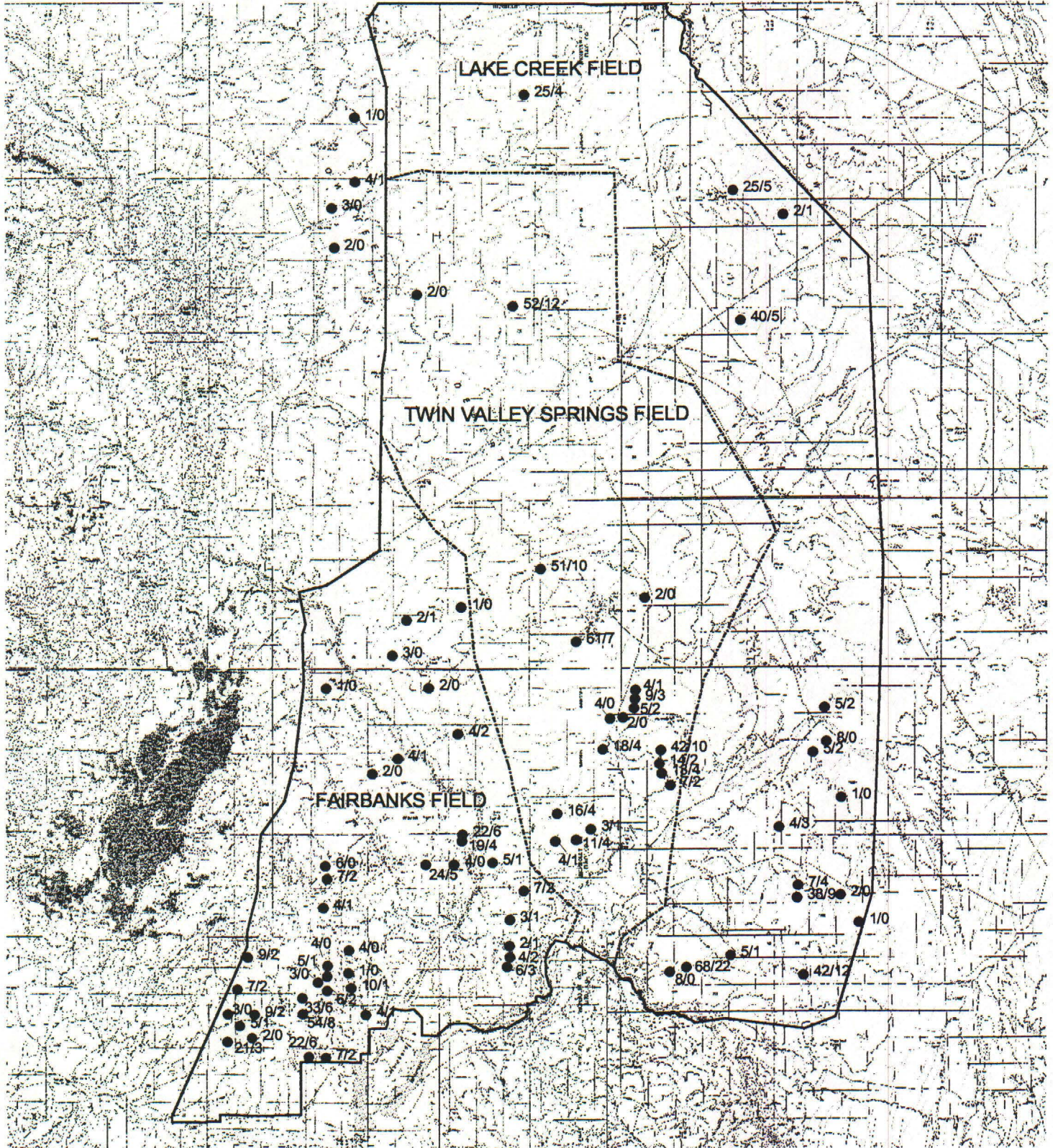


- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⚡ Pasture fences

5 0 5 Miles



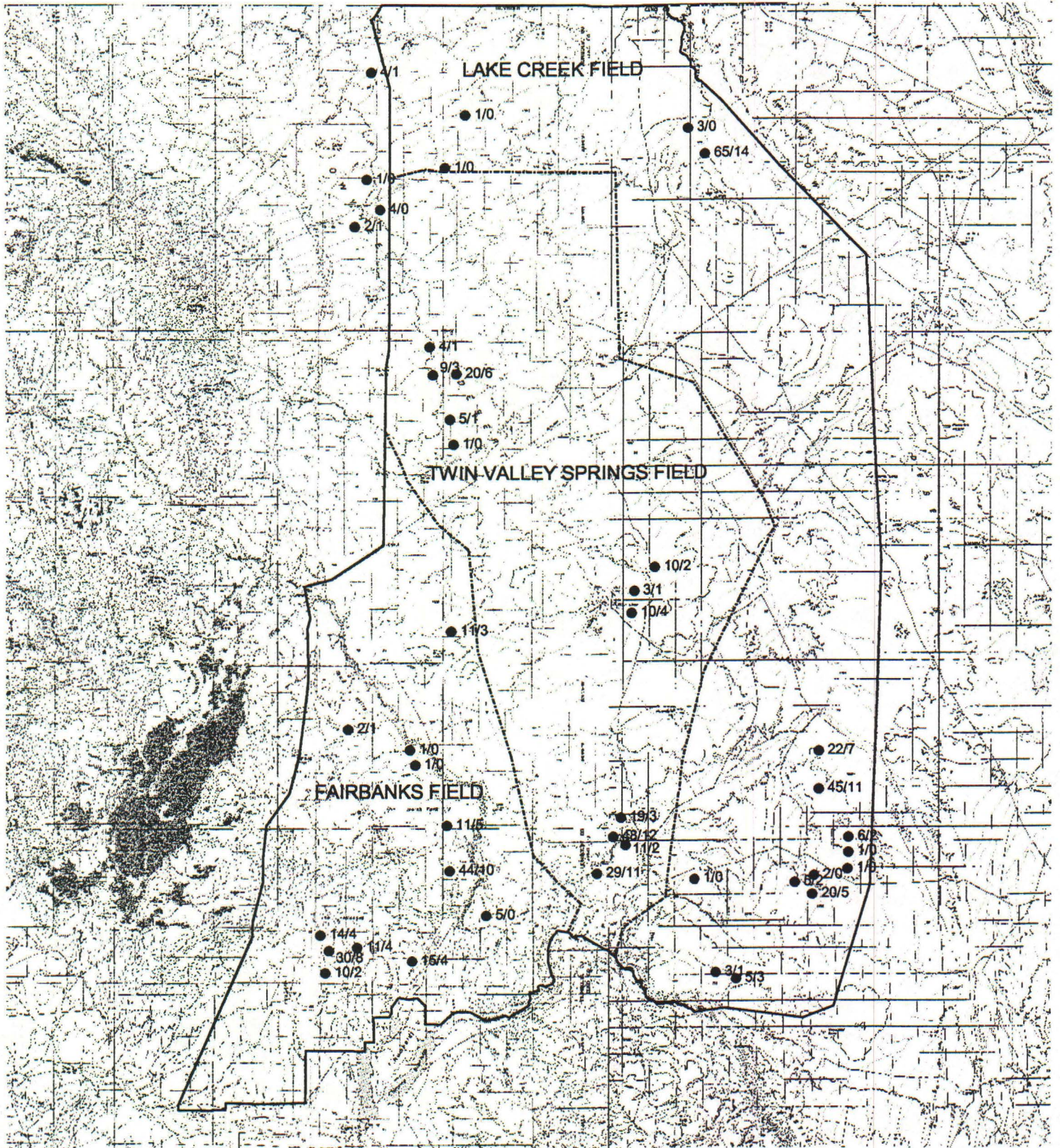
APPENDIX A
 Little Owyhee HMA
 Census Flight - July 29-30, 1997
 Bell B-1



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⚡ Pasture fences



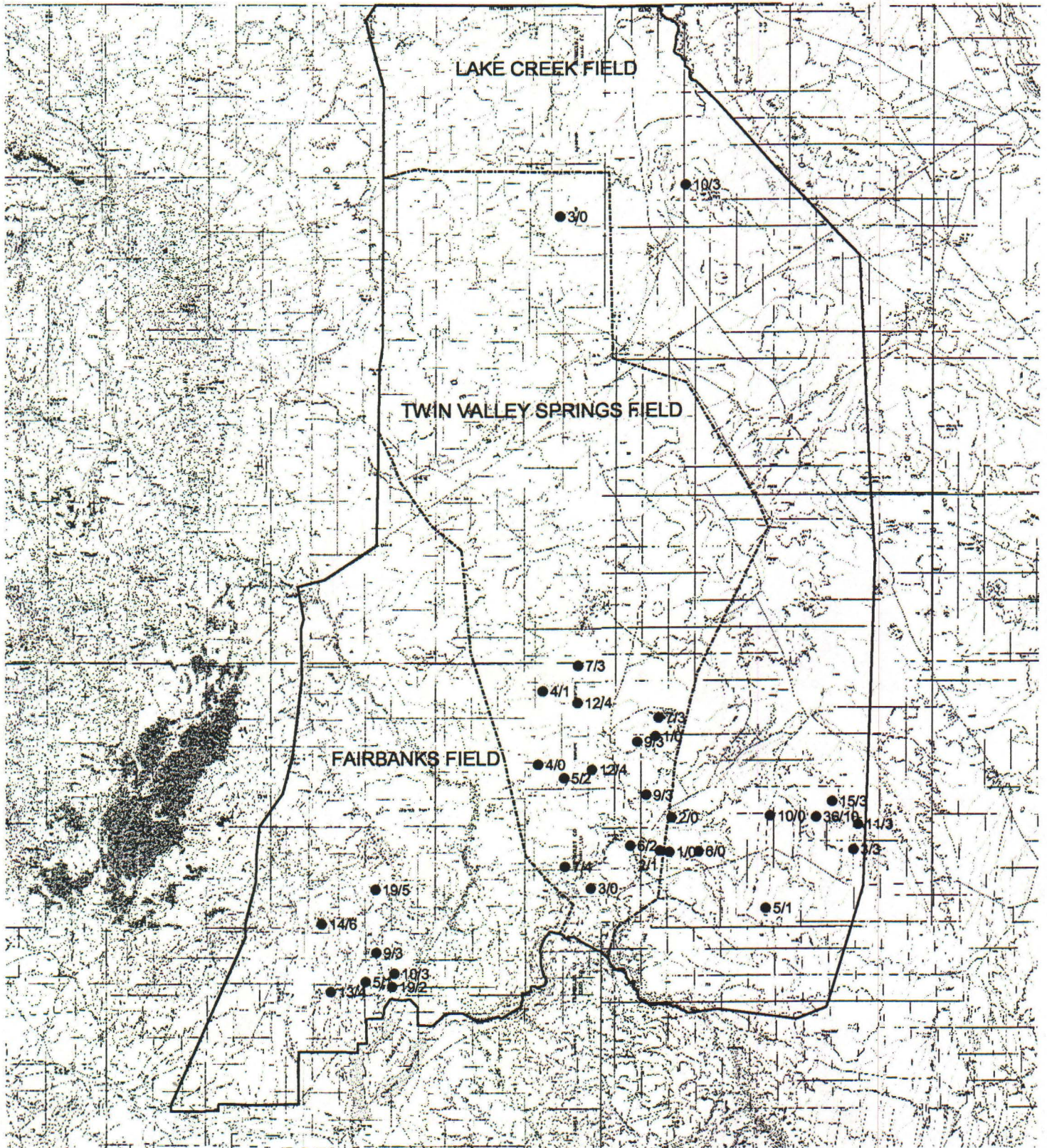
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - September 20, 1995
 Husky A-1



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⚡ Pasture fences



APPENDIX A
 Little Owyhee HMA
 Distribution Flight - August 31, 1994
 Cessna 210



● Wild horse locations (adults/foals)



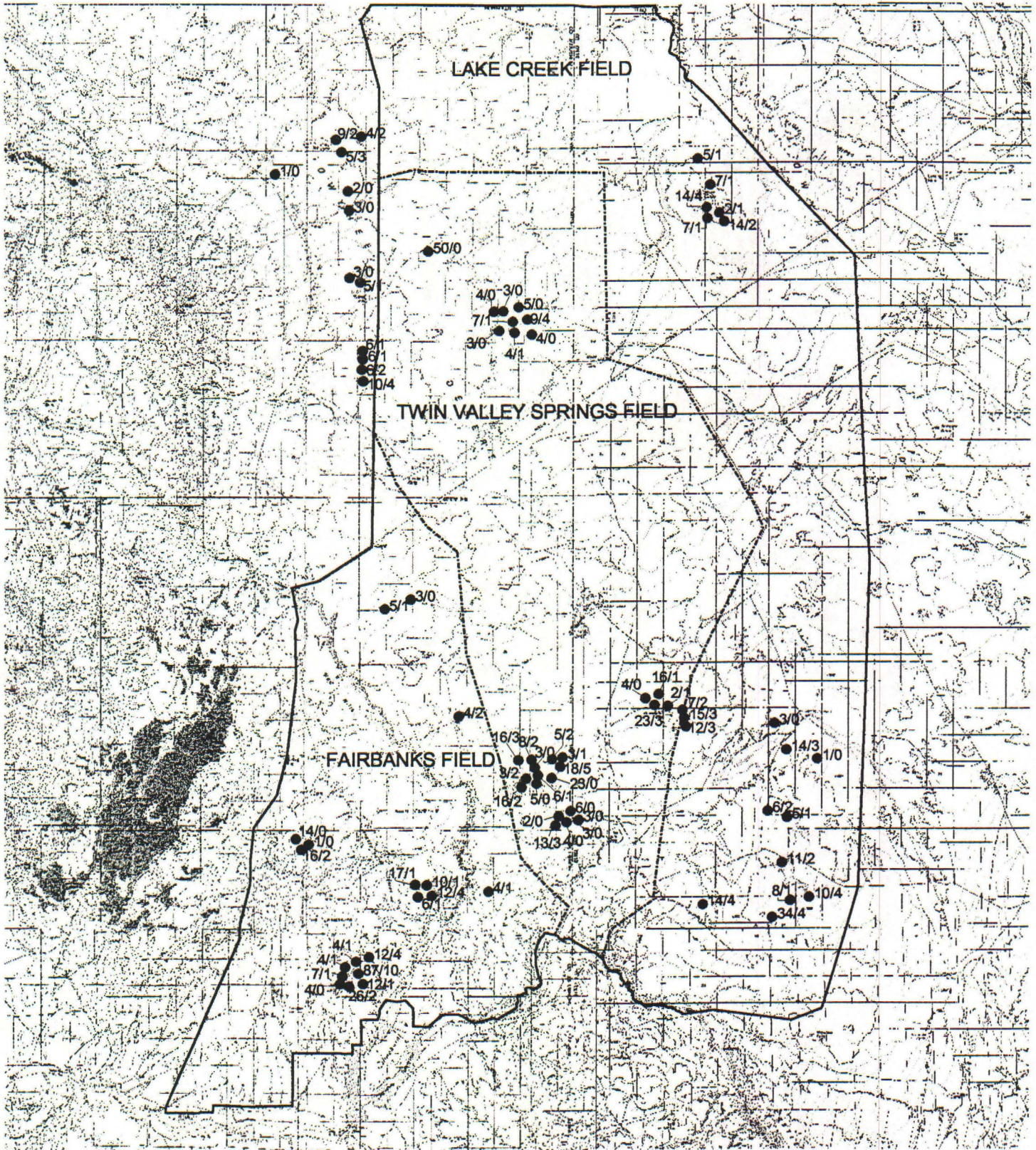
Little Owyhee HMA



Pasture fences



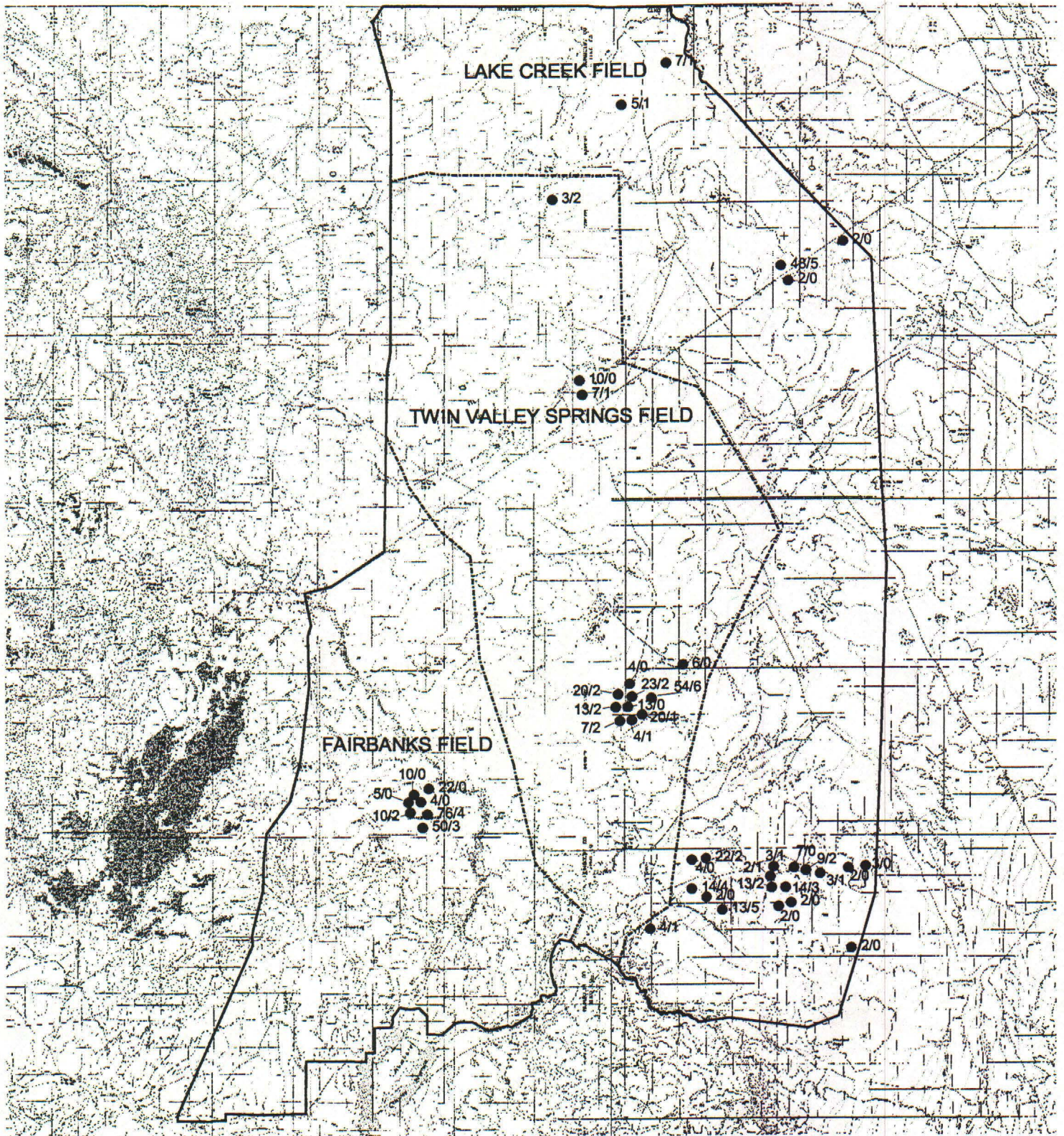
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - October 6, 1993
 Cessna 210



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⋈ Pasture fences



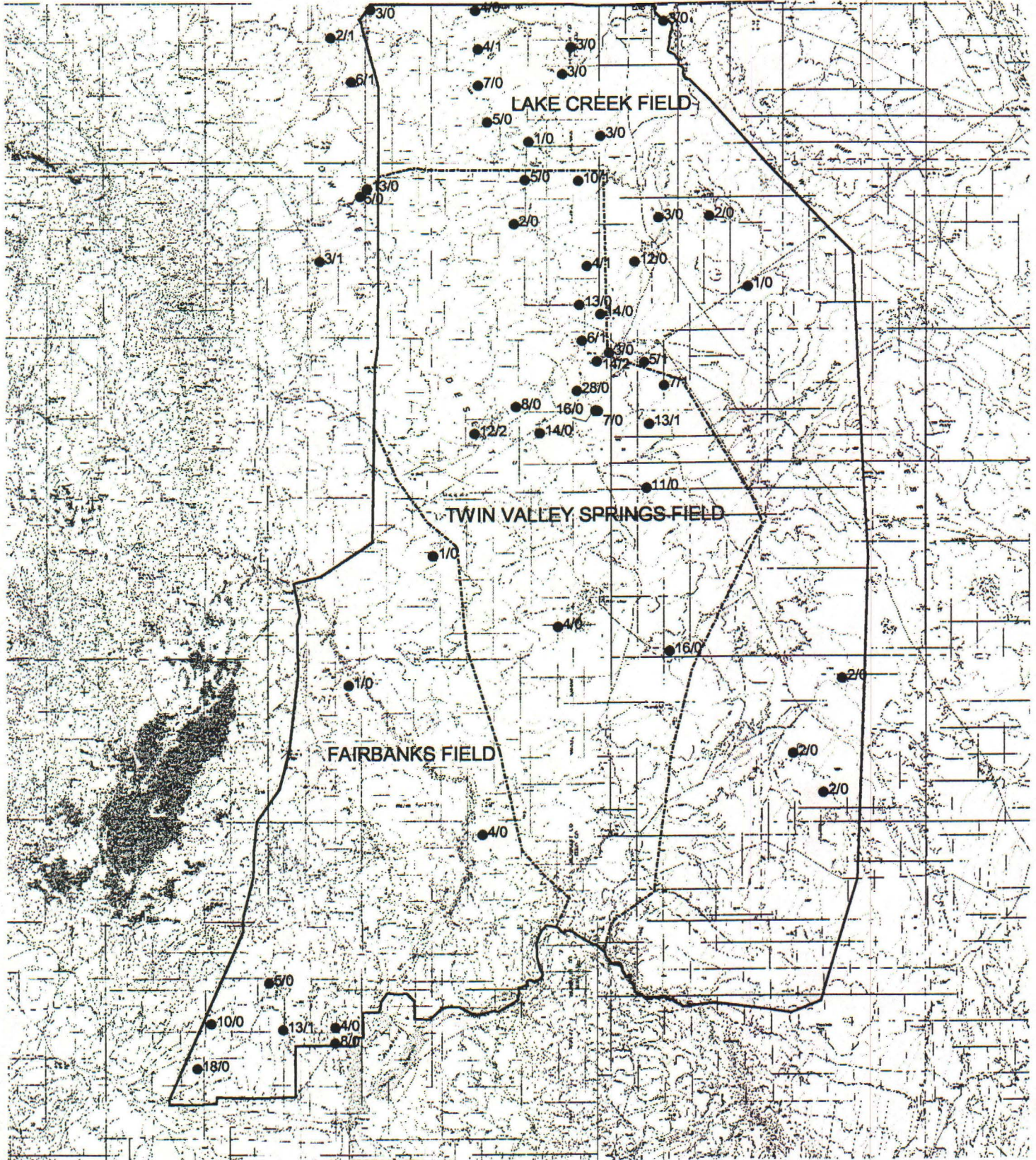
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - May 14, 1993
 Cessna 210



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⚡ Pasture fences



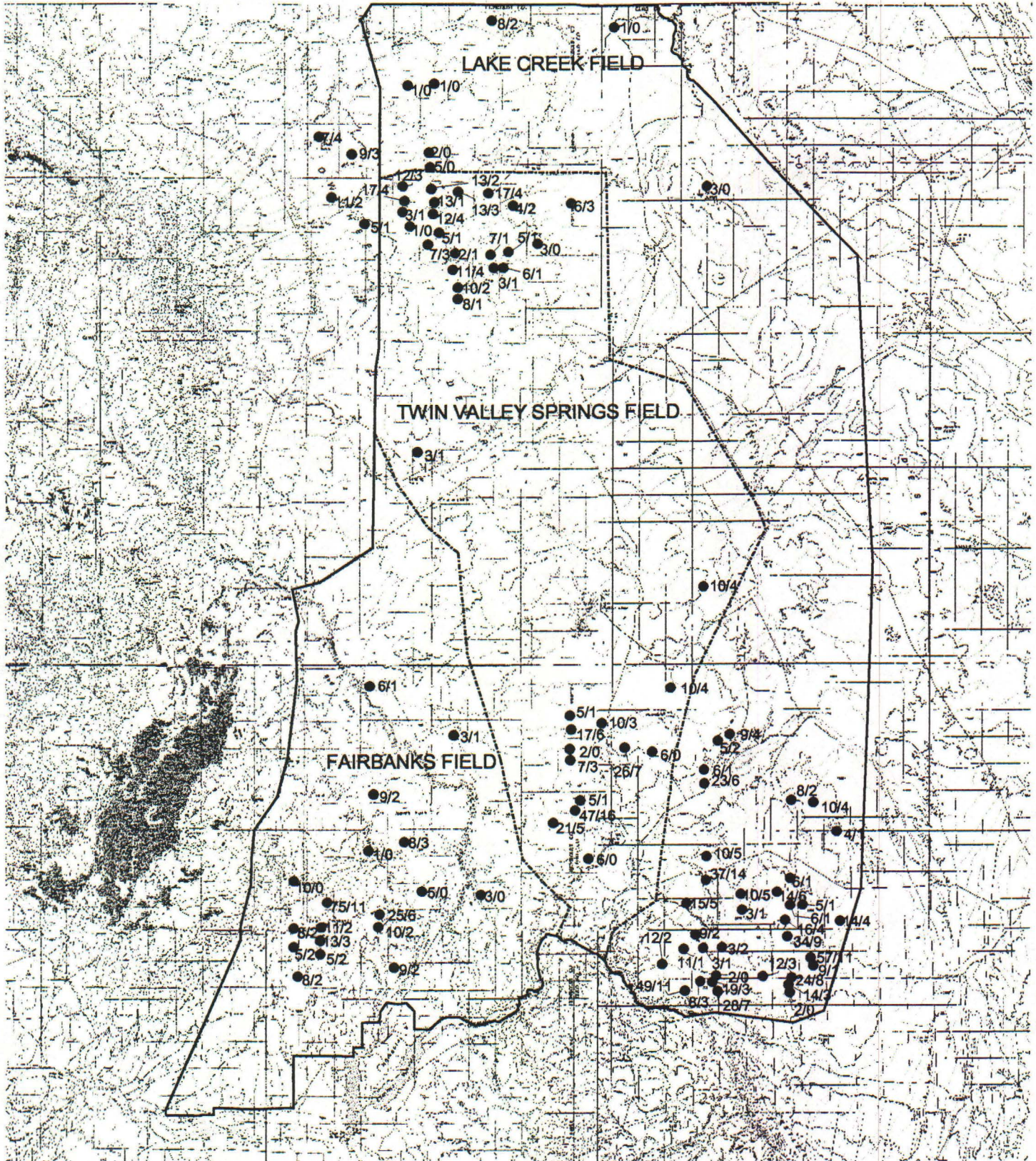
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - January 22, 1993
 Maule 5



