

# **APPENDIX A: LITERATURE REVIEW**



## SUMMARY OF RESEARCH ON MOTORIZED VEHICLE USE

While access to public lands improves the experience of ORV users, it can damage air and water quality as well as soils; adversely affect vegetation, wildlife, and habitat; impact cultural resources; detract from other visitors' enjoyment of public lands; and create law enforcement issues. In general, air and water quality are negatively affected by exhaust fumes, oil, dust, and siltation that result from ORV use (Taylor n.d.; Proescholdt 2007; Ouren et al. 2007). ORVs churn up and damage delicate soils, and continued use of certain areas can result in soil compaction that prohibits the establishment of annual plants and can foster the invasion of nonnative species into fragile ecosystems (Proescholdt 2007; Ouren et al. 2007; Webb 1982). Soil damage and compaction can also lead to increased erosion of ORV traffic areas expressed by deep gullies and high stream siltation (Iverson 1980). An analysis of ORV impacts in national park units (Long et al. 1999) found this type of recreation causes damage to topsoil as well as vegetation and has in some places resulted in the mortality of endangered species. Park rangers have also reported incidents where ORV use has destroyed or disturbed cultural resources that parks are bound by law to protect (Long et al. 1999). Additionally, loud engines in quiet environments disturb wildlife and affect visitor enjoyment for those that use parks as places of peace and solace or for activities such as hunting and fishing (Proescholdt 2007). While Long et al. (1999) found that there is widespread legal use of ORVs in 23 park units, they found illegal use in 40 park units.

This literature review has been prepared to support the development of an ORV management plan/EIS at Lake Meredith National Recreation Area. The following sections summarize available information related to the potential effects of ORV use on natural and cultural resources, such as air and water quality, soils, vegetation, wildlife, and archeological resources, found in national park units. It also examines information on the effects of ORV use on socioeconomics, esthetics/sound, safety, and management issues. Because the national recreation area is located within a semiarid region, the literature review focused on mountainous, semiarid, and desert environments, where appropriate.

### AIR QUALITY

While emissions from on-road vehicles decreased 56 percent from 1986 to 2006 as a result of emissions reduction programs, there was a 42 percent increase in ORV emissions over the same period. Annual estimates show that ATVs emit more than 381,000 tons of hydrocarbons, 1,860,000 tons of carbon monoxide, and 11,000 tons of nitrogen oxide each year across the country (Wildlands CPR 2006). A recent report from the Center for Biological Diversity (Kassar and Spitler 2008) cites the California Air Resources Board finding that off-road motorcycles and ORVs produce 118 times as much smog-forming pollutants as do modern automobiles on a per-mile basis. One study prepared for the Bureau of Land Management (BLM) in California showed that the impacts of fugitive dust (particulate matter) created during the operation of ORVs varied as a function of activity levels (WESTEC 1979). In some instances, fugitive dust levels that were 10 times the daily standard and 100 times the hourly standard were found to occur in localized areas. As a result, the study recommended adequate separation of ORV use from non-ORV related receptors to properly reduce the effects of fugitive dust emissions (WESTEC 1979). If left uncontrolled, it is estimated that ORVs will contribute 33 percent of hydrocarbon emissions, 9 percent of carbon monoxide, 9 percent of nitrogen oxide, and 2 percent of particulate emissions nationally by 2020 (Wildlands CPR 2006).

Overall, from the perspective of human health, studies have shown that ORVs emit carbon monoxide, nitrogen oxide, benzene, toluene, ethylbenzene and xylenes. Carbon monoxide exposure has been shown to lead to visual impairment, reduced work capacity and mental dexterity, poor learning ability, nausea, headaches, dizziness, and death. Nitrogen oxides can cause shortness of breath, chest pain and increased susceptibility to respiratory infections. Benzene is an identified carcinogen. Toluene, ethylbenzene, and xylenes can cause dizziness, headaches and loss of consciousness (Wildlands CPR 2006). Particulate

matter (in the form of fugitive dust from unpaved roadways) is another air pollutant which can lead to decreased lung function, respiratory disease, and even death (Wildlands CPR 2006).

## **WATER QUALITY**

A total of six articles were reviewed regarding water quality impacts associated with ORV use. Five of the articles involved specific scientific studies, and one article (Wildlands CPR 1999) presented legal strategies for activists to address inappropriate roads and ORVs through tools provided in four regulatory areas of the *Clean Water Act*: state water quality plans, total maximum daily loads, discharge permits, and Section 404.

Of these articles, two documented the impacts on water quality directly related to the use of motorized vehicles in or near aquatic environments. The Texas Chapter of the American Fisheries Society (TCAFS) cites the erosion, siltation, and bank destabilization that results from ORV use and increases the potential for other water quality impacts. The damage to stream bottoms and increased siltation can change stream temperatures, resulting in increased extremes and temperature variability that can be detrimental to fish populations (TCAFS 2002). In the July 2000 article in the U.S. Forest Service (USFS) Stream Systems Technology Center's "Stream Notes" magazine, Furniss et al. (2000) determined that forest roads and associated drainage features caused an increase in channelized runoff that often reached local waterways prior to infiltration, which demonstrated a hydrologic connection between roads and streams. This report was based on several studies in the Pacific Northwest that documented increases in runoff timing, peak flows, and sedimentation in streams caused by concentrated outflows from ditches and culverts associated with forest roads. The authors determined that this hydrologic connection between roads and streams indicated the potential for impacts on water quality, aquatic habitats, and hydrology (Furniss et al. 2000).

## **SOILS**

Several studies show that ORV use in desert climates can have lasting, deleterious effects on soil stability and fertility. In one study, researchers drove a four-wheel-drive vehicle back and forth twice across test plots in the southern Colorado Plateau, Sonoran Desert, Mojave Desert, Chihuahuan Desert, the northern Colorado Plateau, and the Great Basin Desert. They found statistically significant reduction in soil nitrogenase activity in nearly half of the test sites (Belnap 2002). Nitrogenase activity results from an enzyme that catalyzes nitrogen fixation, which contributes to soil fertility and productivity.

In desert climates, biological soil crusts are often primary contributors to soil fertility, stability, and primary productivity due to the nitrogenase activity of soil lichens, cyanobacteria, and moss (Belnap 1996, 2002). Soil composition is an important indicator of the presence of different types of biological organisms—sandy and clay soils being less hospitable to these organisms than those higher in silt content (Belnap 2002). The presence of these organisms before disturbance does influence the degree to which soils are injured by ORV disturbance and should be considered when estimating the damage caused by ORVs.

Similarly, desert type also appears to determine the impact that ORV disturbance will have on the nitrogenase activity of those organisms. For instance, Belnap (2002) found that biological soils in hot deserts (e.g., Chihuahuan, Sonora, and parts of the Mojave) recovered more quickly from disturbance than those in cooler deserts (e.g., Colorado Plateau, northern Great Basin) due in part to the type of soil lichens found in those soils as a result of climate. Moreover, the presence of more soil lichens before the disturbance significantly reduced the impact on nitrogenase activity after the disturbance. Although desert type can affect the degree of impact, any disturbance by ORVs damages fragile biological soil crusts, and recovery can take decades or even centuries depending on the soil type (Belnap 1993, 2003; Webb and Wilshire 1980). In their study on a ghost town in Nevada, Webb and Wilshire (1980) found that a half

century after the site was abandoned, soils had still not recovered. Moreover, the type of vegetation found at the research site differed significantly from surrounding undisturbed areas, pointing to the impacts that soil disturbance had on other biological organisms.

In addition to reduction in primary productivity though decreasing nitrogenase activity, soil compaction is another byproduct of ORV use that can have negative impacts on desert ecology. Compacted soils can impede the establishment of plants by inhibiting root expansion. Results from a study by Adams et al. (1982) in the Mojave Desert showed that soil compaction as a result of ORV use is more pronounced on wet soils than dry soils. Under wet conditions, just three ORV passes over a study area resulted in statistically significant soil strengthening to a depth of 25 centimeters. With dry soils, similar results were not achieved until a Ford Bronco had completed 20 passes and only at a depth of 15 centimeters. These results indicate that controlling ORV activity under moist and wet conditions could reduce soil compaction and thus ecosystem injury.

Another study in the Mojave Desert (Iverson 1980) showed that soil compaction can lead to soil erosion, largely because of decreased infiltration rates of rainwater. Tuttle and Griggs (1987) documented erosion of ORV-compacted soils in state vehicular recreation areas located in arid regions of California, including gullies and increased stream sediments at various hillclimbs. Webb (1982) found that soil compaction in Mojave Desert soils resulted from a minimal number of motorcycle passes and that after as few as ten, all annual vegetation was destroyed. Loamy sand soils appeared particularly vulnerable, and Webb recommended ORV traffic be prohibited from areas with those soil types. At a minimum, partial recovery of the tests sites from his study became apparent only after one year, and it was attributed to invasive species.

## VEGETATION AND INVASIVE SPECIES

There are numerous studies describing the impacts of ORVs on vegetative communities, including direct damage to vegetation by vehicle use and the spread of invasive species by vehicular seed dispersal. Three studies reviewed involved direct examination of vehicles to determine if they were potential distributors of nonnative plant seeds.

Osborn et al. (2002) discuss a study that investigated the potential for seed transport into Kakadu National Park in Australia by means of tourist vehicles. The study concluded that vehicles were partially responsible for weed seed dispersal, but the low density of seeds found on the vehicles did not warrant the park taking preventative action. Another study (Rooney 2005) compared soil samples taken from the undercarriage of ORVs to field surveys for seven invasive species in forested areas of Wisconsin. No evidence of actual invasive plant dispersal was noted; however, because invasive plants have seed traits that predispose them to dispersal, the study found that ORVs may occasionally contribute to long distance dispersal events. This is further supported by a study conducted by the Montana Weed Control Association (Trunkle and Fay 1991) which involved driving a vehicle 40 feet into a vegetated plot and then to various distances from the plot. Afterwards, plant material, including spotted knapweed (*Centaurea stoebe*) seeds, was collected from the undercarriage. The results indicate that spotted knapweed seed is readily disseminated by motor vehicles for long distances.

Two studies reviewed addressed the effects of roads on the spread of invasive species. Gelbard and Belnap (2003) documented that roads and associated environmental disturbances contributed to the spread of invasive species in semiarid grasslands, shrublands, and woodlands of southern Utah. This study also noted evidence of higher nonnative species richness and invasive species cover near paved roads than near four-wheel-drive vehicle tracks. A study from southern Nevada (Bolling and Walker 2000) explained how the initial form of disturbance in creating roads could be a factor in determining the forms of plant succession that occur during revegetation of disturbed areas. Soils and vegetation types in southern

Nevada differed between roads and nearby non-road areas and between roads created by vehicular traffic (track) and bulldozing (bladed). Track roads were more susceptible to soil compaction and had higher levels of organic matter and plant cover (Bolling and Walker 2000).

A study of nine ORV use areas in California deserts (Lathrop 1983) found that direct vehicle impacts constituted the primary means of vegetative destruction. The study showed that areas beyond the vehicle track width were also affected although the degree of impact varied with conditions and intensity of vehicle use. The study demonstrated that concentrated current or recent use in localized areas (such as heavy weekend use) created the greatest reduction in vegetative cover. Another study in the Mojave and Colorado deserts of California (Lovich and Bainbridge 1999) found that natural recovery rates (return to pre-disturbance levels of biomass, cover, density, community structure, and soil characteristics) for certain desert ecosystems from the negative impacts of ORVs and other uses could be as long as 3,000 years. Wilshire (1983) found that even a single pass of an ORV could destroy many types of annual and some perennial plants although hundreds of passes may be required to destroy tough, deep-rooted shrubs. Webb (1983) found that while most of the annual vegetation in a Mojave Desert study remained after one pass by a motorcycle, most had been destroyed after 10 passes. Wilshire, Shipley and Nakata (1978) documented the impacts of ORVs in western states, including trail widening, uprooting of vegetation, burying plants, severe erosion, runoff, and the consequences of each to vegetation. Another study (Nakata 1979) investigated the causes of damage from a particular storm event in Utah and found that several factors contributed to the development of a storm-induced mudflow, including erosion and channelization of runoff along ORV trails that combined with diverted canal water. Nakata concluded that major destabilized areas above the canal were stripped of vegetation by ORV use.

## **FISH AND WILDLIFE**

Numerous studies have detailed the impacts on wildlife of ORV use on public lands. Impacts generally described in these studies include direct mortality, harassment, noise effects, and habitat destruction. For example, desert tortoises (*Gopherus agassizii*) and other amphibians and reptiles have been crushed to death or injured by this type of traffic in public lands (Bury and Luckenbach 2002). Other risks include injury during escape responses, and in severe cases, habitat avoidance and abandonment of young. Radle (2007) found that wildlife generally experience an increase in heart rate, as well as altered metabolism and hormone balance, when introduced to human-made noise. Noise from ORVs can obstruct the senses of animals that depend on hearing and vibration detection to survive (Berry 1980; Bury 1980). ORVs also impact wildlife by destroying or fragmenting habitat. Much of the existing research has dealt specifically with the effects of erosion and trampling of vegetation by visitors and the associated impacts on wildlife habitat values (Joslin and Youmans 1999; Monz et al. 2003). This has led some to conclude that the most effective strategies for avoiding habitat disturbance are outright road removal and the avoidance of new road construction in roadless or sparsely roaded areas (Trombulak and Frissell 2001; Walder n.d.).

Among bird species, adverse reactions to human recreational activities have included nest desertion, temporary nest abandonment, and changes in foraging habits (Joslin and Youmans 1999). Studies of wintering raptors in Colorado have found that perching distances and species richness were greater at nest locations away from trails, suggesting that trails may have an effect on habitat selection (Fletcher et al. 1999). As a result, spatial buffer zones (0.4 to 1.2 kilometers from nests) for ORV use in the Rocky Mountains are recommended during sensitive nesting phases (Joslin and Youmans 1999).

ORV-related impacts on amphibian and reptile species identified in Montana include direct mortality from vehicle collisions as well as indirect impacts on populations via the creation of migration barriers, habitat destruction, and increasing chemical contamination and sedimentation. The development of recreational facilities and water impoundments may result in the loss of key breeding, foraging, and wintering habitats, while ORV-related noise has resulted in decreased acoustical sensitivities in a number

of lizard species in the Sonoran Desert (Joslin and Youmans 1999). Species-specific studies have shown that certain species of reptiles in the Mojave Desert region of California vary in body mass depending on the level of ORV impacts, with reptiles in lower impact areas showing higher body mass (Nicolai and Lovich 2000; McGrann et al. 2006). These studies also noted that availability of primary food sources in high impact areas was lower than in low impact areas. Reptiles studied in Owyhee County, Idaho, exhibited reduced rates of movement following disturbance from ORVs. For example, reptiles have been found in higher densities further from trails at sites used less frequently by ORVs, while higher densities were observed closer to trails at more heavily used sites (Munger et al. 2003).

Studies of ORV impacts on mammalian species have shown that disturbance responses depend on the species, the extent of disturbance, and a multitude of other factors such as individual habituation. Related stressors include lowered resistance, inhibition of reproductive functions, behavioral disturbances, and greater energy demands due to flight responses, particularly from motorized recreationalists during winter months (Boyle and Samson 1985; Caslick and Caslick 1997; Wisdom et al. 2004).

Adverse effects on small mammals from ORV use have also been documented and include population reduction, energy expenditure, habitat modification (including changes in microclimate), forage/cover removal, and echolocation interference (Joslin and Youmans 1999). Further research on the effects of recreational disturbances on ungulates, such as deer (*Odocoileus* spp.) and elk (*Cervus canadensis*), has shown that even when disturbances do not induce an overt behavioral response, the increased heart rates can result in relatively high energy expenditures (Joslin and Youmans 1999). Black et al. (n.d.) also explain how disturbances contribute to increased energy expenditures for wildlife and describe various animals' means of thermal regulation (maintaining body temperature) during winter months.

These authors state that of the three learned responses that wildlife may show to recreationists (habituation, attraction, and avoidance), avoidance is particularly important in the Gunnison Basin of southwestern Colorado where animals have learned to flee from hunters. An example of this has been the propensity of bighorn sheep (*Ovis canadensis*) to abandon traditional ranges and alter social patterns as a response to these disturbances (Black et al. n.d.). It has been reported that any human activity on bighorn sheep winter range, especially within 100 feet of escape terrain, could affect their survivability (Caslick and Caslick 1997). By contrast, an earlier study by MacArthur et al. (1982) found that domestic sheep in Alberta, Canada that were regularly exposed to human activities had elevated heart rates when they were in the presence of humans accompanied by dogs. However, their reactions to road traffic were minimal, suggesting some degree of habituation.

One particular study demonstrated that ORV use in aquatic communities had a simplifying effect on aquatic biota. Some species were unable to adapt and disappeared from the modified environment (TCAFS 2002) primarily due to the impacts of vegetation loss and resulting water quality impacts.

## **ARCHEOLOGICAL RESOURCES**

Whether intentionally or inadvertently, ORV use has the potential to affect archeological resources on public lands (BLM 2000; Lyneis et al. 1980; Schiffman 2005; Sowl and Poetter 2004; SUWA 2002). Direct impacts result from the damage or destruction that occurs when ORVs drive over and/or near archeological sites. The weight and torque of such vehicles easily damages fragile surface deposits. The Southern Utah Wilderness Alliance (2002) has cited cases in which the associated soil compaction, vegetation loss, and altered hydrology cause the compaction of surface and subsurface features (e.g., remains of houses, burials, hearths, storage pits, etc.) as well as breakage of artifacts. Site integrity, a necessary element for listing a cultural resource in the National Register of Historic Places, is also affected by the visible changes caused by vehicle tracks and erosion (Sowl and Poetter 2004). Lastly,

impacts occur when vibrations and soil erosion caused by ORVs undermine the stability of fragile prehistoric structures (SUWA 2002).

One study in the Izembek National Wildlife Refuge in Alaska noted that increased erosion from ORVs exposed artifacts, making them susceptible to collection (Sowl and Poetter 2004). Studies conducted in the California desert note that ORVs provide access to previously inaccessible, remote areas as ORV users explore new terrain (Lyneis et al. 1980). According to the BLM, this leads to an increase in visitation to lands previously used only by small numbers of hikers and increases the intentional and inadvertent damage of archeological resources through surface disturbances (BLM 2000), as described above. In Alaska, it has been shown that damage from such access increases dramatically when the areas are remote enough to preclude monitoring (Sowl and Poetter 2004).

ORVs have also enabled collectors and pothunters to reach these remote areas, facilitating greater archeological resource damage from intentional collection and vandalism (BLM 2000; Schiffman 2005; Lyneis et al. 1980; SUWA 2002). In addition, one study in the California desert notes that ORVs increase the ability of collectors to carry larger and heavier artifacts out of an area (Lyneis et al. 1980).

## **SOCIOECONOMICS**

ORV-related economic impacts vary by state and region. A 2008 study commissioned by the Iowa State ORV Association to investigate statewide ORV use patterns and expenditures found that the most frequent type of ORV use consists of day trips within the vicinity of users' homes, but about 41 percent of ORV owners in Iowa make an average of 1.7 out-of-state trips annually for recreation purposes (Otto 2008). The study used the IMPLAN economic modeling tool to create a user profile and estimate ORV-related statewide income and employment. It found that Iowa ORV users, a group that includes 29,663 households, spend an estimated \$86.4 million per year on ORV equipment and activities, resulting in an estimated total of \$126 million in in-state transactions or sales, \$33.7 million in personal income, and 1,200 jobs. The study also found that Iowa ORV users generate an estimated total \$6.3 million in out-of-state transactions (Otto 2008).

Reed and Hass (1989) indicate that the profile of the ORV economy in Colorado is even more pronounced, with an estimated \$489 million (in 1989 dollars) spent by ORV users statewide for ORV-related equipment, activities, and services. In 1988, approximately 192,400 ORV users in Colorado accounted for an estimated 1.3 million ORV recreation trips. The 600 ORV users surveyed in the Reed and Hass study would be willing to pay, on average, \$19 (in 1988 dollars) for an annual ORV registration fee if the revenues were collected to enhance statewide ORV opportunities, such as trail construction, maintenance, and educational programs.

A more recent survey-based study of ORV recreational use on the Colorado economy (COHVC 2001) focused on user behavior and average per-trip expenditures and found estimated ORV-related expenditures for households to be between \$140 and \$159 million in 2000. The estimated value of new recreational vehicle sales in Colorado in 2000 was \$67.6 to \$74.4 million. There were also indirect contributions to the Colorado state economy (e.g., expenditures for maintenance, repairs, storage, and miscellaneous items). Total employment for ORV-related activities was between 3,196 and 3,515 jobs. The study found that 68 percent of Colorado ATV users would leave the state for such activities if no ORV activities were allowed in state.

Another study of economic impacts of ATVs in Minnesota (Schneider and Schoenecker 2006) found that direct ATV-related expenditures were \$641.9 million, with an estimated 5,693 jobs from ATV-related retail and manufacturing activity. Stynes (2000), who looked at ORV use in Michigan, mentions that these socioeconomic effects tend to take place in rural communities with fairly limited economic

development and which rely heavily upon retail and tourism. In his study of ORV spending and economic impact in Michigan, he found that ORV owners spent about \$40 million on trail-riding trips outside their region of residence in 1998, supporting about 600 jobs statewide.

A survey of registered Utah ORV users found that the number of registered users tripled in eight years (1998–2006) (Burr et al. 2008). Statewide, respondents are concerned with provision of information, trailhead facilities, maintenance of ORV areas, signage, and enforcement of rules and regulations. Availability of information is the most important among users and is found to be the biggest weakness. Respondents believe that more information should be provided regarding rules, hazards, and conditions via maps, brochures, newsletters, and websites. Concerning fees, Utah users were opposed to an additional statewide tax on the sale of all new ORVs and trailhead parking fees for all users. Respondents were least opposed to daily use fees for heavily used areas (Burr et al. 2008).

In a review of surveys conducted by several leading publications, King (1972) found that motorcycle riders were representative of the wider American society, with the average motorcyclist being in the mid-20s and 20 percent being employed in semi-skilled/skilled professions. King reported that many off-road, trail motorcyclists use forests and parks in other recreational ways, such as for fishing and hunting, and concluded that trail riding is a significant and valuable recreational activity that should be allowed within park units.

Freuh (2001) also found that hunting and fishing constitute the highest recreational interests among ORV users in Colorado. Schneider and Schoenecker (2006) used both survey and secondary data to construct a profile of ATV users. It showed that the 2005 registered ATV rider is a middle-aged, non-Hispanic white male with less than a college education, which is a finding consistent with ATV profiles of riders in Wisconsin, Colorado, and Utah.

## **ESTHETICS/SOUND**

ORV use influences the character of the wild landscape and can result in conflicts between ORV users and other recreational users. McCool (1979) points out that visual impacts last longer in arid environments, where soil stability is inherently more tenuous. The compounding factors of ORV activities, wind erosion, and increased runoff from the resulting loss of vegetation can have major impacts on the esthetic character of such regions.

## **ESTHETICS**

There is a paucity of data regarding ORV use and its impacts on soundscapes in NPS units, with the majority of available data related to air tours over public lands managed by the NPS. Gramann (1999) used many approaches to garner information about how visitor experiences in national parks are affected by mechanical versus natural sound. Overall, results showed that park users identify natural sounds as more enjoyable than mechanical sounds, but mechanical sounds do not always interfere with the user's experience. Visitor experiences and sensitivity to mechanical sound is dependent on visitor expectations, group size, front or backcountry experience, and activity type. For example, a visitor in a group of three or more visiting a park for the first time in the front country and taking pictures may not be as sensitive to mechanical sounds as a lone hiker in the backcountry. People are generally tolerant of certain noise disturbances if they perceive them as necessary (e.g., helicopters conducting fire suppression activities). In this sense, the study indicated that it is important that sounds are consistent with the visual setting within which they are heard.

Variable noise disturbances may be more readily tolerated depending on the perception of the setting by the observer. As a result, from a management perspective, some scenic overlooks and short front country

trails may not require as much protection as backcountry locales where preserving the experience of natural sound is paramount to overall visitor experience (Gramann 1999). It is useful to note that, along with regulatory frameworks, successful management of natural soundscapes must also include compliance assurance. A report from the Motorcycle Sound Working Group of the American Motorcycle Association (2005) points out that while strict U.S. Environmental Protection Agency standards regarding sound output are applied by the manufacturers of ORVs, users often modify vehicles with aftermarket parts that circumvent such regulations.

## **SAFETY**

The 2005 *Annual Report of ATV-Related Deaths and Injuries* published by the U.S. Consumer Product Safety Commission (CPSC) reveals that overall, the number of deaths and injuries reported since 1982 has increased. Nationwide, as of the end of 2005, a total of 7,188 deaths had been reported since reporting began in 1982 (Ingle and Streeter 2007). An estimated 137,000 ATV-related emergency room treated injuries have occurred in the same time period. Thirty percent of the total ATV-related deaths were children under 16 years old, and 13 percent were younger than 12. Between 1992 and 2005, there was a 24 percent increase in injuries in the 45–54 age group (Ingle and Streeter 2007).

CPSC first began analyzing data on ATVs in the early 1980s to provide statistics on frequency of deaths and injuries associated with three-wheel ATVs. These data led to a consent decree with CPSC and five ATV distributors that halted the production of three-wheel ATVs, offered training to all new ATV owners, and recommended adult-size ATVs for those 16 and older. The decree expired after 10 years in 1998, but the five original signers, along with two others, agreed to continue with most of the elements under the consent decree of 1988 through voluntary action plans (Ingle and Streeter 2007).

Consumer advocacy groups and petitioners have argued that current industry standards regarding ATV use by children under the age of 16 are not preventing deaths and injuries. In August of 2002, a petition to ban ATV use by children under 16 years old and to provide monetary refunds covering the cost of vehicle purchase for consumers was brought by the Consumer Federation of America and eight other organizations to the CPSC. The organizations included consumer and medical non-profit organizations and environmental, safety, and public interest research groups. The petition stated that ATVs pose unreasonable risk of injury and death to children and referenced the 1988 consent decree described above, pointing out that the decree did not include incentives to encourage owners of three-wheel ATVs to return them to dealers. The petitioners stated that voluntary action plans by manufacturers are inadequate in preventing deaths and injuries to children, and they cited the CPSC conclusion that ATVs are “inherently difficult to operate for adults and [are] beyond the development capability of children to control” (Weintraub 2002). The groups requested more stringent controls for ATV users over the age of 16, including licensing and training.

## **MANAGEMENT ISSUES**

Nationwide, 15 national park system units allow ORV use by the general public. Within these areas, various user groups, as well as ORV manufacturers, contend that NPS limits on ORV use unfairly restrict access, establish a precedent for other federal land managers to impose or extend restrictions, and may be economically harmful to gateway communities and industries serving users (Calvert et al. 2007). Opponents of motorized recreation in national park system units cite ORV use as damaging to the environment and cultural artifacts. Conflicts also arise on USFS lands, where uses such as timber harvesting and ORV recreation may affect birdwatching and sightseeing and can degrade water quality in certain settings (Calvert et al. 2007).

Studies show that ORV use has been increasing throughout the United States. Cordell et al. (2005) report that, according to the Motorcycle Industry Council, ORV annual sales more than tripled between 1995 and 2003, and ATVs represent about 70 percent of all ORVs purchased during that period. In Colorado alone, 26.7 percent of the state's population (more than 4.5 million in 2005) participated in ORV recreation, and Blahna (2006) highlights the current crisis of ORV proliferation and concomitant damage to resources.

A 2001 survey of ORV users in Colorado found that while many trail riders were reportedly knowledgeable of rules and regulations regarding off-trail restrictions, some riders still did not obey regulations (Frueh 2001). In the study, most ORV users admitted to going off trail, but felt that it was okay "just this one time." Adult users reportedly believe that it is their duty to pass on trail ethics to younger riders. Younger users (13–18 years of age) were more concerned with personal safety than environmental concerns. Chavez and Schuett (2005) found while many ORV users felt that humans should be in "harmony with nature," they were not focused on environmental concerns. A quarter of the respondents believed trails should always contain a variety of scenery, be controlled for erosion, and have posted signs at trailheads indicating difficulty and trail length. Most respondents used private lands for recreational riding and national forests second (Chavez and Schuett 2005). A survey of registered ORV owners in Utah found that BLM land was the primary destination for ATV, motorcycle, and 4×4 vehicle trips. Forest Service land was the second most preferred destination. Respondents surveyed reported mixed feelings with regard to law enforcement, with some believing transgressions by ORV users to be of minor concern (Fisher et al. 2001).

A study in Utah aimed at creating an inventory of ORV use occurring in 12 high-use or "hotspot" regions of USFS land found that ORV users had taken excessive measures to access closed routes by moving large boulders, removing posts, chain-sawing trees or logs, or purposefully negotiating terrain to create a new trail around management-placed and/or natural barriers to ORV traffic (Divine and Foti 2004).

The effective implementation and maintenance of successful park travel management plans depends upon adherence to certain design criteria. The Colorado Mountain Club and Wilderness Society (CMCWS 2004) outlines 10 steps to developing a comprehensive travel management plan:

1. Identify recreation and transportation goals for the planning area.
2. Assemble resource data.
3. Identify the baseline travel system.
4. Summarize public recreation desires and current recreational opportunities.
5. Analyze present and predicted future fiscal and personnel resources.
6. Calculate route density and quantify route distribution in comparison to high priority biological, physical, and cultural features.
7. Identify geographic subunits that constitute logical distinct recreation planning areas.
8. Develop management alternatives.
9. Review the final route assessment.
10. Implement the plan and monitor, evaluate, and adjust as needed.

Some monitoring efforts have benefited from the simultaneous observation and data collection of traffic and wildlife made possible by pneumatic road counters and GPS units (USGS 2005). However, Calvert et al. (2007) note that monitoring and enforcement may be impeded in some locations (and especially on BLM lands) due to their remoteness, insufficient signs, and inadequate staff and resources, challenges

which would also be relevant to the NPS. Adaptive management strategies targeted toward the specific needs of individual parks would potentially provide the most efficacy in resource management.

Given the general trend of increasing ORV use, appropriate travel management planning has increased among public agencies and various stakeholder groups. Other federal regulatory requirements concerning the protection of resources also provide guidance for travel management plans. For instance, Section 106 of the National Historic Preservation Act specifically requires that cultural resource information from the planning area's Class I inventory, and other existing cultural resources information, be considered when choosing among the range of possibilities in designating a planning area travel system for proposed designation. Moreover, agencies are required under Section 106 to identify the geographic area or areas within which the character or use of any historic properties may be directly or indirectly affected by an undertaking. Coordination with State Historic Preservation Officers and Indian Tribes prior to initiating the development of a travel management plan is also required (BLM 2006). Yankoviak (2005) argues that such up-to-date policies will provide improved guidance in solving ORV issues on USFS lands. However, challenges to the crafting and implementing of park travel management plans often arise which carry significant implications for the functional management of park resources.

