ENVIRONMENTAL ASSESSMENT

FOR

WILD FREE-ROAMING HORSE MANAGEMENT

ON THE

EL RITO RANGER DISTRICT

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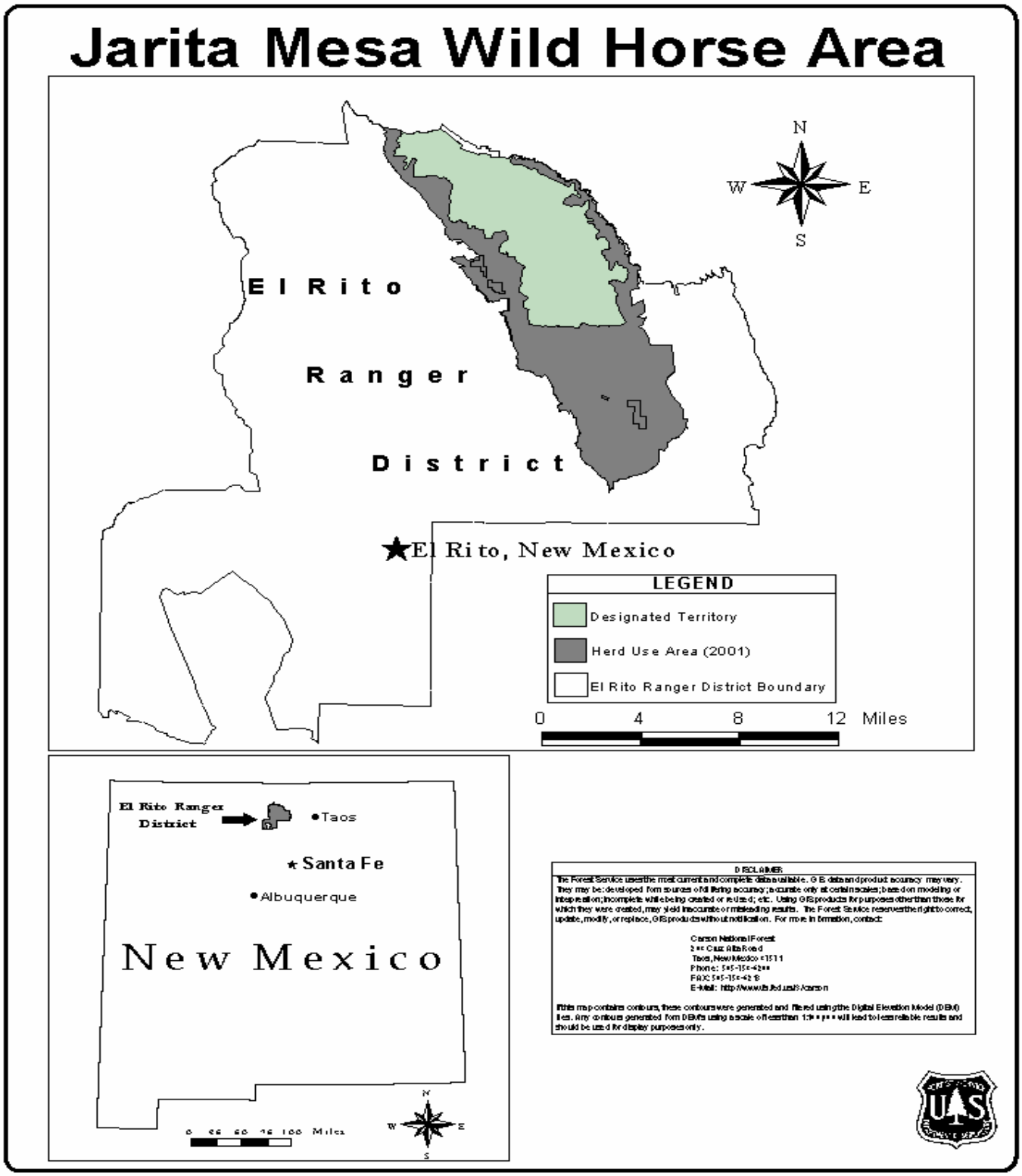

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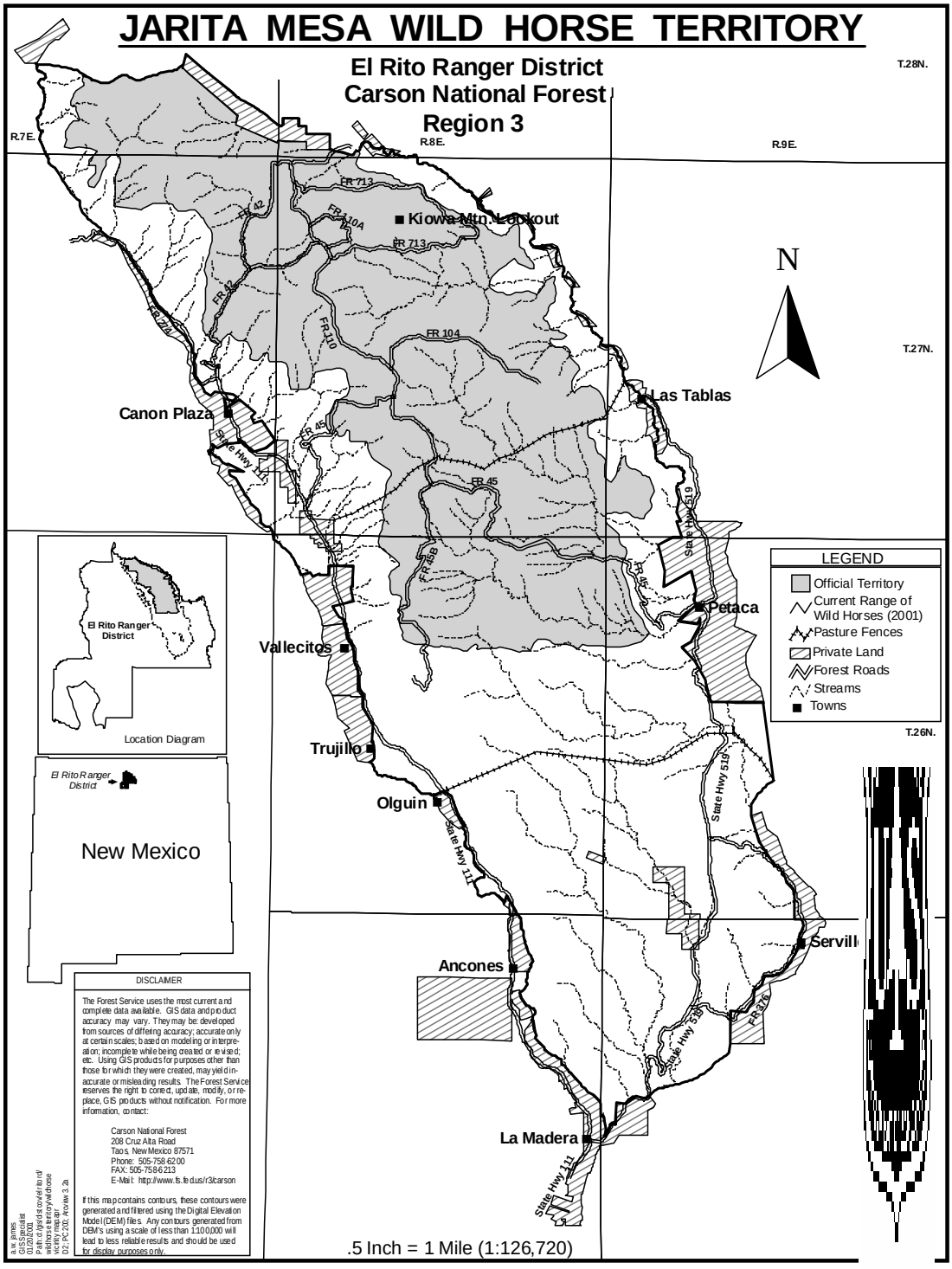


CHAPTER 1-PROJECT SCOPE

A. Project Location/Analysis Area

Project Record numbers are shown in brackets after each subject that was mentioned in other documents, e.g. (PR #xx).

The Jarita Mesa Wild Horse Territory (Designated Territory) located on the El Rito Ranger District is managed for wild free-roaming horses under the 1982 Environmental Assessment and Decision Notice/Finding of No Significant Impact (FONSI) (enclosed in Appendix G), as shown on the Vicinity Map (Designated Territory Map) and Project Records #9e and 9k. This Designated Territory is entirely on National Forest System lands in Township 28 North, Ranges 7 and 8 East; Township 27 North, Ranges 7, 8, and 9 East; and Township 26 North, Ranges 8 and 9 East. The wild free-roaming Designated Territory is within the allotment boundary for the Jarita Mesa Range Allotment.

The Herd Use Area (2001) is almost entirely on Forest Service lands (PR #18). There are four (4) tiny pieces of private land in the very south end and the west central area. The approximate legal description is Forest Service lands that lie within Township 28 North, Ranges 7 and 8 East; Township 27 North, Ranges 7, 8, and 9 East; Township 26 North, Ranges 8 and 9 East; and Township 25 North, Ranges 8 and 9 East. The wild free-roaming Herd Use Area (2001) coincides with the allotment boundary for the Jarita Mesa Range Allotment. (See Vicinity Area Maps on pages 4 and 5).

B. Background

This environmental assessment has been done to define a proposed action (management of the Jarita Mesa Wild Horse Herd and the Designated Territory and setting the boundary of the area to be managed for wild horses) and alternatives to it; to determine issues from the public and internally; and to determine the environmental effects of all the alternatives.

There are four designated wild horse herd Territories on the Carson National Forest: One on El Rito Ranger District, two on Canjilon Ranger District, and one on Jicarilla Ranger District. This document deals with the one on El Rito Ranger District. It is here-after called the Jarita Mesa Wild Horse Territory or the Designated Territory. Wild horse management within a Territory is prescribed by Acts and regulations. Wild horses may also be managed outside the Territory under conditions prescribed by the environmental assessment and subsequent management plan. (See Appendix H.)

The 1982 Management Plan (Appendix G.) identified the Designated Territory as the mesa top, which included 23,879 acres. Presently and for many years, wild horses have been using this Designated Territory plus a large area to the south, especially to spend the winter in the piñon/juniper and sagebrush. Hereafter there will be references to the Designated Territory and the Herd Use Area (2001), which is the Designated Territory plus the herd use area outside of it. The Herd Use Area (2001) encompasses 54,866 acres, extending into three pastures of the Jarita Mesa Range Allotment. (PR #18) The Designated Territory is in two pastures of the same allotment (PR # 9e or 9k) & (PR #11g). The Designated Territory and Herd Use Area (2001) are grazed by 516 cattle (518 in 2001 (PR #215a)) for about 108 days and about 67 to 104 elk year-round. Ungulate use should be 40% or less of the available forage each year, leaving the remainder for resource protection and food/habitat for the prey of Threatened, Endangered, and Sensitive (TE&S) species. It appears that this may be exceeded at times in select locations.

Management of the wild horses is based on several documents, with a summary of the pertinent points in these documents found in Appendix H of this document, including (PR #230):

- The Wild Horse Protection Act of 1959 (Project Record #8),
- The Wild Horses and Burros Protection Act of 1971 (PR #9) {as amended by the Federal Land Policy Management Act of 1976 and the Public Rangelands Improvement Act of 1978},
- 36 CFR 222 Subpart B 222.20 to 222.36 (PR #11d),
- Forest Service Manual Chapters 2200 and 2260 (PR #11),
- The Carson National Forest Land and Resource Management Plan (LRMP or Forest Plan) (PR #2a) ["WILD HORSE POPULATIONS …Annually remove excess wild horse populations to levels outlined in Management Plans when territories were established. Guideline: 21,246 acres. Declassify Mesa de las Viejas Territory."], and
- A management plan (4/5/1982) (1982 Management Plan) (found in Appendix G in this document).
- Ecosystem Management Area analyses for Los Comanches area and Vallecitos Federal Sustained Yield Unit (VFSYU) area. (PR #11ca and 11cb)

Based on the Act of 1971 and regulations, we manage a herd of wild horses not a specific type of horse or a horse of specific ancestry.

The 1982 Management Plan prescribes a herd with 12 to 14 wild horses. This was felt to be within the ecological limits of the 23,879 acre territory, as established.

Captures of wild free-roaming horses were prescribed whenever the appropriate management level (12 to 14) was exceeded, but this has seldom been done successfully. Wild horses that are captured are placed up for adoption.

Portions of the Designated Territory and Herd Use Area (2001) had vegetation treatments in 1970 (tree crushing) and in the 1980s that resulted in increased grass and forbs, e.g. timber sales, precommercial thinning, and prescribed burning. This may have increased the capacity of the area to support horses. After 10 to 15 years the grass/forbs are declining in density and productivity.

Horses classified as “wild” were not known to occupy Jarita Mesa until the early 1950s. Before that time there were as many as 159 head of exempt (free use) horses utilizing the area, as well as 521 cattle. The “wild” horses after that time were those that were not claimed by anyone in the surrounding communities. In 1965 all “free use” permits were terminated and the horses that were left on the Forest and their offspring are those that were officially recognized as “wild” under the 1971 Act. During the early 1950s there were between five and eight “wild” horses. From 1950 to 1971, the wild horse population only increased to 12 head. The primary reason for the small increase was the capture by local residents of young horses for their own use. After the enactment of the 1971 law, which afforded the wild horses with protection, the numbers increased to 47 by 1977. Aerial counts of the wild horses began in 1975 and over the last 25 years have counted from 8 to 57 wild horses. There are probably some wild horses that stray across the boundary occasionally, but for the most part they seem to stay inside the Herd Use Area (2001) and do not even go onto private land in the valleys. Private land owners have not reported horses on their lands. The local residents see some "rights" to the wild horses considering the history and the traditional culture of Jarita Mess, but none of these are considered to be private horses. There are no horses authorized by permit in the Jarita Mesa Range Allotment and no ownership claims have been made on any of the horses.

Currently, there are an estimated 70 wild horses in the Herd Use Area (2001). Even when no gathers were done for many years, the wild horse population seemed to fluctuate between 20 and 60 wild horses counted in the annual surveys.

There is competition for forage (grass and forbs) between elk, cattle, and horses. In a few locations, it is in excess of what the ecosystem can handle and still maintain acceptable vegetation cover, e.g. around water sources on the mesa top.

The Forest Service on the Carson National Forest is unique, since we manage, capture, and adopt out our wild horses, rather than having Bureau of Land Management (BLM) do it, as do most other National Forests in the West.

This analysis is tiered to the Environmental Impact Statement and Record of Decision (PR #7a and 7b) for the Carson National Forest LRMP (PR #2, 2b, and 2c). These documents discuss alternative land uses and the environmental, economic, and social effects of these land uses. The LRMP provides direction for management, land use, and implementation standards and guidelines. "What-to-do" was decided in those documents. This current analysis will disclose the site-specific effects of “how, when, and where” to implement the Forest Plan within the area under consideration.

In the past 20 or so years, the only National Environmental Policy Act (NEPA) documents that have been written for land within the Designated Territory and Herd Use Area (2001) that have affected the forage available to the wild horses are for management of timber and other vegetation. This includes the following timber sales and vegetation management plans: Benji, Burma, Big Rock, Little Rock, Lonesome, Jarita, Mill, Plaza, Rio, and Spring Timber Sales.

C. Purpose and Need for Action

The Forest Supervisor, Carson National Forest, has determined that there is the need to decide whether to manage the wild horses in the Designated Territory (legislative boundary) or in the Herd Use Area (2001) (area that is now and has historically been used) and to determine what number of wild free-roaming horses is the appropriate management level for the chosen area. This number must be consistent with multiple uses of this part of Jarita Mesa on the El Rito Ranger District, while maintaining a wild horse herd and thriving natural ecological conditions. Management must meet the requirements of the 1996 Amendment to Forest Plans for the Mexican Spotted Owl and Northern Goshawk (PR #7a and

7b). Management must do what is best for the wild horses, within multiple-use management and the other values of the land and resources.

The need for this analysis is based on the age of the existing analysis, which was completed in 1982. This 1982 analysis does not address all of the current issues, laws, and regulations, e.g. the Forest Plan amendment of 1996, the Mexican Spotted Owl Recovery Plan (PR #10g), and the Northern Goshawk Conservation Plan ("Management Recommendations for the Northern Goshawk in the Southwestern United States" (PR #10da)). The area used by the current wild horse herd is much larger than the Designated Territory that was identified in 1982, so the impacts of use outside the Designated Territory need to be analyzed. Due to the current conditions and comments from wild-horse-advocacy groups, there is the need to re-visit the appropriate management level (number) of wild horses for this Designated Territory.

The wild horse population is greater than recommended in the current management plan. The effects of a herd this size need to be determined and addressed. Ungulate use should be 40% or less of the available forage each year and this may be exceeded at certain locations and times. Portions of Jarita Mesa had vegetation treatments in the 1980s after the number of wild horses was set at 12 to 14. This transitory range may have increased the forage production, allowing more horses to be present in the area, although after 10 to 15 years the grass/forbs are declining in density and productivity.

Present grazing activity by three ungulate classes (wild horses, elk, and permitted cattle) is creating competition for forage. The result is overuse, especially during dry conditions near water sources. If uncorrected, this activity could lead to insufficient available forage and accelerated soil erosion. Furthermore, it could also jeopardize the wild horse herd by allowing the population to expand to levels that would not be sustained during hot, dry summers or cold, snowy winters.

The wild horses been using an area that is larger than the Designated Territory for winter and summer habitats for at least two decades. Most of the usable winter habitat is in the southern part of Herd Use Area (2001) that is outside the Designated Territory.

There is the need to construct permanent "water traps" in the north and south ends of the Designated Territory for the capture of the wild horses. This will eliminate lost time from periodically constructing temporary traps and will allow the wild horses to become used to the fences.

The Act of 1971 directs that "All management activities shall be at the minimal feasible level ..." and "Any adjustments in forage allocations on any such lands shall take into consideration the needs of other wildlife species which inhabit such lands." (PR #9)

Goals. The goals for this analysis for the management plan are:

(1) To determine the appropriate boundary of the area to be managed for wild horses.

(2) To determine the appropriate management level (AML) of wild horses that maintains or improves the condition of the vegetation/soil/watershed on Jarita Mesa and that is consistent with the Carson National Forest Plan (as amended).

D. Proposed Action

The Forest Supervisor, Carson National Forest, proposes to manage the wild free-roaming horse herd at a population of 12 to 14 wild free-roaming horses in accordance with the existing (1982) management plan, to achieve or maintain a thriving natural ecological balance and avoid deterioration of the range. Management of wild horses includes the removal of horses that are outside the territory, the removal of excess wild horses, and the monitoring of their effects on the environment.

Work toward attaining this number of wild horses as early as 2001 and continue for several years until the objective of 12 to 14 head is achieved in the Designated Territory.

Manage the wild horse herd within the Designated Territory (23,879 acres).

Comply with the Wild Horses and Burro Protection Act of 1971, as amended, and the Carson National Forest Land and Resource Management Plan, as amended and with further amendments as needed. (PR #2, 9, & 11aa)

Initiate gathers whenever populations are determined to be excess of the numbers in the management plan, based on monitoring results.

Make reductions by various capture techniques that are appropriate for the area and yearly conditions, e.g. helicopter gathers, riders on horses, snowmobiles, or ATVs with corrals, "feed traps", and "water traps".

Determine the capture season by the capture method. Some of the more probable capture methods include, but are not limited to:

Table 1

Methods	Conditions
Water traps with trigger gates (Horses push open a one-way gate to get access to a pond that is fenced. Once in, the gate will not open outward, and the animals are contained in the fenced enclosure around the water.) These traps will be checked daily.	Hot, dry weather when water is scarce.
Feed traps with good quality hay, salt blocks, or mineral blocks. (Same idea as water traps except use feed and/or salt or mineral blocks to entice the animals into the enclosure.)	When forage level is low, e.g. drought or heavy snow conditions in winter.
Push wild horses into traps with helicopters, snowmobiles, and/or horses. (This involves chasing the animals into the fenced enclosure(s).)	Winters with sufficient snow conditions.

Wild horses which are captured and removed will be put up for adoption, in accordance with the Wild Horses and Burros Protection Act of 1971, as amended and 36CFR 222.29.

The information and analysis in this document will be used to update the Jarita Mesa Wild Horse Territory Management Plan. The Jarita Mesa Wild Horse Territory Excess Horse Removal Plan will be revised to comply with the document and on-the-ground conditions each time a gather is proposed.

The management plan must be flexible year-to-year based on a monitoring plan.

Monitor the wild horse herd population by aerial surveys and reports of horses seen during visits to the Designated Territory and Herd Use Area (2001) for other projects.

Monitor the wild horses, during other visits to the Designated Territory and Herd Use Area (2001), for abnormalities that may indicate in-breeding.

Monitor forage conditions as part of range management for these pastures of the Jarita Mesa Range Allotment. Included in this could be periodic photos of vegetation photo points. Ensure that the monitoring is tied to Terrestrial Ecosystem (TES) units, as well as to pastures, so the forage production capability spreadsheets can be validated.

Monitor the wild horses that are adopted for compliance with the agreement.

(See Appendix F for more details on monitoring.)

Mitigation measures will be incorporated into the treatment:

Heritage resources will be protected. Surveys will be done where structures or treatments are proposed.

Injury to wild horses during gathers will be minimized by using appropriate methods and seasons and having veterinarian services readily available.

E. Decision to be Made

Because the decision on Wild Horse Territory Management Plans is not delegable below the Forest Supervisor level, the Carson National Forest Supervisor is the responsible official. As the decision maker and based on the interdisciplinary analysis in the environmental assessment, the Forest Supervisor will decide:

Whether or not to revise the 1982 Wild Horse Management Plan and, if so, how.

Whether or not to also manage areas adjoining the Designated Territory for wild horses, and, if so, how much.

Whether or not to change the appropriate management level (number) of the wild free-roaming horse herd in the Jarita Mesa Designated Territory or Herd Use Area (2001) and, if so, how much.

Whether or not to construct "water traps" and, if so, what type, number, and location.

F. Public involvement

The ID Team conducted the analysis, following guidelines set forth in the Integrated Resource Management handbook for the Southwest Region.

The analysis of Jarita Mesa wild horse management began with an interdisciplinary team (ID Team) meeting on March 31, 2000. A scoping letter was sent to 87 persons, groups, agencies, and tribes/pueblos on June 16, 2000 (PR #23 & 24), to three more persons on 11/1/2000 (PR #42), and to 11 more persons on 11/14/2000 (PR #45). Section 106 Consultation was done on 11/21/2000 with the affected Tribes and Pueblos. (PR #52)

The project was included in the Carson National Forest's Schedule of Proposed Actions (NEPA Quarterly) in October of 2000 (PR #33a) and in January, April, and July of 2001. (PR #75b, 189, and 216a) These documents were mailed to 148 to 156 individuals, groups, and agencies. An article was published about the project in the Rio Grande Sun (July 6, 2000) (PR #28) and in the Santa Fe New Mexican (December 14, 2000) (PR #70a).

Someone associated with the private wild horse groups put information about the Jarita Wild Horse Management analysis on the Internet on two different web sites. This reached a lot of people nationwide and generated most of the responses that were received.

In response to these requests for comments (and from at least two private Internet sites), we received seven notes, 34 letters, 15 e-mails, 14 telephone call, two petitions, one fax, one document, and one congressional inquiry (see Appendix C). More details about these responses is found in Appendix C of this document.

After reviewing the replies and from internal discussions, one significant issue and several comments were found (PR #185a): (See Chapter 5 and Appendix C for more details.)

The desire by some members of the public to have at least 100 to 200 wild horses present in order to have a viable, sustainable population." (Issue 1)
Balancing forage use among the various ungulates, (Comment 1)
The condition of the forage, (Comment 1)
The need to reduce cattle numbers, (Comment 1)
The effects of wild horses on TE&S species and their habitat, (Comment 2)
Capture methods and seasons, (Comment 3)
The need to maintain wild horses on Jarita Mesa, (Comment 4)
The need to maintain enough horses to minimize in-breeding (abnormalities/deformities), (Comment 4)
The desire to maintain the apparent Spanish bloodline of the herd, and (Comment 5)
The size of the Territory. (Comment 6)

All of the above input has been considered in the drafting of this document. Most of it is incorporated in the text as part of the alternatives or analysis. The comments will be addressed in the Effects Section of the analysis, but will not be used to formulate different alternatives.

The Predecisional Review Period letter for public comments was sent on August 30,2001 to 127 people, groups, and agencies, who had participated in the process up to that point or who are to receive copies of all NEPA documents (PR #236, 237, and 238). A Legal Notice was published in the Rio Grande Sun on August 30, 2001 (PR #233c). Replies to this letter are found in Appendix H.