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⋈ Pasture fences



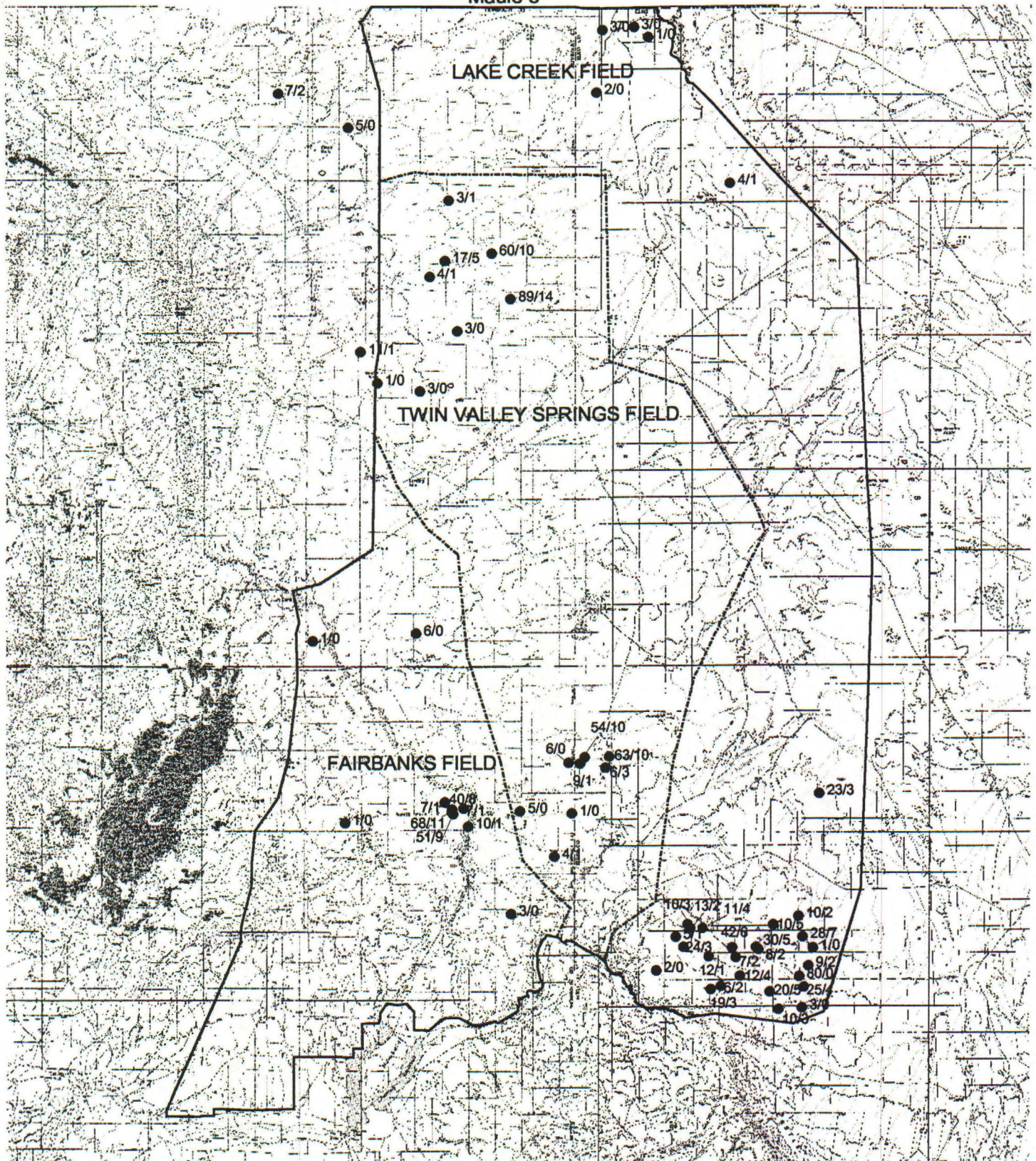
APPENDIX A
 Little Owyhee HMA
 Census Flight - July 17-18, 1992
 Bell 47G Soloy



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⚡ Pasture fences



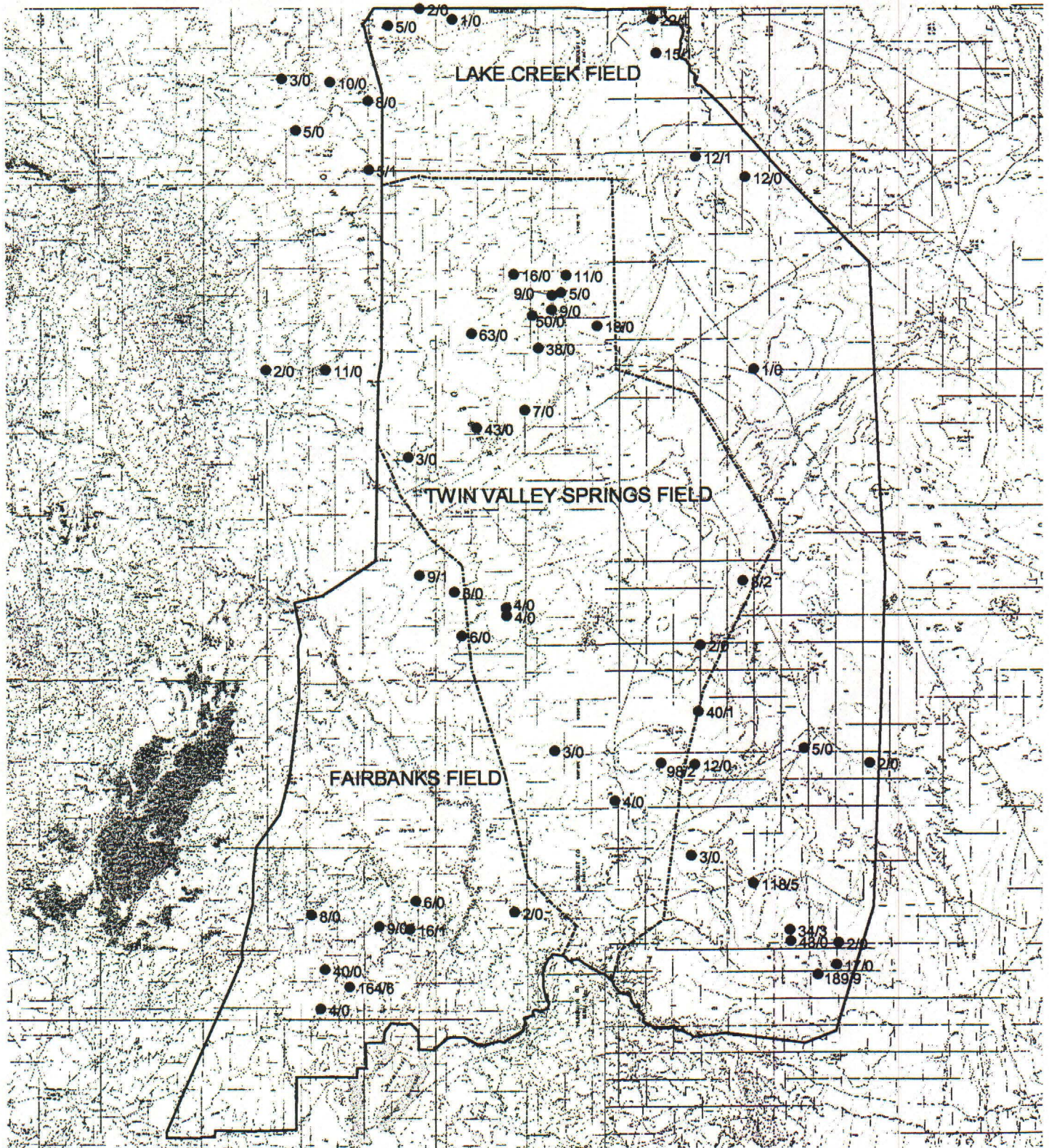
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - May 21, 1992
 Maule 5



- Wild horse locations (adults/foals)
- ▭ Little Owyhee HMA
- ⚡ Pasture fences



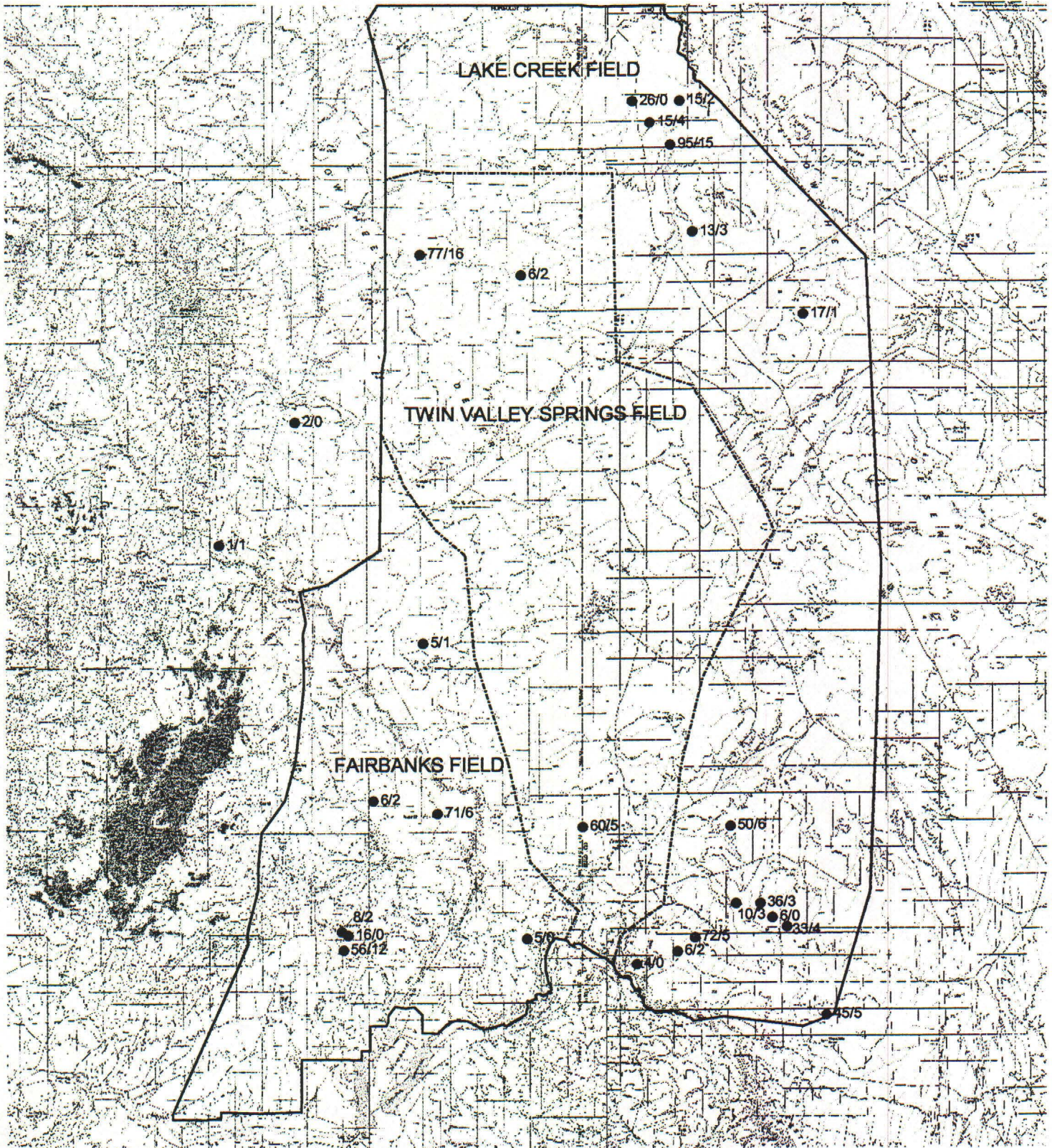
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - March 5, 1992
 Maule 5



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⋈ Pasture fences



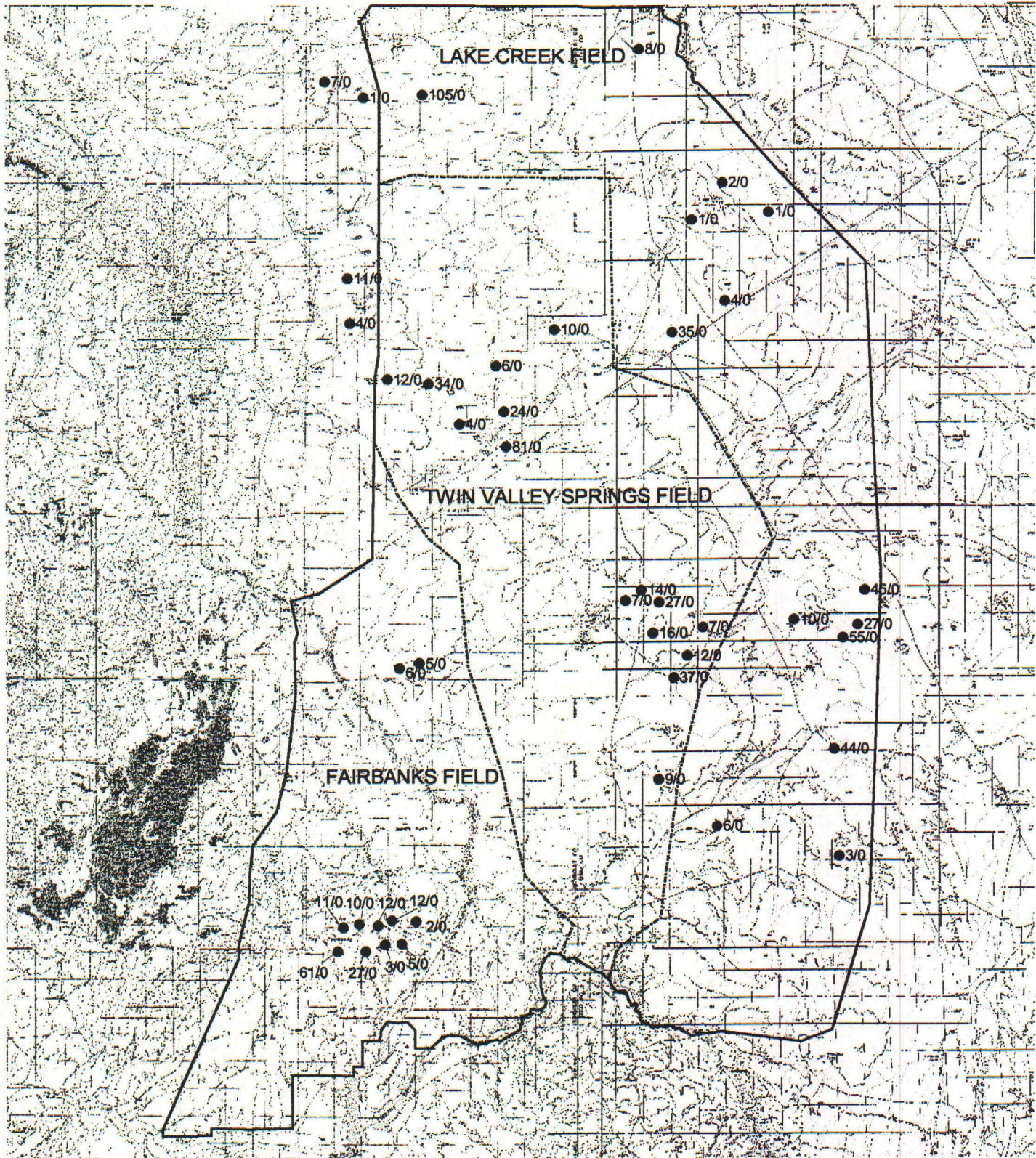
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - July 31, 1991
 Maule 5



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- Pasture fences



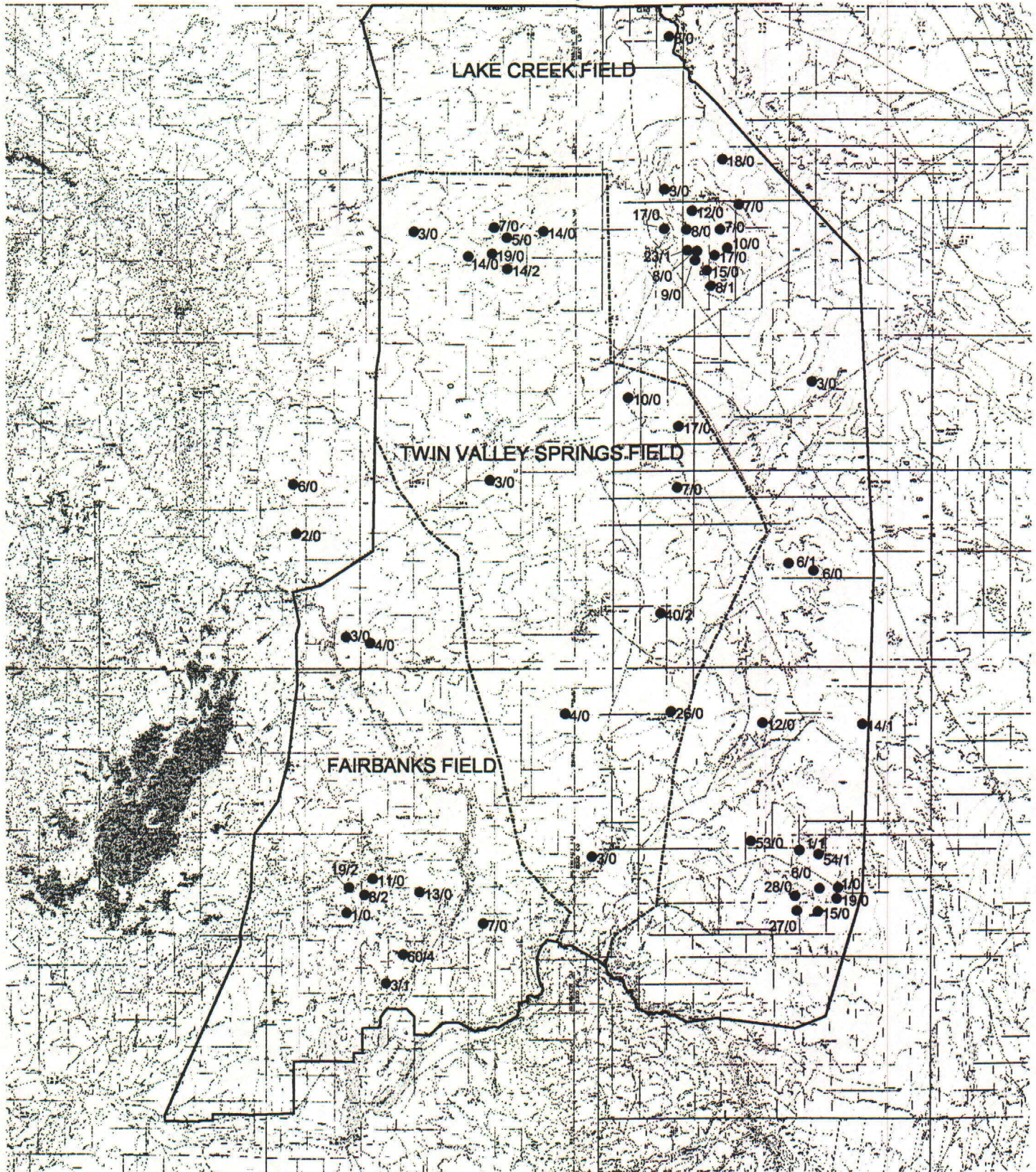
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - January 31, 1991
 Cessna 210



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⚡ Pasture fences



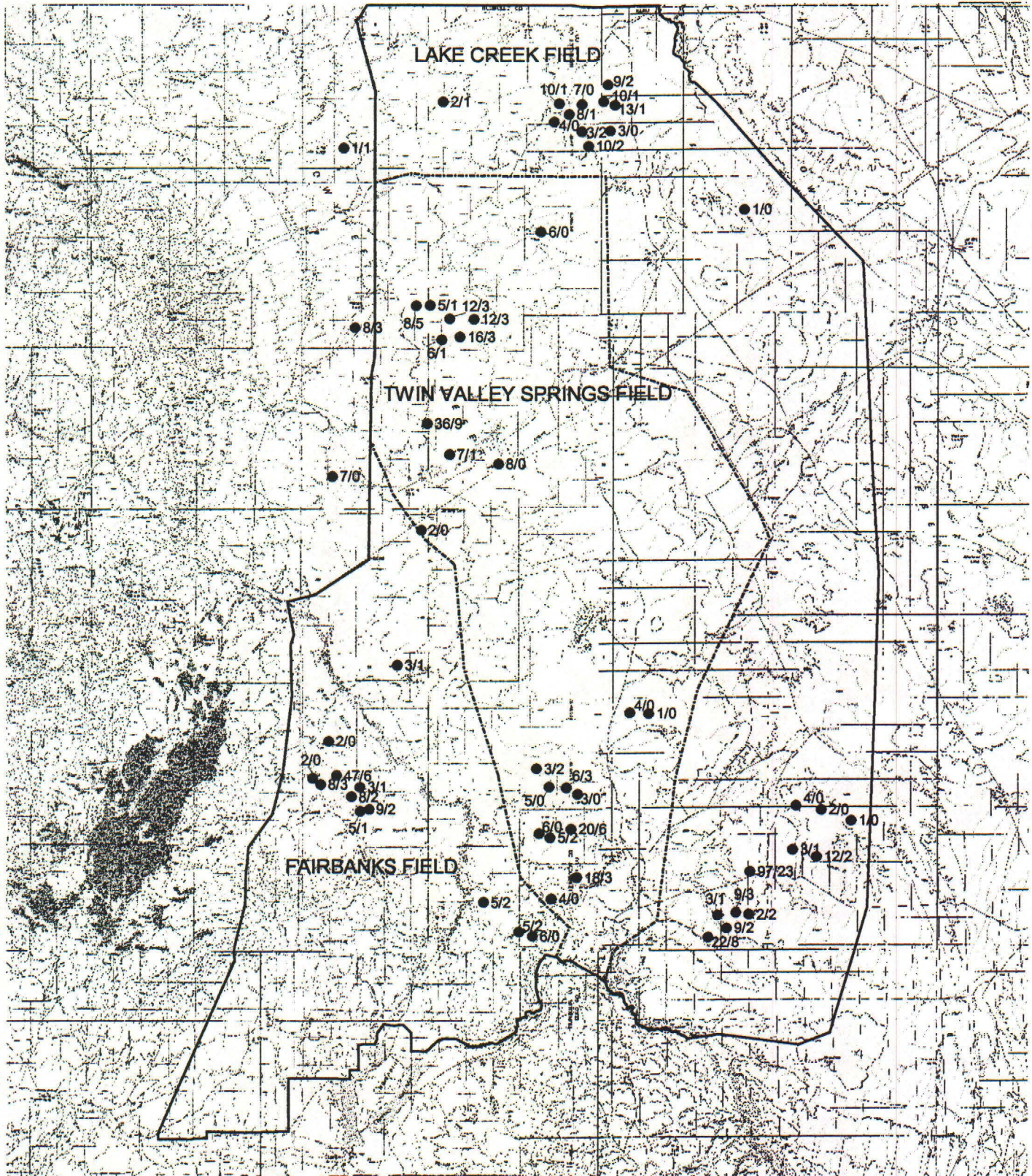
APPENDIX A
 Little Owyhee HMA
 Census Flight - February 20, 1990
 Bell 47G Soloy



- Wild horse locations (adults/foals)
- ▭ Little Owyhee HMA
- ⚡ Pasture fences



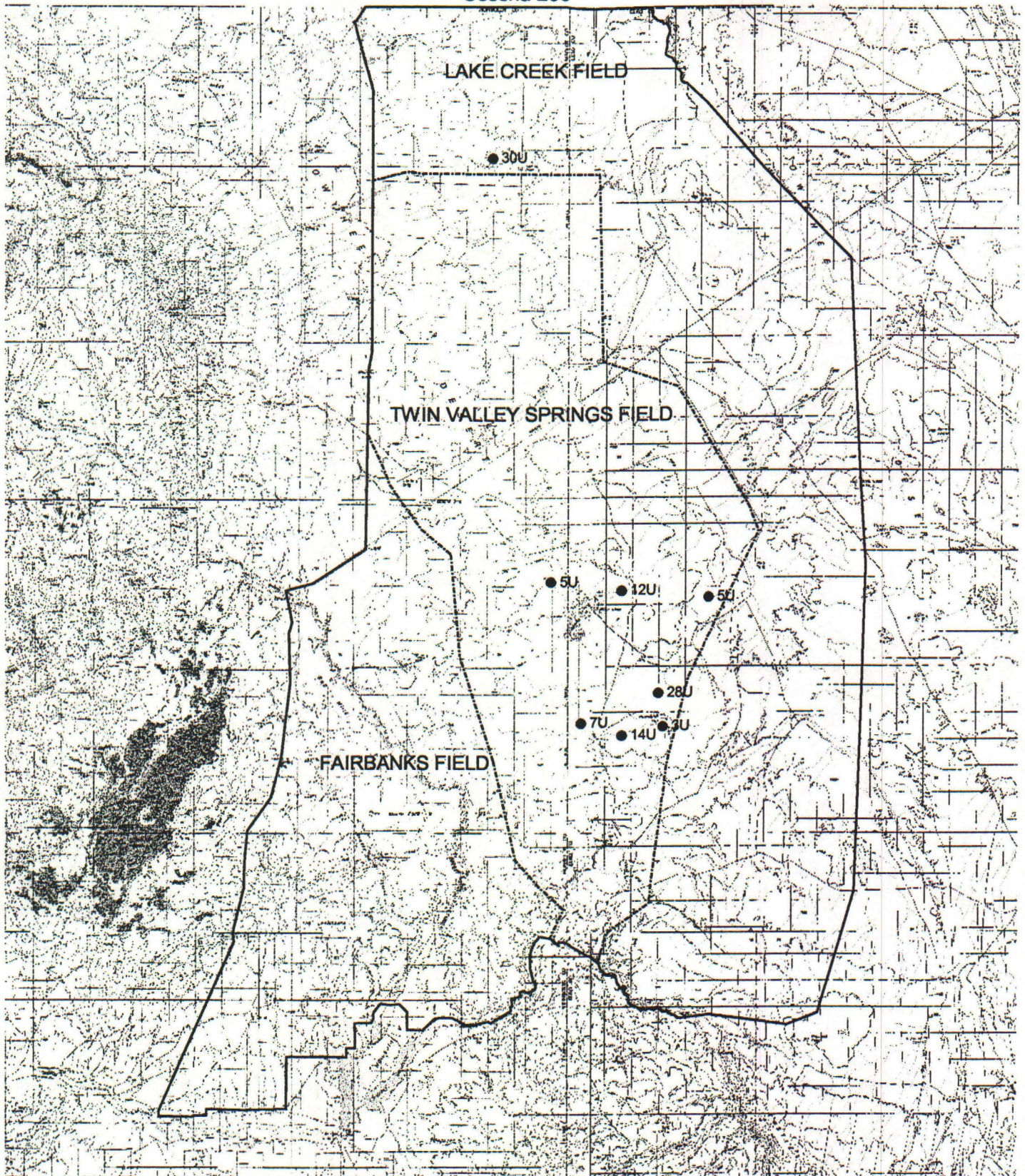
APPENDIX A
 Little Owyhee HMA
 Census Flight - July 25, 1989
 Bell 47G Soloy



