

APPENDIX A - HUNTING MANAGEMENT PLAN

Hunting Management Plan

U.S. Fish & Wildlife Service
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Environmental Action Statement

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record. I have determined that the action of approving a new Hunting Plan, included expanded areas for big game and waterfowl hunting at Red Rock Lakes National Wildlife Refuge is found not to have significant environmental effects, as determined by the attached "Finding of No Significant Impact" and the environmental assessment.

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Dean Rundle, Refuge Supervisor

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I. INTRODUCTION

On April 22, 1935, President Franklin D. Roosevelt established Red Rock Lakes Migratory Waterfowl Refuge (later named Red Rock Lakes National Wildlife Refuge on July 19, 1961). During the 74 years since the executive boundary was established, the U.S. Fish and Wildlife Service has continued to acquire lands by purchase from willing landowners and acceptance of donations. The Service currently owns 51,693 acres.

This refuge is one of the most remote in the contiguous United States. It is located in the Centennial Valley in southwestern Montana in Beaverhead County, 47 miles west of West Yellowstone and 38 miles east of the town of Lima. This 51,693-acre refuge sits at 6,670–9,400 feet above sea level and lies east of the Continental Divide near the uppermost reach of the Missouri drainage.

The refuge has some of the most naturally diverse habitats in the National Wildlife Refuge System. The refuge boasts the largest wetland complex within the Greater Yellowstone Ecosystem, as well as expansive tracts of grassland and sagebrush-steppe habitats, and a small amount of midelevation forested areas. These habitats support over 230 species of birds, including peregrine falcons, bald eagles, short-eared owls, sandhill cranes, sage grouse, and numerous species of waterfowl and waterbirds. The Refuge is considered the most important breeding grounds for trumpeter swans in the Greater Yellowstone Ecosystem. Common mammals include Shiras moose, Rocky Mountain elk, mule and white-tailed deer, badger, coyote, and red fox. In addition, wolves and grizzly bears have been documented using the refuge in recent years. There is also a remnant population of endemic adfluvial (a population that lives in a lake and breeds in a river) Arctic grayling that occur on the refuge.

II. CONFORMANCE WITH STATUTORY AUTHORITIES

Several laws and a recent executive order apply to hunting on national wildlife Refuges. These laws are summarized below.

The Refuge Recreation Act of 1962

This Act (16 U.S.C. 460k) authorizes the Secretary of the Interior to administer such areas for public recreation as an appropriate incidental or secondary use only to the extent that it is practicable and not inconsistent with the primary objectives for which the area was established. In addition, the Refuge Recreation Act requires that funds are available for the development, operation, and maintenance of the permitted forms of recreation.

The National Wildlife Refuge System Administration Act of 1966

This Act (16 U.S.C. 668 dd-ee; 80 Stat. 927) authorizes the Secretary to "...permit the use of any area within the System for any purpose...compatible with the major purposes for which such areas were established..."

Executive Order 12996 (March 25, 1996)

This Executive Order, entitled "Management and General Public Use of the National Wildlife Refuge System," contains a directive to: "...recognize compatible wildlife-dependent recreational activities involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation as priority general public uses of the Refuge System..."

National Wildlife Refuge System Improvement Act of 1997

Signed by President Clinton on October 9, 1997, this new law defines compatible wildlife-dependent recreation as "legitimate and appropriate general public use of the [National Wildlife Refuge] System." It establishes hunting, fishing, wildlife observation and photography, and environmental education and interpretation as "priority public uses" where compatible with the mission and purpose of individual national wildlife Refuges.

Code of Federal Regulations (CFR), Title 50

- Section 31.2(e) lists hunting as a method of surplus wildlife population control.
- Section 31.15 states that the privilege of hunting may be extended to the general public.
- Section 32.1 states that the opening of a wildlife Refuge area to hunting will be dependent upon the provisions of law applicable to the area and upon a determination by the Secretary of the Interior that the opening of the area to the hunting of migratory game birds, upland game, or big game will be compatible with the principles of sound wildlife management and will otherwise be in the public interest.
- Section 32.2 of Title 50 CFR has provisions applicable to each person engaged in public hunting on a wildlife Refuge area.
- Section 32.3 of Title 50 CFR explains the procedure for publication of special regulations.

III. STATEMENT OF OBJECTIVES

A. Refuge Purpose

Every refuge has a purpose for which it was established. The purpose is the foundation upon which to build all refuge programs, from biology and visitor services, to maintenance and facilities. No uses of a refuge may be allowed if they are determined to materially detract from or interfere with the purposes for which the refuge was established or the mission of the Refuge System. The refuge purpose is found in the legislative acts or administrative orders that provide the authorities to either transfer or acquire a piece of land for a refuge. Over time, an individual refuge may contain lands that have been acquired under a variety of transfer and acquisition authorities, giving a refuge more than one purpose. The goals, objectives, and strategies identified in the Refuges' comprehensive conservation plan are intended to support individual purposes for which the refuge was established.

