

EVALUATION AND ENVIRONMENTAL ASSESSMENT REPORT

QUARTZ ALLOTMENT

RANGE MANAGEMENT PLAN

REPUBLIC RANGER DISTRICT

COLVILLE NATIONAL FOREST

November 1981

ENVIRONMENTAL ANALYSIS REVIEW AND APPROVAL RECORD

NAME OF PROJECT QUARTZ ALLOTMENT

TYPE OF PROJECT EVALUATION AND ENVIRONMENTAL ASSESSMENT REPORT

RANGER DISTRICT REPUBLIC

REPORT PREPARED BY: JIM NASH Date 1/21/82

RANGER DISTRICT DEVELOPMENT AND REVIEW

Carl O. Baker Date 1-21-82
Other Resource Assistant

Gregory B. Clay Date 1/21/82
Fire Management Assistant

Paul R. [unclear] Date 21 Nov 82
Engineering Assistant

Walter L. Price Date 1/25/82
Timber Management Assistant

APPROVAL RECOMMENDED BY:

Dino Nichols Date 2-25-82
District Ranger

SUPERVISOR'S REVIEW

Larry Olmerson Date 2-10-82
Range, Wildlife, Water and Soils Staff Officer

Patricia [unclear] Date 3-1-82
Engineering, Lands and Minerals Staff Officer

Bert [unclear] Date 3-2-82
Fire and Recreation Staff Officer

Hermit J. Link Date 2-23-82
Timber Staff Officer

Stephen Kelley Date 3/1/82
Planning and Programming Staff Officer

Date _____

On the basis of the environmental analysis process documented by this report, I have determined that the proposed action will not result in a significant impact on the quality of the human environment nor is it expected to become highly controversial. Therefore, an environmental statement will not be prepared for this proposal.

Forest Supervisor Date _____

NOTE TO REVIEWERS: Your signature indicated that you recommend approval by the Forest Supervisor. If you believe the report or project should have revisions or additions, so indicate by attaching your comments, writing in your signature block the words, "See Comments," and fill in the date.

DECISION NOTICE

AND

FINDING OF NO SIGNIFICANT IMPACT

QUARTZ CATTLE AND HORSE ALLOTMENT

FERRY COUNTY, WASHINGTON

U.S.D.A. - FOREST SERVICE

COLVILLE NATIONAL FOREST


REPUBLIC RANGER DISTRICT

The Republic Ranger District of the Colville National Forest proposes to implement a production oriented grazing system on the Quartz Allotment. This grazing system was selected over the other alternatives because it provides for the best combination of biological, social and economic benefits.

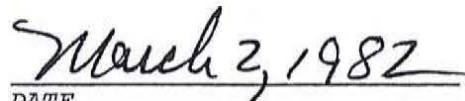
This grazing system will provide for a possible additional 202 head of cattle to be run on the allotment. The implementation of this grazing system will begin in the spring of 1982 and will take three years for the Forest Service and the permittees to complete.

I have determined through the environmental assessment that this is not a major federal action that would significantly affect the quality of the human environment; therefore, an Environmental Impact Statement is not needed. This determination was made considering the following factors: (a) construction of improvements will have only a slight effect on the ecosystem; (b) there are no irreversible resource commitments or irretrievable loss of production on lands grazed; (c) there are no apparent adverse cumulative or secondary effects; (d) the uniqueness or rareness of the Forest resource will

not be altered on the area. This decision is subject to Administrative Review (appeal) pursuant to 36 CFR 211.19.