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⋈ Pasture fences



APPENDIX A
Little Owyhee HMA
Distribution Flight - January 7, 1988
Cessna 206

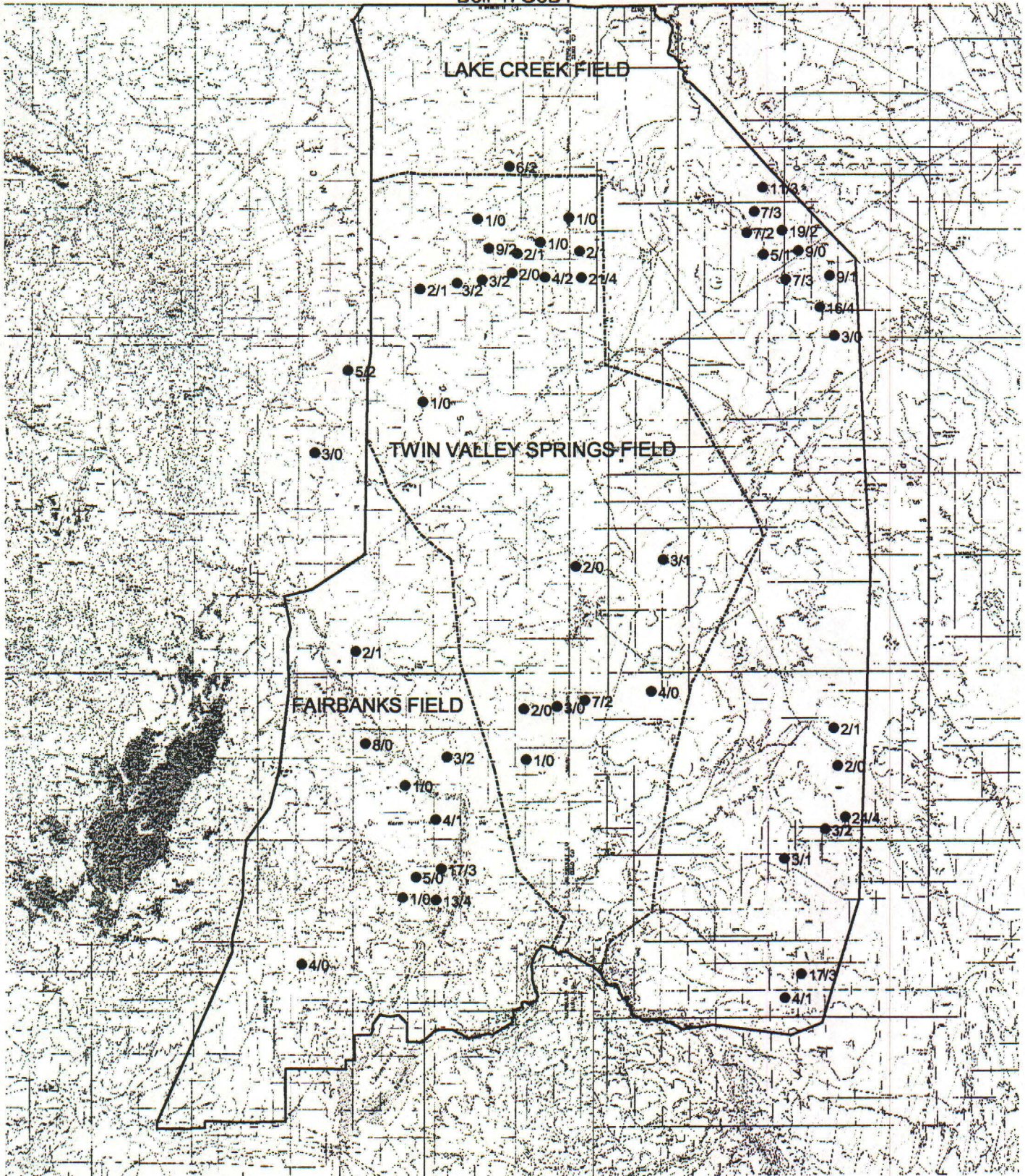


- Wild horse locations (adults/foals)
(U = unclassified adult/foal mix)
- ▭ Little Owyhee HMA
- ∩ Pasture fences

5 0 5 Miles



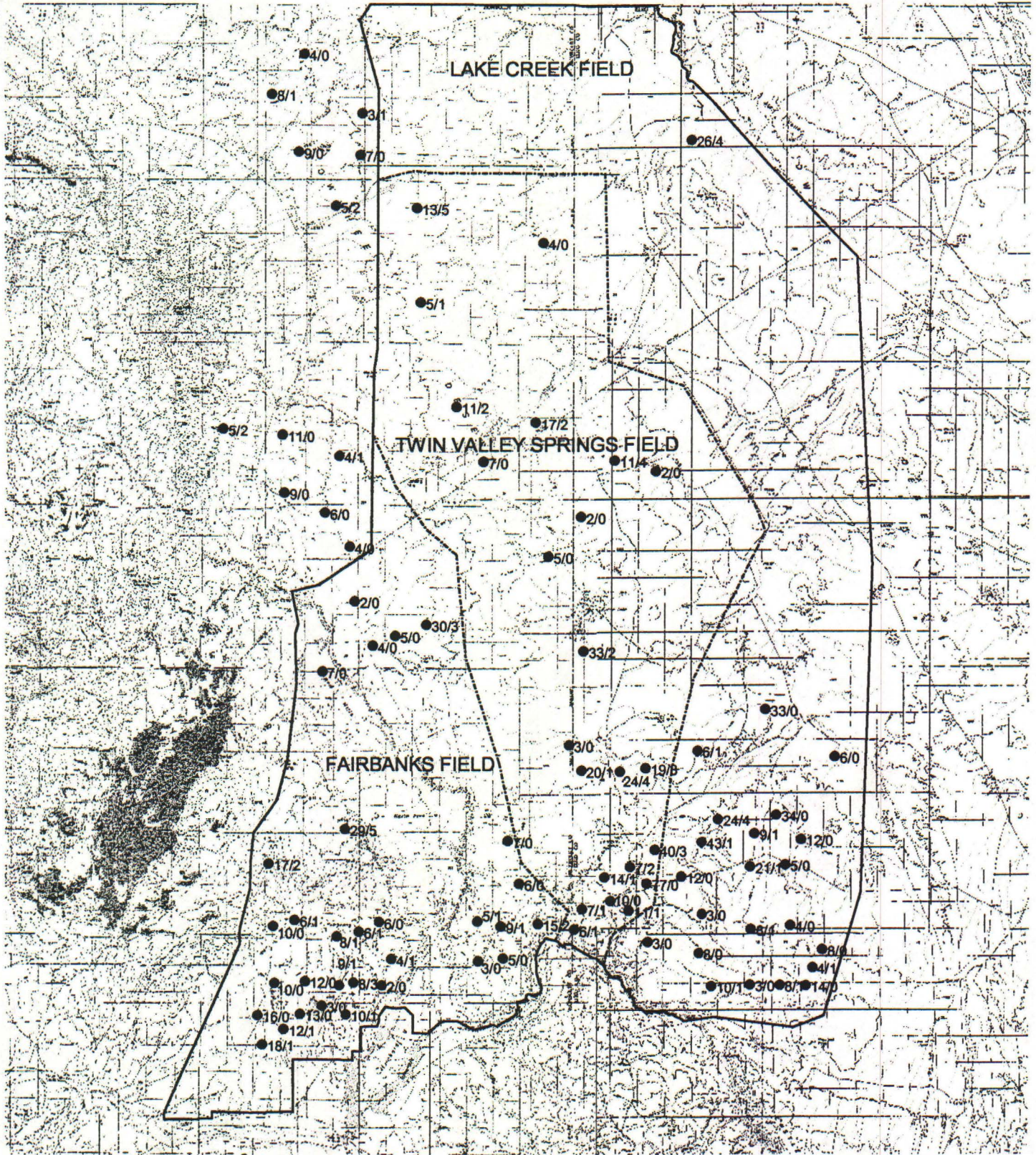
APPENDIX A
 Little Owyhee HMA
 Census Flight - September 23, 1986
 Bell 47G3B1



- Wild horse locations (adults/foals)
- ▭ Little Owyhee HMA
- ⋈ Pasture fences



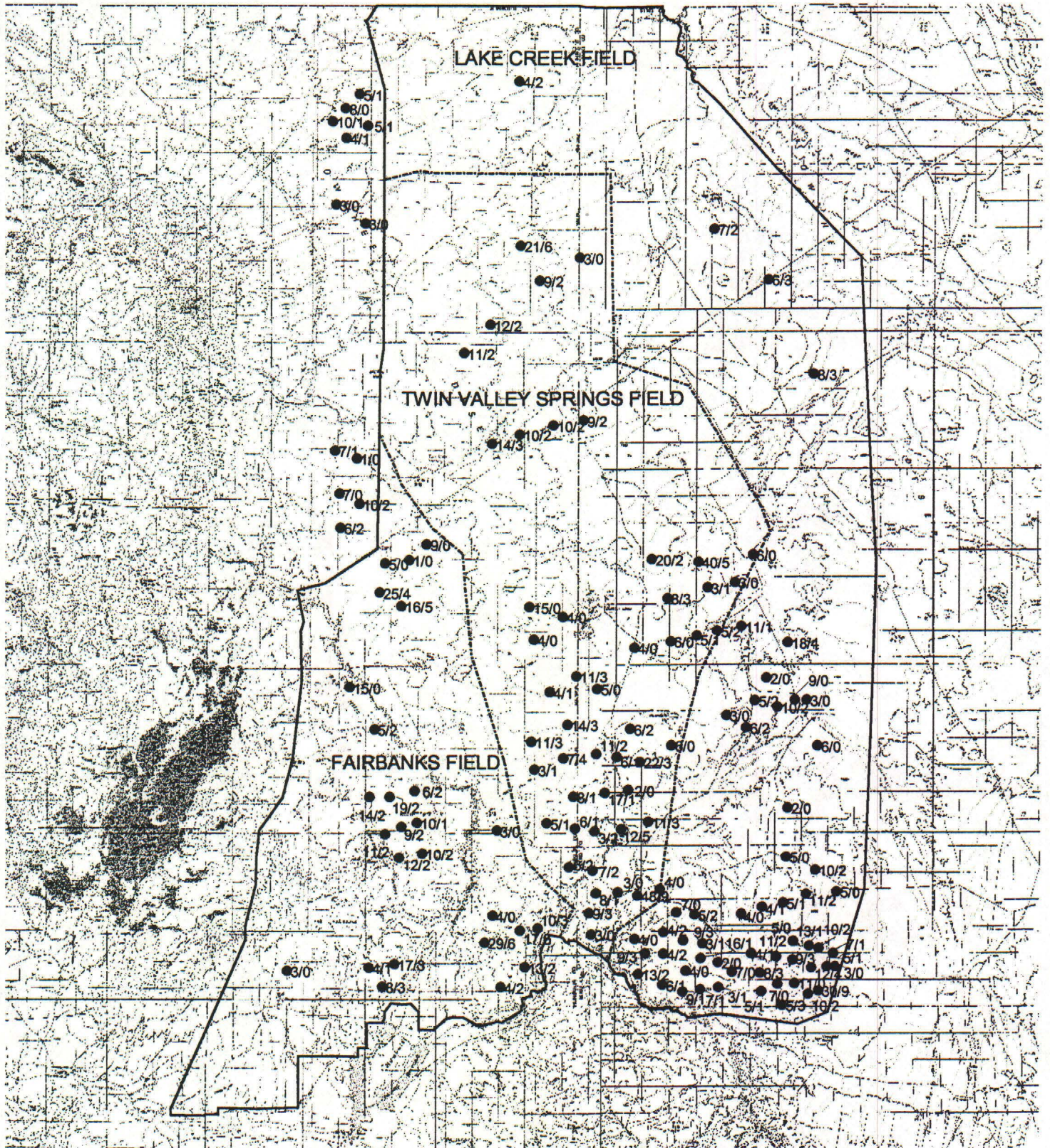
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - September 2,7 & 8, 1982
 Piper Super Cub



- Wild horse locations (adults/foals)
- ▭ Little Owyhee HMA
- ⚡ Pasture fences



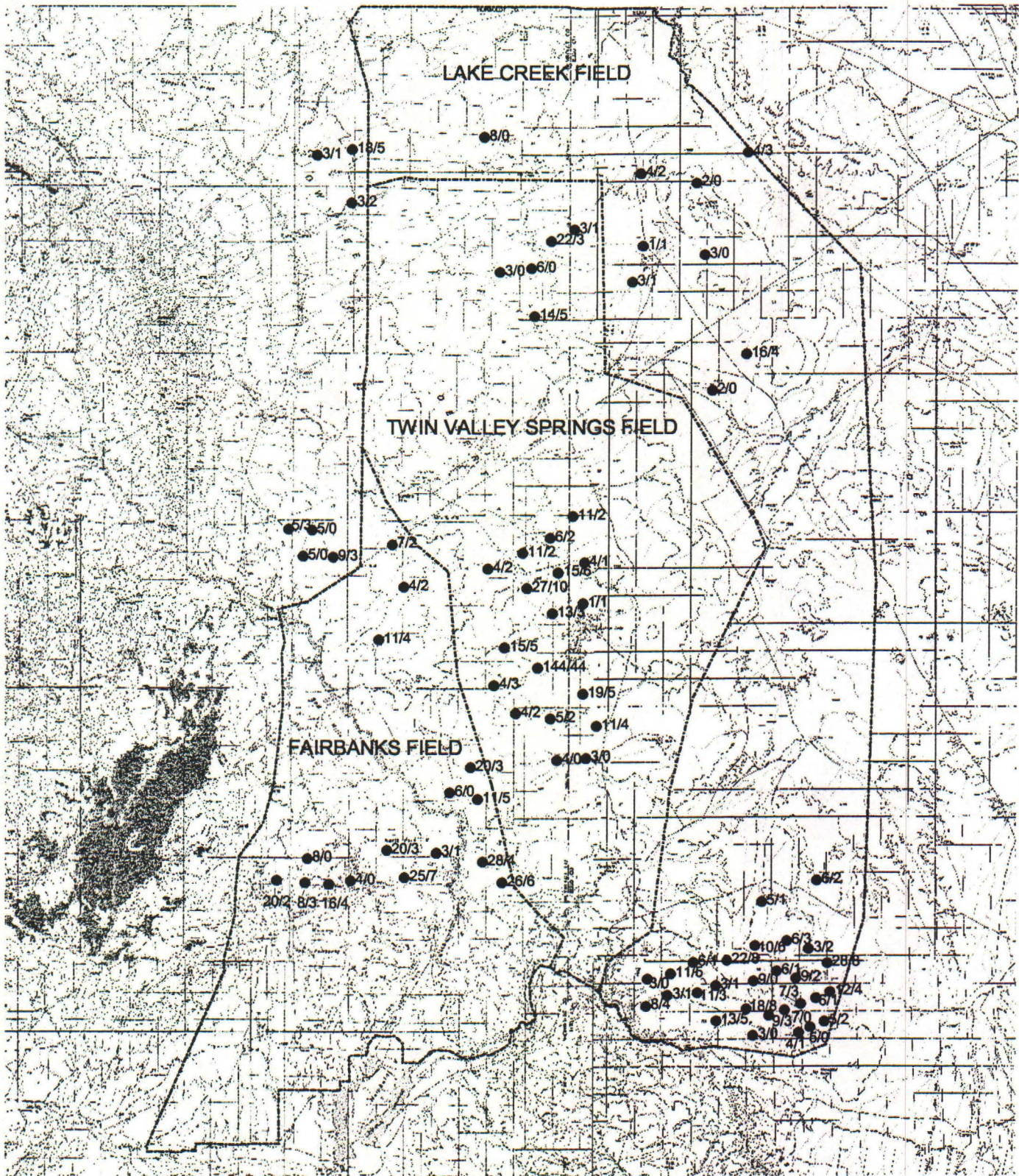
APPENDIX A
 Little Owyhee HMA
 Census Flight - October 7-9, 15-16, 1980
 Bell 47G3B1



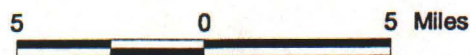
- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⚡ Pasture fences



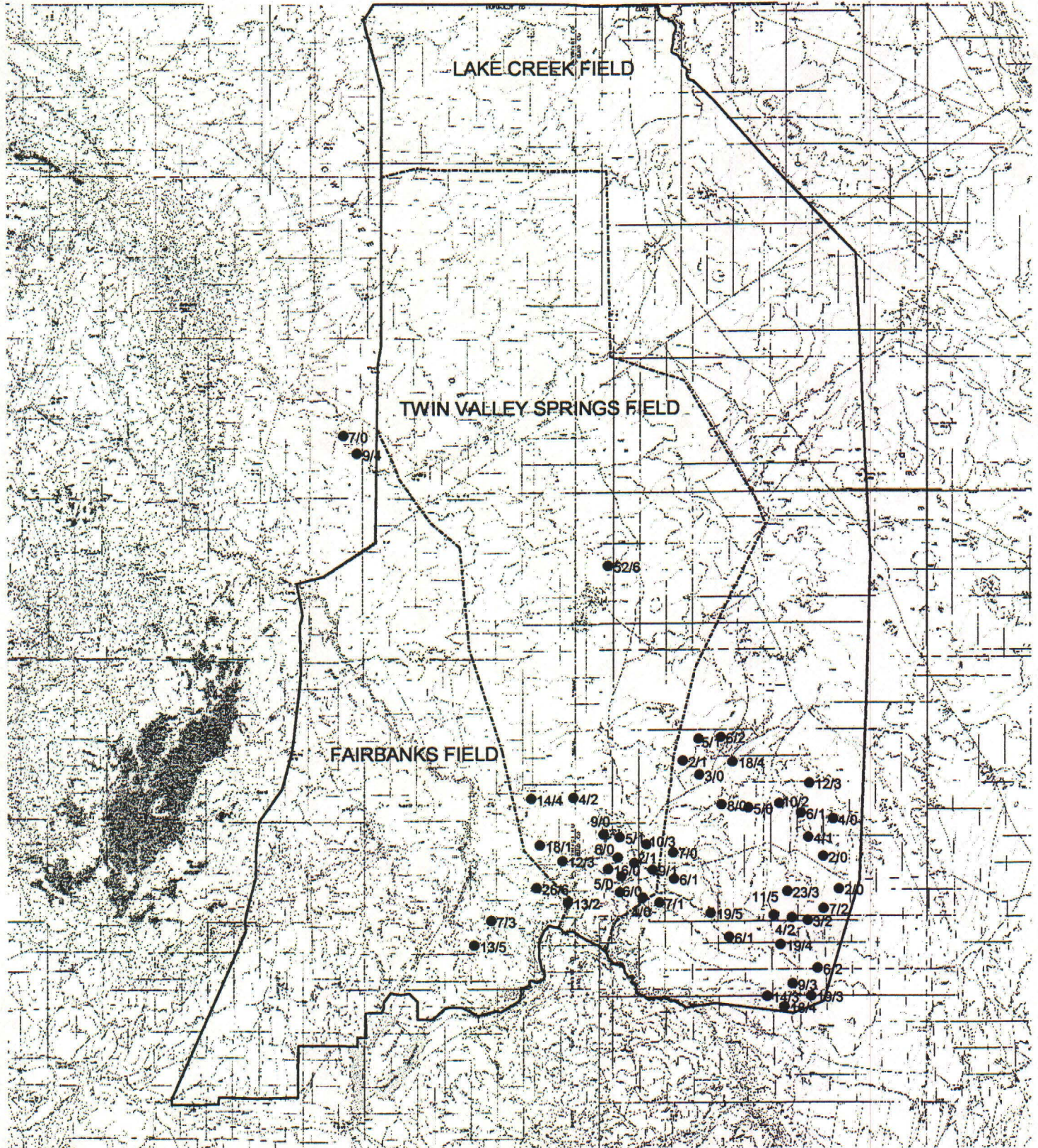
APPENDIX A
 Little Owyhee HMA
 Census Flight - June 30, 1979
 Bell 47G3B1



- Wild horse locations (adults/foals)
- ▭ Little Owyhee HMA
- ⚡ Pasture fences



APPENDIX A
 Little Owyhee HMA
 Distribution Flight - August 23, 1978
 Piper Super Cub

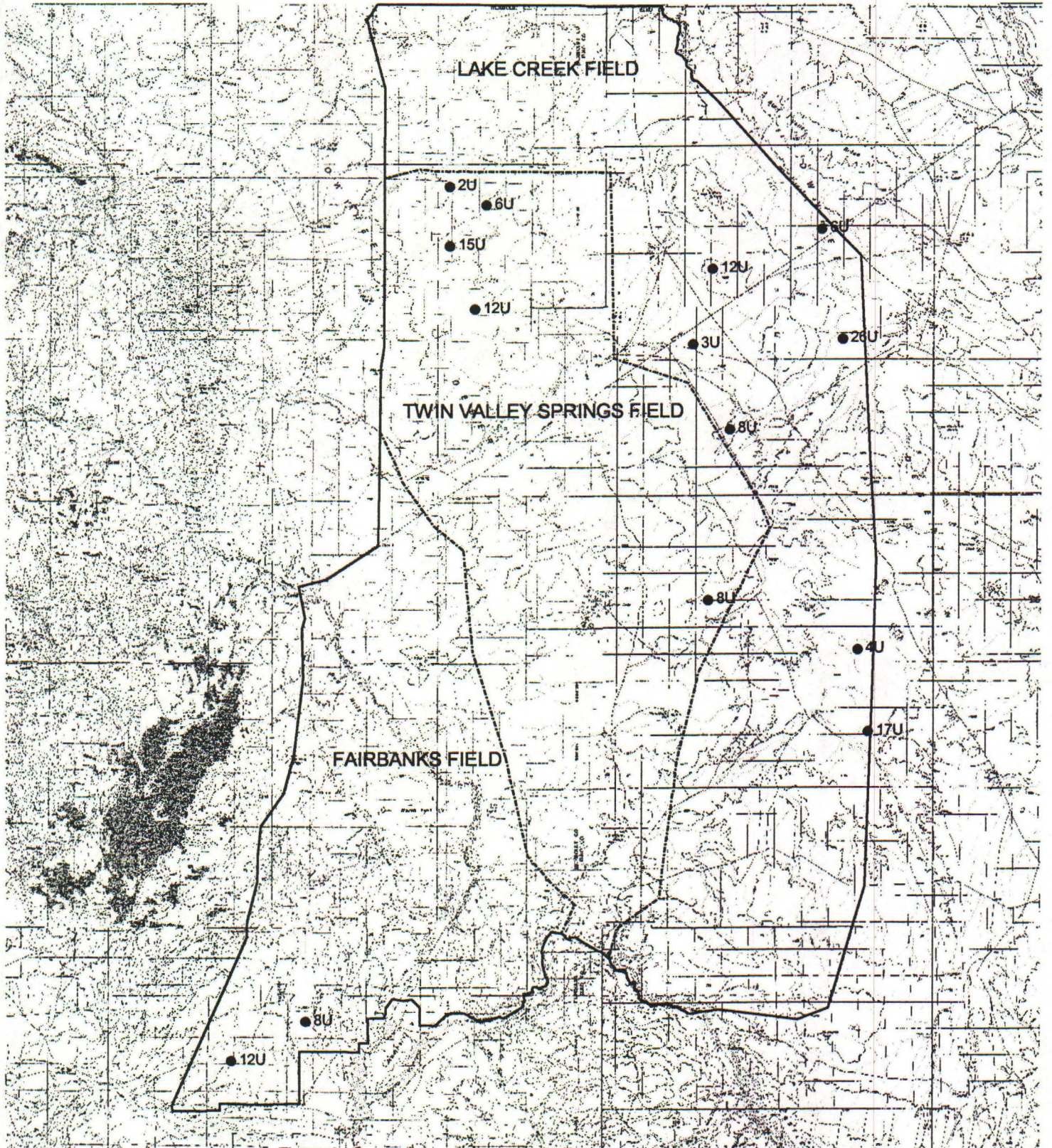


- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⚡ Pasture fences

5 0 5 Miles



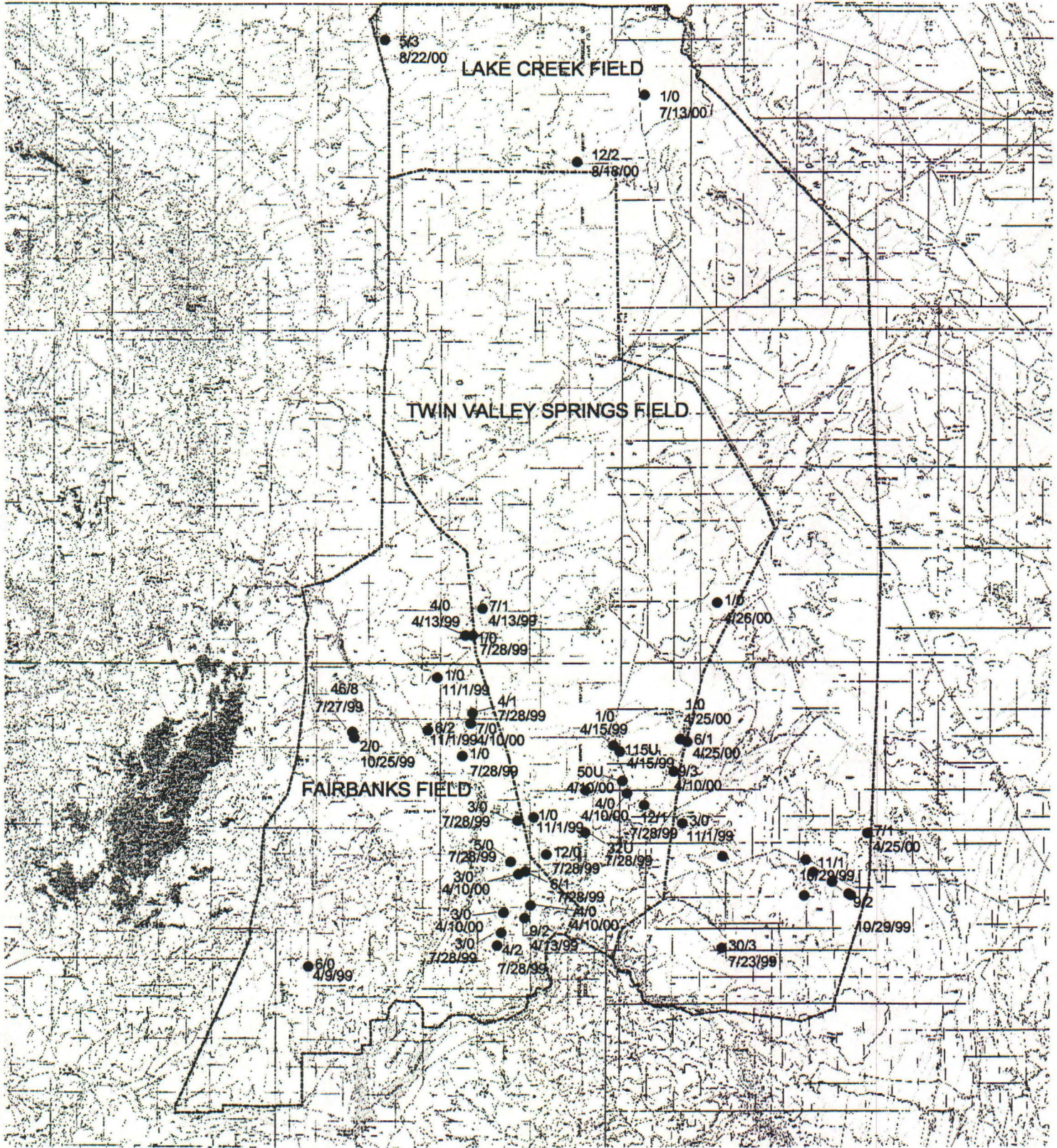
APPENDIX A
 Little Owyhee HMA
 Distribution Flight - March 12, 1969
 Fixed Wing Aircraft



