**Location:** The Cluster II project area encompasses approximately 142,162 acres of National Forest System lands, 1,018 acres of Bureau of Land Management lands, and 500 acres of privately-owned land. Four grazing allotments are involved:

- Sand Springs – 55,967 acres
- Quartz Mountain – 34,087 acres
- Cabin Lake – 26,192 acres
- Crater Buttes – 26,416 acres

The group of allotments in the planning area is located southeast of Pine Mountain and North of Christmas Valley, borders the Newberry national Volcanic Monument on the west and follows the boundary between the Deschutes National Forest and the Bureau of Land Management and private land owners on the east and southeast.

**Table 1. Project Area Allotment Status**

<table>
<thead>
<tr>
<th>Allotment</th>
<th>Total Allotment Acres</th>
<th>Permitted Livestock Type</th>
<th>Last Year Actively Grazed/Status</th>
<th>Acers of non-Forest Service Ownership in the Allotment</th>
<th>Year of Latest NEPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabin Lake</td>
<td>26,192</td>
<td>Cattle</td>
<td>1994/Vacant</td>
<td>1 - BLM</td>
<td>1964</td>
</tr>
<tr>
<td>Crater Buttes</td>
<td>26,416</td>
<td>Sheep</td>
<td>1975/Vacant</td>
<td></td>
<td>1962</td>
</tr>
<tr>
<td>Quartz Mountain</td>
<td>34,087</td>
<td>Cattle</td>
<td>2004/Active</td>
<td>326 – Private, 94 - BLM</td>
<td>1981</td>
</tr>
<tr>
<td><strong>Total Acres</strong></td>
<td><strong>142,662</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


**Purpose and Need for Action.** The purpose of the Cluster II project is:

- compliance with Section 504 of the 1995 Rescissions Bill (P.L. 104-19);
- to reauthorize grazing in the Cabin Lake, Crater Buttes, Quartz Mountain, and Sand Springs Range Allotments;
- updated allotment management plans that reflect current laws, regulations and management direction;
- authorize construction, reconstruction and maintenance of range improvements, including fence lines, water sets and related facilities, to improve the distribution of livestock, protect other resources, and maintain or restore authorized use levels within each allotment;
- to protect and enhance wildlife and range habitats by proper grazing practices;
- to utilize grazing to help establish and maintain vegetative communities that are more resistant to disturbance from events such as wildfire;
• reduce conflicts between grazing operations and other resources and resource users.

NEED

Public Law 104-19, the Rescission Act, was signed into law in July 1995. The Act requires that grazing permits, which expire prior to completion of NEPA analyses, be reissued based on existing terms and conditions. It also requires that NEPA analysis be conducted on all range allotments by 2010 and that new permits be issued unless there are significant environmental concerns.

The Cabin Lake Allotment has been vacant since the last permittee vacated the allotment in 1995 in compliance with Forest Service grazing permit policy.

The Crater Buttes Allotment has been vacant since the last permittee vacated the allotment in 1976.

A new term grazing permit was issued for the Quartz Mountain Allotment in 2003 based on the sale of adjacent private land, the base property on which the permit is based.

A new term grazing permit was issued for the Sand Springs Allotment in 1998 based on the sale of adjacent private land, the base property on which the permit is based.

There is a need to comply with the provisions of P.L. 104-19, and specifically Section 504, to perform environmental analysis prior to issuing new permits.

There is a need for:

1) allotments with a sufficient number of pastures to allow the proper application of rest-rotation grazing systems;
2) permitted allotment use levels;
3) replace or repair improvements destroyed or damaged by non-use; and
4) minimize the impacts of wild and prescribe fire activities on permittees.

When grazing was initiated in the 1930s, there was little or no interaction between the public and livestock. Other uses, particularly recreational activities such as hunting, dispersed camping and off-highway vehicle (OHV) use, have increased over the past 30-40 years. Such activities have increasingly occurred in areas historically associated with livestock use.

