

EA Number: NM-510-2005-0002 Preparer: Ken Roberts			Action Type: North Melena RX		
Resource / Activity	Not Present	Not Affected	**May Be Affected	Reviewer	Date
Air Quality*			√	/s/ Michael McGee Hydrologist	11/29/04
Floodplains*			√		
Soils/Watershed			√		
Water Quality- Drinking/Ground*			√	/s/ Michael McGee Hydrologist/Geologist***	11/29/04
Vegetation			√	/s/ hjmiller Rangeland Management Spec	12/17/2004
Livestock Grazing			√		
Invasive, Nonnative Species*			√	/s/ hjmiller Range Mgmt Spec/Nox. Weed Spec	12/17/2004
Wastes, Hazardous or Solids*				Hazardous Waste Spec.	
Prime/Unique Farmlands*	x			Irene M. Gonzales Realty Specialist	12/01/2004
Lands/Realty/ROW		x			
Fluid Minerals				Pet Eng/Geologist/Sur. Prot. Spec.	
Mining Claims		√		/s/ Jerry Dutchover Geologist	12/01/04
Mineral Materials		√			
Threatened or Endangered Species*			X	/s/ Dan Baggao Wildlife Biologist	12/15/04
Wetlands/Riparian Zones*			X		
Wildlife Habitat			X		
Native American Religious Concerns*		X		Pat Flanary Archaeologist	12/15/04
Cultural Resources*			X		
Areas of Critical Environmental Concern*	X			J H Parman Planning & Env. Coordinator	1/6/05
Low Income & Minority Population Concerns		X			
Wild/Scenic Rivers*	x			Paul Happel Outdoor Recreation Planner/NRS	12/1/04
Wilderness*	x				
Cave/Karst Resources		x			
Outdoor Recreation		x			
Visual Resources		x			
Access/Transportation		X		RICHARD G. HILL Environ. Prot. Spec.	

* "Critical Element" - must be addressed in all NEPA documents.

** "Affected Element" - must be addressed in the attached Environmental Assessment.

*** "Hydrologist/Geologist" – Hydrologist would be the primary lead for "Water Quality- Drinking/Ground" with Resource projects such as fire, fuels, and grazing EA's etc... The Petroleum Geologist would be the primary lead for "Water Quality- Drinking/Ground" with Minerals or oil and gas projects such as Application For Permit To Drill and Sundry Notices etc...

ENVIRONMENTAL ASSESSMENT

North Melena Prescribed Fire

EA No: NM-510-2005-0002

Location: Township 9 South, Range 25 East
Sections 14,15,21-28,35

October 7, 2004

Bureau of Land Management
Pecos District
Roswell Field Office
Roswell, New Mexico

I. INTRODUCTION

This project would be implemented under Bitter Lake National Wildlife Refuge's approved burn plan dated November 21, 2003 using Fish and Wildlife Service and BLM fire personnel. The project will be in conjunction with a prescribed fire treatment on Bitter Lake NWR. An amendment to the burn plan including BLM land would be completed prior to the implementation of the burn. The ideal time for the burn to take place would be just prior to the spring green-up which typically occurs in April.

A. Need and Purpose for the Proposed Action:

The purpose for the proposed action is to improve riparian and floodplain health and function, range and watershed conditions, and to enhance wildlife habitat for a variety of terrestrial and aquatic species.

B. Conformance with Land Use Plan:

It has been determined that the proposed action conforms to the land use plan as outlined in the Roswell Approved Resource Management Plan and Record of Decision of October 1997.

C. Relationship to Statutes, Regulations, or Other Plans:

The Taylor Grazing Act of 1934, as amended (43 U.S.C. 315 (a)-(r)).

The Federal Land Policy and Management Act of 1976, as amended (Pub. L. 94-579, 43 U.S.C. 1702 et seq), Sections 302 (a) & (b), Section 502 (a) & (c).

The Public Rangelands Improvement Act of 1978, as amended (Pub. L. 95-514, 43 U.S.C. 1901 et seq).

The National Environmental Policy Act of 1969, as amended (Pub. L., 91-190, 42 U.S.C. 4321-4347) Sec. 101.

Noxious weed control and prescribed fire as a range improvement, either under cooperative Agreement or Range Improvement Application, is addressed under the 43 Code of Federal Regulations, Parts 4100, Grazing Administration, Exclusive of Alaska., Subpart 4120.3.

Vegetation Treatment on BLM Lands in Thirteen States, Final Environmental Impact Statement of May 1991.

Bitter Lake National Wildlife Refuge Final Comprehensive Conservation Plan. September 25, 1998.

Bitter Lake National Wildlife Refuge, New Mexico Fire District, Iron Maiden RX Burn Prescribed Fire Burn Plan, November 21, 2003.

II. PROPOSED ACTION AND ALTERNATIVE

A. Proposed Action

Conduct prescribed fire operations on about 800 acres within the Pecos River floodplain just north of the Bitter Lake National Wildlife Refuge. The purpose for this time frame includes; (1) the availability of firing and holding resources, (2) relatively low fire activity period, and (3) seasonal weather conditions that would be favorable to achieve the desired objectives. Any range improvements and facilities would be protected prior to the burn by removing fuel concentrations from around or near threatened improvements by black lining or hand line construction. For further information concerning the prescription for the burn itself, please refer to the Burn Plan prepared by the U.S. Fish and Wildlife and appended to this EA.