WILLIAM D. SHENK
Forest Supervisor



DATE

I. INTRODUCTIONA. *Scope of the Decision*

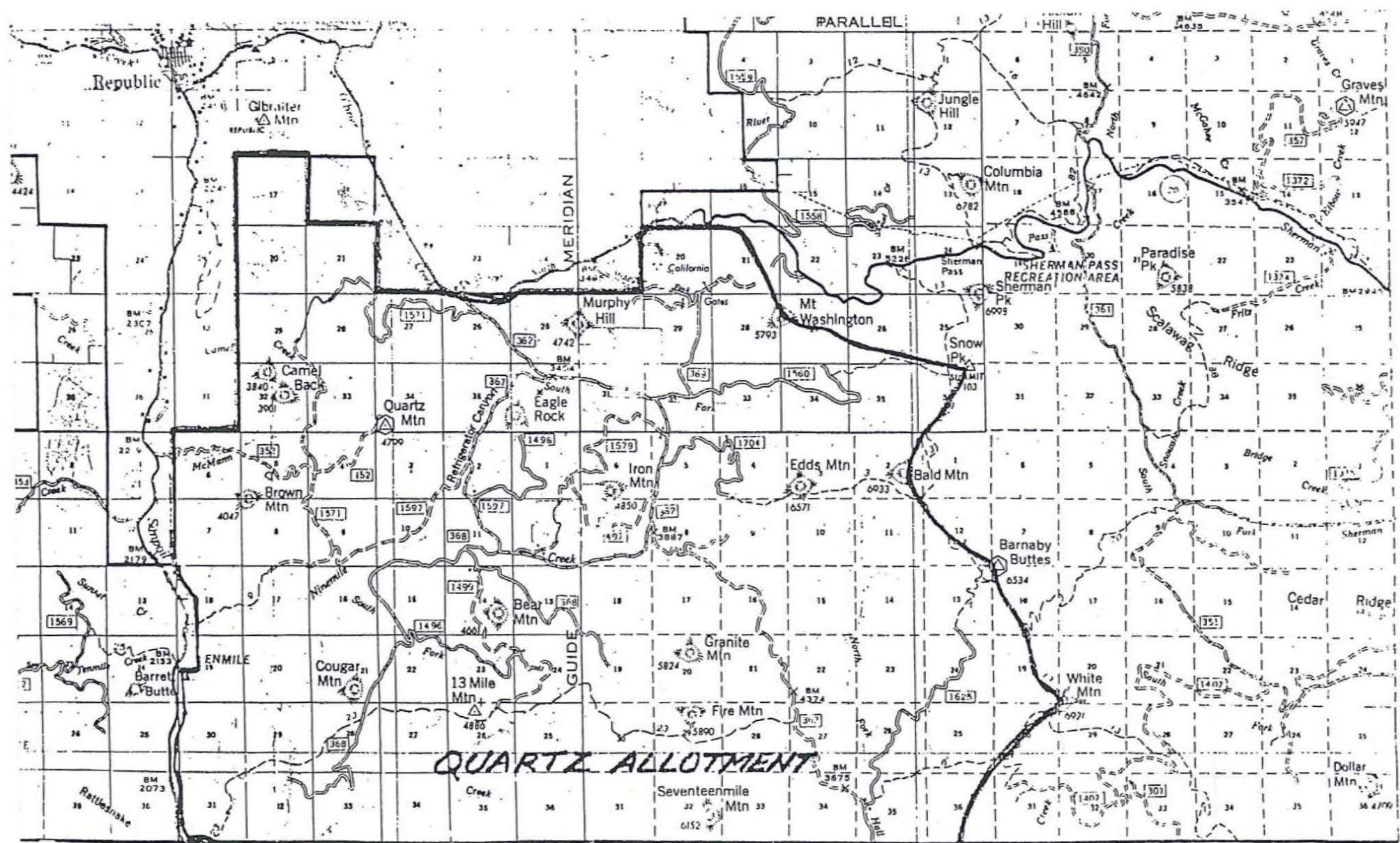
The following report is an Environmental Assessment Report for the Quartz Allotment. The evaluation is based on inventory data collected in 1976 and other related resource information. This information serves as a guideline for developing management alternatives. Through this process a preferred alternative is selected for management of the range resource on the Quartz Allotment of the Republic Ranger District, Colville National Forest.

The alternatives analyzed are consistent with direction provided in the Kettle Range Land Management Plan and the Colville National Forest Multiple Use Plan. These alternatives are also consistent with the Forest Service Region 6 and Colville National Forest goal of achieving quality range management by 1984.

A separate range management plan will be prepared which will serve as the implementation document for the preferred alternative.

The Republic Ranger District is proposing to meet Management Strategy "D" as described in Forest Resources Report Number 19, The Nation's Range Resources -- A Forest Range Environmental Study.

This is consistent with the Colville National Forest overall objectives. That is to maximize livestock forage production consistent with constraints of maintaining the environment and with other resources and values. To achieve this level of grazing



VICINITY MAP
 QUARTZ C&H ALLOTMENT
 REPUBLIC RANGER DISTRICT
 COLVILLE NATIONAL FOREST
 REGION SIX
 SCALE 1/2 INCH = 1 MILE

1976

J. B. MCCLISKEY

INDIAN

JOSEPH

RESERVATION

management for the Quartz Allotment it is necessary to develop a grazing system. This is consistent with the environmental statement of the Kettle Range Planning Unit alternative "C".

"The intent of management under this strategy is to provide a wide range of management activities and uses featuring uses of timber and domestic grazing. A full range of timber management activities and uses may occur. Management will also be directed towards optimizing permitted use for domestic livestock on lands suitable for grazing." The basic decision to be made then, is what grazing intensity will best meet our needs and objectives?

This document on the Quartz Allotment is an Environmental Assessment Report. The Environmental Assessment sections of this report have been conducted in accordance with the new FSM 1950 guidelines for compliance with the National Environmental Policy Act. This section describes only those factors (physical, biological, economic and/or social) which are affected.

