

SCOPING DOCUMENT



NEW MEXICO FIRE DISTRICT DRAFT FIRE MANAGEMENT PLAN AND ENVIRONMENTAL ASSESSMENT U.S. FISH AND WILDLIFE SERVICE REGION 2

DECEMBER 2011



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INTRODUCTION

The Department of the Interior United States Fish and Wildlife Service (FWS) requires that every area with burnable vegetation have an approved Fire Management Plan (FMP) that describes actions to prepare for and respond to a wildfire (fire suppression), to plan and conduct prescribed fires, and to complete other fire management business. The FMP must meet the policy and direction of the *National Fire Plan* by emphasizing the primary goals of the *10-Year Comprehensive Strategy and Cohesive Strategy for Protecting People and Sustaining Natural Resources*. Among other policies, the FMP must also incorporate and adhere to the Department of the Interior policy stated in 620 Department Manual 1 by giving full consideration to the use of wildland fire as a natural process and tool during the land management planning process.

Planning Process for the FMP Environmental Assessment

The FWS has begun the planning process to prepare a Fire Management Plan and Environmental Assessment (FMP/EA) that will analyze various treatment methods (such as prescribed fire, mechanical, and chemical) to achieve fire management objectives for the following eight FWS units located in the state of New Mexico:

1. Bitter Lake National Wildlife Refuge (NWR)
2. Bosque del Apache NWR
3. Dexter National Fish Hatchery–Federal Technology Center (NFH–FTC)
4. Las Vegas NWR
5. Maxwell NWR
6. Mora NFH–FTC
7. San Andres NWR
8. Sevilleta NWR

The environmental assessment process will be conducted in accordance with Council on Environmental Quality regulations for implementing the *National Environmental Policy Act* (40 Code of Federal Regulations [CFR] 1500).

Public Scoping Process

The scoping process is an opportunity for people to read about the proposed alternatives that will be analyzed in the FMP/EA and to provide feedback about any concerns or suggestions for the

FMP/EA. The scoping process helps identify relevant issues that could influence the scope of the environmental analysis, including alternative development and refinement, and guide the planning process.

This Scoping Document describes the purpose and need for the proposed fire management actions and presents four preliminary alternatives for implementing the New Mexico District FMP. You are encouraged to submit comments about the information contained in this Scoping Document. Please be as specific as possible when commenting because specific details about what concerns you are most useful to the planning and environmental analysis process.

This Scoping Document also lists some preliminary planning issues identified by FWS personnel. These issues will be added to public issues to help finalize the purpose and need and alternatives that will be carried forward for analysis in the FMP/EA.

Once the FMP/EA is finalized and an alternative is chosen, that selected alternative will become the final New Mexico District FMP for the eight FWS units. The FMP will be reviewed annually to ensure that it contains the most current information based on monitoring and evaluation by the FWS.

Submitting Comments

There are two ways to submit comments after your review of this Scoping Document.

Email

r2fireplanning@fws.gov

U.S. Postal Service

New Mexico Fire District FM/EA
c/o San Andres NWR
5686 Santa Gertrudis Drive
Las Cruces, NM 88012

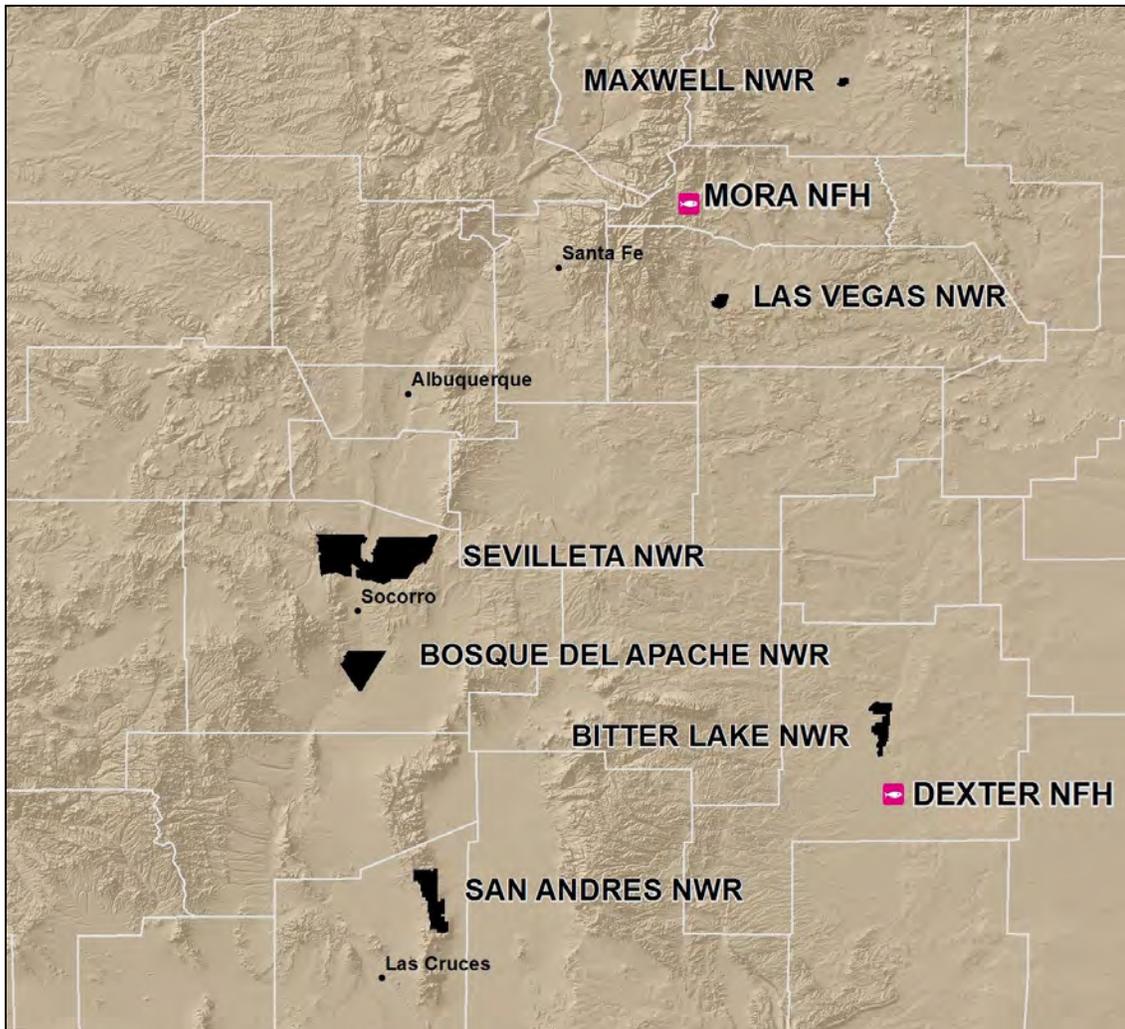
The scoping period begins on December 15, 2011, and will end on January 20, 2012 (37 days), so please submit your comments by January 20.