- Wild horse locations (adults/foals)
(U = unclassified adult/foal mix)
- Little Owyhee HMA
- ⚡ Pasture fences



APPENDIX A
 Little Owyhee HMA
 Ground Observations - 1999-2000



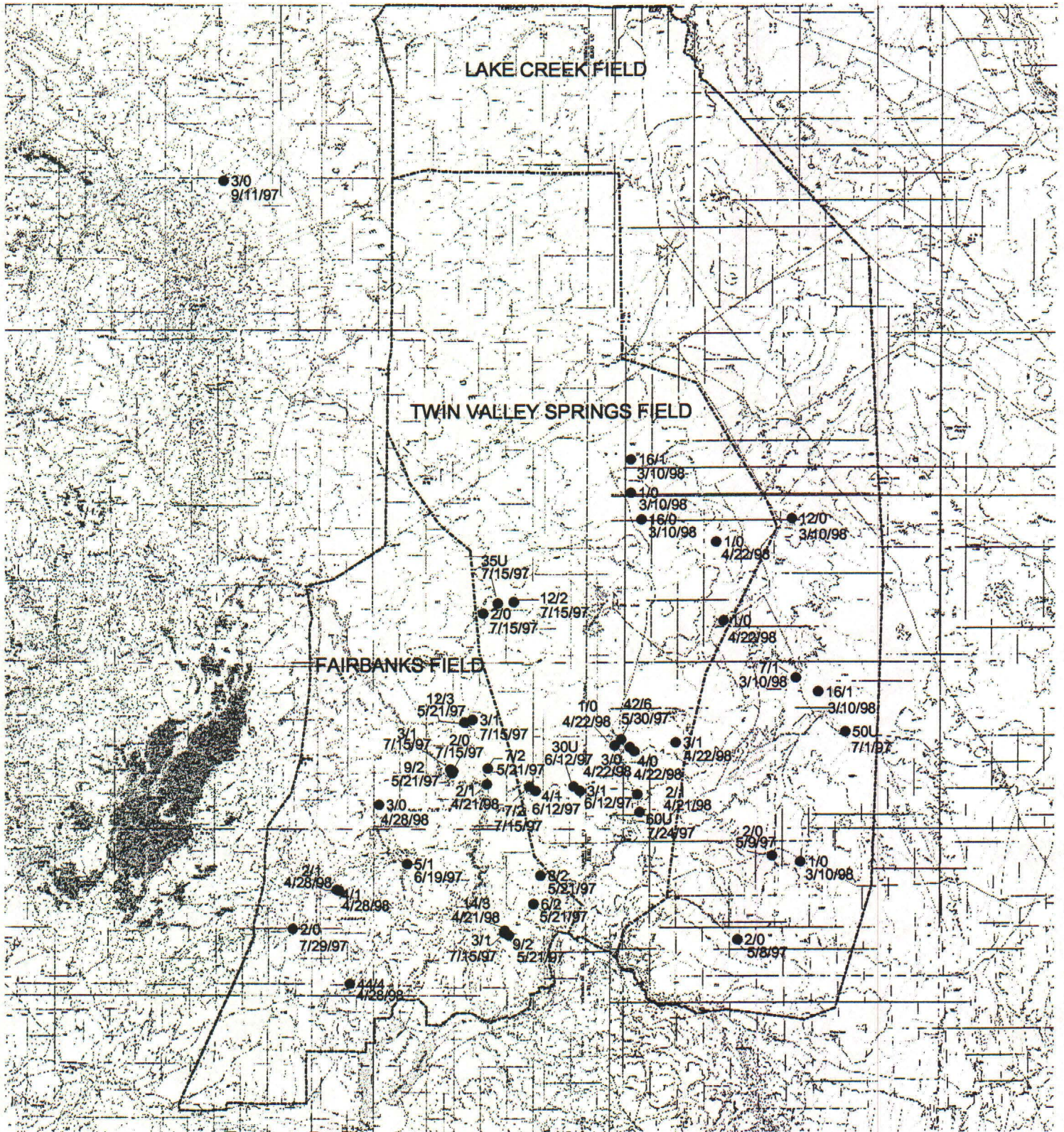
- Wild horse locations (adults/foals)
(U = unclassified adult/foal mix)
- Little Owyhee HMA
- ⚡ Pasture fences



APPENDIX A

Little Owyhee HMA

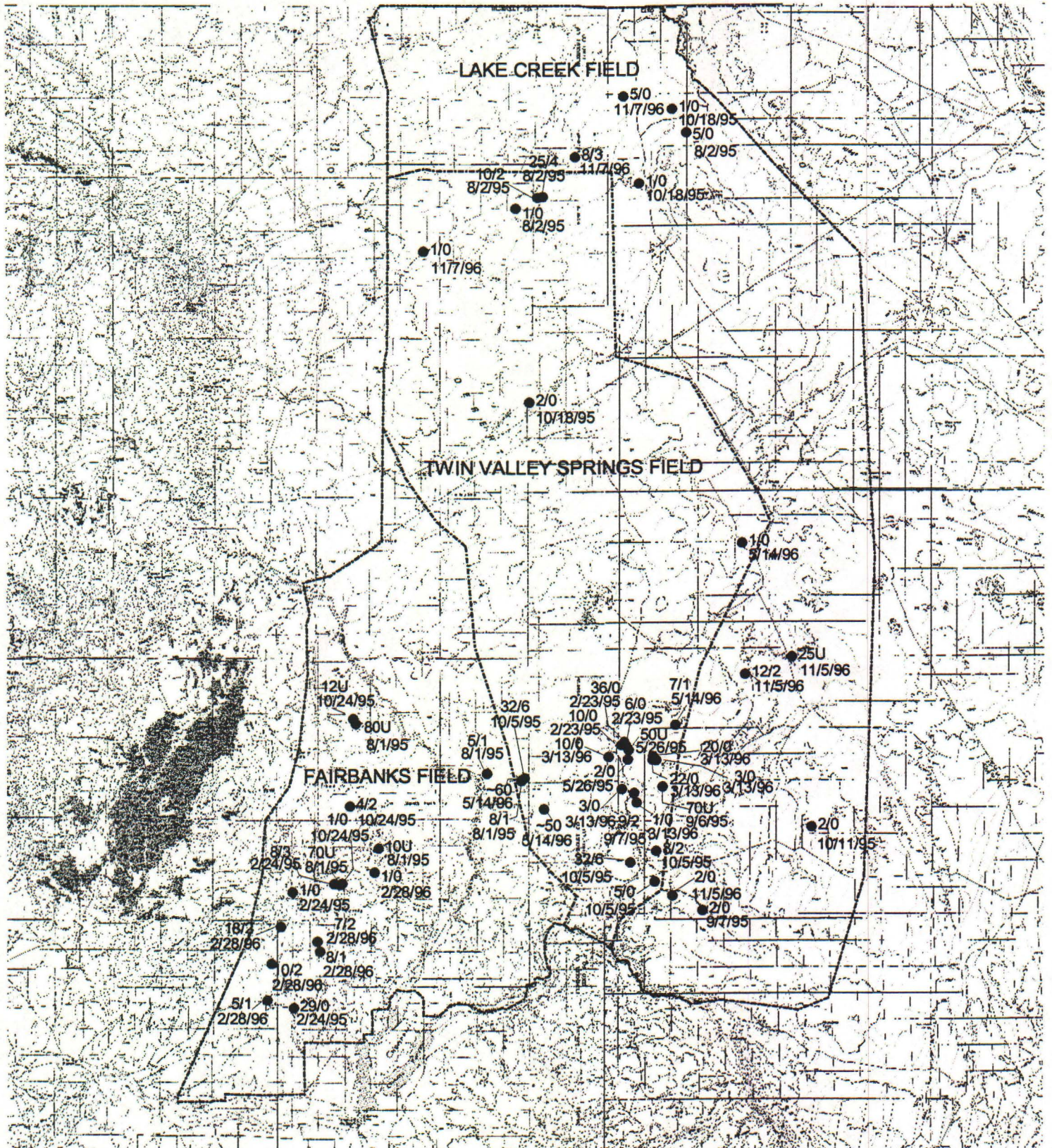
Ground Observations 1997-98



- Wild horse locations (adults/foals)
(U = unclassified adult/foal mix)
- Little Owyhee HMA
- ⚡ Pasture fences



APPENDIX A
 Little Owyhee HMA
 Ground Observations 1995-96



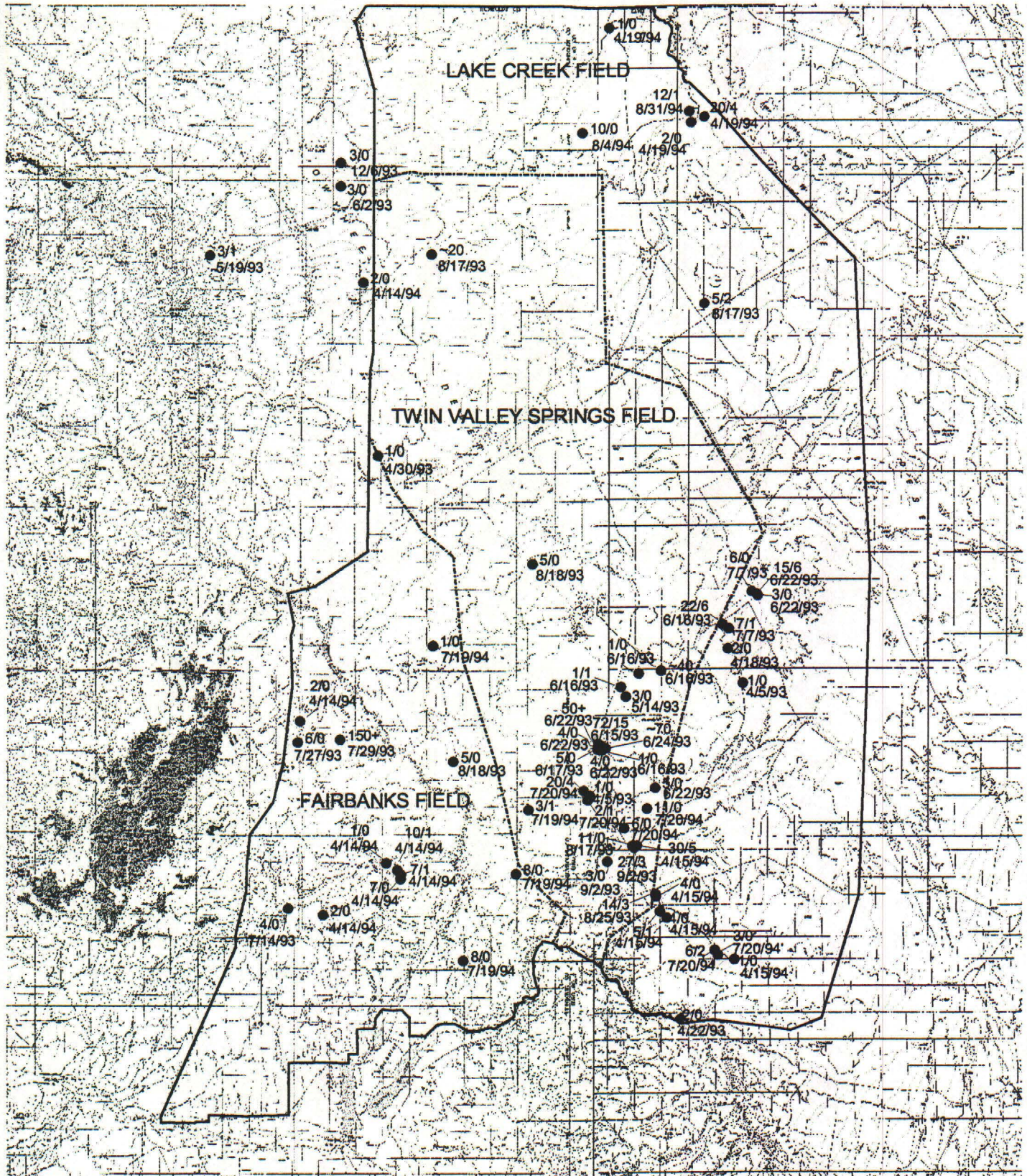
- Wild horse locations (adults/foals)
(U = unclassified adult/foal mix)
- ▭ Little Owyhee HMA
- ⚡ Pasture fences



APPENDIX A

Little Owyhee HMA

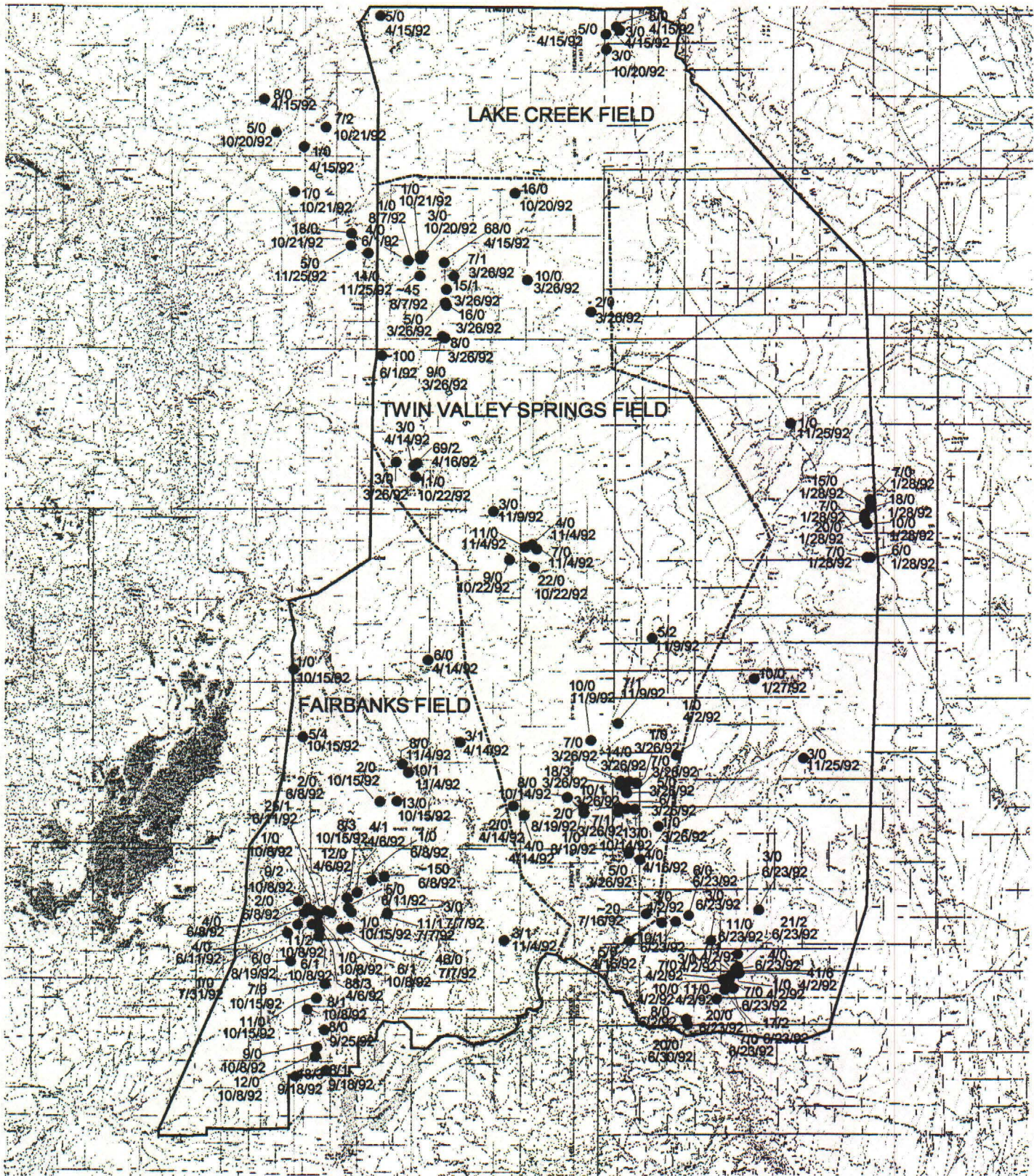
Ground Observations 1993-94



- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⚡ Pasture fences



APPENDIX A
 Little Owyhee HMA
 Ground Observations - 1992



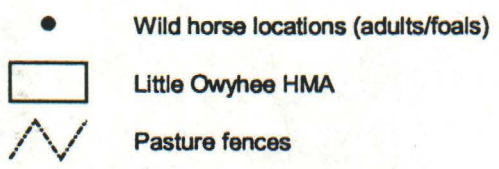
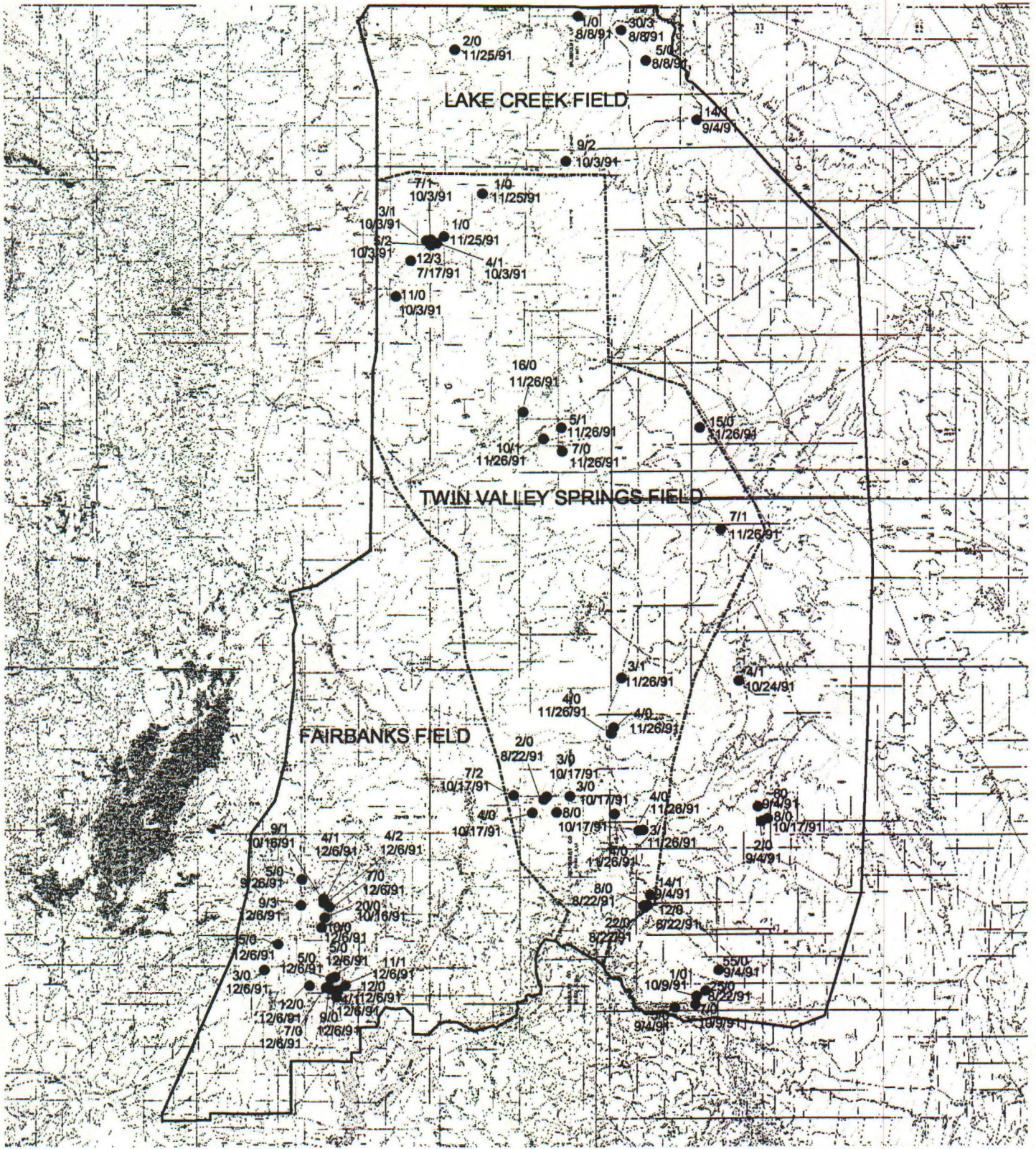
- Wild horse locations (adults/foals)
- Little Owyhee HMA
- ⚡ Pasture fences



APPENDIX A

Little Owyhee HMA

Ground Observations - 1991



APPENDIX B

Water Sources and Range Improvements

FAIRBANKS FIELD

<u>Reservoirs</u>	Name	Project Number	Date Const	Date Reconst	Comments
41N-42E-10 SW NW	FAIRBANKS	0431	1948		
41N-42E-11 NW SW					
41N-42E-19 NW NE	MCCLEARY	0871	1958		
42N-42E-09 SE SW					
42N-42E-15 NW SW	JACKRABBIT	0430	1948		
42N-42E-15 NW SE					
42N-42E-28 SW NE					
42N-42E-33 NW NW					
42N-43E-06 NW SW					
42N-43E-06 SW NW					
42N-43E-07 SE NE	WHISKEY SPRING				
42N-43E-23 SE SE					
42N-43E-26 SW SW					
42N-43E-30 SW NE					
42N-44E-21 SE NE					
43N-42E-03 NW NE					
43N-42E-13 NE SW	BIG	0216	1946		
43N-42E-23 SW NE					
43N-42E-26 NE SW	BULL PEN				
43N-42E-36 NW SW					
43N-43E-15 SE NE					
44N-42E-35 SE SE	SAGEHEN	0218	1945		
 <u>Springs</u>					
42N-42E-04 NE NW	MUSTANG SPRING				Private land
42N-42E-10 NE SE	CHUKAR SPRING	4924	1985		Developed spring
42N-42E-14 SW NE	LITTLE MUD SPRING	4704	1975		Developed spring
42N-43E-07 SE NE	WHISKEY SPRINGS				
 <u>Small waterhole</u>					
41N-42E-19 NE SW					
 <u>Miscellaneous water sources</u>					
42N-44N, 42-43E	NORTH FORK LITTLE HUMBOLDT RIVER				Perennial

LAKE CREEK FIELD

Reservoirs

41N-45E-02 NW NE					
42N-45E-03 NW NE					
42N-45E-04 SE NE					
42N-45E-13 SW NE					
42N-45E-21 NE NW					
42N-45E-29 SE NE					
42N-45E-29 SE NE	ROCKY				
42N-45E-32 SE NW					
42N-45E-34 SE NE					
42N-46E-06 SE NW					Dam broken
42N-46E-06 SW NW					
43N-45E-14 SW SE					
43N-46E-21 SE SW					
43N-46E-28 NW NE					Needs cleaned out
44N-45E-25 SE NW	OWYHEE #8	4504	1963		
44N-45E-25 SE SW					
45N-45E-07 SE NW					Private land
45N-45E-25 NE NW	REED & TAYLOR	4727	1930	1982	Private water right
45N-46E-30 NE NW	OWYHEE #43	4509	1963	1981	
47N-43E-05 NW SE					
47N-43E-06 SE SE					
47N-43E-06 SW NW	WILLOW SPRING				
47N-44E-10 SE NW					
47N-45E-07 NE SW	CATHCART				
47N-45E-07 SE NW					
47N-45E-27 SW SE	LAKE CREEK	4498	1963	1985	
 <u>Wells</u>					
42N-46E-18 NW SE	MCCLEARY WELL #2				Private water right
43N-46E-20 SE NW	MCCLEARY WELL #1				Private water right
44N-45E-13 NE NE	CORRAL LAKE WELL	4003	1971		Private water right
 <u>Pipelines</u>					
44N-45E-12 SE SE	CORRAL LK PIPELINE	4258	1971		Private water right
44N-45E-24 SW NE	CORRAL LK PIPELINE	4258	1971		Private water right
44N-46E-06 NE NE	CORRAL LK PIPELINE	4258	1971		Private water right
44N-46E-06 SW SW	CORRAL LK PIPELINE	4258	1971		Private water right
45N-45E-03 SW NE	CORRAL LK PIPELINE	4258	1988		Private water right
45N-45E-13 NE SE	CORRAL LK PIPELINE	4258	1988		Private water right
45N-45E-13 NW NW	CORRAL LK PIPELINE	4258	1988		Private water right
45N-46E-19 SW SE	CORRAL LK PIPELINE	4258	1988		Private water right
46N-44E-02 NW SE	MAIDEN SPR PIPELINE	0141	1962		Private water right
47N-44E-36 SW NE	MAIDEN SPR PIPELINE	0141	1988		Private water right

47N-45E-30 SW NE MAIDEN SPR PIPELINE 0141 1988 Private water right

Small waterholes

47N-45E-07 SW SE
 47N-45E-17 SW SW
 47N-45E-18 SE NE
 47N-45E-20 SW SW
 47N-45E-29 NW SW

Natural depressions/playas

42N-46E-03 NE SW
 44N-46E-15 SE SE

Miscellaneous water sources

41N-45E-15&16 RODEAR FLAT (South Fork Little Humboldt River) Perennial, partially private land

TWIN VALLEY SPRINGS FIELD

Reservoirs

42N-44E-04 SE SE				
42N-45E-07 SW SE	FOUR MILE	4729	1964	1982
43N-43E-25 NW SE	NEW			
43N-44E-25 NW SE				
43N-44E-25 SE NE				
43N-45E-03 NE SW				
43N-45E-04 SW SE	OWYHEE #9	4501	1963	
43N-45E-05 SE SW	OWYHEE #10	4500	1963	
43N-45E-07 NE SW				
43N-45E-08 SW NW				
43N-45E-28 SE NW				
43N-45E-29 NE NE	OWYHEE #44	4503	1963	
43N-45E-29 SW SW	OWYHEE #14	4502	1963	
43N-45E-30 NW SW	EIGHT MILE	4731	1964	1982
44N-43E-12 SW NE				
44N-43E-25 SW NW	OWYHEE #13	4499	1963	1982
44N-44E-22 NW NW	MCCLEARY	0034	1961	
44N-44E-35 SW NE	BUTTON LAKE	0327	1962	
44N-44E-36 NE NW				
44N-45E-04 NE SE				
44N-45E-04 NW SE				Needs cleaned out
44N-45E-07 SW SW				
44N-45E-11 SW SE	OWYHEE #25	4508	1963	
44N-45E-11 SW SW				

44N-45E-14 NW SE	OWYHEE #22	4507	1963	
44N-45E-23 SW SW	OWYHEE #21	4506	1963	Needs cleaned out
44N-45E-24 NW NW	OWYHEE #20	4505	1963	
44N-45E-34 SW SE				
45N-45E-33 SE NW				
46N-43E-12 NE NW				

Springs

45N-43E-28 NE SW TWIN VALLEY SPRINGS

Wells

44N-44E-25 NW SE	BUTTON LAKE WELL	0694	1965	Private water right Currently inoperative
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Pipelines

46N-43E-01 SW SW	MAIDEN SPR PIPELINE	0141	1962	Private water right
46N-43E-10 SW NE	MAIDEN SPR PIPELINE	0141	1962	Private water right
46N-43E-16 SE NW	MAIDEN SPR PIPELINE	0141	1962	Private water right
46N-43E-17 SE SE	MAIDEN SPR PIPELINE	0141	1962	Private water right
46N-44E-10 NE NE	MAIDEN SPR PIPELINE	0141	1962	Private water right
44N-45E-13 NW NE	CORRAL LK PIPELINE	4258	1988	Private water right

Miscellaneous water sources

42N-44E-23 NW SE	MILLIGAN CREEK			Perennial
42N-44E-26 NE	MILLIGAN CREEK MARSH			Private land

All waters on BLM land except where noted.