The legislative purposes for Red Rock Lakes National Wildlife Refuge include the following:

1. "As a refuge and breeding ground for wild birds and animals." (Executive Order 7023, dated April 22, 1935)
2. "For use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (Migratory Bird Conservation Act 1929)
3. "Suitable for (a) incidental fish and wildlife-oriented recreational development, (b) the protection of natural resources, (c) the conservation of endangered species or threatened species ... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors." (Refuge Recreation Act 1962)
4. "The conservation of the wetlands of the nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions." (Emergency Wetlands Resources Act 1986)
5. "For the development, advancement, management, conservation, and protection of fish and wildlife resources ... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude." (Fish and Wildlife Act 1956)
6. "Wilderness areas ... shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness." (Wilderness Act 1964)

B. Goals of the National Wildlife Refuge System

The goals established for the National Wildlife Refuge System are delineated below:

- To preserve, restore, and enhance in their natural ecosystems (when practicable) all animal and plant species that are endangered or threatened with becoming endangered;
- To perpetuate the migratory bird resource;

- To preserve a natural diversity and abundance of fauna and flora on Refuge lands; and,
- To provide an understanding and appreciation of fish and wildlife ecology and man's role in his environment, and to provide Refuge visitors with high quality, safe, wholesome, and enjoyable recreational experiences oriented toward wildlife to the extent these activities are compatible with the purpose for which the Refuge was established.
- The goal established for the Red Rock Lakes National Wildlife Refuge as identified in the Comprehensive Conservation Plan (signed in 2000), specific to hunting is to:

Provide opportunities for compatible wildlife-dependent recreation, which includes hunting.

C. Objectives of Red Rock Lakes National Wildlife Refuge

The objectives established for the Red Rock Lakes National Wildlife Refuge as identified in the Comprehensive Conservation Plan (signed in 2009), specific to hunting is delineated below:

Provide opportunities for wildlife photography, wildlife observation, environmental education and interpretation, hunting, and fishing

D. Hunting Program Objectives

The Fish and Wildlife Service policy on hunting as stated in the Refuge Manual (8RM 5.1) is: “...to permit hunting on any Refuge within the Refuge System upon a determination that hunting is compatible with the major purposes for which such areas are established.” In addition to a compatibility determination, the Refuge Recreation Act requires verification that funds are available for the development, operation and maintenance of the hunting program.

The Service has long recognized that hunting is an integral part of a comprehensive wildlife management program and that significant positive benefits can be attributed to a well-managed hunt. Hunting is also recognized as an acceptable, traditional form of wildlife-oriented recreation that can be, and sometimes is, used as a management tool to effectively manipulate wildlife population levels.

This is especially true in an area where those lands have traditionally supported hunting, as in the Centennial Valley of Southwest Montana. In situations where hunting opportunities may be modified, the reasons include: wildlife population considerations, habitat maintenance, providing for safety and maintaining a high-quality hunt, simplifying hunt boundaries. The Red Rock Lakes National Wildlife Refuge hunting program objectives are listed below:

- To provide a high quality hunting experience; and,
- To maintain wildlife populations and their unique habitats found within the Refuge in a healthy condition.
- Address density dependent disease threats to elk with emphasis on brucellosis.
- Manage species in a manner that is consistent with the Refuge purpose.
- Simplify hunting boundaries and eliminate confusion associated with checker boarded ownership on the north side of the Refuge

Hunting on Red Rock Lakes National Wildlife Refuge (Refuge) shall be in accordance with state, federal and Refuge regulations. The Refuge will institute limited big game hunting opportunities, sanctuaries, and similar special conditions for safety, wildlife management, and other reasons based upon necessity to insure public safety and sound wildlife conservation. Portions of the Refuge open for hunting will be designated by signs and/or shown on permits or maps. Special regulations and maps will be available to the public.

E. Relationship of Hunt Program to Goals and Objectives

A Refuge hunting program would provide the public with quality wildlife-dependent recreation opportunities. Also, a Refuge hunting program would benefit the habitat management objectives of the Refuge, especially in managing wildlife populations. Growing elk densities in and around the Refuge are a cause for concern in the areas of disease

transmission. Brucellosis has been found in elk heads throughout neighboring lands of the Refuge. High densities of elk are susceptible to transmitting the disease brucellosis. When the populations are managed, primarily through hunting, to prohibit congregation in unnaturally high population densities and to not become overpopulated, brucellosis becomes less of a factor. The elk found in and around the Refuge find sanctuary on the Refuge where they are presently not being hunted. This has led to an increase in the local densities which does not allow the Montana Fish, Wildlife, and Parks to meet its management objectives, and increases risk of disease transmission.

The negative effects of a hunting program on the Refuge have been minimized through the use of Refuge-specific regulations. Safety issues, wildlife population concerns, non-target species impacts, endangered species impacts, impact to local businesses, and quality hunt parameters will all be evaluated as the program develops and the Refuge will make adjustments when needed.

IV. ASSESSMENT

Environmental Status as stated in CCP (signed June 2009)

Water Resources

The refuge is located in the upper end of the Red Rock River watershed. This watershed is the headwaters of the Missouri River. The refuge encompasses approximately 25,000 acres of natural, enhanced, and created wetlands. Upper and Lower Red Rock lakes have a combined surface water area of approximately 6,300 acres. This wetland complex has many sources of surface and groundwater inputs. Spring runoff plays an important role in the hydrology of the mountain creeks that flow into this wetland complex. There are a few surface water inputs that flow from the north side of the Centennial Valley into this wetland complex.

Shrub Dominate Wetlands

Soils in these habitats range from poorly drained peat or muck meadows, saline (salty) to calcareous (containing accumulations of calcium and magnesium carbonate). The refuge has three major wetland shrub communities: shrubby cinquefoil dominated, low-statured willow dominated, and tall-statured willow dominated.