Meyer (2002) prescribes regular trail maintenance and monitoring, including periodic inspections and condition assessments at five-year intervals. In addition, Meyer offers several management approaches that can be implemented to curtail trail degradation, including trail rerouting in cases where numerous segments have been degraded by recreational use; seasonal or type-of-use restrictions in instances when specific seasonal uses may be contributing to greater impacts; trail hardening, which involves the application of amendments to the trail surface; and outright trail closure as a last resort to protect threatened resources. Traffic volume restrictions or "controlled use" is also suggested as a means to prevent significant resource degradation, although enforcement is needed to implement this management strategy (Meyer 2002).

Christensen and Watson (2006) describe challenges resulting from the implementation of the 2006 *Bitterroot National Forest ORV Management Plan*, which included maintaining an up-to-date inventory of routes, working with ORV users to reduce impacts and conflicts, and working with all stakeholders to identify appropriate and acceptable ORV opportunities. Christensen and Watson also cite lessons learned from the USFS policy and experiences of planners nationwide, which suggest that a collaborative process with a "system-wide, forest-level perspective" is likely to be the most appropriate and successful strategy for developing a widely supported ORV travel management plan. Moreover, Christensen and Watson stress ongoing public involvement in ORV planning as being crucial for public acceptance of the resulting plans. In an assessment of the efficacy of such a cooperative effort in four counties in North Central Michigan, Nelson and Lynch (2001) conducted stakeholder interviews, surveys of ORV drivers, and investigations of route signage survival. They found that, after plan implementation, compliance with ORV rules increased as most riders supported the program.

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**APPENDIX B: DRAFT ENVIRONMENTAL IMPACT  
STATEMENT PUBLIC COMMENT SUMMARY REPORT**

## Appendices

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## INTRODUCTION AND GUIDE

### INTRODUCTION

Pursuant to the National Environmental Policy Act (NEPA), its implementing regulations, and National Park Service (NPS) guidance on meeting the NEPA obligations, Lake Meredith National Recreation Area (hereafter “Lake Meredith” or “the recreation area”) invited the public to submit comments on the Draft Off-road Vehicle Management Plan / Environmental Impact Statement (draft plan/EIS). This report describes how the NPS considered public comments and provides responses to those comments.

After the Environmental Protection Agency’s (EPA) release of the Notice of Availability to prepare the draft plan/EIS, a 60-day public comment period was open between January 25, 2013, and March 26, 2013. This public comment period was announced online ([www.parkplanning.gov/lamr](http://www.parkplanning.gov/lamr)), in newspaper articles, through press releases, and through direct mailings.

The draft plan/EIS was made available through several outlets, including the NPS Planning, Environment, and Public Comment (PEPC) website at <http://parkplanning.nps.gov/>, hardcopies at the recreation area’s headquarters, and by request through the mail. After reviewing the draft plan/EIS, the public was encouraged to submit comments about the draft plan/EIS through the NPS PEPC website, by postal mail sent directly to the recreation area, delivered in person directly to the recreation area, or at public meetings. Written comments were accepted during the public meetings on comment forms and on flip charts.

### DEFINITION OF TERMS

Primary terms used in the document are defined below.

**Code:** A code is a grouping centered on a common subject. Codes were developed during the public comment process and were used to track major subjects.

**Comment:** A comment is a portion of the text in an item of correspondence that addresses a single subject. A comment could include such information as an expression of support or opposition to the use of a potential management tool, additional data regarding the existing condition, or an opinion debating the adequacy of an analysis.

**Concern:** A concern summarizes the issues or themes identified by each code. Each code is further characterized by concern statements that focus on the content of comments. Some codes require multiple concern statements. In cases where no comments were received about an issue, the issue was not identified or discussed in this report.

**Correspondence:** An item of correspondence is the entire document received from a commenter. It can be in the form of a letter, written comment form, open house flip chart, or petition.

**Representative Quote:** Representative quotes are portions of text taken directly from comments received from the public. Representative quotes help clarify the concern statements. Representative quotes are not edited.

All public comments were considered important as useful guidance and input to the public comment process, but only substantive comments were analyzed in the Public Comment Summary Report.

## GUIDE TO THIS DOCUMENT

This report is organized as follows.

**Content Analysis Report:** This basic report generated by PEPC provides information about the numbers and types of comments received, organized by code. Table 1 summarizes the number of correspondences that contained each code. Tables 2 through 5 show general demographic information, such as the states where commenters live and the number of letters received from different organizations.

**Comment Response Report:** This report summarizes the substantive comments received on the draft plan/EIS. These comments are organized by codes and are further organized into concern statements. Below each concern statement are representative quotes, which have been taken directly from the text of the public's comments and further clarify the concern statements. A response to each concern statement is provided.

**Correspondence from Organizations:** This table lists all groups that submitted comments, arranged by the following organization types as defined by PEPC (and in this order): recreational groups; state government; federal government; and unaffiliated individuals. Each item of correspondence was assigned a unique identification number upon entry into PEPC. This number can be used to assist the public in identifying how the NPS addressed their comments.

**Index by Organization:** This index identifies all of the codes that were assigned to each item of correspondence and is arranged by organization type. Individual commenters are also included in this report, identified as unaffiliated individuals.

**Index by Code:** This index lists which organization or unaffiliated individual commented on which topics, as identified by the codes used in this analysis. The index is organized by code. Under each code is a list of the organizations that submitted comments on the coded topic and the related correspondence number. Entries identified as N/A represent unaffiliated individuals.

**Non-substantive Comment Report:** This report includes all of the comments received that were categorized as non-substantive.

## PUBLIC MEETINGS

Two public meetings were held in March 2013 to provide information about the plan and the alternatives considered, continue the public involvement process, and obtain input on the draft plan/EIS for ORV use at Lake Meredith. The public meetings held during the public comment period for the draft plan/EIS are listed below:

- March 19, 2013: Ashmore Inn and Suites in Amarillo, Texas (33 attendees)
- March 20, 2013: Sanford-Fritch Schools, Business Office, in Fritch, Texas (19 attendees)

A total of 52 meeting attendees signed in during the two meetings. The meetings were conducted in an open house style, in which displays were stationed around the room and the public was able to ask questions. Recreation area staff members were available at the meetings to answer questions and provide additional information to open house participants. The public was encouraged to provide comments at the meeting on flip charts or using a comment card. Participants were also encouraged to provide comments after the meeting using the NPS PEPC website, comment card, or posted letter. Public comments received are categorized in this report.

During the public comment period, 116 pieces of correspondence were entered into the PEPC website. Some comments were entered directly by members of the public, and the NPS or its contractor uploaded hardcopy letters and comment forms sent to the NPS.

## **THE COMMENT ANALYSIS PROCESS**

Comment analysis is a process used to compile and correlate similar public comments into a format that can be used by decision makers and the interdisciplinary team. Comment analysis assists the team in organizing, clarifying, and addressing technical information pursuant to NEPA regulations. It also aids in identifying the topics and issues to be evaluated and considered throughout the planning process.

The process includes five main components:

- Developing a coding structure
- Employing a comment database for comment management
- Reading and coding public comments
- Interpreting and analyzing the comments to identify issues and themes
- Preparing a comment summary

A coding structure was developed to help sort comments into logical groups by topics and issues. The coding structure was derived by analyzing the range of topics discussed during internal NPS scoping, past planning documents, and the comments themselves. The coding structure was designed to capture all comment content rather than to restrict or exclude any ideas.

The NPS PEPC database was used for managing the comments. The database stores the full text of all correspondence and allows each comment to be coded by topic and issue. Outputs from the database include the total number of correspondence and comments received, sorting and reporting of comments by a particular topic or issue, and demographic information for the sources of the comments.

Analysis of the public comments involved assigning codes to statements received from the public in letters, email messages, and written comment forms. All comments were read and analyzed, including those of a technical nature; opinions, feelings, and preferences of one element or one potential alternative over another; and comments of a personal or philosophical nature.

During coding, comments were classified as substantive or non-substantive. As stated in NPS Director's Order 12, substantive comments "raise, debate, or question a point of fact or policy." Comments that suggested changes to the range of alternatives or suggested new alternatives or alternative elements were also considered substantive. Comments in favor of or against the alternatives or comments that only agree or disagree with NPS policy are not considered substantive. All comments were read and considered and will be considered in the development of the final plan/EIS; however, only those determined to be substantive were used to develop concern statements.

Although the analysis process attempts to capture the full range of public concerns, this content analysis report should be used with caution. Comments from people who chose to respond do not necessarily represent the sentiments of all members of the public. Furthermore, comment analysis is not a vote counting process; comment analysis emphasizes the content of the comment rather than the number of times a comment is received.

## CONTENT ANALYSIS REPORT

**TABLE 1: CORRESPONDENCE DISTRIBUTION BY CODE**

Note: Each correspondence may have multiple codes, so the total number of correspondences in this table will reflect multiple countings.

Code	Description	# of Correspondence	% of Correspondence
AL6400	Alternatives: Support Alternative A	58	30%
AL2000	Alternatives: Support ORV Access (Non-substantive)	17	9%
AL4000	Alternatives: New Alternatives or Elements	12	6%
AE1035	Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive)	10	5%
AL7000	Alternatives: Alternative B	8	4%
AE10060	Affected Environment: Issues Considered but Dismissed	7	4%
AL5045	Alternative Elements: Permit Requirements	6	3%
AL5055	Alternative Elements: Zone System	6	3%
AL9000	Alternatives: Alternative D	5	3%
AE2000	Affected Environment: Soils	5	3%
AL5046	Alternative Elements: Permit Requirements (Non-substantive)	5	3%
AL5056	Alternative Elements: Zone System (Non-substantive)	4	2%
AL2011	Alternatives: Oppose ORV Restrictions (Non-substantive)	4	2%
AL5010	Alternative Elements: Monitoring and Enforcement	3	2%
AL5020	Alternative Elements: Camping, Campfires, and Other Amenities	3	2%
MT1000	Miscellaneous Topics: General Comments	2	1%
AL9400	Alternatives: Support Alternative D	2	1%
CC1000	Consultation and Coordination: General Comments	2	1%
AL5050	Alternative Elements: Designated Vehicle Routes/Areas	2	1%
AL7600	Alternatives: Oppose Alternative B	2	1%
VU4005	Visitor Use and Experience / Health and Safety: Impact of Proposal and Alternatives (Non-substantive)	2	1%
AL5065	Alternative Elements: Education and Outreach	2	1%
AE1022	Affected Environment: T&E and Species of Concern (Non-substantive)	2	1%
GA1000	Impact Analysis: Impact Analyses	1	1%
AL9600	Alternatives: Oppose Alternative D	1	1%
AE1050	Affected Environment: Management and Operations	1	1%

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<b>Code</b>	<b>Description</b>	<b># of Correspondence</b>	<b>% of Correspondence</b>
AE15000	Affected Environment: Archeology Resources	1	1%
PN3000	Purpose and Need: Scope of the Analysis	1	1%
AL5036	Alternative Elements: Equipment Requirements (Non-substantive)	1	1%
AL8000	Alternatives: Alternative C	1	1%
AL6000	Alternatives: Alternative A	1	1%
AL5066	Alternative Elements: Education and Outreach (Non-substantive)	1	1%
AE10065	Affected Environment: Issues Considered but Dismissed (Non-substantive)	1	1%
AL5040	Alternative Elements: Speed Limits	1	1%
AE1010	Affected Environment: Soundscapes and Acoustic Environment	1	1%
AL8600	Alternatives: Oppose Alternative C	1	1%
AE2005	Affected Environment: Soils (Non-substantive)	1	1%
AE1030	Affected Environment: Visitor Use and Experience / Health and Safety	1	1%
AL1001	Alternatives: Elements Common to All Alternatives (Non-substantive)	1	1%
AL5015	Alternative Elements: Monitoring and Enforcement (Non-substantive)	1	1%
AR4000	Archeology Resources: Impact of Proposal and Alternatives	1	1%
TE4000	Threatened and Endangered Species: Impact of Proposal and Alternatives	1	1%
AL5030	Alternative Elements: Vehicle Requirements	1	1%
AL6200	Alternatives: Alternative A (Non-substantive)	1	1%
MO4000	Management and Operations: Impact of Proposal and Alternatives	1	1%
AL5035	Alternative Elements: Equipment Requirements	1	1%
AL7400	Alternatives: Support Alternative B	1	1%
PN4000	Purpose and Need: Park Legislation/Authority	1	1%
AL4005	Alternatives: New Alternatives or Elements (Non-substantive)	1	1%
AL2010	Alternatives: Support ORV Restrictions (Non-substantive)	1	1%
<b>Total</b>		196	100%

**TABLE 2: CORRESPONDENCE BY TYPE**

Type	# of Correspondence
Web Form	100
Park Form	11
Letter	2
Other	2
Fax	1
<b>Total</b>	<b>116</b>

**TABLE 3: CORRESPONDENCE BY ORGANIZATION TYPE**

Organization Type	# of Correspondence
State Government	1
Recreational Groups	1
Federal Government	1
Unaffiliated Individual	113
<b>Total</b>	<b>116</b>

**TABLE 4: CORRESPONDENCE DISTRIBUTION BY STATE, TERRITORY, OR COUNTRY**

State	Percentage	# of Correspondence
Texas	96%	111
DC	1%	1
Oklahoma	1%	1
Unknown	2%	2
<b>Total</b>		<b>116</b>

**TABLE 5: CORRESPONDENCE DISTRIBUTION BY COUNTRY**

Country	Percent	# of Correspondence
USA	100%	116
<b>Total</b>		<b>116</b>

## COMMENT RESPONSE REPORT

### Lake Meredith National Recreation Area Draft Off-road Vehicle Management Plan and Environmental Impact Statement

#### AE10060 – Affected Environment: Issues Considered but Dismissed

**Concern ID:** 44289  
**CONCERN STATEMENT:** Commenters questioned not carrying forward socioeconomics as an impact topic, expressing concern that regulating ORV use would impact local businesses. Some commenters also expressed concern regarding the business survey, feeling that more than four businesses should have been interviewed. One commenter requested that the NPS discuss minority and low-income populations, and the associated Executive Order 12898, in the final EIS.

**Representative Quote(s):** **Corr. ID:** 72 **Organization:** *Not Specified*

**Comment ID:** 313168 **Organization Type:** Unaffiliated Individual

**Representative Quote:** The economic impact to the region from lost visitation days could be disastrous for the businesses and communities that benefit from the ORV use in LMRA. The Draft EIS proposes the socioeconomic impacts from the various proposed alternatives to be small. The Draft EIS/ORV Management Plan states: "Based on the experience of national recreation area staff and a survey of local businesses, visitor spending in the ROI is low." Many businesses and municipalities would probably disagree. According to the NPS report entitled "Economic Benefits to Local Communities from National Park Visits, 2011", the economic impact from the LMRA area in 2011 totaled \$32,446,000 and represented 382 jobs. If you further extrapolate the dollars associated with just the Rosita Flats area based upon this report, the local economic impact from the use of the ORV area is estimated to be approximately \$12,353,214 (\$49.86/person/day x 247,758 visitation days, according to this same report). My suspicion is that the local municipalities and local governmental representatives would not consider a loss of this magnitude to be "low" to the local economies. Either the "area staff" of the NPS is ill-equipped to perform proper and representative socioeconomic studies of the proposed alternatives or the NPS believes that \$12,000,000 worth of spending is not significant to our local economy.

**Corr. ID:** 72 **Organization:** *Not Specified*  
**Comment ID:** 313169 **Organization Type:** Unaffiliated Individual

**Representative Quote:** One must place the ORV area in proper perspective with the remainder of the LMRA properties and its impact to the communities. The Rosita Flats portion of the park represents only 5% of the total park acreage (2,267 ac of the 44,978 ac total) but brings 38% of the monies into the economy. The NPS needs to seriously consider a likely upset of the local economy with the debatable environmental impact of ORV use in the park. With increased rules, regulations, restrictions, and most importantly, imposed fees, the use of Rosita Flats will continue to decline and will most assuredly impact the socioeconomics of the local area. The NPS must certainly take this into account when evaluating the various alternatives.

**Corr. ID:** 81 **Organization:** West Texas Outlaws Off Road Club  
**Comment ID:** 313129 **Organization Type:** Unaffiliated Individual

**Representative Quote:** Another glaring incomplete analysis was the economic impact survey. Only 4 businesses were polled as to the effect on their revenue if the river was limited to usage and visitors declined. What about groceries, gasoline, auto parts, vehicle dealers, campers, hotels? Why were the gateway communities not included? With Lake Meredith no longer able to attract boaters why not ask the business there what they would think of losing even more income?

**Corr. ID:** 85 **Organization:** AMA  
**Comment ID:** 313141 **Organization Type:** Unaffiliated Individual

**Representative Quote:** One perspective that is negative will be economic impact that limiting off road vehicles at the discussed locations. Locally owned business will feel the greatest negative impact. David Brown's Sport Center and Sharp's Motorsports already sell the OHV stickers at virtually zero profit. Now if the suggested management programs are implemented, even greater losses will ensue. Declining ATV, UTV and motorcycle sales will surely impact the already fragile Panhandle market. One would think the State of Texas would want to cultivate and grow the OHV market to reap the possible millions in sales tax. And the impact does not stop there. The recreational vehicle market will also suffer without a local place to camp out and ride one's OHV.

**Corr. ID:** 116 **Organization:** US Environmental Protection Agency – Region 6  
**Comment ID:** 315690 **Organization Type:** Federal Government

**Representative Quote:** Socioeconomic, Page 18 – The DEIS did not include any socioeconomic data concerning minority or low-income populations. Also the NPS did not list Executive Order (E.O) 12898 in the relevant laws section of the DEIS. Discuss the rationale for excluding E.O. 12898 and associated socioeconomic analysis in the Final EIS.

**RESPONSE:** The topic of socioeconomics was considered in the development of the draft plan/EIS, and was dismissed from detailed analysis as described in chapter 1 of the plan/EIS. Although some commenters expressed concern about a loss of the spending from ORV use, the loss discussed assumed loss of all ORV use. None of the alternatives being considered would result in an ORV ban or 100 percent loss of ORV use, so this impact would not occur under the proposed plan. Under the plan/EIS, it is expected that a substantial fraction of visitors would continue to visit the recreation area and those who were worried about safety may be more likely to visit.

In determining if socioeconomics would be carried forward for detailed analysis, the impact on the three-county region of influence (ROI) was estimated (further described in chapter 1 of the plan/EIS). This analysis used IMPLAN, an input-output model, and looked at the impact of several levels of reduction in visitation, including a 50 percent decrease in ORV visitation. The results suggested that the adverse employment and output effects would be less than 1 percent for the entire three-county ROI. IMPLAN is the basis for the estimates provided in the report "Economic Benefits to Local Communities from National Park Visits, 2011." The impacts in the report represent the impact of spending by all visitors compared to a

scenario of no visitors (this would happen if the park closed and no other economic activity took place on the land). The model estimates of value added are comparable to Gross Domestic Product for the county. These estimates are calculated based on estimates of spending per party (not individual visitor) and take into account the fact that not all the direct spending by visitors stays in the area (businesses buy their inventory from outside the region), the ripple effects of spending through the economy, and exclude spending by local residents (assuming that local residents would have spent their money on something else in the local area if the park were closed). The assumptions about visitor party size, length of trip, activities, and spending are based on surveys from this and other parks. The impacts of the proposed management alternatives in the plan/EIS will be much smaller because they will not result in a 100 percent decrease in visitation.

As discussed in the plan/EIS, although the socioeconomic impacts on the ROI maybe small, the impacts will be larger for businesses that directly serve ORV visitors to Lake Meredith. There may be individual businesses that experience negative impacts from the proposed alternatives. The impacts will depend on the number of visitors that continue to visit Lake Meredith and whether the management actions to improve visitor safety and experience draw new or increased visits.

The IMPLAN analysis focused on the impacts of potential reduced visitor spending in the ROI. The business survey was not intended to provide a full accounting of the impacts, but to explore the impacts on businesses that serve the Lake Meredith visitors who were most likely to be affected. The focus of the survey was on businesses near Lake Meredith that sold all-terrain vehicles (ATVs), campers, motorcycles, watercraft, and other motorized vehicles because they are most likely to be familiar with ORV visitors, as opposed to stores such as gas stations that would serve all visitors to Lake Meredith.

In regards to Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, a description of this executive order has been added to the section in chapter 1 titled, “Relevant Laws, Policies, Regulations, and Plans.”

Executive Order 12898 defines a minority as any person who identifies themselves as being of a race other than non-Hispanic White alone. The minority population of an affected area is present when either the minority population of the affected area exceeds 50 percent or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (CEQ 1997). For purposes of analysis in this plan/EIS, the threshold to determine high concentrations of minority residents is when the area under analysis comprises minority populations more than 10 percent greater than the benchmark or reference region. In this case, the reference or benchmark geographic area is Texas. As demonstrated in table 1 (in chapter 1 of the final plan/EIS), all counties in the ROI are less than 10 percentage points greater than the Texas average. Therefore, the ROI is not classified as an area with high concentrations of minority residents.

Guidance from the U.S. Census classifies a poverty area as areas where 20 percent or more of the population lives below the poverty line. As demonstrated in table 1 (in chapter 1 of the final plan/EIS), two of the three counties in the ROI have populations with less than 20 percent of residents living below the poverty line.

Potter County has approximately 23 percent of its population living below the poverty line. The proposed action alternatives would regulate ORV use in different areas throughout Lake Meredith National Recreation Area. Routes where ORV use is allowed may change, although ORV use would largely still be permitted in the recreation area. Because any change in ORV use regulations would affect all users in the same manner, no disproportionate adverse impacts to low-income populations are anticipated. The proposed action alternatives would introduce an annual permit fee to use ORVs within the recreation area. This fee would apply to all visitors accessing the recreation area with personal ORVs and would represent a small fraction of the cost associated with purchasing and maintaining these vehicles. Therefore, it is not anticipated that permit fees introduced as part of the proposed action alternatives would result in disproportionate adverse impacts to low-income populations in Potter County and the larger ROI, and this topic was not carried forward for analysis. This information is also included in chapter 1 under “Issues Considered but Dismissed from Further Consideration.”

**TABLE 1. ENVIRONMENTAL JUSTICE STATISTICS, 2010**

Geographic Area	Percentage of Population	
	Minority	Below the Poverty Level
United States	36%	14%
Texas	55%	17%
Hutchinson County <sup>a</sup>	26%	15%
Borger Urban Cluster	26%	13%
Moore County	62%	13%
Potter County	51%	23%
ROI <sup>b</sup>	49%	20%

<sup>a</sup> Includes Borger urban cluster.

<sup>b</sup> Per capita income was calculated as an average of the three counties; minority, poverty, and graduation statistics were calculated from actual population figures.

Source: U.S. Census Bureau, 2010.

**Concern ID:**  
**CONCERN STATEMENT:**

44290  
One commenter requested that mitigation measures related to air quality be added to the final plan/EIS, including separation of visitor uses, planned ORV routes, and suspension of ORV use during excessive wind events.

**Representative Quote(s):**

**Corr. ID:** 116  
**Comment ID:** 315691  
**Organization:** US Environmental Protection Agency – Region 6  
**Organization Type:** Federal Government

**Representative Quote:** Air Quality, Page 19 – The DEIS analyzes a range of alternatives and actions for the management of off-road vehicle (ORV) use at Lake Meredith National Recreation Area in the Texas panhandle, northeast of Amarillo. During the scoping process for the plan, topics such as air quality were not further analyzed because the impact level or frequency was not sufficient to warrants a full analysis. Existing air monitoring data in the area does not indicate an air quality problem (e.g., particulate matter) for the area, however, localized air quality impacts from ORV use can affect visitor experience, health and safety. EPA

recommends that the project alternative selected include mitigation such as separation of visitor uses so that fugitive dust impacts during high wind vents are minimized, planned ORV routes, or suspension of ORV use during excessive wind events.

**RESPONSE:**

While it has been documented that ORV use contributes to increased atmospheric particulate matter levels in the form of fugitive dust (WESTEC 1979), subtle meteorological dispersion effects in the Texas panhandle are such that these impacts are unlikely to present significant threats to human health. Stable thermal stratification allows large dust particles to settle out of the air quickly, while allowing smaller particles to remain suspended and presenting potential health risks to sensitive receptors (WESTEC 1979). Atmospheric conditions in the vicinity of Lake Meredith National Recreation Area are characterized by consistent winds of varying speeds. High winds send dust higher into the atmosphere where the dust is dispersed to the surrounding area, away from potential receptors in the area (WESTEC 1979).

To address any concerns related to air quality, the preferred alternative presented in the draft plan/EIS includes both separation of uses and planned ORV routes. The analysis of visitor experience discloses that dust may be bothersome to ORV users in the ORV areas at Blue Creek and Rosita Flats. However, impacts will be minimized through separating visitor uses using a zone system that separates campers from riders and separates different track vehicles. All the action alternatives designate specific routes and areas for riding. Finally, Rosita and Blue Creek do not attract non-ORV users, so there are few opportunities for separation since most users visit to participate in the same activity: off-road driving and associated activities.

In addition to the separation of uses and designation of routes, the action alternatives all include a speed limit that may also reduce dust.

The NPS considered suspension of ORV use during excessive wind events, but due to the unpredictable, sporadic, and brief nature of the events in this area, implementation would not be practical. High wind events in this area usually occur quickly and last for a short period, making it difficult to monitor these events and implement closures. The events generally last a brief period, which in many cases would result in the event being over before a closure could be implemented. Further, very few riders on ATVs or similar open vehicles choose to ride during high wind events, limiting the need for this restriction. For these reasons, this element was considered, but not incorporated into the preferred alternative because of technical impracticability.

**AE1010 – Affected Environment: Soundscapes and Acoustic Environment**

**Concern ID:** 44291  
**CONCERN STATEMENT:** One commenter expressed concern that the sound study was conducted during the time of year when most use occurs.

**Representative Quote(s):** **Corr. ID:** 106 **Organization:** *Not Specified*  
**Comment ID:** 313185 **Organization Type:** Unaffiliated Individual

**Representative Quote:** Study is incorrect, incomplete and skewed! ...Esp sound study done in February when there is majority of usage.

**RESPONSE:** As described in the *Lake Meredith National Recreation Area Acoustic Monitoring and Modeling of Off Road Vehicles*, long-term sound measurements were conducted using NPS methodology and software. The study cites the NPS Air Tour Management Planning Acoustic Sampling and Resource Management Guide. The NPS protocols are intended to ensure standardized methodology, scientific defensibility, and comparability to other studies.

The Air Tour Management Planning protocol states, "it is important to measure the ambient sound levels both with and without human-generated sound." The NPS Acoustical Sampling and Analysis Guide cites Section 8.2.3 of the NPS *Management Policies 2006* on the natural ambient sound level and further states, "acoustical monitoring must document the different kinds of noise sources affecting the park."

The Lake Meredith acoustic monitoring and modeling study contained two separate measurement campaigns with sufficient duration to satisfy the requirements of NPS protocols. "The 2008 campaign targeted the season with relatively low park use or minimal visitors" to capture the natural ambient sound level with a minimal amount of human-generated sound, while "the 2009 campaign targeted the annual Sand Drags event" in order to accurately assess the period of peak park use.

**AE1030 – Affected Environment: Visitor Use and Experience / Health and Safety**

**Concern ID:** 44292  
**CONCERN STATEMENT:** Commenters stated that the NPS does not have an accurate view of the number or type of visitors at the recreation area. They expressed further concern that the decline in 2012 use numbers was related to an increase in the state ORV sticker, and that imposing an additional permitting requirement with a fee may result in an additional decline in visitation.

**Representative Quote(s):** **Corr. ID:** 72 **Organization:** *Not Specified*  
**Comment ID:** 313166 **Organization Type:** Unaffiliated Individual

**Representative Quote:** My educated opinion is that one of two things occurred in 2012 to reduce the number of visitors in the Rosita Flats area: 1) errors in traffic counting, which probably is unlikely, or 2) the cost of OHV stickers more than doubled over the previous year. If the drop in visitor numbers is due to the increased cost of ORV stickers (i.e. user fees) let this serve as a warning to the NPS that a yearly user fee of \$40 per user vehicle will likely have significant



**AE1050 – Affected Environment: Management and Operations**

**Concern ID:** 44293  
**CONCERN STATEMENT:** One commenter expressed concern that the recreation area’s budget indicates that the NPS prioritizes resources over visitor safety.

**Representative Quote(s):** **Corr. ID:** 72 **Organization:** *Not Specified*

**Comment ID:** 313170 **Organization Type:** Unaffiliated Individual

**Representative Quote:** NPS documents indicate that the LMRA budgets are as follows: 2006 \$2.2M; 2007 \$2.3M (requested amount); 2008 \$2.8M; 2009 \$3.1M; and for 2010 \$3.2M (requested). In 2008, the LMRA requested an additional 3 full time equivalents (FTEs) for law enforcement and protection of park visitors and resources. Also in 2008, the LMRA requested an additional 4 FTEs to help eradicate invasive plant species and protect threatened and endangered species. I'm not sure if LMRA received the additional FTEs or not, but what strikes me about this is that the NPS seemingly placed a higher priority (more requested FTEs) on the salt cedar and the 3 threatened and endangered species than it did on visitor safety.

**RESPONSE:** *NPS Management Policies 2006* states that “The Service...will seek to provide a safe and healthful environment for visitors and employees.” This planning effort and the preferred alternative put an emphasis on both resource protection and visitor safety. Per Executive Order 11644, the plan and preferred alternative designate routes to “minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.” The plan also discusses the potential to increase law enforcement presence in the national recreation area and the potential to locate law enforcement staff closer to the Rosita Flats area. Either of these changes would occur through the use of the permit fee program. The overall number of staff dedicated to various activities is outside the scope of this plan; however, through the elements listed above, the NPS has considered visitor safety in this planning process.

**AE15000 – Affected Environment: Archeology Resources**

**Concern ID:** 44294  
**CONCERN STATEMENT:** One commenter stated that the draft plan/EIS incorrectly states that none of the recorded archeological sites within the boundaries of the recreation area are listed or considered eligible for listing in the National Register of Historic Places (National Register), including sites in Rosita Flats. The commenter further stated that sites with undetermined eligibility should be treated as though they were eligible until eligibility can be determined.

**Representative Quote(s):** **Corr. ID:** 113 **Organization:** State Historic Preservation Officer  
**Comment ID:** 315681 **Organization Type:** State Government

**Representative Quote:** The document is incorrect in stating that none of the recorded sites within the boundaries of the Lake Meredith National Recreation Area are listed or considered eligible for listing in the National Register. Our

records indicate that many sites within the national recreation area have been determined eligible and the vast majority have undetermined eligibility.

Of the 20 or more previously recorded sites within the portion of the Lake Meredith NRA immediately surrounding the Rosita Flats ORV use are, most have undetermined eligibility and at least one has been determined eligible. Several of these sites actually fall within the highlighted Rosita Flats ORV use area. While no sites have been recorded within the sandy bottom area of the Blue Creek ORV, many sites are adjacent to the creek within the Lake Meredith NRA boundary. Most of these have not been evaluated for NRHP eligibility.