Dispersed camping and OHV staging areas favor open sites with limited or no vegetation. These are characteristics common to livestock water sets. When livestock are not present, the open character makes them attractive to dispersed camping (especially during the fall hunting seasons) and OHV use. Regular use by OHVs of some water set locations on the east side of the District has resulted in the designation of those sites as OHV staging areas. This has resulted in the water set being closed and relocated to a new site. Additional conflicts arise when water sets are used by other users when livestock are present in the pasture.

There is a need to reduce conflicts between grazing permittees and other forest and rangeland users.

There are no perennial streams or lakes within the project area. There are three ponds or springs that retain water throughout the summer season within the project area. Water for livestock is
provided by the permittee and delivered to water tanks by water trucks. Water sets are distributed at set distances within each pasture. They are located near or adjacent to system roads to provide access. Water sets are also located away from high public use areas and hidden by vegetation or terrain to minimize conflicts with other users. Placement of each water set allows the permittee to better distribute livestock and improve utilization of forage. Some pastures within the Cluster II allotments have too few water sets for the terrain and distances livestock must travel between sets.

There is a need to:
1) minimize the loss or relocation of existing water sets;
2) increase the number of water sets to improve livestock distribution and forage utilization;
3) maintain or improve the placement of water sets within each pasture and allotment; and
4) restore or maintain road access to water set locations.

MANAGEMENT AREAS AND DIRECTION

Deschutes Land and Resource Management Plan:

The Deschutes National Forest Land and Resource Management Plan (LRMP), as amended, guides all natural resource management activities and provides standards and guidelines for the Deschutes National Forest. Forest Service records indicate that grazing has been occurring in the planning area since at least the late 1920s. Historic records indicate grazing actually began much earlier, prior to World War I, in the Cabin Lake area. The 1934 Taylor Grazing Act established grazing controls on public lands. The 1990 Deschutes Land and Resource Management Plan (LRMP) identified 34 allotments totaling more than 816,000 acres. The LRMP determined that the allotments are suitable for livestock grazing (LRMP, page 4-10).

The following is a summary of the Management Areas (MA) found in the project area (Map:

Deer Habitat (MA-7; 52,965 acres): Manage vegetation to provide optimum habitat conditions on deer winter and transition ranges while providing some domestic livestock forage, wood products, visual quality, and recreation opportunities.

General Forest (MA-8; 78,461 acres): Emphasize timber production while providing forage production, visual quality, wildlife habitat, and recreation opportunities for public use and enjoyment.

Scenic Views (MA-9; 3,606 acres): Provide Forest visitors with high quality scenery that represents the natural character of Central Oregon.

Old Growth (MA-15; 6,112 acres): Provide naturally evolved old growth forest ecosystems for 1) habitat for plant and animal species associated with old growth forest ecosystem, 2) representations of landscape ecology, 3) public enjoyment of large, old-tree environments, and 4) the needs of the public from an aesthetic spiritual sense.

Other Ownership- 568 acres

Outside Deschutes NF Boundary (BLM) – 950 acres
The project area is located within the North and South Paulina Management Unit as designated by the Oregon Department of Fish and Wildlife (ODFW). These management units have an overall target deer population of 16,500 animals.

Livestock target primarily forage species - grasses, forbs, etc. when grazing. Some livestock will also browse shrubs, including bitterbrush, the primary browse species of wintering mule deer. Mule deer are browsers and target primarily shrubs such as bitterbrush during the winter months.

There is a need to:
1) maintain sufficient browse to support target populations of mule deer as designated by ODFW;
2) minimize browsing of bitterbrush by livestock; and
3) improve upland vegetation conditions and allow for forage utilization by modifying grazing practices and implementing cost effective range improvements.

Section 504 of the 1995 Rescissions Bill, requires each National Forest System unit establish and adhere to a schedule for the completion of National Environmental Policy Act (NEPA) (1969) analysis and decisions on all allotments on that unit for which NEPA analysis is needed.

There is a need comply with Section 504 of the 1995 Rescissions Bill.