- B. Major Issues and Concerns identified during the assessment process and considered in this report are:
1. Tree Regeneration
 2. Deer Winter Range
 3. Benefit Cost Ratio
 4. Range Utilization
 5. Forest Service Permitted Cattle on the Reservation

II. AFFECTED ENVIRONMENT

A. *Land Use Classification*

According to the Kettle Range Land Management Plan most of the allotment will be managed as general Forest. There are, however, three exceptions. One of these is six areas basically along the San Poil breaks set aside for Wildlife Habitat. Another exception is the Refrigerator Canyon area. This area is located near the north central part of the allotment. This will be called an area of Unusual Interest. The third area is located along the eastern edge of the allotment, and it runs along the Kettle Crest. This area is called Limited Access.

B. *Environmental Setting*

The Quartz Allotment is the largest on the Republic Ranger District and is located between the San Poil River and the Kettle Crest (Kettle Divide), the east and west boundaries, and is bounded on the south by the Colville Indian Reservation (see vicinity map). It has a gross area of 60,550 acres of which 97% is National Forest land. A summary of the allotment lands is found in the process records.

Elevation on the allotment ranges from 3,500 feet on Hall Creek to 7,103 feet on Bald Mountain.

The entire allotment lays on the west side of the Kettle Mountain Range. The topography is generally steep and broken. In general, the bottoms and south-facing slopes provide for most of the grazing

areas. Climate of the area is dominated by western air flows. In general the area has cold winters and warm summers. The precipitation varies from 14 at lower elevations to 30 inches at higher elevations. Most of the precipitation comes as snow during the winter months.

C. Resources

1. Vegetation and Ecoclass

The allotment is primarily timbered with coniferous species. The exceptions to this are two old homesteads in the approximate center of the allotment. These contain mainly poa species and receive heavy use. Another basic type are the bunch grass types which are usually on the south and southwest slopes.

The principal grasses found on the allotment include: Kentucky bluegrass, red top, quack grass, timothy, orchard grass, Idaho Fescue, blue bunch wheatgrass and pine grass.

Shrubs found on the allotment that provide some browse for livestock and wildlife are: snowberry, ninebark, service berry, willow species, chokecherry, dogwood, alder, elderberry and twinberry.

The eighteen different Ecoclass types that were used in compilation figures for estimating grazing capacities based on present condition and trend are as follows:

- a. U6 Psme Caru LUP
- b. S6 Pipo Caru Phma $\frac{G}{G} \rightarrow$
- c. S6 Psme Caru Phma $\frac{G}{G} \rightarrow$
- d. S1 Agsp Feid $\frac{G}{G} \rightarrow$
- e. U8 R
- f. Pipo Psme Agsp Feid $\frac{G}{G} \rightarrow$
- g. Xs6 Psme Caru Phma $\frac{G}{F} \uparrow$
- h. P6 Psme Caru Phma $\frac{G}{G} \rightarrow$
- i. U6 Psme Libo Caru
- j. XP6 Psme Caru Popr $\frac{P}{F} \uparrow$
- k. S6 Psme Agsp Caru $\frac{F}{F} \uparrow$
- l. P1 Agsp Pose $\frac{F}{G} \rightarrow$
- m. P6 Pipo Psme Caru Feid $\frac{G}{G} \rightarrow$
- n. S6 Pipo Caru Syal $\frac{G}{G} \rightarrow$
- o. S6 Pipo Caru Feid $\frac{G}{G} \rightarrow$
- p. P6 Pipo Caru Phma $\frac{F}{F} \rightarrow$
- q. P6 Pipo Psme Caru Agsp $\frac{F}{F} \rightarrow$

2. Soils

The entire allotment lies mostly west of the Sherman Fault. During the last continental ice age the entire area was glaciated. Some time later the area was covered with volcanic ash. The lighter soils are basically on ridge tops or steep south facing slopes. These types of areas usually have little erosion or compaction problem since cattle do not generally prefer to congregate here. The heavier soils types usually found in the bottoms (85 Shaskit - Tonata and 95 Tonata Silt Loam) or depressions are susceptible to puddling and/or compaction depending upon soil moisture and when used. (For further information on existing soil types see Soil Survey of North Ferry Area, Washington.)

Under present conditions all the soils that are grazed upon are in a stable condition. There is, however, only 26% of the allotment presently being used by cattle. (For further information on soil condition and trends see vegetative ecoclass types. For potential hazards involved with types of soil see "Soil Interpretation Handbook, Colville National Forest" by Larry Laing.)

3. Threatened and Endangered Plant Species

There are two species of threatened and endangered plant species found on the allotment. These plants are on the federally proposed threatened species list. The plants are *Talinum okanoganeuse* and *Allium robinsonii*.

Cattle do not generally use the same areas in which both of these species are found, for these plants usually inhabit rock outcrops where there is very little other vegetation.

(For further information see "A Summary of Widespread Searches for Rare Plants" by Tony Basabe in the process records.

4. Research Natural Areas

There are at present three proposed Research Natural Areas within the allotment boundary. For exact location see the 4060 file on Research Facilities at the Republic Ranger District office. These areas will be set aside to preserve the natural integrity of these areas. At present these three areas are seldom, if ever, used by cattle.

