

ENVIRONMENTAL ASSESSMENT

BLACK DIAMOND AND OAK ALLOTMENT MANAGEMENT PLANS

Douglas Ranger District
USDA Forest Service
Cochise County, Arizona

August 24, 2000

Foreward	1
Section 1 – Project Scope	
A. Background	2
B. Purpose and Need	6
C. Proposed Actions	6
D. Decision to be Made	8
E. Planning Issues	8
F. Evaluation Measures	8
G. Further NEPA Analysis Needed	8
Section 2 – Alternatives	
A. Alternative Development	9
B. Alternatives Considered	
1) No Action/No Grazing	9
2) Proposed Action	9
3) Current Management	11
C. Alternatives dropped from detailed analysis	11
D. Comparison of Alternatives	11
E. Preferred Alternative	12
Section 3 – Affected Environment and Environmental Effects	
A. Past actions contributing to present condition	13
B. Proposed projects	15
C. Vegetation	15
D. Riparian areas	19
E. Soils	21
F. TES species	22
G. Wildlife	24
H. Water/Air	25
I. Cultural Resources	26
J. Economics	27
K. National Forest Management Act Findings	27
Section 4 – List of preparers	28
Section 5 – Consultation with others	28
Appendix A – Analysis Record Index	29
Appendix B – Response to Comments	

FOREWORD

The Council on Environmental Quality regulations (40 CFR Parts 1500 to 1508) state the procedures the Forest Service uses to comply with the National Environmental Policy Act, commonly referred to as NEPA. These regulations define an environmental assessment as a "concise public document" that "shall include brief discussions" of the need for the proposal, alternatives to the proposal, discussion of environmental effects based on the substantive issues, and a listing of agencies and persons consulted (40 CFR 1508.9). In order to meet the intent of the regulations with respect to "concise" and "brief", the text of this environmental assessment will contain referencing to the contents of the analysis record whenever possible. Included in the text of this environmental assessment, references to analysis record documents will be contained in parenthesis following the conclusionary remarks abstracted from a particular referenced document. For example, a reference "(Doc. 23, page 6)" would mean that a specific passage in the environmental assessment is linked to analysis record Document 23, page 6. A complete index to the analysis record contents is contained in the environmental assessment as Appendix A.

The Code of Federal Regulations (CFR) contains guidance concerning public review of environmental assessments. This guidance can be found at 36 CFR Part 215. These regulations prescribe a 30-day comment period for public review of this document (36 CFR 215.6(a)). The 30-day comment period begins on the first day after publication of a notice of environmental assessment availability in the appropriate newspaper. The District Ranger must consider all comments received by the close of business on the 30th day of the comment period (36 CFR 215.6(c)(2)). The District Ranger's response will be written and added to the appendix of the environmental assessment. A copy of the written response will be forwarded to all environmental assessment commentors with a copy of the final decision notice.

When the final project decision is made, the 36 CFR 215 regulations also provide an administrative appeal process to further review agency decisions. The final decision notice mailed to persons who have expressed an interest in this project will contain information on filing an appeal should you choose to do so. Decisions made at the Coronado National Forest level will be reviewed by the Regional Forester of the Forest Service Region III Office in Albuquerque, New Mexico (36 CFR 215.12). Unless waived in a specific case, it is the position of the Department of Agriculture that any filing for Federal judicial review of a decision subject to review under the 36 CFR 215 regulations is premature and inappropriate unless the plaintiff has first sought to invoke and exhaust the procedures available under these regulations (36 CFR 215.20). When NEPA is completed relative to issuance of permits (e.g., special use, grazing, etc.), permittees may choose to appeal under the regulations listed at 36 CFR 251, Subpart C. Permittees must select which administrative review regulation they will opt to use, because they cannot use both for the same appealed decision.

SECTION 1 - PROJECT SCOPE

A. Background

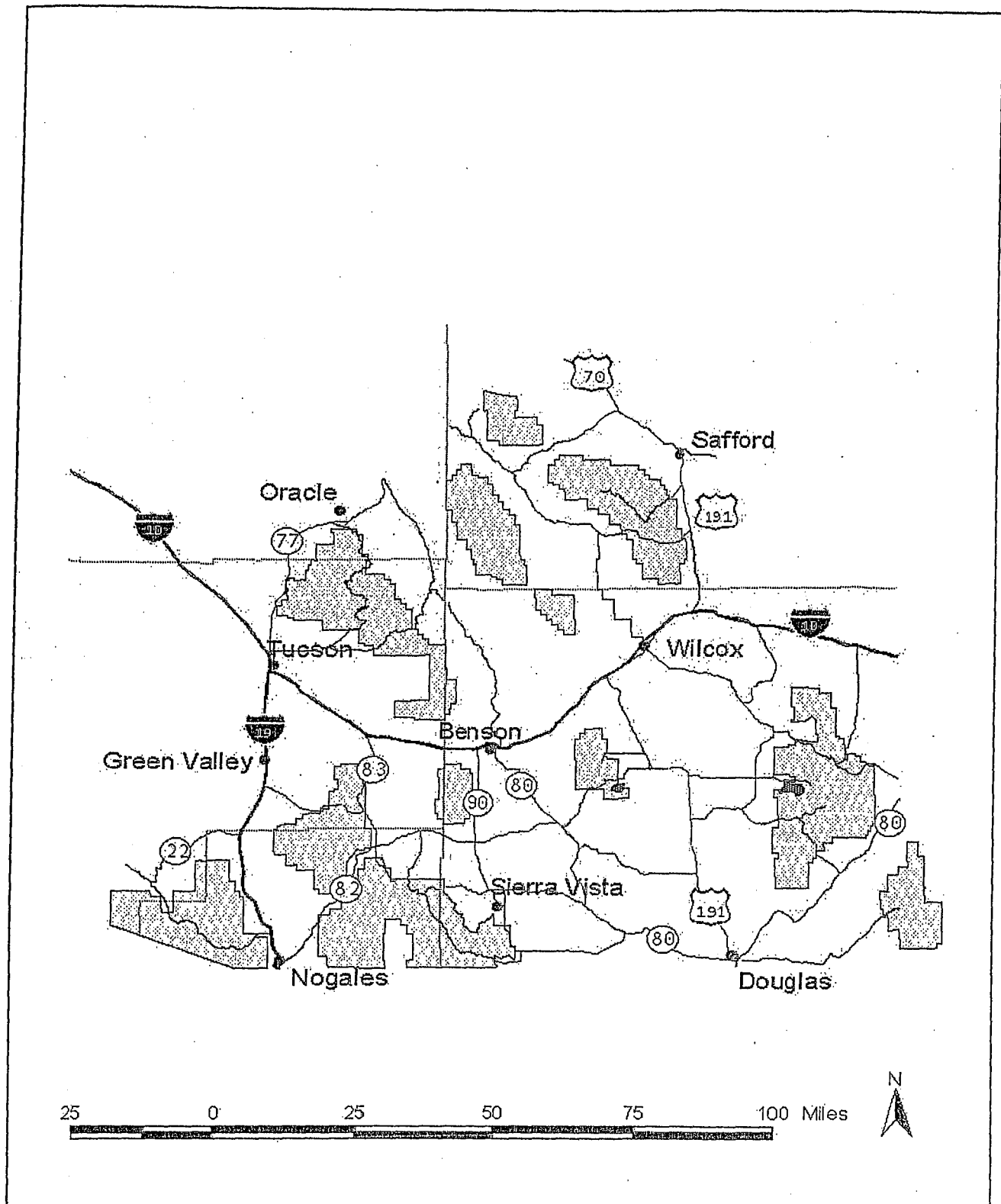
The Black Diamond and Oak grazing allotments both include land identified as suitable for grazing in the Coronado National Forest Land Management Plan (LMP). Where consistent with LMPs, it is Forest Service policy to make forage available to qualified livestock operators from lands suitable for grazing (FSM 2202.1, FSM 2203.1, 36 CFR 22.2 (c), Multiple Use and Sustained Yield act of 1960, Wilderness Act of 1964, Forest and Rangeland Renewable Resources Planning Act of 1974). Federal actions such as issuance of term grazing permits and AMP development must be analyzed to determine potential environmental consequences (National Environmental Policy Act of 1969).

There is not a current Allotment Management Plan (AMP) for the Black Diamond Allotment. Grazing has been managed through the Annual Operating Instructions. An environmental analysis was conducted on the Oak Allotment in 1995 and an AMP was developed. In May of 1997, the Oak Allotment was acquired by the current permittee who also holds the permit on the Black Diamond Allotment. In October 1998, the Sanders Allotment was added to the Oak Allotment. In January 1999, an environmental analysis was begun for the Black Diamond allotment. This analysis was expanded in August 1999 to cover both the Black Diamond and Oak allotments to reflect the changed conditions on the Oak Allotment.