This Environmental Assessment has been prepared to assess the environmental impacts of reauthorizing livestock grazing on three cattle and horse allotments and closing one sheep and goat allotment to livestock grazing within the Cluster II project area. The resulting grazing permits would be in effect from 2007 to 2016. The proposed action is similar to the current management of the allotments, but would be modified to reflect new standards and to implement protection measures for sensitive plants. Three alternatives to the proposed action were developed, analyzed, and compared to the proposed action: No Grazing; Current Allotment Management (No Change); and Modified Proposed Action (Extended Monitoring).

The Proposed Action is needed because management plans currently in place on the allotments are outdated and need to be updated to reflect changed laws, regulations, and information. The proposed action is expected to improve or maintain upland vegetation conditions and allow for forage utilization by modifying current grazing practices and implementing cost-effective range improvements. Monitoring is incorporated into the action alternatives. Impacts to resources in the project area have been assessed, and no significant effects will result from the action alternatives.

Based on the information contained in the Environmental Assessment and on public comment, the responsible official will decide whether or not to authorize grazing on the allotments within the Cluster II project area. If the decision is to continue authorization of grazing, then the responsible official will decide what management prescriptions will apply.

Two allotments are in active status – Quartz Mountain and Sand Springs. These two allotments have permittees that operate annually at or near their current permitted numbers. Permitted numbers were allocated based on the resource conditions, permittee operations, and/or existing range improvements. Two of the four allotments are vacant with no permittee and no use by livestock. The Crater Buttes Allotment became vacant in 1975 after the permittee chose not to continue grazing in the allotment, and the Cabin Lake Allotment became vacant in 1994. There has been interest by private parties to restock these allotments. Vacant allotments cannot be restocked with livestock until an assessment under the NEPA is completed.
The Deschutes Land and Resource Management Plan (LRMP) has the following goal for range management on the Forest: “To manage the forage resources for long-term sustained productivity through attainment of upward or stable vegetative trends, protection of the basic soil and water resources, and meet public needs for multiple resource outputs.” (LRMP 4-49). To meet this goal, there is a need to improve control of livestock. The new AMPs would provide this through better distribution and more controlled utilization of vegetation.

The purpose of this action is to continue to authorize grazing in the Sand Springs, Quartz Mountain, and Cabin lake Allotments, applying new grazing management direction, and to close the Crater Buttes allotment to grazing. This action would supply updated terms and conditions to the allotment management plans and term grazing permits.

Present allotment management plans were implemented between 1962 and 1984. These need to be updated to reflect the most current laws, regulations, and management direction, and to incorporate new or changed conditions and recent science.

**Cabin Lake Allotment**

There is a need to fully enclose the Cabin Lake Allotment with fences, improve livestock management and better meet resource objectives. The fencing will meet the following purposes: to exclude livestock grazing in most of the Old Growth MA on the east flanks of Sugar Pine Ridge; to exclude livestock from Road 22 where there are safety concerns; to discontinue livestock use of transitional range north of Road 22, exclude the South Ice Cave recreation area and eliminate potential user conflicts by separating livestock grazing and OHV activities. Due to years of neglect, there is also needed maintenance on the existing fencing.

**Quartz Mountain Allotment**

There is a need to add additional fencing in the Quartz Mountain Allotment to improve livestock management. Additional fencing is intended to meet the following purposes: divide existing pastures, improve livestock distribution, facilitate livestock management by providing more control, and allow for a shorter period of time in each pasture to reduce the period of use on each acre of ground. The fencing also provides more fencing options and flexibility when there is drought or the need to provide more specific use of deer winter range areas.

There is a need to provide a water source into portions of the 16 East and West pastures and the Wigtop pasture. Extending waterlines and/or developing a new well will provide piped water sources into areas that are currently lacking.

**Sand Springs Allotment**

There is a need to add additional fencing in the Sand Springs Allotment to improve livestock management. Additional fencing is intended to meet the following purposes: divide existing pastures, improve livestock distribution, facilitate livestock management by providing more control, and allow for a shorter period of time in the Watkins pasture to reduce the period of use on each acre of ground. The fencing also provides more fencing options and flexibility when there is drought or the need to provide more specific use of deer winter range areas.

**Crater Buttes Allotment**
The Crater Buttes Allotment has experienced a significant change in understory vegetation because of past management activities and the lack of fire. Many areas are experiencing conifer encroachment and the shrub component that sheep were allocated has been reduced. The grazing capacity is now much reduced from the 1970s when it was last utilized. There is a need to close this allotment to livestock grazing.