FMP/EA Mailing List

If you want to remain on the mailing list for the New Mexico District FMP/EA, please send a request to the above email address (include your name and address in the email) and state “please keep me on the mailing list.” If we do not hear back from you by the close of the scoping comment period, which is January 20, 2012, we will remove your name from the mailing list for the FMP/EA. However, we do hope to hear from you and encourage you to submit comments. If you submit a comment, you will automatically remain on the mailing list.

OVERVIEW OF THE NWRs AND NFHS–FTCS

This section provides an overview for each of the six NWRs and two NFHS–FTCs in the state of New Mexico. Figure 1 shows the locations of these eight FWS units.

Figure 1. Locations of the eight NWRs and NFHs–FTCs in New Mexico

Bitter Lake National Wildlife Refuge

The refuge was established in October 8, 1937, by Executive Order 7724 “as a refuge and breeding ground for migratory birds and other wildlife.” Management emphasis on the refuge is placed on the (1) protection and enhancement of habitat for endangered species and federal candidate species, (2) maintenance and improvement of wintering crane (*Grus* spp.) and waterfowl habitat, (3) monitoring and maintenance of natural ecosystem values, and (4) habitat management to maintain populations of neotropical migrants (birds that migrate to the United States from Central and South America), shorebirds, and resident species associated with the lower Pecos ecosystem. Large numbers of migratory birds use the refuge, supported by refuge wetlands on the Middle Tract and irrigated cropland on the South Tract. While originally established to save wetlands vital to the perpetuation of migratory birds, the isolated gypsum springs, seeps, and associated wetlands protected by the refuge have been recognized as providing the last known habitats in the world for several unique species. Bitter Lake NWR provides habitat for at least 323 bird species, 57 mammal species, 50 reptile and amphibian species, and 24 fish species.

Bosque del Apache National Wildlife Refuge

Bosque del Apache NWR was established by Executive Order 8289 on November 22, 1939, “as a refuge and breeding ground for migratory birds and other wildlife.” The primary management emphasis during the time that the refuge was established was on the recovery of the Rocky Mountain population of sandhill cranes (*Grus canadensis tabida*), which were believed to number about 40 birds. In 1975 the emphasis on the refuge was providing wintering habitat for an experimental flock of endangered whooping cranes (*Grus americana*). Over time, however, the refuge has come to play new and different roles in response to changes in wildlife use. Today, refuge lands have become increasingly important as habitat for wintering snow geese (*Chen* spp.), ducks, sandhill cranes, neotropical migrating birds, and endangered species. In addition, the refuge supports a rich diversity of resident wildlife. The refuge is a leader in the control of exotic (nonnative) vegetation in riparian areas, restoration of native riparian vegetation, and maintenance of riparian health. The development and restoration of wetlands has allowed for intensive moist soil management practices, which benefit a tremendous number of wildlife species. A “greener” cooperative farming program and field border development is also contributing heavily to the biodiversity goals of the refuge.

Dexter National Fish Hatchery–Federal Technology Center

The primary mission of the Dexter NFH–FTC is to assist in the preservation, culture, and recovery of imperiled fishes of the American West. In conjunction with this more specific mission, the hatchery supports the broader mandates of the FWS as it relates to the preservation of all native species and their habitats. The hatchery grounds support a significant amount of wetland; these resources are similar to other wetlands in the Pecos Complex that serve as additional habitat and breeding ground for migratory birds and associated wildlife.

Las Vegas National Wildlife Refuge

The refuge is located at the junction of two unique ecosystems: the Great Plains prairie grasslands to the east and the Rocky Mountains to the west. The north reach of the Chihuahuan desert lies approximately 100 miles south of the refuge. Due to the blending of multiple ecosystem characteristics, the refuge provides habitat for a variety of unique plants and animals. The refuge provides habitat for over 270 species of birds, with approximately 80 of these species nesting on the refuge. Out of the 128 neotropical species found on the refuge, 52 nest on the refuge. In addition to the high species richness of birds, many other wildlife species are at home on the refuge, including mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), Merriam’s turkey (*Meleagris gallopavo merriami*), and coyote (*Canis latrans*). A variety of amphibians and reptiles can also be found on the refuge, and there is an abundance of insect life.

Maxwell National Wildlife Refuge

Maxwell NWR was established on August 24, 1965, to provide a protected area for waterfowl migrating through the Central Flyway, which is a bird migration route that generally follows the Great Plains in the United States and Canada. During the early development phase of the refuge, plans called for providing a feeding and resting area for migrating waterfowl, and the available irrigated farmlands were to be used to produce green browse and other foods for waterfowl. The refuge has focused on the production of forage crops and other habitats to sustain healthy populations of migrating birds while preventing depredation (adverse effects) on private lands.

The refuge has made great strides in restoring and conserving grasslands and wetlands to fulfill its larger purpose of managing lands “for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” The refuge’s management activities are designed and implemented to provide habitats for a wide variety of migratory and resident species, including over 280 species of birds, 42 species of mammals, 23 species of reptiles and amphibians, and 10 species of fish. This also includes federally listed threatened and endangered species and several other species of concern.

Mora National Fish Hatchery–Federal Technology Center

The purchase of land for Mora NFH–FTC was initiated in 1989, when the United States Congress appropriated financing for a hatchery feasibility study. The hatchery was established with the primary objective to provide federal leadership to conserve, protect, and enhance fish and wildlife and their habitat for the continuing benefit of people.

The Mora NFH–FTC is dedicated to the restoration and recovery of the endangered Gila trout (*Oncorhynchus gilae gilae*), a fish found only in the upper headwaters of the Gila River in New Mexico and Arizona. Scientists at the center maintain brood stocks of the rare trout, keeping them in as much a natural setting as possible. Gila trout live in tanks with woody cover, current flow, and even fishes that naturally co-occur in the wild, like desert sucker (*Catostomus clarki*) and Sonora sucker (*Catostomus insignis*). This new culture procedure is meant to maintain wild characteristics in the rare trout so the offspring are well-suited to face the rigors of the wild. Award-winning, leading-edge water recirculation technology allows the Mora facility to recirculate 95 percent of its water.