5. Hydrology

The Quartz Allotment is an important watershed for four major streams as follows: Nine Mile Creek, Hall Creek, Thirteenmile Creek, South Fork O'Brien Creek. All these streams eventually end up in the Columbia River. Thirteenmile and Hall Creek flow into the Reservation which is on the south border of the allotment. Hall Creek flows directly into the Columbia while the other three flow into the San Poil before it empties into the Columbia.

The South Fork of O'Brien Creek is used mostly by local people for irrigation, domestic, recreation use. Ninemile is used most on the allotment by cattle, wildlife, fisheries, and recreation. All of the waters that enter the Columbia River are used many times for power production.

Water monitoring has been done on O'Brien Creek, Ninemile Creek, Thirteenmile and McMann Creek. More recently there has been project monitoring on Hobo and Cobra Sale areas. The quality of water produced from the allotment, as measured at these monitoring stations, is high, meeting or exceeding State of Washington Standards for Class AA waters. For further information on quality of water, see files under 2540 and the Process Records.

6. Timber

The Quartz Allotment varies from open, grassy slopes to heavy, forested timber. There has been some clear cutting in the past in order to create even age stands. The general tendency is away from clear cutting towards shelterwood. The predominant trees in the allotment are ponderosa pine, Douglas-fir, western larch, lodgepole pine, subalpine fir and Engelmann spruce.

This allotment is one of the major timber producing areas of the District. Therefore, all range and wildlife activities are coordinated with timber management activities. Some of the activities relating to timber are commercial harvest, precommercial thinning, planting, and insect and disease control. In the past there have been harvest methods ranging from partial cutting to clear cutting. A great deal of this transitory range can be used for cattle grazing up to twenty years after harvest.

Recent timber activities in the allotment include the Brown Mountain Timber Sale which took place in 1979. This sale

has .6 MBF. Hobo II is now under progress, which has 2.8 MBF. The Helen Sale, which borders the Indian Reservation to the south, is 6 MBF and is scheduled for 1983. In areas in which there are at least seed trees left after harvest, there is very little problem with regeneration of trees. However, in areas where most all of the trees have been removed there are usually problems re-establishing the trees after a timber sale. There are many variables that are not fully understood in re-establishing trees in cut over areas.

7. Visual

The Republic Ranger District has been inventoried and mapped for visual resources. Fences and water developments are not expected to detract from the natural beauty of the area. (For further information, refer to "National Forest Landscape Management, Volume 2", Chapter 1, Agriculture Handbook Number 462, on file at the Republic Ranger Station.

8. Cultural

At present there has been some cultural resource work completed on the allotment which has dealt mainly with timber sales. There will, however, be a complete cultural resource inventory accomplished for new fence lines and new spring developments. This will be completed in advance to any field work started on the ground.

9. Fisheries and Wildlife

Ninemile stream is important for its fisheries and is considered a Class I stream at the upper end of Ninemile where there are a series of old beaver dams. This area has, in the past, produced a large number of good-sized trout. Heavy fishing pressure has reduced the number of larger trout. From this area the stream heads

westward, picking up velocity as it flows over the San Poil Breaks. This area with relative steep stream gradients limits pool development and acts as a barrier to passage between suitable habitat areas. It is therefore considered a Class II ~~III~~ stream down in Ninemile Canyon.

Preservation of the present fisheries may depend upon maintenance of the suitable habitat areas and the present high water quality.

This allotment contains a lot of the varieties of wildlife found on the District. Big game species include black bear, mountain lion, whitetail deer, mule deer. Small game species include ruffed grouse, blue grouse, Franklin's grouse and snowshoe hare. Fur bearers include short- and long-tailed weasel, mink, beaver. Predator species of coyote, bobcat, Canadian Lynx and many non-game species of mammals, birds, reptiles and amphibians (see checklists, "Birds of the Colville National Forest", "Reptiles and Amphibians of the Colville National Forest", for species found in the vicinity of the Colville National Forest) are found in the allotment.

The San Poil Breaks is a key deer winter range. This series of steep mountain slopes runs north and south. Deer from all over the allotment congregate here during the winter months. Deer from the reservation move into the Thirteenmile area in late winter and early spring. Another area for deer winter range is near Murphy Hill. This is a south-facing slope and

is of major importance to the deer. Most of the deer on the allotment are mule deer; however, some whitetail are seen.

There is presently a coordinated study effort (between W.S.U. and the Okanogan and Colville National Forests) to aid in learning more about local deer feeding habits during the winter months.

The riparian zones around marshes, springs and along streams are important wildlife habitat as well as key livestock use areas. This good mixed vegetation composition provides for excellent feed and cover. The banks along streams, marshes, ponds remain free to access by livestock.

10. Survey

Surveying private lands within the allotment will be of little consequence since the proposed fence and water development construction will not be close or adjacent to any private lands. There is a possibility of hooking onto existing fences to provide for a cross fence.