**Alternative 2 (Proposed Action):**

The Deschutes National Forest is proposing to authorize the grazing of domestic livestock, cattle, in the Sand Springs, Quartz Mountain, and Cabin Lake Allotments by issuing new 10-year term permits starting with the 2007 grazing season and ending after the 2016 grazing season. The Crater Buttes Allotment, a sheep and goat allotment, would be closed to grazing.

The Quartz Mountain and Cabin Lake Allotments would be grazed using a rest rotation system. To protect the pumice grape fern in the Sand Springs Pasture, the Sand Springs Allotment would be grazed using a deferred rest rotation system.

The grazing season within the three open allotments would be variable but would generally be from May through the end of September depending on the allotment and weather conditions. A maximum of 1500 cow/calf pairs would be permitted in the three allotments for the 4-month grazing season. Actual numbers within each allotment and the actual season of grazing would be based on range condition, permittee requested use, and range readiness. Actual seasons and numbers would be specified in the Annual Operating Plan and be within the limits specified in the permit.

The following actions would be necessary to implement this alternative (all improvements would be constructed and maintained by the permittee): New fence construction, development of additional water set locations; new current and trend study plots (Forest Service responsibility); adjustments in allotment and pasture boundaries; waterline extensions; adjustments in the season of use; additional cattleguards to support new fence construction; removal of cattleguards; waterline relocations; a new well; and changes in the current status of existing allotments.

Following is a discussion of specific required improvements and changes in grazing for each allotment.

**Sand Springs Allotment:**

The grazing season would change by starting May 15th and ending September 30th each year for a maximum of 122 days. A maximum of 600 cow/calf pairs would be permitted.

To minimize the impacts of grazing on the pumice grape fern population in the Sand Springs Pasture, the period of grazing would be varied on a four-year cycle. For one year out of the four, the pasture would not be grazed and the pasture rested during the entire season. For two out of the four years, grazing would not be allowed until August 1st. During the fourth year, grazing would occur prior to August 1st and be limited to a maximum of three weeks during that period. No grazing after August 1 would be expected in the pasture during that fourth year.

The number of pastures would increase from four (4) to five (5), The Watkins Pasture would be divided into two pastures (Watkins East and Watkins West). The allotment acreage would remain at approximately 55,967 acres.
Approximately 3.5 miles of new division fence would be constructed to divide the existing Watkins Pasture. The fence would be a wildlife friendly 3-strand smooth wire/barbed wire fence with the lower wire no less than 16 inches above the ground and the top wire no higher than 42 inches above the ground. Posts would be metal. This would increase the number of miles of interior and boundary fence to approximately 58.5 miles. No existing fences would be removed.

New fence construction would require mowing up to approximately 3.5 acres of vegetation using a mower pulled by a 4-wheel farm type tractor or other similar piece of equipment. Vegetation would be mowed to a minimum of height of 6-8 inches. The mowed strip width would be approximately eight feet wide.

New fence construction would also require the construction of one road cattleguard on Road 2315 in T22S., R16E., Section 28. The cattleguard would be located within the existing road prism. It would be constructed using a wheeled backhoe or other similar equipment. No OHV cattleguards would be required.

Approximately 1.25 miles of water line extensions would be constructed. This would include: approximately one mile extension from the end of the existing line in T22S., R16E., Section 20 south along side of Road 2315-120 then across country to the corral on Road 2315-240 in T22S., R16E., Section 22; and an approximately one quarter (0.25) mile extension running east from the existing line in T22S., R16E., section 4 to a point near the junction of Road 2313-100 and Road 2313-190.

Construction of the waterline extensions would require digging a shallow ditch with a maximum depth of approximately 18 inches. The amount of disturbed area associated with the construction would be less than 10 feet in width. The ditch would be constructed using a backhoe with a bucket width of 24 inches or less in width or by using a “ditch witch” or comparable equipment. Approximately one mile of the proposed waterline extensions would be placed adjacent in the disturbed area along to Road 2315-120; the remainder of the extensions would be in undisturbed areas away from existing roads. The total amount of disturbed area associated with this construction would be less than two acres, the majority of which would be located adjacent to Road 2315-120.