The BLM will coordinate with the Comanche Hill allotment permittee prior to burning to remove livestock from the area if necessary.

Subsequent treatments to maintain the project area would including prescribed fire, herbicide application, or combinations thereof, may be needed within the general project area to prevent saltcedar regeneration after the initial project. Any use of herbicide would be in strict accordance with BLM policy and guidance and a subsequent BLM document would be written to determine potential impacts from herbicide treatments prior to any herbicide use.

Future burns would be planned to occur every three to five years to duplicate historic fire regimes that occurred in the Pecos Valley. It is expected that future burns would be of a lower intensity due to the initial reduction of fuels build-up from this proposed action. The specifics of the prescribed fires would be outlined in the necessary Burn Plans.

B. Alternatives

1. No Action

If no action is taken, the existing situation would continue. Forage and browse availability and nutritional quality would continue to be limited. Habitat improvements to benefit wildlife populations would not be conducted. Use of the area by wildlife would remain static. The decadent state of the giant and alkali sacaton would continue. The heavy accumulation of decadent and dead material adds to the fuel loading and fire danger would remain high in the affected area.

III. AFFECTED ENVIRONMENT

General Setting

The project area is located in Chaves County, approximately eight miles northeast of Roswell, New Mexico (see Map 1). The area is bounded by U.S. 70 to the north and the

Old Clovis Highway to the west, and shares its south boundary with BLNWR. A number of rights-of-way exists, most of them for gas pipelines.

The project area is specifically located on well-blocked public lands within Township 9 South, Range 25 East, Sections 14, 15, 21, 28, and 35. Refer to Map for specific treatment location. The project would include the treatment of approximately 40+ acres of private land. The general elevation ranges from 3800 to 3900 ft.

The Pecos River bisects the project area north/south through both BLM public lands and Bitter Lake NWR lands. Access to the west side of the project area would be through the Bitter Lake NWR. Access to the east side can also be through the Bitter Lake NWR or can be reached by heading east approximately 9 miles on Highway 380 then heading north on Alamo road approximately 9 miles.

The project area includes portions of two grazing allotments, North Melena, Allotment No. 64056, and Comanche Hill, Allotment No. 65037. Grazing is not currently authorized on North Melena. The majority of the project is on the North Melena allotment. The Pecos River flows north-to-south through a broad alluvial valley, entering Allotment No. 64056 just south of U.S. Highway 70. It meanders along the east boundary of the allotment, and enters Bitter Lake National Wildlife Refuge (BLNWR) as it exits the allotment. Much of the allotment lies within the 100-year floodplain of the Pecos River. Allotment No. 64056 is considered a riparian allotment because of its 6.4 miles of riparian habitat along the Pecos River.

The climate of the area is generally classified as semi-arid with an average growing season of 195 days (April to October). During the growing season, the daily temperatures average from 55 to 80 degrees Fahrenheit (F). There are frequent highs of 100 degrees F. or more during the summer. Minimum winter temperatures occasionally drop below 0 degrees F. The average annual temperature is 61 degrees F. High winds from the west and southwest are common from March to June.

Annual precipitation averages 8 to 12 inches a year. Wide fluctuations from year to year are common, ranging from a low of about two inches to a high of over twenty inches. Eighty percent of the annual precipitation occurs in the form of rainfall during the months of June through September. Snowfall averages less than four inches annually and may occur from November through April, and usually melts within a short time.

Critical elements that are not present or not affected include: Hazardous or Solid Wastes; Prime and Unique Farmlands; Wild and Scenic rivers; Areas of Critical Environmental Concern; Mineral concerns; Mining Claims; and Wilderness. The impact of the proposed action and alternatives to minority or low-income populations or communities has been considered and no significant impact is anticipated.

Other affected resources that may possibly be affected are listed below.

1. Air Quality:

The proposed action is located in an area that is considered a Class II air quality area. A Class II area allows for moderate amounts of air quality degradation. The primary forms of air pollution are smoke, dust, and exhaust emissions. The prevailing winds for the site is from the southwest. The nearest community is the town of Roswell, NM approximately 8 miles to the southwest. Due to the direction and distance of the nearest town, all smoke would be dissipated before reaching any communities or populations. A Class I airshed (Salt Creek Wilderness) is located approximately 7 miles to the north of the proposed area but would not be impacted by the burn because of the southwesterly component of the prevailing winds. The light fuel would also burn out rapidly leaving little residual smoke and inversions are not common in the area during the spring months.

2. Soil:

The *Soil Survey of Chaves County, New Mexico, Northern Part (USDA Soil Conservation Service 1983)* was used to describe and analyze impacts to soils on the project area. There are several general soil map units represented on the allotment.

The two primary soil types are:

The Glendale-Ustifluvents-Harkey soil is found on the Pecos floodplain. It is a deep silt loam to very fine sandy loam derived from calcareous alluvium. The Hollomex-Reeves-Milner soil is found on terraces above the floodplain. It is a deep loam derived from calcareous, gypsiferous alluvium.