San Andres National Wildlife Refuge

San Andres NWR was established in 1941 by Executive Order 8646 for the “conservation and development of natural wildlife resources.” The primary emphasis since establishment has been the restoration and management of desert bighorn sheep (*Ovis canadensis nelson*), currently a state-listed endangered species in New Mexico. The refuge is surrounded by federal lands belonging to the White Sand Missile Range, which encompasses the refuge in its entirety. The Agricultural Research Service–Jornada Experimental Range has research rights on approximately 40 percent of the western half of the refuge. The National Aeronautical and Space Administration–White Sands Test Facility borders the southwestern corner of the refuge.

Sevilleta National Wildlife Refuge

The Sevilleta NWR was established in 1973 and is about 230,000 acres in size. The refuge has a unique purpose: to preserve and restore native wildlife and plants and the systems that support them; to allow natural processes to operate; to encourage and facilitate research; and to provide educational opportunities for the public. Four major biomes come together at the refuge: Pinyon-Juniper Woodlands intersect with the Colorado Plateau Shrub Steppe, Chihuahuan Desert, and the Great Plains Short Grass Prairie. Adding to the diversity, the Rio Grande bisects the refuge and provides habitat for dozens of fish and wildlife species and a corridor for wildlife movement. The refuge hosts a diverse array of research projects conducted by researchers from around the globe.

Prior to establishment of the refuge, cattle ranching combined with drought and invasive species, took their toll on native plants and wildlife. Today, FWS staff and volunteers work hard to return native plants, processes, and wildlife to the refuge. They remove salt cedar and other invasive plants and replant with native species. The refuge currently manages two wetland units for migratory birds and may add more units in the future. The refuge is currently restoring Gunnison’s prairie dog to the

refuge in the short grass prairie and previously reintroduced American Pronghorn to the refuge. The refuge hosts a captive management facility for the Mexican gray wolf to assist in recovery of this endangered predator.

FMP/EA GOAL AND DISTRICT-WIDE MANAGEMENT OBJECTIVES

Environmental Assessment Goal

The overall goal of the FMP/EA is to present an ecosystem-based approach — an environmental management approach that recognizes the full array of interactions within an ecosystem, including humans, rather than considering single issues, species, or ecosystem services in isolation — for protecting resources at the six NWRs and two NFHs–FTCs that make up the New Mexico Fire District.

Importance of Defining Objectives and Final Decision

Objectives are specific statements of purpose that support the goals an alternative must meet, to a large degree, for the planning and environmental analysis process to be considered a success. Meeting objectives to a large degree is part of what makes an alternative “reasonable.” Objectives also help resolve the need for action. The decision maker for the New Mexico Fire District FMP/EA and Finding of No Significant Impact will be Regional Director Dr. Benjamin Tuggle. Dr. Tuggle will use the proposal objectives, together with potential environmental effects, as evaluation criteria to select the alternative that best fulfills the proposal’s objectives and satisfactorily meets environmental guidelines. Once the FMP/EA is finalized and a Finding of No Significant Impacts is approved, the management actions contained in the selected alternative will become the New Mexico District FMP for the eight FWS units. The FMP will be reviewed annually to make sure it contains the most current information based on monitoring and evaluation by the FWS.

Purpose and Need for Fire Management Actions

There are two district-wide objectives for the FWS New Mexico Fire District Region 2. These two objectives are presented for fire management actions at the six NWRs and two NFHs–FTCs based on the purpose and need for the FMP and FWS direction. The following objectives guided the development of four proposed alternatives:

1. Protect life, property, human improvements, and cultural resources from the threat of wildland fire through prevention, education, mitigation, and restoration actions on and adjacent to the NWRs and NFHs–FTCs.
2. Protect, restore, and maintain the ecological integrity of native biological communities by using prescribed fire (planned ignitions), wildfire (unplanned ignitions), and mechanical and chemical treatment methods to support a diversity of wildlife occurring on and near the NWRs and NFHs–FTCs.

The following section summarizes the need for action (based on existing conditions) to demonstrate the link between those conditions and the purpose (objectives) of fire management actions at the NWRs and NFHs-FTCs

OBJECTIVE 1. Protect life, property, human improvements, and cultural resources from the threat of wildland fire through prevention, education, mitigation, and restoration actions on and adjacent to the NWRs and NFHs-FTCs.

Need Based on Existing Conditions. The FWS has a responsibility to provide for the prevention and suppression of wildfire, which can cause adverse effects on refuge infrastructure and neighboring properties. Assets of the FWS and its neighbors need to be protected, and in order to do so, there must be proactive management of the hazardous fuels to reduce the behavior of wildfires, which threaten lives and property.

There is a need to protect NWR neighbors by implementing hazardous fuel reduction treatments in the Wildland Urban Interface and in areas with heavy fuel loads. A variety of treatment methods are needed to reduce unwanted fuel loading and reduce the spread and intensity of wildfire, while increasing the ability to quickly suppress the fire. Significant increases in nonnative invasive species have worsened the problem, especially along riparian areas where *Tamarisk* spp. has become established. The removal of these fuels by mechanical, chemical, and prescribed fire is instrumental in meeting this objective.

Additionally, the FWS needs to prepare for climate conditions that can increase the potential for devastating wildfires on FWS lands or from a wildfire off FWS property that could spread to the NWRs and NFH-FTCs. In annual terms, the average fire danger rating is low. The fire danger rating in spring and fall mostly varies from low to moderate, with some days high, very high, or extreme — usually when windy on top of other conditions such as lack of precipitation, low humidity, and higher temperatures. For example, the drought conditions experienced during the summer of 2010 can extend and amplify the fire season and danger rating. The conditions the NWRs and NFHs-FTCs need to prepare for are referred to as “90th percentile weather conditions.” These conditions are described as the highest 10 percent of fire weather days where fuel moisture, temperature, relative humidity, and wind speed are only exceeded 10 percent of the time based on historical periods of weather observations.

There is a need to prepare for potential wildfires. Preparation includes measures such as reducing or removing excessive ground and ladder fuels, providing access, creating fire breaks and defensible space, reducing potential for unplanned fires to start, and making sure that properly trained and equipped personnel are prepared to respond.

There is a need to protect significant values at the six NWRs and two NFHs-FTCs. The estimated replacement cost of government-owned facilities are listed in

Table 1. The replacement costs include such assets as buildings (including furnishing and fixtures), storage shed (including the equipment inside), fences, information kiosks, signs, water control structures and water diversion structures, irrigation wells, pedestrian boardwalks and bridges, observation decks, parking areas, public use comfort stations, and utilities (gas and electric—piping, wiring, poles). This list is just a very small sampling of the type of FWS assets that could be at risk from a potentially devastating wildfire.