Other projects

<u>Name</u>	<u>Legal</u>	<u>Project#</u>	<u>Date Constructed</u>
Button Lake Capture Corral	44N-44E-25		
Fairbanks Management Fence	42-45N, 43-44E	4711	1975
Lake Creek Management Fence	41-46N, 43-45E	4693	1977
Little Owyhee Drift Fence	47N, 43-45E	4458	1961
Maiden Sp Pipeline Capture Corral	47N-45E-30		
McCleary #1 Capture Corral	43N-46E-20		
Owyhee Fence #1	44-45N, 42-43E	0680	1965
Owyhee Seasonal Fence	45-47N, 43E	0937	1966
Twin Valley Capture Corral	45N-43E-28	4746	1977

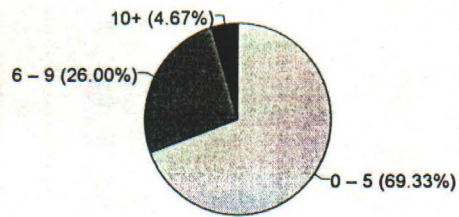
APPENDIX C
Data from 1983-85 Little Owyhee Gathers

Age	1983			1984			1985		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
foal	36	36	72	55	60	115	49	53	102
1	20	29	49	26	61	87	52	45	97
2	20	26	46	14	20	34	35	53	88
3	19	16	35	11	22	33	19	16	35
4	5	13	18	11	13	24	15	29	44
5	4	14	18	7	16	23	30	18	48
6	12	14	26	16	26	42	31	63	94
7	14	11	25	14	20	34	24	21	45
8	8	15	23	15	18	33	13	19	32
9	5	9	14	4	7	11	9	6	15
10	0	0	0	4	7	11	10	9	19
11	0	0	0	1	6	7	7	4	11
12	5	5	10	2	2	4	8	2	10
13	2	0	2	1	1	2	5	5	10
14	0	0	0	3	1	4	6	4	10
15	0	0	0	2	1	3	2	3	5
16	0	0	0	1	2	3	7	8	15
17	0	0	0	4	1	5	2	0	2
18	0	0	0	4	1	5	4	4	8
19	0	0	0	0	0	0	0	0	0
20	0	0	0	2	2	4	6	2	8
20+	0	0	0	3	0	3	22	6	28
Total	150	188	338	200	287	487	356	370	726
0 - 5	104	134	238	124	192	316	200	214	414
6 - 9	39	49	88	49	71	120	77	109	186
10+	7	5	12	27	24	51	79	47	126
Sex Ratio (M:F)	44:56			41:59			49:51		

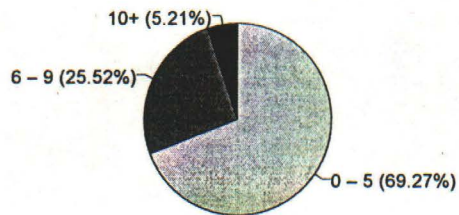
APPENDIX C

Data from 1983-85 Little Owyhee Gatherers

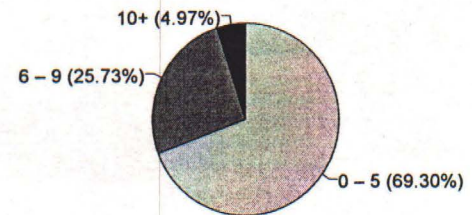
1983 Little Owyhee Gather
Ages - Males



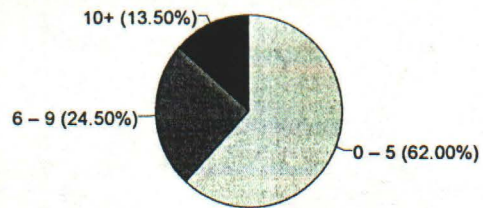
1983 Little Owyhee Gather
Ages - Females



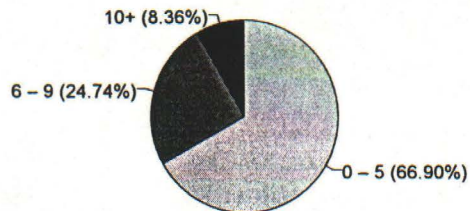
1983 Little Owyhee Gather
Ages - Total



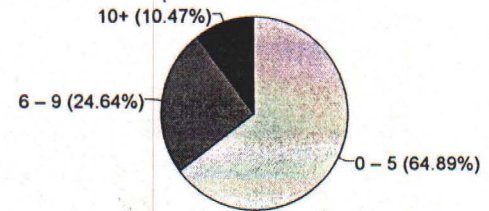
1984 Little Owyhee Gather
Ages - Males



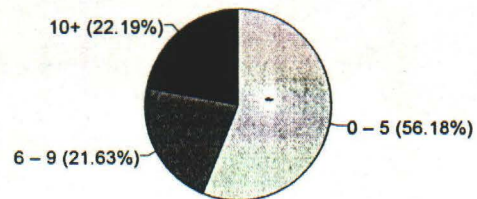
1984 Little Owyhee Gather
Ages - Females



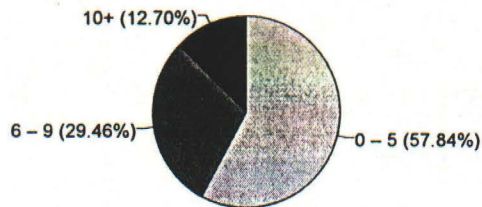
1984 Little Owyhee Gather
Ages - Total



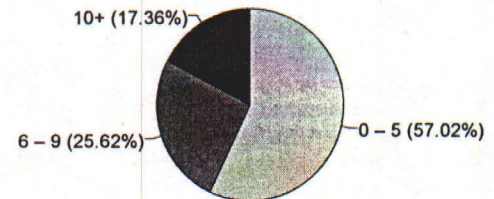
1985 Little Owyhee Gather
Ages - Males



1985 Little Owyhee Gather
Ages - Females



1985 Little Owyhee Gather
Ages - Total



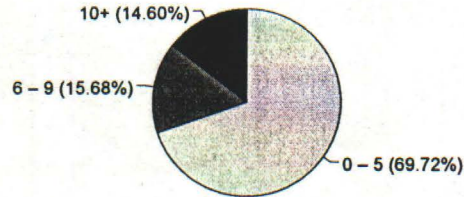
APPENDIX C

Data from 1992 Little Owyhee Gather

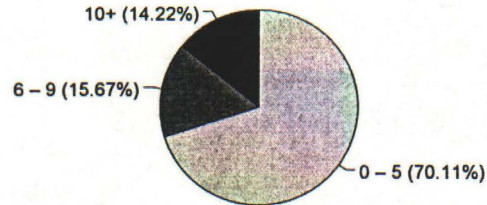
Age	Overall			Rodear Flat			North Twin Valley		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
foal	80	92	172	57	70	127	23	22	45
1	25	17	42	17	14	31	8	3	11
2	57	64	121	47	42	89	10	22	32
3	52	66	118	44	48	92	8	18	26
4	39	47	86	30	35	65	9	12	21
5	12	27	39	9	21	30	3	6	9
6	15	23	38	12	19	31	3	4	7
7	24	30	54	16	24	40	8	6	14
8	11	20	31	9	15	24	2	5	7
9	1	6	7	0	2	2	1	4	5
10	11	10	21	7	8	15	4	2	6
11	15	11	26	11	7	18	4	4	8
12	6	8	14	3	7	10	3	1	4
13	10	9	19	9	8	17	1	1	2
14	11	0	11	8	0	8	3	0	3
15	12	4	16	10	3	13	2	1	3
16	2	1	3	1	1	2	1	0	1
17	2	1	3	0	0	0	2	1	3
18	3	0	3	3	0	3	0	0	0
19	0	0	0	0	0	0	0	0	0
20	3	1	4	1	0	1	2	1	3
20+	1	0	1	1	0	1	0	0	0
NotAged	1	2	3	1	2	3	0	0	0
Total	393	439	832	296	326	622	97	113	210
0 - 5	265	313	578	204	230	434	61	83	144
6 - 9	51	79	130	37	60	97	14	19	33
10 +	76	45	121	54	34	88	22	11	33
Sex Ratio (M:F)	47:53			48:52			46:54		

APPENDIX C
Data from 1992 Little Owyhee Gather

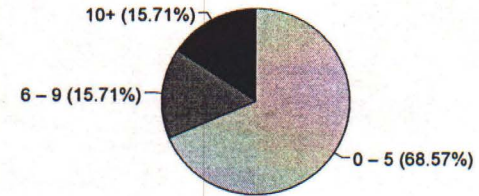
1992 Little Owyhee Gather
Ages - Overall - Total



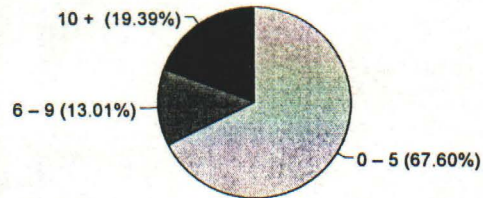
1992 Little Owyhee Gather
Ages - Rodear Flat - Total



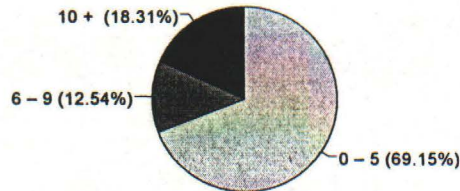
1992 Little Owyhee Gather
Ages - North Twin Valley - Total



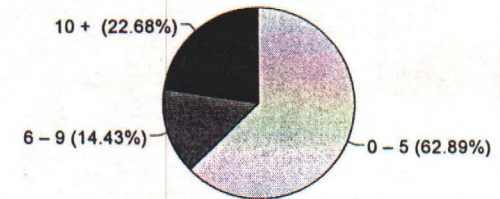
1992 Little Owyhee Gather
Ages - Overall - Males



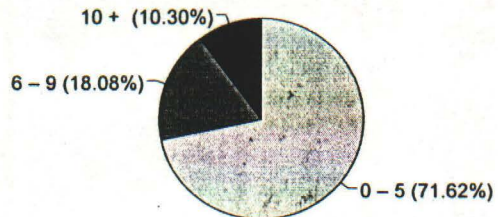
1992 Little Owyhee Gather
Ages - Rodear Flat - Males



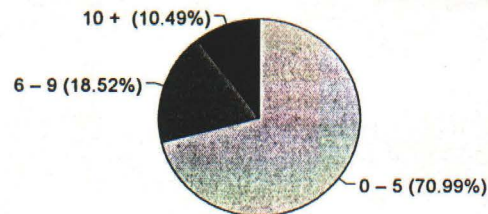
1992 Little Owyhee Gather
Ages - North Twin Valley - Males



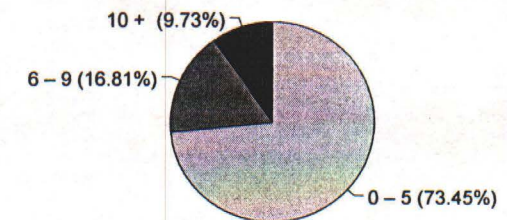
1992 Little Owyhee Gather
Ages - Overall - Females



1992 Little Owyhee Gather
Ages - Rodear Flat - Females



1992 Little Owyhee Gather
Ages - North Twin Valley - Females



APPENDIX C
Data from 1993-94 Little Owyhee Gather

	Overall			Fairbanks			Twin Valley		
Age	Males	Females	Total	Males	Females	Total	Males	Females	Total
foal	48	62	110	8	15	23	20	18	38
1	15	13	28	7	6	13	7	3	10
2	36	67	103	14	33	47	18	15	33
3	56	43	99	18	15	33	27	18	45
4	33	28	61	15	9	24	14	10	24
5	12	14	26	5	2	7	4	7	11
6	11	17	28	6	11	17	3	6	9
7	15	8	23	7	2	9	5	5	10
8	12	25	37	7	9	16	2	9	11
9	5	4	9	2	2	4	1	0	1
10	12	11	23	9	5	14	0	1	1
11	9	10	19	4	3	7	0	1	1
12	20	22	42	10	6	16	4	10	14
13	8	4	12	2	1	3	3	2	5
14	10	9	19	1	1	2	5	3	8
15	11	3	14	3	0	3	4	1	5
16	7	5	12	4	1	5	0	0	0
17	6	2	8	1	1	2	2	0	2
18	7	4	11	2	0	2	2	2	4
19	2	4	6	0	0	0	0	0	0
20	5	3	8	0	0	0	2	1	3
20+	3	3	6	0	1	1	2	0	2
11+ X/XX	14	7	21	0	2	2	4	0	4
Not Aged	0	6	6	0	0	0	0	0	0
Total	357	374	731	125	125	250	129	112	241
0 - 5	200	227	427	67	80	147	90	71	161
6 - 9	43	54	97	22	24	46	11	20	31
10 +	114	87	201	36	21	57	28	21	49
Sex Ratio (M:F)	49:51			50:50			54:46		

APPENDIX C
Data from 1993-94 Little Owyhee Gather

	Lake Creek			Outside HMA		
Age	Males	Females	Total	Males	Females	Total
foal	17	14	31	3	15	18
1	0	1	1	1	3	4
2	2	11	13	2	8	10
3	4	8	12	7	2	9
4	3	4	7	1	5	6
5	0	3	3	3	2	5
6	0	0	0	2	0	2
7	3	1	4	0	0	0
8	1	6	7	2	1	3
9	2	2	4	0	0	0
10	2	2	4	1	3	4
11	4	2	6	1	4	5
12	5	3	8	1	3	4
13	3	0	3	0	1	1
14	4	4	8	0	1	1
15	4	2	6	0	0	0
16	3	3	6	0	1	1
17	3	1	4	0	0	0
18	3	2	5	0	0	0
19	1	4	5	1	0	1
20	2	2	4	1	0	1
20+	1	2	3	0	0	0
11+ X/XX	9	5	14	1	0	1
Not Aged	0	2	2	0	4	4
Total	76	84	160	27	53	80
0 - 5	26	41	67	17	35	52
6 - 9	6	9	15	4	1	5
10 +	44	32	76	6	13	19

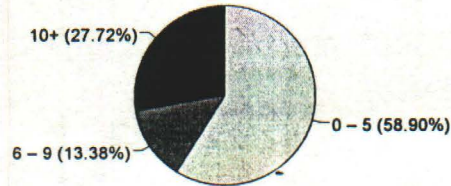
Sex Ratio (M:F) 48:52

34:66

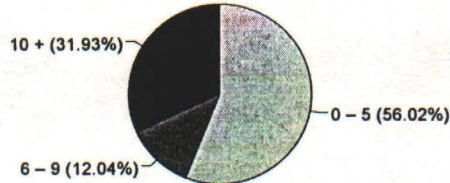
APPENDIX C

Data from 1993-94 Little Owyhee Gather

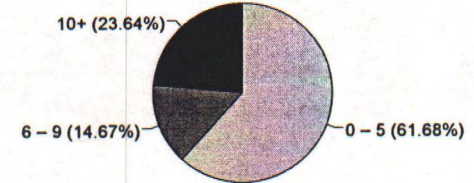
1993-94 Little Owyhee Gather
Ages - Overall - Total



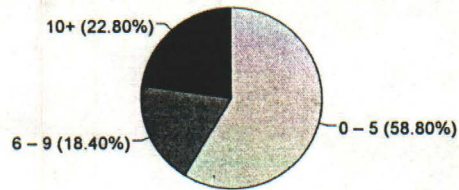
1993-94 Little Owyhee Gather
Ages - Overall - Males



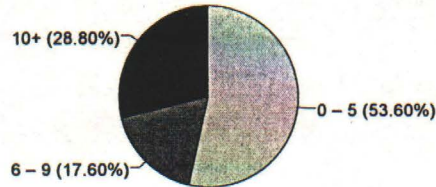
1993-94 Little Owyhee Gather
Ages - Overall - Females



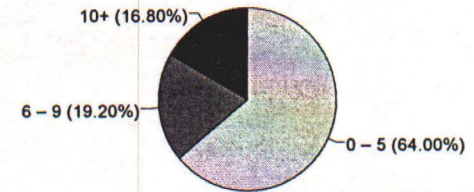
1993-94 Little Owyhee Gather
Ages - Fairbanks - Total



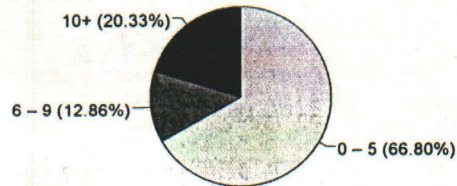
1993-94 Little Owyhee Gather
Ages - Fairbanks - Males



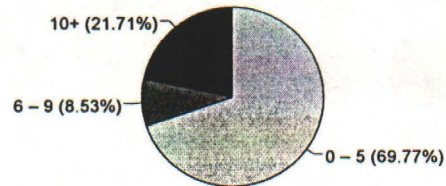
1993-94 Little Owyhee Gather
Ages - Fairbanks - Females



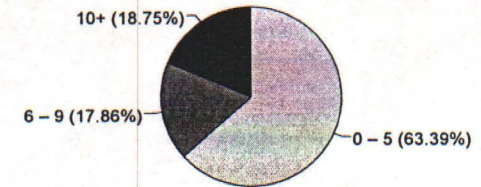
1993-94 Little Owyhee Gather
Ages - Twin Valley - Total



1993-94 Little Owyhee Gather
Ages - Twin Valley - Males

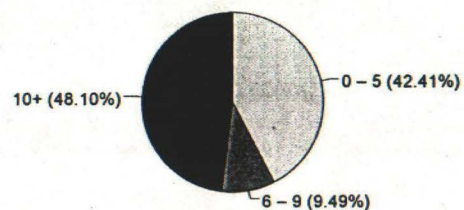


1993-94 Little Owyhee Gather
Ages - Twin Valley - Females

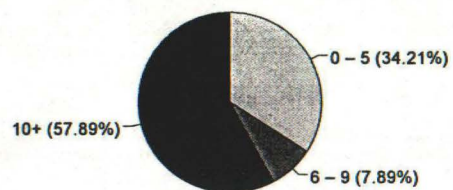


APPENDIX C
Data from 1993-94 Little Owyhee Gather

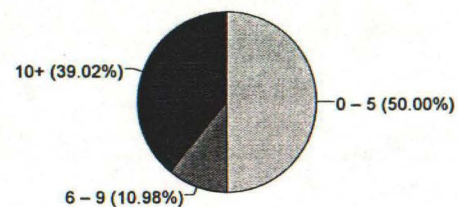
1993-94 Little Owyhee Gather
Ages - Lake Creek - Total



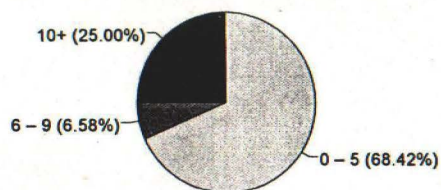
1993-94 Little Owyhee Gather
Ages - Lake Creek - Males



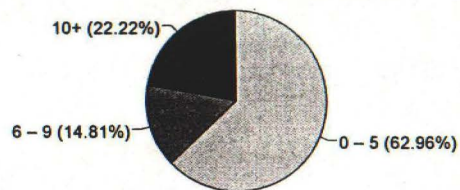
1993-94 Little Owyhee Gather
Ages - Lake Creek - Females



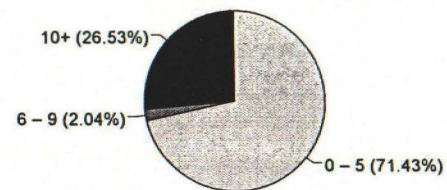
1993-94 Little Owyhee Gather
Ages - Outside HMA - Total



1993-94 Little Owyhee Gather
Ages - Outside HMA - Males



1993-94 Little Owyhee Gather
Ages - Outside HMA - Females



APPENDIX C
Data from 1997 Little Owyhee Gather

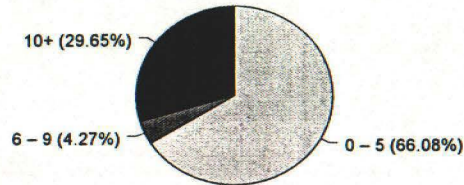
Age	Overall			Fairbanks			Twin Valley		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
foal	94	92	186	31	30	61	32	26	58
1	45	53	98	24	15	39	11	16	27
2	73	80	153	28	22	50	13	28	41
3	41	48	89	16	16	32	16	18	34
4	43	14	57	15	3	18	10	2	12
5	15	6	21	5	1	6	5	1	6
6	1	6	7	1	2	3	0	3	3
7	3	5	8	0	1	1	2	2	4
8	4	3	7	0	1	1	2	1	3
9	5	12	17	2	8	10	2	3	5
10	21	29	50	12	15	27	4	11	15
11	18	8	26	6	3	9	7	2	9
12	20	13	33	14	8	22	6	1	7
13	21	14	35	5	4	9	8	4	12
14	14	14	28	2	4	6	5	5	10
15	7	3	10	3	0	3	3	0	3
16	5	2	7	0	1	1	2	1	3
17	7	6	13	1	1	2	2	1	3
18	11	5	16	6	0	6	2	2	4
19	4	4	8	1	2	3	2	0	2
20	16	10	26	6	4	10	2	2	4
20+	17	2	19	5	0	5	3	0	3
NotAged	1	0	1	0	0	0	1	0	1
	486	429	915	183	141	324	140	129	269
0 - 5	311	293	604	119	87	206	87	91	178
6 - 9	13	26	39	3	12	15	6	9	15
10+	161	110	271	61	42	103	46	29	75
Sex Ratio(M:F)	53:47			56:44			52:48		

APPENDIX C
Data from 1997 Little Owyhee Gather

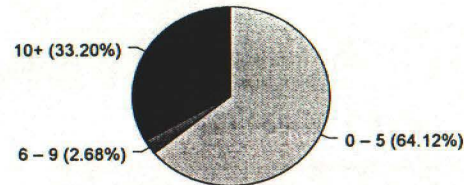
Age	Lake Creek			Outside HMA		
	Males	Females	Total	Males	Females	Total
foal	31	35	66	0	1	1
1	10	21	31	0	1	1
2	32	29	61	0	1	1
3	9	14	23	0	0	0
4	17	9	26	1	0	1
5	4	4	8	1	0	1
6	0	1	1	0	0	0
7	1	2	3	0	0	0
8	2	1	3	0	0	0
9	1	1	2	0	0	0
10	5	3	8	0	0	0
11	5	3	8	0	0	0
12	0	3	3	0	1	1
13	8	6	14	0	0	0
14	6	5	11	1	0	1
15	1	3	4	0	0	0
16	3	0	3	0	0	0
17	4	3	7	0	1	1
18	3	3	6	0	0	0
19	1	2	3	0	0	0
20	8	4	12	0	0	0
20+	7	2	9	2	0	1
NotAged	0	0	0	0	0	0
	158	154	312	5	5	10
0 - 5	103	112	215	2	3	5
6 - 9	4	5	9	0	0	0
10+	51	37	88	3	2	5
Sex Ratio(M:F)	51:49			50:50		