Wet Meadows

Wet meadow habitat occurs over 7,000 acres of the refuge. Topography of wet meadows on the refuge varies from level to undulating or hummocky. Soils are poorly drained loam, sandy loam, or clay. These habitats are dominated by a dense layer of graminoids (sedges, rushes, and grasses) with low to moderate forb diversity and low forb canopy cover. These areas are flooded early in the growing season, but soils are dry by mid-summer. The amount of residual cover is variable depending upon the species composition and subsequent vegetative growth of the previous growing season. Differences in species composition and moisture gradients result in a mosaic of relatively short (<1 foot in height) and relatively tall (>2 feet in height) vegetation. On average, vegetation is <20 inches in height by late summer.

Montane wet meadows, a type of high-elevation wetland, undergo a rapid wet/dry cycle, with complete flooding in the spring and early summer followed by two to three months of little to no precipitation. Groundwater flow, surface runoff, and spring/early summer precipitation are important water sources for these habitats (Windell et al. 1986). Hydrologic cycles in these habitats are strongly influenced by snowpack, and water table levels can undergo extreme fluctuations both within a single growing season and annually (Svejcar and Riegel 1998). Variation in the depth to water table has a strong influence on plant species distribution (Allen-Diaz 1991, Castelli et al. 2000, Dwire et al. 2006).

The majority of wet meadow habitats on the refuge are grazed by cattle 1 out of every 4 years. Cattle typically arrive in mid-July and remain until mid- to late September. Nonnative plants, including smooth brome, Canada thistle, and Kentucky bluegrass, have invaded portions of this habitat, particularly areas that were historically-hayed. Prescribed fire has been used to reduce cover of smooth brome.

Shrub-Steppe and Grasslands

Upland shrub-steppe habitats, or habitats where both shrubs and grasses share dominance, occur on over 9,200 acres of the refuge. Several shrub-steppe habitats occur on the refuge, with areas dominated by threetip sagebrush. These

habitats typically have <20% sagebrush canopy cover. Threetip sagebrush is very localized in Montana, occurring only in the extreme southwestern portion of the state. This species typically occurs on gentle alluvial slopes or benches with moderately deep soils (Mueggler and Stewart 1980). Mountain big sagebrush shrublands occur on the southern edge of the refuge on the foothills of the Centennial Mountains, as well as within snowmelt drainages and north-facing aspects. Basin big sagebrush shrublands occur only within the Centennial Sandhills (see “Centennial Sandhills” in the next section). Two shrub-steppe habitats, mountain silver sagebrush and greasewood, are considered wetland habitats. Silver sagebrush shrublands occur on alluvial fans on the refuge and typically have <20% sagebrush canopy cover.

Grasslands on the refuge occur primarily north of Lower Red Rock Lake and make up over 2,000 acres. The bunchgrass, Idaho fescue, has by far the most coverage at over 1,500 acres. On more alkaline soils, basin wildrye, Nuttall’s alkaligrass, and Sandberg bluegrass are common. Forb coverage and diversity is variable depending upon soil moisture and type. Silvery lupine, rosy pussytoes, and common yarrow are the most widely occurring forbs.

Grassland and shrub-steppe communities on the refuge are relatively intact and contiguous. The largest disturbance to these habitats resulted from seeding of nonnative forage for hay production, which occurred before refuge ownership. These haying operations resulted in the replacement of native vegetation with nonnative, rhizomatous grasses, particularly smooth brome, Kentucky bluegrass, and meadow foxtail. Other invasive species, including cheatgrass, Canada thistle, and common tansy, occur in localized patches throughout these communities.

Centennial Sandhills

The Centennial Sandhills (sandhills) cover the northeastern portion of the Centennial Valley and make up over 3,500 acres of refuge habitat. This is 44% of the 7,907 total acres that occur in the valley. These well-vegetated, relatively stable sand dunes are in various states of activity. The western dunes, located outside of the refuge boundary, are the most active and topographically varied, whereas those on refuge lands to the east are well stabilized with less topographic relief. Soils in the sandhills are highly erodible, well-drained, and sandy. Vegetative communities in these sandhills occur nowhere else in Montana (Lesica and Cooper 1999). Basin big sagebrush is the dominant shrub with 5%–40% canopy cover. Such dominance of basin big sagebrush is rare in Montana (Morris et al. 1976). Threetip sagebrush, rubber rabbitbrush, green rabbitbrush, and spineless horsebrush are other common shrubs. Bunchgrass canopy cover ranges from 5%–90% with needle and thread dominant and Idaho fescue codominant in some portions. Other common grasses include prairie Junegrass, Sandberg’s bluegrass, and thickspike wheatgrass. Forbs have 5%–45% cover and moderate to high diversity. Hoary tansyaster, silvery lupine, granite prickly phlox, buckwheat, silverleaf phacelia, tarragon, slimflower scurfpea, and brittle pricklypear are common. 10%–70% of the soil surface is bare sand, although the nonnative pale madwort is common in some portions of the sandhills, subsequently reducing the amount of bare sand. Several rare plant species are found in areas of open sand in early seral portions of this habitat. Two species are critically imperiled (painted milkvetch and sand wildrye), and one species (Fendler cat’s-eye) is imperiled in Montana due to limited range and habitat in the state. The status of a fourth species, pale evening primrose, is currently under review by the network of Natural Heritage Programs. The sandhills contain several unique vegetation associations, one of which, the threetip sagebrush and needle and thread grass vegetation association, is critically imperiled globally (MTNHP 2002).