Table 1. Estimated replacement costs of government-owned assets

NWR or NFH-FTC	Estimated Replacement Cost
Bitter Lake NWR	\$62,346,455
Bosque del Apache NWR	\$157,206,128
Dexter NFH-FTC	\$30,435,450
Las Vegas NWR	\$32,798,389
Maxwell NWR	\$14,103,209
Mora NFH-FTC	\$20,282,168
San Andres NWR	\$25,904,769
Sevilleta NWR	\$181,683,200

OBJECTIVE 2. Protect, restore, and maintain the ecological integrity of native biological communities by using prescribed fire (planned ignitions), wildfire (unplanned ignitions), and mechanical and chemical treatment methods to support a diversity of wildlife occurring on and near the NWRs and NFHs-FTCs.

Need Based on Existing Conditions. There is a need to reintroduce or apply fire to refuge lands. Fire has affected terrestrial ecosystems since ancient times. Historically, fire was the primary disturbance regime that affected vegetation composition and structure (Collins and Gibson 1990). Fire is considered a significant ecological factor, and ecosystems have become adapted to frequent fires (Odum 1971). Fire suppression has had an effect on vegetation that would have existed historically or ordinarily in the presence of fire. According to Odum (1971) “the failure to recognize that ecosystems may be fire adapted has resulted in a great deal of mismanagement of man’s natural resources.”

There is a need to treat areas that have become infested with invasive plant species, some of which are flammable and increase the risk of high-severity wildfire. Treatment actions are needed because invasive nonnative (also referred to as exotic or alien) plants are out-competing native vegetation for resources (such as sunlight, soil moisture, and nutrients) and displacing native plants and changing species composition, vegetation structure, and soil chemistry. Invasive plants have taken over to a degree that they are the dominant vegetation in some areas at the NWRs. This has created a monoculture (plants of only one species in a particular area) in some areas rather than an ecosystem that supports plant and

animal diversity. The replacement of native plants with nonnative plants is causing adverse effects because native insects, birds, and animals are adapted to living and reproducing along with native plants. Native insects, birds, and animals sometimes readily feed or reproduce on nonnative plants, leading one to think that this is beneficial. However, this can negatively affect their diet, lead to mortality or reproductive failure, make them vulnerable to pests and predators, or prevent the pollination or seed dispersal of native plants.

Native habitats occurring on refuges and hatcheries in New Mexico have been affected by overgrazing of nonnative herbivores, the spread of nonnative and native invasive plant species, and a decrease in the historical scope and occurrence of fire on the landscape. In addition, long-term climate changes, alterations to the hydrology of river and riparian systems, and agricultural practices have affected species diversity and composition.

There is a need to restore native vegetation to the type that would normally be found at the NWRs. Prior to the establishment of the NWRs, past land use practices altered vegetation from its original conditions. The loss of native vegetation has occurred over the years, primarily from grazing. The loss of native vegetation has also been the result of fire exclusion.

THE PROPOSED ALTERNATIVES

The CEQ regulations for implementing NEPA require federal agencies to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). The four preliminary alternatives described in this Scoping Document are

Alternative A: No Action—Continue Current Level of Fire Management (Prescribed Fire, Chemical and Mechanical Treatments, and Suppression)

Alternative B: Suppression Only

Alternative C: Prescribed Fire Treatments and Suppression

Alternative D: Chemical and Mechanical Treatments and Suppression

Treatment Objectives

The use of prescribed fire, mechanical, and/or chemical treatments is based on the management objective for the area, costs, availability of workforce, and time to implement, as well as several other local factors that may be involved. In general, prescribed fire is used as a natural mechanism of disturbance that the native vegetative and faunal communities evolved with and need to maintain a naturally functioning system. Prescribed fire may also be used to reduce hazardous fuel loadings either singly or in conjunction with mechanical treatments to remove debris. Mechanical treatments provide a means of removing large amounts of fuel loading that would either be unfeasible to accomplish with fire alone, due to the severity and inability to control such a fire, or because of

environmental constraints with protecting resources (such as plant and animal species) in the treatment area from fire. Chemical treatments are often used as follow-up treatments to mechanical or prescribed fire projects to treat remaining vegetation or to treat site-specific areas where mechanical treatment is unwarranted.

Description of Methods Used to Meet Treatment Objectives

Prescribed Fire. Prescribed fire is a management tool used to manipulate vegetation. Prescribed fires may be loosely classified as broadcast, in which fire is applied across the landscape, or as debris burning as with pile or ditch burning. Historically, the treatment size and number of burns conducted on refuges and hatcheries in the New Mexico Fire District has varied considerably by unit to meet both habitat management and fuel reduction needs. Broadcast burns may range from as little as 5 acres to 20,000 acres, depending on the size of the refuge and specific management objectives. Burning may be conducted year-round, again depending on the desired objectives of the burn to achieve specific results.

Broadcast burning may be used to restore native biological communities to provide optimum feeding, breeding, and wintering habitat for a diversity of grass- and shrubland-dependent migratory birds, migratory waterfowl, native herbivores, native pollinating invertebrates, and other native wildlife that are present. Broadcast burning may also be used as a management tool in wetlands and moist soil units to reduce invasive species such as cattail. Prescribed fire also provides a needed mechanism of disturbance across all habitats that have evolved with fire.

Debris burning is used to remove vegetative material produced from mechanical treatments such as piles, or to remove a buildup of decadent vegetation from ditches and canals to improve the flow of water.

Natural ignitions are nonhuman-caused fires. Natural ignitions in the New Mexico Fire District may be managed for resource benefit in wilderness study areas, designated wilderness, and areas with little to no threat of loss to structures or developed assets on and off the refuge. These areas are located at Sevilleta NWR, Bosque del Apache NWR, Bitter Lake NWR, and San Andres NWR. Nonhuman-caused ignitions on these sites would be evaluated for potential to cross jurisdictional boundaries and the potential for damage or loss to refuge infrastructure or private property. This management option would reduce the potential for adverse effects created during suppression operations (such as the mechanical construction of firelines) and allow for the natural role of fire in these environments.