Sites that have undetermined eligibility status should be treated as though they are eligible or avoided entirely until eligibility can be determined.

**RESPONSE:** The purpose of this ORV management plan/EIS is to manage ORV use in the national recreation area for visitor enjoyment and recreation opportunities, while minimizing and correcting damage to resources. As part of that purpose, under the preferred alternative (alternative D) routes and areas were established to avoid sensitive resources, including archeological sites within the two ORV areas. For the few sites that are located within a designated ORV area, barriers to the site will be put in place to avoid further damage to the sites from ORV use. Instances in the document that discuss the status of recorded sites have been corrected to indicate that they have been listed, or have undetermined eligibility, as appropriate.

*AE2000 – Affected Environment: Soils*

**Concern ID:** 44295

**CONCERN STATEMENT:** Commenters stated that the erosion in the area is mainly due to natural causes, such as water and wind, as well as drilling operations, and that ORV use makes a smaller contribution to erosion.

**Representative Quote(s):**

**Corr. ID:** 23

**Organization:** Post Enduro Association, AFD retired

**Comment ID:** 312611

**Organization Type:** Unaffiliated Individual

**Representative Quote:** I have heard comments about the erosion we cause should be stopped but if you study the erosion caused by the many industrial quarrying and drilling operations going on in the Canadian River area it is apparent that the ORV use is a small part of that erosion.

**Corr. ID:** 47

**Organization:** *Not Specified*

**Comment ID:** 312892

**Organization Type:** Unaffiliated Individual

**Representative Quote:** The report claimed that off road use was causing erosion to the area. If you have spent any time in this area then you are familiar with the wind that blows quite freely for lack of a better description. This will impact the erosion factor in much more depth than ATV's. Please don't think I am totally oblivious to the problems associated with ATV's, UTV's and Dune buggies. I am sure there is an impact but I don't think it is creating a problem that the everyday weather in this part of the country or Mother nature are not doing on a daily basis.

**Corr. ID:** 81 **Organization:** West Texas Outlaws Off Road Club

**Comment ID:** 313126 **Organization Type:** Unaffiliated Individual

**Representative Quote:** The Canadian river bed changes due to wind and rainfall every time I go to Rosita even if the visits are just a few days apart. I don't feel like it is fair or accurate to try to show off- roaders as the cause of erosion.

**Corr. ID:** 85 **Organization:** AMA

**Comment ID:** 313140 **Organization Type:** Unaffiliated Individual

**Representative Quote:** The impact of trail management or closure is a watershed moment for a motorcyclist enthusiast such as myself. I have ridden at the Canadian River and Rosita Flats area for 31 years. I have seen many changes in the landscape in the area over the years. Many of these changes have been due to water and wind erosion. Granted there is mechanical erosion from 4 wheel drive vehicles, ATV's, and UTV's, it is overshadowed by acres of erosion due to flooding. It is this mechanism that changes the landscape most drastically, in my opinion. And I would argue that I have spent more time and have a more intimate knowledge of the landscape at the River than any of the NPS employees and scientists.

**Corr. ID:** 114 **Organization:** *Not Specified*

**Comment ID:** 315684 **Organization Type:** Unaffiliated Individual

**Representative Quote:** Yes there is erosion but a good rain washed more of Chicken Creek in one storm than off-roaders did in thirty years of use. Yes, some trails are eroded, but to these trails and the foliage around them pay taxes?

**RESPONSE:** While erosion due to wind and water occurs naturally, erosion due to human induced processes, such as ORV use, has been shown to accelerate and intensify these processes. ORV use changes the speed, timing, quantity, and quality of water moving through the landscape altering surface hydraulics and causing channelization of soil surfaces (Taylor n.d.).

The plan/EIS shows that soil compaction from ORV use decreases soil permeability, which contributes to more highly channelized runoff during storm events and corresponding erosion of adjacent areas. Moreover, in the absence of designated ORV routes, direct impacts from ORVs could result in the loss of vegetation, which would also result in higher erosion potential. Other recreational activities, such as camping in vegetated areas, would similarly continue to result in disturbance and damage to soils through compaction and erosion.

Furthermore, studies have shown that ORV use reduces plant cover and density, and that a single pass can destroy many types of plants, microfloral crusts, and soils. Desert and arid region plants are particularly susceptible due to their characteristic shallow root systems (Taylor n.d.). At the national recreation area, unauthorized ORV use has been found to result in destruction of surface vegetation which further exacerbates the erosion effects described above.

**AL4000 – Alternatives: New Alternatives or Elements**

**Concern ID:** 44296  
**CONCERN STATEMENT:** One commenter suggested that the recreation area look into grants to maintain and improve the trails and camping areas.

**Representative Quote(s):** **Corr. ID:** 1 **Organization:** *Not Specified*

**Comment ID:** 310281 **Organization Type:** Unaffiliated Individual

**Representative Quote:** does yamaha, honda, kawasaki, polaris, and other major atv manufacturers offer grants to parks for trail improvement?  
does the travel trailer industry offer grants to help parks improve camping areas?  
these are things to check.

**RESPONSE:** The NPS is open to working with partners to provide improvements to ORV areas. Seeking funding from private sources relates to the implementation of the plan. These sources will be considered as the plan is finalized and implemented.

**Concern ID:** 44297  
**CONCERN STATEMENT:** Commenters requested that ORV use areas be expanded, including allowing access to the lake.

**Representative Quote(s):** **Corr. ID:** 25 **Organization:** *Not Specified*

**Comment ID:** 312614 **Organization Type:** Unaffiliated Individual

**Representative Quote:** The only change I would consider is an expansion of the current OHV area with multiple access points. This would reduce congestion in the Rosita Flats area and create multiple access points for the public and emergency vehicles.

**Corr. ID:** 38 **Organization:** *Not Specified*  
**Comment ID:** 312876 **Organization Type:** Unaffiliated Individual

**Representative Quote:** We would like the Lake Meredith area opened up for OHV use. This area is losing money from the lake levels being so low. We would love to be able to ride to the lakes edge and get our lawn chairs out and enjoy it, without having to worry about hitting something with the prop on our boat.

**Corr. ID:** 58 **Organization:** *Not Specified*  
**Comment ID:** 312916 **Organization Type:** Unaffiliated Individual

**Representative Quote:** Please keep the Canadian river (Rosita flats) open to orvs and I would like to see the boundary extended into lake Meredith area

**Corr. ID:** 106 **Organization:** *Not Specified*  
**Comment ID:** 313184 **Organization Type:** Unaffiliated Individual

**Representative Quote:** Open up more areas instead of closing them off for more riding. We can ride our 4-wheeler and ATVs anywhere. Keep the money here for our economy to improve!!

**Corr. ID:** 110                      **Organization:** *Not Specified*  
**Comment ID:** 315674            **Organization Type:** Unaffiliated Individual

**Representative Quote:** There should be some portions of the now exposed lake bottom that should be considered for ORV use. Perhaps extend the limits of use in Blue West Creek towards the mouth of the canyon.

**RESPONSE:** As described in chapter 2 of the plan/EIS, the creation of new ORV use areas was considered, but the NPS determined that this ORV plan should focus on ensuring compliance for existing areas before considering new areas. Planning for new ORV use areas would need to occur under a separate planning process. Establishment of new routes and areas is not part of the purpose of and need for this plan, and is considered outside the scope of this planning process. Expanding ORV use to new areas was also dismissed because vehicle use in areas previously untouched by motorized use could result in new impacts to resources, visitor use and experience, and staffing. This would not meet plan objectives related to visitor use and safety, management, natural resources, and national recreation area operations (see chapter 1 in the plan/EIS). Such impacts could include

- Degradation of water quality and drinking water through increased soil erosion from additional ORV use areas
- Habitat fragmentation from the establishment of additional ORV routes and areas
- Lack of staff to provide services to additional areas
- Exacerbation of existing trespassing problems
- Potential for additional conflicts with other national recreation area visitors and recreational uses

The development of new ORV areas would be anticipated to result in adverse natural and cultural impacts, and would require additional site-specific evaluation and planning beyond the scope of this plan.

**Concern ID:** 44298  
**CONCERN STATEMENT:** Commenters voiced support for transferring Rosita Flats to state ownership. One commenter had concerns with this potential alternative, stating that this could result in the loss of land for public use.

**Representative Quote(s):** **Corr. ID:** 72                      **Organization:** *Not Specified*

**Comment ID:** 313172            **Organization Type:** Unaffiliated Individual

**Representative Quote:** Another concern of mine is the alternative about trading or selling the ORV portion of the LMRA to the State of Texas. While I'm generally an advocate of state's rights, I'm not in favor of Texas managing this public property as an ORV area or state park. I have seen first hand along the Canadian River (both upstream and downstream of the lake) how influential land owners have taken public land for their very own by moving fences down to the existing waterline. When I confronted the General Land Office of Texas about this, I received no support whatsoever, even though they acknowledged I was probably right. The "good ol' boy" system between influential landowners and legislators (often one in the same) is alive and well in Texas. If the NPS trades the LMRA to the State, I'm afraid the citizens will eventually lose some or all public access to this great recreation area. Fortunately, this proposal has been tabled for now.





**Representative Quote(s):**

**Corr. ID:** 1                      **Organization:** *Not Specified*

**Comment ID:** 310280              **Organization Type:** Unaffiliated Individual

**Representative Quote:** post emergency phone numbers at the billboards so we know the numbers to contact even in the off hours.

**Corr. ID:** 1                      **Organization:** *Not Specified*

**Comment ID:** 310279              **Organization Type:** Unaffiliated Individual

**Representative Quote:** make patrols more often. when out making patrols, check everyone's paperwork. issue citations on offenses. ZERO TOLERANCE. be fair, firm, and consistent. enforcement is key to making the areas a better place to play and hunt. make repeat offenders' fines progressive. they have got to learn it is for everyone's safety and benefit.

**Corr. ID:** 13                      **Organization:** *Not Specified*

**Comment ID:** 312595              **Organization Type:** Unaffiliated Individual

**Representative Quote:** I also think a hefty fine for going beyond the approved sites should be enforced.

**Corr. ID:** 72                      **Organization:** *Not Specified*

**Comment ID:** 313173              **Organization Type:** Unaffiliated Individual

**Representative Quote:** As I indicated earlier, the two things I believe that can make the LMRA ORV area work without implementing any new alternative is education and enforcement. There were proposals in the 2008 budget request for additional monies in part to increase education about the concerns of the ORV areas. These did not come to fruition. I frequent the Rosita Flats area often and I've yet to see any real education literature, signs, etc. about NPS concerns. I believe it would be entirely beneficial to construct a small office/structure just inside the entrance at Rosita Flats where people could purchase the state ORV stickers, learn about the LMRA, pick up literature on ecology preservation, and just talk to a park ranger about enforcement actions or safety.

This isn't a new concept by any means for the NPS. These small offices are located throughout the national parks and would be welcomed here as well. Short courses on trail management and rehabilitation could be taught and encouraged here and over time I believe we would see a shift in abuse of some of the trails. Unfortunately, this proposal to install a permanent or even semi-permanent building at the entrance to Rosita Flats has been rejected because the area is in a flood plain. This is really not a valid excuse because there are many places in the area of Rosita Flats that have never flooded in the 40+ years that I have been recreating there. A small wood frame building or even a steel building would not cost that much to erect and would go a long ways towards making this part of the park a better place to visit. Just the mere presence of an active NPS office would be a deterrent to some of the illegal activities taking place there now. It is easier to educate the public when a ranger is present.

**RESPONSE:** As stated in the plan/EIS (chapter 2, alternative D), the NPS preferred alternative would implement a permit fee system. Fees from this permit would be used, in part, to increase law enforcement, including the potential for locating a law enforcement contact station in the vicinity of Rosita Flats. As discussed for Concern ID 44299, construction of a law enforcement station at Rosita Flats is not





**Representative Quote(s):** **Corr. ID:** 72 **Organization:** *Not Specified*  
**Comment ID:** 317163 **Organization Type:** Unaffiliated Individual  
**Representative Quote:** I am against the requirements for flags on motorcycles as this poses a serious imminent danger to the rider during riding.  
**RESPONSE:** As shown in the Alternative Elements Summary (table 2 in chapter 2 of the final plan/EIS), the preferred alternative (alternative D) would require flags on ATVs, but would not require flags on motorcycles. The NPS agrees there are safety concerns with such a requirement.

**AL5040 – Alternative Elements: Speed Limits**

**Concern ID:** 44304  
**CONCERN STATEMENT:** One commenter requested that there be no speed limits set, except for around large camping areas.  
**Representative Quote(s):** **Corr. ID:** 74 **Organization:** *Not Specified*  
**Comment ID:** 313090 **Organization Type:** Unaffiliated Individual  
**Representative Quote:** A speed limit only around a large camping area. This place is normally packed when we are there. No speed limits for the river bed and trails away from the camping area.  
**RESPONSE:** Objectives of this plan include managing ORV use to minimize conflicts among different ORV users and promoting safe operation of ORVs and safety of all visitors. The NPS has chosen to include speed limits in certain areas under the range of alternatives to increase safety and meet these plan objectives.

**AL5045 – Alternative Elements: Permit Requirements**

**Concern ID:** 44305  
**CONCERN STATEMENT:** Commenters voiced support for a fee permit, contingent upon those funds being used to provide additional improvements in the ORV areas and to provide more areas for ORV use. Another commenter requested that fees be used to increase enforcement in the area. Commenters suggested alternate permitting fee structures, including allowing four ORVs for \$100.  
**Representative Quote(s):** **Corr. ID:** 1 **Organization:** *Not Specified*  
**Comment ID:** 310276 **Organization Type:** Unaffiliated Individual  
**Representative Quote:** i like the use of a permit for the atvs/utvs. the nps needs the monies generated to help cover the costs of investment into the recreational areas. good examples are the outhouses at blue creek. too bad we have some folks that destroy the equipment and don't pick up trash after themselves which makes it harder on those of us who do clean up our trash and theirs. anyways, would the \$40 permit be per machine? i mean, the average number of family members is 4 and all 4 members would fit inside of a boat. so, would we get a prorated on the permit and get a \$100 permit to cover 4 machines/atvs? single machine permits could be \$40, 2 @ \$65, 3 @ \$85, or 4 @ \$100?



users to the "user capacity" of the area, whatever that may be. I fear that the NPS would establish a "carrying capacity" for the area and the number of annual permits would then be limited and the remainder of park users would be left out of recreation opportunities.

**Corr. ID:** 74

**Organization:** *Not Specified*

**Comment ID:** 313092

**Organization Type:** Unaffiliated Individual

**Representative Quote:** We already pay \$16 per OHV for an OHV decal, we shouldn't have to pay a day use fee. Maybe you can get a cut of the OHV decal fees from the state.

**RESPONSE:** As stated above under Concern ID 44305, the NPS must use funds generated from ORV permits for management of ORV use, which includes providing additional amenities for ORV users, increasing law enforcement of ORV areas, and monitoring ORV use.

In regards to the NPS obtaining a portion of state sticker fees rather than instituting a new fee, there is currently not a mechanism in place that provides for transfer of funds between the federal and state levels. However, the NPS can apply for grant funds from the state to assist with management. The NPS would continue to look for opportunities to apply for such funding.

#### AL5050 – Alternative Elements: Designated Vehicle Routes/Areas

**Concern ID:** 44307

**CONCERN STATEMENT:** Commenters suggested providing trail maintenance of ORV routes. In addition, they suggested closing certain areas for a year to allow regeneration or recovery in the area and reopening them the next year, provided that the public would be well informed.

**Representative Quote(s):** **Corr. ID:** 72

**Organization:** *Not Specified*

**Comment ID:** 313174

**Organization Type:** Unaffiliated Individual

**Representative Quote:** Lastly, and perhaps most importantly to all parties concerned, I think some trail management could be beneficial. Some of the trails and roads in general are in very poor condition. A little trail maintenance and education could help to reduce or eliminate trail abuse. By rotating out some of the trails and giving nature a chance to rehabilitate herself, we could prolong the availability of this unique ORV area. I would be in favor of establishing motorcycle only trails, motorcycle/ATV only trails, jeep trails, and perhaps even some designated rock crawling trails. If the NPS better enforced the existing laws, we wouldn't have as much illegal activity as we have now, and probably wouldn't even need this drastic of a management plan. There are existing laws that can protect the environment now without the need for additional rules and regulation, such as fines for destroying natural resources, but they must be enforced. Let's use the tools that we already have.

**Corr. ID:** 74  
**Comment ID:** 313091

**Organization:** *Not Specified*  
**Organization Type:** Unaffiliated  
 Individual

**Representative Quote:** Maybe instead of losing routes and areas at a moments notice, close a certain area(s) for a year and reopen the following year. Make sure to provide education materials on the board as to which areas are closed.

**RESPONSE:** As stated in chapter 2 of the plan/EIS, “The national recreation area may temporarily close ORV routes and areas if resource conditions warrant. This could include closing areas that become overly rutted or closing an area after heavy rains to prevent resource damage. Once the resource condition has been corrected or conditions improve, the area would be reopened to ORV use.” The ability to temporarily close ORV routes would allow for natural regeneration in areas where non-designated trails have been created. The NPS would do this on an as-needed basis, rather than on a set rotation schedule as suggested by the commenter, to ensure trails or areas are not reopened before the impacts have been mitigated. Due to the environmental conditions of the area (wind, soils, water availability) one season may not be adequate for an area to have adequate regeneration. In addition, the routes in the plan will be incorporated into the special regulation governing ORV use at the recreation area, and set routes will allow for enforcement and understanding of that regulation. In regards to trail maintenance, where designated trails exist, the NPS will maintain those trails.

**Concern ID:** 44309

**CONCERN STATEMENT:** One commenter stated that the plan should not include limited river crossings because of the ever-changing nature of the river system. The commenter also stated that limited crossings would create point sources of water and soil contamination and that river crossings have not been shown to impact the Arkansas River shiner.

**Representative Quote(s):**

**Corr. ID:** 72  
**Comment ID:** 313162

**Organization:** *Not Specified*  
**Organization Type:** Unaffiliated  
 Individual

**Representative Quote:** The next issue is limited river crossing abilities. The Canadian River is an ever-changing river system that redefines its stream course with every precipitation event. It is absurd to envision only a few defined areas to cross this river. Furthermore, if crossings are limited to a few defined areas, then the NPS will have created point sources of potential water and soil contamination and impact. It is better to spread out the potential impact to the environment over many more less frequently used crossings than it is to concentrate all of the traffic to one or two areas. Vehicles and river crossings have never been directly documented as impacting the Arkansas River shiner along the NPS segment of the Canadian River. The Canadian River has become an ephemeral stream due to the dam at Ute Lake in New Mexico and persistent regional drought conditions. The lack of stream flow and the total absence of water in the Canadian River have the biggest impacts on the Arkansas River Shiner, its habitat, and any other river biota.

**RESPONSE:** The Arkansas River shiner tends to be located primarily in the downstream pools of large transverse ridges of shallow rivers (TransCanada 2012). Designated river crossings for ORVs will be located in shallow, low-banked stretches of the river

where pools and shiner habitat are unlikely to occur. Due to the changing nature of rivers in the area, river crossings will be clearly marked and will be subject to change per the superintendent's authority with consultation provided by the USFWS. Additionally, if monitoring shows that river crossing areas are experiencing point source impacts on water and soil as a result of ORV use, management actions will be put into place to address these impacts.

**Concern ID:** 44310

**CONCERN STATEMENT:** One commenter felt that the designation of routes would be confusing for users. The commenter noted that at the public meeting, information was provided concerning routes that were not on the map, and that the conflicts between the information in the meeting and what was in the draft plan/EIS were confusing.

**Representative Quote(s):**

**Corr. ID:** 72

**Organization:** *Not Specified*

**Comment ID:** 313158

**Organization Type:** Unaffiliated Individual

**Representative Quote:** Currently, there is no shortage of regulation or rules governing ORV use in the LMRA, so implementing additional rules will serve no beneficial purpose nor will it accomplish what those on the books now have failed to do. It is imperative to enforce the laws that we currently have. Quite frankly, the three remaining alternatives (B,C,D) are rather convoluted and misunderstood by the layman recreationalist, as well as the NPS rangers themselves. During the March 2013 public meeting in Amarillo, a lack of knowledge and understanding of the proposed Alternatives on the part of the NPS staff led to confusion for the many user groups that were represented. Mr. Paul Jones of the NPS indicated that many trails he personally GPS'd were not represented on the maps for Alternatives B, C, and D. He indicated that all those trails would be accessible. However, according to the Draft EIS currently being proposed, none of those are shown as active ORV trails. In fact, the maps represented in the various alternatives are all maps that were in the 2010 or earlier LMRA ORV Management Plan, so there is no expectation that these differences are going to be incorporated in the final plan. We as users cannot take the NPS Rangers' verbal interpretation of the various alternatives, but yet can only look to the facts as they are presented in the EIS. We cannot expect anything else promised verbally, and misunderstanding on the part of the NPS representatives only compounds the problem.

**RESPONSE:** The maps provided at the public meeting, as well as in the plan/EIS, provide an accurate representation of allowable ORV routes under the preferred alternative. While the NPS apologizes for any misunderstanding of these routes, the maps included in the draft plan/EIS are accurate and are included in the final plan/EIS.

#### AL5055 – Alternative Elements: Zone System

**Concern ID:** 44311

**CONCERN STATEMENT:** Commenters suggested that different types of trails and zones be created for different types of users, with motorcycles provided as one example of a use that should be separated out.

**Representative Quote(s):**

**Corr. ID:** 43

**Organization:** *Not Specified*

**Comment ID:** 312886

**Organization Type:** Unaffiliated Individual

**Representative Quote:** Motorcycles should be in a category all there own, and not jumbled into a generic ATV category. Riders are much more susceptible to injury by other vehicles much larger than them. Motorcyclist need room on the outskirts and need to keep there trails small and single tracks. Ideally there should be a "Motorcycle Only" area large enough to keep everyone happy.

However, it is impossible to keep everyone happy so if I had to choose plan A or B, I would choose "A"

**Corr. ID:** 72

**Organization:** *Not Specified*

**Comment ID:** 313159

**Organization Type:** Unaffiliated Individual

**Representative Quote:** Rather than pick and choose my likes and dislikes from the various alternatives being proposed, I will sum up my desires for recreational uses in the Rosita Flats area of the LMRA as follows:

4. Develop different types of user trails (ie. Motorcycles, atvs, jeeps, trucks, etc.) and rotate trail use

**Corr. ID:** 72

**Organization:** *Not Specified*

**Comment ID:** 313164

**Organization Type:** Unaffiliated Individual

**Representative Quote:** I am in favor of a designated trail system. I would like to see trails designated for: motorcycle only, motorcycle/atvs, jeeps, regular vehicles, and open-to-all trails. By establishing these specific trail types, I believe the safety of riders could be enhanced. Rotating these trails in and out of service will help to protect the potential for erosion and degradation as well. I am for a designated campground and quiet-time restrictions.

**RESPONSE:**

Currently, and under all alternatives, there are routes that lend themselves to motorcycle use because of their narrow nature. At least one of these routes cannot be widened because of trees and other topography. Because of this, the route is only suitable for motorcycle use. This route, along with the others, is located in Rosita Flats, east of Bull Taco Hill in the floodplain, just outside of the river. Under all alternatives, these routes would still be available, and most would be conducive to motorcycle use. In regards to other designated trails for specific vehicle types, the NPS believes that due to the variety of trails available, some are more suitable for certain types of vehicles than others, and official designation of these trails for one type of vehicle is not necessary at this time.

**Concern ID:**

44312

**CONCERN STATEMENT:**

Commenters expressed concern with a zone system, stating that this would increase the number of riders in a single area and result in more accidents. They also expressed concern about the resource protection area, stating that it is too restrictive as proposed due to the vehicle width limitation and the length of the restriction.

**Representative Quote(s):**

**Corr. ID:** 6 **Organization:** American Motorcyclist Association

**Comment ID:** 310287 **Organization Type:** Recreational Groups

**Representative Quote:** Furthermore, we do not believe the DEIS takes into account the safety and environmental impacts, such as trail congestion and overuse, from forcing riders into a smaller designated area.

**Corr. ID:** 24 **Organization:** *Not Specified*

**Comment ID:** 312612 **Organization Type:** Unaffiliated Individual

**Representative Quote:** Placing restrictions on the riding areas will only increase the number of riders forced to ride in the same area which could lead to more accidents and more erosion issues. One of the great things about the area is that it allows people to have some room to avoid collisions. Also, the diversity of the terrain makes riding enjoyable for all levels. Placing motorcycles, 4-wheelers, and dune buggies in the same area would be a big problem, an accident waiting to happen.

**Corr. ID:** 72 **Organization:** *Not Specified*

**Comment ID:** 313163 **Organization Type:** Unaffiliated Individual

**Representative Quote:** The resource protection area is extremely restrictive as it is proposed now. Only vehicles 5' wide or less will be allowed and there is no provision for street legal vehicles in this area. This will limit or even prohibit many hunters from utilizing this area during the general hunting season (or any other times). Many hunters, including myself utilize our street legal vehicle to access prime hunting areas within the Rosita Flats area. Under these alternatives, street legal vehicles will not be allowed. Additionally, ORV (besides those used in hunting activities) use will not be allowed during the hunting season(s) in this resource protection area. This is a period of up to 2 months each year. I have hunted all my life in this area, and while I do encounter ORV during hunting hours, I have never lost the opportunity to harvest an animal due to an ORV. I have been discouraged by their presence from time to time, yet I do NOT want to restrict their use during this time. The LMRA and particularly, the Rosita Flats is public property for ALL to enjoy year round.

**Corr. ID:** 72 **Organization:** *Not Specified*

**Comment ID:** 313160 **Organization Type:** Unaffiliated Individual

**Representative Quote:** There are many different user groups that frequent the Rosita Flats area, hunters, motorcyclists, atvs, dune buggy, jeeps, rock crawlers, campers, hikers, etc. Some of these users are actually multi-use recreationalists, such as myself. I enjoy and participate in almost every one of these activities, however all three alternatives being proposed (B,C,D) will conflict with one or more of the activities in which I participate. First and foremost is the desire for a safe recreation area. It is my intent every time I visit the LMRA to come home safely. To help facilitate that, more NPS presence is needed in the Rosita Flats area.

**Corr. ID:** 79 **Organization:** PEA

**Comment ID:** 313121 **Organization Type:** Unaffiliated Individual

**Representative Quote:** BUT IT IS IMPERATIVE that beware that the smaller the area for riding the higher the risk is for getting hurt.. Put that into consideration before you even think about taking Canadian river.

**RESPONSE:** The NPS believes that implementation of a zoning system will better enhance and protect the recreation area’s resources. The Organic Act gives the NPS broad authority and discretion to manage the sometimes conflicting goals of resource conservation and visitor enjoyment and to determine how visitor activities, including recreational activities, may be managed to avoid or minimize impacts to natural and cultural resources. The express language of the Organic Act does not mandate that NPS equally balance resource protection with public use in making its management decisions. Courts have held that the Organic Act places an overarching concern on protection of resources in the management of national parks. Since the act speaks of but a single purpose, conservation, where the goals of resource protection and user enjoyment conflict, protecting the resources takes precedence. Thus, the NPS interpretation of the Organic Act as allowing the recreation area to manage appropriate recreational uses in the interest of resource protection is consistent with the act and is a proper exercise of discretion, even if it may result in a concentration of use due to the implementation of a zone system.

Further, although the zoning system may restrict use in some areas to certain vehicle types, it still allows for use within the zones that promote visitor safety, such as the beginner zone or hunting zone. The NPS believes that the safety benefits created from these zones outweighs some of the crowding concerns of commenters. Addressing commenters’ concerns in the resource protection zone, the NPS has revised the size restriction to vehicles with no more than a 64-inch wheel width (not wheel base) to allow for additional use in that area. This decision is reflected in the final plan/EIS.

**AL5065 – Alternative Elements: Education and Outreach**

**Concern ID:** 44313  
**CONCERN STATEMENT:** One commenter requested that bigger signs be placed at entrances to inform users of the rules.

**Representative Quote(s):** **Corr. ID:** 1 **Organization:** *Not Specified*  
**Comment ID:** 310277 **Organization Type:** Unaffiliated Individual

**Representative Quote:** bigger signs would need to be placed at the entrances for potential riders to see what the rules are, what permits are required, etc....

**RESPONSE:** As stated in chapter 2 of the plan/EIS, the preferred alternative (alternative D) includes multiple education and outreach elements to inform users of the rules at Rosita Flats and Blue Creek. One mechanism for education and informing users of the rules is the proposed fee permit system, which would require that people requesting a permit receive education prior to obtaining a permit. Other education and outreach, beyond what the recreation area is already implementing, would include

- Providing safety literature and trash bags to users. ORV and other rules could be printed on the trash bags. Rangers seek out visitors and provide this information and increase visitor contacts

- Providing ORV safety programs in schools and attend Fritch Howdy Neighbor Day.
- Increasing education about ORVs at community events the national recreation area staff attends.
- Adding ORV education to Water Safety Day.
- Providing signs to local businesses containing Lake Meredith National Recreation Area ORV use area map and rules.
- Increasing educational signs in ORV use areas.
- Establishing a volunteer group to assist with cleanup and other efforts.
- Developing a “tread lightly” pamphlet for ORV use.

The NPS believes these measures would be effective and that bigger signs at the entrances would not be required.

**AL6000 – Alternatives: Alternative A**

**Concern ID:** 44314

**CONCERN STATEMENT:** Commenters requested that alternative A be implemented, with modifications to include increased outreach and enforcement.

**Representative Quote(s):**

**Corr. ID:** 72

**Organization:** *Not Specified*

**Comment ID:** 313157

**Organization Type:** Unaffiliated Individual

**Representative Quote:** It is my strong and researched opinion that the NPS should continue to operate the LMRA just as it is now; with minor exceptions. Those minor exceptions can be broken down into two areas: Education and Enforcement. Both of these are lacking in sufficient quantities in the Rosita Flats area of the LMRA. My preference, as well as almost every user of the LMRA, would be to implement Alternative A, which is a no-action alternative. I understand from reading the Draft EIS that the NPS has ruled this option out, as was also indicated by Mr. Paul Jones of the NPS during a March 2013 public comment meeting.

**RESPONSE:** Implementation of alternative A, even with additional outreach and enforcement, is not likely to bring the recreation area into compliance with Executive Orders 11644 and 11989 respecting ORV use, and with NPS laws, regulations (36 CFR 4.10), and policies to minimize impacts to recreation area resources and values. In particular, Executive Order 11644 requires that the location of routes minimize damage to soil, watershed, vegetation, or other resources of the public lands; minimize harassment of wildlife or significant disruption of wildlife habitats; minimize conflicts between ORV use and other existing or proposed recreational uses of the same or neighboring public lands, and ensure the compatibility of such uses recreational uses of the same or neighboring public lands. ORV routes may be located in areas of the national park system only if the respective agency head determines that ORV use in such locations will not adversely affect their natural, aesthetic, or scenic values. Alternative A, even with additional law enforcement and education, does not effectively minimize damage to soils, vegetation, wildlife, and wildlife habitat and therefore does not protect the natural values of the area as well as the action alternatives.