Aspen Woodlands and Forests

Aspen communities comprise approximately 280 acres on the refuge and occur as relatively small patches located within wetlands in the southeastern portion of the refuge near Upper Red Rock Lake, within mixed stands of aspen and conifer, and as larger patches on the fringe of Douglas-fir forests on the southern edge of the refuge. These larger patches are typically associated with old earthflows and landslides on the northern flank of the Centennial Range. The vegetation in these communities is variable, ranging from two-layered quaking aspen overstory and grassland understory communities (quaking aspen and mountain brome, quaking aspen and pinegrass) to multilayered quaking aspen and tall forb; and quaking aspen and tall willow vegetation associations. The upper elevation limit for aspen within the Centennial Valley is about 8,500 feet.

Reproduction in these aspen communities is most likely vegetative via root suckering, forming clonal (genetically identical) stands. Aspen are shade intolerant and regeneration cannot occur under a dense tree canopy (Jones and Debyle 1985). Historically, many of these stands were maintained through disturbances, such as fire, that removed the overstory and promoted root suckering. Large-scale declines of aspen across the western United States have been

widely distributed, likely caused by a combination of factors, including global climate change, high levels of ungulate herbivory, and conifer encroachment due to fire suppression (Brown et al. 2006).

Recent work suggests that aspen loss at the scale of the Greater Yellowstone Ecosystem has averaged 10% in the last 50 years—much less than previous studies have suggested (Brown et al. 2006). Much local variability exists in changes in aspen extent, likely based on biophysical setting and climatic conditions (Brown et al. 2006). In the Centennial Mountains of Idaho, vegetation models show a 75% decline in aspen coverage since the mid-1800s (Gallant et al. 2003). A 45% decline in coverage of aspen, and mixed aspen and conifer stands over the past 50 years was estimated in the Gravelly Mountains of southwestern Montana (Wirth et al. 1996). A recent study conducted on the refuge found successful aspen regeneration throughout the twentieth century along the sagebrush-grassland and forest ecotone (a transition zone between two different plant communities) (Sankey et al. 2006). Preliminary results of a second study conducted in the Centennial Valley show some aspen expansion, but most sites exhibited loss of aspen due to conifer encroachment (Korb et al. 2008). Fire suppression has likely promoted the encroachment of Douglas-fir into aspen stands, potentially reducing their extent. Surveys conducted by The Nature Conservancy (on file at Red Rock Lakes National Wildlife Refuge) showed that where aspen are successfully regenerating, aspen stems are undergoing moderate to heavy browsing by elk and moose, with few stems growing above browse height.

Coniferous Woodlands and Forests

Coniferous woodlands (evergreen trees having <60% canopy cover) and forests (evergreen trees having >60% canopy cover) cover over 3,500 acres on the refuge. The primary natural disturbance in these habitats is fire. Several sawmills operated in the Centennial Valley during the early 1900s, but the extent of logging that occurred in the area that is now part of the refuge is unknown.

At the forest and grassland ecotone, open woodlands dominated by Douglas-fir occur. Understory vegetation is dominated by mountain big and threetip sagebrush, bluebunch wheatgrass, and Idaho fescue. Historically, these woodlands underwent frequent (annually to every few years) low-severity fires, which killed sapling and small-diameter trees and maintained the open tree canopy. Since settlement of the Centennial Valley, fires in these woodlands have been actively suppressed because most homes and other buildings occur in this habitat. Cattle grazing occurs in these woodlands, reducing fine grassy fuels. As a result, tree densities have increased and forests have expanded into the adjacent sagebrush and grassland habitat (Heyerdahl et al. 2006, Korb 2005, Sankey et al. 2006).

Open woodlands (tree canopy cover <60%) of limber pine are found on mostly south- and southwest-facing slopes. The ground is mostly bare and gravelly, and understory vegetation is sparse. Scattered common juniper and bluebunch wheatgrass are the most common understory species although their coverage is typically <10%. Fire is infrequent due to the lack of fuels. Trees in these sites may be several hundred years old (Cooper 1999).

Coniferous forests flank the north-facing slopes of the Centennial Mountains, ranging in elevation from 6,700 to 9,600 feet. Common tree species include Douglas-fir, subalpine fir, lodgepole pine, Engelmann spruce, whitebark pine, and limber pine. Shrubs make up a minor component of the vegetative community with mountain snowberry and common white spiraea. The undergrowth can be sparse depending upon tree canopy cover. The forb understory can be diverse, but no species are particularly common except heartleaf arnica, timber milkvetch, and western showy aster. Western meadowrue, showy aster, northern valerian, and mountain sweet-cicely are common forbs on more mesic (moderately moist) sites. In more open forests, the understory is dominated by graminoids, with Geyer's sedge and pinegrass being most common.

Douglas-fir dominates the tree canopy at elevations up to 8,200 feet. Historically, these areas of relatively mesic, lower-elevation forests experienced mixed-severity fires; supporting both frequent (years to decades) low-severity fires, which typically killed individual or small clumps of small-diameter trees, and infrequent (1 to many centuries), high-severity crown fires, which killed large areas (thousands of acres) of canopy trees (Korb 2005, Schoennagel et al. 2004). Accordingly, the fire systems in these forests are the most complex and least understood of the major fire systems in Rocky Mountain forests. A complex interaction of both fuels and climate affect the frequency, severity, and size of fires under mixed-severity fire systems (Schoennagel et al. 2004). Historic fire suppression efforts in these forests were likely few due to their remoteness; thus, current conditions in these forests are likely to be within their historic range of variability.

Above 7,200 feet, moist, high-elevation forests are dominated by subalpine fir, Engelmann spruce, and lodgepole pine. These forests experience infrequent (1 to many centuries), high-severity, stand-replacing crown fires (Schoennagel et al. 2004), and the thin bark of these tree species make them easily killed by fire. Tree density is high in these forests and tree canopy typically exceeds 70%, thus undergrowth vegetation is sparse and fuels are few.