Mechanical Treatments. Mechanical treatments are implemented using hand-held tools, chain saws, bulldozers, tractors, masticators, excavators, forestry cutters, chippers, and other specialty equipment. Mechanical treatments have ranged from less than 1 acre to 1,000 acres or more on each NWR or NFH-FTC in New Mexico. Mechanical treatment methods are generally used to remove heavy concentrations of fuel or invasive species that may not be treated by prescribed fire or chemical treatments due to the size and amount of material needing to be removed. Mechanical treatments may also be used in conjunction with chemical and prescribed fire treatments as part of the overall treatment process.

Tamarisk has become well established throughout the riparian corridors of New Mexico, resulting in the displacement of native species. As a result, the fire danger and severity of wildfires have increased due to the high rate of spread and resistance to control exhibited in this fuel type. Mechanical reduction of these dense, large volumes of highly flammable fuels is currently accomplished through the use of an excavator to either pull the trees from the ground or by a dozer to push the trees into piles. Follow-up treatment of root raking with heavy equipment is recommended to remove the remaining roots to prevent root sprouting. Restoration of native species following Tamarisk removal reduces the fire hazard by restoring native species that produce a much lower fire behavior and are less resistant to control.

Mechanical treatments have also been conducted using chainsaws and specialty equipment such as “slash busters” to remove junipers and pinyon pine that have become established on grasslands. Mechanical treatments are often used prior to or in conjunction with prescribed fire to both remove the cut material and prevent sapling trees from encroaching onto the treated site. These types of treatments would continue in order to prevent the further encroachment of grassland and savanna habitats and to manage density of pinyon-juniper stands to maintain a diversity of grass and forb species.

Firebreaks are generally created and maintained with mechanical treatments through the use of heavy equipment to remove heavy fuel concentrations, mow “green” fire breaks, grade two-track roads to remove vegetation, and to remove single or small groups of trees by hand.

Chemical Treatments. Some of the eight FWS units in New Mexico use chemicals to treat invasive plant species, crop plants, federally and state-listed noxious plant species and to restore and maintain native habitats. All units of the FWS that implement chemical treatments must prepare an annual Pesticide Use Proposal (PUP) that describes the chemical (for example, herbicide, insecticide, or rodenticide) that is proposed for use. Chemical use varies by unit as shown in Table 2 (page 18 of this document) and Table 3 (page 20). The FMP/EA will include an analysis of effects of using chemical treatments.

Wildfire Suppression. Suppression actions may include the construction of fireline by firefighters using hand tools, engines, heavy equipment (such as dozers), and aircraft. Some suppression actions using heavy equipment or aircraft may be restricted based on the presence of cultural sites, riparian habitat, waterways, and critical habitat. Tactics such as burning out from roadways or allowing the fire to burn into areas of natural confinement may be appropriate as well. Some refuges may have special constraints regarding suppression actions such as the presence of Unexploded Ordnance (UXO). The Federal Wildland Fire Policy gives fire managers the latitude to determine and implement the appropriate suppression response based on the current and expected conditions.

Treatment Implementation

The number of all treatment that could be implemented may vary widely on an annual basis. This variation is based, in part, on specific habitat management and fuels-reduction objectives, availability of funding and resources, and current and long-term weather and fuel conditions. Some grasslands may only need to be burned once every 8 to 15 years or more while other areas require more frequent

fire to maintain habitat conditions. Fuels reduction and the creation and maintenance of fire breaks would most likely require more frequent treatments.

Prioritization of Treatments

Treatment priority, in general, is based on values at risk, both on- and off-refuge/hatchery values, such as structures and property, and natural values such as critical habitat. High-priority projects are those that involve the reduction of wildfire threat to infrastructure on and adjacent to refuges and hatcheries. The treatments generally involve the reduction of hazardous fuels through mechanical, chemical, and prescribed fire and the creation of firebreaks. Other high-priority projects would involve the protection or restoration of critical habitat, especially in circumstances where federally listed (threatened and endangered) plant or wildlife species are or may be present.

Treatments may be prioritized based on refuge management objectives, availability of resources and funding, and current climatic and vegetative conditions.

Description of the Preliminary Proposed Alternatives

The four proposed alternatives are described as “preliminary” because they have not been subjected to public review and comment during the scoping process. If, during scoping, public comments present issues concerning the alternatives or components of the alternatives, the FWS will consider if the issues are significant enough to warrant changes to the alternatives. Sometimes public comments are responsible for an agency developing an additional alternative if implementation is feasible and if it would meet management objectives.

The draft FMP/EA will include an analysis of a no-action alternative, which complies with the Council on Environment Quality regulations for implementing the National Environmental Policy Act at 40 CFR 1502.14(d). The no-action alternative for the draft FMP/EA is described as continuation of the current level of management (prescribed fire, chemical and mechanical treatments, and fire suppression).

Alternative A: No Action—Continue Current Level of Fire Management

BITTER LAKE NWR

Proposed Management Actions to Meet District-wide Objectives

1. Fuel breaks would continue to be constructed and maintained at the refuge through the removal of salt-cedar and the creation of permanent fuel breaks using mechanical, chemical, and prescribed fire treatments.
2. All existing fuel breaks on the north tract would continue to be maintained through annual maintenance. The existing fuel break along the west and north boundary of the north tract would continue to be maintained through annual grading and road maintenance.
3. The FWS would continue to coordinate with adjacent landowners to remove Tamarisk in close proximity of the north and south of the refuge’s boundary along the Pecos River corridor to reduce the threat of wildfire to the refuge and neighboring property.

4. The FWS would continue to coordinate with neighboring agencies and landowners to apply prescribed fire, mechanical, and chemical treatments across jurisdictional boundaries to reduce the threat and severity of wildfire and improve habitat conditions.
5. The FWS would continue to protect habitat for federally endangered species: Pecos assiminea snail, Koster's spring snail, Roswell spring snail, Noel's amphipod, Pecos gambusia, Pecos bluntnose shiner, and interior least tern; and federally threatened species: Pecos puzzle sunflower.
6. The current condition class of refuge habitats would continue to be maintained or improved through the use of prescribed fire, mechanical, and chemical treatments. The treatment interval would continue to be based, in part, on monitoring of vegetative response.
7. Mechanical and chemical treatments would continue to be used to control nonnative invasive plant species in all parts of the refuge as monitoring and field assessments identify sites.
8. Broadcast burning would continue to be used to reduce fuel loading and/or construct fuel breaks and defensible space in order to protect refuge infrastructure and identified sensitive or critical habitat.
9. Natural-caused wildfire would be allowed to burn in the North Tract Wilderness to restore the natural role of fire and reduce the potential adverse effects of suppression actions. The appropriate suppression response would be identified and used if fire threatens to cross onto neighboring properties.