APPENDIX C
Data from 1997 Little Owyhee Gather

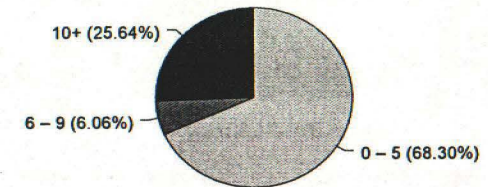
1997 Little Owyhee Gather
Ages - Overall - Total



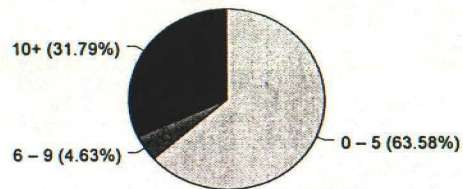
1997 Little Owyhee Gather
Ages - Overall - Males



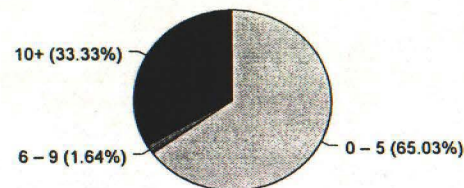
1997 Little Owyhee Gather
Ages - Overall - Females



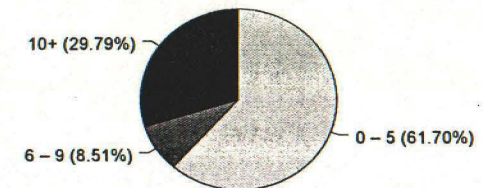
1997 Little Owyhee Gather
Ages - Fairbanks - Total



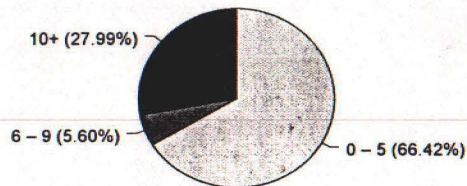
1997 Little Owyhee Gather
Ages - Fairbanks - Males



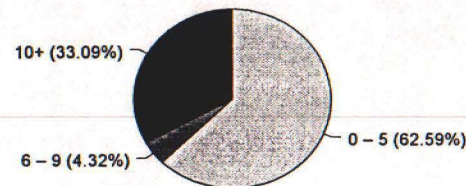
1997 Little Owyhee Gather
Ages - Fairbanks - Females



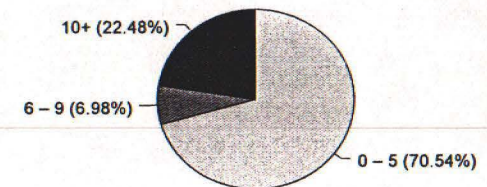
1997 Little Owyhee Gather
Ages - Twin Valley - Total



1997 Little Owyhee Gather
Ages - Twin Valley - Males

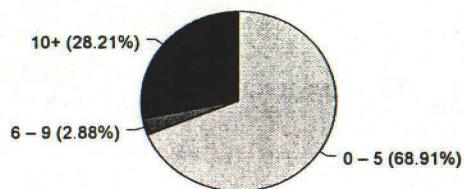


1997 Little Owyhee Gather
Ages - Twin Valley - Females

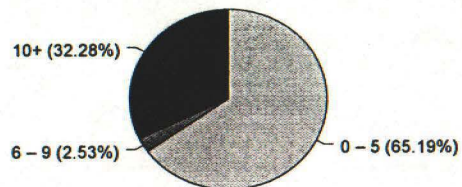


APPENDIX C
Data from 1997 Little Owyhee Gather

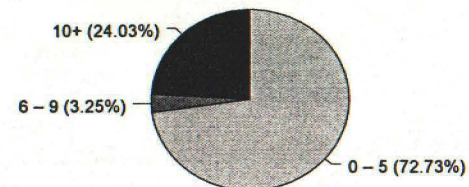
1997 Little Owyhee Gather
Ages - Lake Creek - Total



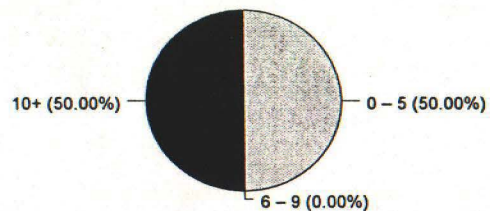
1997 Little Owyhee Gather
Ages - Lake Creek - Males



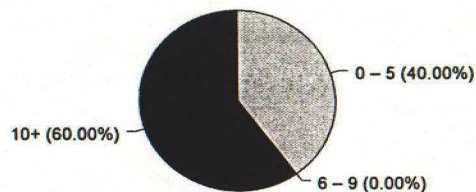
1997 Little Owyhee Gather
Ages - Lake Creek - Females



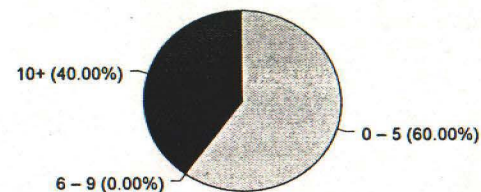
1997 Little Owyhee Gather
Ages - Outside HMA - Total



1997 Little Owyhee Gather
Ages - Outside HMA - Males



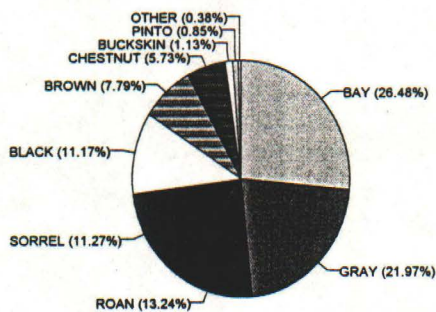
1997 Little Owyhee Gather
Ages - Outside HMA - Females



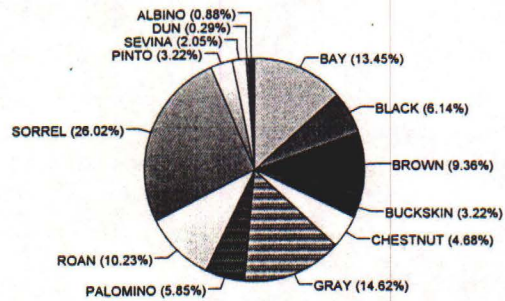
APPENDIX C
Data from 1977-85 Little Owyhee Gather
Colors

Color	1977		1983		1984		1985	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
BAY	282	27	46	13	133	27	179	25
BLACK	119	11	21	6	35	7	70	10
BROWN	83	8	32	9	38	8	74	10
BUCKSKIN	12	1	11	3	12	2	28	4
CHESTNUT	61	6	16	5	14	3	19	3
GRAY	234	22	50	15	64	13	126	17
PALOMINO	3	0	20	6	5	1	14	2
ROAN	141	13	35	10	49	10	41	6
SORREL	120	11	89	26	129	26	150	21
PINTO	9	1	11	3	4	1	6	1
APPALOOSA	1	0	0	0	0	0	0	0
SEVINA	0	0	7	2	4	1	12	2
DUN	0	0	1	0	0	0	1	0
ALBINO	0	0	3	1	0	0	1	0
QUEMELLA	0	0	0	0	0	0	3	0
WHITE	0	0	0	0	0	0	2	0
	1065	100	342	100	487	100	726	100

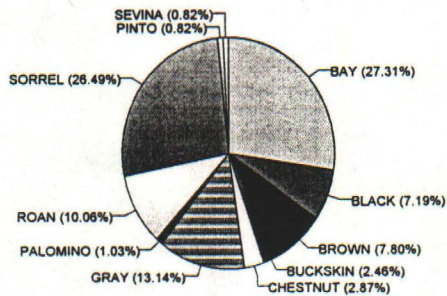
1977 Little Owyhee Gather
Colors



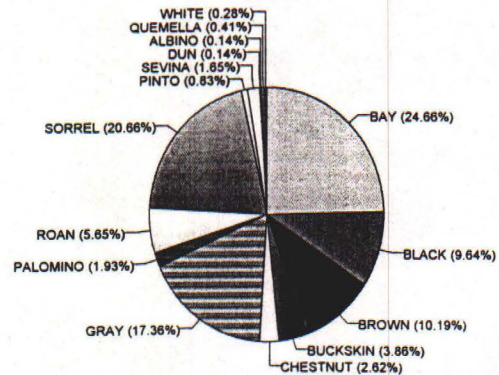
1983 Little Owyhee Gather
Colors



1984 Little Owyhee Gather
Colors



1985 Little Owyhee Gather
Colors

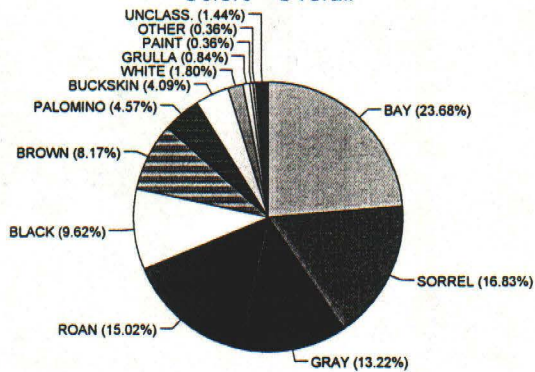


APPENDIX C
Data from 1992 Little Owyhee Gather
Colors

Color	Overall		Rodear Flat		North Twin Valley	
	Number	%	Number	%	Number	%
BAY	197	24	153	25	44	21
SORREL	140	17	107	17	33	16
GRAY	110	13	72	12	38	18
ROAN	92	11	80	13	12	6
BLACK	80	10	64	10	16	8
BROWN	68	8	51	8	17	8
PALOMINO	38	5	25	4	13	6
BUCKSKIN	34	4	18	3	16	8
BLUE ROAN	19	2	17	3	2	1
WHITE	15	2	10	2	5	2
RED ROAN	11	1	11	2	0	0
GRULLA	7	1	6	1	1	0
PAINT	3	0	0	0	3	1
CHESTNUT	2	0	2	0	0	0
GRAY ROAN	2	0	2	0	0	0
ALBINO	1	0	1	0	0	0
STRAWBERRY ROAN	1	0	0	0	1	0
UNCLASSIFIED	12	1	3	0	9	4
	832	100	622	100	210	100

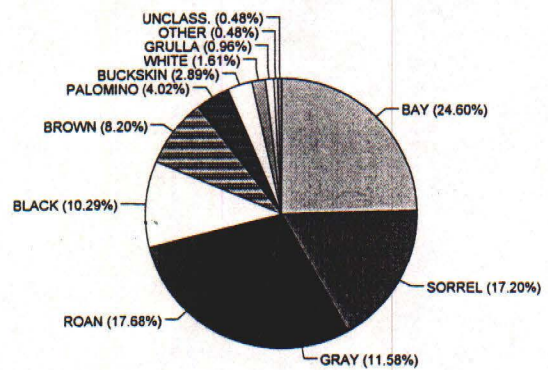
1992 Little Owyhee Gather

Colors - Overall



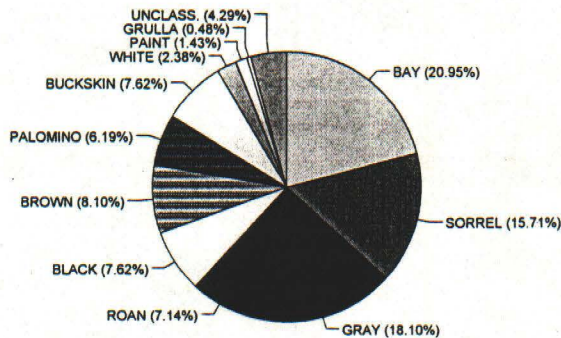
1992 Little Owyhee Gather

Colors - Rodear Flat



1992 Little Owyhee Gather

Colors - North Twin Valley



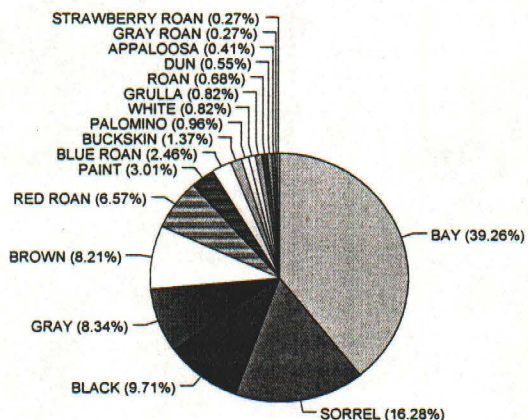
APPENDIX C
Data from 1993-94 Little Owyhee Gather
Colors

Color	Overall		Fairbanks		Twin Valley	
	Number	%	Number	%	Number	%
BAY	287	39	159	64	54	22
SORREL	119	16	47	19	32	13
BLACK	71	10	5	2	32	13
GRAY	61	8	1	0	34	14
BROWN	60	8	20	8	23	10
RED ROAN	48	7	10	4	24	10
PAINT	22	3	0	0	22	9
BLUE ROAN	18	2	0	0	7	3
BUCKSKIN	10	1	1	0	2	1
PALOMINO	7	1	0	0	0	0
WHITE	6	1	1	0	3	1
GRULLA	6	1	0	0	3	1
ROAN	5	1	2	1	3	1
DUN	4	1	3	1	0	0
APPALOOSA	3	0	0	0	0	0
GRAY ROAN	2	0	0	0	2	1
STRAWBERRY ROAN	2	0	1	0	0	0
	731	100	250	100	241	100

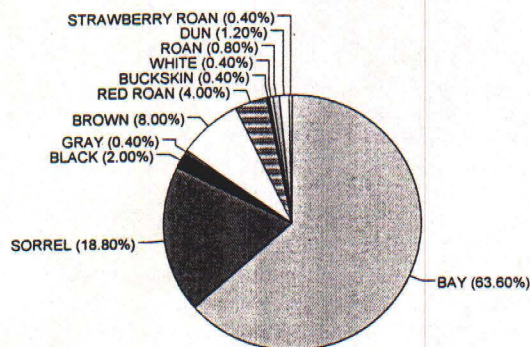
Color	Lake Creek		Outside HMA	
	Number	%	Number	%
BAY	43	27	31	39
SORREL	29	18	11	14
BLACK	25	16	9	11
GRAY	23	14	3	4
BROWN	9	6	8	10
RED ROAN	12	8	2	3
PAINT	0	0	0	0
BLUE ROAN	6	4	5	6
BUCKSKIN	6	4	1	1
PALOMINO	5	3	2	3
WHITE	0	0	2	3
GRULLA	1	1	2	3
ROAN	0	0	0	0
DUN	0	0	1	1
APPALOOSA	0	0	3	4
GRAY ROAN	0	0	0	0
STRAWBERRY ROAN	1	1	0	0
	160	100	80	100

APPENDIX C
 Data from 1993-94 Little Owyhee Gather
 Colors

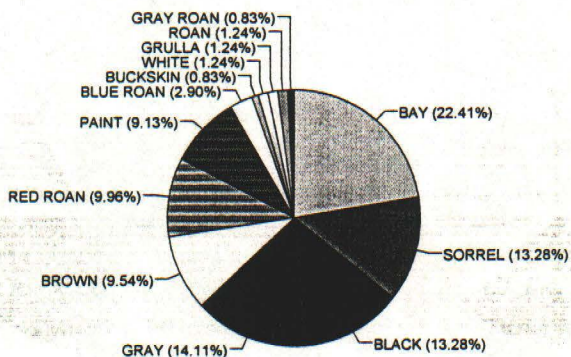
1993-94 Little Owyhee Gather
 Colors - Overall



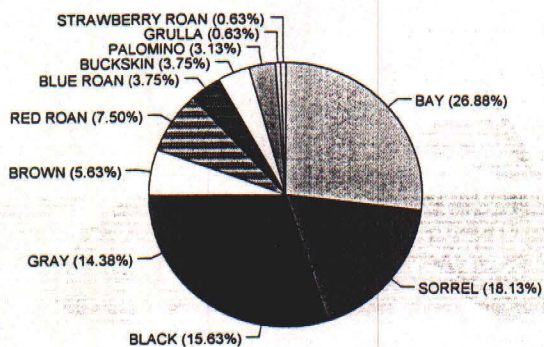
1993-94 Little Owyhee Gather
 Colors - Fairbanks



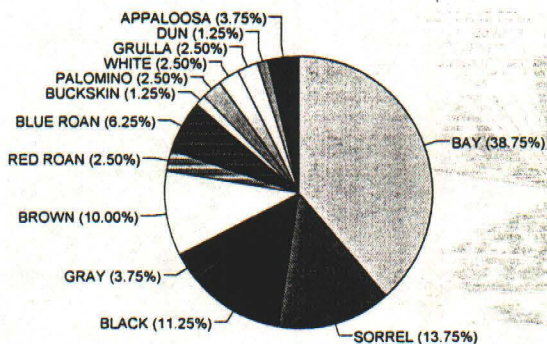
1993-94 Little Owyhee Gather
 Colors - Twin Valley



1993-94 Little Owyhee Gather
 Colors - Lake Creek



1993-94 Little Owyhee Gather
 Colors - Outside HMA



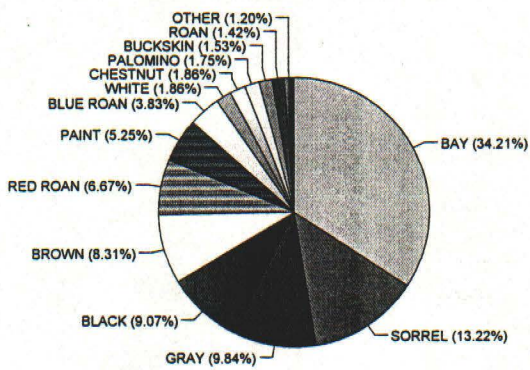
APPENDIX C
Data from 1997 Little Owyhee Gather
Colors

Color	Overall		Fairbanks		Twin Valley	
	Number	Percent	Number	Percent	Number	Percent
BAY	313	34	186	57	66	25
SORREL	121	13	54	17	22	8
GRAY	90	10	18	6	32	12
BLACK	83	9	8	2	42	16
BROWN	76	8	18	6	22	8
RED ROAN	61	7	10	3	23	9
PAINT	48	5	2	1	35	13
BLUE ROAN	35	4	6	2	6	2
WHITE	17	2	2	1	7	3
CHESTNUT	17	2	6	2	4	1
PALOMINO	16	2	4	1	1	0
BUCKSKIN	14	2	4	1	4	1
ROAN	13	1	3	1	5	2
STRAWBERRY ROAN	3	0	0	0	0	0
APPALOOSA	2	0	1	0	0	0
DUN	2	0	2	1	0	0
GRAY ROAN	2	0	0	0	0	0
SEVINA	1	0	0	0	0	0
GRULLA	1	0	0	0	0	0
	915	100	324	100	269	100

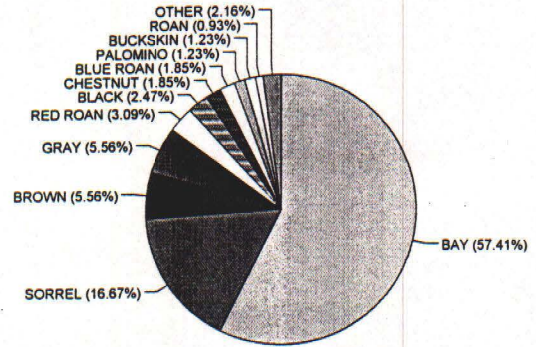
Color	Lake Creek		Outside HMA	
	Number	Percent	Number	Percent
BAY	57	18	4	40
SORREL	44	14	1	10
GRAY	37	12	3	30
BLACK	32	10	1	10
BROWN	36	12	0	0
RED ROAN	28	9	0	0
PAINT	11	4	0	0
BLUE ROAN	23	7	0	0
WHITE	8	3	0	0
CHESTNUT	6	2	1	10
PALOMINO	11	4	0	0
BUCKSKIN	6	2	0	0
ROAN	5	2	0	0
STRAWBERRY ROAN	3	1	0	0
APPALOOSA	1	0	0	0
GRAY ROAN	2	1	0	0
SEVINA	1	0	0	0
GRULLA	1	0	0	0
	312	100	10	100

APPENDIX C
 Data from 1997 Little Owyhee Gather
 Colors

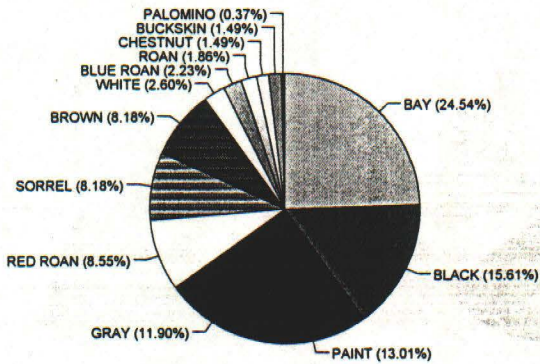
1997 Little Owyhee Gather
 Colors - Overall



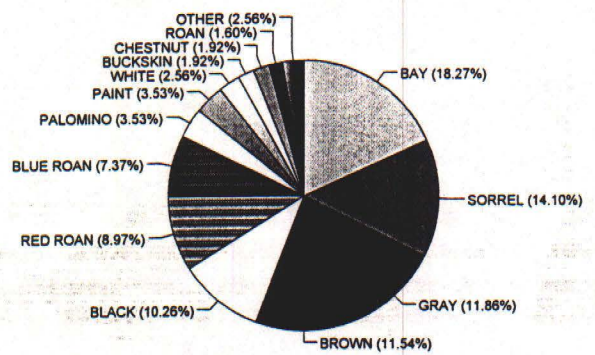
1997 Little Owyhee Gather
 Colors - Fairbanks



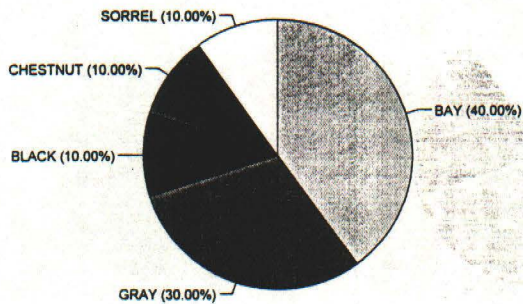
1997 Little Owyhee Gather
 Colors - Twin Valley



1997 Little Owyhee Gather
 Colors - Lake Creek



1997 Little Owyhee Gather
 Colors - Outside HMA



APPENDIX C
Data from 1992 Little Owyhee gather
Color by Age and Sex
Overall

MALES

Age	Bay	Sor	Gry	Ron	Blk	Brw	Pal	Buc	BRn	Whi	RRn	Gru	Che	Alb	Unc	Tot
foal	20	16	6	3	4	12	3	5	2	2	-	1	1	-	5	80
1	2	5	4	2	2	3	1	4	1	-	1	-	-	-	-	25
2	14	7	4	13	9	1	3	4	1	1	-	-	-	-	-	57
3	13	9	7	4	6	5	4	-	2	-	1	-	-	1	-	52
4	13	8	5	6	1	4	-	1	-	1	-	-	-	-	-	39
5	5	-	3	-	2	-	-	-	1	-	1	-	-	-	-	12
6	2	3	2	3	3	2	-	-	-	-	-	-	-	-	-	15
7	1	5	6	3	3	2	1	-	2	1	-	-	-	-	-	24
8	2	2	-	3	-	2	-	1	-	1	-	-	-	-	-	11
9	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
10	3	1	-	1	3	1	-	-	1	1	-	-	-	-	-	11
11	6	2	1	1	1	1	1	1	-	-	1	-	-	-	-	15
12	2	1	2	1	1	-	-	-	-	-	-	-	-	-	-	7
13	1	-	3	1	2	2	-	-	-	2	-	-	-	-	-	11
14	3	1	2	2	3	1	-	-	-	-	-	-	-	-	-	12
15	6	1	-	1	-	-	-	-	-	1	-	-	-	-	-	9
16	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
17	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	2
18	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
20	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-	3
20+	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
NotAged	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Total	99	61	46	46	41	37	13	18	10	10	4	1	1	1	5	393

FEMALES

Age	Bay	Sor	Gry	Ron	Blk	Brw	Pal	Buc	BRn	Whi	RRn	Gru	Pnt	Che	SRn	Unc	Tot
foal	19	17	4	6	9	12	6	5	1	-	-	5	1	-	-	7	92
1	4	8	-	1	1	1	-	1	-	-	1	-	-	-	-	-	17
2	19	14	8	9	2	4	1	2	2	-	1	1	1	-	-	-	64
3	16	10	10	9	7	4	4	1	-	1	3	-	1	-	-	-	66
4	8	7	13	3	6	4	4	-	2	1	1	-	-	-	-	-	49
5	13	1	3	3	4	-	-	1	-	1	1	-	-	-	-	-	27
6	2	5	4	2	4	1	2	1	-	1	-	-	-	-	-	-	22
7	8	5	7	4	1	1	-	1	1	-	-	-	-	1	1	-	30
8	3	2	6	3	1	2	2	1	-	-	-	-	-	-	-	-	20
9	1	1	-	-	-	1	1	2	-	-	-	-	-	-	-	-	6
10	1	1	4	-	2	1	-	-	1	-	-	-	-	-	-	-	10
11	2	-	2	3	-	-	3	-	-	-	-	-	-	-	-	-	10
12	1	2	2	1	-	-	1	1	-	-	-	-	-	-	-	-	8
13	1	3	1	1	1	-	-	-	1	1	-	-	-	-	-	-	9
14	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
15	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	3
16	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
17	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
20	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
20+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
NotAged	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2
Total	98	79	66	46	39	31	25	16	9	5	7	6	3	1	1	7	439

APPENDIX C
 Data from 1992 Little Owyhee Gather
 Color by Age and Sex
 Rodear Flat