A small (19 acres) seasonally flooded Engelmann spruce forest exists on the south shore of Upper Red Rock Lake. Soils within this association typically remain wet well into the growing season. Old growth Engelmann spruce dominates the canopy. The understory is dominated by a moderate cover of field horsetail and a dense layer of moss. Other forbs include arrowleaf ragwort, starry false lily of the valley, and clasp leaf twisted stalk. This forest type is rare in southwest Montana.

V. DESCRIPTION OF THE HUNTING PROGRAM

A. Guidelines for Hunt Program

The following administrative procedures for Refuge hunting programs can be found in the Service Refuge Manual (8 RM 5.5):

"Refuge hunting programs should be planned, supervised, conducted, and evaluated to promote positive hunting values and hunter ethics such as fair chase and sportsmanship. In general, hunting on Refuges should be superior to that available on other public or private lands and should provide participants with reasonable harvest opportunities, uncrowded conditions, limited interference from or dependence on mechanized aspects of the sport. This may require zoning the hunt unit and limiting the number of participants. Good planning will minimize the controls and regimentation needed to achieve hunting objectives."

B. Areas Open to Hunting

The Refuge is broken up in to easily definable components describing the hunted game species. As a result of adjusting the hunt boundaries, no measureable increase is expected in the number of waterfowl, deer (mule and white-tail), and moose hunters. However, the number of elk hunters over the entire season will increase to a maximum of 52 hunters. Finally, an additional of 18 antelope hunters will visit the Refuge as a result of these boundary changes. For an overall view of the Refuge and its hunting boundaries, see the Refuge map in the appendix.

The following describes hunting on Red Rock Lakes NWR:

Access by foot will be allowed throughout the Refuge during the open hunting seasons. Special youth hunting and access for hunters with disabilities will be encouraged and accommodated following MFWP regulations. Livestock are allowed to retrieve game on the Refuge. They are allowed south of South Valley Road to assess lands managed by other agencies. Livestock will be prohibited while hunting north of the South Valley Road. The use of stock animals is generally used by hunters to retrieve animals taken on the Refuge or adjacent lands in the backcountry of the Centennial Mountains. All or any part of the Refuge may be closed to hunting or public access by the refuge manager whenever necessary to protect the resources or in the event of an emergency endangering human life or property. In addition, according to refuge policy (RM 5.436), yearly monitoring of impacts from the hunting program will occur to determine if modifications to the Hunt Plan are necessary.

6,940 acres will be open to a restricted big game hunt during the general gun season. Refuge specific regulations will limit the number of hunters in this area. 23,110 acres will be open to deer, elk and pronghorn hunting in accordance with MFWP. 10,143 acres will be open to waterfowl hunting, 5,126 acres will be open to moose hunting with a Refuge specific regulation delaying opening on the refuge until October 15th. 7,306 acres will be closed to hunting. The refuge is closed to hunting of all other species, not mentioned above. Big game hunting boundaries were modified and expanded to eliminate boundary confusion, address law enforcement issues, address congregating of elk to minimize the potential for disease transmission, and expand hunting opportunities. Changes are also designed to incorporate newly acquired refuge land into the refuge hunting program. These changes expand the area designated as open to elk, deer, pronghorn, and duck, goose, and coot hunting, but no new species were added (e.g. mountain grouse).

Big game, waterfowl, and coot hunting is allowed 50 yards- east of Odell Creek, northward to where the creek intersects with Lower Red Rock Lake. The south boundary of this expansion area is Sparrow Pond Trail and bridge. Hunting is prohibited until 50 yards downstream of the bridge.

The northern boundary for waterfowl hunting will be the east-west running fence line ~1 mile north of the River Marsh. The west boundary for waterfowl hunting will be the west boundary of the Refuge. The south boundary for waterfowl hunting will be the South Valley Road. The east boundary for waterfowl hunting, north of where Odell Creek enters Lower Red Rock Lake, will be the existing north-south waterfowl boundary that proceeds due north from the mouth of Odell Creek.

Elk, deer, and pronghorn hunt boundaries include lands acquired/added to the Refuge in recent years north of the River Marsh. The area in-between Lower and Upper Red Rock lakes, south of the Red Rock River Marsh, north of the South Valley Road, and east of Odell Creek is opened to 2 hunters per day during the general big game season. The area around Lower Lake is included in this two hunters per day limit during general big game season. This change restricts past opportunity that area provided for unlimited number of hunters during the general big game season. The moose hunting area was modified by closing an area now open south of the South Valley Road (1040 acres), and opening an area (240 acres) near Saier's Corrals west of the South Valley Road. The 240 acre area was acquired/added to the refuge in recent years. The area open to moose hunting will remain closed to all other hunting such as big game and waterfowl. Moose hunting is open in the area southeast of Upper Red Rock Lake south of Elk Springs Creek, west of Elk Lake Road, west and north of South Valley Road to just east of Upper Lake Campground. Refuge lands surrounding Refuge headquarters/Lakeview and portions of Odell Creek Trail will remain closed for protection of nearby residences, and provide time and space separation for consumptive and non-consumptive users. Hunting of mountain lion, black bear, wolf, coyote, all grouse, ground squirrels, and furbearers will remain prohibited on the Refuge. Vehicle access will continue to be permitted on roads, currently open to the public. To prevent illegal shooting from the road right away, a no-hunting area will extend 50 yards from either side of the road's centerline for the South Valley Road, within the Refuge boundary.