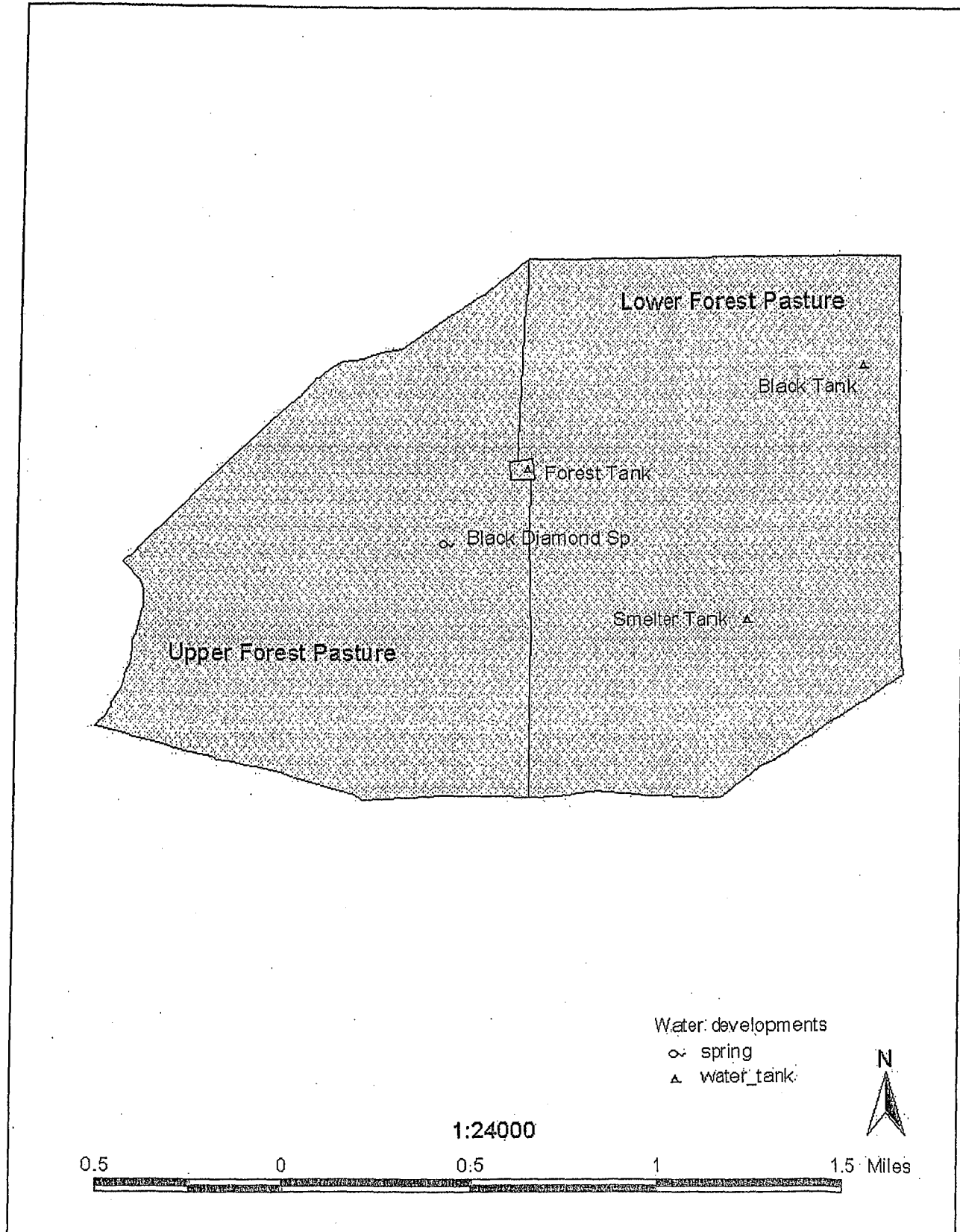
The Black Diamond allotment is located in the southeast portion of the Dragoon Mountains in Cochise County (maps 1 & 2). It is approximately 1,586 acres (1,303 are capable range) and consists of 2 pastures. It also encompasses 340 acres of private land. The area drains to the east, into the Willcox Playa. Elevations range from 5,000 feet at the south allotment boundary to 7,000 feet at Black Diamond Peak. Topography of the allotment is dominated by rough steep slopes in the western portion of the allotment and semi-alluvial flats with hills in eastern lower levels of the allotment. The allotment is 25% of the Black Diamond Ranch's operation. In addition to Forest Service permit, Black Diamond Ranch includes deeded land and a state lease. When the livestock are not on the Forest, they are on the state or private land.

The Oak allotment is located on the central west portion of the Chiricahua Mountains, within Cochise County (maps 1 & 3). It contains 4,083 acres of which 2,037 acres are considered capable and is divided into five pastures. The four main pastures are Upper Cottonwood, Middle, Southwest, and Sanders. The fifth pasture is the Holding pasture which is used when entering and exiting the allotment. The traps are used to move cattle between the pastures. The Oak Allotment is 40% of the permittee's operation. The remainder of the ranch is private land and state lease lands. There is one main drainage, Cottonwood Canyon, which drains to the west into the Sulphur Springs Valley via Whitewater Draw. Elevations range from 5,500 to 8,000 feet. The landform varies from steep canyon sides to moderately steep slopes to flatter old alluvial fans towards the low lands. The allotment is watered by Cottonwood Spring and pipeline which feeds three troughs (two in the Upper Pasture and one which straddles the fence between the Upper and Middle Pastures) and four dirt tanks. The dirt tanks are in good working order except for Turkey Dirt Tank. A fifth tank is located half in and out on the Forest Boundary in the Sanders Pasture, but is owned and operated by an adjacent landowner. A cement dam named Coal Pit is located in the northeastern portion of the allotment and is currently silted in and semi-functional. Other improvements include one shipping corral and about five miles of interior fence.

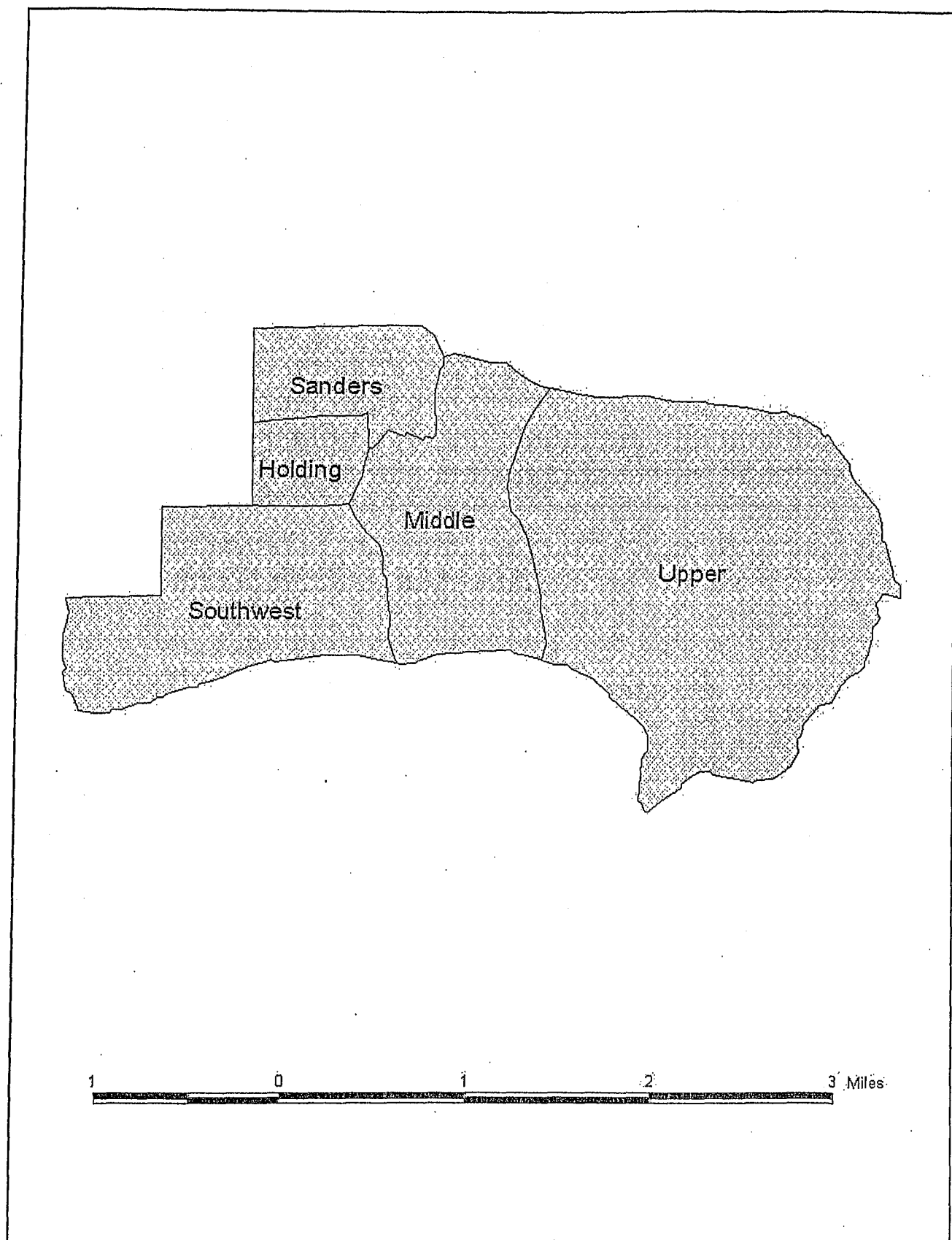
Map 1. General Vicinity of Allotments



Map 2. Black Diamond Allotment



Map 3. Oak Allotment



B. Purpose and Need for Action

The purpose of the proposed action is to implement Forest Service policy pertaining to forage use, authorize livestock grazing on the Black Diamond and Oak grazing allotments, and provide long-term management direction through an allotment management plan (AMP). An AMP is a coordinating document between the Forest Service and the livestock grazing permittee. These plans are generally developed every ten years. The EA will describe the existing and desired conditions of the allotments the effects of the proposed action and any alternatives on specific aspects of the environment. Management practices that are approved will be incorporated into the AMP.