A total of two new water troughs would be constructed; one along the longer waterline extension and one at the end of the shorter extension. Water troughs would be placed on site and would require no construction other than to connect them to the water line. In contrast to water sets, water troughs would not be removed when the cattle were removed for the season.

The waterline that currently is located in the center of Roads 2270-670 and 2274-410 in T22S., R14E., Sections 25 and 36 and T23S., R14E., Section 2, would be moved to the east side of the road. The estimated distance is less than 1.75 miles. The same types of equipment would be expected to be used to relocate this line. The relocated line is expected to be located primarily within previously disturbed areas within the road prism. The expected amount of soil disturbance is approximately two acres or less. Two existing water troughs would not be moved or otherwise relocated.

Three new current and trend study plots would be established; one each in the western portion of the Kelly-Firestone Pasture, the new Watkins West Pasture, and the new Watkins East Pasture.
Quartz Mountain Allotment

There would be no change in the size of the allotment or the number of cow/calf pairs that would be permitted to graze; a maximum of 600. The number of pastures would increase from five to eight. The grazing season would be changed from the current June 1 to September 30 to one from May 15th to September 30th and would be a variable use period between those dates permitting 600 cow/calf pairs for 122 days or the equivalent.

Approximately five miles of new fences would be constructed to divide the Wigtop (approximately two miles), Aspen (approximately one mile in two segments), and Powerline (approximately two miles) Pastures into the Wigtop East, Wigtop West, Aspen North, Aspen South, Powerline North, and Powerline South. Approximately five acres of vegetation would be mowed to permit construction of the new fences (eight foot strip with vegetation mowed to a minimum height of 6-8 inches). All would be wildlife friendly, 3-strand smooth wire/barbed wire with metal posts. No fences would be removed. There would be no change in the number of acres in the allotment due to new fence construction. The total number of miles of boundary and interior fences in the allotment would increase from 46 miles to 51 miles.

Construction of new fences would require the construction of three new road cattleguards. One would be located on Road 2325 (T23S., R15E., Section 24); one on Road 2325-700 (T23S., R15E., section 24), and the third on Road 2315 (T23S., R16E., Section 21). The number of cattleguards would increase from 14 to 17.

The new fences would also require three new gates. One would be located on Road 2350-810 and one on Road 2350-850 (T23S., R15E., section 20), and Road 2315-800 (T23S., R16E., Sections 21/28). The number of gates would increase from 29 to 32.

Six new water sets would be established. The first, located in the southeast quarter of the southeast quarter of section 23 in T23S, R15E, would also include the construction of approximately one quarter (0.25) mile of new holding fence. The fence would be a 3-strand, smooth wire/barbed wire fence and would be wildlife friendly with the bottom strand at least 16’ above the ground and the top strand 42 inches or less above the ground. The water set would serve four pastures – Powerline North, Powerline South, East 16, and Wigtop East.

Two new water sets are proposed beneath the BPA transmission lines and within the transmission line corridor. The first is located in the southeast quarter of the southeast quarter of section 1 in T23S., R15E. The second is located in section 25 in T23S., R15E., along Road 2325. New fences would not be required at these sites.

The fourth water set would be located at the intersection of Roads 2315-800 and 2315-820 in the southwest quarter of the northeast quarter in section 25 of T23S., R16E. No new fences would be required. The fifth water set would be located in T23S., R16E., Section 16 on Road 2315-630. The sixth water set would be located in T23S., R16E., section 17 on Road 2320-760.