BOSQUE DEL APACHE NWR

Proposed Management Actions to Meet District-wide Objectives

1. Mechanical, chemical, and prescribed fire treatments would continue to be used to construct and maintain fuel breaks at the north, mid-refuge, and south boundary locations of the Rio Grande floodplain of the refuge through the removal of salt cedar.
2. The existing fuel break along south refuge boundary would continue to be maintained by using all methods, as necessary, to treat new or recurring salt cedar. The cottonwood and willow stands would continue to be maintained to provide a shaded fuel break.
3. The FWS would continue to coordinate with adjacent landowners to remove Tamarisk within 5 miles to the north and south of the refuge boundary along the Rio Grande corridor to reduce the threat of wildfire to the refuge and neighboring property.
4. The FWS would continue to coordinate with neighboring agencies and landowners to apply prescribed fire, mechanical, and chemical treatments across jurisdictional boundaries to reduce the threat and severity of wildfire and improve habitat conditions.
5. The current condition class of refuge habitats would continue to be maintained or improved through the use of prescribed fire, mechanical, and chemical treatments. The treatment interval would be based, in part, on monitoring of vegetative response.
6. Mechanical and chemical treatments would continue to be used to control nonnative invasive plant species in all parts of the refuge as monitoring and field assessments identify sites.
7. Broadcast burning would continue to be used to reduce fuel loading and/or construct fuel breaks and defensible space in order to protect refuge infrastructure and identified sensitive or critical habitat.
8. Natural-caused wildfire would continue to be allowed to burn in the Little San Pascual, Chupadera, and Indian Well Wilderness Areas to restore the natural role of fire and reduce

the potential adverse effects of suppression actions. The appropriate suppression response would be identified and used if fire threatens to cross onto neighboring properties.

9. Burned areas along the riparian corridor would continue to be restored with native species, including but not limited to cottonwood, willow, and the native grasses that serve as shaded fuel breaks.

DEXTER NFH-FTC

Proposed Management Actions to Meet District-wide Objectives

1. The existing defensible space around hatchery structures would be maintained through regular mowing and grading of road systems.
2. The FWS would coordinate with neighboring agencies and landowners to apply prescribed fire, mechanical, and chemical treatments across jurisdictional boundaries to reduce the threat and severity of wildfire and improve habitat conditions.
3. The current condition class of hatchery habitats would be maintained or improved through the use of prescribed fire, mechanical, and chemical treatments. The treatment interval would be based, in part, on monitoring of vegetative response.
4. Mechanical and chemical treatments would be used to assist in the control of nonnative invasive plant species in all parts of the hatchery, as monitoring and field assessments identify sites.
5. Broadcast burning would be used to reduce fuel loading and/or maintain defensible space in order to protect hatchery infrastructure and identified sensitive or critical habitat.

LAS VEGAS NWR

Proposed Management Actions to Meet District-wide Objectives

1. Periodic mowing would continue to be used to maintain the existing fuel break along the northwest refuge boundary south of Highway 281.
2. The FWS would continue to coordinate with neighboring agencies and landowners to apply prescribed fire, mechanical, and chemical treatments across jurisdictional boundaries to reduce the threat and severity of wildfire and improve habitat conditions.
3. The current condition class of refuge habitats would continue to be maintained or improved through the use of prescribed fire, mechanical, and chemical treatments. The treatment interval would be based, in part, on monitoring of vegetative response.
4. Mechanical and chemical treatments would continue to be used to assist in the control of nonnative invasive plant species in all parts of the refuge, as monitoring and field assessments identify sites.
5. Broadcast burning would continue to be used to reduce fuel loading and/or construct fuel breaks and defensible space in order to protect refuge infrastructure and identified sensitive or critical habitat.

MAXWELL NWRProposed Management Actions to Meet District-wide Objectives

1. Fuel breaks along the northern, western, and eastern refuge boundary woodlots would be constructed and maintained using mechanical, chemical, and prescribed fire treatments to remove/thin Siberian elm and Russian olive.
2. The existing fuel breaks at the north/south interior gravel road (Lake 13 Road) and the west/east interior gravel road (Refuge Road) would be maintained annually by mowing the rights-of-way and grading roads.
3. The FWS would coordinate with neighboring agencies and landowners to apply prescribed fire, mechanical, and chemical treatments across jurisdictional boundaries to reduce the threat and severity of wildfire and improve habitat conditions.
4. The current condition class of refuge short-grass prairie habitats would be maintained or improved through the use of prescribed fire, mechanical, and chemical treatments. The treatment interval would be based, in part, on monitoring of vegetative response.
5. Mechanical and chemical treatments would be used to assist in the control of nonnative invasive plant species in all parts of the refuge, as monitoring and field assessments identify sites.
6. Broadcast burning would be used to reduce fuel loading and/or construct fuel breaks and defensible space in order to protect refuge infrastructure and identified sensitive or critical habitat.
7. Natural-caused wildfire would be allowed to burn in the 80-acre Research Natural Area on the southwest corner of the refuge to restore the natural role of fire and reduce the potential adverse effects of suppression actions. The appropriate suppression response would be identified and used if fire threatens to cross onto neighboring properties or other refuge units.

MORA NFH-FTCProposed Management Actions to Meet District-wide Objectives

1. The existing defensible space around hatchery structures would continue to be maintained through regular mowing and grading of road systems.
2. The FWS would continue to coordinate with neighboring agencies and landowners to apply prescribed fire, mechanical, and chemical treatments across jurisdictional boundaries to reduce the threat and severity of wildfire and improve habitat conditions.
3. The current condition class of hatchery habitats would continue to be maintained or improved through the use of prescribed fire, mechanical, and chemical treatments. The treatment interval would be based, in part, on monitoring of vegetative response.
4. Mechanical and chemical treatments would continue to be used to assist in the control of nonnative invasive plant species, in all parts of the hatchery, as monitoring and field assessments identify sites.
5. Broadcast burning would continue to be used to reduce fuel loading and/or maintain defensible space in order to protect hatchery infrastructure and identified sensitive or critical habitat.