11. Private Lands Within the Allotment

There are some private lands within the allotment. There is also one section of State Land which is leased to one permittee for grazing. There is also 420 acres of unfenced private land approximately in the center of the allotment. 260 acres of this belongs to a permittee, and he has a private land permit based on his lands. The other acreage belongs to a realty firm.

It is not leased to the permittees nor is it used as part of the allotment carrying capacities. There are some private non-affiliated lands which are in the north end of the allotment. There are approximately 827 acres in this piece, and it is fenced out of the allotment.

D. Uses

1. Recreation

There are only dispersed recreational sites on the allotment. There was an old C.C.C. camp site on McMann Creek. There is very little evidence now of its existence. This area is the second most used recreation areas on the District. It is used by fishermen, hunters, hikers, picnickers, campers, etc. Nine-mile Falls on Road 2052 on the south end of Refrigerator Canyon is one of the more scenic attractions within the allotment. The areas along the crest of the Kettle Range are designated as limited access areas under provisions of the Kettle Range Management Plan. This would emphasize solitude, camping, and hiking.

2. Range

The estimated grazing capacity for the Quartz Allotment has been based on acres of primary and secondary range by range type and condition class. Range types and condition class were determined during the 1976 field season. Other considerations were based on class of livestock, topography as it relates to travel routes and grazing areas, effectiveness of range improvements, and management system employed. The indicated capacity has been calculated using productivity based on range type and estimated proper use of the key forage species

on primary range areas. Proper use standards used in these computations are as follows, based on vegetative condition.

<u>Condition Class</u>	<u>Proper Use</u>
Good	40-50%
Fair	25-40%
Poor	10-25%

Only those acres suitable to livestock grazing were considered in determining condition trend and grazing capacity. The range assessment for Quartz was completed in 1976. Evaluation was made according to eighteen different range types. The condition and trend on these types were basically an ocular estimate. Data shows that 64% of the range is in good condition; 32% is in fair condition; and 5% is in poor condition. Only 12% of the vegetation is in an upward trend. Indicated grazing capacity has been based on acres of primary range by range type and condition class. Range types and condition class were determined during the 1976 field season.

3. Minerals

There are several mining claims within the allotment. However, there are no active claims at this time. The Forest Service has surface rights on all unpatented mining claims.

4. Special Uses

Mr. Rittel has had a special use permit since December 29, 1948 on the allotment. This comprises ~~of~~ eleven acres which adjoins his private land. He is allowed five AUMs based on this property. This area cannot be used as part of the regular Quartz Allotment Grazing System since it is separated by a 500 ft. vertical cliff. (For more information see 2720 Special Use Permit kept on file at the Republic Ranger Station.)

III. EVALUATION CRITERIA

The evaluation criteria were derived directly from the major issues by the I.D. Team. They are listed below:

1. Minimize competition between cattle and wildlife in deer winter range. Measured by acres that cattle overlap into the deer winter range during the summer months.
2. Minimize damage to tree reproduction. Measured by AUM's gained on small plantations.
3. Maximize benefit cost ratio. Measured by margin of return to the ranchers.
4. Optimize range utilization. Measured by the increased AUM's taken from the allotment.

The above criteria will be used to select the preferred alternative.

IV. ALTERNATIVES CONSIDERED

This section will contain two parts. The first section basically describes a combination of variables that can be used for each alternative. The second section describes the alternatives. Under each alternative there are three basic management elements that will be discussed. The three elements are as follows:

1. Cattle numbers
2. Management of cattle
3. Level of improvements

D R A F T

1. Cattle Numbers

Based on range analysis cattle numbers can be as high as 551 head.

2. Management of Cattle

Under this element there are several criteria that will be discussed.

They are:

- a. Riding -- The more riders and hours of effective riding, the more cattle control.
- b. Salting -- Correct and timely salting can insure greater control of cattle.
- c. Fencing -- Proper fencing in combination with correct location of cattle guards are of great value in controlling cattle.
- d. Use of Natural Barriers -- This criteria can be used as another way to control cattle.
- e. Water Development

3. Level of Improvements

- a. Amount of improvements may vary depending upon opportunities and economics. Increased numbers of improvements will give more control over cattle.

The three alternatives that were developed are:

Alternative A -- to provide a baseline 10 which the other alternatives could be compared to estimate effects.

Alternative B -- to provide a conservative approach for the use of our renewable forage resources.

Alternative C -- to provide a moderate to heavy use alternative of our forage resource.

IV. ALTERNATIVES CONSIDERED

Alternative Formulation Process

The following is a description of three different alternatives to be considered, including the mitigating measures, management constraints and monitoring needs.

The formulation of these alternatives were based on field trips in combination with ground reconnaissance.