The need for the action is a change in management on the Oak allotment and the lack of an AMP on the Black Diamond allotment. A further need for action is that there are areas on both allotments with soils in less than satisfactory condition. Habitat for the Chiricahua leopard frog is currently limited to stock water ponds and to improve this habitat, the ponds on the Black Diamond Allotment need to be reconstructed and fenced. Other improvements on both allotments also need to be reconstructed and there is a continuing problem with gates being left open by forest users. This would be remedied by the installation of a cattle guard.

The desired condition for the allotments is to have satisfactory resource conditions while maintaining livestock grazing. The objectives of this proposal are:

1. Livestock stocking is consistent with capacity.
2. Satisfactory watershed, riparian, and rangeland conditions are achieved or maintained.
3. Grazing and construction activities are managed with full consideration for wildlife and cultural resources.
4. A grazing management system, which provides for periodic growing season rest in all pastures, is in place.
5. All improvements needed for grazing management are in good working order.
6. Communication between the permittee and the Forest Service about environmental conditions within the allotment is timely and ongoing.
7. Chiricahua leopard frog habitat on the Black Diamond allotment is supporting frog populations.

C. Proposed Actions

The proposed action is to authorize livestock grazing on the Black Diamond and Oak allotments. The following is a description of proposed management practices for each of the allotments.

Black Diamond Allotment: Authorize livestock grazing on the allotment not to exceed 384 HMs (300 HMs on the National Forest and 84 HMs on the private land). This equates to 25 cow/calf pairs on the National Forest and 7 cow/calf pairs on the private land grazing year round. Actual use dates will vary as the allotment is part of a larger grazing system which includes state and private land outside the Forest boundary. Allowable use rates would be 45% in the summer growing season (July – September) and 50% the remainder of the year. These are the use levels which have been permitted in the past and under this management, satisfactory range conditions have been achieved.

In addition to the livestock grazing, the following developments are proposed:

- Reconstruct 2.0 miles of existing Forest Boundary fence (FBF), relocate quarter mile of FBF on line and install cattleguard.
- Black Tank and Smelter Tank: clean out tanks, install an enclosure fence around a portion of the each tank to protect frog habitat; construct erosion control features (rock/wire baskets) in the drainage above the tanks. The tank cleanout consists of dredging sediment from the tank bottom and depositing it on the existing berm. The enclosure fence will be confined to areas already impacted by tank construction and maintenance. There will be no new ground disturbance. The erosion control features will consist of stabilizing arroyo headcuts with rock, placed on the surface and secured by wire mesh. The treatment is to enhance Chiricahua leopard frog habitat and would be done in conjunction with Arizona Game and Fish Department.

Oak Allotment: Authorize livestock grazing on the allotment for 80 cow/calf pairs from 10/1 to 5/14. The maximum season of use is 7 months within this period. The initial permitted HMs would be 560 HMs. This could be increased to 630 HMs if at least 3 years of utilization studies indicate the capacity is available. The maximum estimates of capacity are based on NRCS Ecological Site Description guide, which indicated an initial stocking rate of 680 HMs. However, to account for watershed and wildlife needs, the permitted use would not exceed 630 HMs. Allowable use rates would be 45%. This is the use level which has been permitted in the past and under this management, satisfactory range conditions have been achieved. The grazing system for this allotment is a 5 pasture deferred rotation system.

In addition to the livestock grazing, the following developments are being proposed:

- Replace pipeline from Cottonwood Spring downhill about 6,500 ft to water troughs located in the Upper Pasture. This will improve cattle distribution.
- Continue construction of wire basket/rock/brush erosion control structures. The project consists of hand construction of erosion control features in four small drainages. This involves collecting and piling rocks within the drainage. Wire baskets will be anchored on the sides of the drainage and filled with rocks.
- Clean and maintain five cattle tanks: this will involve removing sediment from the tank bottoms and reinforcing the berms; and stacking loose rock on the surface where the drainages empty into the tanks (which will be done by hand). Equipment will use existing roads for access; there will be no new ground disturbance.

The cleaning of tanks is considered maintenance of existing developments and is not subject to NEPA analysis. It is included in the description of the action for these allotments in order to provide a complete description of the work to be done. It will not be part of any decision made.

D. Decision to be Made

The Douglas District Ranger will decide whether or not to continue to authorize grazing the Black Diamond and Oak allotments. If a decision is made to authorize grazing, the Ranger will also decide which management practices and mitigation measures will be prescribed in each AMP, including permitted number of animals and season of use, range facilities to be constructed, allowable utilization standards, and term of permit.

E. Planning Issues

On several dates in January and May of 1999, a Coronado National Forest Interdisciplinary team met with permittees and other agency representatives to discuss these two allotments and develop the proposed action. The site specific scoping helped the team to identify the following issues:

1. Effect of livestock and proposed improvements on vegetation. (Vegetation)
2. Effect of livestock and proposed improvements on riparian areas. (Riparian)
3. Effect of livestock grazing and proposed improvements on soil condition, especially those areas that are not currently in satisfactory condition. (Soils)
4. Effects of livestock grazing and proposed improvements on threatened, endangered, and sensitive species, especially lesser long-nosed bat and Chiricahua leopard frog. (TES species)
5. Effect of livestock grazing and proposed improvements on wildlife, especially Mearns's Quail. (Wildlife)
6. Effect of livestock and proposed improvements on water and air quality. (Water/Air)
7. Effect of livestock and proposed improvements on cultural resources. (Cultural Resources)
8. Cost of the proposed improvements. (Economics)

F. Evaluation Measures

These measures are used to evaluate issue resolution and to disclose the environmental effects of the proposed actions. Section 3 discussions focus on these measures in the narrative and tabular disclosures.

1. Vegetation: narrative and display of changes in range condition and trend
2. Riparian: narrative and display of changes in riparian conditions
3. Soils: narrative and display of the change in soil conditions.
4. TES species: narrative of effects on the species. The specifics will be evaluated in the Biological Assessment and Evaluation for the preferred alternative.
5. Wildlife: narrative discussing the direct, indirect, and cumulative effects of the alternatives.
6. Water/Air: narrative discussing the direct, indirect, and cumulative effects of the alternatives.
7. Cultural resources: narrative applying the National Register of Historic Places effects criteria (36 CFR 800.5)
8. Economics: comparison of costs by alternative

G. Further NEPA Analysis Needed

This environmental assessment documents the site-specific project level analysis that will support the decisions to be made at this time. No additional NEPA analysis will be needed to implement this project. This NEPA analysis is tiered to the analysis and documentation completed for the Coronado Land and Resource Management Plan in 1986. While this environmental assessment discloses the environmental effects from grazing on two allotments, separate decision notices will be issued for each allotment.

SECTION 2 - ALTERNATIVES

A. Alternative Development

For each allotment, three alternatives were analyzed: no grazing, continuation of current management, and the proposed action was developed. This is the minimum range of alternatives required by Forest Service policy. These alternatives address the issues so there was no need to develop additional ones.

B. Alternatives Considered

The following alternatives were developed by the interdisciplinary planning team to address the substantive issues defined during scoping. Two alternatives that were suggested during scoping were dropped from detail consideration. The alternatives considered in detail are described below:

Alternative 1: No Action, No Grazing

Under this alternative, use of the grazing allotment by domestic livestock would be discontinued. No term grazing permit would be issued. All existing structural improvements including water developments would remain in place but would not be maintained. Periodic monitoring of structural improvements (at least once every ten years) will be used to determine whether removal or maintenance is needed. Removal or maintenance would be authorized by a separate decision.

Alternative 2: Proposed Action

Black Diamond Allotment: Authorize livestock grazing on the allotment not to exceed 384 HMs (300 HMs on the National Forest and 84 HMs on the private land). This equates to 25 cow/calf pairs on the National Forest and 7 cow/calf pairs on the private land grazing year round. Actual use dates will vary, as the allotment is part of a larger grazing system which includes state and private land outside the Forest boundary. Allowable use rates would be 45% in the summer growing season (July – September) and 50% the remainder of the year. These are the use levels which have been permitted in the past and under this management, satisfactory range conditions have been achieved. In addition to the livestock grazing, the following developments are being proposed:

- Reconstruct 2.0 miles of existing Forest Boundary fence (FBF), relocate quarter mile of FBF on line and install cattleguard.
- Black Tank and Smelter Tank: clean out tanks, install an enclosure fence around a portion of the each tank to protect frog habitat; construct erosion control features (rock/wire baskets) in the drainage above the tanks; and treat to eliminate predatory non-native fish. The tank cleanout consists of dredging sediment from the tank bottom and depositing it on the existing berm. The enclosure fence will be confined to areas already impacted by tank construction and maintenance. There will be no new ground disturbance. The erosion control features will consist of stabilizing arroyo headcuts with rock, placed on the surface and secured by wire mesh. The treatment is to enhance Chiricahua leopard frog habitat and would be done in conjunction with Arizona Game and Fish Department.