Opening the land in-between Upper and Lower Lake (limited big game hunting area) is mitigated because the Refuge limits the area to only 2 hunters per day, starting on November 1st from 2012-2014 during the gun big game season. We believe congregations of Elk need to be encouraged to break into smaller groups, or at least leave the closed hunting areas where unnaturally high densities of elk has occurred in the past several years. Concerns over increased transfer of the disease brucellosis will be mitigated and hunters will gain opportunity to hunt elk in an open wilderness landscape. The hunt will be monitored because there is a limited number of hunters/ day allowed on this expanded hunting area. Law enforcement is accomplished with current staff levels and collaboration with MFWP.

C. Species to be Hunted

As defined by the Service's Refuge Manual, hunting on Refuges may be allowed for migratory waterfowl and coots and big game species such as mule and white-tailed deer, Shiras moose, rocky mountain elk and pronghorn antelope.

Shiras Moose

Floodplain riparian habitat provides relatively stable and important wintering habitat for moose in the Rocky Mountains. The Centennial Valley in southwest Montana contains the largest wetland complex in the Greater Yellowstone Ecosystem. Shiras moose, a subspecies of moose found in the central Rocky Mountains, commonly occur on the refuge in one of the largest and highest density wintering Shiras moose populations in the central Rocky Mountains. Most of this habitat is encompassed by the Refuge, situated in the eastern extent of the valley. During the winter, this habitat is also believed to support the majority of the moose population within MFWP's Hunting District 334. Although a complete understanding of seasonal movements is lacking for the Centennial Valley moose population, peak numbers on the refuge occur during December and January.

Refuge moose management is coordinated with the state MFWP to adjust harvest for population regulation. Although the refuge comprises only a small proportion of the hunting district, a high percentage (~90%) of moose harvested in the district is taken on refuge lands. Moose populations have increased >500% since the mid-1960's. For example, 26 moose were counted during a survey in 1966, compared to the winter of 2011, when 135 moose were counted. Currently, the Refuge is home to more overwintering moose than in Refuge history. In this alternative, total acre allowable for moose harvest will be reduced by ~800 acres. We expect no measureable impact

to moose populations by reducing the area open to moose hunting, while there will be benefits to enforcement of the open and closed areas. Adult moose populations continue to grow at 3% annually, a rate that supports positive population growth. Recent data suggests that willow habitats in the Tom Creek Basin (the hunting area for moose) are being over-browsed. Both moose and elk browse this area. However, nearby willow habitats in the Greater Yellowstone Ecosystem have recently recovered from ungulate over browsing. The recovery of willows in recent time has been linked to behavioral impacts on elk by wolves and increased precipitation levels.

Elk

The current population objective for the Gravelly EMU is 8,000 observed elk \pm 15%. In 2011, the second highest count (9,653) of elk was recorded in the GEMU over the last 30 years. This 3,044-square-mile EMU [2,181 square miles (75%) are occupied by elk] encompasses the Gravelly, Greenhorn, Snowcrest, Centennial, and Blacktail mountain ranges of southwest Montana and includes 7 hunting districts (HDs). With the exception of the Snowcrest and Centennial Mountains, which are steep and rugged, the unit consists primarily of gentle, rolling terrain, even at high elevations. The U.S. Forest Service (USFS) Beaverhead-Deerlodge National Forest, administers about 24% of the EMU, about 20% is administered by the U.S. Bureau of Land Management (BLM), 13% by the Montana Department of Natural Resources and Conservation (DNRC), and about 37% is private land. The refuge is only 2.6% of the EMU. The area of elk distribution includes 33.5% USFS land, 23.1% BLM land, 12.7% DNRC land, and 26.3% private land. However, weighted by numbers and time spent, about 71% of locations of radio-collared elk throughout the year were on USFS lands (Hamlin and Ross 2002). Three FWP-administered Wildlife Management Areas (WMAs) are located in this EMU (Blacktail, Wall Creek and Robb-Ledford WMAs) and about 45% of winter locations of radio-collared elk were on the WMAs and 37% on USFS land (Hamlin and Ross 2002).

There may be additional disturbance and harvest to elk by expanding big game hunting into historically closed hunting areas of the Refuge. However, the impact to the local elk herd will be minimal, because: Harvest regulations focus on brow-tined bulls with a limited antlerless season; Any additional harvest experienced from implementing the proposed action is mitigated by an increase in elk numbers that occurred with establishment of the Refuge and; Adaptive Harvest Management by MFWP allows the state to be proactive in monitoring elk population parameters and changing harvest strategies to maintain a healthy self-sustaining herd.

Expanding the Refuge hunting area increases access to elk that are currently congregating in that area because it is closed. This may have some impact on the local elk herd as it makes it easier to find the elk. However, it will be difficult for hunters to approach the elk, given open terrain and lack of cover for hiding the hunter. Access to the currently closed hunting area will not likely have an appreciable negative impact on the local elk herd. Any major impact would be mitigated by a change in hunting seasons under the MFWP's Elk Management Plan.

Mule Deer

Montana Fish, Wildlife and Parks use Adaptive Harvest Management to manage mule deer populations. This is similar to the system used for elk management where population objectives are set for each management unit and emphasis is placed on monitoring population parameters such as total number of deer observed, buck to doe, and fawn to doe ratios. Hunting regulation alternatives had been set that can be implemented when the monitoring program detects significant changes in population status. MFWP has developed statistical modeling programs that can be used to predict future trends in populations by analyzing variables such as population structure, weather, habitat condition, predation and other natural mortality and hunter harvest.