MALES

Age	Bay	Sor	Gry	Ron	Blk	Brw	Pal	Buc	BRn	Whi	RRn	Gru	Che	Alb	Unc	Tot
foal	16	13	4	2	3	7	2	5	2	-	-	1	1	-	1	57
1	2	4	2	2	2	2	-	1	1	-	1	-	-	-	-	17
2	11	6	4	11	8	-	3	2	1	1	-	-	-	-	-	47
3	11	8	4	4	5	5	3	-	2	-	1	-	-	1	-	44
4	10	6	4	5	1	2	-	1	-	1	-	-	-	-	-	30
5	3	-	2	-	2	-	-	-	1	-	1	-	-	-	-	9
6	1	1	2	3	3	2	-	-	-	-	-	-	-	-	-	12
7	1	3	4	3	2	-	1	-	2	-	-	-	-	-	-	16
8	2	2	-	2	-	2	-	-	-	1	-	-	-	-	-	9
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
10	1	1	-	-	2	1	-	-	1	1	-	-	-	-	-	7
11	3	2	1	1	1	1	1	-	-	-	1	-	-	-	-	11
12	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	3
13	1	-	2	1	1	2	-	-	-	2	-	-	-	-	-	9
14	3	-	-	2	2	1	-	-	-	-	-	-	-	-	-	8
15	5	1	-	1	2	-	-	-	-	1	-	-	-	-	-	10
16	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
18	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
20	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
20+	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
NotAged	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Total	76	47	30	39	34	25	10	10	10	7	4	1	1	1	1	296

FEMALES

Age	Bay	Sor	Gry	Ron	Blk	Brw	Pal	Buc	BRn	Whi	RRn	Gru	Che	Unc	Tot
foal	17	14	2	6	8	10	4	2	1	-	-	4	-	2	70
1	4	5	-	1	1	1	-	1	-	-	1	-	-	-	14
2	10	11	4	8	2	2	1	1	1	-	1	1	-	-	42
3	14	7	7	7	4	4	2	-	-	-	3	-	-	-	48
4	8	4	9	3	5	3	2	-	1	-	-	-	-	-	35
5	8	1	3	3	3	-	-	1	-	1	1	-	-	-	21
6	2	4	3	2	3	1	1	1	-	1	1	-	-	-	19
7	7	4	5	4	-	1	-	1	1	-	-	-	1	-	24
8	3	2	3	2	1	2	2	-	-	-	-	-	-	-	15
9	1	-	-	-	-	1	-	-	-	-	-	-	-	-	2
10	-	1	4	-	1	1	-	-	1	-	-	-	-	-	8
11	1	-	2	3	-	-	1	-	-	-	-	-	-	-	7
12	1	2	1	1	-	-	1	1	-	-	-	-	-	-	7
13	1	3	-	1	1	-	-	-	1	1	-	-	-	-	8
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
15	-	1	1	-	-	-	1	-	-	-	-	-	-	-	3
16	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
20+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
NotAged	-	1	-	-	1	-	-	-	-	-	-	-	-	-	2
Total	77	60	44	41	30	26	15	8	7	3	7	5	1	2	326

APPENDIX C
 Data from 1992 Little Owyhee gather
 Color by Age and Sex
 North Twin Valley

MALES

Age	Bay	Sor	Gry	Ron	Blk	Brw	Pal	Buc	Whi	Unc	Tot
foal	4	3	2	1	1	5	1	-	2	4	23
1	-	1	2	-	-	1	1	3	-	-	8
2	3	1	-	2	1	1	-	2	-	-	10
3	2	1	3	-	1	-	1	-	-	-	8
4	3	2	1	1	-	2	-	-	-	-	9
5	2	-	1	-	-	-	-	-	-	-	3
6	1	2	-	-	-	-	-	-	-	-	3
7	-	2	2	-	1	2	-	-	1	-	8
8	-	-	-	1	-	-	-	1	-	-	2
9	-	-	-	1	-	-	-	-	-	-	1
10	2	-	-	1	1	-	-	-	-	-	4
11	3	-	-	-	-	-	-	1	-	-	4
12	1	1	1	-	-	-	-	-	-	-	3
13	-	-	1	-	-	-	-	-	-	-	1
14	-	1	2	-	-	-	-	-	-	-	3
15	1	-	-	-	1	-	-	-	-	-	2
16	1	-	-	-	-	-	-	-	-	-	1
17	-	-	1	-	-	-	-	1	-	-	2
18	-	-	-	-	-	-	-	-	-	-	0
19	-	-	-	-	-	-	-	-	-	-	0
20	-	-	-	-	1	1	-	-	-	-	2
20+	-	-	-	-	-	-	-	-	-	-	0
NotAged	-	-	-	-	-	-	-	-	-	-	0
Total	23	14	16	7	7	12	3	8	3	4	97

FEMALES

Age	Bay	Sor	Gry	Ron	Blk	Brw	Pal	Buc	BRn	Whi	Gru	Pnt	SRn	Unc	Tot
foal	2	3	2	-	1	2	2	3	-	-	1	1	-	5	22
1	-	3	-	-	-	-	-	-	-	-	-	-	-	-	3
2	9	3	4	1	-	2	-	1	1	-	-	1	-	-	22
3	2	3	3	2	3	-	2	1	-	1	-	1	-	-	18
4	-	3	3	-	1	1	2	-	1	1	-	-	-	-	12
5	5	-	-	-	1	-	-	-	-	-	-	-	-	-	6
6	-	1	1	-	1	-	1	-	-	-	-	-	-	-	4
7	1	1	2	-	1	-	-	-	-	-	-	-	1	-	6
8	-	-	3	1	-	-	-	1	-	-	-	-	-	-	5
9	-	1	-	-	-	-	1	2	-	-	-	-	-	-	4
10	1	-	-	-	1	-	-	-	-	-	-	-	-	-	2
11	1	-	1	-	-	-	2	-	-	-	-	-	-	-	4
12	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
13	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
15	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
17	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
20	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
20+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
NotAged	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Total	21	19	22	5	9	5	10	8	2	2	1	3	1	5	113

APPENDIX C
 Data from 1993-94 Little Owyhee Gather
 Color by Age and Sex
 Overall

MALES

Age	Bay	Sor	Blk	Gry	Brn	RRn	Pnt	BRn	Buc	Pal	Ron	Whi	Gru	GRn	SRn	Tot
foal	14	7	10	6	5	2	1	2	-	1	-	-	-	-	-	48
1	5	3	1	1	2	2	1	-	-	-	-	-	-	-	-	15
2	21	2	4	2	4	1	1	-	-	-	1	-	-	-	-	36
3	22	8	7	8	3	4	-	1	-	-	-	1	2	-	-	56
4	9	10	2	5	3	2	1	-	-	-	-	-	-	1	-	33
5	4	6	-	1	1	-	-	-	-	-	-	-	-	-	-	12
6	4	2	-	-	3	-	1	-	-	-	-	-	-	-	1	11
7	5	4	2	1	2	-	-	1	-	-	-	-	-	-	-	15
8	7	2	1	1	1	-	-	-	-	-	-	-	-	-	-	12
9	1	2	-	-	1	1	-	-	-	-	-	-	-	-	-	5
10	6	-	1	-	2	-	-	-	-	-	2	1	-	-	-	12
11	3	1	1	-	-	3	-	-	-	-	-	-	-	-	1	9
12	9	3	1	2	2	3	-	-	-	-	-	-	-	-	-	20
13	3	1	-	1	1	1	1	-	-	-	-	-	-	-	-	8
14	3	1	3	2	-	-	-	1	-	-	-	-	-	-	-	10
15	2	4	2	-	-	2	-	1	-	-	-	-	-	-	-	11
16	4	-	1	2	-	-	-	-	-	-	-	-	-	-	-	7
17	2	-	1	1	-	1	-	-	-	-	-	1	-	-	-	6
18	2	-	3	1	-	-	1	-	-	-	-	-	-	-	-	7
19	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2
20	2	-	2	1	-	-	-	-	-	-	-	-	-	-	-	5
20+	-	-	1	1	-	1	-	-	-	-	-	-	-	-	-	2
X	3	3	1	-	2	1	-	1	3	-	-	-	-	-	-	14
Total	132	59	44	36	32	24	7	7	3	1	3	4	2	1	2	357

FEMALES

Age	Bay	Sor	Blk	Gry	Brn	RRn	Pnt	BRn	Buc	Pal	Ron	Whi	Gru	Dun	App	GRn	Tot
foal	19	8	10	1	8	4	4	1	3	2	1	-	1	-	-	-	62
1	3	6	1	-	1	1	1	-	-	-	-	-	-	-	-	-	13
2	41	6	3	3	4	4	-	3	1	-	-	-	1	-	1	-	67
3	21	9	-	1	1	3	2	1	1	-	1	-	1	1	-	1	43
4	12	2	5	-	4	3	-	1	-	-	-	-	-	1	-	-	28
5	5	5	-	2	-	1	-	-	-	-	-	-	-	-	1	-	14
6	8	4	-	1	-	1	3	-	-	-	-	-	-	-	-	-	17
7	2	2	-	-	2	1	1	-	-	-	-	-	-	-	-	-	8
8	12	2	2	3	5	-	1	-	-	-	-	-	-	-	-	-	25
9	1	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	4
10	5	3	-	-	-	1	1	-	-	-	-	-	-	-	1	-	11
11	3	-	-	2	-	1	-	1	-	1	-	-	1	1	-	-	10
12	9	3	-	4	1	2	-	-	1	-	-	1	-	1	-	-	22
13	2	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	4
14	3	1	1	2	-	-	1	1	-	-	-	-	-	-	-	-	9
15	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	3
16	-	1	-	1	-	-	-	-	1	1	-	1	-	-	-	-	5
17	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	2
18	3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	4
19	-	1	1	-	-	-	-	2	-	-	-	-	-	-	-	-	4
20	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	3
20+	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
XX	2	3	-	-	1	-	-	1	-	-	-	-	-	-	-	-	7
NotAged	2	1	2	-	1	-	-	-	-	-	-	-	-	-	-	-	6
Total	155	60	27	25	28	24	15	11	7	6	2	2	4	4	3	1	374

APPENDIX C
Data from 1993-94 Little Owyhee gather
Color by Age and Sex
Fairbanks

MALES

Age	Bay	Sor	Blk	Gry	Brn	RRn	Ron	SRn	Tot
foal	5	1	-	-	2	-	-	-	8
1	4	1	-	-	1	1	-	-	7
2	12	-	1	-	-	1	-	-	14
3	12	4	-	-	1	1	-	-	18
4	6	7	-	-	2	-	-	-	15
5	2	3	-	-	-	-	-	-	5
6	3	1	-	-	1	-	-	1	6
7	3	3	-	-	1	-	-	-	7
8	6	1	-	-	-	-	-	-	7
9	1	1	-	-	-	-	-	-	2
10	5	-	-	-	2	-	2	-	9
11	2	1	1	-	-	-	-	-	4
12	7	1	-	-	-	2	-	-	10
13	2	-	-	-	-	-	-	-	2
14	1	-	-	-	-	-	-	-	1
15	-	3	-	-	-	-	-	-	3
16	4	-	-	-	-	-	-	-	4
17	1	-	-	-	-	-	-	-	1
18	1	-	-	1	-	-	-	-	2
19	-	-	-	-	-	-	-	-	0
20	-	-	-	-	-	-	-	-	0
20+	-	-	-	-	-	-	-	-	0
X	-	-	-	-	-	-	-	-	0
Total	77	27	2	1	10	5	2	1	125

FEMALES

Age	Bay	Sor	Blk	Brn	RRn	Buc	Whi	Dun	Tot
foal	10	4	-	-	1	-	-	-	15
1	2	3	-	1	-	-	-	-	6
2	28	1	1	2	-	1	-	-	33
3	9	4	-	1	1	-	-	-	15
4	5	-	1	2	-	-	-	1	9
5	1	1	-	-	-	-	-	-	2
6	8	3	-	-	-	-	-	-	11
7	1	-	-	1	-	-	-	-	2
8	7	-	-	2	-	-	-	-	9
9	1	1	-	-	-	-	-	-	2
10	3	1	-	-	1	-	-	-	5
11	1	-	-	-	1	-	-	1	3
12	2	2	-	-	1	-	-	1	6
13	1	-	-	-	-	-	-	-	1
14	1'	-	-	-	-	-	-	-	1
15	-	-	-	-	-	-	-	-	0
16	-	-	-	-	-	-	1	-	1
17	1	-	-	-	-	-	-	-	1
18	-	-	-	-	-	-	-	-	0
19	-	-	-	-	-	-	-	-	0
20	-	-	-	-	-	-	-	-	0
20+	-	-	1	-	-	-	-	-	1
XX	1	-	-	1	-	-	-	-	2
Not Aged	-	-	-	-	-	-	-	-	0
Total	82	20	3	10	5	1	1	3	125

APPENDIX C
Data from 1993-94 Little Owyhee gather
Color by Age and Sex
Twin Valley

MALES

Age	Bay	Sor	Blk	Gry	Brn	RRn	Pnt	BRn	Buc	Ron	Whi	Gru	GRn	Tot
foal	3	3	5	3	2	2	1	1	-	-	-	-	-	20
1	1	1	1	1	1	1	1	-	-	-	-	-	-	7
2	5	2	3	2	4	-	1	-	-	1	-	-	-	18
3	7	4	4	6	2	1	-	1	-	-	1	1	-	27
4	2	2	2	4	-	2	1	-	-	-	-	-	1	14
5	-	3	-	1	-	-	-	-	-	-	-	-	-	4
6	1	-	-	-	1	-	1	-	-	-	-	-	-	3
7	1	-	1	1	1	-	-	1	-	-	-	-	-	5
8	-	1	-	1	-	-	-	-	-	-	-	-	-	2
9	-	-	-	-	1	-	-	-	-	-	-	-	-	1
10	-	-	-	-	-	-	-	-	-	-	-	-	-	0
11	-	-	-	-	-	-	-	-	-	-	-	-	-	0
12	-	1	-	1	1	1	-	-	-	-	-	-	-	4
13	-	-	-	1	-	1	1	-	-	-	-	-	-	3
14	1	-	2	1	-	-	-	1	-	-	-	-	-	5
15	1	-	2	-	-	-	-	1	-	-	-	-	-	4
16	-	-	-	-	-	-	-	-	-	-	-	-	-	0
17	-	-	-	1	-	-	-	-	-	-	1	-	-	2
18	-	-	1	-	-	-	1	-	-	-	-	-	-	2
19	-	-	-	-	-	-	-	-	-	-	-	-	-	0
20	1	-	1	-	-	-	-	-	-	-	-	-	-	2
20+	-	-	1	-	-	1	-	-	-	-	-	-	-	2
X	2	-	-	-	1	-	-	-	1	-	-	-	-	4
Total	25	17	23	23	14	9	7	5	1	1	2	1	1	129

FEMALES

Age	Bay	Sor	Blk	Gry	Brn	RRn	Pnt	BRn	Buc	Ron	Whi	Gru	GRn	Tot
foal	4	1	2	-	4	1	4	-	-	1	-	1	-	18
1	-	-	1	-	-	1	1	-	-	-	-	-	-	3
2	6	1	1	2	1	4	-	-	-	-	-	-	-	15
3	5	4	-	1	-	2	2	1	-	1	-	1	1	18
4	2	2	3	-	1	2	-	-	-	-	-	-	-	10
5	2	3	-	1	-	1	-	-	-	-	-	-	-	7
6	-	1	-	1	-	1	3	-	-	-	-	-	-	6
7	1	1	-	-	1	1	1	-	-	-	-	-	-	5
8	5	-	1	-	2	-	1	-	-	-	-	-	-	9
9	-	-	-	-	-	-	-	-	-	-	-	-	-	0
10	-	-	-	-	-	-	1	-	-	-	-	-	-	1
11	-	-	-	-	-	-	-	1	-	-	-	-	-	1
12	3	1	-	3	-	1	-	-	1	-	1	-	-	10
13	-	-	-	-	-	1	1	-	-	-	-	-	-	2
14	-	1	-	1	-	-	1	-	-	-	-	-	-	3
15	-	-	-	1	-	-	-	-	-	-	-	-	-	1
16	-	-	-	-	-	-	-	-	-	-	-	-	-	0
17	-	-	-	-	-	-	-	-	-	-	-	-	-	0
18	1	-	-	1	-	-	-	-	-	-	-	-	-	2
19	-	-	-	-	-	-	-	-	-	-	-	-	-	0
20	-	-	1	-	-	-	-	-	-	-	-	-	-	1
20+	-	-	-	-	-	-	-	-	-	-	-	-	-	0
XX	-	-	-	-	-	-	-	-	-	-	-	-	-	0
NotAged	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Total	29	15	9	11	9	15	15	2	1	2	1	2	1	112

APPENDIX C
 Data from 1993-94 Little Owyhee gather
 Color by Age and Sex
 Lake Creek

MALES

Age	Bay	Sor	Blk	Gry	Brn	RRn	BRn	Buc	Pal	SRn	Tot
foal	4	2	5	3	1	-	1	-	1	-	17
1	-	-	-	-	-	-	-	-	-	-	0
2	2	-	-	-	-	-	-	-	-	-	2
3	1	-	2	1	-	-	-	-	-	-	4
4	-	1	-	1	1	-	-	-	-	-	3
5	-	-	-	-	-	-	-	-	-	-	0
6	-	-	-	-	-	-	-	-	-	-	0
7	1	1	1	-	-	-	-	-	-	-	3
8	1	-	-	-	-	-	-	-	-	-	1
9	-	1	-	-	-	1	-	-	-	-	2
10	1	-	1	-	-	-	-	-	-	-	2
11	-	-	-	-	-	3	-	-	-	1	4
12	2	1	1	1	-	-	-	-	-	-	5
13	1	1	-	-	1	-	-	-	-	-	3
14	1	1	1	1	-	-	-	-	-	-	4
15	1	1	-	-	-	2	-	-	-	-	4
16	-	-	1	2	-	-	-	-	-	-	3
17	1	-	1	-	-	1	-	-	-	-	3
18	1	-	2	-	-	-	-	-	-	-	3
19	1	-	-	-	-	-	-	-	-	-	1
20	1	-	-	1	-	-	-	-	-	-	2
20+	-	-	-	1	-	-	-	-	-	-	1
X	1	2	1	-	1	1	1	2	-	-	9
Total	20	11	16	11	4	8	2	2	1	1	76

FEMALES

Age	Bay	Sor	Blk	Gry	Brn	RRn	BRn	Buc	Pal	Gru	Tot
foal	1	3	4	1	1	2	-	2	-	-	14
1	-	1	-	-	-	-	-	-	-	-	1
2	6	3	1	-	-	-	-	-	-	1	11
3	6	1	-	-	-	-	-	1	-	-	8
4	2	-	-	-	1	1	-	-	-	-	4
5	1	1	-	1	-	-	-	-	-	-	3
6	-	-	-	-	-	-	-	-	-	-	0
7	-	1	-	-	-	-	-	-	-	-	1
8	-	1	1	3	1	-	-	-	-	-	6
9	-	-	-	1	-	1	-	-	-	-	2
10	1	1	-	-	-	-	-	-	-	-	2
11	-	-	-	1	-	-	-	-	1	-	2
12	1	-	-	1	1	-	-	-	-	-	3
13	-	-	-	-	-	-	-	-	-	-	0
14	1	-	1	1	-	-	1	-	-	-	4
15	-	-	-	1	-	-	-	-	1	-	2
16	-	-	-	1	-	-	-	1	1	-	3
17	-	-	-	-	-	-	-	-	1	-	1
18	2	-	-	-	-	-	-	-	-	-	2
19	-	1	1	-	-	-	2	-	-	-	4
20	-	1	-	1	-	-	-	-	-	-	2
20+	1	1	-	-	-	-	-	-	-	-	2
XX	1	3	-	-	-	-	1	-	-	-	5
NotAged	-	-	1	-	1	-	-	-	-	-	2
Total	23	18	9	12	5	4	4	4	4	1	84

APPENDIX C
 Data from 1993-94 Little Owyhee gather
 Color by Age and Sex
 Outside HMA

MALES

Age	Bay	Sor	Blk	Gry	Brn	RRn	Whi	Gru	Tot
foal	2	1	-	-	-	-	-	-	3
1	-	1	-	-	-	-	-	-	1
2	2	-	-	-	-	-	-	-	2
3	2	-	1	1	-	2	-	1	7
4	1	-	-	-	-	-	-	-	1
5	2	-	-	-	1	-	-	-	3
6	-	1	-	-	1	-	-	-	2
7	-	-	-	-	-	-	-	-	0
8	-	-	1	-	1	-	-	-	2
9	-	-	-	-	-	-	-	-	0
10	-	-	-	-	-	-	1	-	1
11	1	-	-	-	-	-	-	-	1
12	-	-	-	-	1	-	-	-	1
13	-	-	-	-	-	-	-	-	0
14	-	-	-	-	-	-	-	-	0
15	-	-	-	-	-	-	-	-	0
16	-	-	-	-	-	-	-	-	0
17	-	-	-	-	-	-	-	-	0
18	-	-	-	-	-	-	-	-	0
19	-	-	-	-	-	-	1	-	1
20	-	-	1	-	-	-	-	-	1
20+	-	-	-	-	-	-	-	-	0
X	-	1	-	-	-	-	-	-	1
Total	10	4	3	1	4	2	2	1	27

FEMALES

Age	Bay	Sor	Blk	Gry	Brn	BRn	Buc	Pal	Gru	Dun	App	Tot
foal	4	-	4	-	3	1	1	2	-	-	-	15
1	1	2	-	-	-	-	-	-	-	-	-	3
2	1	1	-	1	1	3	-	-	-	-	1	8
3	1	-	-	-	-	-	-	-	-	1	-	2
4	3	-	1	-	-	1	-	-	-	-	-	5
5	1	-	-	-	-	-	-	-	-	-	1	2
6	-	-	-	-	-	-	-	-	-	-	-	0
7	-	-	-	-	-	-	-	-	-	-	-	0
8	-	1	-	-	-	-	-	-	-	-	-	1
9	-	-	-	-	-	-	-	-	-	-	-	0
10	1	1	-	-	-	-	-	-	-	-	1	3
11	2	-	-	1	-	-	-	-	1	-	-	4
12	3	-	-	-	-	-	-	-	-	-	-	3
13	1	-	-	-	-	-	-	-	-	-	-	1
14	1	-	-	-	-	-	-	-	-	-	-	1
15	-	-	-	-	-	-	-	-	-	-	-	0
16	-	1	-	-	-	-	-	-	-	-	-	1
17	-	-	-	-	-	-	-	-	-	-	-	0
18	-	-	-	-	-	-	-	-	-	-	-	0
19	-	-	-	-	-	-	-	-	-	-	-	0
20	-	-	-	-	-	-	-	-	-	-	-	0
20+	-	-	-	-	-	-	-	-	-	-	-	0
XX	-	-	-	-	-	-	-	-	-	-	-	0
NotAged	2	1	1	-	-	-	-	-	-	-	-	4
Total	21	7	6	2	4	5	1	2	1	1	3	53

APPENDIX C
Color by Age and Sex
Data from 1997 Little Owyhee Gather
Overall

MALES

Age	Bay	Sor	Gry	Blk	Brn	RRn	Pnt	BRn	Whi	Che	Pal	Buc	Ron	SRn	App	Sev	Gru	Tot
foal	29	13	6	6	14	4	5	5	-	2	2	3	5	-	-	-	-	94
1	14	10	6	4	4	3	1	-	-	1	1	1	-	-	-	-	-	45
2	24	8	10	9	5	1	3	3	1	1	4	1	1	1	1	-	-	73
3	12	3	5	2	8	5	3	1	1	1	-	-	-	-	-	-	-	41
4	16	7	2	3	4	1	2	2	1	1	2	1	1	-	-	-	-	43
5	6	1	1	-	4	1	-	1	-	-	-	-	-	-	-	-	1	15
6	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
7	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	3
8	1	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	4
9	2	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	5
10	10	4	1	2	3	1	-	-	-	-	-	-	-	-	-	-	-	21
11	4	4	3	3	1	-	-	-	2	-	-	1	-	-	-	-	-	18
12	11	1	-	2	-	1	-	1	3	1	-	-	-	-	-	-	-	20
13	7	1	2	3	1	1	-	1	3	-	-	1	-	-	-	1	-	21
14	6	-	2	1	-	1	-	1	-	3	-	-	-	-	-	-	-	14
15	4	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	7
16	1	-	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	5
17	1	1	1	2	-	-	1	1	-	-	-	-	-	-	-	-	-	7
18	5	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	11
19	1	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	4
20	7	1	1	1	1	2	-	1	2	-	-	-	-	-	-	-	-	16
20+	6	3	4	2	-	-	1	-	-	-	-	-	-	1	-	-	-	17
NotAged	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
Total	168	61	49	46	49	23	19	17	13	12	9	8	7	2	1	1	1	486

FEMALES

Age	Bay	Sor	Gry	Blk	Brn	RRn	Pnt	BRn	Whi	Che	Pal	Buc	Ron	SRn	App	Dun	GRn	Tot
foal	32	13	3	5	11	9	6	7	1	-	2	2	-	-	-	-	1	92
1	19	7	4	8	3	6	2	2	-	1	-	-	1	-	-	-	-	53
2	21	15	9	9	4	10	5	2	-	2	-	-	3	-	-	-	-	80
3	17	7	7	3	4	4	3	2	-	-	-	1	-	-	-	-	-	48
4	4	2	1	1	1	1	1	1	-	-	-	1	-	-	-	-	1	14
5	3	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	6
6	1	2	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	6
7	2	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	5
8	-	1	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	3
9	5	-	1	2	-	-	1	-	-	1	-	-	-	-	-	2	-	12
10	10	5	1	1	3	3	4	-	-	-	-	1	1	-	-	-	-	29
11	3	2	1	-	-	-	-	1	-	-	-	-	-	-	1	-	-	8
12	5	1	3	2	-	1	-	-	1	-	-	-	-	-	-	-	-	13
13	3	1	3	1	1	1	1	-	1	1	-	-	1	-	-	-	-	14
14	8	-	3	2	-	-	-	1	-	-	-	-	-	-	-	-	-	14
15	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	3
16	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2
17	3	-	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	6
18	-	2	-	1	-	1	-	-	-	-	1	-	-	-	-	-	-	5
19	2	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	4
20	4	1	1	-	-	1	-	2	-	-	-	1	-	-	-	-	-	10
20+	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	2
Total	145	60	41	37	27	38	29	18	4	5	7	6	6	1	1	2	2	429