G. Issues

The only significant issue resulting from public input was: *The desire by some members of the public to have at least 100 to 200 wild horses present in order to have a viable, sustainable population.* (Issue 1)
(FOREST SERVICE REPLY: This is the main basis for the differences between the five alternatives analyzed later.)

H. Measures

(to see if we meet our goals for Section B)
(see Chapter 2 for effects and comparisons between alternatives)

Goal 1: To determine the boundary of the area to be managed for wild horses.
Number of acres managed for wild horses.

Goal 2: To determine the appropriate management level (AML) of wild horses that maintains or improves the condition of the vegetation/soil/watershed on Jarita Mesa and that is consistent with the Carson National Forest Plan (as amended).
Percentage utilization of available forage by elk, cattle, and wild horses.
Number of wild horses present.

I. Further NEPA Analysis Needed

No further analysis is needed to implement the proposals in this assessment. No permits are needed for the proposed actions.

CHAPTER 2 - ALTERNATIVES

A. Alternative Development

Alternatives to the Proposed Action were developed based on public involvement and internal concerns. Alternative A is the No Action alternative as required by regulations. In this assessment, No Action is defined as following the current (1982) management plan in the Designated Territory. Alternative B is the Proposed Action, which is No Action plus the construction of two new "water traps". Alternative C is a continuation of the current conditions (the status quo) in the Herd Use Area (2001). Alternative D meets public desires for more wild horses. It is in the Herd Use Area (2001). Alternative E manages 12 to 14 wild horses in the larger Herd Use Area (2001). This provides more winter habitat than in Alternatives A or B.

These five alternatives meet the Purpose and Need for the analysis and address the significant issues.

The maximum forage utilization level of 40% was chosen by the ID Team for use in this analysis, based on the following (PR #234):

> Ungulate stocking rates are determined by grazing intensity, and grazing intensity is directly related to animal performance, vegetation, watershed, and habitat conditions. Forage utilization beyond certain levels results in reduced

animal performance as animals expend energy seeking forage that would otherwise go into weight gain. General grazing intensity recommendations for range in fair to good condition during average precipitation years on arid midgrass and shortgrass range is 40-45% utilization (Holechek, 1993).

Shortgrass and Pinion Juniper sites dominated by blue grama as the primary forage species respond well to moderate grazing intensity (41-50% use of forage) defined by 1.5-2 inch residual stubble height (Holechek et.al. 2000). These areas are dominated by warm season grasses with the majority of growth occurring after summer rains beginning in July. These areas are grazed year-round by horses (more use in winter), during late spring and early summer by cattle and during winter and spring by elk. Allowable use for these areas will be set at 40% use of current annual growth measured in Oct-Nov. Allowable use monitoring should be conducted again in the spring to determine winter utilization levels. No more than 50% use (1.5" stubble) will be allowed following winter use measured in March-April to provide sufficient residue to protect soils.

Mountain grassland and forested sites dominated by species such as Arizona fescue, muttongrass/Kentucky bluegrass, and mountain muhly as the primary forage species respond well to moderate grazing intensity (41-50% use of forage) which corresponded to 5-6 inch stubble height on Arizona fescue, and 3-4 inch stubble height on bluegrasses and mountain muhly. These areas are grazed year-round by horses (except during heavy snow accumulation), during summer by cattle and during summer and fall by elk. Allowable use for these areas will be set at 40% (6" stubble on Az. Fescue and 4" stubble on bluegrasses and Mtn. Muhly) use of current annual growth measured in Oct-Nov.

Other allowable use factors related to raptor prey base (small rodent) habitat and soil stability were also considered. Residual forage structure and function are the primary concern related to small rodent habitat. Here, the height, aerial cover, and arrangement are key components to this habitat. Habitat needs are highly variable depending on the prey species in question. Due to the variability in forage preferences and distribution patterns of ungulates it is assumed that a variety of habitat conditions will exist for small rodents, with some species preferring short (2-3") contiguous cover, and others tall patchy cover. Therefore, based on discussions with the wildlife biologist a utilization level of 40% of all herbaceous species within key foraging areas was defined. Similarly, in discussions with the hydrologist a maximum of 50% use of all herbaceous species was required to prevent accelerated erosion.

It is recommended that an allowable use coefficient of 40% be used in the forage allocation model to determine preliminary grazing capacity for the herd use area.

B. Alternatives Considered But Dropped From Detailed Study

An alternative to **change the Designated Territory Boundary**. We cannot change Designated Territory boundaries unless it can be shown that there were errors made when the boundary was first set following the passage of the 1971 Act. (Comment 6) (PR #212)

An alternative to **reduce the number of permitted livestock** - This is outside the scope of the analysis, since this analysis is specific to wild horses. If we need to reduce the number of cattle due to the effects shown in an alternative, this will be addressed in Cumulative Effects, with the assumption that such a decision will be made in another analysis. The FSM 2260.3-2 directs a multiple use approach (cattle and wildlife) rather than exclusive use by wild horses. (Comment 1)

An alternative to **interpret "managing principally but not exclusively for wild horses" to mean that there must be as many or more horses than cattle**. The cattle, while greater in number, are only present for portions of six months during a year, while the horses are present all year. Management for cattle is not done to the detriment of the horses. There is forage available to them. From all indications, there appears to be something other than cattle grazing that is holding down the number of horses on the mesa. Surveys have never found over 60 horses present. There needs to be a multiple-use approach to all resources and values on the land. (Issue 1) (Comment 1)

An alternative to **maintain wild horse herd genetic viability** - This is outside the scope of the analysis, not being part of the Act of 1971. We are managing the Designated Territory and Herd Use Area (2001) for a thriving natural ecological balance for the long-term benefit of many resources. This requires healthy animals and adequate reproduction, but does not speak to genetics *per se*. The herd will be monitored for signs of "lack of vigor" (PR #202). (Comment 4) (Comment 5)

An alternative that **reduces the number of horses by euthanizing them**. This is an unpalatable alternative to most people.

Plus, there is a perpetual rider on the appropriations bill that forbids the killing of healthy wild horses. If they cannot be "adopted", then we must house, feed, and care for them. In the FY 2001 Interior and Related Agency's Appropriations Act, the statement reads: "Provided , That appropriations herein made shall not be available for the destruction of healthy, unadopted, wild horses and burros in the care of the Bureau or its contractors." This language is found as far as back the late 1980s, and may have been there since the mid to early 80s. It specifically addresses the BLM, but the Forest Service honors this direction as intended for all wild horse and burro management. (PR #93a) (Comment 3)

An alternative that **manages for a population level other than 12 to 14, 20 to 70, and 120 to 150 wild horses**. There are a number of other possible ranges of horse populations but the differences between them and the alternatives are too subtle to really analyze and show differences in effects. The five alternatives that are being considered in detail give a wide range of possible effects. (Issue 1) (Comment 1)

An alternative that **manages for a wild horse population of over 160 horses**. Based on field observations, this is more than the land can support when managed for a combination of horses, cattle, and wildlife. Multiple use management of the land is a part of the Wild Horse and Burros Protection Act of 1971. (Issue 1) (Comment 1) (Comment 4) (Comment 5)

An alternative that shows **a high number of horses present due to increased treatments of the vegetation**: Depending on the accomplishment of a lot of vegetation treatments in the future is not reliable. It would also mean that the heritage resource surveys would have to be done before this decision could be signed. We will be showing the effects of the higher numbers of wild horses, but putting possible treatments into the Cumulative Effects Section for future consideration. (Issue 1) (Comment 1)

An alternative that analyzes **different capture methods and their effects** on the wild horses - This is outside the scope of the analysis. The alternatives and purpose and need deal with the number of wild horses that should be present. The analysis will address the season of capture and the frequency of capture. The methods of capture are to be variable to allow for differences in yearly conditions. All methods will be allowed that are effective and are suitable for maintaining wild horses in a healthy condition. There was an idea of building a pipe corral near Benjamin Tank to facilitate wild horse management and to be used for cattle round-ups. It was opposed by the grazing allotment permittees, because they felt that such a corral could be used by some members of the public to steal calves or wild horses Comment 3).

An alternative that **reduces the population of wild horses to zero by removing all horses**. First, the Forest Plan prescribes management of a wild horse herd. Second, although some people consider wild horses an unnatural part of the ecosystem, they have been present in the Designated Territory for many years, at least since the 1940s. Third, the Wild Horses and Burros Protection Act of 1971 provides for their protection on the lands, if they can be managed in a thriving ecological balance. There has been an established wild horse Territory since 1971. Even if they are descendants of feral horses and not historic Spanish horses, they are protected by the Act of 1971. (Comment 1) (Comment 3) (Comment 4) (Comment 5)

An alternative that **lets nature take its course with the population**. This could cause large increases and sudden collapses in the population of wild horses. It could have devastating effects on the vegetation, soil, and protected wildlife during "booms" and bad effects on genetics during the repopulating phase. (Issue 1) (Comment 1) (Comment 3)

An alternative that prescribes the **capturing and sterilizing of some or all of the horses** (mares and stallions). This would maintain the numbers of horses but reduce or stop the growth rate. This reduces the options for the future if non-sterilized horses die or are killed. We would need to be careful not to wipe out a genetic trait that we thought was undesirable, but is later wanted. We would have a hard time determining which horses truly have the desired ancestry to retain without testing each one. Where would we get wild horses to replace those that are killed or die? This could also be said about selective capturing during gathers, but at least then the horses are adopted out and would be available for return if necessary. (Comment 3)

An alternative to **transplant captured horses to other Territories rather than adopting them** - This is against Forest Service policy. Adoption is the preferred method of disposition. This would be a method within an alternative, not an alternative itself. (Comment 3) (Comment 5)

An alternative to **transplant horses from other Territories into Jarita Mesa Designated Territory and Herd Use Area (2001) to improve genetics** - This is outside the scope of the analysis and against Forest Service policy. This analysis deals with maintaining a specified ecological condition and level of wild horses. (Comment 4) (Comment 5)

An alternative to **remove all fences**. The concern about fences not allowing wild horses to be "free roaming" is inconclusive. There are many Territories in grazing allotments where fences are present and the wild horses seem to thrive. Gates are left open when cattle are not present so, in addition to jumping over fences or pushing them down, wild horses often have the option of going through gaps in the fences. (Comment 1)

C. Alternatives Considered in Detail

1. Objectives Common to Alternatives

All actions will comply with the Wild Horses and Burro Protection Act of 1971, as amended, and the Carson National Forest Land and Resource Management Plan, as amended and with further amendments as needed. (PR #2, 9, & 11aa)

Gathers will be initiated whenever populations are determined to be excess of the numbers in the management plan, based on monitoring results.

All alternatives will incorporate some level of adaptive management. The initial appropriate management level of wild horses under each alternative is based on the analysis shown in Appendix I and in Chapter 3 (Vegetation). These numbers must be verified by vegetation/forage monitoring under actual field conditions. These are the two methods of determining stocking levels based on past research (PR #84a). Adaptive management is the "stock and monitor system" described in that publication. The spreadsheet is the "Forage Allocation" method described in this same publication. It is assumed that the calculated figures will be used as a tentative stocking rate, which will be verified in future years by monitoring; and adjustments will be made based on this monitoring.

Reductions will be by various capture techniques that are appropriate for the area and yearly conditions, e.g. helicopter gathers, riders on horses, snowmobiles, or ATVs with corrals, "feed traps", and "water traps".

The capture season will be determined by the capture method.. Some of the more probable capture methods include, but are not limited to:

Table 2

Methods	Conditions
Water traps with trigger gates (Horses push open a one-way gate to get access to a pond that is fenced. Once in, the gate will not open outward, and the animals are contained in the fenced enclosure around the water.) These traps will be checked daily.	Hot, dry weather when water is scarce.
Feed traps with good quality hay, salt blocks, or mineral blocks. (Same idea as water traps except use feed and/or salt or mineral blocks to entice the animals into the enclosure.)	When forage level is low, e.g. drought or heavy snow conditions in winter.
Push wild horses into traps with helicopters, snowmobiles, and/or horses. (This involves chasing the animals into the fenced enclosure(s).)	Winters with sufficient snow conditions.

Wild horses which are captured and removed will be put up for adoption, in accordance with the Wild Horses and Burros Protection Act of 1971, as amended and 36CFR 222.29.

The information and analysis in this document will be used to update the Jarita Mesa Wild Horse Territory Management Plan. The Jarita Mesa Wild Horse Territory Excess Horse Removal Plan will be revised to comply with the document and on-the-ground conditions each time a gather is proposed.

The management plan must be flexible year-to-year based on a monitoring plan.

Monitor the wild horse herd population by aerial surveys and reports of horses seen during visits to the Designated Territory and Herd Use Area (2001) for other projects.

Monitor the wild horses, during other visits to the Designated Territory and Herd Use Area (2001), for abnormalities that may indicate in-breeding.

Monitor forage conditions as part of range management for these pastures of the Jarita Mesa Range Allotment. Included in this could be periodic photos of vegetation photo points. Ensure that the monitoring is tied to Terrestrial Ecosystem (TES) units, as well as to pastures, so the forage production capability spreadsheets can be validated.

Monitor the wild horses that are adopted for compliance with the agreement.

Mitigation measures will be incorporated into the treatment:

Heritage resources will be protected. Surveys will be done where structures or treatments are proposed.

Injury to wild horses during gathers will be minimized by using appropriate methods and seasons and having veterinarian services readily available.

(See Appendix F for more details on monitoring.)

2. Alternative Description

Alternative A - (No Action)

Manage the wild free-roaming horse herd at a population of 12 to 14 wild free-roaming horses in accordance with the existing (1982) management plan, to achieve or maintain a thriving natural ecological balance and avoid deterioration of the range. Management of wild horses includes the removal of horses that are outside the territory, the removal of excess wild horses, and the monitoring of their effects on the environment.

Work toward attaining this number of wild horses as early as 2001 and continue for several years until the objective of 12 to 14 head is achieved in the Designated Territory.

Manage the wild horse herd in the Designated Territory (23,879 acres).

(See Objectives Common to All Alternatives for more items.)

Alternative B - (Proposed Action)

Manage the wild free-roaming horse herd at a population of 12 to 14 wild free-roaming horses in accordance with the existing (1982) management plan, to achieve or maintain a thriving natural ecological balance and avoid deterioration of the range. Management of wild horses includes the removal of horses that are outside the territory, the removal of excess wild horses, and the monitoring of their effects on the environment.

Work toward attaining this number of wild horses as early as 2001 and continue for several years until the objective of 12 to 14 head is achieved in the Designated Territory.

Manage the wild horse herd in the Designated Territory (23,879 acres).

Develop the fences and gates for two new water traps at existing ponds (Spring Creek, La Jara, Upper Abevedero, and/or Lower Abrevedero).

(See Objectives Common to All Alternatives for more items.)

Alternative C

Manage for a wild free-roaming horse population of approximately 20 to 70, depending on precipitation/forage conditions, to achieve or maintain a thriving natural ecological balance and avoid deterioration of the range. This number of wild horses is the population that has been present for much of the last 20 years based on past monitoring. In a good forage-producing year the Herd Use Area (2001) can support at least 70 wild horses, but under drought conditions only about 20 wild horses. The number of horses present will be based on "adaptive management" to meet the maximum of 40% forage utilization. The initial number will be in the range of 20 to 70 based on the precipitation/forage conditions for the next year or two. Future numbers will be based on this, plus monitoring to see if forage conditions are maintained under the desired wild horse numbers. Management of wild horses includes the removal of horses that are outside the territory, the removal of excess wild horses, and the monitoring of their effects on the environment.

Gathers of wild horses to reduce their populations will be based on the following "trigger points". The gathers will be done periodically (every 1, 2, 3, or 4 years) depending on population growth and vegetation conditions. The number of wild horses left after a gather will depend on the existing conditions and the predicted severity of droughts and grazing pressure. It will be based on the professional judgment of district personnel.

1. The wild horse population is beginning to exceed the maximum of 70 horses, or

2. The vegetation conditions have deteriorated or are projected to deteriorate below the acceptable level, based on:

   Two or more consecutive years of drought (precipitation 20% or more below average), or

   Greater than 40% forage utilization in key areas for two or more consecutive years and total ground cover is unacceptable, or

   Drought conditions are predicted for the next two or more years, such that forage utilization is expected to be unacceptably high.

Work toward attaining this number of wild horses as early as 2001 and continue for several years, as needed, until the desired number is obtained in the Herd Use Area (2001).

Manage the wild horse herd in the expanded Herd Use Area (2001), which is the Designated Territory plus the area outside it that the wild horses currently use (54,866 acres).

Develop the fences and gates for two new water traps at existing ponds (Spring Creek, La Jara, Upper Abevedero, and/or Lower Abrevedero).

Amend the Forest Plan to allow for management of wild horses in an area of 54,866 acres rather than the currently specified 21,246 acres.

(See Objectives Common to All Alternatives for more items.)

Alternative D

Manage for a wild free-roaming horse population of approximately 120 to 150, depending on precipitation/forage conditions, to achieve or maintain a thriving natural ecological balance and avoid deterioration of the range. There will be no gathers until a population of at least 120 is reached. This range in numbers of wild horses will meet the desire of some members of the public to have more wild horses present in the area. The number of horses present will be based on "adaptive management" to meet the maximum of 40% forage utilization. The initial number will be in the range of 120 to 150 based on the precipitation/forage conditions for the following year or two. Future numbers will be based on this, plus monitoring to see if forage conditions are maintained under the desired wild horse numbers. Management of wild horses includes the removal of horses that are outside the territory, the removal of excess wild horses, and the monitoring of their effects on the environment.

Gathers of wild horses to reduce their populations will be based on the following "trigger points". The gathers will be done periodically (every 1, 2, 3, or 4 years) depending on population growth and vegetation conditions. The

number of wild horses left after a gather will depend on the existing conditions and the predicted severity of droughts and grazing pressure. It will be based on the professional judgment of district personnel.

1. The wild horse population is beginning to exceed the maximum of 150 horses, or

2. The vegetation conditions have deteriorated or are projected to deteriorate below the acceptable level, based on:

   Two or more consecutive years of drought (precipitation 20% or more below average), or

   Greater than 40% forage utilization in key areas for two or more consecutive years and total ground cover is unacceptable, or

   Drought conditions are predicted for the next two or more years, such that forage utilization is expected to be unacceptably high.

Work toward attaining this number of wild horses beginning in 2001 and continue until the desired number is obtained in the Herd Use Area (2001).

Manage the wild horse herd in the expanded Herd Use Area (2001), which is the Designated Territory plus the area outside it that the wild horses currently use (54,866 acres).

Develop the fences and gates for two new water traps at existing ponds (Spring Creek, La Jara, Upper Abevedero, and/or Lower Abrevedero).

Amend the Forest Plan to allow for management of wild horses in an area of 54,866 acres rather than the currently specified 21,246 acres.

(See Objectives Common to All Alternatives for more items.)

Alternative E

Manage the wild free-roaming horse herd at a population of 12 to 14 wild free-roaming horses, to achieve or maintain a thriving natural ecological balance and avoid deterioration of the range. Management of wild horses includes the removal of horses that are outside the territory, the removal of excess wild horses, and the monitoring of their effects on the environment.

Work toward attaining this number of wild horses as early as 2001 and continue for several years until the objective of 12 to 14 head is achieved in the Herd Use Area (2001.

Manage the wild horse herd in the expanded Herd Use Area (2001), which is the Designated Territory plus the area outside it that the wild horses currently use (54,866 acres).

Develop the fences and gates for two new water traps at existing ponds (Spring Creek, La Jara, Upper Abevedero, and/or Lower Abrevedero).

Amend the Forest Plan to allow for management of wild horses in an area of 54,866 acres rather than the currently specified 21,246 acres.

(See Objectives Common to All Alternatives for more items.)

Summary Table of Alternatives:

Table 3

Factor	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Number of Wild Horses	12 to 14	12 to 14	20 to 70	120 to 150	12 to 14
Size of Territory	23,879 acres	23,879 acres	54,866 acres	54,866 acres	54,866 acres

Number of New Water Traps	0	2	2	2	2
Amend the Forest Plan?	No	No	Yes	Yes	Yes

Summary Table of Effects (see Chapter 3 for more details):

Table 4

Factor	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
To set the boundary of the area to be managed for wild horses.	23,879 acres	23,879 acres	54,866 acres	54,866 acres	54,866 acres
To manage the wild horses at an AML that maintains or improves the condition of the vegetation, soil, and watershed on Jarita Mesa (consistent with the 1996 Amendment to Forest Plans).	Yes	Yes	Yes	No. Use exceeds utilization standards.	Yes
Vegetation [Percent utilization of forage by ungulates] [Standard is 40% maximum]	39%	39%	38 to 44%	50 to 54%	37%
Soil and Water Quality [Percent utilization of forage by ungulates] [Standard is 50% maximum]	39%	39%	38 to 44%	50 to 54%	37%
Horses gathered initially to reach desired number	56	56	0 to 50	0	56
Horses produced per year (estimated)	3 per year	3 per year	5 to 17 per year	30 to 37 per year	3 per year
Wildlife [Percent utilization of forage by ungulates] [Standard is 40% maximum]	39%	39%	38 to 44%	50 to 54%	37%

CHAPTER 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

A. Description

This chapter shows the present conditions within the project area and the changes that can be expected from taking no action at this time or from implementing the action alternatives. The No Action alternative sets the environmental base line for comparing effects of the action alternatives.

The Purpose and Need and Public Involvement (See Chapter 1) define the scope of the environmental concern for this project. The environmental effects are the changes from present base line conditions. Some of the environmental effects are confined to this action and the project area. Others are cumulative with environmental effects from other actions and cover an area beyond the project area. Cumulative effects are discussed for each resource when they occur and as a separate section.

B. Vegetation

Affected Environment:

The Jarita Mesa Wild Horse Designated Territory and Herd Use Area (2001) contain the following vegetation types, based on the Geographic Information System (GIS) and Rocky Mountain Resource Information System (RMRIS) databases:

Table 5

Vegetation Type:	Acreage in Herd Use Area (2001)):	% of the Herd Use Area (2001):		Acreage in Designated Territory:	% of the Designated Territory:
Ponderosa Pine - untreated (<40%)	22,437	40.89		14,130	59.17
Ponderosa Pine - thinned	2,889	5.27		2889	12.10
Ponderosa Pine - seed tree cut	503	0.92		503	2.11
Ponderosa Pine - >40% slope	5,094	9.28		2,282	9.56
Rocky mountain juniper	14	0.03		0	0.00
Piñon/Juniper - untreated (<15%)	4,761	8.68		269	1.13
Piñon/Juniper - tree crushed	818	1.49		0	0.00
Piñon/Juniper - >15% slope	11,450	20.87		136	0.57
Grassland	2,658	4.84		801	3.35
Oak	222	0.40		133	0.56
Douglas-fir (<40% slope)	1,305	2.38		962	4.03
Douglas-fir - >40% slope	758	1.38		250	1.05
White Fir (<40% slope)	1,415	2.58		1,319	5.52
White Fir - >40% slope	236	0.43		166	0.70
Englemann Spruce	15	0.03		0	0.00
Aspen	48	0.09		39	0.16
Cottonwood/Willow	24	0.04		0	0.00
Water	7	0.01		0	0.00
Rockland	25	0.05		0	0.00
Gravel pits/quarries	187	0.34		0	0.00
TOTAL	54,866	100.00		23,879	100.00
Private	642	1.17		---	---
TOTAL with Private	55,508	101.17		---	---

Description of the Vegetation

The small areas of mixed conifers are quite dense and do not support much grass/forb understory.

The small area of aspen has a dense understory of grasses, forbs, and shrubs.

The ponderosa pine has a sparse mixture of grasses and forbs in the understory. It is mixed with the mixed conifers in the high elevations and the piñon/juniper at low elevations.

Piñon/juniper is often found on steep slopes (>20%) and often has much bare soil in the understory. It is seldom grazed on the steeper slopes.

Oak is often mixed with mountain mahogany.

Grasslands are heavily grazed. In the southern pasture (Maton de Encino) these are mainly the areas that were converted from piñon/juniper in the 1970s.

Sagebrush areas are heavily grazed (for the grass), especially in the early spring.

There are many areas in the grassland and piñon/juniper that could have grass/forb cover but are now densely stocked with big sagebrush.

Vegetation Treatments

The northern two thirds of the Herd Use Area (2001)) and most of the Designated Territory are in the Vallecitos Federal Sustained Yield Unit (VFSYU), where timber sales are a common occurrence. The last timber sale in this area closed in 1989, but small fuelwood sales are ongoing.