Approximately 2.0 miles of new water line would be constructed from the end of the existing line in T23S R15E section 8. One section would continue south along Road 2368-200 then east less than one quarter (0.25) mile cross country to the end of Road 2368-280 in T23S, R15W., Section 16. Approximately 0.5 miles of wildlife friendly, 3-strand, smooth wire/barb wire fence would be constructed around the existing dirt reservoir at the end of Road 2368-280 to exclude livestock. A new water trough would be placed at the end of Road 2368-280,
A new well would be drilled at the end of Road 2368-280 and a 5,000 gallon water storage tank constructed on a small ridge located to the west of the reservoir. Both the well and the storage tank would be connected to the proposed water line extension. Less than one half acre would be expected to be disturbed to drill the well and a similar sized area to construct the storage tank. An access road, approximately 500 feet in length and a maximum width of 10 feet, would be required to provide access to construct and maintain the tank. This access road would require no actual construction (blading, digging, etc.); local terrain permits cross country vehicle access. Drilling of the well would be coordinated with the BLM which has jurisdiction on subsurface activities.

One new current and trend study plot would be established in the new East Wigtop Pasture.

**Cabin Lake Allotment**

The allotment would remain with five pastures. The grazing season would be changed to May 25 through September 10. The number of cow/calf pairs would decline from 300 to 240.

The size of this allotment would be reduced from the current 26,192 acres to approximately 21,296 acres, a reduction of approximately 4,896 acres. Pasture One would be reduced by approximately 148 acres, Pasture 2 by approximately 807 acres, and Pasture 3 by approximately 3,951 acres. Pasture 3 would also see a 10 acre increase in the northeast corner of the pasture resulting from the construction of a short segment of new fence. This would result in a net decrease of 3,941 acres.

The reduction in the allotment and pasture sizes would be accomplished by the construction of new fences along the east side of Roads 2240-500 and 2240 and along the south side of Road 22. A small, approximately 40 acre section south of Road 22 and bounded by Road 23 on the west, Road 2300-910 on the south, and OHV Trail 911 on the east would also be fenced out of the allotment. This would require the construction of approximately 11 miles of wildlife friendly, 3-strand smooth wire/barbed wire fence with metal posts. Construction would require the mowing of approximately 11 acres of vegetation. No existing fences would be removed.

New fence construction would require the construction of two new road cattleguards would be required on Roads 2240-550 (T24S., R13E., section 2) and 23 (T23S., R14E., sections 16/17). Approximately 15 other system roads would require gates. An existing road cattleguard, located on Road 2240 (T23S., R13E., section 26) would be removed and relocated on Road 2240-200 (T23S., R13E., section 26). The number of cattleguards would increase from the current 10 to 12.

All cattleguard placements, removals, and relocations would occur within the existing road prism.

In addition to road cattleguards, two (2) new OHV cattleguards would be needed; one on OHV Trail 911 in T23S., R14E., section 16 and the other at the intersection of OHV Trails 914 and 993 in T23S., R14E., section 15. There is no fence line or new fence construction proposed at the site of the latter cattleguard. Natural features provide a natural barrier to prevent cattle movement outside of the allotment. Placement of this cattleguard would prevent cattle from using the OHV trail to leave the allotment. As with road cattleguards, OHV cattleguard placements would occur primarily within the OHV trail prism.

The number of water sets would remain at 22; no new water sets would be established. There are no water troughs in the allotment and no new ones would be added. The one trick tank would
remain; no new ones would be constructed. This tank is currently in need of repair. It would be repaired.

There is approximately one mile of existing water line. No extensions or new lines are proposed. The existing well would remain; no new ones would be drilled.

Two new current and trend study plots would be established; one in Pasture Two and one in the eastern portion of Pasture 3.

**Crater Buttes Allotment**

This allotment would be closed. There are no improvements (fences, water sets, gates, cattleguards, etc.) associated with this allotment, and no new improvements would be added. There is approximately 6.7 miles of allotment boundary fence associated with the Gebhardt Well Allotment located along the southeast boundary of the Crater Buttes allotment. This allotment boundary fence would remain in place as long as grazing continued in the Gebhardt Well Allotment.

**Other Alternatives Analyzed**

A No Grazing Alternative, a Current Management Alternative, and a fourth alternative were analyzed. The fourth alternative is a modification of the proposed action, which provides for a 7-year monitoring period within the Sand Springs Pasture of the Sand Springs Allotment. The additional monitoring would allow information to be gathered on the Botrychium pumicola sensitive plan species that occurs in that pasture.