**AL7000 – Alternatives: Alternative B**

**Concern ID:** 44315  
**CONCERN STATEMENT:** Commenters expressed concern with the implementation of a multi-use trail under alternative B, questioning whether demand existed for such a use.

**Representative Quote(s):** **Corr. ID:** 17 **Organization:** *Not Specified*  
**Comment ID:** 312602 **Organization Type:** Unaffiliated Individual

**Representative Quote:** Alternative B which includes the Multi-Use Trail (Hike/Bike) @ the Alibates & Fritch Fortress areas is just plain bizarre. NPS could have implemented this trail system without interfering with OHV activities at the Canadian River area long before now. Equestrian activities have been seen at the Canadian River since before our Family started going in the late 1960's.

That said, has anyone actually run a marketing analysis for demographics for the proposed Multi-Use trail system? Does NPS actually believe the outdoor enthusiasts from Amarillo (largest urban area) will drive over an hour to hike or ride their bicycles when Palo Duro Canyon is one of the most epic hiking/riding places in the state...and 20-min from Amarillo?

**RESPONSE:** None of the alternatives for the ORV management plan/EIS include development of a multi-use trail. The recreation area recently completed a separate planning process for a multi-use trail in January 2010. The multi-use trail would consist of five phases of primitive trails totaling approximately 22 miles in length and would be available for pedestrian and bicycle use. Phase 1 would be located in the Harbor Bay and Fritch Canyon area; phase 2 would be between Harbor Bay and Short Creek; phase 3 would be located between Short Creek and South Turkey Creek; phase 4 would start at the mouth of South Turkey Creek and continue up the canyon; and phase 5 would be located between Fritch Fortress and the northern portion of phase one. None of these areas coincide with the ORV areas, and planning for this multi-use trail is outside the scope of the ORV management plan/EIS.

**Concern ID:** 44316  
**CONCERN STATEMENT:** One commenter requested that the NPS clarify the purpose of the no-cost permit under alternative B, specifically what type of educational purpose the permit would serve.

**Representative Quote(s):** **Corr. ID:** 116 **Organization:** US Environmental Protection Agency – Region 6  
**Comment ID:** 315686 **Organization Type:** Federal Government

**Representative Quote:** Executive Summary, Page xi – Alternative B includes issuing a no-cost permit for educational purposes, but it is unclear what educational purpose the permit would fulfill. The only education mentioned in the DEIS is through outreach with ORV users via bulletin boards and brochures, and the permits mentioned in the DEIS are for identifying ORV area users. These two measures are common to alternatives B, C, and D.

**RESPONSE:** The no-cost educational permit would inform users of the rules and regulations of the national recreation area, as well as provide information on the sensitive resources in the ORV area. As stated in chapter 2 of the plan/EIS under alternative B, “To obtain the permit, ORV owners would be required to read education

materials and sign for their permits. By signing for permits, users would be acknowledging they have read, understood, and agreed to abide by the rules of ORV use in the national recreation area. The signed permit materials must be kept in the vehicle being used in the national recreation area.” The NPS believes that a no-cost educational permit will ensure all users have applicable information related to rules, regulations, and resource conditions and increase compliance in these areas. In addition, a no-cost permit will also provide the NPS with a tool to better track usage levels in the ORV areas.

**Concern ID:** 44317  
**CONCERN STATEMENT:** One commenter asked how the NPS would enforce the alternatives and also asked why, if ORVs are threatening the Arkansas River shiner, use is allowed primarily in the riverbed.

**Representative Quote(s):** **Corr. ID:** 74 **Organization:** *Not Specified*  
**Comment ID:** 313084 **Organization Type:** Unaffiliated Individual

**Representative Quote:** I do agree that some changes need to be made but after looking at the map (Figure 7: Alternative B: Rosita Flats Off-Road Vehicle Use Area in Chapter 2), I wonder how you are going to enforce this. It is very confusing. In chapter 1, It says that OHV's are threatening the Arkansas Shiner (a minnow), but the map in Chapter 2 says all riding should be done in the sandy bottoms, aka, the river bed (except for a few marked trails). It will cost more money and manpower to keep people out of the other marked trails.

**RESPONSE:** The intent of the alternatives is to allow driving in the riverbed, when the river is dry and the habitat for the Arkansas River shiner is not present. Alternative D includes provisions to protect the shiner, including a restriction on driving in isolated pooled areas of water that may contain shiner habitat. The NPS currently manages the ORV areas and will continue to do so under all alternatives. The preferred alternative includes a permit fee, which would help provide additional funds for increased enforcement.

**AL8000 – Alternatives: Alternative C**

**Concern ID:** 44318  
**CONCERN STATEMENT:** One commenter requested that the NPS provide a rationale for closing the area east of Bull Taco Hill to ORV use. Further, if the closure is proposed for resource protection, the commenter requested an explanation as to why this element was not included in other alternatives.

**Representative Quote(s):** **Corr. ID:** 116 **Organization:** US Environmental Protection Agency – Region 6  
**Comment ID:** 315687 **Organization Type:** Federal Government

**Representative Quote:** Alternative C, Page 52 – Implementation of Alternative C would close the area east of Bull Taco Hill to all ORV use. The rationale for this action is never fully explained. Describe why closing down the area East of Bull Taco Hill was included in Alternative C. If this action was based on the need to protect natural or cultural resources; then explain why this action was not included in the other action alternatives.

**RESPONSE:** The NPS considered closing the area east of Bull Taco Hill under alternative C, but not other alternatives, as part of the range of alternatives. It was not part of the preferred alternative (alternative D). In consultation with the USFWS, it was determined that ample areas for ORV use outside of the riverbed should be provided to prevent overuse of the riverbed area. Based on this consultation, the NPS determined that keeping the area open for use and allowing a greater dispersal of use would be preferable to closing the area completely. Although alternative D does not close that area, it does include a resource protection zone (not included under alternative C) that would restrict vehicles of a certain size and provide for increased resource protection. Therefore although there is not a complete closure of the area east of Bull Taco Hill under alternative D, it does have other resource protection measures not present in alternative C.

**AL9000 – Alternatives: Alternative D**

**Concern ID:** 44319  
**CONCERN STATEMENT:** One commenter expressed concern that alternative D could encourage illegal riding.

**Representative Quote(s):** **Corr. ID:** 6 **Organization:** American Motorcyclist Association  
**Comment ID:** 310285 **Organization Type:** Recreational Groups

**Representative Quote:** According to the preferred plan (alternative D), the NPS intends to limit OHV access to a fraction of the area previously allowed. Additionally, the plan would require individual permits for different zones in the park, further complicating access for individuals and families who wish to take part in multiple activities per trip. Also, that requirement could potentially encourage illegal riding.

**RESPONSE:** The NPS recognized the potential for illegal use under any of the alternatives presented in the plan/EIS. To address this, the preferred alternative includes a fee permit system in which funds generated from the permits must be used for ORV amenities or management, including law enforcement. If a rider were found off designated trails, the NPS would recommend to the courts that the permit be revoked for the remainder of the year. If a rider violates the rules in either of the ORV use areas (Rosita Flats and Blue Creek) three times, the national recreation area would recommend to the court permanent suspension of their permit privileges. ORV users driving off-road and damaging park resources may be required to pay for those damages pursuant to federal law. In addition, if illegal use were occurring in a certain area and resulting in resource damage, that area could be closed until that area has recovered from the damage. Although illegal use is a possibility, alternative D would provide the NPS with the tools to address that use.

**Concern ID:** 44320  
**CONCERN STATEMENT:** Commenters stated support for alternative D, but requested that it be modified to allow for a lower ORV permit fee, increase fines for littering, provide more trash pickups, and phase in any noise level restrictions.

**Representative  
Quote(s):**

**Corr. ID:** 39

**Organization:** *Not Specified*

**Comment ID:** 312882

**Organization Type:** Unaffiliated Individual

**Representative Quote:** With this in mind, I recommend that Alternative D of the draft environmental impact statement be implemented for the specific reasons stated below:

- 1) Instituting permit/fee/regulatory requirements for ORVs would put management of ORV use consistent with management of other activities that impact the natural environment/habitats at LMNRA, thereby allowing:
  - a. Collection of fees to manage and maintain the area (financial resources are expended regardless of the collection of fees),
  - b. Consequences for non-compliance with regulations.
- 2) Because ORV use by definition has the potential to be destructive to the natural environment, within a national recreation area I believe we have a responsibility to manage ORV areas in order to sustain/protect habitats for native and migratory species, as well as for future generations.
- 3) I believe having zones is a necessary component to allow for enjoyment by multiple users while minimizing opportunities for conflict, and for long-term management of the LMNRA as use changes are necessitated by changes to the natural landscape.

**Corr. ID:** 91

**Organization:** Track & Trail Sports Riders

**Comment ID:** 313148

**Organization Type:** Unaffiliated Individual

**Representative Quote:** I favor Alternative D with following suggestions:

Need more trash pickups during summer months in Rosita Flats or at Highway 287 bridge.

Possible faded in noise levels in 1 to 2 years.

Possible lower fee for 1 to 2 years of \$20 per year.

**Corr. ID:** 102

**Organization:** *Not Specified*

**Comment ID:** 313177

**Organization Type:** Unaffiliated Individual

**Representative Quote:** I am for alternative D, although I do believe that having a much higher fine for littering would be good.

**RESPONSE:**

In regards to noise standards, vehicles manufactured after the late 1990s are all manufactured to meet the noise standard in the plan/EIS. The national off road vehicle association also endorses this standard. Since vehicles meeting the standard have been manufactured for many years, non-modified ORVs should be able to meet the standard.

As noted under Concern ID 44301, the NPS is not responsible for setting fines, but can consider recommending higher fine levels to the courts. Also, the specific fee to be changed for the permit is yet to be determined and will be determined under a separate process, which will take into consideration comments received during the EIS process. The level of amenities provided with those fees, including trash cans and trash pick-up, will be determined at a later date.

**AR4000 – Archeology Resources: Impact of Proposal and Alternatives**

**Concern ID:** 44321  
**CONCERN STATEMENT:** One commenter expressed concern that the proposed plan would adversely affect cultural resources and requested a survey to determine the presence of cultural resources in the plan study area.

**Representative Quote(s):** **Corr. ID:** 113 **Organization:** State Historic Preservation Officer  
**Comment ID:** 315682 **Organization Type:** State Government

**Representative Quote:** We have concerns that the proposed plan will adversely affect these cultural resources. It is also likely that unrecorded cultural resources are located in these areas and we would recommend a survey to determine the presence of additional cultural resources and assessment of new and previously recorded cultural resources.

**RESPONSE:** The Rosita Flats area was surveyed in 2005. The survey was a Class III survey. The preferred alternative (alternative D) designates routes and areas to avoid sensitive resources, including archeological sites within the two ORV areas. The one site that is located within a designated ORV use area will be protected by a barrier denying access, including access by pedestrians.

**CC1000 – Consultation and Coordination: General Comments**

**Concern ID:** 44322  
**CONCERN STATEMENT:** Commenters raised concerns about consultation with the U.S. Fish and Wildlife Service (USFWS), asking whether the USFWS had been consulted during the planning process. One commenter requested that the final plan/EIS include concurrence from the USFWS regarding impacts on threatened and endangered species from the proposed plan.

**Representative Quote(s):** **Corr. ID:** 20 **Organization:** Texasoffroaders  
**Comment ID:** 312607 **Organization Type:** Unaffiliated Individual

**Representative Quote:** Alternatives B,C,& D, all have the traffic moved to the river bed. Did you guys talk with your counterparts at Fish & Game about the impact on the Arkansas River Shiner if all traffic was directed in that Direction? Did NPS even contact any of the local off roading public and ask for input when the various alternatives were being prepared?

**Corr. ID:** 116 **Organization:** US Environmental Protection Agency – Region 6  
**Comment ID:** 315688 **Organization Type:** Federal Government

**Representative Quote:** Agencies, Organizations and Individuals Consulted, page 231 – The DEIS does not contain a final determination of the environmental consequences of the alternatives to threatened and endangered species. The U.S. Fish and Wildlife Service (USFWS) was contacted for threatened and endangered species consultation, but there is not concurrence from the USFWS on any conclusions reached in the DEIS. Include concurrence from the USFWS on the NPS determination for impacts of the proposed project to threatened and endangered species.

**RESPONSE:** Throughout the development of the plan/EIS, the NPS informally consulted with the USFWS. On May 5, 2014 the NPS received the biological opinion on the NPS preferred alternative. A review of the impacts is included in the biological opinion and the record of consultation is included in attachment 1 of appendix B.

**Concern ID:** 44323  
**CONCERN STATEMENT:** One commenter requested that the comment period be extended due to the February 25, 2013, blizzard that caused the public meetings to be rescheduled.

**Representative Quote(s):** **Corr. ID:** 20 **Organization:** Texasoffroaders  
**Comment ID:** 312608 **Organization Type:** Unaffiliated Individual

**Representative Quote:** And it would have been the right thing to do to move the end of the comment period back like the public meetings were because of the recent blizzard on 2/25/2013.

**RESPONSE:** The NPS places a high value on public input throughout the planning process. To facilitate greater public involvement, the comment period on the draft plan/EIS was 60 days, rather than the required 45 days. During this period, the public was provided with multiple ways to participate; the public meetings were only one method of participating. Commenters could submit comments on line, provide written comments through the mail, or send written comments to park headquarters. The NPS believes the 60-day comment period and multiple methods available to comment provided ample opportunity for comments during this planning process.

**Concern ID:** 44324  
**CONCERN STATEMENT:** One commenter requested more information regarding the Tribal consultation conducted by the park, and suggested additional Tribal consultation.

**Representative Quote(s):** **Corr. ID:** 116 **Organization:** US Environmental Protection Agency – Region 6  
**Comment ID:** 315689 **Organization Type:** Federal Government

**Representative Quote:** Tribal Concerns, Page 232 – The DEIS lists ten Tribes that were contacted during the development of the plan, but does not indicate whether they were contacted for government-to-government consultation under E.O. 13175, National Historic Preservation Act (NHPA) consultation, or other reasons. Information, responses, and concerns to/from the listed Tribes were not specified in the DEIS, nor was there any indication of communication with Texas Tribes; including the Kickapoo Traditional Tribe, Ysleta Del Sur Pueblo, Alabama-Coushatta Tribe, and the Tonkawa Tribe. All of these tribes may have an interest in the proposed project location. Provide information in the Final EIS to document that all potentially affected Tribes were identified and contacted for both NHPA and E.O. 13175. The Texas State SHPO should also be contacted to provide concurrence on the conclusions reached in the DEIS concerning historic, cultural, or archeological resources. EPA recommends that the NPS continue to communicate and consult with the Tribes as the project progresses.

**RESPONSE:** The tribes listed in chapter 5 of the plan/EIS were sent a Notice of Intent letter to initiate government-to-government consultation under Executive Order 13175. Of the 10 letters sent, no responses were received. In regards to the tribes specifically mentioned by the commenter, these tribes do not have a historical association with Lake Meredith National Recreation Area, and therefore were not contacted as part

of this process. The Texas State Historic Preservation Officer was sent a letter on July 1, 2014 informing the NPS that they concurred with their determination of no effect. Further information on the consultation is provided in Chapter 5.

**GA1000 – Impact Analysis: Impact Analyses**

**Concern ID:** 44325

**CONCERN STATEMENT:** One commenter stated that the description of actions that could have cumulative impacts was flawed, specifically the descriptions of the mud bog and sand drags events. The commenter provided information to correct the statements they felt were incorrect.

**Representative Quote(s):**

**Corr. ID:** 81

**Organization:** West Texas Outlaws Off Road Club

**Comment ID:** 313127

**Organization Type:** Unaffiliated Individual

**Representative Quote:** I read the 2013 draft from cover to cover and found myself appalled at the cost and effort paid for by the taxpayer to conduct this study which is incomplete, inaccurate and obviously skewed to the park service view. Looked like most of the consultants weren't even from Texas (think Pace salsa ad) Some of the inaccurate views are about the sand drags (a generic term since there hasn't been an organized race event for the past 2 years) 10,000 visitors showed up the last full weekend of February regardless of the mass gathering restrictions and the increased law enforcement, not to view the "races" but because it is tradition.

One statement which really upset me was on page 127.

1. The West Texas Outlaws have not had a mud bog event for the past two years.
2. The Tejano Buggy Club started the sand drags in the 80's, the WTO did not host the event until 1992 and had only mud bogs from 1996. Other organizations held the sand drags ever since.
3. The mud bog and the sand drags have always been held on state land, not NPS land, NPS gets the spillover campers as stated..

**RESPONSE:**

The plan/EIS describes the Amarillo Sand Drags event as an action that could contribute to cumulative impacts, because the event is located adjacent to NPS lands. To address the commenter's concerns, text in the plan/EIS has been modified as follows (new text is shown as an underline, with deleted text shown in ~~strikeout~~):

**Amarillo Sand Drags**—The Amarillo Sand Drags is a competitive ORV drag racing event that began in the 1980s and is hosted by local ORV organizations organized each year by the West Texas Outlaws Off road Club. Held every February, the event attracts thousands of spectators and hundreds of motorcycles, four wheelers, sand rails, and river buggies on state lands adjacent to Rosita Flats. Drivers of these vehicles compete against one another in ORV races. ~~The event uses the Canadian River riverbed in the Lake Meredith National Recreation Area as its location.~~ Although the event itself is held on state-owned lands ~~is contained to the sandy wash of the riverbed,~~ the event's increasing popularity has resulted in spill-over effects on parklands outside the main event grounds. There is a substantial increase in visitor use at Lake Meredith associated with this annual event, and this dramatic increase in visitation necessitates greater law enforcement

and park management services, while the increased intensity of ORV use has the potential to negatively affect soils and other natural resources from the spill-over use.

**MO4000 – Management and Operations: Impact of Proposal and Alternatives**

**Concern ID:** 44326

**CONCERN STATEMENT:** Commenters stated that there would not be the funds necessary to implement the alternatives, and suggested that alternative A be implemented because it would cost the least. They also stated that implementing a permit fee would decrease visitation, and that this should be taken into account when considering how permit fees would offset costs.

**Representative Quote(s):**

**Corr. ID:** 72

**Organization:** *Not Specified*

**Comment ID:** 313171

**Organization Type:** Unaffiliated Individual

**Representative Quote:** I believe the funding needed to implement any of Alternatives B, C, or D will not be granted. With the lack of funding to implement these plans, the LMRA would most likely be closed to visitors. Below is a summary of the costs NPS indicate are required to implement each of the proposed alternatives.

Alternative A \$ 315,000

Alternative B \$1,775,000

Alternative C \$ 442,500 (offset by user permit fees)

Alternative D \$1,775,000 (offset by user permit fees)

It doesn't take an advanced degree in finance to see that the least cost option is Alternative A. The remaining alternatives are expensive and likely will face steep challenges in the budgetary request process as every government agency fights for limited funds. As mentioned previously, when a user fee is implemented, visitation will likely decrease substantially, thus the offset costs for these alternatives will not be realized which will further exacerbate the funding crisis.

**RESPONSE:** Although alternative A may be the least expensive to implement, it does not meet the purpose and need of this planning effort, and it does not address the findings of the Friends of the Earth Lawsuit or applicable executive orders (see Concern ID 44293 for further details).

In regards to obtaining the needed funding, once the planning is completed, and a decision is made, a request for additional funds would occur. Like most federal agencies, the NPS relies on federal appropriations to fund its core activities, although there is increasing use of alternative revenue sources, such as permit fees, to manage special uses. Parks generally obtain project funding either from annual appropriations or recreational fees; however, federal and non-federal grants can be a potential fund source as well. Annual appropriations are obtained directly from Congress. As an agency, the NPS develops an annual budget request that is submitted to Congress for review, modification, and approval. Base funding approved in the operation of the national park system appropriation covers basic operations (operating visitor centers, patrolling park grounds, and maintaining facilities). Other appropriations cover special programs (e.g., funding research, land acquisition, and construction) of the NPS. Lake Meredith would follow this process to obtain the funding necessary to implement the preferred alternative, and funding

would include revenue from permit fees.

Although the commenter notes concerns about decreased visitation with permit fees, this has not occurred with the implementation of the state ORV permit (see Concern ID 44292). Further, the concept of a permit fee was incorporated based on comments from local ORV use groups as well as individuals, and is expected that this fee will not lead to large decreases in visitation.

**PN3000 – Purpose and Need: Scope of the Analysis**

**Concern ID:** 44790

**CONCERN STATEMENT:** One commenter expressed concern that the plan did not provide enough consideration of two-wheel vehicle sports.

**Representative Quote(s):** **Corr. ID:** 30 **Organization:** *Not Specified*

**Comment ID:** 312855 **Organization Type:** Unaffiliated Individual

**Representative Quote:** In reviewing the alternatives we have come to the conclusion that any choice other than "A" will deeply curtail our right to enjoy the land in a responsible way that includes our hobby of Off Road dirt bikes, in-fact from what I can tell the plans will increase the danger associated with any 2 wheel hobby to the point of not worth the risk. We currently have enough trail options to ride without interference from other off road enthusiast. From the conversations at the Amarillo meeting, it became painfully clear, 2 wheel sports have been given no real consideration. If you run the off roaders away from the area, I promise the only users of the area will be an element you are not currently prepared to handle. Palo Duro and Caprock offer much more suitable mountain biking and camping. The river will not draw those users to itself, but the drug users and dog trainers will.

**RESPONSE:** This ORV management plan/EIS was developed to address all ORVs operating in Rosita Flats and Blue Creek, and does not differentiate between different types of ORVs, including two-wheeled vehicles.

Currently, and under all alternatives, there are routes that lend themselves to two-wheeled vehicle use because of their narrow nature. These routes are located in Rosita Flats, east of Bull Taco Hill in the floodplain, just outside of the river. Under all alternatives, these routes would still be available, and most conducive to two-wheeled vehicle use; however, they would not be explicitly designated only for this use.

**PN4000 – Purpose and Need: Park Legislation/Authority**

**Concern ID:** 44327

**CONCERN STATEMENT:** One commenter stated that the local community was kept out of the planning process, specifically because of the lack of public notification regarding the lawsuit filed by Friends of the Earth.

**Representative Quote(s):** **Corr. ID:** 20 **Organization:** Texasoffroaders

**Comment ID:** 312606 **Organization Type:** Unaffiliated Individual

**Representative Quote:** Concerning the proposed alternatives that the NPS has given the "stakeholders" in the Amarillo area I must vote for A, No Action. My

reasoning for doing so is that the NPS has kept the local area users out of the decision making process as long as they possibly could. Why was the public at large in the Texas Panhandle not informed about the lawsuit that The Friends of the Earth filed pertaining to the Rosita Flats recreation area north of Amarillo. I think the NPS didn't want any organized local opposition putting up a fight to keep Rosita Flats open to the off-roading public.

**RESPONSE:** Lake Meredith National Recreation Area has continually involved the public in the ORV management decision making process. See chapter 5 of the plan/EIS for a description of how the park has involved the public in the process.

Lake Meredith was one of a number of parks listed in the Friends of the Earth v. U.S. Department of the Interior, No. 1:05-CV-2302 lawsuit. As a general practice, the NPS does not announce when a lawsuit has been filed against itself.

**TE4000 – Threatened and Endangered Species: Impact of Proposal and Alternatives**

**Concern ID:** 44328

**CONCERN STATEMENT:** One commenter suggested that drought was impacting the Arkansas River shiner more than ORV use.

**Representative Quote(s):**

**Corr. ID:** 47

**Organization:** *Not Specified*

**Comment ID:** 312893

**Organization Type:** Unaffiliated Individual

**Representative Quote:** This area is suffering from a drought so I don't imagine there is much chance of the Shiners suffering from off road vehicles.

**RESPONSE:** As stated above Concern ID 44295, the NPS protects resources, regardless of impacts from other sources, such as natural occurrences (including drought). In particular, the Arkansas River shiner is listed as threatened by the USFWS. NPS *Management Policies 2006* (section 4.4.2.3) states that “The Service will survey for, protect, and strive to recover all species native to national park system units that are listed under the Endangered Species Act. The Service will fully meet its obligations under the NPS Organic Act and the Endangered Species Act to both proactively conserve listed species and prevent detrimental effects on these species.” To meet the above obligations, the management policies direct the NPS to “conduct actions and allocate funding to address endangered, threatened, proposed, and candidate species.” The policies further indicate that “the National Park Service will inventory, monitor, and manage state and locally listed species in a manner similar to its treatment of federally listed species to the greatest extent possible. In addition, the Service will inventory other native species that are of special management concern to the parks (such as rare, declining, sensitive, or unique species and their habitats) and will manage them to maintain their natural distribution and abundance.” Based on this policy guidance, the ORV management plan/EIS includes measures to further the protection of the Arkansas River shiner.

## CORRESPONDENCE FROM ORGANIZATIONS

Correspondence ID	Date received	Organization Type	Organization
6	2/20/13	Recreational Groups	American Motorcyclist Association
113	3/6/13	State Government	State Historic Preservation Officer
116	3/25/13	Federal Government	U.S. Environmental Protection Agency

## INDEX BY ORGANIZATION

(04/10/2013)

### Federal Government

US Environmental Protection Agency – Region 6 – 116; AE10060 – Affected Environment: Issues Considered but Dismissed. AL7000 – Alternatives: Alternative B. AL8000 – Alternatives: Alternative C. CC1000 – Consultation and Coordination: General Comments.

### Recreational Groups

American Motorcyclist Association – 6; AE10060 – Affected Environment: Issues Considered but Dismissed. AL2011 – Alternatives: Oppose ORV Restrictions (Non-substantive). AL5055 – Alternative Elements: Zone System. AL9000 – Alternatives: Alternative D.

### State Government

State Historic Preservation Officer – 113; AE15000 – Affected Environment: Archeology Resources. AR4000 – Archeology Resources: Impact of Proposal and Alternatives.

### Unaffiliated Individual (If organization is listed, the individual is not an official representative of that organization)

AMA – 85; AE10060 – Affected Environment: Issues Considered but Dismissed. AE2000 – Affected Environment: Soils. AL6400 – Alternatives: Support Alternative A.

AMA – 90; AL6400 – Alternatives: Support Alternative A.

Amarillo Off Road Association – 44; AL5046 – Alternative Elements: Permit Requirements (Non-substantive).

avid off-roader with kids! – 14; AL5045 – Alternative Elements: Permit Requirements. AL5056 – Alternative Elements: Zone System (Non-substantive). AL6400 – Alternatives: Support Alternative A.

High Plains Offroad – 69; AL6400 – Alternatives: Support Alternative A.

JUST A PRIVATE CITIZEN – 7; AL6400 – Alternatives: Support Alternative A.

Local resident – 95; AL4000 – Alternatives: New Alternatives or Elements.

Mass Carnage Offroad – 50; AL6400 – Alternatives: Support Alternative A. AL7600 – Alternatives: Oppose Alternative B. AL8600 – Alternatives: Oppose Alternative C. AL9600 – Alternatives: Oppose Alternative D.

motor cycle riders – 75; AL6400 – Alternatives: Support Alternative A.

Mudd Inc – 60; AL2000 – Alternatives: Support ORV Access (Non-substantive).

MUDD INC. – 53; AL5045 – Alternative Elements: Permit Requirements. VU4005 – Visitor Use and Experience / Health and Safety: Impact of Proposal and Alternatives (Non-substantive).

MUDD INC. – 55; AL2000 – Alternatives: Support ORV Access (Non-substantive).

Mud inc – 93; VU4005 – Visitor Use and Experience / Health and Safety: Impact of Proposal and Alternatives (Non-substantive).

Mx – 84; AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive).

N/A – 1; AL1001 – Alternatives: Elements Common to All Alternatives (Non-substantive). AL2000 – Alternatives: Support ORV Access (Non-substantive). AL4000 – Alternatives: New Alternatives or Elements. AL5010 – Alternative Elements: Monitoring and Enforcement. AL5045 – Alternative Elements: Permit Requirements. AL5046 – Alternative Elements: Permit Requirements (Non-substantive). AL5065 – Alternative Elements: Education and Outreach.

N/A – 2; AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 4; AL2011 – Alternatives: Oppose ORV Restrictions (Non-substantive).

N/A – 8; AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive).

N/A – 9; AL6400 – Alternatives: Support Alternative A.

N/A – 10; AL6400 – Alternatives: Support Alternative A.

N/A – 11; AL6400 – Alternatives: Support Alternative A.

N/A – 13; AL2010 – Alternatives: Support ORV Restrictions (Non-substantive). AL5010 – Alternative Elements: Monitoring and Enforcement.

N/A – 15; MT1000 – Miscellaneous Topics: General Comments.

N/A – 17; AL6400 – Alternatives: Support Alternative A. AL7000 – Alternatives: Alternative B.

N/A – 19; AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive). AL6400 – Alternatives: Support Alternative A.

N/A – 22; AL5030 – Alternative Elements: Vehicle Requirements.

N/A – 24; AL5055 – Alternative Elements: Zone System.

N/A – 25; AL4000 – Alternatives: New Alternatives or Elements. AL6400 – Alternatives: Support Alternative A.

N/A – 28; AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 30; PN3000 – Purpose and Need: Scope of the Analysis.

N/A – 32; AE1022 – Affected Environment: T&E and Species of Concern (Non-substantive). AL6400 – Alternatives: Support Alternative A.

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N/A – 33; AL6400 – Alternatives: Support Alternative A. MT1000 – Miscellaneous Topics: General Comments.

N/A – 34; AE1022 – Affected Environment: T&E and Species of Concern (Non-substantive). AL7600 – Alternatives: Oppose Alternative B.

N/A – 35; AL6400 – Alternatives: Support Alternative A.

N/A – 36; AL6400 – Alternatives: Support Alternative A.

N/A – 37; AL6400 – Alternatives: Support Alternative A.

N/A – 38; AL4000 – Alternatives: New Alternatives or Elements. AL5020 – Alternative Elements: Camping, Campfires, and Other Amenities. AL5056 – Alternative Elements: Zone System (Non-substantive).

N/A – 39; AL9000 – Alternatives: Alternative D.

N/A – 40; AL6400 – Alternatives: Support Alternative A.

N/A – 41; AL6400 – Alternatives: Support Alternative A.

N/A – 42; AL5046 – Alternative Elements: Permit Requirements (Non-substantive). AL5056 – Alternative Elements: Zone System (Non-substantive). AL6400 – Alternatives: Support Alternative A.

N/A – 43; AL5055 – Alternative Elements: Zone System. AL6400 – Alternatives: Support Alternative A.

N/A – 46; AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 47; AE2000 – Affected Environment: Soils. AL6400 – Alternatives: Support Alternative A. TE4000 – Threatened and Endangered Species: Impact of Proposal and Alternatives.

N/A – 48; AL6400 – Alternatives: Support Alternative A.

N/A – 49; AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive).

N/A – 51; AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 52; AE10065 – Affected Environment: Issues Considered but Dismissed (Non-substantive). AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 54; AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive). AL2011 – Alternatives: Oppose ORV Restrictions (Non-substantive).