Much timber harvesting has been conducted in the ponderosa pine type in this area over the last 20 years for mistletoe reduction. About 3,392 acres were cut between 1983 and 1988 in five large timber sales (Benji, Big Rock, Little Rock, Mill and Lonesome Timber Sales). Of this, 2,889 were thinned to about 35% crown closure and 503 acres received seed tree cuts to about 5% crown closure. In addition, there were four other small timber sales in the 1980s (Burma, Jarita, Plaza, Rio, and Spring Timber Sales) (PR #150a). From 1988 to 1993, approximately 2,500 acres were treated with prescribed burning within harvested timber sales. The fuel loading after the sales was an average of eight to eleven tons per acre of 0 to 3 inch slash on the ground, with an additional three to five tons of larger material. At these slash levels, the harvested units had a surface fuel loading that could have resulted in a very active fire behavior, with a probability of a crown fire, resulting in the loss of residual overstory stands. Much of this fuel was removed by the prescribed burning. Much of this area successfully regenerated with pine and now has 4 to 8 foot tall trees that would grow better if they received precommercial thinning and had the overstory removed. This dense regeneration prevents good grass/forb cover in the understory.

It should be noted that there has not been as much cutting on the mesa top as first appears. The roads all go through the cut units and avoid the large areas that have not been treated, so appearances are deceptive when one drives through the area.

Precommercial thinning is on-going with about 100 to 200 acres done each year.

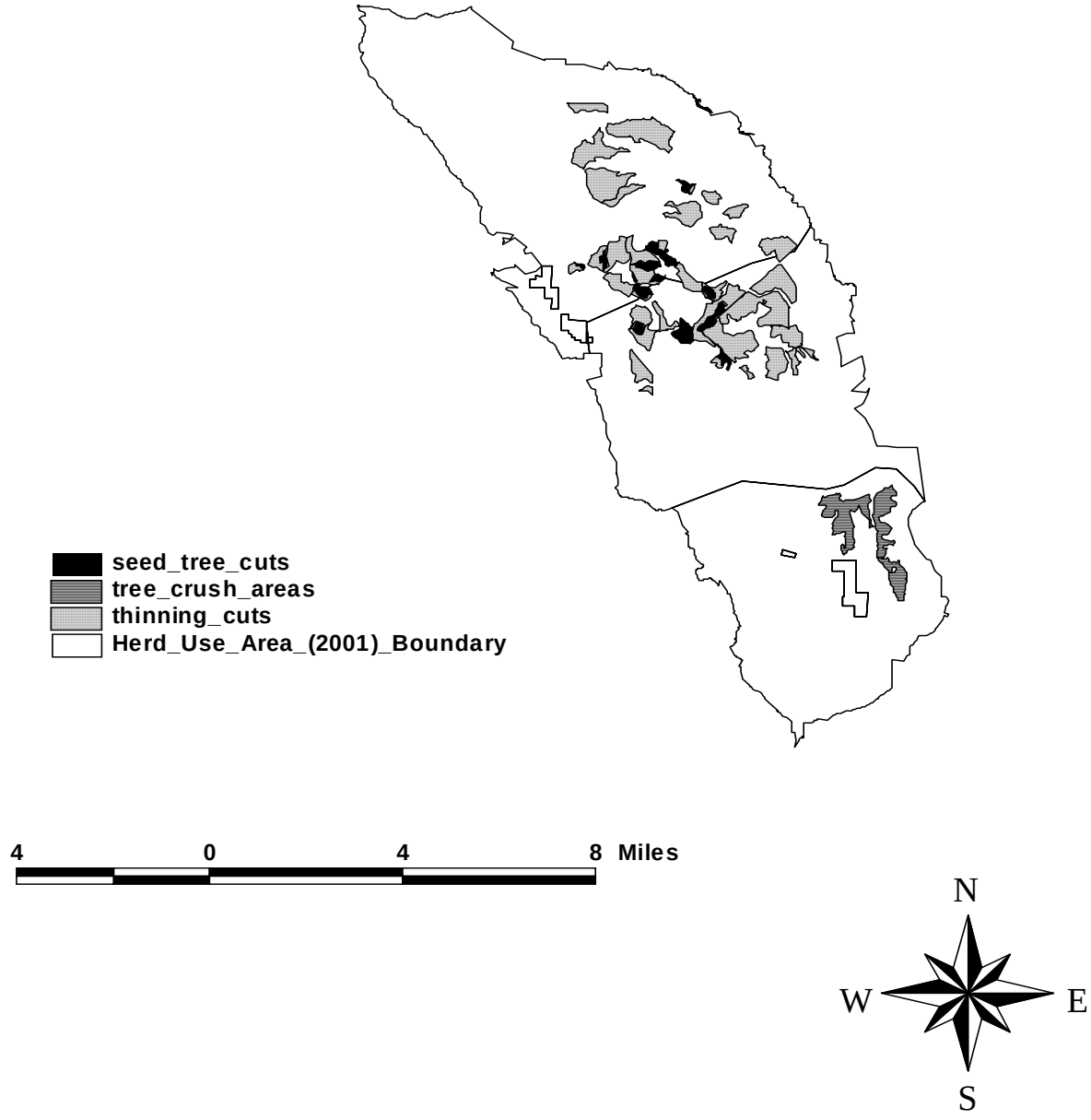
In 1970 about 818 acres of piñon/juniper were converted to grasslands by tree pushing and crushing. This was in the Maton de Encino pasture, south of Petaca (PR #150b)

Past burning (prescribed and natural) has resulted in some increases in patches of oak.

Prescribed burning and mechanical treatments designed for resources other than wild horses are scheduled to continue in Jarita Mesa for the next three to four years, mostly on previously harvested stands. Approximately 4,000 to 5,000 acres will be treated within this time period.

The current conditions are due to historic practices and inherent soil/climate conditions, including grazing, fire, dry area, soil types, cutting, pushing. (See the Cumulative Effects for more details.)

Tree Canopy Treatment Referred to in Analysis



DISCLAIMER: The Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. They may be: developed from sources of differing accuracy; accurate only at certain scales; based on modeling or interpretation; incomplete while being created or revised; etc. Using GIS products for purposes other than those for which they were created, may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify, or replace, GIS products without notification. For more information, contact: Carson National Forest, 208 Cruz Alta Road, Taos, New Mexico 87571 (Phone: 505-758-6200, Fax: 505-758-6213, E-Mail: http://www.fs.fed.us/r3/carson). If this map contains contours, these contours were generated and filtered using the Digital Elevation Model (DEM) files. Any contours generated from DEM's using a scale of less than 1:100,000 will lead to less reliable results and should be used for display purposes only.

Effects of Ungulates on the Vegetation

The appearance of the range condition indicates that there are too many ungulates grazing in the Designated Territory and Herd Use Area (2001) for a thriving ecosystem. Utilization appears to be relatively uniform and the range is in relatively good condition, except near water sources and in the south end that receives heavier use in the winter. Unlike cattle, the season of use for horses cannot be easily controlled, and they use the range as soon as it greens-up in the spring.

As early as 1972, conflicts between horses and cattle for forage were recognized as a potential problem if the horse population increased. (PR #9a) Research studies in Colorado, Wyoming, and southern New Mexico have been done on forage utilization by ungulates (PR #9f and 9g). They point to a direct competition between cattle and horses but less so with deer. There was an overlap of forage use between cattle and horses of 59 to 75% and 77% in two studies, while overlap with deer was only 1 to 4% and <11%. Elk, cattle, and wild horses in Wyoming used primarily grasses and sedges. In southern New Mexico, horses used primarily grasses, some forbs, and shrubs. A Colorado State University publication says that cattle and wild horses have essentially the same diet and use 60 to 80% grass and sedges.

A production/utilization study in the upper pasture (Kiowa) in August of 2000 showed about 28% utilization (ranging from 10 to 58%). This was in a dry year when the cows went on early. A similar study in 1979 (PR #9i) showed less than 5% utilization, except near Benjamin Tank where use was about 50%.

Further monitoring is needed to show the extent of the overgrazing and to distinguish between the levels of elk, cattle, and wild horse grazing.

In winters with significant snow, the wild horses are found primarily south of the Designated Territory in the piñon/juniper and sagebrush (but within the Herd Use Area (2001)). They tend to stay here into the spring and use the grass before the cattle are put on the range.

There have been no reports of elk eating hay or pastures on private land in the winter, which seems to indicate that the elk can find enough forage on federal land.

Fences have not noticeably stopped these horses from moving around the Designated Territory and Herd Use Area (2001).

Paradoxically, years of good precipitation may be the worst for the wild horses. It results in deep snow and difficulty getting to food.

Viability of populations of animals/species is tied to the ability of the land and resources to support them (and all the other uses and users). A Range Management textbook dealt with forage utilization and soil/range conditions with the following quotes. "The premise here is that a certain minimum level of dry matter should always be present on a particular range to maintain the soil, forage plant vigor, livestock diet quality, and wildlife habitat." "Forage fluctuates considerably between years in response to changing climatic conditions." "In rough, rugged terrain, cattle congregate on the more convenient, flat areas such as valley bottoms, riparian zones, and ridgetops. Forage on the steeper slopes (over 60%) receive little or no use by cattle and these areas must be deleted from the grazable land area." "The stocking rate we have calculated will probably have to be further adjusted as experience is gained with actual animal use of the pasture." (PR #10ba)

In accordance with the above ideas, spreadsheets have been done to show the amount of forage available to ungulates and the estimated amounts used by the various ungulates in the Designated Territory and Herd Use Area (2001). See the following segments for more details and a discussion of the process and results. See the spreadsheets, assumptions, and analysis in the Project Record (PR #163, 164, 175, 176, 177, 178, 179, 180, and 219) for all the details.

Estimated Grazing Capacity Analysis for the Herd Use Area (2001) (3/27/2001)

This is just a brief description of the process. The whole spreadsheet and process is in the project record (PR #163, 164, 175, 176, 177, 178, 179, 180, and 219) and more details on this analysis are in Appendix I of this document.

Forage is defined as the estimate in pounds per acre of the annual yield (air-dry/normal year) of herbaceous/woody plants that may provide food for grazing animals. The zone of estimation is from the soil surface to a height of 4½ feet. (Page 7 of Terrestrial Ecosystem Survey of the Carson NF, 1987) **(Note: This and all forage productions are averages for average conditions in average years and are estimates. They can vary greatly year-to-year**

due to precipitation amounts and between sites with subtle differences, but they provide a baseline from which to start analyses.)

The forage utilization standard used in this analysis is based on a combination of on-the-ground evaluations of Jarita Mesa conditions and the Standards and Guidelines for the 1996 Forest Plan Amendment for Mexican Spotted Owls and Northern Goshawk. The ID Team set this for all TES Units at 40% maximum utilization for this analysis. Ungulates can graze to the utilization maximum (40%). The other 60% of the forage is available for soil/watershed protection and for use by rodents, other ungulates, and other grass/forb-eating species. They are the prey base for the TE&S species, as well as other carnivores.

Based on average research findings, it was assumed that cattle eat 27.7 pounds per day, horses east 24.8 pounds per day, and elk eat 13.8 pounds per day.

It is known that varying numbers of cattle are present for various time periods in the three pastures, totaling 87,189 cow/calf units of daily use (one cow and calf for one day of grazing) in the Herd Use Area (2001) (PR #215a). This is roughly 170 days of use or about 46% of the year, during which time each cow/calf unit would consume about 4,709 pounds of forage.

There are estimated to be 67 elk present in the summer and 104 in the winter.

Wild horses are the variable with 20 to 70 in Alternative B, 120 to 150 in Alternative C, and 12 to 14 in Alternative E.

Non-winter use by horses and elk was assumed to be nine months (April to December) when the entire Designated Territory and Herd Use Area (2001) is available. For the other three months (January to March), it is assumed that elevations above 9,000 feet and slopes facing north, northeast, and northwest have deep snow that prevents grazing.

Table 6

Number of Wild Horses in Herd Use Area (2001)	Number of Cow/calf Units (Daily)	Number of elk	**Estimated actual % forage utilization of Herd Use Area (2001)**	% of net forage used in the non-winter period	% of net forage available for the winter use by horses and elk	Surplus or Deficit of forage for the year in Herd Use Area (2001)
Alternative C:						
20	87,189	67/104	**38%**	87.3%	12.3%	121,892 lbs
70	87,189	67/104	**44%**	98.3%	1.7%	(-248,739) lbs
Alternative D:						
120	87,189	67/104	**50%**	108.9%	(-8.9%)	(-619,371) lbs
150	87,189	67/104	**54%**	115.3%	(-15.3%)	(-841,750) lbs
Alternative E:						
14	87,189	67/104	**37%**	86.4%	13.6%	166,368 lbs

With these assumptions, the Herd Use Area (2001) cannot support the cattle and elk that are known to be present in average years and meet the 40% forage utilization guideline, if there are more than 36 wild horses.

Estimated Grazing Capacity Analysis for the <u>Designated Territory</u> (3/27/2001)

It is known that varying numbers of cattle are present for various time periods in the two pastures, totaling 56,059 cow/calf units of daily use in the Designated Territory (PR #215a). This is roughly 108 days of use or about 30% of the year.

There are estimated to be 30 elk present in the summer and 57 in the winter.

Wild horses are the variable with 12 to 14 in Alternatives A and B.

Non-winter use by horses and elk was assumed to be nine months (April to December) when the entire Designated Territory and Herd Use Area (2001) is available. For the other three months (January to March), it is assumed that elevations above 9,000 feet and slopes facing north, northeast, and northwest have deep snow that prevents grazing.

Table 7

Number of Wild Horses in the Designated Territory	Number of Cow/calf Units (Daily)	Number of elk	**Estimated actual % forage utilization of the Designated Territory**	% of net forage used in the non-winter period	% of net forage available for the winter use by horses and elk	Surplus or Deficit of the net forage for the year in the Designated Territory
Alternative A:						
14	56,059	30/57	**39%**	89.9%	10.1%	39,689 lbs
Alternative B:						
14	56,059	30/57	**39%**	89.9%	10.1%	39,689 lbs

With these assumptions, the Designated Territory can support the animals that are to be present during the whole year under the 1982 Management Plan. This also assumes that the horses and elk stay within the Designated Territory all winter and do not go outside of it to graze. Since we know that they go outside of this area at some times of the year, the actual forage utilization would be even less than 39%.

Environmental Consequences:

In **Alternative A** The vegetation/range condition will improve as the current population of wild horses is reduced to 12 to 14 adults. The cattle numbers will remain static. Elk numbers are not expected to increase. This will result in less forage being eaten than at present, with more remaining for other animals to eat or for the protection of the soil. For comparison purposes, the excess forage is about enough for 8 cow/calf units for the established grazing season (as calculated in Section K. Grazing). It is estimated that forage utilization will be a maximum of 39%, with 40% being allowable. (PR #175, 176, 177, 178, 179, and 180) (Comment 1)

The condition of the timber and woodland species will not change, except for the understory, which is grazed more lightly than under the current conditions.

Alternative B has effects identical to Alternative A.

In **Alternative C** The vegetation/range conditions will continue to be stable as the 20 to 70 wild horses, the current number of cattle, and the current number of elk continue to graze the forage. Stable conditions would be possible due to the potential to adjust the number of wild horses depending on the vegetation and weather conditions. It is estimated that forage utilization will be a maximum of 38 to 44%, depending on the number of wild horses present, with 40% being allowable. For comparison purposes the forage use is between an excess of about enough for 26 cow/calf units for the established grazing season to an overuse of about 53 cow/calf units for the same period (as calculated in Section K. Grazing). Remembering that the forage utilization was based on average conditions, adjustments in wild horse numbers from year to year should allow forage utilization to stay at 40% or less. It is estimated that 36 wild horses will result in 40% utilization in the average year. In years of better than average forage, the same number of horses (70) that would result in 44% utilization will still eat the same amount, but there will be more forage available on the ground. (PR #175, 176, 177, 178, 179, and 180) (Comment 1)

The condition of the timber and woodland species will not change, except for the understory, which is grazed the same as now or more lightly.

In **Alternative D** The vegetation/range conditions will continue to deteriorate as the 120 to 150 wild horses, the current number of cattle, and the current number of elk continue to overgraze the forage, most likely in more areas than are currently overgrazed. Even with the potential to adjust the number of wild horses depending on the vegetation and weather conditions, there are too many for the area. It is estimated that forage utilization will be a maximum of 50 to 54%, depending on the number of wild horses present, with 40% being allowable. For comparison purposes this excess use of forage is about enough for 132 to 178 cow/calf units for the established grazing season (as calculated in Section K.

Grazing). Even remembering that the forage utilization was based on average conditions, adjustments in wild horse numbers from year to year will not be able to reduce utilization to 40% or less except in the very best of years. It is estimated that 36 wild horses will result in 40% utilization in the average year. The 120-150 horses are estimated to eat from 619,371 to 841,750 pounds of forage above the 40% utilization level. (PR #175, 176, 177, 178, 179, and 180) (Comment 1)

The condition of the timber and woodland species will not change, except for the understory, which will be grazed more heavily than it currently is grazed. This will reduce the amount of grass/forbs and reduce the potential for tree reproduction. It will also increase the amount of bare soil and the likelihood of increased levels of surface erosion.)

In **Alternative E** The vegetation/range condition will improve as the population of wild horses is reduced to 12 to 14 adults and the area managed for wild horses is increased from 23,879 acres to 54,866 acres. The cattle numbers will remain static. Elk numbers are not expected to increase. This will result in less forage being eaten than at present, with more remaining for other animals to eat or for the protection of the soil. For comparison purposes, the excess forage is about enough for 36 cow/calf units for the established grazing season (as calculated in Section K. Grazing). It is estimated that forage utilization will be a maximum of 37%, with 40% being allowable. (PR #175, 176, 177, 178, 179, and 180) (Comment 1).

C. Soil

Affected Environment: The soil erosion hazard in the area ranges from low to high depending on the soil's parent material and the slope (PR #198). The soils in the Jarita Mesa Wild Designated Territory and Herd Use Area (2001) are as follows:

Based on information in the table, which comes from the Forest's Terrestrial Ecosystem Survey book (PR #4 and 198), the Herd Use Area (2001) includes 19,492 acres (36%) of soils where current erosion exceeds tolerance or there is a severe hazard of that happening if more bare soil is exposed. There are an additional 4,376 acres (8%) where there is a large amount of current erosion and the hazard of more is severe, usually due to steep slopes or a lot of bare soil. The remaining 30,998 acres (56%) has little current erosion or it has a lot of current erosion but the hazard of increased erosion is low. This is usually due to gentle slopes or abundant vegetation/litter cover.

In the Designated Territory, there are 3,763 acres (16%) of soils where current erosion exceeds tolerance or there is a severe hazard of that happening if more bare soil is exposed. There are an additional 1,135 acres (5%) where there is a lot of current erosion and the hazard of more is severe, usually due to steep slopes or a lot of bare soil. The remaining 19,039 acres (79%) have little erosion at present or erosion is evident, but the hazard of increased erosion is low. This is usually due to gentle slopes or abundant vegetation/litter cover.

A Range Management textbook dealt with the relationship between vegetation and soil with the following quotes. "The use of vegetation as an indicator {of range condition} is based upon the ecological premise that vegetation is the product of its environment; the product, therefore, can be used as an indicator of the causal relationships. The most accurate indexes of overgrazing are the early changes that take place in the vegetation as a result of plant succession. Grazing gradually reduces the more desirable plants and makes available soil nutrients and moisture for less desirable plants." "Soil changes, like vegetation changes, should be recognized early, for by the time that they are obvious, much damage has been done." (PR # 9ca)

"The best protection against erosion is to establish and maintain a good vegetative cover." Livestock affect watershed properties by removal of plant cover and through the physical action of their hooves. Reduction in the plant cover can increase the impact of raindrops, decrease soil organic matter and soil aggregates, and increase soil crusts. The primary effect of hoof action is compaction of the soil surface. Removal of cover and soil compaction reduce water infiltration rates, increase runoff, and increase erosion." "Ground-cover levels of 30 to 40% appear adequate for flat, arid areas with low-intensity storms." (PR #10f) This analysis will use a standard of 50% ground cover to be on the conservative side. This will be equated to 50% forage utilization.

In the Designated Territory and Herd Use Area (2001), the hazard of increased erosion due to grazing/browsing is most likely to come from bare soil on trails made by cattle or horses as they travel or from severely overgrazed localized patches.

Known watershed/soil problems in the area include: naturally bare soil, overgrazed areas, and channeling of sediment to streams and ponds from roads.

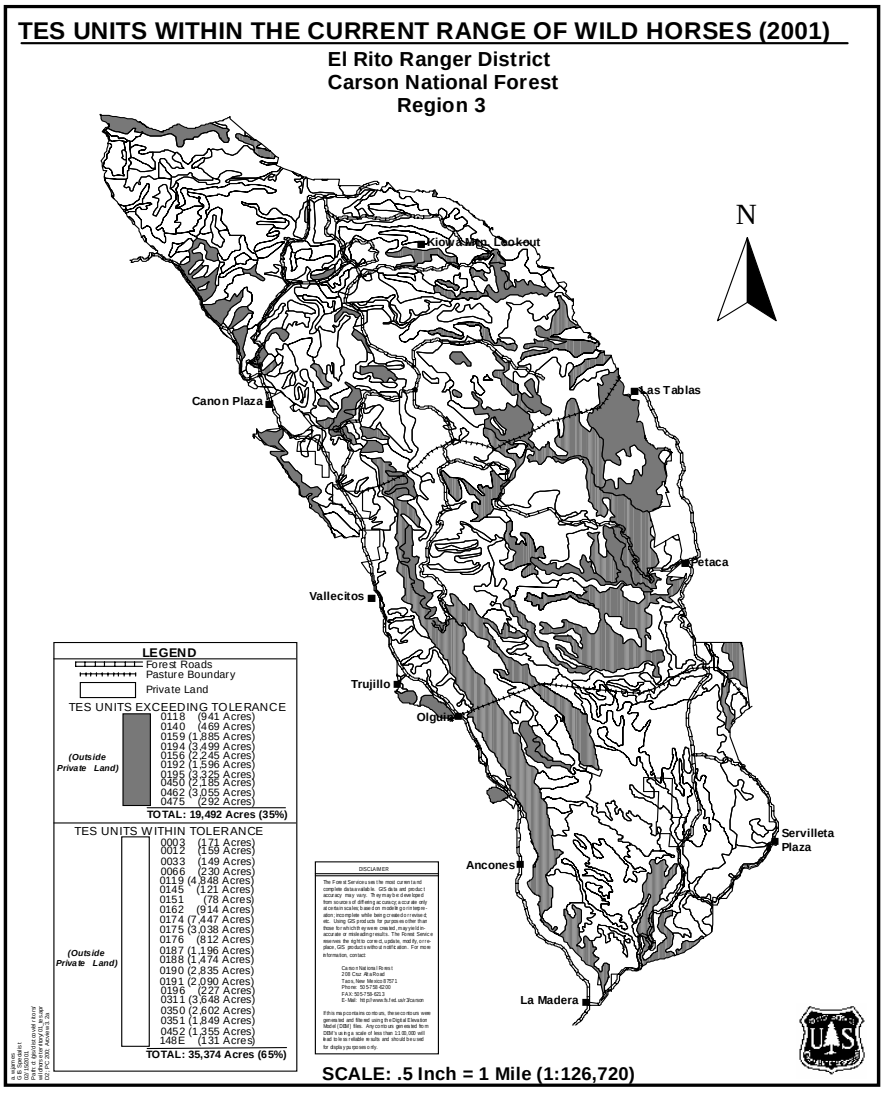
Ponds that have been constructed in the area are slowly filling with sediment eroded from the surrounding land.

Table 8

TES Unit *+	Acres in Herd Use Area (2001)	% of Herd Use Area (2001) in this TES Unit		Acres in Designated Territory	% of Designated Territory in this TES Unit
3	171	0.31		0	0.00
12	159	0.29		0	0.00
33	149	0.27		0	0.00
66	230	0.42		216	0.90
118 *	941	1.72		0	0.00
119	4848	8.84		26	0.11
140 *	469	0.85		0	0.00
145	121	0.22		0	0.00
148E	131	0.24		71	0.30
151	78	0.14		0	0.00
156 *	2245	4.09		1869	7.81
159 *	1885	3.44		0	0.00
162	914	1.67		0	0.00
174	7,447	13.57		7008	29.28
175	3038	5.54		1994	8.33
176	812	1.48		134	0.56
187	1196	2.18		902	3.77
188 +	1474	2.69		632	2.64
190	2835	5.17		150	0.63
191 +	2090	3.81		369	1.54
192 *	1,596	2.91		531	2.22
194 *	3499	6.38		0	0.00
195 *	3,325	6.06		57	0.24
196	227	0.41		230	0.96
311	3648	6.65		3541	14.79
350	2602	4.74		2538	10.60
351	1849	3.37		1492	6.23
450 *	2185	3.98		678	2.83
452	1355	2.47		871	3.64
462 *	3,055	5.57		444	1.85
475 *	292	0.53		184	0.77
Total	54866	100.00		23937**	100.00

*+ * -- greater than tolerance or severe hazard exists
+ -- close to tolerance or lot of current erosion

**(From this point forward there will be discrepancies in acreages due to different map sources. Acres come from old reports, old maps, GIS databases, and GIS maps.)