Oak Allotment: Authorize livestock grazing on the allotment for 80 cow/calf pairs from 10/1 to 5/14. The maximum season of use is 7 months within this period. The initial permitted HMs would be 560 HMs. This could be increased to 630 HMs if at least 3 years of utilization studies indicate the capacity is available. The maximum estimates of capacity are based on NRCS Ecological Site Description guide, which indicated an initial stocking rate of 680 HMs. However, to account for watershed and wildlife permitted use would not exceed 630 HMs. Allowable use rates would be 45%. This is the use levels which has been permitted in the past and under this management, satisfactory range conditions have been achieved. The grazing system for this allotment is a 5 pasture deferred rotation system. In addition to the livestock grazing, the following developments are being proposed:

- Replace pipeline from Cottonwood Spring downhill about 6,500 ft to water troughs located in the Upper Pasture. This will improve cattle distribution. A survey for cultural resources and consultation with interested Tribes will be conducted prior to this work in order to mitigate any unforeseen effects.
- Continue construction of wire basket/rock/brush erosion control structures. The project consists of hand construction of erosion control features in four small drainages. This involves collecting and piling rocks within the drainage. Wire baskets will be anchored on the sides of the drainage and filled with rocks.

The following management practices would be included for both allotments:

- Salt and supplements will be placed away from water and low areas.
- A project specific survey of endangered, threatened, and sensitive plants will be conducted prior to any ground disturbing activities in order to facilitate avoidance of important populations in project areas.
- Key monitoring areas will be established in each pasture. Measurement of average utilization will be conducted as needed to ascertain when a grazed pasture has reached its utilization objective.
- Best Management Practices will be implemented. These are:
 - 1) annually prepare an operating plan with the permittee to allow for current allotment conditions
 - 2) make periodic field checks to identify needed adjustments in season of use and livestock numbers including stock counts, forage utilization, assessment of rangeland to verify soil and vegetative condition and trend
 - 3) use necessary techniques to achieve proper distribution, or lessen the impact on areas which are sensitive or which would naturally be overused, including riding and herding to shift livestock locations, using salt or supplement feed, range improvements, prescribed burning, trail construction or seeding, or prevention of intensive livestock grazing or concentrated livestock use on soils that have low bearing strength and are wet.

Alternative 3: Current Management

Black Diamond Allotment: Authorize livestock grazing on the allotment not to exceed 384 HMs (300 HMs on the National Forest and 84 HMs on the private land). This equates to 25 cow/calf pairs on the National Forest and 7 cow/calf pairs on the private land grazing year round. Actual use dates will vary, as the allotment is part of a larger grazing system which includes state and private land outside the Forest boundary. Allowable use rates would be 50% in the winter and 45% in the summer growing

season (July – September). These are the use levels which have been permitted in the past and under this management, satisfactory range conditions have been achieved. No improvements would be constructed or reconstructed.

Oak Allotment: Authorize livestock grazing on the allotment for 80 cow/calf pairs from 10/1 to 4/30. Allowable use would be 45%. This has been the level of use permitted in the past and satisfactory range conditions have been achieved under this management. The grazing system for this allotment is a 5 pasture deferred rotation system. No improvements would be constructed or reconstructed.

The following management practices would be included for both allotments:

- Salt and supplements will be placed away from water and low areas.
- A survey for cultural resources and consultation with interested Tribes will be conducted prior to any ground disturbing range improvement projects in order to mitigate any unforeseen effects.
- A project specific survey of endangered, threatened, and sensitive plants will be conducted in order to facilitate avoidance of important populations in project areas.
- Key monitoring areas will be established in each pasture. Measurement of average utilization will be conducted as needed to ascertain when a grazed pasture has reached it's utilization objective.

C. Alternatives dropped from detailed analysis

An alternative which increased HMs based on new improvements, management, and a production/utilization study contracted by the permittee was considered initially. This alternative was dropped due to non-completion of the data collection.

One respondent (document 22) suggested an alternative with a description of "Issue a 10-year term grazing permit for numbers and season based on the most recent production and utilization data available." This is substantially the same as the proposed action and will not be analyzed separately.

D. Comparison of Alternatives

The following table shows a comparison of the alternatives for several parameters and a summary of the effects.

Black Diamond Allotment

Parameter	No Grazing	Proposed Action	Current Management
Season of use	None	3/1-2/28	3/1-2/28
Utilization level (July-Sept)	0%	45%	45%
Utilization level (Oct – June)	0%	50%	50%
Permitted number of animals	0	25 Forest and 7 private land	25 Forest and 7 private land
Permitted animal months	0	384	384
Range improvement projects	N	Y	N
Frog enhancement project	N	Y	Y

Oak Allotment

Parameter	No Grazing	Proposed Action	Current Management
Season of use	None	10/1-5/14 (7 mo. Max)	10/1-4/30
Utilization level (July-Sept)	0%	45%	45%
Utilization level (Oct – June)	0%	45%	45%
Permitted number of animals	0	80	80
Permitted animal months	0	560 to 630	560
Cottonwood Spring pipeline	N	Y	N
Coal Pit Tank dams and cleaning	N	Y	N
Turkey Tank cleaned and flow redirected	N	Y	N
Loose rock dams	N	Y	N

E. Preferred Alternative

The proposed action (Alternative 2) is the agency's preferred alternative. This alternative provides for continued resource condition improvement, improved maintenance of existing improvements, provides for additional improvements to improve livestock distribution, and minimizes the economic impacts to the permittees.

SECTION 3 – EXISTING CONDITION and ENVIRONMENTAL EFFECTS

This section describes the past actions which have led to the present condition of the area, the affected environment (present condition), and the environmental effects (changes expected from implementing an alternative). The major issues (see Section 1) define the scope of environmental concern for this project. The environmental effects described in this section reflect the identified major issues.

Unless specified otherwise, the analysis area for each issue is the Black Diamond and Oak allotment. Since these allotments are not contiguous, the information is generally described separately. If the information is similar for the allotments, they are not separated.

A. Past actions contributing to the present condition

Over the five years prior to this assessment, rainfall on both allotments has been characterized by lower than normal summer precipitation, and, with the exception of 1998, higher than normal winter precipitation.

Fire has not been a major influence in the Black Diamond and Oak Allotments in the past 100 years. Fire starts by lightning may not spread because of a lack of fine fuels (grasses) resulting from grazing, and fires are generally suppressed due to fire management strategies. Between 1980 and 1999, one fire

occurred on the Black Diamond Allotment and five fires occurred in the upper east portion of the Oak allotment.

Black Diamond Allotment: Andrew Busenbark, the Black Diamond allotment permittee from 1966 to 1991, was permitted 300 AMs (25 head) year long. Roger Garey acquired the permit in 1992 with the same numbers and season. The current permit was issued in 1998 for 25 cow/calf yearlong. In addition, there is a private land permit for 7 head yearlong for a total of 384 Head Months. The season of use varies from year to year, but does not exceed proper utilization. The actual use for the 1994/95 Production-Utilization Survey was 57 to 68 head of cattle from July 6, 1994 to February 27, 1995 (320 HMs).

There is no current AMP. Management direction is in the form of Annual Operating Instructions (AOI). The AOI varies the numbers and timing of use. Currently the management is for the Upper Pasture to be grazed by 45 head from annually 10/21 to 1/05 and the Lower Pasture at various other times of the year.

Table 1. History of use on Black Diamond Allotment

	1991-1997	1998-1999
Permitted numbers (term permit + private land permit)	25 +7	25+7
Permitted HM	384	384
Actual use – number of head	40 to 67	45 upper pasture 10/21 – 1/5 45 lower pasture 6/1-6/14 124 lower pasture 6/15-8/12
Actual use – HMs	300	360
Season of use	Various times	Upper pasture 10/21 –1/5 Lower pasture 6/1-8/12

This allotment contains the historic Black Diamond Mine, smelter, and associated mine camp. The claim was first patented in 1902 and worked until the 1940's. A slag removal project occurred in 1979. The allotment is accessible to the public from Middlemarch Road. Hunting is the main recreational activity in the area.

Oak Allotment: Rudy Kambatch held the Oak Allotment permit between 1970 to 1994. The Double Heart Revocable Trust acquired the permit in 1994. Rudy Kambatch and Double Heart Revocable Trust grazed the Oak Allotment with 60 head yearlong. The allotment was rested for the 1994 and 1995 grazing years due to management and stocking rate concerns. In 1995 a permit was issued for 47 head from 11/1 to 4/30. This was the authorized use in 1996. For the 1997 grazing year, 60 head were authorized from 11/1 to 4/30. In 1997 Roger Garey acquired the allotment and was permitted 60 head from 11/1 to 4/30. The Oak Allotment underwent the NEPA process in 1995/96. The Environmental Assessment and Decision Notice indicated the permit would be re-evaluated in three years.