Glendale- Harkey association, 0 to 1 percent slopes (GHA) Permeability of the Glendale soil is moderately slow. Runoff of the unit soil is medium and the hazard of water erosion is moderate and the hazard of soil blowing is high. Permeability of the Harkey soil is moderate. Runoff of the unit soil is medium and the hazard of water erosion is moderate and the hazard of soil blowing is high.

Hollomex-Reeves-Milner, dry loams, 0 to 3 percent slopes (HMA) Permeability of the Hollomex soil is moderate. Runoff of the Hollomex soil is medium and the hazard of water erosion is moderate and the hazard of soil blowing is high. Permeability of the Simona soil moderate. Runoff of the Simona soil is medium and the hazard of water erosion is medium and soil blowing is high.

Secondary soil types are:

Hollomex-Gypsum land-Alama, dry complex, 0 to 25 percent slopes (HKD) Permeability of the Hollomex soil is moderate. Runoff of the Hollomex soil is medium and the hazard of water erosion is moderate and the hazard of soil blowing is high. Gypsum land consists of stratified beds of hard gypsum at a depth of 12 inches. Permeability of the Alama Soil is moderately slow. Runoff of the Alama Soil is medium and the hazard of water erosion is moderate and soil blowing is high.

Ustifluvents, 0 to 2 percent slopes (USA) Permeability of the soil is slow to moderate. Runoff of the unit soil is medium and the hazard of water erosion is moderate and the hazard of soil blowing is high.

3. Floodplains

Portions of the project area are located in the 100-year floodplain of the Pecos River. The 100-year floodplain of the Pecos River covers approximately 2200 acres on Allotment 64056, including 1,430 acres of BLM land, and 770 acres of state and private land. The floodplain ranges in width from less than one-half mile to more than one mile in the area. Channel banks are generally stable, but are actively being cut in some locations. This is most likely due to entrenchment of the channel rather than disturbance associated with land use activities. The channel material is primarily a sand and gravel bed with small cobbles and silt. The stream gradient is relatively flat (0.25 percent).

For administrative purposes, the 100-year floodplain serves as the basis for floodplain management on public land. It is based on Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency (1983). Current floodplain developments in the project area consists of two track roads, a products pipeline right-of-way, and several miles of fence.

4. Water Quality

Surface Water

Allotment 64056 lies within the river reach from the Rio Peñasco to Salt Creek, which is identified as Segment 2206 by the New Mexico Water Quality Control Commission (WQCC). Under the authority of the federal Clean Water Act, the WQCC (1995) designated uses for streams in New Mexico. Designated uses for Segment 2206 on the Pecos River include irrigation, livestock watering, wildlife habitat, secondary contact (e.g., wading), and a warmwater fishery.

The WQCC (1995) also established water quality standards to protect the designated uses, and directs periodic water quality assessments to ensure that standards are met. According to the New Mexico Environment Department (NMED), Segment 2206 is currently meeting the standards for all its designated uses (Hogge 1998, NMED 1998a).

Ground Water

The hydrology in the area near the allotments is complex. The allotments lie at the northeast limit of the Roswell ground-water basin, and the Pecos River is just to the east. This is an area of karst topography, so there is significant interaction between surface water and ground water. The Roswell ground-water basin generally consists of three components. First is an eastward dipping carbonate aquifer that is closely related to the San Andres limestone. It is often called the “artesian aquifer” though it is unconfined to the west.

Fresh groundwater for domestic, irrigation, and stock use can be obtained from deposits of Quaternary Alluvium, Artesia Group and the San Andres Formation in the area. Known depths to water range from 1 foot to approximately 700 feet + (New Mexico Office of the State Engineer data).

The Artesia Group comprises the second component of the basin, a leaky “confining bed” overlaying the carbonate aquifer. The eastward dipping formations of the Artesia Group thin to a wedge near the allotments. Significant upward movement of water from the artesian aquifer to the shallow aquifer probably occurs in the allotment area. Finally, the confining bed is overlain by a water table aquifer of Quaternary alluvium, commonly called the “shallow aquifer”. Ground water in the shallow aquifer converges locally toward Bitter Lake (Welder 1983). Therefore, shallow ground water beneath Allotment 64057 and the southern part of Allotment 64056 flows in the direction of Bitter Lake and gambusia habitat features on the refuge.

Well records from 1989 showed ground water in the shallow aquifer to be 25 to 30 feet below the surface on the allotments. Ground-water depth is probably 10 feet or less near the river (Wilkins and Garcia 1995, Hudson and Borton 1983). Yields of 100 gallons per minute or more from the alluvium are common (Geohydrology Associates, Inc. 1978).

Ground-water quality varies in the area of the allotments. Chloride concentrations range from less than 500 milligrams per liter near the west side of Allotment 64057, to more than 2000 milligrams per liter at the north end of Allotment 64056 (Welder 1983).

5. Vegetation:

The upland vegetation on the Melena allotment is comprised of mesquite, creosote, fourwing saltbush, broom snakeweed, fluffgrass, burrograss, muhly species, dropseeds, three-awn, black grama, and annual forbs. The floodplain has the appearance of a salt flat, and is comprised of plants that are tolerant of saline soils, such as alkali sacaton, saltgrass, witchgrass, pickleweed, buckwheat, tobosa, and coldenia.