APPENDIX C
Data from 1997 Little Owyhee Gather
Color by Age and Sex
Fairbanks

MALES

Age	Bay	Sor	Gry	Blk	Brn	RRn	Pnt	BRn	Whi	Che	Pal	Buc	Ron	Tot
foal	16	5	2	-	2	-	-	-	-	2	-	2	2	31
1	10	7	4	-	1	1	-	-	-	-	-	1	-	24
2	14	6	2	1	-	-	1	1	-	-	2	-	1	28
3	7	2	1	-	5	-	-	-	-	1	-	-	-	16
4	8	2	-	-	-	-	1	2	-	1	1	-	-	15
5	1	1	1	-	1	-	-	1	-	-	-	-	-	5
6	-	-	-	-	1	-	-	-	-	-	-	-	-	1
7	-	-	-	-	-	-	-	-	-	-	-	-	-	0
8	-	-	-	-	-	-	-	-	-	-	-	-	-	0
9	1	-	1	-	-	-	-	-	-	-	-	-	-	2
10	7	3	-	-	1	1	-	-	-	-	-	-	-	12
11	2	2	-	2	-	-	-	-	-	-	-	-	-	6
12	10	1	-	-	-	-	-	1	1	1	-	-	-	14
13	4	-	-	-	1	-	-	-	-	-	-	-	-	5
14	2	-	-	-	-	-	-	-	-	-	-	-	-	2
15	2	-	-	-	-	-	-	-	-	1	-	-	-	3
16	-	-	-	-	-	-	-	-	-	-	-	-	-	0
17	1	-	-	-	-	-	-	-	-	-	-	-	-	1
18	3	1	1	-	-	1	-	-	-	-	-	-	-	6
19	-	1	-	-	-	-	-	-	-	-	-	-	-	1
20	4	-	1	-	-	1	-	-	-	-	-	-	-	6
20+	3	1	1	-	-	-	-	-	-	-	-	-	-	5
Total	95	32	14	3	12	4	2	5	1	6	3	3	3	183

FEMALES

Age	Bay	Sor	Gry	Blk	Brn	RRn	BRn	Whi	Pal	Buc	App	Dun	Tot
foal	23	4	-	-	-	1	1	-	1	-	-	-	30
1	9	3	-	1	1	1	-	-	-	-	-	-	15
2	15	3	-	-	2	2	-	-	-	-	-	-	22
3	9	5	-	-	1	-	-	-	-	1	-	-	16
4	1	1	-	1	-	-	-	-	-	-	-	-	3
5	1	-	-	-	-	-	-	-	-	-	-	-	1
6	-	-	2	-	-	-	-	-	-	-	-	-	2
7	1	-	-	-	-	-	-	-	-	-	-	-	1
8	-	1	-	-	-	-	-	-	-	-	-	-	1
9	5	-	-	1	-	-	-	-	-	-	-	2	8
10	8	3	-	1	1	2	-	-	-	-	-	-	15
11	1	1	-	-	-	-	-	-	-	-	1	-	3
12	4	-	2	1	-	-	-	1	-	-	-	-	8
13	3	-	-	-	1	-	-	-	-	-	-	-	4
14	4	-	-	-	-	-	-	-	-	-	-	-	4
15	-	-	-	-	-	-	-	-	-	-	-	-	0
16	1	-	-	-	-	-	-	-	-	-	-	-	1
17	1	-	-	-	-	-	-	-	-	-	-	-	1
18	-	-	-	-	-	-	-	-	-	-	-	-	0
19	2	-	-	-	-	-	-	-	-	-	-	-	2
20	3	1	-	-	-	-	-	-	-	-	-	-	4
20+	-	-	-	-	-	-	-	-	-	-	-	-	0
Total	91	22	4	5	6	6	1	1	1	1	1	2	141

APPENDIX C
Data from 1997 Little Owyhee Gather
Color by Age and Sex
Twin Valley

MALES

Age	Bay	Sor	Gry	Blk	Brn	RRn	Pnt	BRn	Whi	Che	Buc	Ron	Tot
foal	7	2	3	3	9	2	3	1	-	-	-	2	32
1	2	1	1	3	-	2	1	-	-	1	-	-	11
2	5	-	1	3	2	1	1	-	-	-	-	-	13
3	5	1	1	1	1	4	2	1	-	-	-	-	16
4	3	2	2	-	1	-	1	-	1	-	-	-	10
5	3	-	-	-	1	1	-	-	-	-	-	-	5
6	-	-	-	-	-	-	-	-	-	-	-	-	0
7	-	-	-	1	-	-	1	-	-	-	-	-	2
8	1	-	-	-	-	-	1	-	-	-	-	-	2
9	1	-	-	1	-	-	-	-	-	-	-	-	2
10	2	-	1	1	-	-	-	-	-	-	-	-	4
11	1	1	2	-	-	-	-	-	2	-	1	-	7
12	1	-	-	2	-	1	-	-	2	-	-	-	6
13	2	-	2	2	-	-	-	-	1	-	1	-	8
14	1	-	2	-	-	1	-	1	-	-	-	-	5
15	2	-	-	-	-	1	-	-	-	-	-	-	3
16	-	-	1	1	-	-	-	-	-	-	-	-	2
17	-	1	1	-	-	-	-	-	-	-	-	-	2
18	1	-	-	1	-	-	-	-	-	-	-	-	2
19	-	-	-	2	-	-	-	-	-	-	-	-	2
20	-	-	-	1	-	-	-	1	-	-	-	-	2
20+	1	-	1	-	-	-	1	-	-	-	-	-	3
NotAged	-	-	-	-	-	-	1	-	-	-	-	-	1
Total	38	8	18	22	14	13	12	4	6	1	2	2	140

FEMALES

Age	Bay	Sor	Gry	Blk	Brn	RRn	Pnt	BRn	Whi	Che	Pal	Buc	Ron	Tot
foal	8	5	2	4	2	-	4	-	-	-	-	1	-	26
1	4	2	-	4	1	2	1	-	-	1	-	-	1	16
2	2	5	2	6	2	2	5	1	-	1	-	-	2	28
3	5	1	3	3	1	1	3	1	-	-	-	-	-	18
4	2	-	-	-	-	-	-	-	-	-	-	-	-	2
5	-	-	-	-	-	-	1	-	-	-	-	-	-	1
6	1	1	-	-	-	-	1	-	-	-	-	-	-	3
7	1	-	1	-	-	-	-	-	-	-	-	-	-	2
8	-	-	-	-	-	-	1	-	-	-	-	-	-	1
9	-	-	-	1	-	-	1	-	-	1	-	-	-	3
10	2	-	1	-	2	1	4	-	-	-	-	1	-	11
11	2	-	-	-	-	-	-	-	-	-	-	-	-	2
12	-	-	-	-	-	1	-	-	-	-	-	-	-	1
13	-	-	1	-	-	1	1	-	1	-	-	-	-	4
14	1	-	2	2	-	-	-	-	-	-	-	-	-	5
15	-	-	-	-	-	-	-	-	-	-	-	-	-	0
16	-	-	-	-	-	-	1	-	-	-	-	-	-	1
17	-	-	1	-	-	-	-	-	-	-	-	-	-	1
18	-	-	-	-	-	1	-	-	-	-	1	-	-	2
19	-	-	-	-	-	-	-	-	-	-	-	-	-	0
20	-	-	1	-	-	1	-	-	-	-	-	-	-	2
20+	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Total	28	14	14	20	8	10	23	2	1	3	1	2	3	129

APPENDIX C
Data from 1997 Little Owyhee Gather
Color by Age and Sex
Lake Creek

MALES

Age	Bay	Sor	Gry	Blk	Brn	RRn	Pnt	BRn	Whi	Che	Pal	Buc	Ron	SRn	App	Sev	Gru	Tot
foal	6	6	1	3	3	2	2	4	-	-	2	1	1	-	-	-	-	31
1	2	2	1	1	3	-	-	-	-	-	1	-	-	-	-	-	-	10
2	5	2	7	5	3	-	1	2	1	1	2	1	-	1	1	-	-	32
3	-	-	3	1	2	1	1	-	1	-	-	-	-	-	-	-	-	9
4	5	3	-	2	3	1	-	-	-	-	1	1	1	-	-	-	-	17
5	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	1	4
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
7	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
8	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
9	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
10	1	1	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	5
11	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	5
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
13	1	1	-	1	-	1	-	1	2	-	-	-	-	-	-	1	-	8
14	3	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	6
15	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
16	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3
17	-	-	-	2	-	-	1	1	-	-	-	-	-	-	-	-	-	4
18	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3
19	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
20	3	1	-	-	1	1	-	-	2	-	-	-	-	-	-	-	-	8
20+	2	1	1	2	-	-	-	-	-	-	-	-	-	1	-	-	-	7
Total	34	20	16	20	23	6	5	8	6	4	6	3	2	2	1	1	1	158

FEMALES

Age	Bay	Sor	Gry	Blk	Brn	RRn	Pnt	BRn	Whi	Che	Pal	Buc	Ron	SRn	GRn	Tot
foal	1	4	-	1	9	8	2	6	1	-	1	1	-	-	1	35
1	5	2	4	3	1	3	1	2	-	-	-	-	-	-	-	21
2	4	7	6	3	-	6	-	1	-	1	-	-	1	-	-	29
3	3	1	4	-	2	3	-	1	-	-	-	-	-	-	-	14
4	1	1	1	-	1	1	1	1	-	-	-	1	-	-	1	9
5	2	-	-	1	-	1	-	-	-	-	-	-	-	-	-	4
6	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
7	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	2
8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
9	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
10	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	3
11	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-	3
12	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	3
13	-	1	2	1	-	-	-	-	-	1	-	-	1	-	-	6
14	3	-	1	-	-	-	-	1	-	-	-	-	-	-	-	5
15	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	3
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
17	1	-	-	1	-	-	-	-	-	-	1	-	-	-	-	3
18	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	3
19	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	2
20	1	-	-	-	-	-	-	2	-	-	-	1	-	-	-	4
20+	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2
Total	23	24	21	12	13	22	6	15	2	2	5	3	3	1	2	154

APPENDIX C
 Data from 1997 Little Owyhee Gather
 Color by Age and Sex
 Outside HMA

MALES							FEMALES			
Age	Bay	Sor	Gry	Blk	Che	Tot	Age	Bay	Gry	Tot
foal	-	-	-	-	-	-	foal	-	1	1
1	-	-	-	-	-	-	1	1	-	1
2	-	-	-	-	-	-	2	-	1	1
3	-	-	-	-	-	-	3	-	-	-
4	-	-	-	1	-	1	4	-	-	-
5	1	-	-	-	-	1	5	-	-	-
6	-	-	-	-	-	-	6	-	-	-
7	-	-	-	-	-	-	7	-	-	-
8	-	-	-	-	-	-	8	-	-	-
9	-	-	-	-	-	-	9	-	-	-
10	-	-	-	-	-	-	10	-	-	-
11	-	-	-	-	-	-	11	-	-	-
12	-	-	-	-	-	-	12	1	-	1
13	-	-	-	-	-	-	13	-	-	-
14	-	-	-	-	1	1	14	-	-	-
15	-	-	-	-	-	-	15	-	-	-
16	-	-	-	-	-	-	16	-	-	-
17	-	-	-	-	-	-	17	1	-	1
18	-	-	-	-	-	-	18	-	-	-
19	-	-	-	-	-	-	19	-	-	-
20	-	-	-	-	-	-	20	-	-	-
20+	-	1	1	-	-	2	20+	-	-	-
Total	1	1	1	1	1	5	Total	3	2	5

APPENDIX D

Allotment Management Objectives

The following are the multiple use management objectives and standards for rangeland health under which grazing on the Little Owyhee Allotment will be monitored and evaluated. These objectives and standards are for the entire allotment, including the summer pastures outside the Little Owyhee HMA.

A. Short Term:

- 1) The objective for utilization of key plant species (CAREX, JUNCUS, POA) in wetland riparian habitats is 50%.
- 2) The objective for key streambank riparian plant species (CAREX, JUNCUS, POA, SALIX, ROWO) on the perennial reaches of the East Fork of the Little Owyhee River is 5 inches stubble height by October 31.
- 3) The objective for utilization of key upland plant species will be 50% for STTH2, SIHY, and FEID and it will be 40% for CREPIS, ELCI, POSE, AGSP, EULA5, ORHY, and LUPIN.

B. Long Term:

- 1) Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for livestock, with an initial stocking level of 27,800 AUMs.
- 2) Improve to and maintain the ecological status per key management areas as determined in the Little Owyhee Monitoring Plan.
- 3) Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for big game, with an initial forage demand of 288 AUMs for mule deer, 1,233 AUMs for pronghorn and 72 AUMs for bighorn sheep.
 - a) Improve to and maintain 2,756 acres in Paradise Valley DY-1, 29,612 acres in Santa Rosa DY-10, and 44,210 acres in Santa Rosa DS-1 in good or excellent mule deer habitat condition.
 - b) Improve to and maintain 2,490 acres in Mahogany Ridge PS-8, 25,837 acres in Santa Rose PS-7 and 21,608 acres in Little Owyhee PS-10 to good condition. Improve to and maintain 457,963 acres in Owyhee Desert PY-9, 17,847 acres in Maiden Butte PW-9, 2,306 acres in Evans Lake PW-10, 7,762 acres in Button Lake PW-11, 4,939 acres in Button Lake PS-9, 8,322 acres in Evans Lake PS-11, and 7,469 acres in Bullhead PW-13 in fair or good pronghorn habitat condition.
- 4) Improve to and maintain 594 acres of riparian and meadow habitat types to ensure species diversity and quality, and to maximize reproduction and recruitment of woody riparian species.
- 5) Improve to and maintain 21 acres of aspen habitat types to ensure good reproduction and maximize recruitment within the stand.
- 6) Improve to and maintain 60 acres of mahogany habitat types by allowing for successful reproduction and recruitment in the stand.
- 7) Improve to and maintain the following stream habitat conditions on the North Fork of the Little Humboldt and the perennial reach of East Little Owyhee from 48% on the North Fork, unknown on the East Little Owyhee to an overall optimum of 60% or above.

- a) Streambank cover to 60% or above.
 - b) Streambank stability to 60% or above.
 - c) Maximum summer water temperature below 70° F.
- 8) Improve or maintain suitable sage grouse strutting, nesting, brood rearing, and/or wintering habitat in good condition.

The following parameters have been found to constitute optimum (good) conditions for sage grouse use:

Strutting habitat:

- 1. Low sagebrush or brush free areas for strutting, and nearby areas of sagebrush having 20-50% canopy cover for loafing.

Nesting habitat:

- 1. Sagebrush between seven (7) and 31 inches in height (optimum = 16 inches)
- 2. Sagebrush canopy coverage 15-30% (optimum = 27%)
- 3. 25-35% basal ground cover
- 4. Average understory height of 6-7 inches

Brood rearing habitat:

Early season:

- 1. Sagebrush canopy cover 10-21% (optimum = 14%)

Late season:

- 1. Meadow areas that are in functioning condition
- 2. Residual meadow vegetation of no less than 3-6 inches in height

Winter habitat:

- 1. Greater than 20% sagebrush canopy cover

- 9) Improve to and maintain state water quality criteria for North Fork Little Humboldt River and East Little Owyhee River.

C. Standards of Rangeland Health:

- 1. Soil processes will be appropriate to soil type, climate and land form.
- 2. Riparian/wetland systems are in properly functioning condition.
- 3. Water quality criteria in Nevada or California state law shall be achieved or maintained.
- 4. Populations and communities of native plant species and habitats for native animal species are healthy, productive and diverse.
- 5. Habitat conditions meet the life cycle requirements of special status species.

APPENDIX E
1992-97 FREEZE MARKING PROGRAM

This paper presents an analysis of the results of a freeze marking program conducted on wild horses in the Little Owyhee HMA following gathers in July-August 1992 and December 1993 - January 1994. The marking program was an attempt to determine migration of horses, and survival between gathers. In 1992, horses were gathered from southern Lake Creek and northern Twin Valley Springs pastures only. Animals to be released back into the HMA in 1992, except foals, grays and whites, were freeze marked with an X (for males) or XX (for females) on the left hip. These animals were supposed to be 10 years of age and older. The gather in 1993-94 was conducted over the entire HMA, except for east Fairbanks pasture, as well as in the summer pastures of the Little Owyhee Allotment which are outside the HMA boundary. Northern Lake Creek and southern Twin Valley pastures were included in this gather. East Fairbanks is physically separated from the rest of Fairbanks by the gorge of the North Fork of the Little Humboldt River. Division fences separate Lake Creek, Twin Valley and east Fairbanks pastures. Animals gathered and released in 1993-94 were freeze marked on the left hip, with a number brand 01-08, according to sex and pasture gathered from. Horses released in 1993-94 were aged 6 and older.

X/XX

The following table shows numbers of horses marked and the areas from which they were captured and released. Horses captured at the Twin Valley Springs satellite trap were trucked to the south Lake Creek holding facility, where they were sorted, aged and marked, and released into the Fairbanks pasture. Horses released into Fairbanks were let go near Chukar Spring, west of the North Fork gorge.

FREEZE MARK	NUMBER	CAPTURE LOC.	RELEASE LOC.
X	45	Lake Creek	Lake Creek
X	17	Twin Valley	Fairbanks
Total X	62		
XX	27	Lake Creek	Lake Creek
XX	7	Twin Valley	Fairbanks
Total XX	34		

In 1993-1994, 34 studs and 22 mares were recaptured, and in 1997, 34 studs and 29 mares were recaptured:

Recapture Location	1994 Number Recaptured (X)	1994 Number Recaptured (XX)	1997 Number Recaptured (X)	1997 Number Recaptured (XX)
Fairbanks	1	3	1	4
East Fairbanks	-	-	1	1
Lake Creek	28	19	26	24
Twin Valley	4	-	5	-
Outside HMA	1	-	1	-

Migration

From the fact that few horses have been recaptured in Fairbanks, and marked horses were found in Twin Valley, it appears as if some of the horses released in Fairbanks in 1992 made their way back to Twin Valley. However this cannot be proven as those animals released into Fairbanks did not have any marks distinguishing them as having been released there - they had the same X and XX as did the others. On a flight over the area after the 1992 gather a band of horses was observed attempting to cross the North Fork gorge. This behavior is consistent with that observed elsewhere when horses have been released outside their home area - they try to get back.

There has been some movement into East Fairbanks and into the summer pastures, but not much - 2 and one animals recaptured in those areas respectively. These horses may have come from Fairbanks or Lake Creek; it is impossible to tell.

Survival

Estimating survival is difficult or impossible due to questions about ages of horses, and the fact that most likely not all marked horses were recaptured. In 1997 there were 14 mares branded XX captured that were aged less than 15, which is what they would be if they were at least 10 in 1992. The range was 9-14. There were also 15 studs in this category, ranging in age from 10-14. In 1992, 11 studs and 6 mares were aged at 10 years. If one assumes all 97 horses aged < 15 were aged incorrectly and considered to be age 15, then there would be more horses aged 15 in 1997 than were released as 10 year olds in 1992, which is obviously not possible. So conclusion is that horses were aged incorrectly in 1992 and the true age is as estimated in 1997. Support for this comes from the data for 1993-94. In this gather most X or XX branded animals were not aged; of those that were, 3 mares were aged less than 12 (8, 2 at 11) and 2 studs were aged less than 12 (7 and 11).

So, using 1997 ages, there were $62 - 15 = 47$ horses aged 10 and older released in 1992, and $34 - 14 = 20$ mares aged 10 and older released in 1992. There were $34 - 15 = 19$ studs aged 15 and older recaptured in 1997, and $29 - 14 = 15$ mares aged 15 and older recaptured in 1997. Thus the survival over the 10-15 age class for studs is at least $1 - 19/47 = 59.6\%$, and for mares is at least $1 - 15/34 = 55.9\%$. These numbers are low because some marked animals were not recaptured.

(In 1992 and 1994 the horses were aged by Dave Cattoor's crew; in 1997 by Greg Cook's.)

The following four tables show 1997 gather data by age, sex and pasture; 1997 release data by age, sex and pasture; an estimated age structure of the population following the 1997 gather; and 1997 release data for those horses aged less than 10 years. The entire HMA, including East Fairbanks pasture, and the Little Owyhee Allotment summer pastures outside the HMA, was gathered in 1997.

1997 gather data

AGE	Overall		Lake Creek		Twin Valley		Fairbanks		Outside HMA	
	M	F	M	F	M	F	M	F	M	F
colt	94	92	31	35	32	26	31	30	-	1
1	45	53	10	21	11	16	24	15	-	1
2	73	80	32	29	13	28	28	22	-	1
3	41	48	9	14	16	18	16	16	-	-
4	43	14	17	9	10	2	15	3	1	-
5	15	6	4	4	5	1	5	1	1	-
6	1	6	-	1	-	3	1	2	-	-
7	3	5	1	2	2	2	-	1	-	-
8	4	3	2	1	2	1	-	1	-	-
9	5	12	1	1	2	3	2	8	-	-
10	21	29	5	3	4	11	12	15	-	-
11	18	8	5	3	7	2	6	3	-	-
12	20	13	-	3	6	1	14	8	-	1
13	21	14	8	6	8	4	5	4	-	-
14	14	14	6	5	5	5	2	4	1	-
15	7	3	1	3	3	-	3	-	-	-
16	5	2	3	-	2	1	-	1	-	-
17	7	6	4	3	2	1	1	1	-	1
18	11	5	3	3	2	2	6	-	-	-
19	4	4	1	2	2	-	1	2	-	-
20	16	10	8	4	2	2	6	4	-	-
21+	17	2	7	2	3	-	5	-	2	-
n.a.	1	-	-	-	1	-	-	-	-	-
Total	486	429	158	154	140	129	183	141	5	5

1997 Release data

AGE	Overall		Lake Creek		Twin Valley		Fairbanks	
	M	F	M	F	M	F	M	F
colt	3	-	-	-	3	-	-	-
1	1	-	-	-	-	-	1	-
2	4	5	2	-	1	5	1	-
3	1	4	-	-	1	4	-	-
4	1	1	-	1	1	-	-	-
5	-	1	-	-	-	1	-	-
6	-	2	-	-	-	2	-	-
7	2	1	1	-	1	1	-	-
8	1	1	-	-	1	1	-	-
9	2	10	-	1	1	3	1	6
10	20	29	4	3	4	11	12	15
11	18	8	5	3	7	2	6	3
12	20	13	-	4	6	1	14	8
13	21	14	8	6	8	4	5	4
14	14	14	7	5	5	5	2	4
15	7	3	1	3	3	-	3	-
16	5	2	3	-	2	1	-	1
17	7	6	4	4	2	1	1	1
18	11	5	3	3	2	2	6	-
19	4	4	1	2	2	-	1	2
20	16	9	8	4	2	1	6	4
21+	16	2	8	2	3	-	5	-
n.a.	1		-		1	-	-	-
Total	175	134	55	41	56	45	64	48

Older horses from outside the HMA were released into Lake Creek.

1997 ESTIMATED AGE STRUCTURE OF HORSES ON RANGE AFTER GATHER (INCLUDES 89 ADDITIONAL SEEN DURING FLIGHT 12/4/97, AGE STRUCTURE BASED ON 1994 RELEASE DATA FOR TWIN VALLEY AND LAKE CREEK)

AGE	Overall	
	M	F
colt	4	1
1	1	-
2	4	5
3	1	4
4	1	2
5	-	1
6	-	2
7	2	1
8	1	1
9	4	14
10	26	33
11	20	16
12	22	14
13	22	15
14	16	16
15	14	10
16	8	3
17	13	11
18	17	7
19	6	5
20	20	10
21+	20	5
Total	222	176

The stud that jumped the fence before he could be aged, was arbitrarily assigned to age 10.

Released < 10 years

REASON	NUMBER
Color (paint, gray, appaloosa)	18
Mark (01-06, XX)	12
Color and mark	4
Unweaned colts on old mares	3
Injury/Deformity	2
Conformation	1
Total	40

01-08 FREEZE MARKS

For horses to be released (age 6 and older), freeze marks were placed on left hip according to sex and area captured (number marked in parentheses):

- 01 - Fairbanks studs (56)
- 02 - Fairbanks mares (41)
- 03 - Twin Valley studs (28)
- 04 - Twin Valley mares (33)
- 05 - Lake Creek studs (16)
- 06 - Lake Creek mares (13)
- 07 - Outside HMA studs (3)
- 08 - Outside HMA mares (12)

Horses from outside the HMA, in the summer pastures, were aged 10 and older and were released into Fairbanks pasture, except for one crippled yearling mare that was not marked and released into north Lake Creek pasture.

The following numbers of horses were recaptured in 1997:

FREEZE MARK	NUMBER	RECAPTURE LOC.	RELEASE LOC.
01	33	Fairbanks	Fairbanks
02	27 (1)	Fairbanks	Fairbanks
03	20 (2)	Twin Valley	Twin Valley
03	1	Lake Creek	Twin Valley
04	21	Twin Valley	Twin Valley
04	3	Lake Creek	Twin Valley
05	9	Lake Creek	Lake Creek
05	1	Twin Valley	Lake Creek
05	1 (3)	Outside HMA	Lake Creek
06	2	Lake Creek	Lake Creek
06	2	Twin Valley	Lake Creek
07	1	Fairbanks	Fairbanks
08	7	Fairbanks	Fairbanks
08	1	Outside HMA	Fairbanks
Unreadable brand	4 (2 mares, 2 studs)	Fairbanks	Fairbanks (probably)

- (1) Includes one stud mistakenly branded 02.
 (2) Includes one mare mistakenly branded 03.
 (3) This horse was a mare, mistakenly branded 05.

This data shows a limited amount of movement taking place between Lake Creek and Twin Valley pastures, with the Fairbanks horses staying put, except for one horse from the summer pastures that made her way back there.

There were 20 horses aged 10 and older, plus a seven year old buckskin paint mare, that received new marks in 1997 (01-06):

FREEZE MARK	NUMBER
01 (Fairbanks studs)	5
02 (Fairbanks mares)	3
03 (Twin Valley studs)	6
04 (Twin Valley mares)	1
05 (Lake Creek studs)	4
06 (Lake Creek mares)	2

There were 47 horses captured in 1997 aged 10 and older that had no marks and received none (30 studs, 17 mares).

Survival

See above for X/XX survival.

Fairbanks studs: 36/57 = 63.2% from age 6-20+ to age 9-20+

Twin Valley studs: 20/28 = 71.4% " " " " " "

Lake Creek studs: 10/15 = 66.7%

Outside studs: 1/3 = 33.3%

Total studs: 67/103 = 65.0%

Fairbanks mares: 27/40 = 67.5%

Twin Valley mares: 24/33 = 72.7%

Lake Creek mares: 5/13 = 38.5%

Outside mares: 8/12 = 66.7%

Total mares: 64/98 = 65.3%

The data supports the hypothesis that survival is greater among older studs than older mares (162 studs captured aged 10 and older in 1997 compared to 110 mares). In 1993-94, the ratio was 114:93 studs:mares, and in 1992 it was 77:47.

The marking program should probably be discontinued. There is enough information available to get an idea of horse movements; survival is difficult to estimate except in broad categories, and further marking of animals at subsequent gathers will only cause confusion due to uncertainty about when the animals were captured and marked.