Research conducted by MFWP (MFWP 2000) shows that the most important factors regulating mule deer populations are; weather, habitat condition, predation and other natural mortality, and hunter harvest. Models have been developed that incorporate these factors into the elements of Adaptive Harvest Management.

During the big game hunting season there are few mule deer in the proposed hunting area in the proposed action. This is the area between Lower and Upper Red Rock Lakes, south of the River Marsh and north of South Valley road. The Refuge estimates less than 5 mule deer per year will be harvested in the expanded hunting areas proposed by the proposed action. This represents less than 2% of the local hunting district harvest. It would have little impact on total harvest in this hunting district and would not have a cumulative impact on local mule deer populations. Most likely any hunter using the area where hunters are limited will use the opportunity to elk hunt and will avoid alarming elk by shooting at mule deer.

White-tailed Deer

White-tailed deer are the most abundant and accessible game species in southwest Montana. Deer densities average 15 to 25 deer per square mile. The average fawn/doe ratio is 50% with an average fawn survival to 6 to 12 months of 74% (Sime 2000). Hunting statistics for Region 3 show an average harvest of 9,021 deer/year for the last five years. An estimated 5 to 10 white-tailed deer will be harvested on the Refuge each year under the selected alternative. This represents only 0.01% of the regional harvest.

Opening a greater portion of Red Rock Lakes NWR to deer hunting should have no effect on regional populations for the following reasons: 1) An insignificant number of deer will be harvested from the Refuge (less than 0.01%) compared to the number harvested in the hunting district; 2) Refuge hunting will increase the number of acres open to hunting in the region by less than 1 percent; 3) Deer home ranges in Western Montana average 166 acres for females and 597 acres for males (Morgan 1993) so hunting would only impact populations on a local level. Most likely any hunter using the area where hunters are limited will use the opportunity to elk hunt and will avoid alarming elk by shooting at white-tailed deer.

Waterfowl

Additional impacts from hunting activity include conflicts with individuals participating in other wildlife-dependent priority public uses, such as hiking and wildlife observation. However, the refuge currently provides approximately 41,000 acres of habitat that are closed to waterfowl hunting but open for visitors to participate in wildlife observation activities on foot or by boat. Waterfowl hunting does not open until the Saturday closest to October 1st. Gun hunting for big game does not open until pronghorn hunting season on Columbus Day weekend (October 10). Most other wildlife-dependent public users are not using the refuge by that time due to cold and/or inclement weather.

Trumpeter Swans

Trumpeter swans are present on the Refuge but hunting is not permitted for this species. Trumpeter swans were once abundant across most of North America, but were reduced to a population of less than 120 known individuals by 1936. From this population low point, through diligence and hard work by many, trumpeter swans have recovered remarkably. In 2011, there were nearly 45,000 known trumpeter swans in North America, with breeding populations in fifteen states across the native range of the species. The Rocky Mountain population of trumpeter swans, which includes swans that nest and winter in the Centennial Valley, reached a record high of 5,712 in 2011. This population winters in the tri-state area of southwestern Montana, southeastern Idaho, and northwestern Wyoming. The population nests in two general areas. The largely non-migratory tri-state subpopulation nests primarily in the Centennial Valley of southwestern Montana, Yellowstone National Park, and southeastern Idaho.

The swan population within the Centennial Valley has had positive population growth since the winter of 1992-1993 when their supplemental feeding was terminated. Mean annual population growth for total adult swans is 3.8% since termination of feeding. This rate is enough to maintain positive population growth in the Centennial Valley. During this time of positive population growth, trumpeter swans have likely become habituated to some hunting disturbance by waterfowl hunters using Lower Red Rock Lake. These data suggest that swans are capable of continuing positive population growth while the refuge provides some waterfowl hunting on lands surrounding Lower Red Rock Lake.

Large Carnivores

Mountain lion, black bear, wolf, coyote and fox are present on the Refuge but hunting is not permitted for these species under the proposed action. Elk, deer, antelope, and moose hunting may increase disturbance to large carnivores but not to a degree where a negative impact will occur. Large carnivores have adapted to hunting pressure in southwestern Montana and populations have increased, despite this activity.

Other Non-game Wildlife

Other non-hunted wildlife would include other migratory birds such as songbirds, wading birds, raptors and woodpeckers; small mammals such as voles, moles, mice, shrews, rabbits, squirrels, bats; reptiles and amphibians such as snakes, salamanders, frogs and toads; invertebrates such as butterflies, moths other insects and spiders. Except for migratory birds and some species of migratory bats, butterflies and moths, these species have very limited home ranges or migrate from the Refuge prior to or during hunting season and hunting would not affect their populations regionally; thus only local effects will be discussed.

Disturbance caused by hunting to non-game wildlife is the most likely negative cumulative impact. However, disturbance is unlikely to severely impact these species for the following reasons. However, disturbance is unlikely to severely impact these species for the following reasons: small migratory mammals, including bats, are nocturnal, and inactive during fall/winter when hunting season occurs. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor by cold-blood reptiles and amphibians also limits their activity during the hunting season when temperatures are low. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Encounters with reptiles and amphibians in the early fall are few and should not have cumulative negative effects on reptile and amphibian populations. Invertebrates are also not active during cold weather and would have few interactions with hunters during the hunting season. During the vast majority of the hunting season, hunter density is low (1 hunter/2,000 acres). Refuge regulations further mitigate possible disturbance by hunters to non-game species. Vehicles are restricted to public roads and the harassment or taking of any wildlife other than the game species legal for the season is not permitted.