The Melena allotment is represented by the Drainages, Draws, and Canyons (DDC) community type (52 percent of the allotment), the Grasslands community type (38 percent), and the Mixed-Desert-Shrub community type (10 percent). General objectives for each vegetation community are described in the Roswell Approved RMP and Record of Decision (BLM 1997), and the Roswell Draft RMP/EIS (BLM 1994). Table 1 summarizes vegetation monitoring data on Allotment 64056 in terms of percent composition of vegetative cover, percent ground cover, and ecological condition.

Though the ecological condition rating is adequate for the DDC community, vegetation objectives are not being met. The allotment averages 68 percent bare ground, but the maximum potential for bare ground on Salt Flats SD-3 ecological sites is 60 percent. The high salinity of the soils makes vegetation growth difficult, but grass and forb cover is below potential for this site.

The ecological condition of the Grassland community is rated fair, but only five points above poor. The upward trend in the condition rating might be due to high precipitation levels in the years just before the last monitoring data were collected in 1992.

Vegetative cover by percent composition shows the community to be out of balance. Encroaching mesquite, creosote, and broom snakeweed have resulted in the shrub component dominating the community, making up 61 percent of composition. Monitoring shows forbs to be absent, though the objective is to see 10 to 15 percent of composition as forbs. The lack of forb composition is probably due in part to the fall/winter monitoring schedule. Vegetation data are collected after annual forbs have died off. Bare ground covers 56 percent of the grassland community, almost the maximum potential for a Sandy SD-3 ecological site. Shrubs and trees account for 14 percent of ground cover, exceeding the 10-percent potential for this site. These figures also reflect the encroachment of the shrub species.

Table 1. Allotment 64056 Vegetation Monitoring Data: Averages from 1983-92							
Drainages, Draws, and Canyons Community Type (52 Percent of Allotment)							
Parameter	Grasses	Forbs	Shrubs	Trees	Litter	Bare Ground	Rock
Percent Composition of Vegetative Cover	57	31	12	< 1	Not Applicable		
Percent Ground Cover	15		1		16	69	0
Ecological (Range) Condition and Trend ¹	The average condition ratings are 73 and 51 at the two monitoring locations in the DDC community. Condition appears stable at both locations.						
Grassland Community Type (38 Percent of Allotment)							
Percent Composition of Vegetative Cover	39	0	61	0	Not Applicable		
Percent Ground Cover	7		14		21	57	1
Ecological (Range) Condition and Trend ⁴	The average condition rating is 31 and appears to be in an upward trend.						

The riparian vegetation community is tied to landform within the floodplain and is influenced by flooding intervals. The landform is comprised of exposed and stabilized river bars, the floodplain, and terraces. The river channel is moderately entrenched and

¹The condition rating is defined as the percentage of the plant community that is climax for the ecological (range) site at the time of monitoring.

slightly confined by the valley. Channel banks are fairly stable, but are sloughing or actively being cut in some locations. Bank erosion is most likely due to entrenchment of the channel rather than disturbance associated with livestock grazing or other land uses activities. The channel material is primarily a sand and gravel bed with small cobbles and silt, and the stream gradient is relatively flat (0.25 percent).

Riparian vegetation on the allotment is dominated by dense thickets of saltcedar. Seep willow and saltgrass are other common species, found on point bars where sediment is deposited. Wetland vegetation, such as cattail, rushes, and sedges grow on parts of the river bank. Sandy sites may have stickleleaf, goldenrod, curlycup gumweed, ragweed, and kochia, or have little vegetation except for annual forbs. Only a few scattered cottonwoods are found on the allotment.

Vegetation within the burn site is almost entirely in the Pecos River floodplain. Saltcedar (*Tamarix* spp.) is found in concentration along the river corridor portion of the burn area. Scattered individual Russian-olive plants may be encountered along the river as well. Creosote, honey mesquite, four-wing saltbush (*Atriplex canescens*), broom dalea (*Dalea* spp.), and shadscale (*Atriplex confertifolia*) are brush species found in the upland portions of the proposed area. Grass species found in the upland areas are giant sacaton, tobosa (*Pleuraphis mutica*), alkali sacaton, vine mesquite (*Panicum obtusum*) and cane bluestem (*Bothriochloa barbinoides*).

6. Non-Native and Invasive Species:

A noxious weed is defined as a plant that causes disease or has other adverse effects on the human environment and is, therefore, detrimental to the public health and to the agriculture and commerce of the United States. Generally, noxious weeds are aggressive, difficult to manage, parasitic, are carriers or hosts of harmful insects or disease, and are either native, new to, or not common in, the United States. In most cases, however, noxious weeds are non-native species.

The list currently includes the following weeds: 1) African rue, 2) black henbane, 3) bull thistle, 4) camelthorn, 5) Canada thistle, 6) dalmatian toadflax, 7) goldenrod, 8) leafy spurge, 9) Malta starthistle, 10) musk thistle, 11) poison hemlock, 12) purple starthistle, 13) Russian knapweed, 14) Scotch thistle, 15) spotted knapweed, 16) teasel, 17) yellow starthistle, 18) yellow toadflax, 19) Russian olive, 20) Tamarix species, 21) Siberian elm.