This part of Jarita Mesa got to this condition due to historic practices (grazing and overgrazing), fire and lack of fire, tree cutting and pushing; and inherent soil/climate conditions, e.g. not much rainfall and the soil types. (PR #20 & 21) (See the Cumulative Effects document, which is summarized here, for more details.)

Environmental Consequences

In **Alternative A** The reduction in the number of wild horses from about 70 to 14 or less will result in less grazing of the grass/forb/shrub ground cover, especially near the water sources and in the southern winter habitat. It will also result in

fewer hooves trampling the ground and disturbing the litter layer because fewer horses will be present. The additional grass/forbs and the reduction in trampling will allow stability or improvement in the soil condition. There will be less compaction, less soil being exposed, and more organic matter available to decompose into the ground. (Comment 1)

In **Alternative B** the effects will be identical to Alternative A.

In **Alternative C** The retention of the current number of wild horses (about 70), or fewer depending on yearly conditions and forecasts, will result in stability or improvement in the soil condition. Wild horse numbers will be adjusted periodically to be sure that forage utilization remains at 40% or less. This will result in less grazing of the grass/forb/shrub ground cover than at present, especially near the water sources and in the southern winter habitat. The additional grass/forbs, although less than in Alternative A, will allow stability or improvement in the soil condition. Less soil will be exposed. (Comment 1)

In **Alternative D** The increase in the number of wild horses (120 to 150) will result in a deterioration of the soil condition. Even if wild horse numbers are adjusted periodically to try to get forage utilization to 40% or less, this will probably not be possible. This will result in more grazing of the grass/forb/shrub ground cover than at present, especially near the water sources and in the southern winter habitat. It will also result in more hooves trampling the ground and disturbing the litter layer because more horses are present. The reduction in grass/forbs and the increase in trampling will compact more soil, expose more bare soil, and result in less organic matter being available to decompose into the ground. (Comment 1)

In **Alternative E** The reduction in the number of wild horses from about 70 to 14 or less and the increase in area managed for wild horses, from 23,879 acres to 54,866 acres, will result in less grazing of the grass/forb/shrub ground cover, especially near the water sources and in the southern winter habitat. It will also result in fewer hooves trampling the ground and disturbing the litter layer because fewer horses will be present. The additional grass/forbs and the reduction in trampling will allow stability or improvement in the soil condition. There will be less compaction, less soil being exposed, and more organic matter available to decompose into the ground. (Comment 1)

D. Water

Affected Environment:

Table 9

Watershed (5th code) (private land is not included)	Total Watershed Acres	Acres of Watershed in Herd Use Area (2001)	% of Watershed in Herd Use Area (2001		Acres of Watershed in Designated Territory	% of Watershed in Designated Territory
Tusas	131,742	38,265	29		18,060	14
Vallecitos	115,570	16,601	14		5,819	5

Table 10

Water Source Type	Designated Territory	Herd Use Area (2001)
Earthen Tank/Trick Tank - Permanent Water	30	38
Earthen Tank - Intermittent Water	3	6
Earthen Tank - Usually dry	1	7
Stream - Permanent or permanent pools	6	10
Stream - Intermittent	0	3

The Designated Territory is located on Jarita Mesa between Canon Plaza/Vallecitos and Las Tablas/Petaca going north past Kiowa Mountain. It occurs within the Tusas and Vallecitos Watersheds and is characterized by ephemeral, intermittent,

and perennial watercourses and ponds/trick tanks. (PR #141b)

> Perennial water within the Designated Territory includes 30 earthen tanks and trick tanks and parts of six streams. Parts or all of the following streams either flow year-long or contain pools year-long: Canada de los Apaches, Canada de la Jarita, Kiowa Canyon, Canada del Oso, Ritito Canyon, and La Jara Canyon.
>
> Intermittent water within the Designated Territory includes three earthen tanks.
>
> There is also one earthen tank that does not consistently hold water.

Herd Use Area (2001) is located on Jarita Mesa between Rio Tusas and Rio Vallecitos, going north past Kiowa Mountain. It occurs within the Tusas and Vallecitos Watersheds and is characterized by ephemeral, intermittent, and perennial watercourses and ponds/trick tanks. (PR #141b)

> Perennial water within the Herd Use Area (2001) includes 38 earthen tanks and trick tanks and parts of 10 streams. Parts or all of the following streams either flow year-long or contain pools year-long: Rio Tusas, Rio Vallecitos, Spring Creek, Canon de los Alamos, Canada de los Apaches, Canada de la Jarita, Kiowa Canyon, Canada del Oso, Ritito Canyon, and La Jara Canyon.
>
> Intermittent water within the Herd Use Area (2001) includes six earthen tanks and parts of three streams: Canon de la Paloma, Canada del Abrevadera, and a tributary of Canon de los Alamos.
>
> There are also seven trick tanks or earthen tanks that do not consistently hold water.

The earthen tanks are the most commonly used water sources for horses, cattle, and elk due to location (flat mesa top) and proximity to forage. The streams, which have some riparian vegetation, are used much less commonly. Benjamin and Kiowa Tanks held water quite well during the drought of 2000. The big tanks held water the longest.

Both the Rio Vallecitos and the Rio Tusas are listed on the State of New Mexico's 303(d) report as water quality impaired. The 303(d) report is the current assessment of streams that were initially assessed in the 305(b) report several years ago (PR #216):

> The Rio Vallecitos has impairment of a "high quality cold water fishery". It is only partially supported due to metals (mines in the area) and total organic carbon (natural or unknown sources). It is not supported due to temperature (removal of riparian vegetation) and turbidity (numerous sources - agriculture/range, mining, road runoff, road maintenance, recreation, removal of riparian vegetation, channelizing, and streambank modification/destabilization).
>
> The Rio Tusas has impairment of a "marginal cold water fishery" and a "warm water fishery". It is not supported due to stream bottom deposits (sand/silt filling rock interspaces). The probable causes are rangeland activities, removal of riparian vegetation, and streambank modification/destabilization.

Water quality on federal land is affected by erosion and sedimentation from roads, bare soil under sagebrush, and bare soil under P/J. Little or none of this is attributable to the wild horses.

The north end (higher elevations) of the Designated Territory and Herd Use Area (2001) gets an average of 18” of precipitation yearly, with 10” of this coming as rain. The south end gets an average of 11” with 8” of rain.

The condition of the area is due to inherent dry conditions, soil types, fire, and historic practices, including timber cutting, and tree pushing. (See the Cumulative Effects document, which is summarized here, for more details.)

Environmental Consequences:

In **Alternative A** The reduction in the number of wild horses from about 70 to 14 or less will result in less grazing of the grass/forb/shrub ground cover, especially near the water sources and in the southern winter habitat. It will also result in fewer hooves trampling the ground and disturbing the litter layer because fewer horses are present. The additional residual grass/forbs and the reduction in trampling will reduce the amount of bare soil that is prone to erosion. This will result in less sediment reaching water. This will have no new effects on the quality of water in the Rio Vallecitos or Rio Tusas. (Comment 1)

In **Alternative B** the effects will be identical to Alternative A.

In **Alternative C** The retention of the current number of wild horses (about 70) or fewer depending on yearly conditions and forecasts will result in stability or improvement in the soil condition. Wild horse numbers will be adjusted periodically to be sure that forage utilization remains at 40% or less. This will result in less grazing of the grass/forb/shrub ground cover than at present, especially near the water sources and in the southern winter habitat. The additional grass/forbs, although less than in Alternative A will reduce the amount of bare soil that is prone to erosion. This will result in less sediment reaching water. Due to the small amount of potential erosion attributable to wild horses, this will have minimal or no new effects on the quality of water in the Rio Vallecitos or Rio Tusas. (Comment 1)

In **Alternative D** The increase in the number of wild horses (120 to 150) will result in a deterioration of the soil condition (more bare soil). Even if wild horse numbers are adjusted periodically to try to get forage utilization to 40% or less, this will probably not be possible. This will result in more grazing of the grass/forb/shrub ground cover than at present, especially near the water sources and in the southern winter habitat. It will also result in more hooves trampling the ground and disturbing the litter layer (more horses present). The reduction in residual grass/forbs and the increase in trampling will increase the amount of bare soil that is prone to erosion. This will result in more sediment reaching water. Even so, due to the small amount of potential erosion attributable to wild horses, this will have minimal or no new effects on the quality of water in the Rio Vallecitos or Rio Tusas. (Comment 1)

In **Alternative E** The reduction in the number of wild horses from about 70 to 14 or less and the increase in area managed for wild horses, from 23,879 acres to 54,866 acres, will result in less grazing of the grass/forb/shrub ground cover, especially near the water sources and in the southern winter habitat. It will also result in fewer hooves trampling the ground and disturbing the litter layer because fewer horses will be present. The additional grass/forbs and the reduction in trampling will reduce the amount of bare soil that is prone to erosion. This will result in less sediment reaching water. Due to the small amount of potential erosion attributable to wild horses, this will have minimal or no new effects on the quality of water in the Rio Vallecitos or Rio Tusas. (Comment 1)

E. Wild Horses

Affected Environment:

Project Record 231 has a more detailed description of the wild horses in the area. The following is a summary of only the more pertinent data.

History of the wild horses and grazing in the Designated Territory and Herd Use Area (2001):

Based on information from local old timers and sparse Forest Service records, horses classified as "wild" were not known to occupy Jarita Mesa until the early 1950s. Prior to that time there were as many as 159 head of exempt (free use) horses utilizing the area, as well as 521 cattle. The "wild" horses of this time were those that were not claimed by anyone in the surrounding communities. In 1965 all "free use" permits were terminated and the horses that were left on the Forest and their offspring are those that were officially recognized as "wild" under the 1971 Act.

During the early 1950s there were between five and eight "wild" horses. From 1950 to 1971 the wild horse population only increased to 12 head. The primary reason for the small increase was that local residents periodically captured young horses for their own use. After the enactment of the 1971 Act, which afforded the wild horses with protection, the numbers increased to 47 by 1977. Aerial counts of the wild horses (adults plus young) began in 1975. Over the last 25 years aerial and ground counts have ranged from 6 to 57 wild horses.

There are probably some wild horses that stray across the boundary occasionally, but for the most part they seem to stay inside the Herd Use Area (2001) and do not even go onto private land in the valleys. Private land owners have not reported wild horses on their lands.

The local residents see some "rights" to the wild horses considering the history and the traditional culture of Jarita Mess.

Population (herd size):

The Herd Use Area (2001) presently supports a population estimated at 70 wild horses. Results of monitoring (aerial counts) over the last 26 years are from 8 to 57 wild horses seen, with an unknown number not visible (PR #44). Other past estimates and counts from the ground are from 6 to 27 (PR #44). These counts were often done under poor

conditions, including heavy tree canopies and rough terrain, so populations are believed to have been higher than what was seen.

Results of aerial counts over the last 26 years are (PR #44):

1975 - 13 wild horses	1987 - 13
1976 - 20	1993 - 24
1977 - 47	1994 - 8
1978 - 28	1998 - 47
1979 - 37	1999 - 47
1980 - 19	2000 - 46
1981 - 22	2001 - 57

None of these are considered to be private horses. There are no permitted horses in the allotment, and no ownership claims have been made on any of the horses.

There is concern by some members of the public that managing wild horse herds at low population levels will result in inbreeding and irreparable genetic damage. One authority says that 150 to 200 animals is the minimum needed to ensure long-term viability. Some people who commented on the analysis questioned whether there is any interchange of genes between different wild horse herds because most herds are quite isolated from each other (PR #16).

One factor that must be considered in this analysis is that we have never counted more than 60 wild horses. It appears that the population fluctuates roughly between 20 and 60 wild horses. The reason for this is not known, but could be one of many factors, including the lack of sufficient winter range, the lack of area to spread out for more forage, vague reports of people capturing foals for personal use, and people killing horses.

Studies elsewhere (PR #11aa) have found that about half of a wild horse herd is mares and that they have about 50% reproductive success each year. Based on previous wild horse population estimates here (12 in 1971 and 47 in 1977) this should be about right here also. With this assumption, the productivity under the alternatives should be about three new foals each year in Alternatives A, B, and E; about five to 17 in Alternative C; and about 30 to 37 in Alternative D.

Forage Condition/Competition:

(See discussion under Vegetation Section)

Herd Viability:

The key to the whole process of herd viability is to have a thriving natural ecological balance and avoid deterioration of the range. The appropriate management level is the optimum number or range of numbers of wild horses that results in this balance. The long-term viability of the herd depends on having "enough" wild horse to prevent interbreeding. This number depends on many variables, including herd/band dynamics, interaction with domestic (private) horses, forage availability, and numbers of other ungulates present.

The Act of 1971 does not specifically address management for genetic traits, e.g. Spanish Barb, but it says that management should be at the "least feasible level". We are not to introduce other horses into the territory, so we should not be changing characteristics that way. Managing for a single trait at a low population lever may make it difficult to keep diversity and herd viability. DNA testing to determine levels of inbreeding or ancestry is a good proposal but expensive. It is not required or even implied in the Act of 1971 and the Forest Service has no appropriation of money to do this, so it is not proposed and will not be done, unless private parties want to finance and do it. It is not improbable that many of the horses in the area have some Spanish blood in them, considering their location in Northern New Mexico.

When the wild horses are captured, there is some selective culling. Horses are removed that are obviously in poor health or have poor form or whose removal would improve the age or sex ratios based on the professional judgment of the personnel involved. There are no attempts made to alter the genetic makeup of the herd. Information about age and sex ratios can be gathered, non-scientifically during captures. This can give some ideas about herd dynamics, fecundity, and birth/death rates.

The Jarita Mesa herd appears to be viable and in an ecological balance, even though it has never been seen to be over 60 head in the last 30 years. Whether it is in a "thriving natural" ecological balance is another matter, since there is some overgrazing. No one has mentioned any genetic defects in the horses. The only poorly configured horse seen in the 2001 aerial survey was an old mare and that may have been a natural condition. The population has been relatively stable, averaging 25 to 35 adults. The horses have appeared to be healthy whenever seen. There are differences between the horses (color, size, etc.) so it must be assumed that there is genetic variability in the herd. In the summer of 2001, two foals were found and taken by local residents. These foals were in a very weakened condition and needed to be nursed back to health. This may be an indication of an upcoming crash in population. The drought conditions of the last years and subsequent poor forage conditions may finally be affecting the weaker members of the population.

We have been unable to find definitive, scientific research that tells precisely how many wild horses are necessary to eliminate inbreeding or the effects of inbreeding.

Heredity:

Heredity is only discussed because it came from public input and needs to be dealt with but it is beyond the scope of this analysis and will not affect the alternatives or decision. Based on the Act of 1971 and regulations, we manage a herd of wild horses not a specific type of horse or horse of specific ancestry.

It is thought and assumed by some members of the public that many of the horses have bloodlines that partially date back to the Spanish colonial period. The Jarita Mesa herd is considered unique by some members of the public because two of five horses receiving DNA testing had Spanish Barb indicators. Very little genetic testing of the wild horses has been done so information about their heredity is limited. There is a great deal of variability in the herd due to past breeding with the original Spanish horses, 19th century thoroughbreds, draft horses from the logging era, and others. Some of the wild horses may migrate to other ownerships where there are domestic horses and interbreed with them.

Capturing of Wild Horses:

Capturing of wild horses is addressed here to present the effects, not to build alternatives around or to choose a specific type or season of capture. This will be done in the future in the Excess Wild Horse Removal Document, which is done each time a capture is proposed.

A representative of the BLM forwarded some information about the effects of roundups on behavior and reproduction of feral horses in Idaho. No long-term effects or differences were found in the horses that were herded by helicopter, captured, and adopted; herded by helicopter but not captured; and not herded. Effects were studied for reproduction, resting, feeding, vigilance, traveling, and agonistic encounters (PR #28).

Capture methods employed to date include helicopter herding, "water traps," and riders pushing them into temporary traps. Water traps have not been used enough to show their effectiveness. Most of the wild horses caught to date have been by riders on horses pushing them into temporary traps. It is possible that horses, ATVs, and snowmobiles could be used depending on ground conditions.

The first gather was in the late 1970s or early 1980s, with 20 to 25 wild horses captured. In the 1980s, there was an attempt with a helicopter, which captured no horses. Due to the density of the vegetation and the rugged topography, horses easily avoid helicopter gather attempts. The last wild horse gathering was started in 1997 and continued through 1999. Only 15 wild horses were captured. (PR #11g) All were "adopted out," except one that was destroyed due to past injuries.

There are two makeshift traps used for capturing horses, in the very north and south ends of the Designated Territory and Herd Use Area (2001).

Criteria for wild horses to capture and adopt out are: First, poor physical condition (club foot, parrot mouth, jug head, and sway back) and second, sex/age ratio adjustments. These both depend on the professional judgment of the people involved at the capture site. We do not have age or sex ratios for the herd or bands now, but these can be judged during capture and appropriate changes made to keep the bands healthy. There are no attempts made to alter the genetic makeup of the herd.

The season of capture is controversial, but is not part of this decision. Appendix J has some more information about it.

There is the possibility of injury to wild horses during capture and transportation. It can be minimized by selecting the appropriate method and season of capture and having veterinary services available onsite or on-call.

Adoption:

The wild horses are captured, held, moved to Jicarilla, placed up for adoption, and monitored in the future for compliance with the private maintenance and adoption agreements. Having the Forest Service in control of the process meets local needs and allows for rapid adoption. No healthy wild horses that are captured will be destroyed. (PR #93a)

Monitoring:

The wild horse herd population has been monitored by aerial surveys and reports of horses seen during visits to the Territory for other projects. Informal monitoring of the wild horses for abnormalities that may indicate in-breeding has been done during other visits to the Territory. Monitoring of forage conditions is a part of range management for this allotment.

Environmental Consequences:

Under **Alternative A** there will be:

Not enough horses present to satisfy the public desire for a plentiful herd. (Issue 1)

A small herd that is vulnerable to total loss due to predation or environmental factors due to small numbers. (Comment 4)

Difficulty maintaining an appropriate age or sex ratio. (Comment 4)

Wild horses seldom impacting private land. The Designated Territory is adjacent to less private land than the Herd Use Area (2001). There are fewer horses present to wander onto private land. (Comment 6)

Capturing by various methods and various seasons as appropriate for yearly conditions and the number of horses present and the number to be captured. (Comment 3)

One or two major gathers initially to reduce the wild horse herd to 12 to 14 adults. Then periodic gathers as necessary to maintain the population, but with an estimate of only about three "excess" horses produced each year. (Comment 3)

An average of about three wild horses available for adoption to the public each year. Whether this is good or bad depends on the demand for wild horses by the public. (Issue 1)

The Designated Territory boundary will remain as it is with the wild horses managed within that area. Horses found outside the Designated Territory can be captured or moved back inside the Designated Territory. This will be done even though it is known that the wild horses are commonly are found south of it, especially in the winter when this is more suitable habitat. However, with a low number of wild horses there should be adequate forage within the Designated Territory so wandering should be less necessary. (Comment 6)

Monitoring to follow the wild horse populations. Monitoring of forage conditions to see if the ungulates are in balance with the ecosystem/vegetation. Monitoring for abnormalities that may indicate in-breeding. Monitoring for compliance with agreements for the adopted wild horses. (Comment 4)

Alternative B will have effects that are identical to Alternative A. Plus there will be two additional "water traps" for future gathers of wild horses, making captures mnore efficient.

Under **Alternative C** there will be:

Alternative C is a "baseline" because it is the current conditions.

There will not be enough horses present to satisfy the public desire for a plentiful herd, even though there are more than in Alternatives A, B, or E. (Issue 1)

The wild horse herd has been within this range of horses for the past decades naturally, without much gathering or human interference. Periodic gathers would help to maintain the appropriate number of horses for anticipated vegetation conditions.

The number of wild horses will be varied periodically between 20 and 70 to be in line with forage conditions and predicted weather conditions. These periodic adjustments may take a year or more to implement due to difficulties in capturing wild horses. Under poor conditions horses will be reduced to the minimum number and under good conditions, the maximum number. (Comment 1)

A relatively small herd that is vulnerable to total loss due to predation or environmental factors due to small numbers. (Comment 4)

It should be possible to maintain an appropriate age or sex ratio, especially with close to 70 wild horses from which to choose. (Comment 4)

Wild horses may impact private land. The Herd Use Area (2001) is adjacent to several tracts of private land. Depending on forage conditions and breeding pressure, the wild horses may be tempted to go onto this land to eat or breed with domestic horses. (Comment 6)

Capturing by various methods and various seasons as appropriate for yearly conditions and the number of horses present and the number to be captured. (Comment 3)

The number and size of the initial gathers depends on the number of wild horses desired at this time. If 70 are desired, then no gather is needed. If a lower number is desired then anywhere from one small gather to one or two major gathers will be needed. Then periodic gathers as necessary to maintain the population, with an estimate of only about five to 17 "excess" horses produced each year. (Comment 3)

An average of about five to 17 wild horses are available for adoption to the public each year. Whether this is good or bad depends on the demand for wild horses by the public. (Issue 1)

The Designated Territory boundary will remain as it is, but the wild horses will be managed in the Herd Use Area (2001). This will make a better habitat for the wild horses since it includes the lower elevations south of the Territory, which is needed for winter habitat. This will mean managing wild horses adjacent to more private land than in Alternatives A or B, which could mean more intrusions onto the private land for breeding and foraging. (Comment 6)

Monitoring to follow the wild horse populations. Monitoring of forage conditions to see if the ungulates are in balance with the ecosystem/vegetation. Monitoring for abnormalities that may indicate in-breeding. Monitoring for compliance with agreements for the adopted wild horses. (Comment 4)

Under **Alternative D** there will be:

The maximum number of wild horses that have been present in the Herd Use Area (2001) over the last 30 years is about 60 head. Therefore it is unlikely that the population will reach 120 to 150 wild horses, based on historic data. The following discussion is based on the assumption that we can get this high population of wild horses in the area.

There are enough horses present to satisfy the public desire for a plentiful herd. (Issue 1)

The number of wild horses will be varied between 120 and 150 to be in line with forage conditions and predicted weather conditions periodically. These periodic adjustments may take a year or more to implement due to difficulties in capturing wild horses. Under poor conditions horses will be reduced to the minimum number and under good conditions, the maximum number. (Comment 1)

It is probable that even adjusting down to 120 wild horses in a good year would be insufficient to get forage utilization down to the desired 40% level. There will probably be overgrazing of forage due to the large number of animals, leading to starvation and harming the elk and cattle who rely on this forage also. It may be possible that the number of cattle and/or elk would have to be reduced to allow this many wild horses to be present, or forage conditions would have to be improved

by specific treatments, or utilization standards would have to be relaxed (made greater than 40%). None of these is part of the alternatives, but they are mentioned in the cumulative effects section. (Comment 1)

A relatively large herd is less vulnerable to total loss due to predation or environmental factors than the small herds in the other alternatives. (Comment 4)

It should be possible to maintain an appropriate age or sex ratio, especially with over 120 wild horses to choose from. (Comment 4)

Wild horses may impact private land. The Herd Use Area (2001) is adjacent to several tracts of private land. Depending on forage conditions and breeding pressure, especially with this many horses, the wild horses may be tempted to go onto this land to eat or breed with domestic horses. (Comment 6)

Capturing by various methods and various seasons as appropriate for yearly conditions and the number of horses present and the number to be captured. (Comment 3)

There will be no capturing in the near future to allow the herd to build to 120 to 150 wild horses, unless ecosystem damage is being done. Then periodic gathers will be done as necessary to maintain the population, with an estimate of about 30 to 37 "excess" horses produced each year. (Comment 3)

No horses will be available for adoption by the public for several years, then there will be a relatively stable number of about an average of 30 to 37 per year. (Issue 1)

The Designated Territory boundary will remain as it is, but the wild horses will be managed in the Herd Use Area (2001). This will make a better habitat for the wild horses since it includes the lower elevations south of the Territory, which is needed for winter habitat. This will mean managing wild horses adjacent to more private land than in Alternatives A or B, which could mean more intrusions onto the private land for breeding and foraging. Since this alternative also has more wild horses than Alternatives C or E, there is an even greater chance of intrusions. The estimated forage utilization indicates that there may be a lack of forage on the Forest, so the horses may need to go onto private land to get the needed amounts. (Comment 6)

Monitoring to follow the wild horse populations. Monitoring of forage conditions to see if the ungulates are in balance with the ecosystem/vegetation. Monitoring for abnormalities that may indicate in-breeding. Monitoring for compliance with agreements for the adopted wild horses. (Comment 4)

In **Alternative E** there will be:

There are not enough horses present to satisfy the public desire for a plentiful herd. (Issue 1)

A small herd that is vulnerable to total loss due to predation or environmental factors due to small numbers. (Comment 4)

Difficulty maintaining an appropriate age or sex ratio. (Comment 4)

Wild horses possibly impacting private land. The Herd Use Area (2001) is adjacent to several tracts of private land. Depending on forage conditions and breeding pressure, the wild horses may be tempted to go onto this land to eat or breed with domestic horses, although with the small number of wild horses this is less likely than in Alternatives C and D. (Comment 6)

Capturing by various methods and various seasons as appropriate for yearly conditions and the number of horses present and the number to be captured. (Comment 3)

One or two major gathers intially to reduce the wild horse herd to 12 to 14 adults. Then periodic gathers as necessary to maintain the population, but with an estimate of only about three "excess" horses produced each year. (Comment 3)

An average of about three wild horses available for adoption to the public each year. Whether this is good or bad depends on the demand for wild horses by the public. (Issue 1)

The Designated Territory boundary will remain as it is, but the wild horses will be managed in the Herd Use Area (2001). This will make a better habitat for the wild horses since it includes the lower elevations south of the Territory, which is needed for winter habitat. This will mean managing wild horses adjacent to more private land than in Alternatives A or B, which could mean more intrusions onto the private land for breeding and foraging. (Comment 6)

Monitoring to follow the wild horse populations. Monitoring of forage conditions to see if the ungulates are in balance with the ecosystem/vegetation. Monitoring for abnormalities that may indicate in-breeding. Monitoring for compliance with agreements for the adopted wild horses. (Comment 4)

F. Wildlife

Affected Environment:

A Biological Assessment and Evaluation (BAE) has been written for the Designated Territory and Herd Use Area (2001). It contains more specific information about Threatened, Endangered and Sensitive (TE&S) species (PR #228).