SAN ANDRES NWRProposed Management Actions to Meet District-wide Objectives

1. The FWS would continue to coordinate with neighboring agencies and landowners to apply prescribed fire, mechanical, and chemical treatments across jurisdictional boundaries to reduce the threat and severity of wildfire and improve habitat conditions.
2. Prescribed fire and/or mechanical treatments would continue to be used to reduce pinyon-juniper stand density.
3. The current condition class of refuge habitats would continue to be maintained or improved through the use of prescribed fire, mechanical, and chemical treatments. The treatment interval would be based, in part, on monitoring of vegetative response.
4. Mechanical and chemical treatments would continue to be used to assist in the control of nonnative invasive plant species in all parts of the refuge, as monitoring and field assessments identify sites.
5. Broadcast burning would continue to be used to reduce fuel loading and/or construct fuel breaks and defensible space in order to protect refuge infrastructure and identified sensitive or critical habitat.
6. Natural-caused wildfire would continue to be allowed to burn in all areas of the refuge to restore the natural role of fire and reduce the potential adverse effects of suppression actions. Point-source protection of cultural sites, repeaters, and military installations may be needed in some limited situations. If fire threatens to cross onto neighboring properties, the appropriate suppression response would be identified and used.

SEVILLETA NWRProposed Management Actions to Meet District-wide Objectives

1. Fuel breaks at the north and south end of the Rio Grande floodplain of the refuge would continue to be constructed and maintained using mechanical, chemical, and prescribed fire treatments to remove salt cedar.
2. The existing fuel break along the refuge boundary south of Highway 60 would continue to be maintained through regular grading.
3. The FWS would continue to coordinate with adjacent landowners to remove Tamarisk within 5 miles to the north and south of the refuge boundary, along the Rio Grande corridor to reduce the threat of wildfire to the refuge and neighboring property.
4. The FWS would continue to coordinate with neighboring agencies and landowners to apply prescribed fire, mechanical, and chemical treatments across jurisdictional boundaries to reduce the threat and severity of wildfire and improve habitat conditions.
5. Prescribed fire and/or mechanical treatments would continue to be used to restore and maintain pinyon-juniper savannah habitat at Condition Class 2 or better.
6. The current condition class of refuge habitats would continue to be maintained or improved through the use of prescribed fire, mechanical, and chemical treatments. The treatment interval would be based, in part, on monitoring of vegetative response.
7. Mechanical and chemical treatments would continue to be used to assist in the control of nonnative invasive plant species in all parts of the refuge, as monitoring and field assessments identify sites.

8. Broadcast burning would continue to be used to reduce fuel loading and/or construct fuel breaks and defensible space in order to protect wolf pens, refuge infrastructure, and identified sensitive or critical habitat.
9. Natural-caused wildfire would be allowed to burn in the land management and strategic management zones of the refuge to restore the natural role of fire and reduce the potential adverse effects of suppression actions. The appropriate suppression response would be identified and used if fire threatens to cross onto neighboring properties.

Alternative B: Suppression Only

The suppression actions described under Alternative A for each NWR or NFH-FTC would be the only fire management action that would continue to occur under Alternative B.

FWS Manual (621 FW 1.1) states, in part, that each refuge will maintain a wildland fire suppression program to “ensure that refuge resources, including staff, the general public and private property receive adequate protection from potential wildland fire.

Revised Guidance for Implementation of the National Wildlife Coordinating Group Federal Wildland Fire Management Policy (2009) defines two kinds of wildland fire: **prescribed fire** (planned ignitions) and **wildfire** (unplanned ignitions). A wildland fire may be concurrently managed for one or more objectives, and objectives can change as the fire spreads across the landscape. Objectives are affected by changes in fuels, weather, and topography; varying social understanding and tolerance; and involvement of other governmental jurisdictions having different missions and objectives. The revision allows fire managers to manage a wildfire for multiple objectives and increased flexibility to respond to changing incident conditions and firefighting capability, while strengthening strategic and tactical decision implementation that better supports public safety and resource management objectives.

Alternative C: Prescribed Fire and Suppression

The prescribed fire and fire suppression actions described under Alternative A for each NWR or NFH-FTC would be the only fire management actions that would continue to occur under Alternative C.

Alternative D: Mechanical and Chemical Treatments with Suppression

The mechanical and chemical treatments and fire suppression actions described under Alternative A for each NWR or NFH-FTC would be the only fire management actions that would continue to occur under Alternative D.

PRELIMINARY FWS ISSUES

The FWS identified two preliminary issues that will be analyzed in the FMP/EA. Those are the

- effects of smoke from prescribed fire on air quality, and
- use of prescribed fire during periods of high fire danger.

Table 2. Chemicals (herbicides) used on the NWRs and NFH-FTCs in the New Mexico Fire District, FWS Region 2**Key to herbicide use by unit and invasive plant species treated**

- | | | |
|---|--|---|
| 1. Arsenal (imazapyr) | 10. Telar XP (chlorsulfuron) | 19. Reward (diquat dibromide) |
| 2. Arsenal PowerLine (imazapyr) | 11. Plateau (imazapic) | 20. Fusilade II (fluazifop-P-butyl) |
| 3. Clearcast (imazamox) | 12. Garlon 4 Ultra (triclopyr butoxyethyl ester) | 21. 2,4-D Amine 4 (2,4-D dimethylamine) |
| 4. Northstar (primisulfuron-methyl + dicamba, acid) | 13. Honcho Plus (glyphosate) | 22. Tahoe 3A (triclopyr triethylamine) |
| 5. Vista (fluroxypyr) | 14. Pursuit (imazethapyr) | 23. Barrier (dichlobenil) |
| 6. Rodeo (glyphosate) | 15. Select 2 EC (clethodim) | 24. Cutrire-Plus Granular (copper) |
| 7. Habitat (imazapyr) | 16. Polaris (imazapyr) | 25. Diuron 80 DF (diuron) |
| 8. Garlon 4 (triclopyr butoxyethyl ester) | 17. Garlon 3A (triclopyr triethylamine) | 26. Pramitol (25E (prometon)) |
| 9. Milestone Specialty (aminopyralid) | 18. Roundup (glyphosate, various formulations) | |