Goldenrod, saltcedar, and Russian olive occur in the project area.

7. Visual Resource Management:

The Visual Resource Management classification for the proposed area is Class II and Class III.

The Class objective for Class II is as follows:

The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.

The Class objective for Class III is as follows:

The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found of the predominant natural features of the characteristic landscape.

8. Outdoor Recreation:

In the project area, public access is very limited and limits recreational opportunities. The best vehicle and foot access to public lands within the project area is from the east. No legal vehicle access is afforded to the project area on the west side. There is no public access via the Refuge. Therefore, recreational activities within the area are limited and are primarily birding, hunting, hiking and sightseeing. The off-highway vehicle use is designated limited to existing roads.

9. Caves and Karsts:

The area is located in a high karst probability area. No specific inventories for significant caves have been conducted in the area. There are no known karst features that require special attention in the project area, such as sinkholes and caves.

10. Range Management:

The Melena allotment 64056 is currently not authorized for grazing, while grazing is authorized on the Comanche Hill allotment 65037 and is permitted to Jack Hagelstein. Comanche Hill is along the eastern perimeter of Bitter Lake NWR that is included in the treatment location. 184 cattle and 6 horses for 1,140 Animal Unit Months are authorized on the entire allotment and is grazed under the terms and conditions of grazing permits administered by the Bureau of Land Management.

11. Wildlife and Special Status Species

Numerous avian species use the Pecos River corridor during spring and fall migration, including nongame migratory birds. The Bitter Lake National Wildlife Refuge is located within the RFO and serves as a major focal point for migratory birds (e.g., ducks, geese, sandhill cranes, and waterbirds). Common bird species are mourning dove (*Zenaida macroura*), mockingbird (*Mimus polyglottos*), white-crowned sparrow (*Zonotrichia leucophrys*), black-throated sparrow (*Amphispiza bilineata*), blue grosbeak (*Guiraca caerulea*), northern oriole (*Icterus galbula*), western meadowlark (*Sturnella neglecta*),

Crissal thrasher (*Toxostoma crissale*), western kingbird (*Tyrannus verticalis*), northern flicker (*Colaptes auratus*), common nighthawk (*Chordeiles minor*), loggerhead shrike (*Lanius ludovicianus*), and roadrunner (*Geococcyx californianus*). Raptors include northern harrier (*Circus cyaneus*), Swainson's hawk (*Buteo swainsoni*), American kestrel (*Falco sparverius*), and occasionally Golden eagle (*Aquila chrysaetos*) and Ferruginous hawk (*Buteo regalis*).

Common mammal species using the RFO include mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), striped skunk (*Mephitis mephitis*), porcupine (*Erethizon dorsatum*), raccoon (*Procyon lotor*), badger (*Taxidea taxus*), jackrabbit (*Lepus* spp.), cottontail (*Sylvilagus* spp.), white-footed mouse (*Peromyscus leucopus*), deer mouse (*Peromyscus maniculatus*), grasshopper mouse (*Onychomys leucogaster*), kangaroo rat (*Dipodomys* spp), spotted ground squirrel (*Spermophilus pilosoma*), and wood rat (*Neotoma* spp.).

A variety of herptiles also occur in the area such as yellow mud turtle (*Kinosternon flavescens*), box turtle (*Terrapene ornata*), eastern fence lizard (*Sceloporus undulatus*), side-blotched lizard (*Uta stansburiana*), horned lizard (*Phrynosoma* spp.), whiptail (*Cnemidophorus* spp.), hognose snake (*Heterodon nasicus*), coachwhip (*Masticophis flagellum*), gopher snake (*Pituophis melanoleucus*), rattlesnake (*Crotalus* spp.), and spadefoot toad (*Scaphiopus* spp.).

The Pecos River once supported a wide variety of native fish species adapted to the flow regime that existed prior to dam construction, agriculture development, and the introduction of non-native fish species. The greatest impact to fish habitat is the manipulation of water supply to meet irrigation needs. Representative fish species include the red shiner, sand shiner, Arkansas River shiner, Pecos bluntnose shiner, Pecos pupfish, plains minnow, silvery minnow, plains killifish, mosquitofish, speckled chub, river carpsucker and channel catfish.

Special Status Species

The Bald eagle and the Pecos gambusia are listed as federally endangered with the Interior least tern and Pecos sunflower listed as threatened and the Pecos bluntnose shiner listed as threatened with critical habitat. These five federally listed threatened and/or endangered species can occur in or adjacent to or migrate through the project area.