Smith & Sanders Cattle Company held the Sanders Allotment permit prior to 1989 with 96 HMs from January to July. In 1989, Jerry Sanders the new permittee grazed 32 head from 1/1 to 3/31. The allotment was rested from 1994/95 to 1997/98 grazing season due to resource protection and water

availability. In the fall of 1998, The Sanders Allotment was combined with the Oak Allotment to make one allotment called the Oak Allotment.

The current permit was issued in 1998 under the Rescission Act of 1995. Oak/Sanders Allotment Term Grazing Permit states 80 head of cattle from 10/01 to 04/30 and a Temporary Grazing Permit has been issued for 80 head of cattle from 5/01 to 5/31 or 640 Head Months (HMs). Actual use is 80 head of cattle from 10/15 to 5/14 and 80 head of cattle from 5/15 to 6/14 or 638 HMs. The Temporary Grazing Permit is issued providing resource availability. The most recent AMP (1997) calls for a deferred pasture rotation, with each pasture to be used differently every year (except the upper pasture will be used when the cattle first come on to the allotment). The Holding Trap pasture is used when entering and exiting the allotment.

Table 2. History of use on Oak Allotment.

Year	Oak Allotment		Sanders Allotment	
	Authorized use	Authorized HMs	Authorized use	Authorized HMs
Prior to 1994	60 head yearlong	720 HMs	32 head 1/1 to 3/31	96 HMs
1994	Rested		Rested	0
1995	Rested		Rested	0
1996	47 head 11/1/96 to 4/30/97	282 HMs	Rested	0
1997	60 head 11/1/97 to 4/30/98	360 HMs	Rested	0
1998 (allotments combined)	80 head 10/15/98 to 6/14/99	637 HMs	Combined with Oak allotment	
1999 (allotments combined)	80 head 10/15/99 to 4/30/00	440 HMs	Combined with Oak allotment	

The increase in numbers and authorized HMs from 1996 to 1997 (47 HMs to 60 HMs) was based on the November 3, 1995 decision which selected alternative C. The description of the alternative in the EA stated that a decision would be made in December 1998 regarding the issuance of a 10 year permit. While this has been construed by some as meaning a new decision would be made under NEPA with full public involvement, the intent of this was to adjust numbers based on the actual use and conditions after the allotment was rested for 2 years. The increase in the numbers from 1997 to 1998 (60 head to 80 head) was based on the addition of the Sanders allotment to the Oak allotment (document 26)

Other uses of allotment are mostly limited to hunting and dispersed camping. There is one semi-rough road on the allotment, which follows the canyon bottom to the Wilderness Boundary and branches off southward. Approximately 1300 acres of Wilderness is located in the upper reaches of the Oak Allotment.

B. Proposed Projects

Future projects that, in conjunction with the proposed livestock grazing, may produce cumulative effects in the area are:

- Johnson Peak Fire Plan – This project includes much of the Turkey Creek drainage and would have limited a limited area in the Oak allotment. The effected area would be portions of sections 21, 22, 23 in the northern part of the allotment which would be treated with prescribed fire over the next 10 years to create a buffer around Turkey Creek to reduce the risk of catastrophic fire. Burning in the upper elevations would occur in the mixed conifer and pine types and in the lower elevations would occur in the oak/pine woodland.
- Cottonwood Watershed Plan: this is a continuation of an ongoing project to improve upland and riparian conditions. It includes the installation of gully plugs and upland water spreaders.

C. Vegetation (Issue 1, document 25)

Vegetation on the allotments is described in terms of the vegetation types present and the range condition of the capable acres. Since there are no vegetation treatments that would change the vegetation type, there are no environmental effects described for vegetation type. The existing vegetation types are described for the reader's information.

Range Condition is a subjective expression of the health of the vegetation and soil relative to their combined potential to produce a sound and stable biotic community (FSH 2209.13 4/88 regional amendment). Soundness and stability are evaluated relative to a standard that encompasses the composition, density, and vigor of the vegetation and the physical characteristics of the soil. Trend expresses the direction of change (if any) in the condition, in response to past and existing livestock management practices or land use activities combined with other environmental factors. The methods for determining this are in the Range Analysis Handbook, FSH 2209.13.

Since livestock use on non-capable rangelands is very limited, there is little potential for grazing to affect the condition of these lands. For this reason, the effects of the alternatives on range condition are only for capable rangeland. The condition of the non-capable rangeland is described in the affected environment for information purposes.

Existing condition

Based on data collected in 1997 rangeland conditions on both allotments meet Forest Plan direction. For the capable rangelands, 85% of the Black Diamond allotment is in moderately high condition with an upward trend and 14% is moderately high with a static trend. The remaining 1% is in high condition with an upward trend. Fifteen percent of the capable rangelands on the Oak allotment is in high condition with an upward trend, 79% is moderately high with a high with an upward trend, 5% is moderately high with a static trend, and 1% is moderately low with an upward trend.

Both of the allotments are in the Upper Sonoran life zone with vegetation dominated by broadleaf woodland with small amounts of desert grassland, coniferous forest, and (on the Oak allotment)

deciduous riparian vegetation types. The broadleaf woodland is generally an oak woodland or oak grassland with the dominant tree species being Emory oak or Arizona white oak. Some agaves are present on the Black Diamond allotment. There is brush (manzanita, juniper, etc.) encroachment throughout Black Diamond allotment and Lehman's lovegrass is found along FS Boundary. Scattered oak, mesquite, and hackberry occur along drainages.

Table 3. Condition of Black Diamond and Oak Allotments.

Condition class	Black Diamond Allotment		Oak Allotment	
	Capable range	Non capable range	Capable range	Non capable range
High, upward trend	1%		15%	
High, static trend				
High, downward trend				
Moderately high, upward trend	83%	73%	79%	99%
Moderately high, static trend	16%	27%	5%	1%
Moderately high, downward trend				
Moderately low, upward trend			1%	

There are no mapped riparian areas on the Forest portion of the Black Diamond Allotment although there are small areas around seeps and springs with riparian vegetation. The only riparian area exists on private land on the north side of the allotment. Cottonwood Canyon of the Oak allotment is mapped as a deciduous riparian area. Maps of the vegetation types are in the project file.

Table 4. Vegetation Types on the Black Diamond and Oak Allotments.

Vegetation type	Black Diamond Allotment		Oak Allotment	
	Capable range	Non capable range	Capable range	Non capable range
Southwestern desert scrub	173	0	0	0
Desert grassland	103	0	337	0
Broadleaf woodland	1027	283	1446	1668
Deciduous riparian	0	0	254	22
Coniferous forest	0	0	0	356

Environmental Impacts

Grazing by domestic livestock for 10 years may impact vegetation by changing the mix of species in the plant community being grazed (vegetation composition); by changing the density and frequency of perennial forage plants (forage frequency); and by changing the vigor of the grazed plants. These vegetation attributes are most easily described by range condition.

Other processes may also affect the vegetation occurring on a site. Climatic effects are foremost among these, primarily drought and seasonal fluctuations in rainfall patterns. In general, winter and early spring moisture will favor the establishment of shrubby vegetation and summer monsoonal storms will favor the establishment of warm season grasses. The other major process that may affect vegetation is fire. A regular fire regime will favor open grassland.

The tables display the vegetation condition and trend for the proposed action and alternatives at the end of the 10 year period for the Black Diamond and Oak Allotments. This assessment is for capable acres only. Rangeland vegetation condition as reported in the table is based on comparisons to undisturbed plant communities.

Black Diamond: The no grazing alternative would not have any direct effects on vegetation because there would be no livestock on the allotment. The indirect effects would be improved vigor and density of species and therefore improved range condition, especially on slopes less than 15%.

The direct effects from the proposed action would be effects to individual plants from use. The use levels proposed of 45% during the summer growing season and 50% during the remainder of the year are the ones that have resulted in the current condition. The individual plant's survival is not threatened by this level of grazing so direct effects are minimal. Indirect effects on vegetation are best described by range condition. The current management has resulted in improved range conditions over the past 8 years and this trend is expected to continue. Improvement would be at a slower rate than the no grazing alternative, especially on slopes less than 15%. The proposed watershed improvement projects of loose rock dams would improve overall vegetation condition which would add to the continued improvement expected with the proposed grazing.

The direct effects of the current management would be the same as for the proposed action. The indirect effects would also be continued improved range condition although without the added emphasis from the watershed improvement project.

There are no other projects proposed for the Black Diamond allotment so there would be no cumulative effects for any of the alternatives.

Table 5. Vegetation Effects for Black Diamond Allotment

Condition Class	Existing Condition	No Grazing	Proposed Action	Current Management
HIGH				
Upward Trend		20%		
Static Trend			20%	20%

MODERATELY HIGH				
Upward Trend	87%	80%	80%	80%
Static Trend	13%			
MODERATELY LOW				
Upward Trend				
Total	100%	100%	100%	100%

Oak allotment: The direct and indirect effects of the no grazing alternative would be the same as described for the Black Diamond allotment. The improvement expected under this alternative would add to the improvement of the allotment currently occurring with the Cottonwood watershed project.

The direct and indirect effects for the proposed action would also be the same as for the Black Diamond allotment as there are watershed improvement projects proposed for both allotments. The prescribed burning that would occur under the Johnson Peak fire plan would be minimal in the allotment but the portion that would occur would be expected to improve vegetation condition. Implementation of this alternative in addition to the on-going Cottonwood watershed plan and the Johnson Peak fire plan would continue to result in improved vegetation conditions, although at a slower rate than the no grazing alternative.