Jarita Mesa provides habitat for a variety of wildlife species, both game and non-game species. Big-game species include: elk, mule deer, black bear, and mountain lion. Small-game and non-game species includes passerine birds, cottontail rabbits, ravens, crows, squirrel, chipmunk, mice, reptiles, gophers, and coyotes. Other wildlife species not commonly sighted in the area but are presumed to occupy this land as well include, gray fox, bobcats, badgers, great-horned owls, red-tailed hawks and American Kestrels. District and forest records were reviewed to develop a list of wildlife species and habitats, which occur or may occur within the Jarita Mesa.

The desired condition in the analysis area for terrestrial wildlife species is a diverse habitat capable of supporting viable populations of game and non-game species. For terrestrial wildlife, this would include various stages of vegetative development including: open areas, early-successional habitat with grasses and small forbs for foraging during summer and fall season; early to mid seral stages containing components of browse species for nutrition and palatability; and older type-succession for wildlife species that use snags and down logs for nesting, roosting, drumming, denning, perching, feeding and cover. Overall, the range condition needs to be improved so that all species do not have to compete for grasses and forbs in the area.

Wild Ungulates

Elk use a variety of habitats during the course of their lifetime. They have adapted well to secondary successional and climax vegetative stages. Essential components include thermal cover, which is a feature of habitat that provides elk protection against adverse weather, either extremely high or low temperatures. This type of habitat can be a timber stand with overstory for protection against winter cold or summer heat, or it could be a topographic feature, such as a small basin. Hiding and escape cover is another habitat feature that is important to all forms of wildlife. This type of habitat provides security from predators and man. A qualitative measure of escape cover in a forest, woodland, or shrub communities is sight distance. This is a function of tree stems per acre in older stands having high-density crown cover and a clean forest floor understory. Foraging habitat that does not qualify as cover includes natural areas such as talus, rock outcrops, rivers, streams, and lakes. Vegetative openings provide a greater variety of plant species, and are important to elk. Specialized habitats are those that are used during calving and wallowing, which are only used for brief periods.

Mule deer are not as common as they once were in the area, however within the past couple of years the deer population seems to be increasing. During the 1960's and 1970's, there were more deer than what currently exist in this area now. Deer have historically occupied these habitats for feeding, breeding, and hiding mostly during the spring, summer and fall months. Depending on winter conditions, heavy snowfall will move mule deer to lower elevation for feeding, hiding and thermal cover. Mild winters in this area may contribute to year round presence of mule deer.

Recreational hunting on Jarita Mesa has occurred for many years. Most big-game hunting was used as a means of subsistence for local families in past years. Recently several hunters have expressed support in wild horse reduction to increase deer and elk numbers. As always, deer and elk numbers have fluctuated within the area. Deer numbers were higher in years past, and elk numbers have increased in the past few years. Numbers of both elk and deer on the allotment may vary year to year due to behavioral habits, forage availability, hunter success, winter kill and/or drought conditions.

There are population estimates for Unit 51, which includes the Jarita Mesa allotment. The number of elk in Game Management Unit 51, based on year 2000 sightability index surveys, ranged from 500 to 887 in summer-winter months.

Based on annual surveys it seems as though elk in this part of the region are on an overall increase. The observed increase in elk numbers could alter migration patterns as available vegetative habitats change in successional stages. Another cause for concern with the increasing elk numbers is the consumption of early spring growth by elk before livestock enter the allotment. This occurs soon after the snows melt (May or early June). Depending on the climatic conditions, this could affect livestock turn-on dates and utilization for livestock.

Neo-tropical Migratory Birds (NTMB) (PR #216c)

Twenty-seven NTMB species are known to occur on the Carson National Forest. Habitat used by NTMB range widely from early to late successional stages, from prairie to forest. Aspen and riparian areas are important vegetative components for NTMB. The highest diversity and density of NTMB occurs in these key areas. The Jarita Mesa provides essential habitat components used by some NTMB. Neotropical migratory birds use the Jarita Mesa area for feeding, roosting, and nesting opportunities. Neotropical migratory birds observed on the Jarita Mesa include but are not limited to northern flicker, Stellar's jay, Western tanager, dark eyed junco, mountain chickadee, Western wood peewee, and American robin (Nelson, personal observations, 2001).

The information derived for this EA is an assessment in progress. As the assessment stands now, it is largely information from Partners in Flight and the Fish and Wildlife Service. This will serve as a guide in project and landscape assessments on the Carson National Forest. The focus of the assessment is on habitat and ecosystem processes, not species management. The entire document will be placed in the project record.

Background

The **Migratory Bird Conservation Act (16 U.S.C. 715-715d, 715e, 715f-715r)** of February 18, 1929, (45 Stat. 1222) established a Migratory Bird Conservation Commission to approve areas recommended by the Secretary of the Interior for acquisition with Migratory Bird Conservation Funds. The Secretary of the Interior is authorized to cooperate with local authorities in wildlife conservation and to conduct investigations, to publish documents related to North American birds, and to maintain and develop refuges. The Act provides for cooperation with States in enforcement. It established procedures for acquisition by purchase, rental, or gift of areas approved by the Commission for migratory birds.

Public Law 94-215, approved February 17, 1976, (90 Stat. 190) included in acquisition authority under the Act the purchase or rental of a partial interest in land or waters.

Public Law 95-552, approved October 30, 1978, (92 Stat. 2071) required that the Secretary of the Interior consult with the appropriate units of local government and with the Governor of the State concerned, or the appropriate State agency, before recommending an area for purchase or rental under the provisions of the Act.

Public Law 95-616, approved November 8, 1978, (92 Stat. 3110) authorized acquisition of areas for purposes other than inviolate sanctuary.

There are three vegetation types in the Designated Territory and the Herd Use Area (2001) that are discussed relative to migratory birds: Mixed conifers, ponderosa pine, and piñon/juniper. The discussion is located in the wildlife report in the project record. Only the more important details are listed here.

Mixed Conifer

Description, importance and conservation status:
Mixed Conifer type habitat is found roughly from 8000 to 10,000 feet in New Mexico. Impacts on habitat include: 1) recreation, 2) grazing, 3) fire and fire suppression, and 4) logging.

Williamson's Sapsucker - Population and/or Habitat Objectives:

- use logging, grazing and controlled burn practices that maintain high-quality, older growth ponderosa forest in the state
- maintain taller trees in ponderosa and mixed conifer forest
- maintain a standing aspen component when logging in forests, especially retaining dead, standing aspen

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Williamson's sapsucker, its habitat, or on key habitat components required for the Williamson's sapsucker.

Olive-sided Flycatcher - Population and/or Habitat Objectives:

- manage for openings within the forest
- keep snags, especially on the edges of forest openings; maintain trees which stand above the average height of the canopy

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the olive-sided flycatcher, its habitat, or on key habitat components required for the olive-sided flycatcher.

Dusky Flycatcher - Population and/or Habitat Objectives:

- maintain large shrub component with adjacent open areas within forests or in open conifer forest with shrubby oak understory.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the dusky flycatcher, its habitat, or on key habitat components required for the dusky flycatcher.

Red-breasted Nuthatch - Population and/or Habitat Objectives

- maintain woodpecker populations to provide adequate cavities for nesting

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the red-breasted nuthatch, its habitat, or on key habitat components required for the red-breasted nuthatch.

Ponderosa Pine

Description, importance and conservation status:
Elevations of this habitat extend from 6000 to 9000 feet. Impacts to this habitat type include 1) fire and fire suppression, 2) grazing, 3) logging, 4) development, and 5) recreation.

Flammulated Owl - Population and/or Habitat Objectives:

- maintain and recruit snags for nesting cavities, especially in deciduous trees
- maintain health of acorn woodpecker, northern flicker, and sapsucker populations

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the flammulated owl, its habitat, or on key habitat components required for the flammulated owl.

Pygmy Nuthatch - Population and/or Habitat Objectives:

- encourage selection cutting and thinning of mature ponderosa pines in areas where this species is present
- retain dead, unmarketable ponderosa pine trees standing in forests, especially snags with broken tops
- nest boxes placed in the interior of forests have shown beneficial results

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the pygmy nuthatch, its habitat, or on key habitat components required for the pygmy nuthatch.

Virginia's Warbler - Population and/or Habitat Objectives

- maintain high percentage of live understory, especially oaks on slopes; plan burns accordingly

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Virginia's warblers' nesting habitat. The wild horse grazing may have a negative impact on a few key habitat components required for the Virginia's warbler. At present time, there is not a high species diversity of shrubs.

Grace's Warbler - Population and/or Habitat Objectives:

- use logging, grazing and controlled burn practices which maintain high-quality older growth ponderosa forest with relatively open understory.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Grace's warbler, its habitat, or on key habitat components required for the Grace's warbler.

Piñon/Juniper

Description, importance and conservation status:

Impacts to this habitat include: 1) fuelwood cutting, especially older, mature trees 2) development, which contributes to habitat fragmentation, 3) mistletoe, 4) high intensity grazing, 5) fire suppression, 6) catastrophic fire, and 7) P-J conversion to grassland.

Gray Flycatcher - Population and/or Habitat Objectives:

- maintain 50-65% shrub cover over large areas in mature piñon/juniper forest

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Gray flycatcher, its habitat, or on key habitat components required for the Gray flycatcher.

Gray Vireo - Population and/or Habitat Objectives

- maintain 35-45% shrub cover over large areas in mid-age stands of juniper or pinyon/juniper

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the gray vireo, its habitat, or on key habitat components required for the gray vireo.

Pinyon Jay - Population and/or Habitat Objectives

- in areas of piñon/juniper where mature piñon is dominant, creating or maintaining 6 contiguous non-fragmented blocks of 500ac each within 8 square miles is an optimal condition

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the pinyon jay, its habitat, or on key habitat components required for the pinyon jay.

Management Indicator Species

Management Indicator Species (MIS) for the Carson National Forest were reviewed for this proposal and viability of MIS is not a concern as it relates to this project. This is based on the "white paper" written by biologists on the Carson National Forest in 2001 (PR #216b). The complete document for MIS is located in the project record for the wild horse EA. These MIS are as follows, in two categories (Non-listed MIS and Threatened, Endangered, and Sensitive MIS):

Non-listed Management Indicator Species

Plain Titmouse (*Baeolophus ridgwayi*):
Plain titmouse, also known as juniper titmouse, is a resident of deciduous or mixed woodlands, favoring oak and piñon/juniper (P/J). The titmouse usually nests in natural cavities or old woodpecker holes.

Management Activities or Natural Events That May Affect Habitat:

Negative: Mechanical removal of piñon and juniper trees and wildfire in P/J woodlands.

Positive: Encroachment of piñon and juniper trees into sagebrush and grasslands.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Plain Titmouse or it's habitat.

Rocky Mountain Elk (*Cervis elaphus canadensis*): General Forest
Rocky Mountain elk inhabit most forest types with good forage and cover. This ungulate utilizes a variety of habitat types, both geographically and during the course of their life. They appear to be extremely adaptable to both secondary successional and specific successional vegetation types. Certain types are of limited value to elk due to aspect, elevation, snow depth, water availability and/or vegetation components.

Management Activities or Natural Events That May Affect Habitat:

Negative: Primarily related to long-term cumulative effects of dense forest succession after heavy logging, long-term fire suppression, high road densities, and private development in winter range.

Positive: Timber harvest, thinning, prescribed fire and wildfire.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Rocky Mountain elk and it's habitat. Please read Alternatives A through E for further explanation.

Abert's Squirrel (*Sciurus aberti*): Ponderosa Pine

Abert's squirrel, also known as the tassel-eared squirrel, principally utilizes the ponderosa pine community type. The species depends on ponderosa pine forest types for basically all its life necessities and requires diversity of age classes and tree densities. Pine twigs, pine cones, pine seeds, pine bark, as well as, truffles, which are underground mushrooms known to form mycorrhizal associations with ponderosa pine are used by the Abert's squirrel (States 1985 and 1988).

Management Activities or Natural Events That May Affect Habitat:

Negative: Primarily related to long term cumulative effects of forest succession after heavy logging, long term fire suppression and some overstory removal prescriptions and wildfire.

Positive: Thinning, prescribed fire and wildfire.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Abert's squirrel or it's habitat.

Merriam's Turkey (*Meleagris gallopavo*): General Forest, early to late successional.
The Merriam's turkey has the widest distribution and is the most common subspecies of turkey. It is found in many mountainous areas of northern New Mexico. The bird utilizes ponderosa pine, a source of mast and its favorite roosting tree. The ponderosa pine is an essential component of its permanent habitat, while surface water is also a range requirement. Turkeys prefer to roost in tall mature or over-mature ponderosa pines with relatively open crowns and large horizontal branches starting at 6 to 9 meters (20-30 ft) from the ground. Trees with a diameter at breast height (DBH) of over 14 inches are used as roosts. These trees must have excellent protection from the wind, and must be located in sites with an open ridge or rocky ledge nearby to provide ease in entering and exiting the roost site. Hens normally nest within ½ mile radius of water.

Management Activities or Natural Events That May Affect Habitat:

Negative: Primarily related to long term cumulative effects of forest succession after heavy logging, long-term fire suppression, some overstory removal prescriptions, drought, and large wildfires.

Positive: Thinning, water developments, road closures, prescribed fire, and small wildfires.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Merriam's turkey or it's habitat.

Hairy Woodpecker (*Picoides villosus*): Snags/Downed logs
The hairy woodpecker is an indicator species for the presence of snags and down logs. The species is a forest generalist, keying in on available snags and live aspen. Nests are primarily in trees averaging 17-inch diameter and approximately 18 meters (60 feet) high. The hairy woodpecker forages on insects primarily on tree trunks averaging 43 centimeter (17 inch) DBH and greater than nine meters (30 feet) high. Down logs are also important to support insect populations for foraging.

Management Activities or Natural Events That May Affect Habitat:

Negative: Excessive gathering of dead and down fuelwood, reducing fuel loads by fire and wildfire across large areas.

Positive: Maintaining large trees for future down logs and snags, maintaining standing dead aspen and cottonwood trees and reducing open road densities in areas of highly accessible dead and down material, wildfires.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Hairy woodpecker or it's habitat.

Red Squirrel (*Tamiasciurus hudsonicus*): Mixed Conifer
Red squirrels are dependent on old and mature mixed conifer and spruce-fir forests, in areas with multiple structure and diversity. The more diverse the tree species are the more likely that cone crop production will exist to sustain red squirrel populations. They are predominantly found in areas with >60% canopy closure. In extensive areas of montane forest, this species may be found in ponderosa pine forests where transition occurs with mixed conifer. In smaller mountain ranges, it is restricted to stands of mixed conifer or spruce-fir forests. Red squirrels utilize large diameter trees for nests that are located on big branches near the trunk of the tree. They may also use mistletoe formations in Douglas fir.

Management Activities or Natural Events That May Affect Habitat:

Negative: Logging activities in mature stands, catastrophic wildfire.

Positive: Thinning smaller diameter trees to release and promote larger trees.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the red squirrel or it's habitat.

Threatened, Endangered and Sensitive Species (TE&S)

T&E species that will be addressed in this analysis and the Biological Assessment and Evaluation (BAE) (PR #224) will be: Bald eagle, peregrine falcon (delisted), Mexican spotted owl, Southwest willow flycatcher, black footed ferret, Canada lynx, mountain plover, and the whooping crane.

A list of Federally designated threatened, endangered, and proposed endangered species on the El Rito Ranger District, of the Carson National Forest was evaluated for the application to this allotment. Species were eliminated from evaluation and/or consideration based upon: lack of potential habitat; area not included in historic or current range of the species; or extirpation of the species without current feasibility for reintroduction. The following threatened, endangered, and proposed endangered and sensitive species were evaluated in this analysis

Federal Candidate and Region 3 Sensitive Species that could have potential habitat on the allotment have been evaluated: This includes the Northern goshawk and the Ripley's milk vetch.

Listed Threatened or Endangered Species

Bald Eagle (*Haliaeetus leucocephalus*):
Bald eagles require large trees or cliffs near water with abundant fish for nesting. Bald eagles are winter migrants in this area and conditions are not well suited for permanent water in the analysis area. They spend the winters along major rivers, reservoirs, or in areas where fish and/or carrion is available. For nesting eagles, fish are the primary food source. Waterfowl, rabbits, and carrion are important food items for transient and wintering eagles.

Management Activities or Natural Events That May Affect Habitat:

Negative: Recreation development near lakes; cutting down roost or nest trees; loss of riparian habitat; disturbance during nesting (e.g. boats, vehicles or individuals approaching too close to nests); random shootings; tribal collection, lead shot ingestion from waterfowl carcasses; and entanglement in fishing line and tackle. Certain pesticides and contaminants have been connected to reproductive impairment.

Positive: Continued protection and management of bald eagle habitat; continued population monitoring; designation of Wild and Scenic River corridors; and road closures near riparian and water sources.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the American bald eagle or it's habitat. The Wild Horse Territory or Herd Use Area (2001) do not provide any wintering or key habitat components that the bald eagle depends upon. Please see BAE for additional information on T&E species.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*):
The southwestern willow flycatcher (SWWF) is a small, riparian obligate, neotropical migratory bird. It primarily nests in dense riparian vegetation approximately 4 to 7 meters (13-23 ft) high, often with high percentage of canopy cover, along rivers, streams, irrigation ditches or other wetlands. Perennial flow, surface water or saturated soil is particularly necessary in or adjacent to nesting areas from April through September. Associated channels are wide and shallow, with a well-defined floodplain and a broad valley. Streams are slightly entrenched with deep meanders and riffle/pool bed features. Gradients are less than one percent. Headwaters are not suitable unless they are low in gradient. Quiet water dominates, as in backwaters, pools, beaver ponds, or non-riffle stream stretches. Beaver ponds may be of particular importance in areas where stream gradient is above one percent. In the case of wetlands and shorelines, water levels can fluctuate significantly. The Southwestern willow flycatcher does not have potential habitat in this area. Refer to BAE for additional information on T&E species.

Management Activities or Natural Events That May Affect Habitat:

Negative: Loss of riparian habitat through livestock grazing, water diversions; draining of wet willow meadow areas for urban development on private lands, flood control, road building, vegetation clearing, willow harvest and agricultural development; the presence of brown-headed cowbirds (nest parasitism).

Positive: In the short-term, maximize reproduction of flycatchers at a local level in an effort to expand numbers by addressing the local factors limiting reproduction such as, parasitism, predation and habitat limitations. In the long-term, recovery efforts should revolve around returning riverine processes and habitat regeneration of native vegetation (introduction of beaver, exclusion of livestock in potential and occupied habitat).

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Southwestern willow flycatcher or it's habitat. The Wild Horse Territory and Herd Use Area (2001) do not provide any key habitat components required for the Southwestern willow flycatcher.

Mexican Spotted Owl (Strix occidentalis lucida):
The vegetation communities occupied by the Mexican spotted owl (MSO) consist primarily of warm-temperate and cold-temperate forests, and, to a lesser extent, woodlands and riparian deciduous forest. The MSO uses a variety of forest types ranging from deciduous riparian woodlands, through piñon/juniper, pine-oak, mixed conifer and spruce-fir (USDI 1993). The mixed-conifer community appears to be most frequently used. The most common overstory trees associated with owls in these communities are white fir, Douglas-fir and ponderosa pine. Less common species are southwestern white pine, limber pine, aspen, and corkbark fir. The understory, providing important roosting sites for Mexican spotted owls, usually contains the same conifer species found in the overstory, plus Gambel oak, maples and New Mexico locust. The pine-oak community (not found on the Carson NF) is generally composed of ponderosa pine and Gambel oak. Other species of pine and oak may also provide this habitat type. Montane riparian canyon bottoms used by owls in the mixed-conifer zone may contain box elder, narrowleaf cottonwood, maples, and alders (USDI 1993).

Management Activities or Natural Events That May Affect Habitat:

Negative: Destruction and modification of habitat historic alteration of its habitat as the result of timber harvest (specifically the use of even-aged silvicultural practices), catastrophic wildfires, recreation, overgrazing, road development and mineral development; increased predation associated with habitat fragmentation; drought conditions.

Positive: Protect conditions and structures used by spotted owls where they exist and set other stands on a trajectory to grow into replacement nest habitat or to provide conditions for foraging and dispersal; use uneven-aged silvicultural prescriptions in mixed conifer; conduct prescribed fires to alleviate catastrophic wildfire, retain large diameter trees; designate wilderness or wild and scenic rivers.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Mexican spotted owl or it's potential habitat. The area consists mainly of pure stands of ponderosa pine, which is not considered typical suitable habitat for the Mexican spotted owl. Also, the area does not provide large amounts of dead and down logs for prey base habitat. There are no areas on the Jarita Mesa that are designated as critical habitat for the owl.

Mountain Plover (*Charadrius montanus*):
Despite its common name, the mountain plover is a lowland grassland species and not found in the mountains (Sager 1996). Mountain plover habitat consists of expansive, dry, short-grass prairie, such as high plains and semi-desert tablelands having a high proportion of bare ground (>30%) for nesting. Typical associated plants include: blue grama, buffalo grass, western wheat grass, fringed sage, winterfat, four-wing saltbush, rabbitbrush, snakeweed, cholla, prickly pear, yucca and, occasionally, juniper. In north-central and northwestern New Mexico, the species may be found nesting in open plains, mesas, or dry playas (lake bed flats) from April through July. The species does not require a free water source (Sager 1996). This T&E species has no key habitat components or known habitat conditions that would occur in the Jarita Mesa Area.

Management Activities or Natural Events That May Affect Habitat:

Negative: Conversion of grassland habitat, agricultural practices, management of domestic livestock, and decline of native herbivores are factors that likely have contributed to the mountain plover's decline. However, in New Mexico, there is little evidence of rangeland conversion to agricultural usage in historic mountain plover range (Sager 1996).

Positive: Maintenance of disturbed areas in mountain plover nesting habitat.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Mountain plover or it's habitat. The Wild Horse Territory and Herd Use Area (2001) do not provide any key habitat components required for the Mountain plover.

Black-footed Ferret (*Mustela nigripes*):
Historically, black-footed ferrets have been found in association with prairie dog towns in grassland plains surrounding mountain basins up to 3,150 meters (10,500 ft) in elevation. Prairie dogs serve as the primary food source, and provide the ferrets with abandoned burrows for shelter. This close association is well documented, and any active prairie dog town should be considered potential black-footed ferret habitat. This T&E species has no key habitat components or known habitat conditions that would occur in the Jarita Mesa Area.

Management Activities or Natural Events That May Affect Habitat:

Negative: Extermination of prairie dogs and prairie dog towns, habitat alterations and major plague outbreaks on the prairie dog populations (USDI 1988).