N/A – 56; AL2000 – Alternatives: Support ORV Access (Non-substantive). AL5046 – Alternative Elements: Permit Requirements (Non-substantive).

N/A – 57; AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 58; AL4000 – Alternatives: New Alternatives or Elements.

N/A – 59; AL4005 – Alternatives: New Alternatives or Elements (Non-substantive). AL5056 – Alternative Elements: Zone System (Non-substantive).

N/A – 61; AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 62; AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive).

N/A – 63; AL6400 – Alternatives: Support Alternative A.

N/A – 66; AL6400 – Alternatives: Support Alternative A.

N/A – 67; AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 68; AL4000 – Alternatives: New Alternatives or Elements. AL5015 – Alternative Elements: Monitoring and Enforcement (Non-substantive). AL6400 – Alternatives: Support Alternative A.

N/A – 71; AL6400 – Alternatives: Support Alternative A.

N/A – 72; AE10060 – Affected Environment: Issues Considered but Dismissed. AE1030 – Affected Environment: Visitor Use and Experience / Health and Safety. AE1050 – Affected Environment: Management and Operations. AL4000 – Alternatives: New Alternatives or Elements. AL5010 – Alternative Elements: Monitoring and Enforcement. AL5035 – Alternative Elements: Equipment Requirements. AL5045 – Alternative Elements: Permit Requirements. AL5050 – Alternative Elements: Designated Vehicle Routes/Areas. AL5055 – Alternative Elements: Zone System. AL5065 – Alternative Elements: Education and Outreach. AL6000 – Alternatives: Alternative A. MO4000 – Management and Operations: Impact of Proposal and Alternatives.

N/A – 74; AL5020 – Alternative Elements: Camping, Campfires, and Other Amenities. AL5036 – Alternative Elements: Equipment Requirements (Non-substantive). AL5040 – Alternative Elements: Speed Limits. AL5045 – Alternative Elements: Permit Requirements. AL5050 – Alternative Elements: Designated Vehicle Routes/Areas. AL7000 – Alternatives: Alternative B.

N/A – 76; AL6400 – Alternatives: Support Alternative A.

N/A – 78; AL6400 – Alternatives: Support Alternative A.

N/A – 80; AL5020 – Alternative Elements: Camping, Campfires, and Other Amenities.

N/A – 82; AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 83; AL6400 – Alternatives: Support Alternative A.

N/A – 86; AL6400 – Alternatives: Support Alternative A.

N/A – 87; AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 88; AL6400 – Alternatives: Support Alternative A.

N/A – 89; AL6400 – Alternatives: Support Alternative A.

N/A – 92; AL2000 – Alternatives: Support ORV Access (Non-substantive).

N/A – 94; AL6400 – Alternatives: Support Alternative A.

N/A – 99; AL5046 – Alternative Elements: Permit Requirements (Non-substantive).

N/A – 100; AL6400 – Alternatives: Support Alternative A.

N/A – 101; AL6400 – Alternatives: Support Alternative A.

N/A – 102; AL9000 – Alternatives: Alternative D.

N/A – 103; AL4000 – Alternatives: New Alternatives or Elements. AL5066 – Alternative Elements: Education and Outreach (Non-substantive). AL9400 – Alternatives: Support Alternative D.

N/A – 104; AL4000 – Alternatives: New Alternatives or Elements.

N/A – 105; AL6400 – Alternatives: Support Alternative A.

N/A – 106; AE10060 – Affected Environment: Issues Considered but Dismissed. AE1010 – Affected Environment: Soundscapes and Acoustic Environment. AL4000 – Alternatives: New Alternatives or Elements.

N/A – 107; AL6400 – Alternatives: Support Alternative A.

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N/A – 108; AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive). AL6400 – Alternatives: Support Alternative A.

N/A – 109; AL6400 – Alternatives: Support Alternative A.

N/A – 110; AL4000 – Alternatives: New Alternatives or Elements. AL6400 – Alternatives: Support Alternative A.

N/A – 111; AL6400 – Alternatives: Support Alternative A.

N/A – 112; AL6400 – Alternatives: Support Alternative A.

N/A – 114; AE2000 – Affected Environment: Soils.

N/A – 115; AL6400 – Alternatives: Support Alternative A.

none – 73; AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive).

PEA – 18; AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive).

PEA – 79; AL5055 – Alternative Elements: Zone System.

Post Enduro Association, AFD retired – 23; AE2000 – Affected Environment: Soils.

Riders – 70; AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive).

self – 3; AL6400 – Alternatives: Support Alternative A.

Texas Off-Roaders – 31; AE2005 – Affected Environment: Soils (Non-substantive).

Texas offroaders – 20; AL6400 – Alternatives: Support Alternative A. CC1000 – Consultation and Coordination: General Comments. PN4000 – Purpose and Need: Park Legislation/Authority.

Texas off roaders asso. – 96; AL6400 – Alternatives: Support Alternative A.

Texas Off Roaders Assoc. – 16; AL2000 – Alternatives: Support ORV Access (Non-substantive).

Texas Off Roaders Association – 29; AL5045 – Alternative Elements: Permit Requirements. AL6400 – Alternatives: Support Alternative A. AL9400 – Alternatives: Support Alternative D.

Tora – 45; AL2000 – Alternatives: Support ORV Access (Non-substantive).

Tora – 77; AL6400 – Alternatives: Support Alternative A.

TORA – 65; AL6200 – Alternatives: Alternative A (Non-substantive). AL6400 – Alternatives: Support Alternative A.

TRH – 12; AL6400 – Alternatives: Support Alternative A.

Track & Trail Sports Riders – 91; AL9000 – Alternatives: Alternative D.

Track and Trail, AMA – 64; AL6400 – Alternatives: Support Alternative A.

West Texas Outlaws Off Road Club – 81; AE10060 – Affected Environment: Issues Considered but Dismissed. AE2000 – Affected Environment: Soils. AL4000 – Alternatives: New Alternatives or Elements. AL7400 – Alternatives: Support Alternative B. GA1000 – Impact Analysis: Impact Analyses.

## **INDEX BY CODE**

### **Index by Code (04/10/2013)**

#### **AE10060 – Affected Environment: Issues Considered but Dismissed**

AMA – 85  
American Motorcyclist Association – 6  
N/A – 72, 106  
US Environmental Protection Agency – Region 6 – 116  
West Texas Outlaws Off Road Club – 81

#### **AE10065 – Affected Environment: Issues Considered but Dismissed (Non-substantive)**

N/A – 52

#### **AE1010 – Affected Environment: Soundscapes and Acoustic Environment**

N/A – 106

#### **AE1022 – Affected Environment: T&E and Species of Concern (Non-substantive)**

N/A – 32, 34

#### **AE1030 – Affected Environment: Visitor Use and Experience / Health and Safety**

N/A – 72

#### **AE1035 – Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive)**

Mx – 84  
N/A – 8, 19, 49, 54, 62, 108  
none – 73  
PEA – 18  
Riders – 70

#### **AE1050 – Affected Environment: Management and Operations**

N/A – 72

#### **AE15000 – Affected Environment: Archeology Resources**

State Historic Preservation Officer – 113

#### **AE2000 – Affected Environment: Soils**

AMA – 85  
N/A – 47, 114  
Post Enduro Association, AFD retired – 23  
West Texas Outlaws Off Road Club – 81

**AE2005 – Affected Environment: Soils (Non-substantive)**

Texas Off-Roaders – 31

**AL1001 – Alternatives: Elements Common to All Alternatives (Non-substantive)**

N/A – 1

**AL2000 – Alternatives: Support ORV Access (Non-substantive)**

Mudd Inc – 60

MUDD INC. – 55

N/A – 1, 2, 28, 46, 51, 52, 56, 57, 61, 67, 82, 87, 92

Texas Off Roaders Assoc. – 16

Tora – 45

**AL2010 – Alternatives: Support ORV Restrictions (Non-substantive)**

N/A – 13

**AL2011 – Alternatives: Oppose ORV Restrictions (Non-substantive)**

American Motorcyclist Association – 6

N/A – 4, 54

**AL4000 – Alternatives: New Alternatives or Elements**

Local resident – 95

N/A – 1, 25, 38, 58, 68, 72, 103, 104, 106, 110

West Texas Outlaws Off Road Club – 81

**AL4005 – Alternatives: New Alternatives or Elements (Non-substantive)**

N/A – 59

**AL5010 – Alternative Elements: Monitoring and Enforcement**

N/A – 1, 13, 72

**AL5015 – Alternative Elements: Monitoring and Enforcement (Non-substantive)**

N/A – 68

**AL5020 – Alternative Elements: Camping, Campfires, and Other Amenities**

N/A – 38, 74, 80

**AL5030 – Alternative Elements: Vehicle Requirements**

N/A – 22

**AL5035 – Alternative Elements: Equipment Requirements**

N/A – 72

**AL5036 – Alternative Elements: Equipment Requirements (Non-substantive)**

N/A – 74

**AL5040 – Alternative Elements: Speed Limits**

N/A – 74

**AL5045 – Alternative Elements: Permit Requirements**

avid off-roader with kids! – 14

MUDD INC. – 53

N/A – 1, 72, 74

Texas Off Roaders Association – 29

**AL5046 – Alternative Elements: Permit Requirements (Non-substantive)**

Amarillo Off Road Association – 44

N/A – 1, 42, 56, 99

**AL5050 – Alternative Elements: Designated Vehicle Routes/Areas**

N/A – 72, 74

**AL5055 – Alternative Elements: Zone System**

American Motorcyclist Association – 6

N/A – 24, 43, 72

PEA – 79

**AL5056 – Alternative Elements: Zone System (Non-substantive)**

avid off-roader with kids! – 14

N/A – 38, 42, 59

**AL5065 – Alternative Elements: Education and Outreach**

N/A – 1, 72

**AL5066 – Alternative Elements: Education and Outreach (Non-substantive)**

N/A – 103

**AL6000 – Alternatives: Alternative A**

N/A – 72

**AL6200 – Alternatives: Alternative A (Non-substantive)**

TORA – 65

**AL6400 – Alternatives: Support Alternative A**

AMA – 85, 90

avid off-roader with kids! – 14

High Plains Offroad – 69

JUST A PRIVATE CITIZEN – 7

Mass Carnage Offroad – 50

motor cycle riders – 75

N/A – 9, 10, 11, 17, 19, 25, 32, 33, 35, 36, 37, 40, 41, 42, 43, 47, 48, 63, 66, 68, 71, 76, 78, 83, 86, 88, 89,  
94, 100, 101, 105, 107, 108, 109, 110, 111, 112, 115

self – 3

Texasoffroaders – 20

Texas off roaders asso. – 96

Texas Off Roaders Association – 29

Tora – 77

TORA – 65

Track and Trail, AMA – 64

TRH – 12

**AL7000 – Alternatives: Alternative B**

N/A – 17, 74

US Environmental Protection Agency – Region 6 – 116

**AL7400 – Alternatives: Support Alternative B**

West Texas Outlaws Off Road Club – 81

**AL7600 – Alternatives: Oppose Alternative B**

Mass Carnage Offroad – 50

N/A – 34

**AL8000 – Alternatives: Alternative C**

US Environmental Protection Agency – Region 6 – 116

**AL8600 – Alternatives: Oppose Alternative C**

Mass Carnage Offroad – 50

**AL9000 – Alternatives: Alternative D**

American Motorcyclist Association – 6

N/A – 39, 102

Track & Trail Sports Riders – 91

**AL9400 – Alternatives: Support Alternative D**

N/A – 103

Texas Off Roaders Association – 29

**AL9600 – Alternatives: Oppose Alternative D**

Mass Carnage Offroad – 50

**AR4000 – Archeology Resources: Impact of Proposal and Alternatives**

State Historic Preservation Officer – 113

**CC1000 – Consultation and Coordination: General Comments**

Texasoffroaders – 20

US Environmental Protection Agency – Region 6 – 116

**GA1000 – Impact Analysis: Impact Analyses**

West Texas Outlaws Off Road Club – 81

**MO4000 – Management and Operations: Impact of Proposal and Alternatives**

N/A – 72

**MT1000 – Miscellaneous Topics: General Comments**

N/A – 15, 33

**PN3000 – Purpose and Need: Scope of the Analysis**

N/A – 30

**PN4000 – Purpose and Need: Park Legislation/Authority**

Texasoffroaders – 20

**TE4000 – Threatened and Endangered Species: Impact of Proposal and Alternatives**

N/A – 47

**VU4005 – Visitor Use and Experience / Health and Safety: Impact of Proposal and Alternatives  
(Non-substantive)**

Mud inc – 93

MUDD INC. – 53

## NON-SUBSTANTIVE COMMENT REPORT

### LAKE MEREDITH NATIONAL RECREATION AREA DRAFT OFF-ROAD VEHICLE MANAGEMENT PLAN / ENVIRONMENTAL IMPACT STATEMENT

#### AE10065 Affected Environment: Issues Considered but Dismissed (Non-substantive)

**Correspondence Id:** 52 **Comment Id:** 312899 **Coder Name:** LORI\_FOX

**Comment Text:** Leave the river and Rosita flats alone. I speak for thousands when I say that's are back yard. Several off road organizations are working more everyday to keep it clean. Please do not change anything. I believe it will effect Amarillo's economy.

**Organization:**

**Commenter:** Aaron M Brown **Page:** Paragraph:

**Kept Private:** No

---

#### AE1022 Affected Environment: T&E and Species of Concern (Non-substantive)

**Correspondence Id:** 32 **Comment Id:** 312858 **Coder Name:** LORI\_FOX

**Comment Text:** I also have heard that an endangered fish lives in the river. All I have to say about that is physically go get out into the river and see if the water gets past your shins. I wouldn't think that would be enough water for anything to survive in.

**Organization:**

**Commenter:** Dustin G Cates **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 34 **Comment Id:** 312863 **Coder Name:** LORI\_FOX

**Comment Text:** Alternative B will restrict riding so much that it simply will not be worth bothering with. Texas has so little, if any, public riding areas as it is. I do not believe that the any of the legal riding activities at the Canadian river has caused a danger to the "endangered" silver minnow--it is simply the lack of water. Reducing ORV use will not save the fish.

**Organization:**

**Commenter:** Mark E Darnell **Page:** Paragraph:

**Kept Private:** No

---

**AE1035 Affected Environment: Visitor Use and Experience / Health and Safety (Non-substantive)**

**Correspondence Id: 8 Comment Id: 310241 Coder Name: LORI\_FOX**

**Comment Text:** My wife and kids drive 4 hrs away to go ride the sand dunes of waynoka. We do this 4 times a year because they know what it is all about. money and helping the little towns out. Whoever is over the lake Needs to see what Waynoka Oklahoma doing. They charger to ride the dunes 10.00 per rider 30.00 a night camping. Call and ask them how much they make during snake hunt weekend.

**Organization:**

**Commenter:** doyle yake **Page: Paragraph:**

**Kept Private:** No

**Correspondence Id: 108 Comment Id: 315667 Coder Name: LORI\_FOX**

**Comment Text:** My friends and family and I have been going to "the river" for as long as I can remember. The place holds many of my good memories. It is a place where we can go get away from society for a little while to find some peace and relaxation.

**Organization:**

**Commenter:** Caleb McGuire **Page: Paragraph:**

**Kept Private:** No

**Correspondence Id: 84 Comment Id: 313139 Coder Name: LORI\_FOX**

**Comment Text:** This will ruin a good family tradition that is many decades long. Please consider that.

**Organization:** Mx

**Commenter:** Roger A Magley **Page: Paragraph:**

**Kept Private:** No

**Correspondence Id: 73 Comment Id: 313079 Coder Name: LORI\_FOX**

**Comment Text:** My family has used the trails at the Canadian River Bridge for many years for recreational purposes that include camping, picnics, riding motorcycles, watching sand drags, four wheeling and teaching the children to drive in a safe environment. It would be ridiculous to shut this area down.

**Organization:** none

**Commenter:** Sandra Black **Page: Paragraph:**

**Kept Private:** No

**Correspondence Id: 54 Comment Id: 312944 Coder Name: LORI\_FOX**

**Comment Text:** Texas is the only State in the U.S. that has a natural river open to the public for off roading. That should say enough as it is. People from other States come to Amarillo just for the Canadian river to off road. They bring in revenue for hotels, sporting good stores, restraints and fuel stations just for the chance to off road free. Off roading is a large part of the Texas image as well.

**Organization:**

**Commenter:** N/A N/A **Page: Paragraph:**

**Kept Private:** No

**Correspondence Id:** 70 **Comment Id:** 312938 **Coder Name:** LORI\_FOX

**Comment Text:** I love the river don't change a thing its perfect the way it is

**Organization:** Riders

**Commenter:** Thomas Paddack **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 62 **Comment Id:** 312922 **Coder Name:** LORI\_FOX

**Comment Text:** when you are out there it feels like you are part of a huge family...where else can you find that???

**Organization:**

**Commenter:** N/A N/A **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 49 **Comment Id:** 312895 **Coder Name:** LORI\_FOX

**Comment Text:** There are not many public places in Texas for ORV use and the private ones are few and far in between. I encourage you to keep the areas up for consideration as useable as possible for everyone. Please don't punish us who do respect and take care of the area because of a few who do not care what they tear up or trash.

**Organization:**

**Commenter:** N/A N/A **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 19 **Comment Id:** 312604 **Coder Name:** LORI\_FOX

**Comment Text:** I was taught by my father how to ride dirt bikes at the Canadian river area in 1967. I enjoyed the river from that point on and continue to do so. I have taught my kids how to ride there also, and soon will be teaching my grandson the same as the rest of the family has learned. We have camped, rode bicycles, rode three wheelers, rode four wheelers and even had a buggy for a while. We have watched the river take many changes, I remember the flood and remember thinking we had lost the river, it did change things. I can't imagine not having this place where so many memories have been made, not only for my family, but for many others too.

**Organization:**

**Commenter:** Todd Snider **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 18 **Comment Id:** 312603 **Coder Name:** LORI\_FOX

**Comment Text:** Rosita flats, the river, means so much to our family. That's where we get away from the stress of life. Please don't take it away.

**Organization:** PEA

**Commenter:** Joe G Graham **Page:** Paragraph:

**Kept Private:** No

---

**AE2005 Affected Environment: Soils (Non-substantive)**

**Correspondence Id:** 31 **Comment Id:** 312856 **Coder Name:** LORI\_FOX

**Comment Text:** The off-roaders have used & enjoyed Rosita Flats since the 40's & all of the sudden "resource preservation" becomes a big deal. Well, You-all closed Honda Hill (on the north side) & the trails up it are clearly visible.

**Organization:** Texas Off-Roaders

**Commenter:** frankie d hamilton **Page:** Paragraph:

**Kept Private:** No

---

**AL1001 Alternatives: Elements Common to All Alternatives (Non-substantive)**

**Correspondence Id:** 1 **Comment Id:** 310278 **Coder Name:** KCHIPMAN

**Comment Text:** ban glass drinks. drink what you want but not in glass. do not drive drunk either. not atvs/utvs/dune buggies/whatever. the glass is a problem. there are too many folks who throw them down and it cuts tires. besides, kids play in the water and the broken glass could injure them.

**Organization:**

**Commenter:** R D Sargent **Page:** Paragraph:

**Kept Private:** No

---

**AL2000 Alternatives: Support ORV Access (Non-substantive)**

**Correspondence Id:** 2 **Comment Id:** 310245 **Coder Name:** LORI\_FOX

**Comment Text:** It would be good for the people in the area to have some options for off road riding. I'm always going to vote yes on more trails or access to trails.

**Organization:**

**Commenter:** roger d Boisjolie **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 92 **Comment Id:** 313149 **Coder Name:** LORI\_FOX

**Comment Text:** Writing to keep Rosita flats open. Simple it good family fun.

**Organization:**

**Commenter:** Troy White **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 87 **Comment Id:** 313144 **Coder Name:** LORI\_FOX

**Comment Text:** I support keeping the Canadian river open for off road enthusiast. It's a place many have enjoyed and should be able to continue to enjoy.

**Organization:**

**Commenter:** Stephen T Havins **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 82 **Comment Id:** 313137 **Coder Name:** LORI\_FOX

**Comment Text:** Please do not take our public land away just cause of a few bad apples.

**Organization:**

**Commenter:** Chris N/A **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 67 **Comment Id:** 312933 **Coder Name:** LORI\_FOX

**Comment Text:** Please leave the Canadian River access unchanged. If you restrict access, you will be eliminating countless opportunities for recreation in our area.

**Organization:**

**Commenter:** David G Park **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 61 **Comment Id:** 312921 **Coder Name:** LORI\_FOX

**Comment Text:** Please don't take this away from us cause of some disrespectful people. It's all we got around here the lake is drying up and were losing everything so please don't take this one thing away.

**Organization:**

**Commenter:** Darik S Schilling **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 60 **Comment Id:** 312920 **Coder Name:** LORI\_FOX

**Comment Text:** No one should take away that place it's the one place that you can let loose and have fun while still being respectful of your surroundings!

**Organization:** Mudd Inc

**Commenter:** Brady M Sayers **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 57 **Comment Id:** 312915 **Coder Name:** LORI\_FOX

**Comment Text:** If you take away our river your not just taking away a place to off road.... Your taking another part of home to a lot of people!!

**Organization:**

**Commenter:** Danella West **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 56 **Comment Id:** 312914 **Coder Name:** LORI\_FOX

**Comment Text:** Keep Rosita Flats and Blue Creek open to our family and friends so we can continue to enjoy the one-of-a-kind experience.

**Organization:**

**Commenter:** Jamie N/A **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 55 **Comment Id:** 312912 **Coder Name:** LORI\_FOX

**Comment Text:** I would love to do anything I can to help keep the river around!!

**Organization:** MUDD INC.

**Commenter:** Chris Helm **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 52 **Comment Id:** 312899 **Coder Name:** LORI\_FOX

**Comment Text:** Leave the river and Rosita flats alone. I speak for thousands when I say that's are back yard. Several off road organizations are working more everyday to keep it clean. Please do not change anything. I believe it will effect Amarillo's economy.

**Organization:**

**Commenter:** Aaron M Brown **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 51 **Comment Id:** 312898 **Coder Name:** LORI\_FOX

**Comment Text:** I feel that the Rosita flats should be kept open to the public to use when they want. Most people that I know that go there always pick up after themselves and others and take care of it. It is really nice to have a place to go play in the mud.

**Organization:**

**Commenter:** Deana Patin **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 46 **Comment Id:** 312889 **Coder Name:** LORI\_FOX

**Comment Text:** so I guess what I'm asking is for you to leave the river open so that we can all still go and enjoy what we have all known as kids to adults and so that we can give that same opportunity to are children

**Organization:**

**Commenter:** Jmaes Guenther **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 45 **Comment Id:** 312888 **Coder Name:** LORI\_FOX

**Comment Text:** Keep Rosita flats open to the public!

**Organization:** Tora

**Commenter:** Shawna Bohn **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 28 **Comment Id:** 312609 **Coder Name:** LORI\_FOX

**Comment Text:** leave the park along and let us ride and have fun

**Organization:**

**Commenter:** toby d jewett **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 16 **Comment Id:** 312600 **Coder Name:** LORI\_FOX

**Comment Text:** It is very important that this area remains open to recreational enthusiasts as there is no other place that we can go to enjoy the riding.

**Organization:** Texas Off Roaders Assoc.

**Commenter:** Daniel M O'Neal **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 1 **Comment Id:** 310282 **Coder Name:** KCHIPMAN

**Comment Text:** i'm glad we have two places here in this area where families can go ride and enjoy the outdoors. i'm glad that LMNRA supports the atv industry, atv hobbies, atv enthusiasts, and hunters alike with these areas.

**Organization:**

**Commenter:** R D Sargent **Page:** Paragraph:

**Kept Private:** No

---

**AL2010 Alternatives: Support ORV Restrictions (Non-substantive)**

**Correspondence Id:** 13 **Comment Id:** 312594 **Coder Name:** LORI\_FOX

**Comment Text:** I think adding fees and requiring permits, giving map of areas where these vehicles may go and highlight areas where they are banned. They have a great amount of impact on wildlife. I think the areas where they are allowed you should give yearly permits so the "outdoorsy" people who ride these things can go have fun tearing up the trails.

**Organization:**

**Commenter:** laurie s keick **Page:** Paragraph:

**Kept Private:** No

---

**AL2011 Alternatives: Oppose ORV Restrictions (Non-substantive)**

**Correspondence Id:** 4 **Comment Id:** 310247 **Coder Name:** LORI\_FOX

**Comment Text:** I am against the further closure of trails historically used for OHV access and fully support the public's right to access public lands, within reason and with safety in mind, for recreational purposes.

**Organization:**

**Commenter:** Edwin Quinones **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 54 **Comment Id:** 312942 **Coder Name:** LORI\_FOX

**Comment Text:** I'm against closing down Rosita Flats and any other part of the Canadian river for off roading.

**Organization:**

**Commenter:** N/A N/A **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 6 **Comment Id:** 310288 **Coder Name:** KCHIPMAN

**Comment Text:** The DEIS will unfairly limit access to an important recreation area. The preferred alternative will increase the costs associated with OHV use while, at the same time, limiting the areas available for responsible OHV use.

**Organization:** American Motorcyclist Association

**Commenter:** Wayne Allard **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 6 **Comment Id:** 310284 **Coder Name:** KCHIPMAN

**Comment Text:** The AMA takes issue with alternatives B, C, and D in the DEIS because they would drastically restrict responsible OHV use in the Lake Meredith National Recreation Area.

**Organization:** American Motorcyclist Association

**Commenter:** Wayne Allard **Page:** **Paragraph:**

**Kept Private:** No

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**AL4005 Alternatives: New Alternatives or Elements (Non-substantive)**

**Correspondence Id:** 59 **Comment Id:** 312918 **Coder Name:** LORI\_FOX

**Comment Text:** No glass bottles we support!

**Organization:**

**Commenter:** N/A N/A **Page:** **Paragraph:**

**Kept Private:** No

---

**AL5015 Alternative Elements: Monitoring and Enforcement (Non-substantive)**

**Correspondence Id:** 68 **Comment Id:** 312936 **Coder Name:** LORI\_FOX

**Comment Text:** If you really and truly want to help the river, become part of the ranger team there. Enforce the rules that are there now.

**Organization:**

**Commenter:** Kris L Hubbard **Page:** **Paragraph:**

**Kept Private:** No

---

**AL5036 Alternative Elements: Equipment Requirements (Non-substantive)**

**Correspondence Id:** 74 **Comment Id:** 313094 **Coder Name:** LORI\_FOX

**Comment Text:** I agree with the following statements: As described in Chapter 1 Page viii: Operator/Vehicle Requirements-Additional operator/vehicle requirements would be implemented and would include the following: All ORVs would be required to have a functioning muffler system, a qualified spark arrester (ATVs only), and functioning headlights and taillights. If a vehicle does not have functioning headlights or taillights, it would be permitted to operate during the day, but not after dark. All ATVs would be required to have a triangular orange flag on top of an 8-foot pole attached to the back of the vehicle. All ORVs would be required to display lighted headlights and taillights after dark. Waste Disposal-The NPS would continue to provide waste disposal services at Blue Creek and Rosita Flats and would develop new educational programs/materials for clarifying issues such as proper waste disposal techniques.

**Organization:**

**Commenter:** Carrie Hoffman **Page:** Paragraph:

**Kept Private:** No

---

**AL5046 Alternative Elements: Permit Requirements (Non-substantive)**

**Correspondence Id:** 1 **Comment Id:** 310283 **Coder Name:** KCHIPMAN

**Comment Text:** i would have no problem with paying for a permit to play. privately owned atv parks require this, so i have no problems with NPS requiring this also.

**Organization:**

**Commenter:** R D Sargent **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 99 **Comment Id:** 313155 **Coder Name:** LORI\_FOX

**Comment Text:** I think Rosita Flats should require an off-road sticker, which it already does.

**Organization:**

**Commenter:** Eric N/A **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 56 **Comment Id:** 312913 **Coder Name:** LORI\_FOX

**Comment Text:** We don't have new toys, we have toys that we take care of and maintain because we can't afford the new ones any more than we can afford to pay a bunch of fees for everything from camping to decals.

**Organization:**

**Commenter:** Jamie N/A **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 44 **Comment Id:** 312887 **Coder Name:** LORI\_FOX

**Comment Text:** that's what is wrong with our country now, where is all the money going to that we pay each year for our off road permit????

**Organization:** Amarillo Off Road Association

**Commenter:** Tracie M West **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 42 **Comment Id:** 312885 **Coder Name:** LORI\_FOX

**Comment Text:** I completely support a fee system as long as it gives facilities to the area and keeps the rules enforced, but I do not like a width limit of 5 feet on any trail, nor do I agree that I can't ride in a area during rifle season because I ride year round. Until a option that works for everyone is presented I choose option A (NO ACTION) be taken.

**Organization:**

**Commenter:** Dewey E Mincey **Page:** Paragraph:

**Kept Private:** No

---

**AL5056 Alternative Elements: Zone System (Non-substantive)**

**Correspondence Id:** 14 **Comment Id:** 312597 **Coder Name:** LORI\_FOX

**Comment Text:** I DO NOT support the designation of any areas for any specific use. I DO NOT support additional regulations or restrictions for these areas. I DO NOT support the construction of restrooms, picnic areas or the like in these areas because the inevitable "bad apple" can ruin them in no time at all.

**Organization:** avid off-roader with kids!

**Commenter:** James Pringle **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 59 **Comment Id:** 312919 **Coder Name:** LORI\_FOX

**Comment Text:** The idea of no access during hunting season is not supported. Weather permitting we usually spend lots of time at the river during this time.

**Organization:**

**Commenter:** N/A N/A **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 42 **Comment Id:** 312885 **Coder Name:** LORI\_FOX

**Comment Text:** I completely support a fee system as long as it gives facilities to the area and keeps the rules enforced, but I do not like a width limit of 5 feet on any trail, nor do I agree that I can't ride in a area during rifle season because I ride year round. Until a option that works for everyone is presented I choose option A (NO ACTION) be taken.

**Organization:**

**Commenter:** Dewey E Mincey **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 38 **Comment Id:** 312875 **Coder Name:** LORI\_FOX

**Comment Text:** We do not want the trails to be split, we want to be able to ride with our family and friends.

**Organization:**

**Commenter:** Susan Huff **Page:** Paragraph:  
**Kept Private:** No

---

**AL5066 Alternative Elements: Education and Outreach (Non-substantive)**

**Correspondence Id:** 103 **Comment Id:** 313179 **Coder Name:** LORI\_FOX

**Comment Text:** Education and outreach section of the plan sounds like a great idea. The more you can inform people of the land the more they will respect it and take care of it.

**Organization:**

**Commenter:** Harley Lewis **Page:** Paragraph:

**Kept Private:** No

---

**AL6200 Alternatives: Alternative A (Non-substantive)**

**Correspondence Id:** 65 **Comment Id:** 312928 **Coder Name:** LORI\_FOX

**Comment Text:** Please be advised, in the event any option other than (Option A) is chosen, a formal petition process will be initiated.