Continuation of current management would result in the same direct effects as the proposed action. The indirect effects would be similar but improvement would be expected to be slightly faster with the shorter season. The lack of additional watershed improvement projects would make improvement slightly slower than the proposed action. These 2 differences would balance each other and the conditions at the end of the 10 year period would be the same as for the proposed action. Since the direct and indirect effects would produce the same result as the proposed action, the cumulative effect of continuing the current management in addition to the Cottonwood watershed plan and the Johnson Peak fire plan would be a continued improvement of the allotment.

Table 6. Vegetation Effects for Oak Allotment

Condition Class	Existing Condition	No Grazing	Proposed Action	Current Management
HIGH				
Upward Trend				
Static Trend		50%	35%	35%
MODERATELY HIGH				

Upward Trend	73%	37%	52%	52%
Static Trend	14%	13%	13%	13%
MODERATELY LOW				
Upward Trend	13%			
Total	100%	100%	100%	100%

D. Riparian Areas (Issue 2, documents 9, 27)

Existing Condition

Black Diamond Allotment: The Coronado Land Management Plan has no areas that are designated as riparian on the Black Diamond Allotment. The drainages on the Forest are all ephemeral channels and do not contain riparian obligate species. The only area with obligate species is located on private lands. This allotment was assessed in January 1999 by the Forest Watershed Program Manager. A Riparian Analysis Survey and Evaluation System (RASES) riparian transect was established in 1999 on forest above the private land and obligate species populations. There are small seeps and areas around springs which provide "wetland" type areas but are not large enough to map.

Oak Allotment: Cottonwood Canyon of the Oak Allotment is designated as a riparian area in the Coronado Land and Resource Management Plan. The drainage on the allotment is an intermittent channel with riparian obligate species at the lower end. This area was assessed in 1995 and 1996 and found to be 75% in satisfactory condition and 25% in unsatisfactory condition. The unsatisfactory condition was because only two species (cottonwood and sycamore) were present. All age classes were represented and reproduction was occurring.

Channel conditions indicate the riparian area of Cottonwood Canyon is sensitive to disturbances (changes in flow or sediment). There is 35-40% herbaceous cover on the banks which has a very high influence on channel stability in this type of system. Deergrass is the dominant grass species.

Environmental effects

Black Diamond Allotment: The no grazing alternative would not result in any direct effects from livestock to the small riparian areas or the ephemeral areas but may result in indirect effects from improved conditions in the upland watershed. Cumulative effects of implementing the no grazing alternative would be negative effects on the riparian areas on the private land in the northern portion of the allotment. These lands are zoned for development and this would most likely occur if the allotment were closed to grazing. This development could negatively impact the riparian area.

The proposed action would have the greatest benefit to enhance ephemeral riparian area vegetation. While there may be some limited direct effects from livestock on the seeps, springs, and ephemeral areas, the indirect effects of the watershed improvements would improve the overall condition of these

areas. There are no other projects proposed in the allotment that would lead to a cumulative effect greater than that of the proposed action.

The current management of the allotment would also result in minimal direct effects to seeps, springs, and ephemeral areas but would not have the improved upland watershed condition. This would lead to negative indirect effects. As with the proposed action, there are no other projects proposed in the allotment that would lead to a cumulative effect greater than that of the current management if this alternative were implemented.

Oak Allotment: The no grazing alternative would not result in any direct effects to the riparian area from livestock grazing. It would result in positive indirect effects due to improved upland watershed conditions. The Cottonwood Watershed Plan is the only other project occurring within the allotment which may affect riparian conditions on the allotment. This project is to improve upland watershed conditions so the cumulative effect of implementing the no grazing alternative and the Cottonwood Watershed Plan would be a positive effect on riparian conditions in Cottonwood Canyon.

The proposed action would result in direct effects from livestock grazing in the form of grazing of riparian obligate species and bank trampling. Grazing of riparian trees when they are young can reduce the regeneration success of these species. The 45% utilization level for the allotment would not harm the riparian obligate grass species. Indirect effects would also occur in the form of sediment in the riparian area from the uplands. The proposed action includes watershed improvements which would improve the upland watershed condition and reduce the amount of sediment reaching the riparian area. As with the no grazing alternative, the proposed action, when added to the Cottonwood Watershed Plan, would have a net positive cumulative effect on the riparian areas of Cottonwood Canyon.

The current management would have the least desirable effects on the riparian areas. Direct effects would occur in the form of reduced vegetative cover and bank trampling. Unlike the proposed action and the no grazing alternative, continuation of the current management would not result in improved upland watershed conditions. This would result in negative indirect effects to the riparian area. The Cottonwood Watershed Plan would result in improved upland watershed conditions which would tend to balance the negative effects of continued current management when considered cumulatively.

E. Soils (Issue 3, documents 9, 27, 35)

Existing Condition

Domestic livestock grazing affects soil functions that are important to maintenance of long-term productivity. Specifically, the soil's ability to accept, hold and release water is affected by physical compaction and trampling. The nutrient recycling function of the soil is affected by removal of vegetation that impacts above-ground nutrient inputs into the system. Finally, the soil's resistance to erosion is affected by changes in plant density and protective litter.

Soil condition is described as satisfactory, impaired, unsatisfactory, or unsuited. The functions described above are working properly on satisfactory. Impaired soils have reduced function but have not lost productivity. The condition can be improved with management practices. The function of unsatisfactory soils has degraded to the point where productivity has been lost. Unsuited soils are

generally on steep and/or rocky ground and are considered unsuited for ground disturbing management activities such as timber harvest or road construction.

Soil conditions on the Black Diamond allotment are 60% satisfactory, 10% impaired, and 30% unsuited. The impaired soils were classified as such due to vegetative litter being absent or unevenly distributed. On the Oak allotment, the conditions are 78% satisfactory and 22% unsatisfactory. The unsatisfactory soils are in that condition because vegetative litter is absent or unevenly distributed, there is compaction of the soil, there are few roots in the surface horizon of the soil, and there is evidence of accelerated erosion. These figures are for both capable and non-capable rangelands.

Environmental effects

Of the functions of soil described above, direct effects to soil condition result from trampling or compaction of the soil. Livestock effects on vegetation have an indirect effect on the cycling of nutrients and the soil's ability to resist erosion.

Black Diamond Allotment: The no grazing alternative would not result in any direct effects to soil condition from livestock since there wouldn't be any livestock on the allotment. Indirect effects of this alternative would be improved soil condition due to increased litter on the ground and increased plant density. There are no other projects proposed in the project area that would lead to cumulative effects beyond those described above.

The proposed action would have some direct effects from livestock in trampling and compaction of soil, especially in areas where livestock congregate (around waters and on slopes less than 15%). Direct effects on soils above 15% slope would be minimal. Indirect effects to soil condition from this alternative would be improved conditions from an accumulation of vegetative litter and reduction in erosion from the gully plugs. Improvement would be at a slower rate than no grazing alternative. There are no other projects proposed in the project area which would lead to cumulative effects beyond those described above.

Continuation of current management would have the same direct effects as those described for the proposed action. The indirect effects would also be improved soil condition from improved vegetation conditions but at a slower rate than the proposed action because there would not be the watershed improvement projects. There are no other projects proposed in the project area which would lead to cumulative effects beyond those described above.

Table 7. Soil conditions on the Black Diamond allotment.

Condition Class	Existing Condition	No Grazing	Proposed Action	Current Management
Satisfactory	60%	65%	62%	62%
Impaired	10%	5%	8%	8%
Unsatisfactory	0%	0%	0%	0%
Unsuited	30%	30%	30%	30%

Oak Allotment: The no grazing alternative would have the same direct and indirect effects as described for the Black Diamond allotment. The combination of the improvement in soil condition from the no grazing alternative and the Cottonwood watershed project would cumulatively lead to faster improvement than either project by itself.

The direct and indirect effects of the proposed action would be the same as described for the Black Diamond allotment. Cumulatively, the improvement in soil condition from this alternative, when combined with the Cottonwood watershed project, would be faster than either project alone.

Continuation of current management would also have the same direct and indirect effects as for the Black Diamond allotment. The cumulative effects of this alternative and the Cottonwood watershed project would be improved soil conditions but at a slower rate than the other two alternatives.

Table 8. Soil conditions on the Oak allotment.

Condition Class	Existing Condition	No Grazing	Proposed Action	Current Management
Satisfactory	78%	84%	82%	80%
Impaired	0%	5%	2%	2%
Unsatisfactory	22%	11%	16%	18%
Unsuited	0%	0%	0%	0%

F. TES Species (Issue 4, document 29, 32)

Existing condition

Species listed as threatened or endangered under the Endangered Species Act, as amended, which occur or may have habitat in the allotments are the lesser long-nosed bat, Arizona jaguar, and Mexican spotted owl (MSO).

There are no known bat roosts within either allotment although the Black Diamond allotment is within 4 miles of a roost. Both allotments are considered foraging habitat, although on the Oak allotment, this is limited to the Sanders Pasture.