Positive: Protection of existing prairie dog towns

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the black-footed ferret or it's habitat. The Wild Horse Territory and Herd Use Area (2001) do not provide any key habitat components required for the black footed ferret.

Whooping Crane (*Grus americana*):
Whooping cranes select open expanses of shallow water in rivers, lakes, reservoirs, and native wetlands for nightly roosting. These sites include stock ponds, marshes, and flooded grain fields. Feeding sites include the same wetland types as those used during roosting. Within New Mexico, the whooping crane is associated with the agricultural fields and valley pastures, particularly where there is waste grain or sprouting crops. They feed on small grains like corn, wheat, and barley; green forage; aquatic plants; insects; crustaceans; and small vertebrate animals. The whooping crane typically roosts on sand bars within the Rio Grande floodplain (NMDGF 1988, 1997). This T&E species has no key habitat components or known habitat conditions that would occur in the Jarita Mesa Area.

Management Activities or Natural Events That May Affect Habitat:

Negative: Destruction of wintering and breeding habitat, collisions with power lines and fences, shooting, specimen collection and human disturbance (NMDGF 1998).

Positive: Protection of wintering and breeding habitat.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the whooping crane or it's habitat. The Wild Horse Territory and Herd Use Area (2001) do not provide any key habitat components required for the whooping crane.

Canada Lynx (*Lynx canadensis)*
In the contiguous United States, the distribution of the lynx is associated with the southern boreal forest, comprising of subalpine coniferous forest in the West and primarily mixed coniferous/deciduous forest in the East (Aubry et al. 1999), whereas in Canada and Alaska lynx inhabit the classical boreal forest ecosystem known as the taiga (McCord and Cardoza 1982). Within these general forest types, lynx are most likely to persist in areas that receive deep snow, for which the lynx is highly adapted (Ruggiero et al. 1999).

Management Activities or Natural Events That May Affect Habitat:

Negative: Timber management that reduces late successional forests; recreational activity, mainly motorized type disturbances; roads with moderate to heavy traffic flow that can contribute to road kill; backcountry roads and trails providing human access and possible accidental or intentional shooting (may also provide access for other predators/competitors of the lynx); livestock grazing effects on riparian habitat health and shrubland habitats; other human developments, such as oil/gas leasing, mineral development, utility corridors, reservoirs; accidental trapping; predator control.

Positive: Timber management to create snowshoe hare habitat, consequently increasing populations (prey); prescribed fire to create younger aged forest stands important toward increasing prey habitat conditions and reproduction.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Canada lynx or it's habitat. The Wild Horse Territory and Herd Use Area (2001) do not provide any key habitat components required for the Canada lynx.

Forest Service Listed Sensitive Species

Northern Goshawk (*Accipiter gentilis*):
The northern goshawk is a forest habitat generalist, utilizing a variety of forest types, forest ages, structural conditions, and successional stages. The principal forest types occupied by the goshawk in the Southwest are ponderosa pine, aspen, mixed-species and spruce-fir (Reynolds et al. 1992). Studies of nesting habitat show that goshawks nest in older-aged forests with variable tree species (Shuster 1980, Saunders 1982, Moore and Henny 1983 and Hall 1984). The most consistent vegetation characteristic of goshawk nest sites is a high percent of canopy closure. Stand structure ranges from dense canopy mixed conifer with fairly open understories to aspen groves with trees exhibiting heavy upper branching to provide nest platforms and protection. Because of its large body size and wingspan, the goshawk seldom uses young, dense forests (Fischer 1986).

Surveys for the northern goshawk have been conducted in areas of potential-suitable habitat (August 2001). No goshawks were detected at the time of the survey but areas of potential habitat were identified.

Management Activities or Natural Events That May Affect Habitat:

Negative: Primarily related to long-term cumulative effects of forest succession after heavy logging, creating dominantly dense mid-seral conditions; long-term fire suppression; some overstory removal prescriptions; wildfire. Effects are primarily to nest site availability and prey abundance.

Positive: Thinning and prescribed fire to open understory.

The current range conditions may have exceeded the grazing utilization guidelines for the Jarita Mesa due to a combination of use by wild and domestic ungulates as well as past drought conditions. Therefore, if goshawks are present, foraging areas may be affected by lack of cover for prey base needs.

Boreal Owl (*Aegolius funereus*):
The boreal owl is a small mammal specialist occupying relatively inaccessible tracts of high-elevation coniferous forest -- especially mature to old growth spruce/fir. The spruce/fir habitat is made up of Englemann spruce and subalpine fir with some interspersing of meadows. The boreal owl habitat shows no signs of logging and has trees of sufficient size to support cavities for nesting (approximately 19 in./50 cm DBH). One owl was observed in an area that burned 100 years earlier, but had islands of large trees (Stahlecker and Rawinski 1990).

Management Activities or Natural Events That May Affect Habitat:

Negative: Habitat loss due to logging of mature spruce-fir forests; ski area development; catastrophic wildfire.

Positive: Wilderness and roadless area designations in spruce/fir habitat type; road obliteration in spruce-fir precluding fuelwood gathering.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the boreal owl or it's habitat.

Ripley's Milkvetch (*Astragulus ripleyi*)
Ripley's milkvetch is a perennial, herbaceous plant found growing in sagebrush, piñon/juniper woodland and Gambel oak thickets in ponderosa pine forest at elevations of 2100 to 2500 meters (7,000-8,250 ft) above sea level. This is one of the few New Mexico milkvetches that is a desirable forage plant. Because of minimal or no toxic effects, deer, elk and all classes of livestock relish it. Because of its palatability, it is considered an indicator of overgrazing and grazing management practices.

Management Activities or Natural Events That May Affect Habitat:

Negative: Overgrazing, brush or noxious weed control projects.

Positive: Catastrophic wildfire; prescribed fire; brush removal and chaining in piñon/juniper woodlands.

The primary impacts of wild horses are directly related to grazing. Wild horse grazing will not have any effect on the Ripley's milkvetch and it's habitat. The combination of all ungulates on the wild horse territory and Herd Use Area (2001) contributes to overgrazing in key areas. All alternatives (combined livestock and wildlife grazing) may affect individual plants, but population viability on the forest is not a concern.

Environmental Consequences (In Addition To The Ones Listed Under Individual Species Above):

The effects of the alternatives on management indicator species and threatened, endangered, and sensitive species is listed in the discussion above. The effects described below are more general ones, primarily for elk, deer, and prey species.

Alternatives A and B

If the number of wild horses were reduced to 12 to 14 head in the Designated Territory, this would provide additional forage for elk and deer. Reduction in horses would allow elk numbers to increase as well as deer. Although the numbers of wildlife may increase this would still contribute to additional degradation of the range. There would be little improvement in cover and foraging areas for small birds and mammals. Regardless of the reduction in wild horses, cover for small animals, which provide a prey base for many raptor species would still be lacking.

Although several horses would be removed from the current herd, the proposed number may be too small to support the herd. A small population size may introduce inbreeding, or completely eliminate all horses if subjected to disease. A larger population of horses (40-50) is needed to sustain a healthy population of wild horses. A larger population as well as a larger area, such as the 2001 territory, is needed to support wild horse populations.

The current elk numbers on this allotment coupled with wild horse and livestock grazing has resulted in overuse of key areas. Elk and livestock compete for the same resource, but because of natural behavior, elk avoid using the same units where livestock occur. Once cattle move out of the pastures, elk will enter the previously occupied units by livestock to forage on the re-growth, which emerges after grass has been grazed. The distribution and rotation of livestock has the direct effect of also distributing and rotating elk use around the allotment. This reduces grazing concentrations around preferred foraging areas, which would allow some periods of rest for these areas. The current management is year round occupancy by wild horses and wild ungulates. The livestock are on a rotational schedule of four pastures during the summer months of May to October.

Range improvements, such as fences, stock tanks, and developed springs, would be maintained and would continue to provide a dependable water source for the permitted livestock under Alternatives A and B. Alternative B will develop fences and gates for two new water traps at existing ponds to capture and remove wild horses from the expanded territory. The maintenance of these improvements would not present any additional hazards to wildlife and/or recreationists. Salt would continue to be placed in designated areas to help with the distribution of livestock throughout the allotment. Trampling around these location sites would occur but would be limited in scale. Wildlife would benefit from the salting but would also contribute to the trampling effects.

These alternatives would provide for additional forage allocation for wildlife. The current livestock/wildlife ratio would continue at its current rate. Forage utilization on the allotment under these alternatives will be managed at 40% by weight of available left over forage by both wildlife and domestic livestock. Once the units within the allotment reach this percentage use, the remaining forage will contribute to wildlife needs.

Forest Service has control over livestock and wild horses but no control over the increasing elk numbers. Influence on regulating elk herd numbers is based on recommendations submitted to the New Mexico Game & Fish, through the Game and Fish Commission. This is a state responsibility and is dealt with under the States Comprehensive Plan.

Alternative C

There would be no change to the current grazing activity if approximately 70 wild horses would remain in this area. The poor range condition would remain the same or get worse if drought conditions continued. The current condition does not provide optimal foraging opportunities for various species of wildlife. Direct competition from wild horses does not benefit wildlife resources. Small birds and mammals require greater amounts of cover for nesting and foraging, therefore a reduced prey base for raptors, etc. Larger wild ungulates would continue to graze at the current rate, contributing to the degradation of the range. Elk and deer populations may remain the same depending on available grasses, forbs, and fluctuating weather conditions. Forage utilization in areas near water sources would continue at or about the same level with cattle and wild ungulate use. If wild horse population numbers were not allowed to exceed approximately 40-50 individuals the population would remain healthy and relieve some of the current grazing pressure by all ungulates. A population size of < 40 individuals is not recommended. As previously discussed, a small population size may promote lack of genetic diversity and not allow for recovery if a population crash should occur.

Alternative D

The overall purpose is to manage a wild horse herd without exceeding ecological constraints. Alternative D would continue to deteriorate the range condition and provide additional competition between livestock and wild ungulates. The proposed grazing capacity does not allow for 120 to 150 horses in combination with the current elk, deer, and livestock numbers. In cases such as this, excessive amounts of one particular species can lead to disease or starvation if conditions existed. Many species of wildlife would not benefit from the proposed stocking rate of wild horses. Wildlife populations may suffer from lack of resources due to overstocking of wild horses. The watershed and soils will be negatively affected by compaction and trampling through a combination of all ungulates. Thus, resulting in an unhealthy ecosystem.

Alternative E

Alternative E would allow the current range conditions to improve. Although several horses would be removed from the current herd, the proposed number may be too small to support the herd. A small population size may introduce inbreeding, or completely eliminate all horses if subjected to disease. To avoid inbreeding or population die offs it would be recommended to manage the wild horse herd at a larger number.

Alternative E would provide additional forage for elk and deer. Reduction in horses would allow elk numbers to increase as well as deer. Although the numbers of wildlife may increase this would still contribute to the degradation of the range. There would be little improvement in cover and foraging areas for small birds and mammals. Regardless of the reduction in wild horses, cover for small animals, which provide a prey base for many raptor species would still be lacking.

G. Air

Affected Environment:

The air quality over the Jarita Mesa Wild Designated Territory and Herd Use Area (2001) is good, the same as over the remainder of the District.

There are no major sources of air pollution in or near the Designated Territory or Herd Use Area (2001). There is only smoke from private homes and sawmills, dust from native surface roads, and occasional smoke from prescribed or wild fires. Most of these are minor and of very short duration (minutes to hours)

Environmental Effects:

Under **Alternative A** there will be only the existing factors at current levels.

Under **Alternative B** there will be only the existing factors at current levels.

Under **Alternative C** there will be only the existing factors at current levels.

Under **Alternative D** there will be only the existing factors at current levels.

Under **Alternative E** there will be only the existing factors at current levels.

H. Social Effects - Recreation

Affected Environment:

Recreation in the Designated Territory and Herd Use Area (2001) is dispersed and relatively light.

There is some hunting, grazing, fuelwood gathering, and dispersed camping/picnicking.

There is very light driving for sightseeing and to view the horses.

There is almost no piñon nut gathering.

Wild and Scenic Rivers are a consideration in this area due to the Rio Tusas and Rio Vallecitos, which are near the Designated Territory and Herd Use Area (2001). In 1997, Forest Service specialists conducted a study to determine which rivers on the El Rito Ranger District were eligible for designation as a "wild & scenic rivers" as part of the national Wild & Scenic Rivers system:

> The section of the Rio Vallecitos from the District boundary to Felipito Bridge is eligible due to its "scenic" value. However, this segment is upstream from the area that would be affected by the wild horse management. The portion of the river near and downstream from the Territory is not eligible for designation.
>
> The segment of the Rio Tusas (Tusas Box) from Spring Creek to Las Tablas is eligible due to its "scenic", "recreational", and "geologic" values. This piece of the river borders the Territories.

Environmental Effects:

Under **Alternative A** there will be the following effects:

There will be no change in the types of uses or levels, except for the possibility of increased hunting since there will be fewer horses and could possibly be more elk. There will be less sightseeing for horses, since there will be fewer of them. (Issue 1)

The Wild and Scenic River characteristics of the two river segments that have potential for designation will not be affected.

Under **Alternative B** there will be the following effects:

There will be no change in the types of uses or levels, except for the possibility of increased hunting since there will be fewer horses and could possibly be more elk. There will be less sightseeing for horses, since there will be fewer of them. (Issue 1)

The Wild and Scenic River characteristics of the two river segments that have potential for designation will not be affected.

Under **Alternative C** there will be the following effects:

There will be no change in the types of uses or levels. (Issue 1)

The Wild and Scenic River characteristics of the two river segments that have potential for designation will not be affected.

Under **Alternative D** there will be the following effects:

There will be no change in the types of most uses or levels, except for increased sightseeing for horses since there will be more horses. There may be less hunting or poorer hunting success since the increased number of horses may decrease the number of elk and deer. (Issue 1)

The Wild and Scenic River characteristics of the two river segments that have potential for designation will not be affected.

Under **Alternative E** there will be the following effects:

There will be no change in the types of uses or levels, except for the possibility of increased hunting since there will be fewer horses and could possibly be more elk. There will be less sightseeing for horses, since there will be fewer of them. (Issue 1)

The Wild and Scenic River characteristics of the two river segments that have potential for designation will not be affected.

I. Social Effects - Environmental Justice

Affected Environment:

Environmental justice is a factor in the analysis because the communities adjacent to the areas used by the wild horses are Hispanic communities with long traditions of using the local forest resources. Prior to 1968 the Forest was used for grazing domestic horses, so the local residents had a tradition of releasing and capturing horses as needed for agricultural purposes.

Environmental Effects:

Under **Alternative A** the local residents are not precluded from acquiring wild horses for domestic use. However, the horses must be acquired through adoption rather than capturing them in the Forest. The adoption process involves a nominal fee, but is open to anyone who wants a horse and has the facilities to care for it. The alternative has minimal impact on local lifestyles.

Alternative B has the same effects as Alternative A.

Alternative C has the same effects as Alternative A.

Alternative D has the same effects as Alternative A.

Alternative E has the same effects as Alternative A.

J. Social Effects - Wild Horses

Affected Environment:

Wild horse management is a very emotional issue with many people. Comments have been received from all over the United States, as well as locally. Most comments dealt with the number of wild horses present either directly of indirectly.

Wild horses are a part of the local social environment. Prior to 1965 the Forest was used for grazing domestic horses, so the local residents had a tradition of releasing and capturing horses as needed for agricultural purposes. Representative comments include:

> "Horses have been the main culture of native Hispanic residents surrounding the Jarita Mesa Wildhorse Territory." (PR #31)
>
> "People who had land were allowed a team of horses and a saddle horse; ... People would work their land, turn the horses loose to the forest, back and forth to work their lands." (PR #201)

Wild horses are also a national resource. Many members of the public want to adopt wild horses that are a part "the West". Others just want to know that our history is still alive in the form of herds of wild horses roaming freely through "the West". Representative comments include:

> "The survival and maintenance of the La Jarita Mustangs should take priority over the private interests of the cattle ranches in the area." (PR #all of the form letters)
>
> "We should be honoring these horses as part of our American history ..." (PR #75a)
>
> "They [wild horses] have been on this earth much longer than us and should be allowed to remain unharmed and free." (PR #66)
>
> "This land was put aside for these horses by our U.S. Government to keep a part of our history alive today for our children and our children's children." (PR #66)
>
> "(These types of horses are) very rare now and there is a bit of romance surrounding remnants of a past time." Every day we lose a little bit of what our heritage is ..." (PR #204a)

Environmental Effects:

Under **Alternative A** there will continue to be a wild horse herd in the Designated Territory, managed under the same terms as the 1982 Management Plan. There will only be 12 to 14 wild horses in the territory. This will be unacceptable to most of the people who commented about leaving the wild horses essentially untouched. Initially it will provide a large number of horses to the people who want to adopt them, but long-term there will be few horses available for adoption.

Under **Alternative B** there will continue to be a wild horse herd in the Designated Territory, managed under the same terms as the 1982 Management Plan. There will only be 12 to 14 wild horses in the territory. This will be unacceptable to most of the people who commented about leaving the wild horses essentially untouched. Initially it will provide a large number of horses to the people who want to adopt them, but long-term there will be few horses available for adoption.

Under **Alternative C** there will be approximately the current number of wild horses (20 to 70) present in the larger Herd Use Area (2001). This will still not be enough wild horses for some of the people who commented, but it will be approximately the wild horse herd that has been present since the Act was passed in 1971.

Under **Alternative D** there will be a much larger herd of wild horses in the larger Herd Use Area (2001). This will satisfy some people's desire for a "viable" wild horse herd. It is more wild horses than the local residents want.

Under **Alternative E** there will continue to be a wild horse herd in the Herd Use Area (2001). There will only be 12 to 14 wild horses in the territory. This will be unacceptable to most of the people who commented about leaving the wild horses essentially untouched. Initially it will provide a large number of horses to the people who want to adopt them, but long-term there will be few horses available for adoption.

K. Social Effects - Grazing and Economics

Affected Environment:

There is direct competition between the wild horses and cattle for forage (grass and forbs). Wild horses prefer grass, but will also eat some oak and pine bark from fallen trees.

Herd Use Area (2001) occupies all of three pastures in one grazing allotment (Jarita Mesa). Based on the initial rotation schedule for 2000, it has 516 permitted head of cattle (500 cow/calf units and 16 bulls) (518 cattle in 2001 (PR #215a)). Maton de Encino Pasture is grazed by 281 cattle for 26 days (May 1 to May 26). Kiowa Pasture is grazed by 281 cattle for 7 days (May 27 to June 2, then by 516 head for 70 days (June 3 to August 11). Jarita Pasture is grazed by 516 cattle for 81 days (August 12 to October 31). This gives 87,189 days of use by cow/calf units.

The Designated Territory occupies 69% of Kiowa Pasture and 43% of Jarita Pasture. This gives 56,059 days of use by cow/calf units.

(For more history of grazing see the Wild Horse section of this report).

Range forage utilization is not to exceed 40% in a year, based on the 1996 Forest Plan Amendment for spotted owls and goshawks. This may presently be exceeded in key areas, e.g. near water. (Note: This maximum utilization could be set higher or lower with appropriate analysis based on local conditions. Also, the maximum utilization only applies within appropriate habitats. Based on conditions on Jarita Mesa, the ID Team decided to use 40% as an across-the-board baseline for the Designated Territory and Herd Use Area (2001) for this analysis). A production/utilization study in the upper pasture (Kiowa) in August of 2000 showed about 28% utilization (ranging from 10 to 58%). This was in a dry year when the cows went on early. A similar study in 1979 (PR #9i) showed less than 5% utilization except near Benjamin Tank where use was about 50%.

Economic aspects of the wild horses include competition with cattle for forage (rate of weight gain), competition with elk for forage (huntable populations), and costs of capturing the horses.

It costs about $500 to $1,500 to capture a horse and we get a minimum of $125 for the "adoption" fee. With the assumptions from Section D. about wild horse reproduction this results in (PR #221):

Table 11

	Benefit/Cost Ratio	Present Net Value (PNV)	Population Growth per Year	Average Adoptable Horses per Year	Capture Cycle (Years)
Alternative A	0.22	(-$53,199)	3	3	3
Alternative B	0.21	(-$55,138)	3	3	3
Alternative C	0.22	(-$107,880)	5 to 17	11	3
Alternative D	0.23	(-$284,530)	30 to 37	33	2
Alternative E	0.21	(-%55,138)	3	3	3

The benefit/cost ratio for the next 50 years is estimated to be 0.21 with a present net value (PNV) of (-$55,138). This is the same as Alternative E. This is a B/C ratio similar to the other alternatives, but the second lowest PNV due to low costs and benefits. Even though this alternative avoided having to build a temporary trap for each gather, the high cost of building 2 permanent water traps came out at about the same cost. The costs for capture could go up but the receipt per adopted horse will remain constant at $125.

The benefit/cost ratio for the next 50 years is estimated to be 0.22 with a present net value (PNV) of (-$107,880). This is a B/C ratio similar to the other alternatives, but the second highest PNV due to costs and benefits that are quite high. Even though this alternative avoided having to build a temporary trap for each gather, the high cost of building 2 permanent water traps came out at about the same cost. The costs for capture could go up but the receipt per adopted horse will remain constant at $125.

The benefit/cost ratio for the next 50 years is estimated to be 0.23 with a present net value (PNV) of (-$284,530). This is a B/C ratio similar to the other alternatives, but the highest PNV due to the high costs and benefits. Even though this alternative avoided having to build a temporary trap for each gather, the high cost of building 2 permanent water traps came out at about the same cost. The costs for capture could go up but the receipt per adopted horse will remain constant at $125.

The benefit/cost ratio for the next 50 years is estimated to be 0.21 with a present net value (PNV) of (-$55,138). This is the same as Alternative B. This is a B/C ratio similar to the other alternatives, but the second lowest PNV due to low costs and benefits. Even though this alternative avoided having to build a temporary trap for each gather, the high cost of building 2 permanent water traps came out at about the same cost. The costs for capture could go up but the receipt per adopted horse will remain constant at $125.

Environmental Effects:

Under **Alternative A** there will be:

There will be continued grazing of livestock at present levels. There will be no loss of money to the Forest Service or the permittees. No permittees will be forced out of the livestock business by competition for forage from the wild horses. (Comment 1)

Average forage utilization in an average year should be about 39%, which is less than the maximum 40%. (Comment 1) Based on the above calculations, this forage could have supported 8 more cow/calf units during the year to get to 40% utilization.

There will be fewer wild horses, so there will be more forage available for the cattle. (Comment 1)

Economic effects include:

Hunting opportunities may increase a very small amount, if the elk population increases as the wild horse population is reduced.

Rate-of-gain for the grazed cattle may increase slightly with the increased available forage and decreased competition with wild horses. (Comment 1)

The benefit/cost ratio for the next 50 years is estimated to be 0.22 with a present net value (PNV) of (-$53,199). This is a B/C ratio similar to the other alternatives, but the lowest PNV due to the least costs and benefits. Even though this alternative avoided the high cost of building 2 permanent water traps, it had the periodic costs of constructing temporary traps, which came out at about the same cost. The costs for capture could go up but the receipt per adopted horse will remain constant at $125.

Under **Alternative B** there will be:

There will be continued grazing of livestock at present levels. There will be no loss of money to the Forest Service or the permittees. No permittees will be forced out of the livestock business by competition for forage from the wild horses. (Comment 1)

Average forage utilization in an average year should be about 39%, which is less than the maximum 40%. (Comment 1) Based on the above calculations, this forage could have supported 8 more cow/calf units during the year to get to 40% utilization.

There will be fewer wild horses, so there will be more forage available for the cattle. (Comment 1)

Economic effects include:

Hunting opportunities may increase a very small amount, if the elk population increases as the wild horse population is reduced.

Rate-of-gain for the grazed cattle may increase slightly with the increased available forage and decreased competition with wild horses. (Comment 1)

The benefit/cost ratio for the next 50 years is estimated to be 0.21 with a present net value (PNV) of (-$55,138). This is the same as Alternative E. This is a B/C ratio similar to the other alternatives, but the second lowest PNV due to low costs and benefits. Even though this alternative avoided having to build a temporary trap for each gather, the high cost of building 2 permanent water traps came out at about the same cost. The costs for capture could go up but the receipt per adopted horse will remain constant at $125.

Under **Alternative C** there will be:

There will be continued grazing of livestock at present levels. There will be no loss of money to the Forest Service or the permittees. No permittees will be forced out of the livestock business by competition for forage from the wild horses. (Comment 1)

Average forage utilization in an average year will be about 38 to 44%, which could be more than the desired 40%. Depending on the yearly conditions, this is the point at which numbers of wild horses need to be adjusted to stay below 40% utilization. This range of horses is adequate to allow adjustments downward that will allow us to meet 40%. (Comment 1) Based on the above calculations, this forage could have supported 26 more cow/calf units during the year at the 38% utilization level or would have required removing 53 cow/calf units at the 44% utilization level to get to 40% utilization.