ALTERNATIVE A

A. Description:

This alternative would allow for the permittees to continue to operate basically as they have in the past. Therefore the cattle numbers would remain at 365 head. When an area reached proper utilization the permittees would move their cattle to another unit or area. The permittees would rotate their cattle differently from year to year. They would use salt as a management tool in controlling cattle movement. Thus salt would not be placed in young plantations or near a water source.

This alternative would not require any additional fences, but the permittees would continue to use and maintain the present fences. The permittees would continue to use the natural barrier as an aid in dispersing cattle. They would keep the present water developments in good repair.

B. Mitigating Measures, Management Requirements and Constraints:

Soils, Wetlands and Flood Plains

D R A F T

1. *Provide for range readiness check before turn on. This would aid in eliminating puddling and saturation of soils.*
2. *Disperse cattle over entire unit as evenly as possible to mitigate compaction of soils.*
3. *Keep exposed soils seeded to prevent erosion.*
4. *Provide for water developments in proper locations, containing an adequate overflow system. This will prevent erosion and excessive use in certain areas.*
5. *Keep cattle off of recently cut timber sale areas to prevent compaction and erosion.*

Wildlife

1. *Protect wetlands and riparian zones against water quality degradation and maintain shade and cover.*
2. *Protect S.M.U. as defined by the District Plan.*
3. *Protect brushy areas and key deer winter ranges.*

Timber Harvest and T.S.I. Plantations

1. *Coordinate with timber avenues to leave open natural cattle thoroughfares for travel routes.*
2. *Slash and other residues should be disposed of for proper grazing and movement of cattle.*
3. *Protect existing improvements from damage by logging operation.*
4. *Coordinate the removal of natural barriers so that they may be replaced.*
5. *Protect new plantations by adding the following to the Annual Plan:*
 - a. *Proper salting*
 - b. *Proper riding intensity*
 - c. *Proper development of water*

D R A F T

Roads

1. Closing off unnecessary and dead-end roads for better cattle control.
2. Closing off roads to prevent the spread of noxious weeds.
3. Keep several critical roads open to control water developments and to place salt.

Range

1. This alternative would convert very little secondary range into primary range. Therefore, some basin areas would receive most of the use.
2. This alternative would not disperse cattle over the entire allotment.
3. Cattle would be managed by intensity of riding management, salting and water techniques.

Threatened and Endangered Plant Species

1. At present there is very little overlap between cattle and *Talinum okanoganeuse* and *Allium robinsonii*. That is because cattle do not prefer to graze on forbs.
2. Cattle usually are not found on open outcroppings of rock and steep slopes; therefore, there would be very little trampling of these rare plants because of the small cattle numbers.

Alternative B

A. Description

This alternative would allow for 408 head of cattle on the allotment. This number could be adjusted slightly depending on proper salting, watering and riding techniques. If one rider could not control the

D R A F T

cattle then he would be backed up with another fulltime rider, weekend riders, or whichever combination of riding that is most beneficial for the range. Under this alternative there would be no interior division fences. There would be fences to protect riparian zones and key wildlife areas. If the riders could not keep use in certain areas to a minimum, then there would be a reduction in AUM's taken from that area. This would be called a riding management system. This system would allow for certain areas in the allotment to get some deferment on a rotational basis. Use under this system would be approximately 40%.

There would be six new water developments and eight major reconstructions of all water troughs. Once constructed, all water developments would be kept in good repair.

B. Mitigating Measures, Management Requirements and Constraints

These are the same as in Alternative A except as follows:

Soils, Wetlands and Flood Plains

1. All resources would be given more protection under this alternative.
2. Wetlands and riparian zones may have to be fenced.

Range

1. A great deal of secondary range would be converted into primary range. If these areas are on steep slopes they should receive only light use to prevent erosion.
2. Cattle would have to be forced into changing their natural grazing habits.

D R A F T

Threatened and Endangered Plant Species

- 1. Use would be more dispersed over the entire allotment. Therefore, certain threatened and endangered plant species might receive more trampling than under Alternative A.*
- 2. The increased cattle number might cause a slight bit more of trampling.*
- 3. Once the exact location of these plant communities is found, drive, salt and develop water away from these communities.*

Alternative C

A. Description

This alternative would eventually allow for 567 head of cattle if all conditions were met. This would still allow for 10% of the AUM's available for wildlife.

To ensure for a proper safety factor, the stocking rates would be increased only as the improvements are completed. The first stocking increase will be allowed after the following conditions are met.

Quartz Basin (Unit One) and The Hub (Unit Two) are separated from one another. This will require approximately two and one-tenths miles of fence and two cattleguards. This will also require six water developments. Once this has been completed, 50 additional head of cattle will be allowed on the allotment.

The second phase of development would be to cut Unit Two from Unit Three. This would take approximately 4.5 miles of fence and would require at least eight more water developments. At the completion of this development work, an additional 100 head of cattle would be allowed. This would leave an additional 52 head. These cattle

D R A F T

would then be allowed at the beginning of the third grazing season following completion of all improvements, if the additional forage was available and if the range condition warranted it.