There are no Protected Activity Centers (PAC) for Mexican spotted owls within either allotment although the Oak allotment adjoins a PAC on the eastern edge. The pine-oak woodlands and riparian woodlands are considered foraging habitat for MSO.

Jaguars are not recently known from either allotment. The Chiricahua Mountain range, including the Oak allotment, is considered to be historic habitat for the jaguar.

Sensitive species which may be found on the allotments include American peregrine falcon, Chiricahua fox squirrel, Chiricahua leopard frog, and Coppermine milk-vetch. There is a peregrine falcon eyrie north of the Black Diamond allotment. While there is not reliable natural habitat for the Chiricahua leopard frog on either allotment, there is one known location on the Black Diamond allotment in a stock

tank. The Coppermine milk-vetch is associated with pine-type forests and has been observed within the Middle and Upper Pastures of the Oak allotment but not in great abundance.

Environmental effects

Black Diamond Allotment: There would be no direct effects to lesser long-nosed bat from any alternatives since there are no known bat roosts on the allotment. Indirect effects to bats result from effects to agave during the bolting period. These effects are destruction of the bolting stalk which would result in fewer flowers being available to the bats and from trampling small plants and reducing the future flower availability. The no grazing alternative would have no indirect effects on the bat because there would be no livestock on the allotment to impact the agaves. The proposed action and continuation of the current management could both have indirect effects on bats because there may be livestock on the allotment during the agave bolting period. These effects would be minimal.

A few impounded draws and developed springs in the allotment provide significant 'wetland habitat' for the Dagoon's residential Chiricahua leopard frog populations. Direct effects from livestock would occur if a cow stepped on a frog. Indirect effects would occur through changes in habitat. The no grazing alternative would have no direct effect on frogs but would have an indirect effect in loss of habitat since the stock tanks would not be maintained. There is a very small potential of direct effects on frogs from cattle with the proposed action or current management. Both the proposed action and current management would have indirect effects on the frog through the habitat. The proposed action would have the greatest benefit to enhance the frog habitat with sediment traps and enclosure for riparian vegetation growth. The proposed action would maintain and improve the upper watershed, dirt tanks, Black Diamond Spring, and existing frog habitat conditions (in stock tanks) which would enhance the Chiricahua leopard frogs on the National Forest. The current management would maintain the existing habitat through the maintenance of the stock tanks but would not actively improve the habitat.

Since there are no peregrine falcon eyries on the allotment, there would be no direct effects from any of the alternatives. Indirect effects would result from changes in prey base and are tied to effects on vegetation. These would be all the alternatives since foraging habitat is considered to be marginal.

There would be no cumulative effects to any of the species from any of the alternatives as there are no other projects proposed in the allotment.

Oak Allotment: No jaguars are known on the allotment; therefore there would be no direct effects from any of the alternatives on jaguars. Indirect effects could occur from changes in prey base or habitat and are tied to vegetation. Given the allotment's topographic relief and historic jaguar movement patterns, it does not appear that corridor habitat occurs within the allotment, therefore indirect effects would be minimal from all alternatives. There would be minimal cumulative effects to jaguars from any of the alternatives and the Cottonwood watershed plan because the indirect effects are so small.

The potential for effects on the lesser long-nosed bat are limited to indirect effects in the Sanders pasture. The impact of these effects is described above. The no grazing alternative would have no indirect effects on the bat because there would be no livestock on the allotment to impact the agaves. The proposed action and continuation of the current management could both have indirect effects on bats because there may be livestock on the allotment during the agave bolting period. The proposed

action has a higher potential for impacts to agaves during the bolting season because livestock are on the allotment longer in the spring when the agaves bolt. The effects from either of the action alternatives would be minimal. There would be minimal cumulative effects to bats from any of the alternatives and the Cottonwood watershed plan because the indirect effects are so small.

While there are not any MSO PACs within the Oak allotment, there is one directly to the east. Therefore, there would be no direct effects to MSO from any of the alternatives. The pine-oak woodlands and the riparian area provide foraging habitat for the owls. Impacts to these areas could result in indirect effects to the MSO. Livestock grazing is not expected to change any vegetation types so the extent of the foraging area available is not expected to change. The quality of the foraging habitat could be affected. The analysis for vegetation (described by range condition) showed an improvement in range condition for all alternative. It is expected that there would be minimal indirect effects on the quality of the foraging habitat from this improvement under any of the alternatives. Since there are no direct effects and minimal indirect effects, cumulative effects from any of the alternatives and the Cottonwood watershed plan would also be minimal.

The Coppermine milk-vetch and Chiricahua fox squirrel are associated with the pine forests. There is a small amount of this vegetation type along the eastern edge of the allotment and is entirely within non-capable rangeland. Livestock impacts to this would be virtually non-existent because very few livestock use this area. There would be no direct, indirect, or cumulative effects from any of the alternatives.

G. Wildlife (Issue 5, document 29)

Existing condition

In addition to the threatened, endangered, and sensitive species discussed above, there are other wildlife species which occur on the allotments. The white-tailed deer, javelina, black bear, mountain lion, bobcat, gray fox, desert cottontail, scaled and Gambels quail, and white-winged and morning doves occur on both allotments. The Montezuma (Mearns) quail, coati, wild turkey, and band-tailed pigeon are associated only with the Oak Allotment habitats. In general, the respective species' populations are perceived to be "stable". Only the Mearns quail is of a concern for this project and therefore effects for the other species will not be discussed.

The Coronado National Forest supplement to the Forest Service Manual establishes management direction for Mearns (Montezuma) quail management on the Forest (CNF Supplement 2600-94-1, effective May 1, 1994). The majority of the capable rangeland on the Oak allotment is identified key Montezuma quail habitat. According to the supplement, "utilization of forage by livestock will not exceed 45% by weight." Allowable use levels of 35 to 40% are desirable in key habitat areas for this species. The primary indicator for meeting the quail's herbaceous cover-needs will be stubble height with the minimum standard of six inches in key habitat areas. Key herbaceous cover species for the quail on the Oak Allotment are identified as sideoats grama (*Bouteloua curtipendula*), little bluestem (*Andropogon scoparius*), pinyon ricegrass (*Piptochaetium fimbriatum*), bullgrass (*Muhlenbergia emersleyi*) and deergrass (*M. rigens*).

Environmental effects

Effects to Mearns quail from livestock grazing could be through disturbance of nests or nesting activities (direct effects) or reduction in grass cover which provides protection for the nests and birds (indirect effects). The no grazing alternative would have no direct or indirect effects since there would be no livestock on the allotment. Since there would be no direct or indirect effects, there would be no cumulative effects.

The proposed action and the continuation of current management could have direct effects to the quail although these would be minimal. Utilization levels greater than 35-40%, especially on deergrass in the Holding pasture, could result in insufficient cover for the quail. Both alternatives call for 45% maximum utilization which could result in a slight negative indirect effect to the quail. Since the direct and indirect effects are minor and there is a projected improvement in vegetation condition with both the proposed action and the current management, the cumulative effects of either of these alternatives and the Cottonwood watershed plan would be minimal.

H. Water/Air (Issue 6, document 9, 27)

Existing condition

Black Diamond allotment: The Black Diamond Allotment is entirely within the Willcox Playa watershed. This watershed is about 1,000,000 acres in size, of which approximately 172,000 acres (17%) are National Forest. The Black Diamond Allotment accounts for less than 1% of the watershed. Other ownerships within this watershed are private, Bureau of Land Management, and State Land Department. The towns of Pearce and Sunsites are within this watershed. Areas around Sunsites, in particular, are increasing the use of ground water. Uses on Federal and State lands are primarily grazing and recreation.

No water quality data is available for this allotment or downstream waters. There are no water bodies within this watershed listed as "water quality limited" in the 1998 Arizona Quality Assessment.

The Black Diamond allotment is not located in an air quality non-attainment area for any air quality constituent nor is it located within a Class I Wilderness Area.

Oak allotment: This allotment is located in the Whitewater Draw Fifth Code Watershed. The watershed is approximately 900,000 acres in size, of which about 79,000 acres (9%) are on the National Forest. The Oak allotment is also less than 1% of the watershed. Other ownerships within this watershed are private, Bureau of Land Management, and State Land Department. Land uses on private land are those associated with small town rural development. Uses on Federal and State lands are primarily grazing and recreation.

Whitewater Draw downstream from the confluence with Mule Gulch is listed as "water quality limited" in the 1998 Arizona Quality Assessment. Uses are limited by beryllium, low dissolved oxygen, lead, and turbidity.

The Oak allotment is not located in an air quality non-attainment area for any air quality constituent. A portion of it is located within a Class I Wilderness Area. A map showing the allotment and the wilderness area boundaries is in the project file.

Environmental effects

Cattle grazing has been identified as a source of concern for water contamination in Arizona where appropriate management of cattle is lacking. Implementation of Best Management Practices (BMP's) as described in the proposed action and continuation of current management will be effective in managing cattle grazing to maintain or improve water quality. Because soil conditions are satisfactory over much of both allotments, it is not expected that implementation of any of the alternatives will add to turbidity or suspended sediment in downstream water.

None of the alternatives being analyzed include any activities which would have any effect on air quality. Therefore, there are not direct, indirect, or cumulative effects from any of the alternatives.