There will be the current number of wild horses or fewer, so there can be adequate forage available for the cattle if the wild horse numbers are adjusted properly. (Comment 1)

Economic effects include:

Hunting opportunities will remain at about the current level, since the wild horse populations will be adjusted to retain the current or a slightly lower level of forage utilization pressure. Therefore, the elk population should remain at about the current level.

Rate-of-gain for the grazed cattle should remain at about the current level, since forage availability under the desired range of wild horses should remain at about the current level. (Comment 1)

The benefit/cost ratio for the next 50 years is estimated to be 0.22 with a present net value (PNV) of (-$107,880). This is a B/C ratio similar to the other alternatives, but the second highest PNV due to costs and benefits that are quite high. Even though this alternative avoided having to build a temporary trap for each gather, the high cost of building 2 permanent water traps came out at about the same cost. The costs for capture could go up but the receipt per adopted horse will remain constant at $125.

Under **Alternative D** there will be:

Under this alternative we are assuming that there will be continued grazing of livestock at present levels (516 cow/calf units). There will be no loss of money to the Forest Service or the permittees from reductions in cattle numbers, however as mentioned in the next paragraphs, grazing will be much in excess of the allowable 40% utilization. Therefore, forage for cattle will be in shorter supply than in Alternatives A, B, C, or E. It is possible that the lower amount of available forage and associated problems (e.g. lower rate-of-gain) may cause some permittees to be forced out of the livestock business by competition for forage from the wild horses. Based on the above calculations, this could be up to 178 cattle removed from permits. (Comment 1)

(To maintain acceptable forage conditions under this alternative it would be necessary to reduce the number of cattle grazed in the Herd Use Area (2001). This is not proposed in this analysis. It will be mentioned in the Cumulative Effects Section as a possible future action.)

Average forage utilization in an average year will be about 50 to 54%, which is more than the desired 40%. Depending on the yearly conditions, this is the point at which numbers of wild horses need to be adjusted to attempt to stay below 40% utilization. This range of horses is too large to allow adjustments downward that will allow us to meet 40% unless it is a highly productive forage year. Under average conditions, this range of wild horses will overgraze the forage in the Herd Use Area (2001). (Comment 1) Based on the above calculations, this forage would have required removing 132 cow/calf units at the 50% utilization level or 178 cow/calf units at the 54% utilization level to get to 40% utilization.

Economic effects include:

Hunting opportunities will be reduced from the current level, since the wild horse population will be greatly increased and it can be assumed that the elk population will go down at least some due to lack of available forage.

Rate-of-gain for the grazed cattle is assumed to be less than the current level, since forage availability under the desired range of wild horses will be much lower than currently present. (Comment 1)

The benefit/cost ratio for the next 50 years is estimated to be 0.23 with a present net value (PNV) of (-$284,530). This is a B/C ratio similar to the other alternatives, but the highest PNV due to the high costs and benefits. Even though this alternative avoided having to build a temporary trap for each gather, the high cost of building 2 permanent water traps came out at about the same cost. The costs for capture could go up but the receipt per adopted horse will remain constant at $125.

Under **Alternative E** there will be:

There will be continued grazing of livestock at present levels. There will be no loss of money to the Forest Service or the permittees. No permittees will be forced out of the livestock business by competition for forage from the wild horses. (Comment 1)

Average forage utilization in an average year should be about 37%, which is less than the maximum 40%. (Comment 1) Based on the above calculations, this forage could have supported 36 more cow/calf units during the year to get to 40% utilization.

There will be fewer wild horses, so there will be more forage available for the cattle. (Comment 1)

Economic effects include:

Hunting opportunities may increase a very small amount, if the elk population increases as the wild horse population is reduced.

Rate-of-gain for the grazed cattle may increase slightly with the increased available forage and decreased competition with wild horses. (Comment 1)

The benefit/cost ratio for the next 50 years is estimated to be 0.21 with a present net value (PNV) of (-$55,138). This is the same as Alternative B. This is a B/C ratio similar to the other alternatives, but the second lowest PNV due to low costs and benefits. Even though this alternative avoided having to build a temporary trap for each gather, the high cost of building 2 permanent water traps came out at about the same cost. The costs for capture could go up but the receipt per adopted horse will remain constant at $125.

L. Heritage Resources

Affected Environment:

Jarita Mesa contains prehistoric heritage resource sites. Surveys have been conducted for the wild horse grazing (PR #71) and for the construction of the "water traps" (PR #223, 224, and 225).

Environmental Effects:

Under **Alternative A** there will be no effects to heritage resources.

Under **Alternative B** there will be no effects to heritage resources.

Under **Alternative C** there will be no effects to heritage resources.

Under **Alternative D** there will be no effects to heritage resources.

Under **Alternative E** there will be no effects to heritage resources.

M. Cumulative Effects

This is a summary of the analysis of cumulative effects. The entire analysis is found in the Project Record in item number 232.

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VEGETATION

Overstory: This includes all tree species.

Past Impacts: In the 1980s there was extensive logging (about 3,392 acres), primarily in the ponderosa pine on the top of Jarita Mesa. This included the following timber sales and vegetation management plans: Benji, Burma, Big Rock, Little Rock, Lonesome, Jarita, Mill, Plaza, Rio, and Spring Timber Sales. In about 1970, about 818 acres of piñon/juniper (P/J) was tree-crushed to convert it to grass/forbs. This is about 14% of the ponderosa pine and none of the P/J in the Designated Territory and about 6% of the ponderosa pine and about 1% of the P/J in the Herd Use Area (2001). The 2,500 acres of fires in the past 20 years have had very little impact on the overstory. They have encouraged tree regeneration to some extent. This made transient range that decreases in density and productivity as trees grow and shade it more. It often returns to pre-cutting condition in 10 to 15 years.

Present Impacts (current year): During the past year there has been only the minor thinning of about 100 acres for small timber products.

Future Impacts: There will be a continuation of timber sales and personal-use forest product sales averaging about 100 acres per year. There are projected to be 100 to 200 acres per year of precommercial thinning in conifer stands resulting in less dense trees and more grass/forb forage on the ground. Burning will continue at the rate of up to 1,500 acres per year, mainly west of Petaca on Jarita Mesa - basically north and east of Forest

Road (FR) 45, south of FR 110, and south of FR 713. It will have little effect on the overstory. There will be no differences in treatments between the alternatives. There are projected to be about 300 acres of treatments to improve the watershed on the Mesa and occasional small vegetation treatments for wildlife habitat. Normal tree growth will make tree crowns larger, thereby making stand canopy closure denser at a slow rate. Most of the thinning, sales, and burning will occur in the Designated Territory and north half of the Herd Use Area (2001). This will continue to make transient range in a series of stands, each decreasing in density and volume as trees grow and shade it more. It often returns to pre-cutting condition in 10 to 15 years.

If these were left totally untreated, it is estimated that 10-20% of the sagebrush/grassland stands would become piñon/juniper stands and that 20-40% of grassland stands would become sagebrush stands.

What does this mean for the overstory?: The combination of sales and thinning that make tree canopies more open and of normal tree growth that makes them more closed will lead to a more diverse mixture of stand conditions throughout the areas.

Ground Flora: The coverage of grass/forbs/shrubs varies by site naturally and due to management. Ground flora is naturally sparse on hot dry sites and under dense tree canopy cover. It is denser under thinner tree canopies, where there is adequate ground moisture, and in wet bottoms. Management increases ground flora where it opens the tree canopy, but decreases ground flora where there is overgrazing.

Past Impacts: In the 1980s there was extensive logging (about 3,392 acres), primarily in the ponderosa pine on the top of Jarita Mesa. In about 1970 about 818 acres of piñon/juniper (P/J) was tree-crushed to convert it to grass/forbs. This is about 14% of the ponderosa pine and none of the P/J in the Designated Territory and about 6% of the ponderosa pine and about 1% of the P/J in the Herd Use Area (2001). The 2,500 acres of fires in the past 20 years have helped to increase the amount of grass/forbs/shrubs in the understory. They have encouraged tree regeneration to some extent.

Cattle have grazed the area at about the current rates for decades. Wild horses have been present at populations of 12 to 70 animals over the last three decades.

These treatments would have increased the amount of forage available to ungulates over what was present when the current management plan was written. This may allow more than the recommended 12 to 14 wild horses to exist out there with adequate forage.

Present Impacts (current year): The past few years have been very dry, thereby decreasing the amount of available forage. This can automatically lead to overgrazing if animal numbers are not changed. The minor amount of thinning during the last year has opened the overall tree canopy a very minor amount.

Cattle continue to graze the area. Wild horses are present at a population of about 70.

Future Impacts: There will be a continuation of timber sales and personal-use forest product sales averaging about 100 acres per year. There are projected to be 100 to 200 acres per year of precommercial thinning in conifer stands resulting in less dense trees and more grass/forb forage on the ground. Burning will continue at the rate of up to 1,500 acres per year, mainly west of Petaca on Jarita Mesa - basically north and east of FR 45, south FR 110, and south of FR 713. There are projected to be about 300 acres of treatments to improve the watershed on the Mesa and occasional small vegetation treatments for wildlife habitat. Normal tree growth will make tree crowns larger, thereby making stand canopy closure denser at a slow rate. Most of the thinning, sales, and burning will occur in the Designated Territory and north half of the Herd Use Area (2001). There will continue to be very few, small natural fires in the piñon/juniper type.

If these were left totally untreated, it is estimated that 10-20% of the sagebrush/grassland stands would become piñon/juniper stands and that 20-40% of grassland stands would become sagebrush stands.

Cattle will continue to graze the area at a population of about 516 for varying periods during the year. Wild horses will continue to be present, in varying numbers and different areas depending on the alternative chosen.

What does this mean for Ground Flora?: All of the treatments that open the tree canopy or reduce woody debris on the ground will increase the amount of grass/forb/shrubs. This is due to increased light reaching the ground or minerals (nitrogen) released by burning. These treatments will not vary between alternatives.

Cattle grazing will not be varied by alternative, so the amount of forage used by them will be constant. The five alternatives will vary the number of wild horses present. Adjustments of numbers of wild horses within alternatives will be done to attempt to utilize less than 40% of the available forage. This will be based on forage conditions and projected weather conditions. It will not be possible to precisely adjust the numbers even annually, but best estimates for periods of 2 to 4 years will be used. Alternatives A, B, and D should have very little overgrazing, except near water sources. Alternative C will be similar to present condition. Alternative D will inevitably lead to overgrazing due to the large number of wild horses compared to present numbers.

SOIL AND WATERSHED CONDITION

Past Impacts: In the 1980s there was extensive logging (about 3,392 acres), primarily in the ponderosa pine on the top of Jarita Mesa. In about 1969 about 818 acres of piñon/juniper (P/J) was tree-crushed to convert it to grass/forbs. This is about 14% of the ponderosa pine and none of the P/J in the Designated Territory and about 6% of the ponderosa pine and about 1% of the P/J in the Herd Use Area (2001). The 2,500 acres of fires in the past 20 years have helped to increase the amount of grass/forbs/shrubs in the understory. They have encouraged tree regeneration to some extent.

Cattle have grazed the area at about the current rates for decades. Wild horses have been present at populations of 12 to 60 animals over the last three decades.

There was some road construction during the timber sales, but most of the temporary roads have been closed and are not driven now.

Present Impacts (current year): The past few years have been very dry, thereby decreasing the amount of ground flora. This can automatically lead to overgrazing if animal numbers are not changed. The minor amount of thinning during the last year has opened the tree canopy a very minor amount.

Cattle continue to graze the area. Wild horses are present at a population of about 70.

Future Impacts: There will be a continuation of timber sales and personal-use forest product sales averaging about 100 acres per year. There are projected to be 100 to 200 acres per year of precommercial thinning in conifer stands resulting in less dense trees and less bare soil (more grass/forb forage on the ground). Burning will continue at the rate of up to 1,500 acres per year, mainly west of Petaca on Jarita Mesa - basically north and east of FR 45, south FR 110, and south of FR 713. There are projected to be about 300 acres of treatments to improve the watershed on the Mesa and occasional small vegetation treatments for wildlife habitat. Normal tree growth will make tree crowns larger, thereby making stand canopy closure denser at a slow rate. Most of the thinning, sales, and burning will occur in the Designated Territory and north half of the Herd Use Area (2001). There will continue to be very few, small natural fires in the piñon/juniper type.

If these were left totally untreated, it is estimated that 10-20% of the sagebrush/grassland stands would become piñon/juniper stands and that 20-40% of grassland stands would become sagebrush stands.

Cattle will continue to graze the area at a population of about 516 for varying periods during the year. Wild horses will continue to be present, in varying numbers and different areas depending on the alternative chosen.

What does this mean for Soil and Watershed?: All of the treatments that open the tree canopy or reduce woody debris on the ground will increase the amount of grass/forb/shrubs and thereby decrease bare soil. This is due to increased light reaching the ground or minerals (nitrogen) released by burning. Burning will leave more soil initially, but if there is adequate precipitation, vegetation will soon cover these sites. The burning will be done on relatively flat sites so there is not great increased erosion potential. These treatments will not vary between alternatives.

Cattle grazing will not be varied by alternative, so the amount of forage used by them will be constant. The five alternatives will vary the number of wild horses present. Adjustments of numbers of wild horses within alternatives will be done to attempt to utilize less than 40% of the available forage. This will be based on forage

conditions and projected weather conditions. It will not be possible to precisely adjust the numbers even annually, but best estimates for periods of 2 to 4 years will be used. Alternatives A, B, and E should have very little overgrazing, so there should be decreased bare soil and healthier ground flora, except near water sources. Alternative C will be similar to present condition. Alternative D will inevitably lead to overgrazing and increased amounts of bare soil and decreased vigor in the ground flora due to the large number of wild horses compared to current numbers.

WATER CONDITION

Past Impacts: In the 1980s there was extensive logging (about 3,392 acres), primarily in the ponderosa pine on the top of Jarita Mesa. In about 1969 about 818 acres of piñon/juniper (P/J) was tree-crushed to convert it to grass/forbs. This is about 14% of the ponderosa pine and none of the P/J in the Designated Territory and about 6% of the ponderosa pine and about 1% of the P/J in the Herd Use Area (2001). The 2,500 acres of fires in the past 20 years have helped to increase the amount of grass/forbs/shrubs in the understory. They have encouraged tree regeneration to some extent.

There has been a continuous process of water source construction, and there are presently 40 water sources in the Designated Territory and 64 in the Herd Use Area (2001).

Cattle have grazed the area at about the current rates for decades. Wild horses have been present at populations of 12 to 70 animals over the last three decades.

There was some road construction during the timber sales, but most of the temporary roads have been closed and are not driven now.

Present Impacts (current year): The past few years have been very dry, thereby decreasing the amount of ground flora. This can automatically lead to overgrazing if animal numbers are not changed. The minor amount of thinning during the last year has opened the tree canopy a very minor amount.

No new water sources were constructed and none were maintained or fixed.

Cattle continue to graze the area. Wild horses are present at a population of about 70.

Future Impacts: There will be a continuation of timber sales and personal-use forest product sales averaging about 100 acres per year. There are projected to be 100 to 200 acres per year of precommercial thinning in conifer stands resulting in less dense trees and less bare soil (more grass/forb forage on the ground). Burning will continue at the rate of up to 1,500 acres per year, mainly west of Petaca on Jarita Mesa - basically north and east of FR 45, south FR 110, and south of FR 713. There are projected to be about 300 acres of treatments to improve the watershed on the Mesa and occasional small vegetation treatments for wildlife habitat. Normal tree growth will make tree crowns larger, thereby making stand canopy closure denser at a slow rate. Most of the thinning, sales, and burning will occur in the Designated Territory and north half of the Herd Use Area (2001). There will continue to be very few, small natural fires in the piñon/juniper type.

It is projected that there will be the construction of five new water sources over the next 10 years for the cattle. The trick tanks that currently do not function correctly will be fixed

If these were left totally untreated, it is estimated that 10 to 20% of the sagebrush/grassland stands would become piñon/juniper stands and that 20 to 40% of grassland stands would become sagebrush stands.

Cattle will continue to graze the area at a population of about 516 for varying periods during the year. Wild horses will continue to be present, in varying numbers and different areas depending on the alternative chosen.

What does this mean for Water?: All of the treatments that open the tree canopy or reduce woody debris on the ground will increase the amount of grass/forb/shrubs and thereby decrease bare soil lessening erosion potential. Burning will leave more soil initially, but if there is adequate precipitation, vegetation will soon cover these sites. The burning will be done on relatively flat sites so there is not great increased erosion potential. These treatments will not vary between alternatives.

Cattle grazing will not be varied by alternative, so the amount of forage used by them will be constant. The five alternatives will vary the number of wild horses present. Adjustments of numbers of wild horses within alternatives will be done to attempt to utilize less than 40% of the available forage. This will be based on forage conditions and projected weather conditions. It will not be possible to precisely adjust the numbers even annually, but best estimates for periods of 2 to 4 years will be used. Alternatives A, B, and E should have very little overgrazing so decreased bare soil and healthier ground flora, except near water sources. Alternative C will be similar to present condition. Alternative D will inevitably lead to overgrazing and increased amounts of bare soil and decreased vigor in the ground flora, therefore more potential for soil erosion/sedimentation due to the large number of wild horses in the area compared to current numbers.

More earthen tanks means that more silt is captured before it reaches streams thereby increasing water quality, although to a very small degree.

WILD HORSES

Past Impacts: The wild horse herd had a population of about 10 to 12 when the Act of 1971 was passed. Since then natural growth and death cycles have maintained the herd between about 10 and 70 animals. Captures have been attempted but have had little success and, therefore, little impact on the wild horse population. The management plan requires the wild horses to be managed within the Designated Territory, but due to increased numbers and the need for less snow in the winter habitat, they commonly have gone south of the Designated Territory. They are occasionally reported to be in other nearby locations.

Present Impacts (current year): The current population is estimated at about 70 wild horses. There were no captures in last year. The current Management Plan calls for 12 to 14 wild horses. The grazing by the cattle, elk, and wild horses is too much for the existing forage.

The wild horses are found throughout the Herd Use Area (2001), although most of them are in the Designated Territory.

Future Impacts: The population of wild horses will be varied within the ranges specified in the chosen alternative to be in line with forage conditions and predicted weather conditions, periodically. These periodic adjustments may take a year or more to accomplish due to difficulties in capturing wild horses. Under poor conditions, horses will be reduced to the minimum number of the desired range and under good conditions, the maximum number. Each alternative will attempt to maintain a different level of wild horses: Alternatives A, B, and E at 12 to 14, Alternative C at 20 to 70, and Alternative D at 120 to 150.

Under Alternatives A and B the wild horses will be managed within the Designated Territory. The small number of horses should make this possible. The larger number of horses in Alternatives C and D will require the larger Herd Use Area (2001) to find enough forage. This should be enough forage for Alternative C, but still not enough area or forage for Alternative D. Alternative E will have 12 to 14 wild horses managed in the larger Herd Use Area (2001) so there should be abundant area and forage for them.

What does this mean for Wild Horses?: The wild horse populations will vary greatly by alternative. The projected number for which to manage each year will be based on projected weather and forage conditions and will also vary periodically.

Under Alternatives A and B there will be 12 to 14 wild horses in the Designated Territory. This low number of horses should mean that there is enough forage present and they should not wander out of the Territory too much. This is not adjacent to very much private land, so there will be minimal opportunities for depredation of forage on private land and minimal interaction with domestic horses.

Under Alternative C there will be 20 to 70 wild horses in the Herd Use Area (2001). With this number of horses properly adjusted for forage and weather conditions, there should be enough forage present and they should not wander out of the Herd Use Area (2001) too much. This is adjacent to several tracts of private land, so there will be more opportunities for depredation of forage on private land and more interaction with domestic horses.

Under Alternative D there will be 120 to 150 wild horses in the Herd Use Area (2001). This number of horses, even when adjusted for forage and weather conditions, will need more forage that the Area can provide. There will either be overgrazing or the horses will wander out of the Herd Use Area (2001) to find forage. This is

adjacent to several tracts of private land, so there will be more opportunities for depredation of forage on private land and more interaction with domestic horses.

Under Alternative E there will be 12 to 14 wild horses in the Herd Use Area (2001). With this number of horses properly adjusted for forage and weather conditions, there should be more than enough forage present and they should not wander out of the Herd Use Area (2001) too much. This is adjacent to several tracts of private land, so there will be more opportunities for depredation of forage on private land and more interaction with domestic horses.

WILDLIFE

Past Impacts (PR #226 and 227)**:**

Historically all allotments on the El Rito Ranger District as well as the surrounding areas uses and activities were controlled by local users. During this time, grazing, mining, firewood gathering, hunting were all traditional uses of the area. Human population numbers were low, therefore impacts to the native flora and fauna and other natural resources were low. These areas are still used today, but by a larger segment of the human population from Taos, Espanola, Santa Fe, Chama, and Rio Arriba County. This increase in use of the district and the surroundings has resulted in more demand for the natural resources within any given allotment.

The Canjilon, El Rito, and Tres Piedras Ranger Districts, BLM and the Rio Grande National Forest is a distinct area, geographically and ecologically. These large forested and non-forested areas are characterized by mixed conifer, aspen and ponderosa pine forests, open grasslands and sagebrush flats. Both ponderosa pine and mixed conifer forests have been logged in the past for wildlife and other vegetative improvements. The sites regenerated well, and the stands are now dense even-aged or two storied poletimber and immature stands. These same areas have contributed highly to wildlife improvements and have continued to provide wildlife with increase forage production, hiding and thermal cover, and have served as migration corridors primarily for big game. The effects of past timber harvest activities and other major disturbances (i.e. wildfire) are reflected within the landscape. These effects have both been beneficial as well as detrimental for certain wildlife species and habitats. This following timber sales have occurred in years past on the Jarita Mesa: Benji, Burma, Big Rock, Little Rock, Lonesome, Jarita, Mill, Plaza, Rio, and Spring Timber Sales

Livestock grazing on National Forest and BLM lands has occurred since early European settlement times. Riparian areas were used readily as travel corridors by livestock and wildlife. These areas were always used due to their lower resistance to travel, and because of the lush vegetation associated with riparian areas. Use of riparian areas continues today, but to a lesser extent than what it did when livestock were not under any type of management scenario. It has taken some riparian areas and areas outside of any riparian influence several years to recuperate from past management. Today's livestock management and use of range riders on allotments, together with proper salting practices have improved the overall health of these important habitat components.

Fire suppression over the last 70 years has permitted increased growth and survival of seedling trees. Due to the lack of thinning by fire, the current situation has given way to unhealthy, overstocked stands of trees. In addition, fire control has led to timber stands maturing with closed canopies, causing further reduction of the under story forage supplies for big-game and domestic livestock. The delayed pattern of successional events involving both fire and vegetative manipulations has limited forage production on both summer and winter ranges.

Natural fires on the district and surrounding areas have been happening for hundreds of years. Fire had been responsible for creating a mosaic of forest stands throughout the area, producing a combination of forage and cover highly preferred by big game and domestic livestock.

Prescribed burns occurring on National Forest and BLM lands are important for the quality and quantity of vegetative management in New Mexico. These important wildlife improvement projects have been done to improve the productivity, availability, nutritive value, and palatability of the browse on these important winter wildlife habitats. Coordination meetings with the New Mexico Department of Game and Fish and through the partnership between the Carson National Forest and the Rocky Mountain Elk Foundation made prescribed burns a success.

Elk numbers have steadily increased over the past two decades. There is some migration to and from the Rio Grande National Forest, Tierra Amarilla Land Grant, and the El Rito and Canjilon Ranger Districts. Resident herds have also become established on the Canjilon and El Rito Ranger Districts. The Rio Grande National Forest in southern Colorado presumably provides summer grazing for some elk that winter on the Carson National Forest and BLM. The herd units on all three districts on the Carson National Forest appears to be fast approaching the carrying capacity of the winter range. This is not known for certain, however, the winter forage is the limiting factor to the size of the herds on districts. On the El Rito and Canjilon Ranger Districts, the winter elk herds have extended their range into the Kiowa Mountain, including Comanche Canyon, Valle Grande Peak, Lower Mogote Ridge, Martinez Canyon, Mesa Montosa and Mesa Juan Domingo. Small resident herds on the Mesa de las Viegas on the Canjilon Ranger District appear to be developing. Some yearlong utilization is also apparent, as in Jarita Mesa.