B. Mitigating Measures, Management Requirements and Constraints

These are the same as in Alternative B except as follows:

Range

1. This alternative would convert more secondary range into primary range than either Alternative A or B.
2. Cattle would be using approximately one-third of the allotment at a time. Each unit would be deferred one out of three years.
3. Cattle would be driven between fenced units by all permittees and helpers, as required by the Management Plan.

Threatened and Endangered Plant Species

1. This alternative would possibly have more impact on threatened and endangered plant species than either Alternative A or B. This would be due to the increased cattle numbers.
2. Proper riding intensity, salting and watering will mitigate most problems associated with increased cattle numbers.

Reforestation and T.S.I. Activities

1. This alternative would have more impact on new plantations than either Alternative A or B. This could be due to the increased cattle numbers.
2. Proper riding, salting and watering will eliminate most problems associated with cattle's concentrating on certain overused areas.
3. Three unit fences will help eliminate cattle concentrations.

D R A F T

V. EFFECTS OF IMPLEMENTATION

This section will describe the consequences of implementing each alternative in terms of outputs, costs, and environmental changes.

Alternative A

This alternative would have very little change from what is now the present situation. The situation at present is as follows: All cattle would be driven to the allotment from the base property. The permittees would continue to use the allotment in their respective manners, rotating from year to year.

Once proper use of 45% has been reached, then the cattle would be driven to another area within the allotment. This would continue until the entire allotment had been properly grazed.

Wildlife/Range:

Implementation of this alternative would result in very little overlap between most wildlife and cattle. Cattle prefer the gentler slopes, while deer most generally use the ridgetops and steep, south-facing slopes during critical winter months. Cattle generally prefer grass and grass-type species, while deer prefer forbs and brush.

Timber:

Implementation of this alternative would have little effect on tree regeneration, as compared to the present situation. There is one problem with tree establishment in the Thirteen Mile area. It is presently fenced and the trees are covered with Vexar tubing. It is not presently known whether cattle are the major cause in preventing tree reestablishment.

In general the low numbers of cattle in combination with proper riding, salting and watering techniques will aid Foresters in the quick re-establishment of tree plantations.

D R A F T

Cattle will continue to receive some benefit from range that is created due to a timber sale. The cattle may graze cut-over areas from plantation establishment until the time when there is a complete forest overstory, or approximately 12 years.

Rare and Endangered Plants:

This alternative would have very little significance in changing the present status of the rare and endangered plants presently on the allotment. Cattle numbers would remain the same, and therefore, cattle would not be forced upon secondary range, where these plants are usually found.

Economics:

This alternative has the second highest Benefit Cost Ratio. Because the allotment helps stabilize four family ranches, it is an important source of income for these families. The money that is spent in the community usually turns over seven times, thereby stabilizing the local economy. Most of these ranchers do not have enough summer range to support their current herds; therefore, a reduction would damage their businesses.

Hydrology:

This alternative would have very little negative impact on present water quality, since the cattle number would remain stable. Our present system meets or exceeds all State and Federal standards.

Soils:

Under this alternative there would be little significant impact on soil, puddling or erosion; this is due to the small numbers of cattle. With an increase in cattle numbers, there is a likelihood

D R A F T

of increased possibilities for soil compaction and erosion. Most soil puddling can be handled by keeping cattle off the allotment until the soil is dry.

Wetlands and Flood Plains:

Under this alternative, there would be very little damage to wet or marshy areas. There are very few areas in the allotment that qualify as either a wetland or a flood plain. Cattle do not generally prefer to keg up in these types of areas, since a great deal of insects are usually found here. They do not generally prefer to drink from these types of areas, since the water is poor-tasting.

Conflicts Between Objectives of Federal/Regional/State and Local Land Use Plans:

None identified.

Urban Quality, Historic, Cultural Resources:

Cultural resource inventory to be conducted and to be in compliance with E.O. 11593 and with the American Indian Religious Freedom Act.

Alternative B (Effects of Implementation)

The following effects differ from those of Alternative A. If not mentioned, then the effects are approximately the same as in Alternative A.

Timber:

This alternative would have less overall impact on tree regeneration than either Alternative A or C. There would be such overall light use that very little tree trampling would occur due to cattle.

Rare and Endangered Plants:

Under this alternative cattle would possibly have more influence on these plants than under Alternative A, but less influence than with Alternative C. Cattle would have less influence on these types of plants than deer would since cattle prefer grass.

Alternative C (Effects of Implementation)

Wildlife/Range:

In normal years there should be very little overlap of cattle and wildlife range use. However, if forage becomes critical, cattle may be forced to eat forbs and brush. This has more possibility of happening under Alternative C than under either Alternative A or B. This situation could be eliminated, however, by removing cattle from the range once 50% utilization has been obtained.