**Organization:** TORA

**Commenter:** Texas Off-Roaders Association N/A **Page:** Paragraph:

**Kept Private:** No

---

**AL6400 Alternatives: Support Alternative A (Non-substantive)**

**Correspondence Id:** 7 **Comment Id:** 310242 **Coder Name:** LORI\_FOX

**Comment Text:** Our children and grandchildren find this area a great place to go for safe and fund family outings. We urge you to consider Option A "No action preferred.

**Organization:** JUST A PRIVATE CITIZEN

**Commenter:** LAWRENCE G PICKENS **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 115 **Comment Id:** 315685 **Coder Name:** LORI\_FOX

**Comment Text:** I would like to support Option A.

**Organization:**

**Commenter:** Trevor Kitts **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 112 **Comment Id:** 315676 **Coder Name:** LORI\_FOX

**Comment Text:** This area is great as is ? I chose A. All the regulations are unnecessary and intrusive.

**Organization:**

**Commenter:** Terri Kitts **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 111 **Comment Id:** 315675 **Coder Name:** LORI\_FOX

**Comment Text:** Alternative A! Stay on the other end of the lake!

**Organization:**

**Commenter:** Tom Kitts **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 110 **Comment Id:** 315672 **Coder Name:** LORI\_FOX

**Comment Text:** Please leave things just as they are (Plan A?).

**Organization:**

**Commenter:** Arthur G Forter **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 109 **Comment Id:** 315669 **Coder Name:** LORI\_FOX

**Comment Text:** I support option "A".

**Organization:**

**Commenter:** Caleb McGuire **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 108 **Comment Id:** 315666 **Coder Name:** LORI\_FOX

**Comment Text:** I support option "A".

**Organization:**

**Commenter:** Caleb McGuire **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 107 **Comment Id:** 315303 **Coder Name:** LORI\_FOX

**Comment Text:** There is No Need for Action! Alternative "A" as is.

**Organization:**

**Commenter:** J Coker **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 105 **Comment Id:** 313183 **Coder Name:** LORI\_FOX

**Comment Text:** – There was little done about the recreational value of Lake Meredith before it was drained. Please don't let the river suffer the same fate. Alt A. – Leave things the way they are! Alt A. Leave it alone!!!

**Organization:**

**Commenter:** N/A **Page:** Paragraph:  
**Kept Private:** No

**Correspondence Id:** 100 **Comment Id:** 313156 **Coder Name:** LORI\_FOX  
**Comment Text:** Plan A at the least. Save some money lord knows the Fed needs that.  
**Organization:**  
**Commenter:** N/A **Page:** Paragraph:  
**Kept Private:** No

**Correspondence Id:** 96 **Comment Id:** 313153 **Coder Name:** LORI\_FOX  
**Comment Text:** Option A is what I want... NO CHANGE  
**Organization:** Texas off roaders asso.  
**Commenter:** Tim Young **Page:** Paragraph:  
**Kept Private:** No

**Correspondence Id:** 94 **Comment Id:** 313151 **Coder Name:** LORI\_FOX  
**Comment Text:** I have been using and riding the lake Meredith and Canadian river riding area for close to 15 years now and plan on the continuation of being able to use it so I'm imputing Alternative A or No Action.  
**Organization:**  
**Commenter:** Shannon Pulliam **Page:** Paragraph:  
**Kept Private:** No

**Correspondence Id:** 90 **Comment Id:** 313147 **Coder Name:** LORI\_FOX  
**Comment Text:** As a responsible off road vehicle user, I adamantly support Alternative A or No Action.  
**Organization:** AMA  
**Commenter:** Michelle Hill **Page:** Paragraph:  
**Kept Private:** No

**Correspondence Id:** 89 **Comment Id:** 313146 **Coder Name:** LORI\_FOX  
**Comment Text:** We have reviewed the options; please consider option A so we can continue our family outings utilization of public lands.  
**Organization:**  
**Commenter:** Kaylyn M Drake **Page:** Paragraph:  
**Kept Private:** No

**Correspondence Id:** 88 **Comment Id:** 313145 **Coder Name:** LORI\_FOX  
**Comment Text:** i chose alternative "A" or no action.  
**Organization:**  
**Commenter:** stirling r beck **Page:** Paragraph:  
**Kept Private:** No

**Correspondence Id:** 86 **Comment Id:** 313143 **Coder Name:** LORI\_FOX

**Comment Text:** The most logical proposal is Alternative A or "No Action".

**Organization:**

**Commenter:** N/A **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 85 **Comment Id:** 313142 **Coder Name:** LORI\_FOX

**Comment Text:** I fervidly endorse Alt. A or No Action.

**Organization:** AMA

**Commenter:** Matt Wright **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 83 **Comment Id:** 313138 **Coder Name:** LORI\_FOX

**Comment Text:** I have read the 2010 EIS for lake merideth recreation area and I implore you to take alternative action A or "no action".

**Organization:**

**Commenter:** Frank Blankenship **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 78 **Comment Id:** 313118 **Coder Name:** LORI\_FOX

**Comment Text:** OPTION A NO ACTION IS WHAT I CHOOSE

**Organization:**

**Commenter:** Lendon L Hill **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 77 **Comment Id:** 313116 **Coder Name:** LORI\_FOX

**Comment Text:** As a responsible an avid user of the Canadian river and Rosita flats area it troubles me to think this recreational areas could become more restricted to motorcycles and atv use in any way please take notice that though I disagree with any changes and would like option a or no action at all be taken

**Organization:** Tora

**Commenter:** Justin Johnson **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 76 **Comment Id:** 313115 **Coder Name:** LORI\_FOX

**Comment Text:** Option A, please!

**Organization:**

**Commenter:** N/A **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 75 **Comment Id:** 313114 **Coder Name:** LORI\_FOX

**Comment Text:** Plan A is clearly the best choice.

**Organization:** motor cycle riders

**Commenter:** Douglas Black **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 101 **Comment Id:** 313077 **Coder Name:** LORI\_FOX

**Comment Text:** I SUPPORT PLAN A

**Organization:**

**Commenter:** randy l black **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 71 **Comment Id:** 312939 **Coder Name:** LORI\_FOX

**Comment Text:** I think that Alternative A is the best option, and the only feasible one at that.

**Organization:**

**Commenter:** David T Sparks **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 69 **Comment Id:** 312937 **Coder Name:** LORI\_FOX

**Comment Text:** I choose option A...My group respects these lands & would love to be able to share it with our children & children's children...

**Organization:** High Plains Offroad

**Commenter:** Blaine Bolton **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 68 **Comment Id:** 312934 **Coder Name:** LORI\_FOX

**Comment Text:** I'm voting for plan A.

**Organization:**

**Commenter:** Kris L Hubbard **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 66 **Comment Id:** 312932 **Coder Name:** LORI\_FOX

**Comment Text:** That's why I choose Alternative A!!! "NO ACTION"

**Organization:**

**Commenter:** N/A Wilkins **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 65 **Comment Id:** 312927 **Coder Name:** LORI\_FOX

**Comment Text:** Texas Off-Roader's Association (TORA) official position for the National Park Service (NPS) planning proposal is Plan A (NO ACTION.)

**Organization:** TORA

**Commenter:** Texas Off-Roaders Association N/A **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 64 **Comment Id:** 312926 **Coder Name:** LORI\_FOX

**Comment Text:** The best option for anyone with the same concerns as mine is option A. No. Action.

**Organization:** Track and Trail, AMA

**Commenter:** Beau R Gabert **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 63 **Comment Id:** 312925 **Coder Name:** LORI\_FOX

**Comment Text:** It would be a shame to lose the unrestricted use of The Rosita Flats area that has been an offroad Meca for families to enjoy for so many years. This is the reason that i feel that option "A" (NO ACTION) is the logical choice.

**Organization:**

**Commenter:** Mike W Buescher **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 50 **Comment Id:** 312896 **Coder Name:** LORI\_FOX

**Comment Text:** official position for the National Park Service (NPS) planning proposal is Plan A (NO ACTION.)

**Organization:** Mass Carnage Offroad

**Commenter:** Shane Broaddus **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 48 **Comment Id:** 312894 **Coder Name:** LORI\_FOX

**Comment Text:** I encourage those entrusted with this decision to vote "no action".

**Organization:**

**Commenter:** Leah M McNatt **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 47 **Comment Id:** 312890 **Coder Name:** LORI\_FOX

**Comment Text:** I would like to suggest that at this time you please consider the "No action" plan for the Rosita Flats area in the Texas Panhandle.

**Organization:**

**Commenter:** Steve R Sell **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 43 **Comment Id:** 312886 **Coder Name:** LORI\_FOX

**Comment Text:** However, it is impossible to keep everyone happy so if I had to choose plan A or B, I would choose "A"

**Organization:**

**Commenter:** Steven K Bandy **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 42 **Comment Id:** 312885 **Coder Name:** LORI\_FOX

**Comment Text:** I completely support a fee system as long as it gives facilities to the area and keeps the rules enforced, but I do not like a width limit of 5 feet on any trail, nor do I agree that I can't ride in a area during rifle season because I ride year round. Until a option that works for everyone is presented I choose option A (NO ACTION) be taken.

**Organization:**

**Commenter:** Dewey E Mincey **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 41 **Comment Id:** 312884 **Coder Name:** LORI\_FOX

**Comment Text:** As a responsible and avid OHV user at the Canadian River in North Texas I believe the area should remain AS IS. Therefore "NO ACTION" should be taken.

**Organization:**

**Commenter:** Shane Hulen **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 40 **Comment Id:** 312883 **Coder Name:** LORI\_FOX

**Comment Text:** As a responsible and avid OHV user at the Canadian River in North Texas I believe the area should remain AS IS. Therefore "NO ACTION" should be taken.

**Organization:**

**Commenter:** Shane Hulen **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 37 **Comment Id:** 312870 **Coder Name:** LORI\_FOX

**Comment Text:** The most logical proposal is Alternative A or "No Action".

**Organization:**

**Commenter:** Dawson K Hodges **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 36 **Comment Id:** 312869 **Coder Name:** LORI\_FOX

**Comment Text:** The most logical proposal is Alternative A or "No Action".

**Organization:**

**Commenter:** Randy K Hodges **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 35 **Comment Id:** 312866 **Coder Name:** LORI\_FOX

**Comment Text:** In reviewing the January 2010 EIS for the Lake Meredith National recreational area, I see only one option that will continue to offer the benefits aforementioned. Alternative "A", or no action.

**Organization:**

**Commenter:** Allen Sechrist **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 33 **Comment Id:** 312860 **Coder Name:** LORI\_FOX

**Comment Text:** Please choose plan A, no action

**Organization:**

**Commenter:** Rusty G Cates **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 32 **Comment Id:** 312857 **Coder Name:** LORI\_FOX

**Comment Text:** Please choose plan A, no action.

**Organization:**

**Commenter:** Dustin G Cates **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 29 **Comment Id:** 312854 **Coder Name:** LORI\_FOX

**Comment Text:** I have read the Management Plan in detail and at this time I would submit for strong consideration of Alternative A: No Action ? Continuation of Current Management. My second choice for consideration would be Alternative D: Management through Use of a Zoning and Permitting System at Current ORV Use Areas.

**Organization:** Texas Off Roaders Association

**Commenter:** Jack D Hall **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 25 **Comment Id:** 312613 **Coder Name:** LORI\_FOX

**Comment Text:** I submit my comments in support of option A regarding the proposed changes to the Lake Meredith off road vehicle management plan.

**Organization:**

**Commenter:** George P Rasco **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 20 **Comment Id:** 312606 **Coder Name:** LORI\_FOX

**Comment Text:** Concerning the proposed alternatives that the NPS has given the "stakeholders" in the Amarillo area I must vote for A, No Action.

**Organization:** Texasoffroaders

**Commenter:** Mark Self **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 19 **Comment Id:** 312605 **Coder Name:** LORI\_FOX

**Comment Text:** I am asking that you choose Alt A at this time.

**Organization:**

**Commenter:** Todd Snider **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 17 **Comment Id:** 312601 **Coder Name:** LORI\_FOX

**Comment Text:** The most logical proposal is Alternative A or "No Action".

**Organization:**

**Commenter:** Danny South **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 14 **Comment Id:** 312598 **Coder Name:** LORI\_FOX

**Comment Text:** I DO support the option of making no changes and leaving these area as they are.

**Organization:** avid off-roader with kids!

**Commenter:** James Pringle **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 12 **Comment Id:** 312593 **Coder Name:** LORI\_FOX

**Comment Text:** I would suggest Option A.

**Organization:** TRH

**Commenter:** robert c granger **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 11 **Comment Id:** 312592 **Coder Name:** LORI\_FOX

**Comment Text:** i would like to put my vote in for option A...no change.. i have ridden motorcycles at the river my entire adult life... i have taught my kids to ride there also.. i feel it is our only avenue for this type of riding anywhere close to Amarillo.

**Organization:**

**Commenter:** jay hendricks **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 10 **Comment Id:** 312591 **Coder Name:** LORI\_FOX

**Comment Text:** OPTION A PLEASE!! NO ACTION PREFERRED!!!

**Organization:**

**Commenter:** Nancy T Kuker **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 9 **Comment Id:** 310645 **Coder Name:** LORI\_FOX

**Comment Text:** Please pursue the "Option A, No Action Preferred" and save our last family recreation area for generations to come.

**Organization:**

**Commenter:** craig phipps **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 3 **Comment Id:** 310246 **Coder Name:** LORI\_FOX

**Comment Text:** I endorse the AMA draft response to proposed future restriction of OR vehicles in said Area, and hope it will remain open for my future enjoyment of this great recreation resource.

**Organization:** self

**Commenter:** Arthur B Robertson III **Page:** **Paragraph:**

**Kept Private:** No

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**AL7400 Alternatives: Support Alternative B (Non-substantive)**

**Correspondence Id:** 81 **Comment Id:** 313125 **Coder Name:** LORI\_FOX

**Comment Text:** I would prefer the option "A" but was told at the scoping in Fritch that "A" could not be an option so I choose "B" but under protest.

**Organization:** West Texas Outlaws Off Road Club

**Commenter:** Jennifer h Johnson **Page:** **Paragraph:**

**Kept Private:** No

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**AL7600 Alternatives: Oppose Alternative B (Non-substantive)**

**Correspondence Id:** 34 **Comment Id:** 312863 **Coder Name:** LORI\_FOX

**Comment Text:** Alternative B will restrict riding so much that it simply will not be worth bothering with. Texas has so little, if any, public riding areas as it is. I do not believe that the any of the legal riding activities at the Canadian river has caused a danger to the "endangered" silver minnow--it is simply the lack of water. Reducing ORV use will not save the fish.

**Organization:**

**Commenter:** Mark E Darnell **Page:** **Paragraph:**

**Kept Private:** No

**Correspondence Id:** 50 **Comment Id:** 312897 **Coder Name:** LORI\_FOX

**Comment Text:** I feel plan B, C and D are not options that will provide consistent and OHV user friendly options for the Texas Panhandle off-roaders. Again, any option other than (OPTION A) will unnecessarily restrict access and will infringe on the rights of the users of LAKE MEREDITH NATIONAL PARK RECREATIONAL AREA.

**Organization:** Mass Carnage Offroad

**Commenter:** Shane Broaddus **Page:** **Paragraph:**

**Kept Private:** No

---

**AL8600 Alternatives: Oppose Alternative C (Non-substantive)**

**Correspondence Id:** 50 **Comment Id:** 312897 **Coder Name:** LORI\_FOX

**Comment Text:** I feel plan B, C and D are not options that will provide consistent and OHV user friendly options for the Texas Panhandle off-roaders. Again, any option other than (OPTION A) will unnecessarily restrict access and will infringe on the rights of the users of LAKE MEREDITH NATIONAL PARK RECREATIONAL AREA.

**Organization:** Mass Carnage Offroad

**Commenter:** Shane Broaddus **Page:** Paragraph:  
**Kept Private:** No

---

**AL9400 Alternatives: Support Alternative D (Non-substantive)**

**Correspondence Id:** 29 **Comment Id:** 312854 **Coder Name:** LORI\_FOX

**Comment Text:** I have read the Management Plan in detail and at this time I would submit for strong consideration of Alternative A: No Action ? Continuation of Current Management. My second choice for consideration would be Alternative D: Management through Use of a Zoning and Permitting System at Current ORV Use Areas.

**Organization:** Texas Off Roaders Association

**Commenter:** Jack D Hall **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 103 **Comment Id:** 313180 **Coder Name:** LORI\_FOX

**Comment Text:** The alternative D sounds like it does the most for the state and the ORV operator.

**Organization:**

**Commenter:** Harley Lewis **Page:** Paragraph:

**Kept Private:** No

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**AL9600 Alternatives: Oppose Alternative D (Non-substantive)**

**Correspondence Id:** 50 **Comment Id:** 312897 **Coder Name:** LORI\_FOX

**Comment Text:** I feel plan B, C and D are not options that will provide consistent and OHV user friendly options for the Texas Panhandle off-roaders. Again, any option other than (OPTION A) will unnecessarily restrict access and will infringe on the rights of the users of LAKE MEREDITH NATIONAL PARK RECREATIONAL AREA.

**Organization:** Mass Carnage Offroad

**Commenter:** Shane Broaddus **Page:** Paragraph:

**Kept Private:** No

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**MT1000 Miscellaneous Topics: General Comments (Non-substantive)**

**Correspondence Id:** 15 **Comment Id:** 312599 **Coder Name:** LORI\_FOX

**Comment Text:** Find it sad that our government keeps taking away land from the tax payers, to all current government officials you will not get my vote for reelection

**Organization:**

**Commenter:** Scott A Smith **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 33 **Comment Id:** 312861 **Coder Name:** LORI\_FOX

**Comment Text:** I understand that mountain bike trails are wanting to be put in. Have you ever tried to ride a bicycle in sand? It is not an easy feat. Obviously Palo Duro Canyon is closer to Amarillo, already has trails, and is the best place to ride mountain bikes by far. Spend the money, man hours, and resources elsewhere where it is actually needed.

**Organization:**

**Commenter:** Rusty G Cates **Page:** Paragraph:

**Kept Private:** No

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**VU4005 Visitor Use and Experience / Health and Safety: Impact of Proposal and Alternatives**  
(Non-substantive)

**Correspondence Id:** 53 **Comment Id:** 312900 **Coder Name:** LORI\_FOX

**Comment Text:** Taking this recreation away or limiting it from our family's and our youth that learn so much from it is a big mistake. Please understand that it is a much needed area for the future of our kids learning to hunt, camp and respect outdoors and wildlife.

**Organization:** MUDD INC.

**Commenter:** Jeremy Helm **Page:** Paragraph:

**Kept Private:** No

**Correspondence Id:** 93 **Comment Id:** 313150 **Coder Name:** LORI\_FOX

**Comment Text:** I thank by closing down the river or changing up going to the river more crimes well be taking place and me and my 6 kids want have anything to do together they love going.

**Organization:** Mud inc

**Commenter:** Jerry D Green **Page:** Paragraph:

**Kept Private:** No



**ATTACHMENT 1: GOVERNMENT AGENCY AND  
ORGANIZATION LETTERS RECEIVED DURING  
CONSULTATION AND THE PUBLIC COMMENT PERIOD**

**TEXAS HISTORICAL COMMISSION**  
*real places telling real stories*

March 6, 2013

Acting Superintendent  
Darren Bryant  
National Park Service  
Lake Meredith National Recreation Area  
P.O. Box 1460  
Fritch, Texas 79036

Re: Project review under the National Historic Preservation Act: Off Road Vehicle Management Plan and Draft Environmental Impact Statement (NPS: Track #201304593)

Dear Acting Superintendent:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Tiffany Osburn, has completed its review. We appreciate the opportunity to review and comment on the above reference management plan. The document is incorrect in stating that none of the recorded sites within the boundaries of the Lake Meredith National Recreation Area are listed in or considered eligible for listing in the National Register. Our records indicate that many sites within the national recreation area have been determined eligible and the vast majority have undetermined eligibility.

Of the 20 or more previously recorded sites within the portion of the Lake Meredith NRA immediately surrounding the Rosita Flats ORV use area, most have undetermined eligibility and at least one has been determined eligible. Several of these sites actually fall within the highlighted Rosita Flats ORV use area. While no sites have been recorded within the sandy bottom area of the Blue Creek ORV, many sites are adjacent to the creek within the Lake Meredith NRA boundary. Most of these have not been evaluated for NRHP eligibility.

Sites that have undetermined eligibility status should be treated as though they are eligible or avoided entirely until eligibility can be determined. We have concerns that the proposed plan will adversely affect these cultural resources. It is also likely that unrecorded cultural resources are located in these areas and we would recommend a survey to determine the presence of additional cultural resources and assessment of new and previously recorded cultural resources.



**TEXAS HISTORICAL COMMISSION**  
*real places telling real stories*

Thank you for your cooperation in this federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Tiffany Osburn at 512/463-8883.**

Sincerely,



for  
Mark Wolfe, State Historic Preservation Officer

MW/to





**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**Region 6**

**1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733**

March 25, 2013

Cindy Ott-Jones, Superintendent  
Lake Meredith National Recreation Area,  
Alibates Flint Quarries National Monument  
P.O. Box 1460  
Fritch, Texas 79036

In accordance with our responsibilities under Section 309 of the Clean Air Act (CAA), the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the Draft Environmental Impact Statement (DEIS)/Off-Road Vehicle (ORV) Management Plan prepared by the National Park Service (NPS). The purpose of the proposed action is to manage ORV use in the national recreation area for visitor enjoyment and recreation opportunities; while minimizing and correcting damage to resources.

EPA rates the DEIS as "EC-2" i.e., EPA has "environmental concerns and requests additional information" in the Final EIS. The EPA's Rating System Criteria can be found here: <http://www.epa.gov/oecaerth/nepa/comments/ratings.html>. The "EC" rating is based on the potential for adverse impacts to threatened and endangered species, and minority or low-income populations. The "2" indicates the DEIS does not contain sufficient information to fully assess the impact of the action alternatives, tribal impacts, environmental justice concerns, and impacts to threatened and endangered species. Detailed comments are enclosed with this letter which clearly identifies our concerns and the informational needs requested for incorporation into the Final EIS (FEIS). Responses to comments should be placed in a dedicated section of the FEIS and should include the specific location where the revision, if any, was made. If no revision was made, a clear explanation should be included.

EPA appreciates the opportunity to review the DEIS. Please send our office two copies of the FEIS, and an internet link, when it is sent to the Office of Federal Activities, EPA (Mail Code 2252A), Ariel Rios Federal Building, 1200 Pennsylvania Ave, N.W., Washington, D.C. 20004. Our classification will be published on the EPA website, [www.epa.gov](http://www.epa.gov), according to our responsibility under Section 309 of the CAA to inform the public of our views on the proposed Federal action. If you have any questions or concerns, I can be reached at 214-665-8006, or contact Keith Hayden of my staff at [hayden.keith@epa.gov](mailto:hayden.keith@epa.gov) or 214-665-2133.

Sincerely,

A handwritten signature in blue ink that reads "Debra A. Griffin".

Debra A. Griffin

Associate Director, Compliance Assurance  
and Enforcement Division

Enclosure

**DETAILED COMMENTS ON THE  
NATIONAL PARK SERVICE  
DRAFT ENVIRONMENTAL IMPACT STATEMENT  
FOR THE  
LAKE MEREDITH NATIONAL RECREATION AREA, TEXAS**

**BACKGROUND:** Lake Meredith was originally created by the construction of Sanford Dam on the Canadian River in 1965, and referred to as the Canadian River Project. The Dam and Lake were designed to provide water for cities in the Texas panhandle. In 1968, the Bureau of Reclamation turned over operation and maintenance of the Sanford Dam and facilities to the Canadian River Municipal Water Authority (CRMWA). The area was established as the Lake Meredith National Recreation Area under the jurisdiction of the National Park Service (NPS) in 1990 with the intent to provide diverse and affordable outdoor recreation opportunities. Today, the Lake Meredith National Recreation Area occupies portions of Moore, Hutchinson, Potter, and Carson counties. The recreation area is over 44,900 acres and the lake is the largest body of freshwater in the Texas panhandle. From 1971 through 2008 the recreation area averaged 1.5 million visitors annually. Two off-road vehicle (ORV) areas were established in the 1970's at the north and south ends of the recreation area. The type of vehicles used and the intensity of use have changed drastically since the ORV areas were established. This has negatively affected soil and vegetation resources, destroyed cultural resources, and led to a rise in visitor use conflicts.

The ORV Management Plan/EIS will assess potential environmental impacts associated with a range of alternatives for managing ORV impacts on park resources such as soils, wetlands, wildlife, cultural resources, visitor experience, and public safety. This effort will result in an ORV Management Plan/EIS that will be used to guide the management and control of ORV's at the Recreation Area for approximately the next 15 to 20 years.

## **EXECUTIVE SUMMARY**

Executive Summary, Page xi

Alternative B includes issuing a no-cost permit for educational purposes, but it is unclear what educational purpose the permit would fulfill. The only education mentioned in the DEIS is through outreach with ORV users via bulletin boards and brochures, and the permits mentioned in the DEIS are for identifying ORV area users. These two measures are common to alternatives B, C, and D.

- Clarify the educational purposes alternative B would serve.

## **2.0 ALTERNATIVES**

Alternative C, Page 52

Implementation of Alternative C would close the area east of Bull Taco Hill to all ORV use. The rationale for this action is never fully explained.

- Describe why closing down the area East of Bull Taco Hill was included in Alternative C. If this action was based on the need to protect natural or cultural resources; then explain why this action was not included in the other action alternatives.

## **5.0 CONSULTATION AND COORDINATION**

### Agencies, Organizations, and Individuals Consulted, Page 231

The DEIS does not contain a final determination on the environmental consequences of the alternatives to threatened and endangered species. The U.S. Fish and Wildlife Service (USFWS) was contacted for threatened and endangered species consultation, but there is not a concurrence from the USFWS on any conclusions reached in the DEIS.

- Include concurrence from the USFWS on the NPS determination for impacts of the proposed project to threatened and endangered species.

### TRIBAL CONCERNS

Page 232

The DEIS lists ten Tribes that were contacted during the development of the plan, but does not indicate whether they were contacted for government-to-government consultation under E. O. 13175, National Historic Preservation Act (NHPA) consultation, or other reasons. Information, responses, and concerns to/from the listed Tribes were not specified in the DEIS, nor was there any indication of communication with Texas Tribes; including the Kickapoo Traditional Tribe, Ysleta Del Sur Pueblo, Alabama-Coushatta Tribe, and the Tonkawa Tribe. All of these tribes may have an interest in the proposed project location.

- Provide information in the Final EIS to document that all potentially affected Tribes were identified and contacted for both NHPA and E.O. 13175. The Texas State SHPO should also be contacted to provide concurrence on the conclusions reached in the DEIS concerning historic, cultural, or archeological resources. EPA recommends that the NPS continue to communicate and consult with the Tribes as the project progresses.

### SOCIOECONOMICS

Page 18

The DEIS did not include any socioeconomic data concerning minority or low-income populations. Also, the NPS did not list Executive Order (E.O.) 12898 in the relevant laws section of the DEIS.

- Discuss the rationale for excluding E.O. 12898 and associated socioeconomic analyses in the Final EIS.

## AIR QUALITY

Page 19

The DEIS analyzes a range of alternatives and actions for the management of off-road vehicle (ORV) use at the Lake Meredith National Recreation Area in the Texas panhandle, northeast of Amarillo. During the scoping process for the plan, topics such as air quality were not further analyzed because the impact level or frequency was not sufficient to warrant a full analysis. Existing air monitoring data in the area does not indicate an air quality problem (e.g., particulate matter) for the area, however, localized air quality impacts from ORV use can affect visitor experience, health and safety.

- EPA recommends that the project alternative selected include mitigation such as separation of visitor uses so that fugitive dust impacts during high wind events are minimized, planned ORV routes, or suspension of ORV use during excessive wind events.



A handwritten signature in blue ink, which appears to read 'Wayne Allard', is located in the top right corner of the page.

101 Constitution Avenue NW, Suite 800W, Washington, DC 20001  
T: (202) 742-4301 F: (202) 742-4304

[AmericanMotorcyclist.com](http://AmericanMotorcyclist.com)

Feb. 7, 2013

Cindy Ott-Jones  
Superintendent  
Lake Meredith National Recreation Area  
Alibates Flint Quarries National Monument  
P.O. Box 1460  
Fritch, Texas 79036-1460

Dear Superintendent Ott-Jones:

The American Motorcyclist Association is writing to you regarding your plan to release the new draft environmental impact statement managing off-highway-vehicle use in the Lake Meredith National Recreation Area published in the Federal Register on Jan. 25 [FR DOC No: 2013-01434].

The notice of availability is to allow public comments on the draft environmental impact statement. The AMA takes issue with alternatives B, C, and D in the DEIS because they would drastically restrict responsible OHV use in the Lake Meredith National Recreation Area.

According to the preferred plan (alternative D), the NPS intends to limit OHV access to a fraction of the area previously allowed. Additionally, the plan would require individual permits for different zones in the park, further complicating access for individuals and families who wish to take part in multiple activities per trip. Also, that requirement could potentially encourage illegal riding.

We have concerns that the DEIS does not fully take into account the social and economic costs of limiting access for responsible OHV riders. Furthermore, we do not believe the DEIS takes into account the safety and environmental impacts, such as trail congestion and overuse, from forcing riders into a smaller designated area.

The DEIS will unfairly limit access to an important recreation area. The preferred alternative will increase the costs associated with OHV use while, at the same time, limiting the areas available for responsible OHV use.

Thank you for your time and consideration of our comments.

Sincerely,

A handwritten signature in blue ink, which appears to read 'Wayne Allard', is located below the word 'Sincerely,'.

Wayne Allard  
Vice President, Government Relations

**PEPC Project ID: 20192, DocumentID: 51446  
Correspondence: 65**

**Author Information**

Keep Private: No  
Name: Texas Off-Roaders Association N/A  
Organization: TORA  
Organization Type: I - Unaffiliated Individual  
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E-mail:

**Correspondence Information**

Status: Reviewed                      Park Correspondence Log:  
Date Sent: 03/26/2013              Date Received: 03/26/2013  
Number of Signatures: 1              Form Letter: No  
Contains Request(s): No              Type: Web Form  
Notes:

**Correspondence Text**

Texas Off-Roader's Association (TORA) official position for the National Park Service (NPS) planning proposal is Plan A (NO ACTION.) TORA's primary function is and always will be to protect the rights of OHV enthusiasts for present and future generations. We feel plan B, C and D are not options that will provide consistent and OHV user friendly options for the Texas Panhandle off-roaders. Again, any option other than (OPTION A) will unnecessarily restrict access and will infringe on the rights of the users of LAKE MEREDITH NATIONAL PARK RECREATIONAL AREA. Please be advised, in the event any option other than (Option A) is chosen, a formal petition process will be initiated.