Present Impacts (current year) (PR #226 and 227)**:**

Four pastures comprise the Jarita Mesa grazing allotment. A rotation grazing system is used between all four pastures between the months of May-October. Under normal circumstances, livestock would not be permitted on the allotment until the prescribed phenological stages of the existing vegetation occur. This would allow time for all pastures within the allotment to recover from the previous years use. Livestock use of the pastures once the phenological stages have been reached is restricted to a few weeks in each pasture. For the rest of the season wildlife and wild horses use the pastures with no competition by livestock. This type of use would have significant impacts if the year was a dry year in which forage availability would be limited for both domestic livestock and wildlife.

There are approximately 30 to 104 elk present at different times of the year and in different areas. It appears that the grazing by the cattle, elk, and wild horses is too much for the existing forage. Game management numbers are based upon annual aerial surveys conducted by the New Mexico Department of Game and Fish. The increase in elk populations on all three districts on the Carson National Forest has been of concern. It is expected that this is also true for lands administered by the Rio Grande National Forest and BLM, which are all in direct competition with livestock for the same forage resource.

The increasing elk numbers and their distribution patterns have been one of the permittees biggest concerns over the years. In the spring, elk are grazing the early green-up, which is detrimental to the range. This affects livestock turn-on dates and utilization has been changed for livestock. In the summer, elk are grazing re-growth after livestock have left the pasture. As a result, re-growth is limited and vigor is declining. In the fall there is grazing by livestock which reduces available feed supply for late fall and winter elk use. This also reduces residual feed supply, which is important for watershed.

There is only a small amount of fuelwood cutting on Jarita Mesa this year.

There have been no natural fires on the mesa this year, but about 1,500 acres of former timber sales were prescribed burned to reduce fuel loading and encourage vegetative growth.

Future Impacts (PR #226 and 227)**:**

Timber sales have been proposed in future years on the Jarita Mesa. Many of the sales will provide fuel wood to the local communities. The sales will also reduce large amounts of fuels that contribute to catastrophic wildfires.

Natural fires will continue to occur on the Jarita Mesa, often caused by lightning. When situations such as this happen fire specialists control burns as best they can. Prescribed burns will continue to be implemented in the area to reduce the risk of wildfire in the area and also to protect surrounding communities. The prescribed burns return nutrients to the soils and vegetation that has been lost over time. They also create a mosaic of habitats, which also benefit wildlife.

What does this mean for Wildlife?: Elk numbers will vary depending on the number of wild horses present. Cumulative effects from past, present, and reasonably foreseeable future actions will not affect TE&S animal or plant viability on the forest or district level.

AIR

Past Impacts: There have been very few natural fires on the Mesa. In the previous six years, there has been one natural fire.

Prescribed burning has been common for fuels reduction, range improvement, and wildlife habitat improvement. Over the past 20 years there has been about 2,500 acres of prescribed burning.

Present Impacts (current year): Prescribed burning has not been done on Jarita Mesa during the last year.

Future Impacts: Burning will continue at the rate of up to 1,500 acres per year, mainly west of Petaca on Jarita Mesa - basically north and east of FR 45, south FR 110, and south of FR 713. There will continue to be very few, small natural fires in the piñon/juniper type.

There are no differences between alternatives for treatments. Less grazing may mean more grass for hotter fires.

What does this mean for Air?: All impacts will be very short-term, hours to days. All Alternatives will receive the same treatments.

RECREATION

Past Impacts: The wild horse herd had a population of about 10 to 12 when the Act of 1971 was passed. Since then natural growth and death cycles have maintained the herd between about 10 and 60 animals. Captures have been attempted but have had little success and therefore little impact on the wild horse population. There has been an elk herd present for viewing and hunting.

All of the recreation activities listed under Existing Condition have been present over the last few decades. Characteristics that make the Rio Tusas and Rio Vallecitos eligible for Wild and Scenic River consideration have not been impacted.

Present Impacts (current year): The current population is estimated at about 70 wild horses. There were no captures in last year. There is an elk herd present for viewing and hunting.

All of the recreation activities listed under Existing Condition are present. Characteristics that make the Rio Tusas and Rio Vallecitos eligible for Wild and Scenic River consideration have not been impacted.

Future Impacts: The population of wild horses will fluctuate due to natural conditions and planned captures as needed by alternative. Each alternative will attempt to maintain a different level of wild horses: Alternatives A, B, and E at 12 to 14, Alternative C at 20 to 70, and Alternative D at 120 to 150.

Under Alternatives A, B, and E the reduced number of wild horses should result in more elk available for viewing and hunting. The larger number of horses in Alternative C should keep the elk population at about the current level. Under Alternative D the competition for forage with the large number of horses may cause a reduction in the elk population, thereby reducing the hunting opportunity.

There are no projected changes in the level or types of the recreation activities listed under Existing Condition. Characteristics that made the Rio Tusas and Rio Vallecitos eligible for Wild and Scenic River consideration will not be impacted.

What does this mean for Recreation?: The number of wild horses impacts the number of elk due to competition for forage, and thereby the potential hunter success rates.

Under Alternatives A and B there will be 12 to 14 wild horses in the Designated Territory and a slightly larger elk population. This will result in more elk hunting opportunities. Other recreation activities will not change in level or type. The Rio Tusas and Rio Vallecitos will remain eligible for Wild and Scenic River consideration.

Under Alternative C there will be 20 to 70 wild horses in the Herd Use Area (2001). With this number of horses properly adjusted for forage and weather conditions, there should be enough forage present and thee elk population should remain at current condition. Other recreation activities will not change in level or type. The Rio Tusas and Rio Vallecitos will remain eligible for Wild and Scenic River consideration.

Under Alternative D there will be 120 to 150 wild horses in the Herd Use Area (2001). This number of horses, even when adjusted for forage and weather conditions, will need more forage that the Area can provide. There will be overgrazing and the elk population will probably be reduced, resulting in less hunting opportunity. Other recreation activities will not change in level or type. The Rio Tusas and Rio Vallecitos will remain eligible for Wild and Scenic River consideration.

Under Alternative E there will be 12 to 14 wild horses in the Herd Use Area (2001). With this number of horses properly adjusted for forage and weather conditions, there should be more than enough forage present and the elk population should remain at current condition. Other recreation activities will not change in level or type. The Rio Tusas and Rio Vallecitos will remain eligible for Wild and Scenic River consideration.

GRAZING/ECONOMICS

Past Impacts: In 1976 there were 409 cattle and 16 bulls permitted in the allotment to 27 permittees. By 2000 there were 518 cattle permitted to 18 permittees (PR #14b). Although there may have been some overgrazing, it has not been necessary to remove cattle due to lack of forage on the range.

Present Impacts (current year): There are 516 cattle (cow/calf units or bulls) (518 in 2001 (PR #215a)) present in the Designated Territory or the Herd Use Area (2001) for various times during the year. Herd Use Area (2001) has 87,189 days of use by cow/calf units. The Designated Territory has 56,059 days of use by cow/calf units. The grazing by the three ungulates is too much for the existing forage. A production/utilization study in the Kiowa Pasture in August of 2000 showed about 28% (10 to 58%) utilization. This was in a dry year when the cows went on early. There are no plans to reduce cattle numbers. Although there may be some overgrazing, it has not been necessary to remove cattle due to lack of forage on the range.

Future Impacts: There will continue to be about 516 cattle (cow/calf units or bulls) present in the Designated Territory or the Herd Use Area (2001) for various times during the year unless a different analysis, e.g. Jarita Allotment Range Analysis, determines differently. The Range Analysis for the Jarita Allotment will be done when scheduled in 2004. There will be more overgrazing with the larger number of wild horses. Rate-of-gain for cattle could go down as competition for forage increases.

What does this mean for Grazing/Economics?: The wild horse populations will vary greatly by alternative, but the cattle numbers are to remain constant. If a different analysis results in cattle numbers being reduced in the allotment, then the negative effects shown below would be reduced or eliminated.

Under Alternatives A and B there will be 12 to 14 wild horses in the Designated Territory. This low number of horses should mean that there is enough forage present and competition with cattle and elk should be minimal. Rate-of-gain for cattle should not be reduced by forage competition and could even increase slightly. No permittees will be forced out of the livestock business by competition for forage from the wild horses. (Comment 1)

Under Alternative C there will be 20 to 70 wild horses in the Herd Use Area (2001). With this number of horses properly adjusted for forage and weather conditions, there should be enough forage present and competition with cattle and elk should be minimal. Rate-of-gain for cattle should not be reduced by forage competition. No permittees will be forced out of the livestock business by competition for forage from the wild horses. (Comment 1)

Under Alternative D there will be 120 to 150 wild horses in the Herd Use Area (2001). This number of horses, even when adjusted for forage and weather conditions, will need more forage that the area can provide. There will either be overgrazing or the horses will wander out of the Herd Use Area (2001) to find forage. Cattle cannot leave the allotment so the overgrazing by three ungulates could negatively impact the rate-of-gain for cattle. It is possible that the lower amount of available forage and associated problems (e.g. lower rate-of-gain) may cause some permittees to be forced out of the livestock business by competition for forage from the wild horses. (Comment 1)

Under Alternative E there will be 12 to 14 wild horses in the Herd Use Area (2001). With this number of horses properly adjusted for forage and weather conditions, there should be more than enough forage present and competition with cattle and elk should be minimal. Rate-of-gain for cattle should not be reduced by forage

competition. No permittees will be forced out of the livestock business by competition for forage from the wild horses. (Comment 1)

M. National Forest Management Act and Other Legal Findings

This action does not violate Federal, State, or local laws or requirements imposed for the protection of the environment.

The action is consistent with the Wild Horses and Burros Protection Act of 1971 (PR #9).

It is consistent with and implements the Carson National Forest Land and Resources Management Plan (as amended) (LRMP or Forest Plan) as required by NFMA (FSM 1922.41). (PR #2, 2b, and 2c)):

It is consistent with the Ecosystem Management Area analyses that were done for Los Comanches and Vallecitos Federal Sustained Yield Unit in 1997. (PR #11ca and 11cb)

It is consistent with the Biological Analysis and Evaluation prepared for this project. (PR #228)

Vegetation management in the form of grazing is consistent with the National Forest Management Act (PR #0h) as specified in 36 CFR 219.27.

It is consistent with the Executive Orders for Wetlands (11990) (PR #0j), Floodplains (11988) (PR #0i), and Migratory Birds (13186) (PR #84d).

It is consistent with the analysis for Wild and Scenic Rivers (PR #192).

It is consistent with the Clean Water Act (PR #0a).

CHAPTER 4 - LIST OF PREPARERS

Table 12

Person:	Title:	Expertise:
Kurt Winchester	District Ranger	Timber
Annette Joseph	Range Conservationist	Range, Wild Horses
Michael Casados	Range Conservationist	Range, Wild Horses
Steven Miranda	Range Conservationist	Range
Dan Rael	Forest Range Staff	Range
Bob Lawrence	Archaeologist	Heritage, Native Americans
Francisco Sanchez	Wildlife Biologist	Wildlife
Esther Nelson	Wildlife Biologist	Wildlife
Cornelio Lopez	Fire Management Officer	Fire
Leo Johnson	Resource Officer	NEPA, Timber
Audrey Kuykendall	NEPA Coordinator	NEPA
Jack Carpenter	NEPA Coordinator	NEPA
Greg Miller	Forest Hydrologist	Soil, water, air
Toby Herrera	Forest Technician	Historic knowledge of the horse herd

CHAPTER 5 - CONSULTATION WITH OTHERS

A. List of Persons/Agencies Consulted

Scoping Letter mailed 6/28/2000, 11/1/2000, and 11/14/2000 to 101groups and individuals (PR #23, 24, 42, and 45) and a Section 106 Consultation letter was sent on 11/21/2000 to the Tribes and Pueblos (PR #52):

USDI, Fish & Wildlife Service
USDI Bureau of Land Management
New Mexico Department of Game & Fish
New Mexico Environment Department

The offices of:
- Senator Jeff Bingaman
- Senator Pete Domenici
- Congressman Tom Udall
- Congresswoman Debbie Rodella
- Rio Arriba County Commissioners
- NM State Senator Arthur H. Rodarte

Carson forest Watch
Forest Trust
Southwest Forest Alliance
Forest Guardians
SW Center for Biological Diversity
The Wilderness Society
Wild Horse & Burro Freedom Alliance
5 persons particularly interested in wild horses

Tribes and Pueblos:
- "Eight Northern Pueblos"
- Santa Clara Pueblo
- Nambe Pueblo
- Pojoaque Pueblo
- Picuris Pueblo
- San Ildefonso Pueblo
- San Juan Pueblo
- Taos Pueblo
- Tesuque Pueblo
- Jemez Pueblo
- Jicarilla Apache
- Hopi Tribe
- Navajo Nation
- Southern Ute
- Ute Mountain Ute Tribe
- Comanche Tribe of Oklahoma
- Zuni Pueblo

38 permittees and local residents

11 other potentially interested parties (see mail list in Project Record (PR #23 and 42)

An article was published about the project in the Rio Grande Sun (July 6, 2000). (PR #28)

The project was included in the Schedule of Proposed Actions (NEPA Quarterly) in October of 2000 (PR #33a).

The project was included in the NEPA Quarterly in January, 2001. This document was mailed to 148 individuals, groups, and agencies. (PR #75b)

The project was included in the NEPA Quarterly in April, 2001. This document was mailed to 83 individuals, groups, and agencies. (PR #189)

The project was included in the Schedule of Proposed Actions (NEPA Quarterly) in July, 2001. This document was mailed to 156 individuals, groups, and agencies. (PR #216a)

The Jarita Mesa Wild Horse Territory was mentioned in a National Geographic special on November 26, 2000. (PR #39)

Grazing allotment permittees were contacted by the above letters, as well as, during the annual meeting on March 4, 2001 (PR #150c).

On 2/6/2001, 2/8/2001, and 3/1/2001; the Forest Service sent out a form letter to all persons on the original mailing list and to all persons who have contacted us since then due to other sources, e.g. the Internet. This went to 131 agencies, groups, and individuals (PR #105, 106, 107, 108, 109, 115, 148, and 149). This letter clarified the territory boundary, clarified exactly what we are doing (updating the current management plan), and gave more accurate information to people who had never seen the June 16, 2000 scoping letter.

On 2/6/2001, individual letters were sent to Andrea Lococo (The Fund for Animals) and Linda Adkins in response to some specific concerns that they expressed. (PR #110 & 111)

As of about 2/6/2001, the Southwestern Regional Office has been sending a form letter to people who contact them about Jarita Mesa wild horses. This letter directs people to the District as their source of information or repository for concerns. (PR #113)

On 3/28/2001 a letter was sent to the various Tribes and Pueblos for Section 106 Consultation (PR #187a) of the management plan and proposed traps and corral.

On 3/29/2001 the Rio Grande Sun published a newspaper article about the Jarita Mesa Wild Horse Territory and the analysis that is being done. (PR #188b)

On 4/10-12/2001 a functional assistance trip was held for representatives from the Washington Office, the Regional Office, the Supervisor's Office and District personnel. It included both Jarita Mesa and Jicarilla Territory. (PR #166a, 191, 191a, 191b, 191d, 196, 197, 202, and 203)

On April 23, 2001 seven Jarita Mesa Allotment Permittees met with the Forest Service to discuss concerns over the number of wild horses on the mesa and over statements in a recent newspaper article (PR #188b, 191e, 199, 200, & 201).

The Predecisional Review Period letter for public comments was sent on August 30,2001 to 127 people, groups, and agencies, who had participated in the process up to that point or who are to receive copies of all NEPA documents (PR #236, 237, and 238). A Legal Notice was published in the Rio Grande Sun on August 30, 2001 (PR #233c). Replies to this letter are found in Appendix H.

B. What We Heard

In response to these requests for comments (and from at least two private Internet sites), we received seven notes, 33 letters, 15 e-mails, 14 telephone call, two petitions, one fax, one document, and one congressional inquiry (see Appendix C). Also included is one telephone call made prior to initiation of this analysis:

In a 1997 telephone call a county commissioner wanted the wild horses left alone, fewer elk, and some of the excess wild horses transplanted to Canjilon District's territories. (PR #11b) In a subsequent letter, he discussed the tradition of capturing and domesticating wild horses by residents of the local communities. He supports a larger range for the wild horses and the culling of the herd by traditional means of capture by local residents (PR #191c). (Comment 3) (Comment 6)

Two private persons commented that they were concerned that managing the wild horse herds at low population levels will result in inbreeding and irreparable genetic damage. They quote one authority who says that 150 to 200 animals is the minimum needed to ensure long-term viability. They do not want to transfer horses between herds to maintain genetic diversity because this could "dilute the unique characteristics these herds originally exhibited or developed over years, if not centuries, of natural selection." They question whether there is any interchange of genes between different wild horse herds in the Territory because most herds are quite isolated from each other (PR #14). (Issue 1) (Comment 4) (Comment 5)

The Forest Service Office in Washington, DC, mentioned that there is a legal suit over gathering wild horses in Wyoming. The suit is on-going, but a temporary injunction was not granted because: Public involvement had been adequate, There is professional oversite by a veterinarian, the field office was responsive to the court, the cumulative effects analysis was adequate, and there were no administrative or procedural errors in the documents (PR #15a).

Three representatives of the Wild Horse and Burro Freedom Alliance want the wild and free-roaming horses and burros preserved on public lands. They feel that the proposed 12 to 14 horses is not viable and would eliminate the herd. They feel that cattle should be reduced also, if the horses are reduced. There needs to be an analysis of the capture methods. There needs to be monitoring to see if there is an excess number of wild horses. (PR #25, 32, and 34a). In addition, one of them is concerned over the effects of trigger traps on wildlife. (PR #32) and one of them was emphatic about preserving the Andalusian horse bloodline in the wild horse herd. (PR #34a) (Issue 1) (Comment 1) (Comment 3)

Another person felt that 12 to 14 horses is too few, that managing for more cows than horses violates the 1971 Law, and that 60 to 80 horses would be a better number. (PR #120) (Issue 1) (Comment 1)

Five separate parties wanted to be kept informed of management activities and wanted to be put on the "adoption" lists. (PR #26, 27, 29, 117, and 138)

New Mexico Dept. of Game & Fish supports the proposed action and sees no adverse effects to wildlife or wildlife habitats due to it. (PR #30) (Comment 1) (Comment 2)

The Jarita Mesa Livestock Association supports the reduction in wild horse numbers to improve allotment conditions. They want some wild horses on the mesa because they are part of the culture of the area. The horses are descendants of horses left on the mesa in the 1940s. They see the horses as more useful if adopted and put to use. (PR #31 and 70) (Comment 1) (Comment 5)

A representative of the BLM forwarded some information about the effects of gathers on behavior and reproduction of feral horses in Idaho. No long-term effects or differences were found in the horses that were herded by helicopter, captured, and adopted; herded by helicopter but not captured; and not herded. Effects were studied for reproduction, resting, feeding, vigilance, traveling, and agonistic encounters (PR #32a). (Comment 3)

There is a petition in the New Mexico Horseman Magazine. It concerned about: The “last of the wild horses in Northern New Mexico,” The need for a viable herd (100 to 150 head) to prevent inbreeding and to balance out yearly deaths, and that during drought years, cattle grazing needs to be limited “to ensure grazing for the horses, elk and deer” (PR #33). This same petition is posted in the store in Abiquiu (PR #134). (Issue 1) (Comment 1) (Comment 4) (Comment 5)

One individual (group) is interested in capturing some of the horses to do blood tests (DNA) of wild horses to determine ancestry, particularly for Spanish bloodlines. The individual would also be interested in having six (6) of the horses for his/their wild horse preserve in Valencia County. (PR #34). (Comment 5)

One fisherman wants no cattle or very controlled use of cattle on the Forest. He does not like “cow pies” and overgrazed trout streams. He feels that permittees pay too little for the grazing. He wants the wild horses to remain “free-roaming.” (PR #40). (Issue 1) (Comment 1)

One person wrote to their Congressman rather than replying within the NEPA process. She wants the wild horse herd preserved and opposes the proposed action. The wild horses take priority above cattle. She wants more studies/dialogues and to be sent more information. (PR #40b) (Issue 1) (Comment 1)

There are at least two Internet websites with information about this project;, it is not necessarily accurate or complete information. This is the origination point of many of the form letters we received (PR # 37b, 59a, and 63). (Issue 1) (Comment 1) (Comment 5)

Eleven persons sent the same form letter off of the Internet stating that they want the wild horse herd preserved. They are adamantly opposed to the reduction in wild horse numbers and feel that horses take priority over the interests of the cattle ranchers in the area. They want more study, information, and dialogue before anything is done. Anyone harming wild horses should be held responsible under the law [the implication being, the Forest Service]. This is basically the same letter as in Project Records 37b and 40b (PR #42a, 42b, 43d, 43f, 55, 56, 57, 73, 74, 75, 75a, and 84c). Several of these respondents sent the same letter to multiple locations, but they are counted only once. (Issue 1) (Comment 1)

One person sent the above form letter (PR #37b, 40b), but added an emotional appeal for keeping this part of our history alive for generations to come (PR #66). (Issue 1) (Comment 1) (Comment 4)

One person is opposed to the slaughtering of the horses. He also feels that the cattle should be removed or be greatly reduced in numbers (PR #42d). (Comment 1) (Comment 3)

Five persons are opposed to the killing or destruction of the horses (PR #44aa, 44ab, 44b, 60, and 102a). Two of these want to adopt horses. (Comment 3)

A representative of The Fund for Animals had several comments on the process and the information needed in the analysis. She wants a thorough analysis in the EA. Alternatives should represent a full range of reasonable alternatives, such as fertility control, allowing natural predation, and removing livestock. She included a list of 20 particular items that should be in the EA, e.g. age/sex structure of the herd, impacts of past removals on livestock and pregnant mares, role of wild horses, forage allocation between ungulates, information from inventories to determine forage utilization, climate, capture methods and impacts on horses, and several others (PR #47). (Issue 1) (Comment 1) (Comment 3) (Comment 4) (Comment 5)

A wildlife biologist wants a viable population of wild horses and feels that an AML of 12 to 14 horses is too low for survival. We should remove livestock if necessary to preserve the horses. He listed several benefits from the wild horses (PR #49a). (Issue 1) (Comment 1)

Twelve persons wanted more information about the project or to be put on the mailing list for it (PR #58, 61, 62, 74a, 78, 78a, 79, 80, 85, 98, 101, and 136).

One person was specifically opposed to cattle grazing (PR #58b). (Comment 1)

One person called this a "wild horse reserve" and saw its only use as being to protect the wild horses (PR #67).

One person called to inform us about a source of environmental mediation (PR #81).

One person wanted old lead mares and stallions left in the "Territory" due to their knowledge and skills in protecting the herd. She mentioned personal conflicts with people when in the "Territory". She said that there appears to be a combination of contemporary and old genes in the herd on Jarita Mesa. She is concerned over disease transfers during captures and adoptions. (Issue 1) (Comment 1) (Comment 4) (Comment 5)

One person is concerned that we are looking at wild horse numbers but not cattle or elk numbers. He wonders if there is a "solid range assessment" for the area and what we are doing for range or riparian improvements. He is concerned over the intrinsic value of the herd due to "heritage bloodlines" and the effects this may have on the recreational values of the District. (Issue 1) (Comment 1) (Comment 5)

There has been reported harassment of the wild horses on Jarita Mesa and an investigation is on-going. (PR #190 and 193)

The Jicarilla Apache Tribe consider the horses an important traditional animal and want us to meet with them to discuss the management of the herds. (PR #154a). (Comment 5) This meeting took place on May 9, 2001.

The Jarita Mesa Allotment Permittees have several concerns over the wild horses. They consider them feral animals due to their history. They say that the large number of wild horses present eat the grass before the cattle are permitted on and they stay in pastures longer than the cattle are permitted to. They say that the wild horses eat the salt put out for the cattle and that the Forest Service should consider putting out salt for the wild horses. They recognize that horses have been on the mesa for as long as they can remember (in the whole Herd Use Area (2001)). They began as permitted horses grazed by local residents. The Forest was viewed as common land, to be used for the welfare of the local ranchers/farmers. The horses that were not claimed after the permits were revoked in the 1960s are the ancestors of the present "wild" horses. The local residents have a very strong "tie" to the land and their communities and resent having "outsiders" try to dictate how the land should be managed. Finally, they oppose the proposal to build a pipe corral near Benjamin Tank to facilitate wild horse management and to be used for cattle round-ups. They felt that such a corral could be used by some members of the public to steal calves or wild horses (PR #150c, 199, 200, & 201) (Comment 5).

C. Appendices

A. Document Availability

B. Project Record Index

C. Comments Received and Replies

D. Glossary

E. Maps

F. Monitoring Plan

G. 1982 Wild Horse Management Plan

H. Replies to Public Comment Period Letters