Timber:

This alternative could have more effect on tree regeneration than either Alternative A or B. This is due to the increased cattle numbers. Under this alternative they would have a greater possibility of trampling younger trees. It is not known if cattle are the main problem in retarding tree plantation establishment. Cattle could be kept away from the new plantations until young trees are well-established.

Rare and Endangered Plants:

This alternative could have a greater impact on these plants than either Alternative A or B. These plants could be found on secondary range. However, cattle do not frequent these rock outcroppings where the plants are found.

D R A F T

Economics:

This alternative would have the highest Benefit Cost Ratio, even though it has the highest initial costs. This is due to the allowable increases in cattle numbers. This alternative could support another fulltime rancher in the community. This would add greatly to the economic stability of the area.

Hydrology:

Because of the increased cattle numbers, this alternative is expected to have more possibility of affecting water quality than either Alternative A or B. It will, however, still meet State and Federal requirements.

Soils:

There is also the possibility of slightly more erosion potential than with either Alternative A or B. But with the deferment system, this should more than offset any negative impacts due to increased cattle numbers.

VI. EVALUATION OF ALTERNATIVES

This evaluation process evaluates the three alternatives based on how well the effects of implementation and evaluation criteria are met. In order to accomplish this, the team met to show a difference in relative terms like the following: "best", "no significant difference", and "worst".

To optimize range production came out with the highest score. The next most important factor was to maximize the benefit cost ratio. The team felt that both critical damage to trees and competition between cattle and wildlife should receive equal concern. Therefore, there is no significant difference between them.

D R A F T

Summary of the Three Alternatives:

The three alternatives were ranked against each other on a high-medium-low scale.

Alternative A is tied with Alternative B for protection of trees, utilization of deer winter range and protection of rare plants. It has a high internal rate of return, as does Alternative C. It is average in Benefit Cost Ratio. It is lower in amount of riding, cattle numbers, number of improvements, utilization of range resources and in costs for the system.

Like Alternative A, Alternative B has a high score in protection of trees, utilization of deer winter range, and protection of rare plants. It scored highest in riding management, and therefore, in costs. It is average in allowed cattle number, number of improvements, and range utilization. It is lower than the other two alternatives in Benefit Cost Ratio and I.R.R.

<i>Evaluation Criteria</i>	<i>Alternative A</i>	<i>Alternative B</i>	<i>Alternative C</i>
<i>Minimize damage to tree reproduction</i>	<i>No significant difference</i>	<i>Best</i>	<i>No significant difference</i>
<i>Minimize competition between cattle and deer in key winter range areas</i>	<i>No significant difference</i>	<i>Best</i>	<i>No significant difference</i>
<i>Maximize benefit cost ratio</i>	<i>No significant difference</i>	<i>Worst</i>	<i>Best</i>
<i>Optimize range utilization</i>	<i>No significant difference</i>	<i>No significant difference</i>	<i>Best</i>

D R A F T

Alternative C is higher than the other alternatives in cattle number, number of improvements, range utilization, Benefit Cost Ratio and I.R.R. It has average values in riding, protection of trees, deer winter range, rare plants, and costs. This alternative does not have any low value given, whereas the other two alternatives have been assigned low values.

D R A F T

Inputs and comments were requested from and given by the following individuals.

<u>NAME</u>	<u>AGENCY</u>
Dennis Phillippi	Soil Conservation Service (State)
Don Deerfield	Soil Conservation Service
Ben Roushae	Washington State University
Chuck Perry	State Representative
Lou Spink	Range Staff, U.S.D.A. (Region 6)
Ray Evans	Range Staff, U.S.D.A.
Earl Crea	Republic Permittees' Association
Tom Beal	Ferry County Cattlemen's Association
Bill Kuehne	Rancher (moderator), Chairman of Soil Conservation Service Board
Tom Burke	Wildlife Biologist, U.S.D.A.
Bert Wasson	Hydrologist, U.S.D.A.
Fred Patten	Resource Assistant, U.S.D.A.
Brad Reed	Range Conservationist, U.S.D.A.
Larry Cooke	Soil Conservation Service
Gary Oliverson	Range Staff, U.S.D.A.
John Sweetman	State Range Committee (S.C.S.)
Dean Harrison	Soil Conservation Service (State)

VII. IDENTIFICATION OF THE FOREST SERVICE PREFERRED ALTERNATIVE

Alternative C proved to be the wisest choice when the evaluation criteria were applied equally to all three alternatives (see previous chart, page 29).

This alternative would meet the requirements of minimizing the number of acres in which cattle infringe upon deer winter range during the summer months. This alternative will aid in tree reproduction by striving to obtain fewer AUM's from new plantations. This will minimize most damage to small trees.

Alternative C has the highest Benefit Cost Ratio. Therefore, it will have more social and economic impact than the other alternatives. This alternative is also the highest in optimizing range utilization. This will be due to the 202-head increase. Because of the above reasons, we have selected Alternative C as the preferred alternative.