Respectively,  
Texas Off-Roaders Association Board of Directors

">



United States Department of the Interior  
NATIONAL PARK SERVICE  
Lake Meredith National Recreation Area  
Alibates Flint Quarries National Monument  
P.O. Box 1460  
Fritch, Texas 79036-1460



In reply refer to:  
(1.A.2 LAMR)

July 1, 2014



Mr. Mark Wolfe  
Texas Historical Preservation Officer  
P. O. Box 122767  
Austin, TX 78711-2276

RE: Section 106 for the Lake Meredith National Recreation Area Off-Road Vehicle Plan and Environmental Impact Statement

Dear Mr. Wolfe

In January 2013 we released the Draft Off-Road Vehicle Management Plan and Environmental Impact Statement (Plan/EIS) for public comment. At that time we received a request for additional information on the preferred alternative. We have addressed those questions below and are seeking concurrence with our finding of *no historic properties affected*.

In your letter to us you indicated that the Plan/EIS should reflect the presence of recorded sites within the boundaries of Lake Meredith National Recreation Area. We have corrected this mistake and revised language will be reflected in the Final Plan/EIS.

Your letter also indicated that there are recorded sites within the Rosita Flats and Blue Creek ORV areas. This is correct. Both areas have been surveyed for archeological resources. Those reports include:

William, Cloud. An Archeological Survey Along Big Blue Creek (Northwest and Southeast Burn Blocks), Lake Meredith National Recreation Area, Moore County, Texas, 2003,

Cason, Samuel. Further Archaeological Investigations Along Big Blue Creek (Southwest and Northeast Burn Blocks), Lake Meredith National Recreational Area, Moore and Potter Counties, Texas. 2003.

4 G Consulting. Archaeological Surveys in the North River Bottom and Rosita Flats Burn Units, Lake Meredith National Recreation Area, Potter County, Texas. 2005.

The preferred alternative for both Rosita and Blue Creek propose routes that avoid recorded archeological sites. Markers and barriers, as well as improved law enforcement efforts, are included as part of the preferred alternative, which will provide protection for these sites.



Therefore, in accordance with 36 CFR 800.4(d)(1), Lake Meredith National Recreation Area (LAMR) has determined that there would be *no historic properties affected* under the preferred alternative of the Plan/EIS.

If you concur with this determination of effect, please sign in the space provided below.

If you have any questions or comments, please contact Arlene Wimer, Chief of Resource Management at 806-857-0309.

Sincerely,

Robert J. Maguire  
Superintendent  
Lake Meredith National Recreation Area  
Alibates Flint Quarries National Monument

**CONCUR**  
by William D. Porter  
for Mark Wolfe  
State Historic Preservation Officer  
Date 7/23/14  
Track# 201411716



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services

2005 NE Green Oaks Blvd., Suite 140

Arlington, Texas 76006

April 24, 2014

02ETAR00-2014-F-0054

### Memorandum

To: Superintendent, Lake Meredith National Recreation Area, NPS, Fritch, TX

From: *Acting* Field Supervisor, FWS, Ecological Services, Arlington, TX *Est. Owl*

Subject: Lake Meredith Off-road Vehicle Management Plan Biological Opinion

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the National Park Service's (NPS) implementation of the Lake Meredith National Recreation Area (LMNRA) Off-road Vehicle (ORV) Management Plan and its effects on the federally listed Arkansas River shiner (*Notropis girardi* [ARS]). The LMNRA encompasses approximately 44,977 acres and is located in portions of Hutchinson, Moore, and Potter Counties, Texas. Proposed actions potentially affecting federally protected resources would occur within a 275-acre area in Moore County and within a 1,740-acre area in Potter County.

This biological opinion has been prepared in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.) The biological opinion is based on the Biological Assessment (BA) and the Draft Environmental Impact Statement (DEIS) included with your letter initiating consultation, information provided by NPS staff, and other sources of information. A complete administrative record of this consultation is on file at the Service's Arlington, Texas, Ecological Services Field Office.

### Consultation History

April 28, 2009: Exchange of information between LMNRA NPS staff and Daniel Fenner and Ken Collins of USFWS' Oklahoma Ecological Services Field Office (OESFO) regarding potential impacts to ARS from recreation activities. NPS staff were made aware of responsibilities under section 7 of the Act and were advised on range of alternatives.

August 2, 2010: Further exchange between LMNRA NPS staff and OESFO. LMNRA NPS requested comments on draft alternatives prior to preparing impact

analysis. OESFO received copy of results of survey revealing ARS presence at all sampling points. Future agency coordination was discussed.

November 9, 2011: LMNRA NPS submitted latest draft of alternatives to USFWS for review.

November 25, 2013: LMNRA NPS provided USFWS' Arlington Texas Ecological Services Field Office (ARLESFO) with BA and DEIS for the implementation of the Lake Meredith National Recreation Area Off-Road Vehicle (ORV) Management Plan and requested formal consultation.

April 9, 2014 Draft BO sent to NPS

## **BIOLOGICAL OPINION**

### **I. Description of Proposed Action**

The LMNRA provides a variety of visitor experiences, including the use of ORV. ORV use has been authorized at the LMNRA since the 1970s (under CFR 7.57) in two designated areas: Blue Creek at the north end and Rosita Flats at the south end. Since this initial authorization, ORV use has changed drastically, both in intensity and in the types of ORVs used. This increased ORV use has led to detrimental effects to natural and cultural resources as well as visitor use conflicts.

Executive Order 11644, "Use of Off-road Vehicles on Public Lands" (issued in 1972 and amended by Executive Order 11989 in 1977), requires Federal agencies that allow ORV use to designate specific areas and routes on public lands where the use of ORVs may be allowed. Therefore, motorized travel off established roads would not be permitted in any areas unless designated under a special regulation. Section 3 of this executive order, as amended, authorizes the NPS to designate ORV use areas provided that the designation of such areas and trails would be based on protecting the resources of public lands, promoting the safety of all users of those lands, and minimizing conflicts among the various uses on those lands. Executive Order 11644 was issued in response to the widespread and rapidly increasing use of ORVs on public lands "often for legitimate purposes but also in frequent conflict with wise land and resource management practices, environmental values, and other types of recreational activity."

As a result of these considerations, the LMNRA proposes to implement the Lake Meredith National Recreation Area Off-road Vehicle Management Plan in order to:

- Comply with Executive Order 11644
- Provide for sustainable recreational ORV use areas
- Address the lack of an approved plan, which has led to ORV use outside authorized areas
- Address the change in numbers, power, range, and capabilities of ORVs
- Address resource impacts resulting from ORV use (including impacts to the ARS for reasons discussed in the "Effects of the Action" section of this opinion)

The NPS evaluated several project alternatives and selected "Alternative D: Management Through Use of a Zoning and Permitting System at Current Off-road Vehicle Use Areas" as their preferred alternative. Alternative D was selected as the environmentally preferable alternative

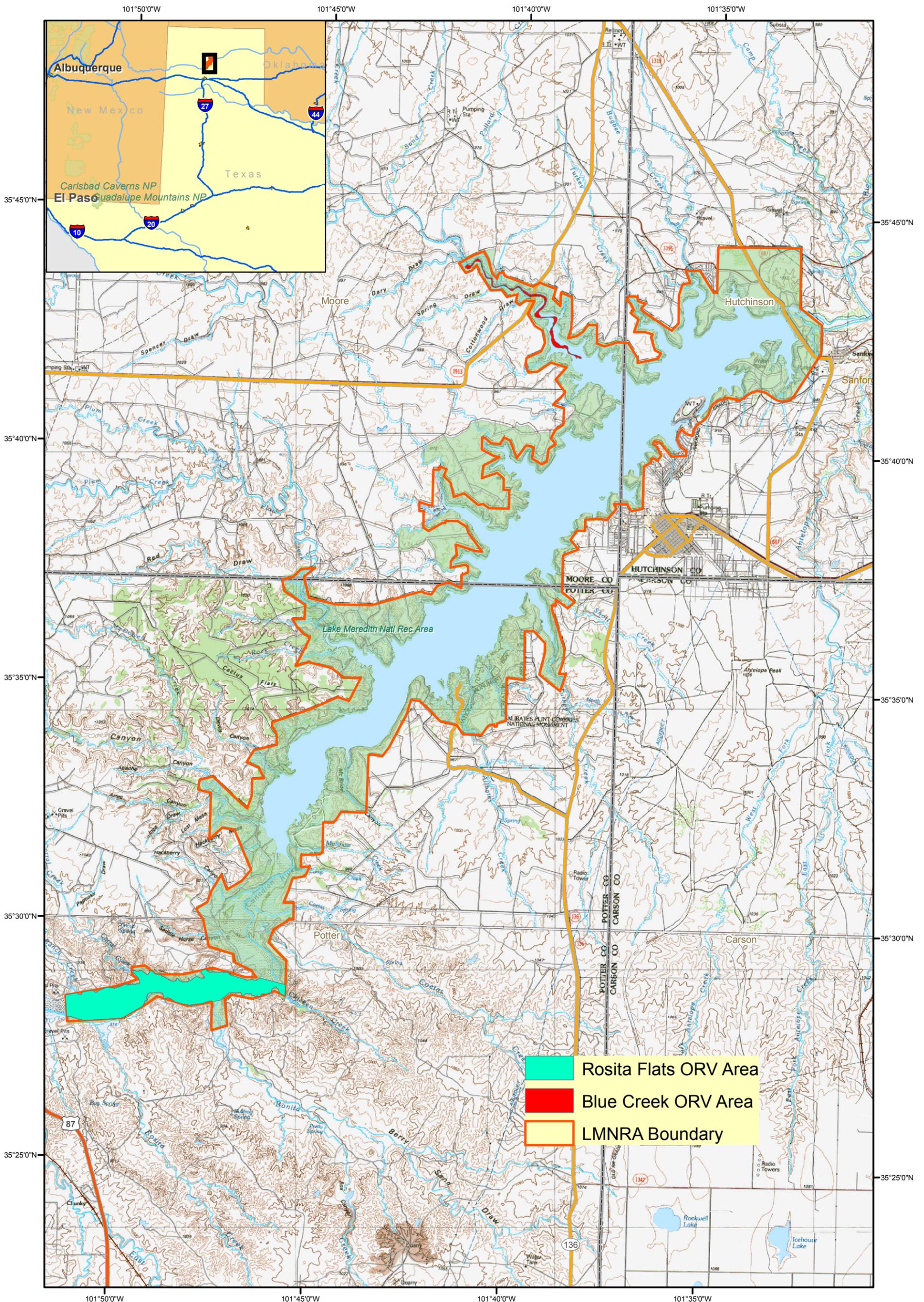
and is the proposed action for section 7 consultation. NPS identified this alternative as environmentally preferable because it would establish numerous management measures that would reduce the impact of ORV use on the landscape in both the Blue Creek and Rosita Flats areas. These measures include the following:

- The establishment of ORV routes and areas in either sand bottom areas (Blue Creek) or on already disturbed trails. Routes and areas would be clearly marked so users would be better able to avoid unknowingly going off trail.
- The overlay of specified zones that would reduce the intensity of use in some areas. In these areas, restrictions on vehicle size would result in less damage to soils and provide a better opportunity for other resources, such as vegetation, to recover. Camping zones with lower ORV speed limits would be established in which camping and campfires would be allowed.
- Designated river crossings that would better protect ARS habitat in addition to restrictions that would prevent driving in isolated pools during times of drought.
- A permit system that would provide educational materials to users to keep them informed on how they can best use ORV use areas while also promoting resource protection.

The action area for the proposed project includes the anticipated extent of the direct and indirect effects. The Service has determined the action area to be approximately 2,015 acres consisting of a 275-acre area in Moore County and a 1,740-acre area in Potter County. Actions potentially impacting the ARS would only occur within the 1,740-acre area in Potter County known as Rosita Flats within and adjacent to the Canadian River (Figure 1). Therefore, the Rosita Flats area alone will be the analysis area of this biological opinion.

**Minimization Measures:** The proposed action also includes several conservation measures to avoid and minimize potential adverse impacts to ARSs as well as other aquatic and shoreline habitat dwelling species. These measures currently include:

- No parking or staging of vehicles of any kind adjacent to or in the Canadian River
- Access to the Canadian River would be allowed only from designated access points
- A Resource Protection Zone would be established within Rosita Flats within which only vehicles with a wheel width of 64 inches or less would be allowed
- Educational materials would be provided when a visitor obtains an ORV use permit. These materials would include information about the prohibition of driving in isolated pools or entering and leaving the Canadian River at undesignated access points, as well as other information about the ARS. This pamphlet would contain the statement, "The USFWS recommends during low water that ORV users do not drive in the Canadian River but cross the channel when needed."
- Additional information on ARS protection would be provided on the existing park bulletin boards and any boards or kiosks added at campground areas.



**U.S. Fish & Wildlife Service**  
**Arlington, Texas, Ecological Services Field Office**  
 Projection: UTM Zone 14N, NAD 1983, GRS 1980  
 Production Date: 4/17/2014



Figure 1: Lake Meredith NRA - Off-road Vehicle Management Plan Action Area



- The superintendent always retains the authority to close any portion of the National Recreation Area for protection of park resources.

## II. Status of the Species

The current list of federally threatened (T), endangered (E), and candidate (C) species that are known to occur, or have been documented in Moore and Potter Counties consists of the following:

Arkansas River shiner (*Notropis girardi*) – T, Moore, Potter  
whooping crane (*Grus americana*) – E, Potter  
lesser prairie-chicken (*Tympanuchus pallidicinctus*) – T, Moore

Whooping cranes have the potential to pass through the general vicinity during their annual migration, but have not been documented within or adjacent to the LMNRA in the recent past. Habitat along the shoreline is not considered preferred habitat; however, it is possible that whooping cranes could potentially utilize the shoreline briefly as a migration stopover. However, the probability of this occurrence would be minimal and could not be meaningfully measured. For this reason, the proposed action is not likely to adversely affect whooping cranes. Therefore, this species will not be discussed further in this biological opinion, and no take of this species is authorized.

The lesser prairie-chicken is currently in the federal listing process and is expected to be listed as threatened on May 12, 2014. Regardless, preferred habitat for lesser prairie-chicken does not appear to be present within the action area and adverse impacts to this species would not be expected.

The federally listed endangered species that does occur in the action area and that may be affected by the proposed action is the ARS. The ARS is a small, robust minnow with a small, dorsally flattened head, rounded snout, and small subterminal mouth (Miller and Robison 1973; Robison and Buchanan 1988). Dorsal coloration tends to be light tan, with silvery sides gradually grading to white on the belly. Adults attain a maximum length of about 2 inches. Dorsal, anal, and pelvic fins all have eight rays, and there is usually a small, black chevron present at the base of the caudal fin. The ARS was listed as a threatened species on November 23, 1998, based on reductions of the species' range and numbers due to habitat destruction and modification, stream dewatering, diversion of surface water, groundwater pumping, construction of impoundments, and water quality degradation (USFWS 1998).

On April 4, 2001, critical habitat for this species was designated (66 *FR* 18002). This critical habitat designation was vacated as a result of a September 2003 Memorandum Opinion of the U.S. District Court of the District of New Mexico, and on October 6, 2004, a new critical habitat designation for the Arkansas River basin population of the ARS was proposed (69 *FR* 59859). A final designation of critical habitat for the Arkansas River basin population of the ARS was published on October 13, 2005 (70 *FR* 59808), which does not include the portion of the Canadian River within the proposed action area.

The ARS was first reported in 1926 from the Cimarron River northwest of Kenton, Cimarron County, Oklahoma (Hubbs and Ortenburger 1929). Historically, the ARS was widespread and abundant throughout the western portion of the Arkansas River basin in Kansas, New Mexico, Oklahoma, and Texas. This species has subsequently disappeared from over 80 percent of its historical range and is now almost entirely restricted to about 508 miles of the Canadian River in New Mexico, Oklahoma, and Texas. A nonnative, introduced population of the ARS occurs in the Pecos River in New Mexico (Bestgen *et al.* 1989). That population is not protected under the Act.

The ARS is now believed to be extirpated from the entire Arkansas River. An extremely small population may still persist in the Cimarron River in Oklahoma and Kansas, based on the collection of only 22 individuals since 1985. A remnant population also may persist in the Beaver/North Canadian River of Oklahoma, based on collection of only four individuals since 1989 (Larson *et al.* 1991; Pigg 1991). However, samples collected by Wilde (2002) at 10 sites along the Beaver/North Canadian River in 2000 and 2001 found no ARS, suggesting that the ARS may be extirpated from that river. An accurate assessment of ARS populations in the Cimarron and Beaver/North Canadian Rivers is difficult because the populations are likely so small that individuals may escape detection during routine surveys.

### Habitat

The ARS historically inhabited the main channels of wide, shallow, sandy-bottomed rivers and larger streams of the Arkansas River basin (Gilbert 1980). Adults are uncommon in quiet pools or backwaters, and almost never occur in tributaries having deep water and bottoms of mud or stone (Cross 1967). Polivka and Matthews (1997) suggested that juvenile ARS associate most strongly with current, conductivity (related to total dissolved solids), and backwater and island habitat types. Cross (1967) believed that adults preferred to orient into the current on the lee sides of transverse sand ridges and feed upon organisms washed downstream.

Matthews (1987) classified several species of fishes, including the ARS, based on their tolerance for adverse conditions and selectivity for physicochemical gradients. The ARS was described as having a high thermal and oxygen tolerance, indicating a high capacity to tolerate elevated temperatures and low dissolved oxygen concentrations (Matthews 1987). Observations from the Canadian River in New Mexico and Texas revealed that dissolved oxygen concentrations, conductivity, and pH rarely influenced habitat selection by the ARS (Wilde *et al.* 2000). ARS specimens were collected over a wide range of conditions—water temperatures from 32.7 to 98.2° Fahrenheit (0.39 to 36.78° Celsius), dissolved oxygen from 3.4 to 16.3 parts per million, conductivity (total dissolved solids) from 0.7 to 14.4 millisiemens per centimeter, and pH from 5.6 to 9.0.

In the Canadian River of central Oklahoma, Polivka and Matthews (1997) found that ARS exhibited only a weak relationship between the environmental variables they measured and the occurrence of the species within the stream channel. Water depth, current, dissolved oxygen, and sand ridge and midchannel habitats were the environmental variables most strongly associated with the distribution of ARS within the channel. Similarly, microhabitat selection by ARS in the Canadian River of New Mexico and Texas was influenced by water depth, current velocity, and, to a lesser extent, water temperature (Wilde *et al.* 2000). The ARS specimens

generally occurred at mean water depths between 6.6-8.3 in (17 and 21 cm) and current velocities between 11.7 and 16.4 in (29.7 and 41.6 cm) per second. Juvenile ARS associated most strongly with current, conductivity, and backwater and island habitat types (Polivka and Matthews 1997).

Wilde *et al.* (2000) found no obvious selection for, or avoidance of, any particular habitat type (*i.e.*, main channel, side channel, backwaters, and pools) by ARS. The ARS specimens did tend to select side channels and backwaters slightly more than expected based on the availability of these habitats (Wilde *et al.* 2000). Likewise, they appeared to make no obvious selection for, or avoidance of, any particular substrate type. Substrates in the Canadian River in New Mexico and Texas were predominantly sand; however, the ARS was observed to occur over silt slightly more than expected based on the availability of this substrate (Wilde *et al.* 2000).

### Food Habits/Feeding Behavior

The ARS is believed to be a generalized forager and feeds upon both items suspended in the water column and items lying on the substrate (Jimenez 1999, Bonner *et al.* 1997). In the Canadian River of central Oklahoma, Polivka and Matthews (1997) found that gut contents were dominated by sand/sediment and detritus (decaying organic material), with invertebrate prey being an incidental component of the diet. In the Canadian River of New Mexico and Texas, the diet of ARS was dominated by detritus, invertebrates, grass seeds, and sand and silt (Jimenez 1999). Invertebrates were the most important food item, followed by detrital material.

Terrestrial and semiaquatic invertebrates were consumed at higher levels than were aquatic invertebrates (Jimenez 1999). With the exception of the winter season, when larval flies were consumed much more frequently than other aquatic invertebrates, no particular invertebrate taxa dominated the diet (Bonner *et al.* 1997). Fly larvae, copepods, immature mayflies, insect eggs, and seeds were the dominant items in the diet of the nonnative population of the ARS inhabiting the Pecos River in New Mexico (Keith Gido, University of Oklahoma, *in litt.* 1997).

### Reproduction

Successful reproduction by the ARS appears to be strongly correlated with streamflow. Moore (1944) believed the ARS spawned in July, usually coinciding with elevated flows following heavy rains associated with summertime thunderstorms. Bestgen *et al.* (1989) found that spawning in the nonnative population of ARS in the Pecos River of New Mexico generally occurred in conjunction with releases from Sumner Reservoir. However, recent studies by Polivka and Matthews (1997) and Wilde *et al.* (2000) neither confirmed nor rejected the hypothesis that elevated streamflow triggered spawning in the ARS.

ARS specimens are open-water, broadcast spawners that release their eggs and sperm over an unprepared substrate (Platania and Altenbach 1998, Johnston 1999). Examination of ARS gonadal development between 1996 and 1998 in the Canadian River of New Mexico and Texas demonstrated that the species undergoes multiple, asynchronous spawns in a single season (Wilde *et al.* 2000). The ARS appears to be in peak reproductive condition throughout the months of May, June, and July (Wilde *et al.* 2000, Polivka and Matthews 1997); however,

spawning may occur as early as April and as late as September. ARS specimens may, on occasion, spawn in standing waters (Wilde *et al.* 2000), but it is unlikely that such events are successful.

Both Moore (1944) and Platania and Altenbach (1998) described behavior of ARS eggs. The fertilized eggs are nonadhesive and semibuoyant. Platania and Altenbach (1998) found that spawned eggs settled to the bottom of the aquaria where they quickly absorbed water and expanded. Upon absorbing water, the eggs became more buoyant, rose with the water current, and remained in suspension. The eggs would sink when water current was not maintained in the aquaria. This led Platania and Altenbach (1998) to conclude that the ARS and other plains fishes likely spawn in the upper to mid-water column during elevated flows. Spawning under these conditions would allow the eggs to remain suspended during the 10- to 30-minute period the eggs were non-buoyant. Once the egg became buoyant, it would remain suspended in the water column as long as current was present.

In the absence of sufficient streamflows, the eggs would likely settle to the channel bottom, where silt and shifting substrates would smother the eggs, hindering oxygen uptake and causing mortality of the embryos. Spawning during elevated flows appears to be an adaptation that likely increases survival of the embryo and facilitates dispersal of the young. Assuming a conservative drift rate of 3 km/hour, Platania and Altenbach (1998) estimated that the fertilized eggs could be transported 45-89 mi (72-144 km) before hatching. Developing larvae could then be transported up to an additional 134 mi (216 km) before they were capable of directed swimming movements. Bonner and Wilde (2000) speculate that 135 mi (218 km) may be the minimum length of unimpounded river that allows for the successful completion of ARS life history, based on their observations in the Canadian River in New Mexico and Texas.

Rapid hatching and development of the young is likely another adaptation in plains fishes that enhances survival in the harsh environments of plains streams. ARS eggs hatch in 24-48 hours after spawning, depending upon water temperature (Moore 1944, Platania and Altenbach 1998). The larvae are capable of swimming within 3-4 days; they then seek out low-velocity habitats, such as backwater pools and quiet water at the mouths of tributaries where food is more abundant (Moore 1944).

Evidence from Wilde *et al.* (2000) indirectly supports the speculation by Cross *et al.* (1985) that the ARS initiates an upstream spawning migration. Whether this represents a true spawning migration or just a general tendency in these fish to orient into the current and move upstream, perhaps in search of more favorable environmental conditions, is unknown (Wilde *et al.* 2000). Regardless, strong evidence suggested the presence of a directed, upstream movement by the ARS over the course of a year.

### Age and Growth

Maximum longevity is unknown, but Moore (1944) speculated that the species' life span is likely less than 3 years in the wild. The age structure of ARS collected from the Pecos River in New Mexico included three, and possibly four, age classes (Bestgen *et al.* 1989). The majority of the fish captured were juveniles (Age-0) and first-time spawners (Age-I). Most of the fish in spawning condition were Age-I. Bestgen *et al.* (1989) thought mortality of postspawning fish

was extremely high based on the absence of Age-I and older fish from collections made after the spawning period (late July and August).

### Diseases, Parasites, and Predation

No studies have been conducted on the impact of disease or predation upon the ARS; therefore, the significance of these threats upon existing populations is unknown. There is no direct evidence to suggest that disease threatens the continued existence of the species. Disease is not likely to be a significant threat except in isolated instances or under certain habitat conditions, such as crowding during periods of reduced flows, or episodes of poor water quality (e.g., low dissolved oxygen or elevated nutrient levels). During these events, stress reduces resistance to pathogens and disease outbreaks may occur. Parasites and bacterial and viral agents are generally the most common causes of mortality. Lesions caused by injuries, bacterial infections, and parasites often become the sites of secondary fungal infections.

Some predation of ARS by largemouth bass *Micropterus salmoides*, green sunfish *Lepomis cyanellus*, channel catfish *Ictalurus punctatus*, and other fish species undoubtedly occurs, but the extent is unknown. Predation by aquatic birds (e.g., terns, herons, and egrets) and aquatic reptiles (e.g., snakes and turtles) also may occur. Plains fishes have evolved under adverse conditions of widely fluctuating, often intermittent flows, high summer temperatures, high rates of evaporation, and high concentrations of dissolved solids. These conditions are not favored by most large predaceous fish and tend to preclude existence of significant populations of these species. However, alteration of historic flow regimes and construction of reservoirs have created favorable conditions for some predatory species such as white bass *Morone chrysops* and striped bass *M. saxatilis*. State and Federal fish and wildlife management agencies, through cooperative efforts to develop sport fisheries in these reservoirs, have facilitated expansion of the distributions of some predatory species. The impact of predation to the species is likely to be localized and insignificant, particularly where habitat conditions upstream of mainstem reservoirs are not favorable to the long-term establishment of abundant predatory fish populations.

### Factors Contributing to Decline

The ARS very likely no longer exists in the Arkansas River in Arkansas, Kansas, and Oklahoma, which is a loss of over 770 miles (1,240 kilometers) of previously occupied habitat (69 FR 59861). The decline of the shiner is primarily the result of modification of the duration and timing of streamflows, habitat loss by inundation, stream depletion due to water diversion and groundwater pumping, water quality degradation (caused by oil and gas, municipal sewage effluent, and manufacturing return flows), competition with invasive nonnative species, and the construction of impoundments (70 FR 59828; USFWS 2009). The fragmentation of streams and rivers, particularly with the construction of reservoirs, throughout the Great Plains has likely acted to increase the frequency of reproductive failure among broadcast spawning species in these systems through restricting the upstream movement of adults to spawn, leaving drifting eggs without sufficient distance to develop and hatch before being transported into lentic habitats (Durham and Wilde 2008, NPS 2013).

### III. Environmental Baseline

#### a. Status of the species within the action area.

The LMNRA is located near the geographic center of the Texas Panhandle, about 40 miles northeast of Amarillo and 9 miles west of Borger. It is composed of approximately 45,000 acres within its boundaries (NPS 2009) and encompasses portions of Hutchinson, Moore, and Potter Counties. The Action Area consists of two separate areas within LMNRA: the 275-acre Blue Creek ORV Use Area located on the northwest side of the lake, and the 1,740-acre Rosita Flats ORV Use Area located in the southernmost section of LMNRA. The ARS occurs only within the Rosita Flats portion of the Action Area and is the primary analysis area of this biological opinion.

Within the LMNRA, the Canadian River has carved a narrow, steep walled canyon from 200 to 300 feet deep and up to two miles wide. Between this canyon and caprock, many tributary streams have caused a rough and broken topography known as the Canadian River Breaks. The completion of the Sanford Dam in 1965 between these breaks created Lake Meredith (NPS 2013). The LMNRA lies within the Canadian/Cimarron Breaks sub-ecoregion which lies within the Southwestern Tablelands ecoregion of Texas. The Southwestern Tablelands flank the High Planes with red hued canyons, mesas, and dissected river breaks. Much of this ecoregion is in sub-humid grassland and semiarid rangeland. Vegetation consists of grama-buffalograss with some mesquite-buffalograss in the southeast, juniper-scrub oak-midgrass savanna on the escarpment bluffs, and shinnery (midgrass prairie with low oak brush) along parts of the Canadian River. Soils in this ecoregion include alfisols, inceptisols, entisols, and millisols (Griffin *et al.* 2004). Soil erosion at Rosita Flats (where the ARS is present) has occurred over the last 40 years primarily due to the use of ORVs above the 3,000-foot elevation contour. On hillsides with slopes of 15 degrees or more, the soils often erode during and after rainfall events due to the presence of steep slopes combined with the removal of vegetation by ORV use (NPS 2013).

Within the LMNRA property and immediately adjacent, the ARS is known to be present in the Canadian River from Chicken Creek upstream to the U.S. Highway 287 Bridge, a large porting of this stretch running through the Rosita Flats ORV use area (NPS 2013). The ARS does not occur in the Blue Creek ORV Use Area and LMNRA staff are unaware of any historical existence of the species in this area (NPS 2013). In addition, the Blue Creek ORV use area does not contain habitat that would be conducive to support future ARS populations (NPS 2013).

The ARS is abundant in the LMNRA in the Canadian River from Chicken Creek upstream to the U.S. 287/State Highway 87 Bridge according to survey efforts of Dr. Gene Wilde (NPS 2010). Dr. Wilde and his assistants conducted quarterly surveys in this area between May 2009 and January 2010 to document the presence and abundance of the ARS at eight survey sites within the Rosita Flats ORV use area and at one survey site at the U.S. Highway 87 bridge outside the LMRA boundary. During the four quarterly sampling events, a total of 4,383 fish representing 16 species and 5 families were captured, identified, and released. During the surveys a total of 1,378 ARSs were collected, making it the most commonly captured fish, representing 31% of the collected assemblage (NPS 2010).

In the spring survey, ARS represented 16% of the fish captured and was the third most commonly collected fish. In the summer survey, ARS represented 23% of the fish captured and was the second most commonly collected fish. The ARS was the most commonly collected fish in both the fall and winter surveys, representing 47% and 58% respectively of the total number of captured fish (NPS 2010). Across all sites, ARS occurred at 18% of spring sampling sites, 63% of summer sampling sites, 38% of fall sampling sites, and 24% of winter sampling sites (NPS 2010). Upstream migration during spawning may explain the reduction in ARS abundance in the spring samples.