Threatened and Endangered Species That May Occur Within the Assessment Area

<u>COMMON NAME</u>	<u>FEDERAL LISTINGS</u>
Bald Eagle	Endangered
Interior Least Tern	Threatened
Yellow-billed cuckoo	Candidate
Pecos Bluntnose Shiner	Threatened with critical habitat
Pecos Pupfish	Candidate

Pecos Gambusia	Endangered
Koster's Tryonia	Proposed
Roswell Springsnail	Proposed
Pecos Assiminea	Proposed
Noel's Amphipod	Proposed
Pecos Sunflower	Threatened

A discussion of the primary species of concern follows:

Pecos Bluntnose Shiner (*Notropis simus pecosensis*) - Federal Threatened

Historically, the Pecos Bluntnose Shiner inhabited the river from Santa Rosa to near Carlsbad, New Mexico. Currently, the subspecies is restricted to the river from the Fort Sumner area southward locally to the vicinity of Artesia, and seasonally in Brantley Reservoir (NMDGF 1988; USFWS 1992). Routine fish community monitoring conducted by the USFWS in the river between Sumner Dam and Brantley Reservoir show the fish remains generally abundant, especially in light of cooperative efforts between the Bureau of Reclamation and the USFWS to more closely mimic natural flows in the Pecos River.

There are two designated critical habitat areas on the Pecos River within the RFO area. The first is a 64-mile reach beginning about ten miles south of Fort Sumner (Township 1 North), downstream to a point about twelve miles south of the DeBaca/Chaves County line (Township 5 South). The second reach is from Highway 31 east of Hagerman (Township 14 South), south to Highway 82 east of Artesia (Township 17 South). The allotment does not fall within these reaches.

Pecos Gambusia (*Gambusia nobilis*) - Federal Endangered

The Pecos Gambusia is endemic to the Pecos River Basin in southeastern New Mexico and western Texas. Historically, the species occurred as far north as the Pecos River near Fort Sumner, and south to Fort Stockton, Texas.

Recent records indicate, however, that its native range is restricted to sinkholes and springs and their outflows on the west side of the Pecos River in Chaves County. In spite of population declines, the species remains locally common in a few areas of suitable habitat. Populations on the BLNWR and the Salt Creek Wilderness Area constitute the key habitat of the species in the RFO area. On the refuge, the gambusia is primarily restricted to springs and sinkholes in the Lake St. Francis Research Natural Area.

Interior Least Tern (*Sterna antillarum athalassos*) - Federal Endangered

The Interior Least Tern nests on shorelines and sandbars of streams, rivers, lakes, and man-made water impoundments. Records of breeding terns in New Mexico are centered around BLNWR where the species has bred regularly since it was first recorded in 1949. BLNWR is considered "essential" tern breeding habitat in the state. Besides BLNWR,

the only known nesting habitat in the RFO area is an alkali flat due north of the refuge on public lands. These are small populations with only a few nesting terns.

Sporadic observations of least terns have been recorded elsewhere in the Pecos River valley. The tern may occur on public lands in Chaves County along the river because suitable nesting habitat is found on sites that are sandy and relatively free of vegetation (i.e., alkali flats). Approximately 44 potential nesting sites are found throughout the RFO area. Other potential habitat sites are saline, alkaline, or gypsiferous playas that occasionally hold water. However, ephemeral playas do not support fish, the main staple for terns.

Specific surveys for nesting least terns have been conducted in potential habitat along the Pecos River and playas by the New Mexico Natural Heritage Program under a Challenge Cost Share project. No other nesting terns have been found to date.

Pecos (Puzzle) Sunflower (*Helianthus paradoxus*) - Federal Threatened

The Pecos Sunflower is found along alkaline seeps and cienegas of semi-desert grasslands and short-grass plains (4,000-7,500 ft.). Plant populations are found both in water and where the water table is near the ground surface.

In the RFO area, the sunflower is found in only a few areas outside of the BLNWR. In 1994, a new population was found growing on the margins of Lea Lake and its outflow at Bottomless Lakes State Park. Lloyd's Draw, east of the Pecos River, has the only known Pecos sunflower population on BLM land, which only became evident following a prescribed fire. Potential habitat also occurs on BLM land within the Overflow Wetlands Area of Critical Environmental Concern (ACEC).

Potential habitat for the sunflower occurs on the allotment as low lying areas where the water table is near the ground surface. The low lying areas are not necessarily along the existing river channel, but in old channel courses and oxbows. These areas are now invaded by saltcedar growing in dense stands, which may prevent the viability of the Pecos sunflower. Other potential sites include a few springs on the east side of the river. No Pecos sunflower populations have been found on the allotment to date.

Pecos Assiminea Snail (*Assiminea pecosensis*) - Proposed Endangered with Critical Habitat

Roswell Springsnail (*Pyrgulopsis roswellensis*) - Proposed Endangered with Critical Habitat

Koster's Tryonia Snail (*Tryonia kosteri*) - Proposed Endangered with Critical Habitat

Noel's Amphipod (*Gammarus desparatus*) - Proposed Endangered with Critical Habitat

These three snails and one amphipod are found in the same locations and share the same threats and management needs. All have extremely limited distribution in the Roswell FO area. Significant populations of these species occur at sinkholes, springs and associated spring runs and wetland habitat at the Bitter Lake National Wildlife Refuge. The Roswell springsnail and Koster's tryonia (*Hydrobiid* snails) are known only from

Bitter Creek, Lost River and Sago spring system at the refuge, and North Springs at the Roswell Country Club (private land, status uncertain). The Pecos *assimineae* (marine snail family) is known only from the refuge and Diamond Y Spring near Ft. Stockton, Texas. Noel's amphipod is known only from the refuge. If listed as endangered, BLNWR would be considered critical habitat for these species.