Invasive Plant	Bitter Lake NWR	Bosque del Apache NWR	Dexter NFH-FTC	Las Vegas NWR	Maxwell NWR	Mora NFH-FTC	San Andres NWR	Sevilleta NWR
Barnyard grass (<i>Echinochloa crusgalli</i>)	--	15	--	--	--	--	--	--
Bermuda grass (<i>Cynodon dactylon</i>)	--	--	26	--	--	--	6, 7, 19, 20	--
Bindweed (<i>Convolvulus arvensis</i>)	--	--	26	--	--	--	--	--
Bull thistle (<i>Ulmas pumila</i>)	--	--	--	9	9	18	--	--
Camelthorn (<i>Alhagi maurorum</i> syn. <i>Alhagi pseudalhagi</i>)	--	9	--	--	--	--	--	--
Canada thistle (<i>Cirsium arvense</i>)	--	--	--	9	9	18	--	--
Cattail (<i>Typha</i> spp.)	--	--	--	--	--	--	6, 7, 19, 20	13
Chara algae (<i>Chara</i> spp.)	--	--	23, 24	--	--	--	--	--
Cocklebur (<i>Xanthium strumarium</i>)	--	13	--	--	--	--	--	--
Common mallow (<i>Malvaceae</i>)	--	14	--	--	--	--	--	--
Crabgrass (<i>Digitaria</i> spp.)	--	--	26	--	--	18	--	--
Curly dock (<i>Rumex crispus</i>)	--	14	--	--	--	--	--	--
Dandelion (<i>Taraxacum officinale</i>)	--	14	--	--	--	--	--	21
Field bindweed (<i>Convolvulus arvensis</i>)	--	--	--	--	--	--	--	21
Filamentous algae (<i>Spirogyra</i> , <i>Anabaena</i> , <i>Oscillatoria</i> , <i>Lyngbya</i> , <i>Pithophora</i> spp.)	--	--	24, 25	--	--	--	--	--
Foxtail grasses (<i>Bromus</i> spp.)	--	4, 14, 15	--	--	--	--	--	--
Goathead (<i>Tribulus terrestris</i>)	--	--	--	--	--	--	--	13, 21
Goosefoot (<i>Chenopodium album</i>)	--	14	--	--	--	--	--	--
Hoary Cress (<i>Cardaria draba</i>)	--	9	--	--	--	--	--	--
Johnson grass (<i>Sorghum halapense</i>)	--	4, 13, 15	--	--	--	--	--	21
Kochia (<i>Kochia scoparia</i>)	--	4, 13, 14	--	--	--	--	--	13, 21

Table 2. Chemicals (herbicides) used on the NWRs and NFH-FTCs in the New Mexico Fire District, FWS Region 2 (continued)

Invasive Plant	Bitter Lake NWR	Bosque del Apache NWR	Dexter NFH-FTCa	Las Vegas NWR	Maxwell NWR	Mora NFH-FTCa	San Andres NWR	Sevilleta NWR
Morning glory (<i>Ipomoea</i> spp.)	--	4, 5	--	--	--	--	--	--
Musk thistle (<i>Carduus nutans</i>)	--	--	23	9	9	--	--	--
Perennial pepperweed (<i>Lepidium latifolium</i>)	--	1, 2, 3, 6, 7, 9, 10, 11	--	--	--	--	--	13, 21
Phragmites (<i>Phragmites australis</i> syn. <i>Phragmites communis</i>)	1, 6, 7	1, 2, 6, 7, 9	--	--	--	--	--	13
Redroot pigweed (<i>Amaranthus retroflexus</i>)	--	4	--	--	--	--	--	--
Rough cocklebur (<i>Xanthium strumarium</i>)	--	--	--	--	--	--	--	21
Russian knapweed (<i>Acroptilon repens</i> syn. <i>Centaurea repens</i>)	--	1, 2, 6, 7, 9, 10, 11	--	--	9	--	--	--
Russian olive (<i>Elaeagnus angustifolia</i>)	--	1, 2, 6, 7, 8, 12	--	7, 8, 17	12	--	--	1, 12, 22
Russian thistle (<i>Salsola tragus</i> syn. <i>Salsola iberica</i>)	--	13	26	--	--	--	--	--
Salt cedar (<i>Tamarix ramosissima</i>)	1, 6, 7, 8, 12, 16, 17, 18	1, 2, 6, 7, 8, 12	--	7, 8, 17	12, 16	--	7, 8, 12	1, 12, 22
Sandbur (<i>Cenchrus longispinus</i> (Hack))	--	4	--	--	--	--	--	--
Siberian elm (<i>Ulmus pumila</i>)	--	--	--	8, 17	12	--	8, 12	22
Sunflower (<i>Helianthus annuus</i>)	--	4	--	--	--	--	--	--
Tall whitetop (<i>Lepidium latifolium</i>)	--	--	--	--	--	--	--	21
Thistle (<i>Cirsium</i> sp.)	--	--	--	--	--	--	--	21
Tumbleweed (<i>Salsola kali</i>)	--	--	--	--	--	--	--	21
White top (<i>Cardaria draba</i>)	--	11	--	--	--	--	--	--
Yellow bristlegrass (<i>Setaria lutescens</i>)	--	15	--	--	--	--	--	--

Table 3. Chemicals (insecticides) used on the NWRs and NFH-FTCs in the New Mexico Fire District, FWS Region 2**Key to insecticide use by unit and pest species treated**

1. Baythroid XL (cyfluthrin)
2. Warrior II with Zeon Technologies (lambda-cyhalothrin)
3. Sevin 80 WSP (carbaryl)
4. Dragnet SFR (permethrin)
5. Tengard SFR One Shot (permethrin)
6. Dimilin 2L (diflubenzuron)

Pest	Bitter Lake NWR ^a	Bosque del Apache NWR	Dexter NFH-FTC	Las Vegas NWR ^a	Maxwell NWR ^a	Mora NFH-FTC ^a	San Andres NWR ^a	Sevilleta NWR
Alfalfa weevil (<i>Hypera postica</i>)	--	1, 2,	--	--	--	--	--	--
American grasshopper (<i>Schistocerca americana</i>)	--	1, 2	--	--	--	--	--	--
Anchor worm (<i>Lernaea cyprinacea</i>)	--	--	6	--	--	--	--	--
Corn earworm (<i>Helicoverpa zea</i>)	--	2	--	--	--	--	--	--
Egyptian alfalfa weevil (<i>Hypera brunneipennis</i>)	--	2	--	--	--	--	--	--
Fall armyworm (<i>Spodoptera frugiperda</i>)	--	2	--	--	--	--	--	--
Ips Bark Beetle (<i>Ips</i> spp.)	--	--	--	--	--	--	--	3, 4, 5
Lygus bug (<i>Lygus hesperus</i>)	--	2	--	--	--	--	--	--
Three cornered alfalfa hopper (<i>Spissistilus festinus</i>)	--	2	--	--	--	--	--	--

Note:

a. Insecticides currently not used.

Literature Cited

Collins, Scott L. and David J. Gibson. 1990. Effects of Fire on Community Structure in Tallgrass and Mixed-Prairie Grasses, ch 6 in *Fire in the North American Tallgrass Prairies*, Scott L. Collins and Linda L. Wallace, Editors. Norman: University of Oklahoma Press.

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