#### **b. Factors affecting species environment within the action area**

The damming of the Canadian River is likely the most significant adverse impact to the ARS within the action area. Impoundments function as barriers, fragmenting populations and habitat into smaller, more isolated units. As noted prior, inundation of riverine systems increases the frequency of reproductive failure among broadcast spawning species in these systems through restricting the upstream movement of adults to spawn, leaving drifting eggs without sufficient distance to develop and hatch before being transported into lentic habitats (Durham and Wilde 2008, NPS 2013). Wilde *et al.* (2000) suggested that an unimpounded stretch of the river approximately 137 miles (220.5 km) long may be necessary for the ARS to complete its life cycle. Inundation of rivers also produces increased abundance of predatory fish that feed on smaller fish like the ARS both upstream and downstream of reservoirs. Additionally, these fragmented sections are more likely to be affected by influences from external factors (*e.g.*, localized drought, water withdrawals, permitted and unpermitted wastewater discharges). Once isolated, other aggregations of ARS can no longer disperse into these reaches and help maintain or restore populations of ARS there. Due to the inundation of the Canadian River at LMNRA, suitable habitat no longer exists for the ARS downstream of Chicken Creek to the Sanford Dam. To our knowledge the ARS was last documented downstream of Sanford Dam in Texas at the intersection of the Canadian River and State Highway 152 in Hutchinson County (USFWS 2002). Since 2002, numerous USFWS surveys have failed to collect ARSs below Lake Meredith in Texas. Surveys further downstream into Oklahoma have located ARSs, however recent drought conditions have significantly lowered total ARS numbers in the South Canadian River (Daniel Fenner, personal communication, April 24, 2014).

Lack of rainfall, pumping for local use, and the spread of salt cedar (*Tamarisk* spp.) has caused a decline in water levels in the region having a direct effect on ARS habitat (NPS 2013). As water resources become scarcer, the capillary effects of increased groundwater pumping may cause isolated pools present in the Canadian River in summer to dry up. Some of these isolated pools within Rosita Flats have been documented to contain stranded ARSs (NPS 2010). Invasive nonnative salt cedar present in the area spreads quickly and uptakes large amounts of water as well. As water levels have dropped, salinity levels rise potentially causing further stress and mortality to ARSs (NPS 2013).

Gas and Oil Development activities are ongoing outside LMNRA which may impact the action area. Associated land clearing for siting and road construction may negatively affect ARS habitat through erosion and sedimentation. Also of concern is the use of water resources for gas and oil extraction as well as the potential for surface and groundwater contamination.

Implementation of the LMNRA Fire Management Plan has reduced woody vegetation possibly generating negative impacts to the ARS in the form of increases in stream temperature, leading to stress-induced mortality especially during summer conditions where shade over isolated pools might be beneficial (CRMWA 2005, NPS 2013). This decrease in woody vegetation may also have resulted in increased access to the Canadian River by ORV users and the associated adverse impacts. Burning of vegetation may have resulted in increased levels of eroded materials entering the Canadian River, which may result in adverse impacts to ARS through the loss of instream habitat, loss of spawning substrate, channel incision, and increased/altered instream velocities (CRMWA 2005, NPS 2013).

The 1973 Lake Meredith National Recreation Area Master Plan was developed to ensure that the aesthetic and biological qualities would be maintained at a standard which would serve its users most effectively. This Master Plan also designated the Rosita Flats portion of the study area for recreational use (including ORVs), likely contributing to the historical degradation of ARS habitat well before the present ORV Management Plan was proposed. However, the development of resource management objectives and the establishment of natural environment areas within the 1973 Master Plan likely contributed to portions of Rosita Flats being less degraded than if the Plan had not been implemented (NPS 2013).

Surveying to monitor the ARS population at LMNRA could have adverse impacts on individual fish due to the stress associated with capture by seine and the handling required to sex, weigh, and mark fishes. However, the adverse impacts to individuals are expected to be outweighed by the benefits to the species from the information gained from the monitoring studies, which may be used to direct future species management efforts. Information gained from monitoring the ARS population at LMNRA may result in increased management actions, such as further ARS habitat protection and enhancement efforts, which may benefit the ARS.

Primary potential sources of adverse impact to the ARS from recreational activities within the action area include ORV use, camping, picnicking, and hunting (NPS 2013), which have contributed to habitat depletion and destruction. In addition to the direct impacts to ARS habitat as a result of these activities, indirect impacts, such as impacts to water quality from vehicles and trash, have also caused impacts as a result of visitor use (NPS 2013).

In the LMNRA, it is common for the Canadian River and inflow streams to dry up during summer conditions, leaving fish congregated in small to large isolated pools. ORVs driven through these isolated pools pose a threat to the congregated fish species, including the ARS (Arlene Wimer, Paul Jones, and Jeremy Stevens, personal communications). Dr. Gene Wilde added that ARS specimens sampled from the Canadian River in isolated pools during summer drought showed higher levels of stress indicators, such as parasites and poor nutrition, than those sampled in more favorable habitat conditions. These stranded individuals therefore may be more likely to be harmed or killed by added disturbances such as being trampled or splashed out of the pools by repeated ORV traffic, and/or by the resulting degradation of habitat quality from increased turbidity, loss of vegetation along margins, and accelerated water loss (Dr. Gene Wilde, personal communication, March 24, 2014). Appendix A contains several photographs provided by Dr. Wilde which illustrate fish stranded in shrinking pools in the Canadian River

and some of the apparent effects of ORVs driven through these pools. Additionally, appendix B contains the preliminary results of an April 2014 field experiment conducted within the Canadian River by Dr. Wilde illustrating the direct mortality of fish stranded in pools resulting from a motor vehicle passing through.

#### **IV. Effects of the Action**

The proposed action consists of the implementation of the Lake Meredith Off-road Vehicle Management Plan for recreational use. Implementation of the Lake Meredith Off-road Vehicle Management Plan would designate specific routes and areas for ORV use in the Blue Creek and Rosita Flats areas of LMNRA. A fee-based permit system would also allow the NPS to provide additional amenities and increased enforcement in the action area. The Biological Assessment for the Lake Meredith Off-road Vehicle Management Plan / Environmental Impact Statement provided descriptions of proposed actions likely to adversely affect the ARS (NPS 2013). Quantitative measurements of length and area of proposed actions and property perimeters were calculated using shapefiles provided by NPS and utilizing ArcGIS software (version 10.1). The Service anticipates that direct and indirect adverse effects to the ARS would result from the action as discussed below.

ORVs cause long-lasting damage to land and aquatic ecosystems, wildlife, soils, and hydrologic flows and this is expected to occur in the action area. Even if all ORV users stayed in designated routes and areas, their activities may contribute to erosion and stream sedimentation, transport invasive species, disrupt and damage wildlife, and reduce habitat quality (Taylor n.d., NPS 2013). Motorized road and trail crossings through aquatic habitats degrade water quality, affect bank stability, damage riparian vegetation, and increase stream deposition, thus reducing habitat quality for aquatic species, including fish and their aquatic insect food sources (New Mexico EMNRD *et al.* 2008, NPS 2013). Soils classified as having moderate or high erosion potential are present along the edges of the Rosita Flats ORV use area. Sedimentation of surface waters of the LMNRA would continue to result from the ongoing erosion of soils due to ORV use. Incremental contributions to existing surface water quality impairments would also result from increased sediment runoff as well as runoff of gasoline or oil that may be leaked from ORVS (CRMWA 2005; Taylor n.d.; NPS 2013).

The individual elements of the Off-road Vehicle Management Plan necessitating section 7 consultation, and their corresponding direct and indirect impacts to the ARS, are as follows:

##### **1. Designated Vehicle Routes/Areas**

###### ***Direct Effects***

The continued use of ORVs at Rosita Flats would likely result in additional habitat disturbance and disruption of the reproductive cycle due to the potential for injury and direct mortality during all life stages, leading to adverse impacts to ARSs. Implementing designated ORV access points at the riverbed and resource protection zones may likely have a beneficial effect on ARS by limiting ORVs from driving through riparian habitat and localizing impacts to certain areas. However, long-term adverse impacts to ARSs would persist from the continued presence of

ORVs in the riverbed. Sign posting and the use of post and cable fencing along ORV routes and indicating ORV use boundaries may help mitigate some of the adverse impacts of ORV use by preventing ORVs from driving through isolated pools possibly containing congregated ARSs.

### *Indirect Effects*

ORV use at Rosita Flats would result in continued habitat/channel degradation due to erosion and aggradation due to sedimentation. Soil erosion may be increased by the compaction and rutting caused by vehicle tracks (Taylor n.d.), which in turn can lead to more sediment entering streams. This may result in turbidity, loss of instream habitat, loss of spawning substrate, channel incision, and increased stream velocities in ARS habitat (CRMWA 2005). These habitat changes may reduce the foraging and reproductive success of ARSs. Prohibiting ORV outside specified routes/areas as specified in the ORV Management Plan may reduce these erosion impacts by decreasing the overall footprint of ORV traffic and by maintaining the soil stabilizing effects of plant roots recolonizing untraveled areas. Continued ORV use at Rosita Flats may also result in the continued occurrence of trash entering streams, contributing to the degradation of ARS habitat. The ORV Management Plan includes efforts to minimize these waste disposal impacts through education and outreach provided to visitors. ORV use occurs off of LMNRA property upstream of Rosita Flats which can also contribute to reduced habitat quality for ARS both off and on LMNRA property by introducing additional turbidity and sedimentation. Identification of Sensitive Resource Areas through signage and fencing may have the indirect, and unintended, effect of encouraging vandalism or intentional destruction of these areas by identifying their locations.

## **2. Zone System**

### *Direct Effects*

Establishing 1,040 acres of Resource Protection Zones, where ORVs with a wheel width greater than 64 inches would not be permitted, would be intended to reduce the size and volume of ORV traffic in these areas. Additional measures are expected to minimize, but not eliminate the potential incidental take of ARSs by restricting the number of locations to four where ORVs can access the river, and limiting the number of ORVs overall, potentially reducing ORVs that come into contact with ARSs.

### *Indirect Effects*

Establishing designated ORV use zones in already degraded areas of Rosita Flats and prohibiting the use of ORVs in vegetated resource protection zones is expected to limit increases in soil erosion, sedimentation, and water quality degradation in ARS habitat. By keeping ORVs in designated non-vegetated zones, preservation of existing vegetation is expected to help maintain water quality by controlling erosion in these areas due to root structure and the wind diffusing effects of the vegetation. Improvements to the road and designated camping zone at Rosita Flats are expected to reduce the impacts of erosion, sedimentation, and water quality degradation resulting from use of this area. Establishment of a hunting zone may result in a decrease of recreational ORV use during rifle season (up to two months) because ORV use in these areas

would be restricted to hunters. Additionally, the establishment of camping-only zones may reduce impacts to water quality due to the prohibition of ORV use in these areas.

### **3. Permit Requirements**

#### ***Direct Effects***

Temporary closures of the ORV use areas if evidence of ORV use is found outside designated routes, as well as the implementation of a permit system could reduce impacts of ORV use on ARSs by encouraging ORV users to stay on designated routes. This action could help to preserve ARS habitat and reduce the incidence of direct mortality. The fee-based permit would also include an ORV user education component informing permit holders about resource protection.

#### ***Indirect Effects***

Considering that only permitted ORV users would be allowed access to Rosita Flats, it is hopeful that these “informed” persons would follow the rules learned through the permitting process, in turn potentially reducing impacts to ARSs and their habitats. This would be in the form of reduced trash and leakage of fluids from ORVs in the water, and reducing the use of ORVs outside of designated areas. Repeat offenders would face revocation of permits, possibly eliminating the presence of users who may impact ARSs most severely.

### **4. Vehicle Requirements**

Underage ORV users would be required to be accompanied by an adult, hopefully leading to greater compliance with LMNRA rules including those that contribute to resource protection.

#### ***Indirect Effects***

The requirement of spark arresters on ORVs would decrease the possibility of wildfires thereby reducing the likelihood of impacts to water quality associated with fire-induced erosion and loss of vegetation.

### **5. Speed Limits**

#### ***Direct Effects***

None.

#### ***Indirect Effects***

Speed limits may increase compliance with avoiding areas closed to ORV use (such as ARS inhabited pools) because operators may be more likely to maneuver around these areas while traveling at reduced speeds.

## **6. Education and Outreach**

### ***Direct Effects***

Along with education provided within the ORV use permitting process, additional visitor education would inform users of LMNRA about the habitat and status of the ARS. This would hopefully result in greater compliance with rules designed to reduce impacts to ARSs and their habitats.

### ***Indirect Effects***

Increased education may result in increased compliance with ORV regulations, reducing impacts to water quality from erosion, loss of vegetation, and chemical leakage.

## **7. Camping, Campfires, and Other Amenities**

### ***Direct Effects***

During construction activities for various future amenities, the resulting erosion and sedimentation may impact ARS habitat. Erosion and runoff from these construction sites would be minimized by following best management practices.

### ***Indirect Effects***

Construction of new visitor amenities may result in adverse indirect impacts related to increased visitor usage of the area. LMNRA will make efforts to locate amenities away from ARS habitats.

## **8. Enforcement**

### ***Direct Effects***

Increased law enforcement may likely result in greater compliance with ORV regulations. This may result in benefits to ARS habitats when compared to current management practices.

### ***Indirect Effects***

Increased compliance with ORV regulations could result in less trash and less erosion and sedimentation entering ARS habitats resulting in beneficial indirect impacts to water quality, when compared to current management practices.

## **V. Cumulative Effects**

Cumulative effects include the environmental baseline in addition to the additive effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed

action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Activities potentially resulting in cumulative effects to the ARS and/or its habitat in the action area are as follows:

1. **Revised Texas Wildlife Action Plan** – The goal of this plan is to conserve and improve the status of species of greatest conservation need and the habitats upon which they rely to prevent listings under the Act. This plan is the natural resources conservation plan for all of Texas (TPWD 2012, NPS 2013). This plan could have potential beneficial impacts to ARSs within the action area if the recommended monitoring is conducted and the data are used to identify needs and direct future resource management.
2. **Continued Hunting** – Hunting activities occur at various times during the year increasing the recreational use of the area and the associated strain on natural resources potentially negatively affecting the ARS.
3. **Continued Invasive Species Removal** – This may involve hand application of herbicides and some minor mechanical removal within the action area. This could potentially negatively affect the ARS if herbicides reach the water. Removal may also produce negative effects associated with increased stream temperature, increased erosion if replanting does not take place, and increased access to the stream from ORVs. Beneficial impacts may include increasing base flows in the Canadian and reducing salinity. Salt cedar is a target species known to uptake large amounts of water and to draw salts to the surface from deep within the ground.
4. **Future Mesquite Spraying on Adjacent Lands** – Past land use practices on adjacent lands have included the spraying of mesquite. This could negatively impact water quality for the ARS if aerial overspray and overland runoff reach the Canadian River including the portion of the action area.
5. **Lowering Lake Levels** – Water levels at Lake Meredith have been steadily decreasing over the past decade. This has been due to many factors including lack of rainfall, groundwater pumping for local use, and the spread of salt cedar which spreads quickly and removes large amounts of water. As water resources become more scarce, the capillary effects of increased groundwater pumping may cause isolated pools present in the Canadian River in the summer (some documented to contain stranded ARSs), to dry up. As water levels drop, salinity levels rise potentially causing further stress and mortality to ARSs (NPS 2013). A decline in the number of cottonwood trees (*Populus deltoids*) in the region has also been attributed to a reduction in available water. This decline in cottonwoods bordering the Canadian River has the potential to alter ARS habitat through increased stream temperatures, loss of shading, increased erosion, and potential increased access by ORV users to the riverbanks.

## V. Conclusion

After reviewing the current status of the ARS, the environmental baseline for the action area, the effects of the proposed ORV Management Plan, and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to *jeopardize* the continued existence of the ARS. No critical habitat for the ARS exists in the action area, therefore none will be affected. However, implementation of the ORV Management Plan may result in the incidental take of ARS.

As stated previously, principal effects of the action may involve unintended degradation of instream habitat and possible mortality of individuals during recreation activities. The project could impact ARSs within approximately 5.5 rivermiles of habitat within Rosita Flats which is only a small fraction of available ARS habitat in the Canadian River. Implementation of the Minimization Measures associated with the proposed ORV Management Plan may reduce the level of incidental take of ARS, when compared to existing resource management practices at LMNRA.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with the terms and conditions of an Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by NPS so that they become binding conditions for any action, grant, or permit issued, as appropriate, for the exemption in section 7(o)(2) to apply. NPS has a continuing duty to regulate the activity covered by this incidental take statement. If NPS (1) fails to assume and implement the terms and conditions or (2) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, NPS must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement. [50 CFR §402.14(i)(3)].

## **Amount or Extent of Take Anticipated**

Several factors may make detection of incidental take under field conditions difficult. For example, finding a dead or impaired specimen is unlikely because the species has a small body size and is difficult to detect under most conditions. Even when detected under these conditions, capture of such individuals may be unlikely. In some instances, sublethal physiological effects may be delayed or not readily apparent in captured individuals. Despite these constraints, the Service is obligated to describe the amount or extent of such anticipated incidental take based on the amount of occupied habitat that may be disturbed.

Incidental take is expected to result from the effects of recreational activities producing erosion, sedimentation, and ORV associated contaminants being introduced into the Canadian River, and ORVs driven into water where the ARS is present. Accordingly, incidental take is expected to occur in the form of harm, wounding, and/or killing. The Service anticipates that any ARS residing within the action area (Rosita Flats) could be taken as a result of the proposed action; however, the extent of take is difficult to accurately assess due to the nature of the take and the unknown abundance of the species within the action area. Therefore, take will be determined based on the description of activities expected to affect the species as described in the Biological Assessment and using habitat area as a surrogate for the species.

The ever-changing nature of the Canadian River within Rosita Flats further complicates quantifying habitat area potentially affected. The Canadian River is typically not a single, well-defined channel, but instead is comprised of a braided system of flows when enough rainfall is present. During dryer conditions, only isolated pools remain containing water. All of these conditions may vary annually depending on rainfall. Therefore, the Service estimates take may occur within a linear distance of approximately 5.5 rivermiles from the furthest upstream boundary of Rosita Flats to the Canadian River's confluence with Chicken Creek, beyond which the ARS is no longer present. The ARS has been documented approximately 8.5 rivermiles downstream Sanford Dam but the implementation of the ORV Management Plan would not be expected to adversely affect the ARS downstream of Rosita Flats.

## **Effect of the take**

In the accompanying biological opinion, the Service determined that the level of anticipated take is not likely to result in jeopardy to the ARS.

## **Reasonable and Prudent Measures**

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of ARS within the Action Area.

- 1) NPS shall develop and implement an appropriate monitoring plan for reporting progress in development of the property and implementation of the reasonable and prudent measures. Population monitoring for ARS will occur every 3-5 years, as funding permits. The content, schedule, and format of the monitoring plan will be at the discretion of the NPS, but would take place no less than once every 5 years.

2) NPS shall provide sufficient guidance to its employees and contracted employees to minimize incidental take and to ensure compliance with the Terms and Conditions in this opinion.

### **Terms and conditions**

In order to be exempt from the prohibitions of section 9 of the Act , NPS must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. Parking or Staging of vehicles of any kind will be confined to areas outside the wetted channel of the Canadian River.
2. ORV use with park boundaries will be restricted to designated routes. Access to the Canadian River will be allowed only from designated access points.
3. ORV use zones will be established in Rosita Flats in two areas currently devoid of vegetation. One is south of the Canadian River and the other will be east of Bull Taco Hill. Outside these areas, ORVs would permitted only on designated, marked routes. ORVs may access the riverbed area only from marked and designated access points off the designated ORV routes.
4. A resource protection zone of approximately 1,040 acres would be established north and east of the Bull Taco Hill ORV use area to protect vegetation and reduce soil erosion. This zone would permit only vehicles with a wheel width of 64 inches or less.
5. Every two to four years, aerial photography will be used to determine if use is occurring outside of designated routes and areas.
6. Educational materials will be provided when a visitor receives an ORV use permit. These materials would include information about the prohibition of driving in isolated pools or entering and leaving the river at undesignated access points. These materials could also contain the statement "The U.S. Fish and Wildlife Service recommends during low water that ORV users do not drive in the river or isolated pools but may cross the channel when needed."
7. Four to six times per week, on-the-ground NPS law enforcement will patrol and monitor for prohibited driving in isolated pools and the wetted channel, as well as other ORV area violations. Monitoring for incidental take of ARS will occur at this time. Additional law enforcement patrols may occur as funding from ORV permits becomes available.

The Service anticipates that no more than 5.5 rivermiles of ARS habitat may be adversely affected as a result of the proposed action. These adverse effects could potentially happen annually dependent up numerous natural and human-caused elements. Reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the

action, this level of incidental take is exceeded, reinitiation of consultation will be required. NPS must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

### **Conservation Recommendations**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. Implementation of these measures would further help to minimize effects to the ARS. The following recommendations are provided for consideration by NPS.

The Service recommends that NPS make efforts to ensure that instream survey monitoring for ARS within Rosita Flats continue at a frequency that would continue to provide valuable information to the scientific community, but not overly stress the local population. This information could be used to direct resource management decisions at LMNRA, as well as recovery efforts for the entire ARS population. As funding is available, efforts should be made to survey areas upstream of Rosita Flats (with landowner permission) which might be more adversely impacted in the absence of resource protections. Information on habitat conditions within this area might be useful in explaining fluctuations in ARS populations downstream in Rosita Flats.

Additional educational materials concerning ARS protection might also be provided on existing park bulletin boards and any boards or kiosks added to campground areas to further awareness of ARS conservation.

### **Reinitiation Notice**

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The Service appreciates the cooperation extended by NPS staff and participating parties during this consultation. If further assistance or information is required, please contact Mr. Sean Edwards or myself at the above address or telephone (817) 277-1100.

cc: Regional Director, FWS, Albuquerque, NM

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## PERSONAL COMMUNICATIONS

Fenner, Daniel. 2014. Biologist - U.S. Fish & Wildlife Service, Tulsa Oklahoma Ecological Services Field Office. April 24, 2014.

Jones, Paul. 2014. Chief Ranger – National Park Service, Lake Meredith National Recreation Area. March 20, 2014.

Jeremy Stevens. 2014. Chief Ranger – National Park Service, Lake Meredith National Recreation Area. March 20, 2014.

Wilde, G. R. 2014. Professor of Fish Ecology-Department of Biological Sciences, Texas Tech University. March 24, 2014

Wimer, Arlene. 2014. Chief of Resources Management – National Park Service, Lake Meredith National Recreation Area. March 19, 2014.

## **Appendix A**

**Photos of fish stranded in pools at Rosita Flats  
and evidence of ORV disturbances**



Isolated pool at Canadian River



Evidence of fish stranded in isolated pool at Canadian River

A-2



Evidence of fish stranded in isolated pool at Canadian River

A-3



Evidence of ORV traffic though isolated pool at Canadian River

A-5



Evidence of ORV traffic through isolated pool at Canadian River  
A-6

## **Appendix B**

**Preliminary results of Dr. Gene Wilde's  
field experiment involving ORVs entering isolated pools containing fish**



Daniel B. Fenner  
U.S. Fish and Wildlife Service  
Oklahoma Ecological Services Field Office  
9014 East 21st Street  
Tulsa, Oklahoma 74129

5 April 2014

Dear Daniel:

We have had several discussions over the years about whether off road vehicles injure or kill fishes in the Canadian River, Texas, specifically in isolated pools in the river bed during periods of no flow. I have always believed there was a possibility that fish in pools might be affected, but didn't believe motor vehicles posed much of a hazard to fish in the flowing river. In either case, this was just an opinion.

Now, however, I have field observations and results of a quick experiment that better inform my opinion. I now believe off road vehicles, when operated in the river, do injure and kill fish. Also, I now am convinced that off road vehicles represent an important source of mortality for fishes, including Arkansas River shiner, trapped in isolated pools during periods of no flow.

In the attachment to this letter I present a few photographs and narrative that support my views.

Sincerely,

Gene R. Wilde  
Professor of Fish Ecology

att.

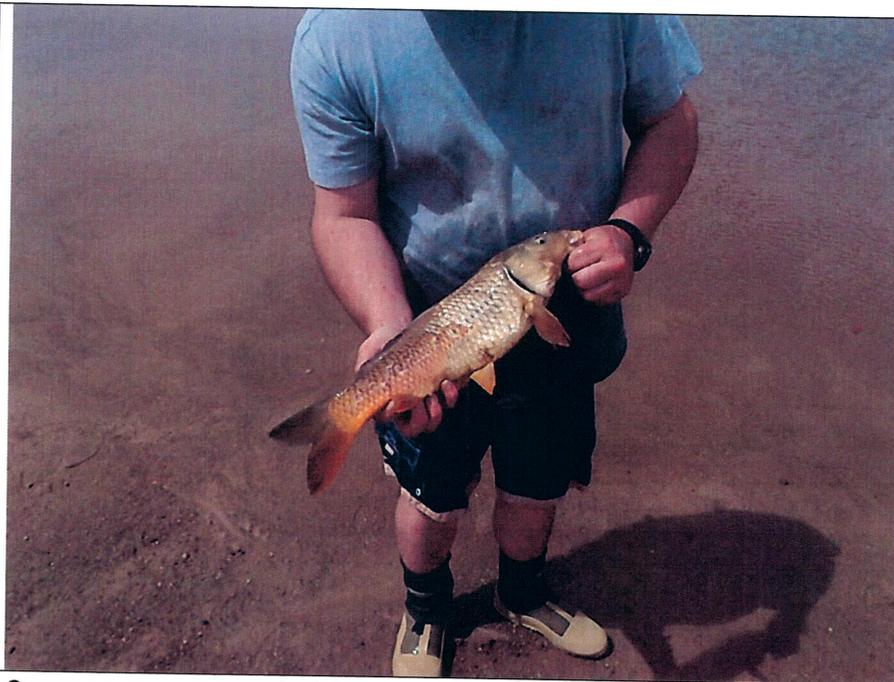
cc: Sean Edwards  
Lindsay Gillham  
Arlene Wimer  
Tim Birdsong

Box 43131, Lubbock, Texas 79409-3131 | T 806.742.2710 | F 806.742.2963 | [gene.wilde@ttu.edu](mailto:gene.wilde@ttu.edu)

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Tire tracks on a sand bar, which give some indication of recent motor vehicle activity. Most of these tracks lead into or out of the river. Canadian River, upstream from US Hwy 287 bridge, north of Amarillo, Potter County, Texas. 31 March 2014.



Common carp captured while seining showing extensive bruising and loss of scales on rear half of the fish (right side). In all likelihood, these injuries are the result of the fish being run over by an off road vehicle. The fish was released alive. Canadian River, upstream from US Hwy 287 bridge, north of Amarillo, Potter County, Texas. 31 March 2014.



Recently killed plains killifish picked up from the water. (Red arrow points to a portion of the injured area of the fish.) The fish was in relatively good condition, but its body posterior to the head and gills was crushed, presumably after being run over by an off road vehicle. Canadian River, upstream from US Hwy 287 bridge, north of Amarillo, Potter County, Texas. 31 March 2014.

I have always suspected that motor vehicles driven through pools in the river bed result in fish deaths. I had an opportunity to test this hypothesis by conducting a field experiment with Aaron Urbanczyk on 2 April 2014 on the Canadian River, upstream from US Hwy 287 bridge, north of Amarillo, Potter County, Texas.

We found a small, isolated pool (10.5-m long, 1.5-m wide, 5-cm deep) approximately 3 km upstream from the US Hwy 287 bridge. We removed, by seining, a number of small (< 30 mm TL) plains killifish and plains minnow and relocated them to another pool. We then introduced 80 large (> 35 mm TL) plains killifish, two red shiner, one plains minnow, and one western mosquitofish. We drove a truck through the pool five times, at 8 km per hour (5 mph).

After repeatedly seining the pool, we recovered 70 live plains killifish, plus all other fishes released into the pool.

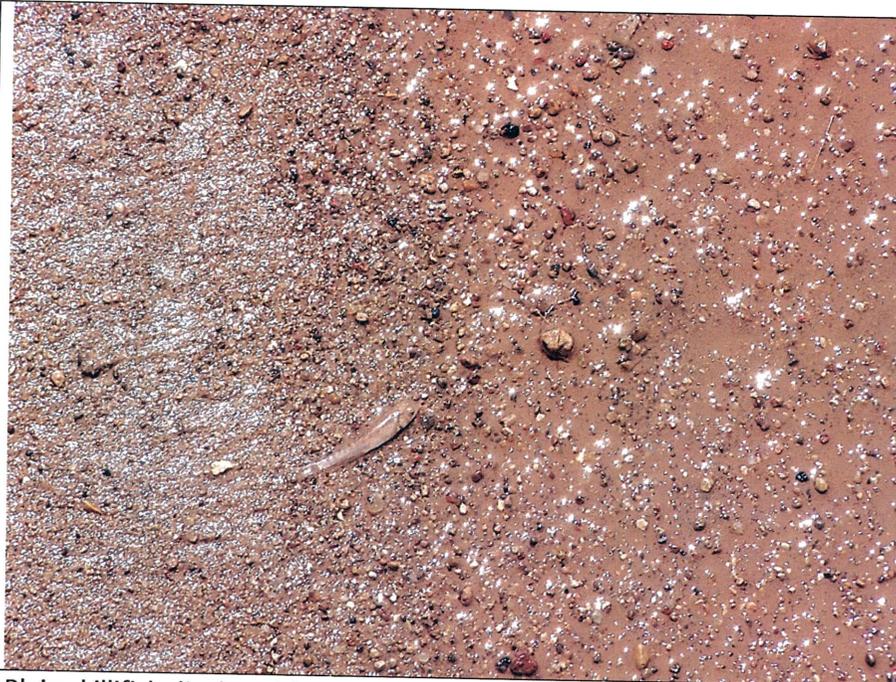
Two dead plains killifish were collected by seining, one was crushed and other had internal injuries that were evidenced externally by hemorrhaging of the eye. Three plains killifish were displaced onto the bank by the outwash from the truck. Thus, we confirmed 5 fatalities due to the truck. We assume the five missing fish were crushed into the sand substrate. We estimate the mortality due to vehicular activity to be 11.8% (10/85 fish). A very conservative estimate would be 5.9% (5/85 fish). We observed mortality only among plains killifish. We believe this is because they represented 94% of fishes introduced into the pool, rather than being due to peculiarities of their behavior or biology.



Pool used in our experiment. (Note the pre-existing tire tracks through the pool.) Canadian River, 3 km upstream from the US Hwy 287 bridge. 2 April 2014.



Truck driven through pool at 8 km per hour. Canadian River, 3 km upstream from the US Hwy 287 bridge. 2 April 2014.



Plains killifish displaced from the pool by truck wash. The fish was still alive, but was counted as dead- it was unable to make its way back to the pool. Canadian River, 3 km upstream from the US Hwy 287 bridge. 2 April 2014.



Plains killifish crushed by the truck (above) and dead fish with internal hemorrhaging (red eye, below). Note that the severity of injuries (and body conditions) are comparable to those observed in dead fishes collected from the river (see above). Canadian River, 3 km upstream from the US Hwy 287 bridge. 2 April 2014.

These estimates must be placed in context. The experiment was conducted in a small, shallow pool- mortality in larger, deeper pools may be greater or less. The density of fish was very low compared to what we commonly see in isolated pools in the Canadian River during periods of no flow- therefore, we would expect greater mortality in natural pools. The truck was driven at a low speed. Greater speeds, more typical of off roaders, may result in a greater number of fish being displaced (splashed) from pools. Finally, these results were from a very small number ( $n = 5$ ) of passes. Pools in the river bed receive much more traffic.