Potential impacts to the snails include local and regional groundwater depletion, surface and ground water contamination, oil and gas extraction activities within the supporting aquifer and watershed, and direct loss of their habitat.

The New Mexico Department of Game and Fish is formulating a draft Recovery Plan for these four species, which are listed as endangered under the New Mexico Wildlife Conservation Act. All four of these species are restricted to aquatic and wetland habitats on the Bitter Lake National Wildlife Refuge.

12. Cultural Resources:

The project area falls within the 100-year Pecos River floodplain. The possibility of finding cultural sites retaining integrity is low due to periodic flooding. Sacaton, the prevalent fuel, has covered the ground surface so densely that ground visibility is very low. Finding cultural material through inventory prior to the project is not possible due to lack of ground visibility, specifically in the sacaton areas. There is a small possibility of archeological sites being found in the floodplain that still have contextual integrity. Archeological architectural sites are rare and not likely to be found. Cultural inventory would have little value.

IV. ENVIRONMENTAL IMPACTS

A. Impacts of Proposed Action

1. Air Quality:

Air quality would suffer a short-term decrease on burn days. There would be no long-term significant impacts associated with smoke particulate. The proposed action lies in an area where the prevailing winds would carry smoke away from any sensitive sites. The majority of the fuels available would have a short burn duration would little to no residual smoke.

The winds that frequent the southeastern part of New Mexico generally disperse the odors and emissions. Federal, State and local air quality regulations would not be violated.

2. Soil:

Vegetation treatments may directly affect the physical characteristics of the soil and can alter the abundance and types of vegetation that may shield soil from erosion, or alter the

presence and abundance of soil microorganisms or larger organisms that contribute to overall soil quality.

Short term negative impacts from burning the vegetation cover would occur until re-growth stabilizes the soil. Long term positive impacts are expected to benefit the soil from an increased herbaceous vegetation cover. Increased cover is expected to also increase water infiltration rates and moisture holding ability. Where excessive soil is disturbed, reclamation measures may be taken. These measures would include reseeding with mixtures of grasses and forbs to prevent erosion and minor water control structures. A seed mix of grasses and forbs which are appropriate for the soils and moisture would be developed at the time of reseeding.

After the proposed action, short term negative impacts may occur if a precipitation event flushes ash into the river. Ash may become suspended in the flow and deposited in downstream locations. Some soil erosion could occur if overland flow of water is of a high enough intensity. After vegetation has re-established, water quality should stabilize or increase due to better protection of the soil by vegetative cover.

3. Water Quality:

Surface Water

Prescribed fire may increase stream nutrients, stormflows, and sediment loads. Underburns and grassland burns would have no significant effect on nutrients. After the proposed fire, short term negative impact would occur after a precipitation event that produces stream flow. Ash may be suspended in the flow and deposited in downstream. Some soil erosion could occur if the stream flow is high in intensity. Short term negative impacts to surface water would occur from increase sediment transport and yield. After vegetation has re-established, water quality should stabilize or increase due to better protection of the soil by herbaceous vegetative cover.

Ground Water

The proposed action would not have a significant effect on ground water. The timing of the burn would not take place during the high precipitation months of July through October, and the soil would filter potential contaminants.

4. Vegetation:

All vegetation would be temporarily negatively impacted after burning. The herbaceous species would respond within one growing season with adequate precipitation to a level which may exceed pre-burning levels. However, not all of the targeted species would be burned completely or at all. This should lead to a natural mosaic in the area of shrubs, grasses and forbs.

Initial burning would reduce 80-100% of the standing vegetation. The sacaton and forb species associated with the floodplain would vigorously regenerate. Burning of the

decadent growth would provide palatable vegetation for wildlife. Ultimately, the treatment area would create a mosaic of wildlife habitat in the area. Burning would also reduce invading brush species within the proposed area.

5. Non-native and Invasive Species:

The main mechanism for seed dispersion is by equipment previously used in noxious weed-infested areas. The potential for the dissemination of invasive and noxious weed seed on public lands would remain low on the allotment due to the limited use of the lands and increased public awareness of the noxious weed problem. Any populations of noxious weeds found on the allotment would be treated according to prescribed control methods for the particular species encountered.

6. Visual Resource Management:

The potential creation of straight lines and stark contrasts in texture and color would be mitigated, at least in part, by the burn pattern produced by the subsequent cleansing fire. A mosaic of vegetation with irregular edges will be produced providing variety in color, form and texture. In the long term (in excess of one year following each treatment) increased lush plant growth and diversity will tend to change the visual character of the area in a positive manner.

There would be a slight visual impact to the area for approximately one year or one growing season. The burned off area would remain black for a short time before the next growing season. There should not be a long term visual impact to either the Class II or Class III areas.

7. Outdoor Recreation:

Outdoor recreation opportunities may be slightly affected by the action of burning the vegetation within the proposed area. This impact would be short term and may increase in the long term from the creation of a more diverse habitat that increases wildlife use of the area.

8. Caves and Karsts:

There are no known caves within the proposed area. If cave entrances are found during project implementation they would be noted and recorded with a GPS location. There should not be any long term affects to the cave or karst environments by the proposed action.