I. Cultural Resources (Issue 7, document 17)**Existing condition**

There have been 6 cultural resource surveys conducted on the Black Diamond allotment since 1979. There was one site found. It encompasses the historic Black Diamond Mine, smelter, and associated mine camp (referred to as "Dagoon Camp" on townsite plat maps). The claim was first patented in 1902 and worked until the 1940's. A slag removal project was given clearance in 1979. The area was re-surveyed, recorded, and mapped in 1996. Cultural resources include historic metal, glass, and ceramics; house/tent platforms; rock alignments and retaining walls; and several large depressions.

The Oak allotment has had 3 cultural resource surveys completed since 1984. Two sites were identified and recorded. One is a small lithic scatter and the other is a small rock wall, approximately 2 meters long, that appears to be historic. It may have been a windbreak used during cattle operations.

Environmental effects

The development activities associated with livestock grazing have the potential to impact cultural resource sites.

The no grazing alternative for both allotments would involve no new impact to cultural resources since there would be no livestock on the allotments.

All of the sites for the proposed projects on the Black Diamond allotment were surveyed and none were found to have any impact on cultural resource sites. The tanks on the Oak allotment were reviewed and the proposed action was found not to be an undertaking for the purposes of cultural resource clearance. Consultation with affected tribes was conducted on the proposed action and it was determined that the proposed action would have no effect on any traditional cultural properties. The extension of the Cottonwood pipeline on the Oak was not included in the survey and consultation. This would need to be done and this project cleared prior to construction occurring.

The continuation of current management does not include any proposed development and therefore would not have any impact on cultural resources.

J. Economics (Issue 8, document 33, 34)

The proposed actions for both allotments include range developments. The table below summarizes the range improvement costs associated with each alternative. This does not include maintenance of existing or planned improvements since these costs are typically borne by the permittee. The projects on the Black Diamond allotment are cost share projects between the Forest Service, the permittee, and Arizona Game and Fish Department.

Table 9. Planned Range Improvements for Each Allotment (1999 Dollars)

	No Grazing	Proposed Action	Current Management
Black Diamond			
Boundary fence	\$0	\$9,000	\$0
Watershed/frog project	\$0	\$9,400	\$0
Loose rock dams	\$0	\$3,000	\$0
Tank cleaning	\$0	\$4,300	\$0
Subtotal	\$0	\$25,700	\$0
Oak			
Cottonwood Spr. pipe	\$0	\$3,200	\$0
Coal Pit tank	\$0	\$2,600	\$0
Turkey tank	\$0	\$2,200	\$0
Loose rock dams	\$0	\$2,000	\$0
Subtotal	\$0	\$12,800	\$0
Total	\$0	\$38,500	\$0

The projects on the Oak allotment would be done using labor from the Department of Corrections. This results in a low cost for these developments.

K. National Forest Management Act Findings (NFMA): The Coronado Land and Resource Management Plan (LRMP) was signed on August 4, 1986. Forest planning is currently guided by Code of Federal Regulations (CFR) at 36 CFR 219. The planning regulations state that projects implemented after the LRMP is in place must be "consistent with the plan" (36 CFR 219.10 (e)). The Black Diamond and Oak AMP project has been deemed consistent with the long term goals and objectives listed on pages 9-11 of the Coronado LRMP. The LRMP deemed both of these allotments as suitable for grazing and this area was included in Management Area 4 (LRMP, pages 62-66). Other NFMA consistency findings relate to the management of suitable timber lands. These allotment do not contain any suitable timber lands; therefore, the other NFMA consistent check requirements do not apply.

SECTION 4 - LIST OF PREPARERS: The following individuals contributed to the completion of this project analysis:

FOREST SERVICE INDIVIDUALS

<u>Name</u>	<u>Contribution</u>
Mark Hocken, Range Mgmt Specialist	Analysis Team Leader, coordinated with District Ranger

	and District Range Staff. Coordinated with permittees, specialist input on range conditions, soil, riparian, water and air resources.
Marcello Martinez, District Range Staff	Core Team Member, provided resource data, specialist input on range conditions, soil, riparian, water and air resources.
Gary Helbing, District Biologist	Core Team Member, specialist input on wildlife, completed biological assessment for TES species
Bob Lefevre, Hydrologist	Core Team Member, specialist input on watershed and soil conditions
Kathy Makansi, Archeologist	Core Team Member, specialist input on cultural resources and traditional cultural properties
Carol Boyd, Forest Range Staff	served as writer/editor for environment assessment
Douglas Hardy, District Ranger	directed the planning process

OTHER INDIVIDUALS

<u>Name</u>	<u>Contribution</u>
Joan Scott, Ariz. Game and Fish Dept.	IDT member
Roger Garey (permittee)	provided perspective on allotment resource conditions and management schemes

SECTION 5 - CONSULTATION WITH OTHERS:

Public participation in the Black Diamond and Oak Allotment Management Plan has occurred throughout the analysis process. From January to April, 1999, several different field trips were organized with the permittee and others concerning allotment conditions and management practices (documents 4, 6). A general final scoping letter was mailed to the District mailing list (over 100 individuals) on August 19, 1999 (document 18). Scoping comments on the proposed action were received from January to September 10, 1999 (documents 14, 15, 20 22, 23). A 30 day comment period will be allowed for public review of this environmental assessment.

Appendix A - Project Record Index

Document Number	Description	Author	Addressee	Date
1.	Request to stay on mailing list	(b) (6)		10/12/1998
2.	Actual use for Black Diamond and Oak Allotments			10/13/1998
3.	Recommendation of meeting day			11/24/1998
4.	Notice of field review and meeting w/ mailing list			12/14/1998
5.	Notice that cannot attend meeting			1/6/1999
6.	IRM general allotment information (Black Diamond) and meeting attendance			1/13/1999
7.	Response to IRM meeting			1/19/1999
8.	Notice that cannot attend meeting			1/15/1999
9.	Black Diamond Soil, Water, and Air Condition Specialist Report			1/29/1999
10.	Request to stay on mailing list			2/5/1999
11.	IRM meeting notes			3/22/1999
12.	Request to remain on mailing list			3/23/1999
13.	Returned letter			3/24/1999
14.	Response to scoping			4/5/1999
15.	Scoping comments			4/8/1999
16.	Request to be placed on mailing list			5/6/1999
17.	Heritage Resources on the Black Diamond and Oak Grazing Allotments			7/22/1999
18.	Second scoping report and mailing list			8/13/1999
19.	Expression of interest			8/23/1999
20.	Scoping comments			9/3/1999
21.	Returned scoping report			9/7/1999
22.	Response to scoping			9/7/1999
23.	Response to scoping			9/8/1999
24.	Proposal to AGFD for Leopard Frog Enhancement Project			10/6/1999
25.	Rangeland Vegetation and Riparian Area Condition Assessment and Analysis of Effects			11/05/1999
26.	Oak allotment stocking rates			11/23/1999

Document Number	Description	Author	Addressee	Date
27.	Oak Allotment	(b) (6)	(6)	1/6/2000
28.	List of issues and alternatives			3/9/2000
29.	Black Diamond/Oak Environmental Analysis-Wildlife Habitat			3/20/2000
30.	Maps of Black Diamond allotment			
31.	Maps of Oak allotment			
32.	Supplemental wildlife information			5/15/2000
33.	Improvement cost information			7/13/2000
34.	Improvement cost information			7/18/2000
35.	Supplemental soils information			8/24/2000
36.	Environmental Assessment			8/24/2000
37.	Transmittal Letter w/ mail list			8/29/2000

Erratum Sheet
Black Diamond - Oak Allotment EA

Black Tank and Smelter Tank: clean out tanks, install an exclosure fence around a portion of the each tank to protect frog habitat; construct erosion control features (rock/wire baskets) in the drainage above the tanks; and treat to eliminate predatory non-native fish. The tank cleanout consists of dredging sediment from the tank bottom and depositing it on the existing berm. The exclosure fence will be confined to areas already impacted by tank construction and maintenance. There will be no new ground disturbance. The erosion control features will consist of stabilizing arroyo headcuts with rock, placed on the surface and secured by wire mesh. The treatment is to enhance Chiricahua leopard frog habitat and would be done in conjunction with Arizona Game and Fish Department.

The above paragraph is a correction to language in the document we sent you earlier. Please use this version as the basis for any response you may make. Thank you

Appendix B
Edition to Environmental Assessment

On page 7 under Proposed Actions for the Black Diamond Allotment, second paragraph and on page 9 last paragraph, it should read:

Black Tank and Smelter Tank: clean out tanks, install an exclosure fence around a portion of each tank to protect frog habitat; construct three sediment control features (gabion baskets) in the drainage above the tanks.

Table 6. Vegetation Effects for Oak Allotment under existing condition should show as follows;:

Fifteen percent of capable rangelands on the Oak Allotment is in high condition with an upward trend, 79% is moderately high with a upward trend, 5% is moderately high with a static trend, and 1% is moderately low with an upward trend.

On page 27, Table 9. Planned Range Improvements for Each Allotment include the following addition:

Under Black Diamond Allotment include cattleguard with Boundary fence. For the tank cleaning on both allotments this will be cost-shared with permittee. Dollars amounts would not change.