9. Range Management:

The likelihood of fire carrying onto the Commanche Hill allotment is low because of a lack of carrier fuels. The purpose of including this allotment within the burn area is to ease “holding” concerns by fire personnel along the east side of the Refuge boundary by including a buffer area to assist in containing the fire within an allowable area. There

would be no intentional burning within the allotment. There would be no affect to livestock operations.

10. Wildlife and Special Status Species:

Impact to wildlife would naturally be short term following the prescribed burn. As with any fire, whether natural or man caused, some mortality of small animals, reptiles and birds would occur, especially if they seek saltcedar piles as cover. In most cases, wildlife would be displaced in the short term by the fire and the loss of surrounding vegetation and then would return when vegetation begins to grow back. Some shift of wildlife may occur within the burned areas. Species favoring dense, heavy brush may vacate the area, while species favoring open or savannah type habitat may inhabit the area.

Special Status Species

There would be no direct effect to listed and proposed species or their habitat. An indirect and long term effect may be an increase of groundwater availability to the Pecos River. This would be an immeasurable result, but possible nonetheless, as the reduction of saltcedar and improvement of range condition would improve the sub-watershed condition within the area.

Summary of Affects Determinations

<u>COMMON NAME</u>	<u>DETERMINATION</u>
Bald Eagle	No Affect
Interior Least Tern	No Affect
Yellow-billed cuckoo	No Affect
Pecos Bluntnose Shiner	MANLTA*
Pecos Pupfish	NLJ**
Pecos Gambusia	MANLTA
Koster’s Tryonia	MANLTA
Roswell Springsnail	MANLTA
Pecos Assiminea	MANLTA
Noel’s Amphipod	MANLTA
Pecos Sunflower	MANLTA

*MANLTA—May affect, not likely to adversely affect

**NLJ-Not likely to Jeopardize

11. Cultural Resources:

It is possible that cultural resources in the prescribed fire area could be negatively affected but these resources cannot be located due to lack of ground visibility in some areas of the project.

The area proposed for prescribed fire would not require fire lines construction. Fire temperatures are expected to be fairly high but for a short time duration. It is possible that cultural resources in the prescribed fire area could be negatively affected but finding cultural material through inventory prior to burning is not possible due to lack of ground visibility.

Archeological architectural sites are not likely. The impacts to cultural resources should be minimal.

B. Impacts of Alternatives

If the “no action” alternative is selected the area would remain unchanged. Decadent sacaton, relatively unusable by wildlife, would remain the dominant member of the area’s plant community. Undesirable brush encroachment would continue and the health of the floodplain would remain in a static state.

V. MITIGATION MEASURE

No impacts are anticipated that require further mitigation as long as the action stays within the parameters set forth in the burn plan and the proposed action.

In the event of an escaped fire, strategies to suppress the escape will be followed according to the contingency plan outlined in the U.S. Fish and Wildlife Service’s Burn Plan.

VI. RESIDUAL IMPACTS

Residual impacts from implementation of the proposed action would primarily affect visual resources, floodplain function, riparian health, and wildlife habitat and populations. The visual resources would remain an open grassland aspect with continued maintenance of the project in the long term. It is expected that the immediate watershed would continue to be productive and diverse in terms of the vegetative component and terrestrial and aquatic species utilizing the area. It is expected that soil conditions, water quality and quantity in the long term to benefit surrounding public, private, state, and NWR lands.

VII. CUMULATIVE IMPACTS

The area of interest is relatively undisturbed by the fact that the land south of the project area is a Refuge with constraints on developments. Because of the limited access to the well blocked public lands north of the Refuge, development of structures is limited. The only significant structure is a major gas products pipeline which is buried. No vegetative manipulative activities have been conducted in the area in the past other than prescribed fire. Livestock grazing has been authorized in the past. This project would add to a beneficial cumulative impact for the general sub-watershed.

Roads, fences, oil and gas wells, pipelines, and water developments have occurred in the past. The old Clovis Highway, BNSF Railroad, and U.S. Highway 70 are currently in the area and contribute significantly to the physical developments in the area. The proposed action on its own would not contribute significantly to the negative cumulative impacts due to its non-structural nature.

VIII. PERSONS OR AGENCIES CONSULTED

The following people or agencies have been consulted for their comments in regards to the proposed action. The comments and suggestions expressed during the consultation have been incorporated into this EA.

New Mexico State Land Office
New Mexico Department of Game and Fish
USDI Fish and Wildlife Service Bitter Lake NWR
USDI Fish and Wildlife Service Region 2
Jack Hagelstein, BLM permittee

Participating Staff of the Bureau of Land Management:

Ken Roberts– Engine Module Leader, BLM
Mike McFerraz- Fuels Module Leader, BLM
Alan Wyngaert – Fuels Specialist, BLM
Chuck Schmidt – Fire Management Officer, BLM
John Spain – Lead Rangeland Management Specialist, BLM
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Helen Miller – Rangeland Management Specialist/Weed Specialist, BLM
Dan Baggao – Wildlife Biologist, BLM
Rand French – Wildlife Biologist, BLM
Michael McGee – Hydrologist, BLM
Paul Happel – Recreation Specialist, BLM
Pat Flanary – Archeologist, BLM
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