Disturbance to non-hunted migratory birds are not likely to impact populations at the regional, local, and flyway scale. Regional and flyway effects would not be applicable to species that do not migrate such as most woodpeckers, and some songbirds such as juncos and chickadees. Disturbance by hunting to migratory birds should not result in cumulative negative impacts for the following reasons: (a) Hunting season would not coincide with the nesting season, and (b) Long-term future impacts that occur if reproduction is reduced are not relevant for this reason. Disturbance to the daily fall activities, such as feeding and resting might occur. Disturbance to birds by hunters would probably be commensurate with that caused by non-hunting visitors. Some species of bats, butterflies and moths are migratory. Cumulative effects to these species at the flyway level should be negligible. These species are in torpor during hunting seasons.

Endangered Species

Hunting is not permitted for Endangered or Threatened species. The only Endangered or Threatened species that has been known to utilize the refuge is the grizzly bear. A Section 7 Evaluation was conducted in association with this EA for hunting on Red Rock Lakes NWR. It was determined that the selected alternative would not likely adversely affect this threatened species.

Grizzly Bear

There is not likely to be any negative cumulative impact on grizzly bears under the selected alternative. Grizzly bears rarely use the Refuge, but their occurrence has increased in recent years. Black bear hunting is not permitted on the Refuge, which eliminates the chance that a grizzly bear could be mistakenly shot for a black bear. Should a grizzly bear be in the vicinity during any hunting season, there are provisions in the Red Rock Lakes NWR Comprehensive Conservation Plan, Environmental Assessment, and the Hunt Plan that would allow for Refuge management to close all or part of the Refuge to public use. Hunters are strongly advised to carry bear pepper spray.

D. Justification for Requiring Permits

Only state licenses, stamps, and tags applicable to the species of take will be required to hunt on the Refuge except a permit will be required for the limited big game hunt area. Only two hunters/day will be allowed there. These two will be selected by a drawing. The limited area has no trees and large numbers of elk. Limiting the number of hunters is needed to prevent unethical hunting behavior such as long shots and competition for first shot.

E. Staffing and Funds

Enforcement of hunting laws will be accomplished with current staff levels. The Refuge manager will rely on close-cooperation and coordination with Montana Fish, Wildlife and Parks (MFWP), Bureau of Land Management, and U.S. Forest Service and law enforcement staff from other offices of the U.S. Fish and Wildlife Service to enforce hunting regulations.

VI. MEASURES TAKEN TO AVOID CONFLICTS WITH OTHER MANAGEMENT OBJECTIVES

A. Wildlife Dependent Recreation

As public use levels expand across time, unanticipated conflicts between user groups may occur. The Refuge's visitor use programs would be adjusted as needed to eliminate or minimize each problem and provide quality

wildlife-dependent recreational opportunities. Experience has proven that time and space zoning (e.g., establishment of separate use areas, use periods, and restrictions on the number of users) is an effective tool in eliminating conflicts between user groups. The proposed big game hunting season lasts 11 weeks in the fall. Other public uses will dominate 41 weeks out of the year. Likewise, the Refuge currently provides a minimum of 11 square miles of habitat that are closed to hunting, but open to non-consumptive users year round. Therefore, non-consumptive users can find areas closed to hunting year-round.

We believe two hunters beginning on November 1st till end of the general season will have little to no significant impact on other non-consumptive users of the refuge. The area where elk congregate is 3 to 6 miles from Lakeview and Refuge headquarters. We will monitor whether there is any wildlife viewing, environmental education or other non-consumptive use of the refuge during the period from opening day of General big game hunting season to November 1st. General Big Game Season typically closes the Sunday after Thanksgiving and opens five weeks prior on a Saturday (October 20-27). This is a 37-day season. Delaying the Refuge limited hunt until November 1st will shorten the length of the Refuge hunt by eleven days in 2012 when General Big Game season opens October 20th. Thus, the limited hunt will be open for only 26 days. During the first three years of this Hunt Plan, we will monitor for potential conflicts between hunters and non-hunters during late-October. If there are few or no conflicts, then the refuge manager may open the limited hunt area on the normal general big game opening date.

B. Refuge Facilities

All roads on the Refuge receive low pressure in the fall by hunters. Little additional use is anticipated with the current hunting program since many hunters using the Refuge traditionally hunted surrounding lands and used these roads to access off Refuge hunting areas. No more than 10 hunter visits per day are expected to use the Refuge roads.

C. Cultural Resources

Hunting in the Centennial Valley has been a traditional form of wildlife-dependent recreation. Hunting, regardless of method or species targeted, is a consumptive activity. Hunting does not pose a threat to cultural resources on and/or near the Refuge.

VII. CONDUCT OF THE HUNT

A. Federal Regulations

Hunting on the Refuge would be contingent on specific regulations enacted by the federal agency for Refuges in general and Red Rock Lakes National Wildlife Refuge in particular. These are in addition to state regulations, and would take precedence where they are more restrictive than the state regulations. General stipulations for Refuge hunting as contained in the Code of Federal Regulations (50 CFR Part 32) state that hunters must have a valid state license, valid Migratory Bird Hunting and Conservation Stamp (“Duck Stamp”) for waterfowl hunting, comply with all current federal hunting regulations including the migratory bird regulations (50 CFR Part 20), and comply with all state hunting and safety regulations. Additionally, hunters must comply with the terms and conditions established by the Refuge for access to the Refuge itself and for its hunting program. Some of the more pertinent federal regulations for hunting on Refuge lands follow:

1. The use or possession of lead shot while hunting waterfowl is prohibited; only non-toxic shot allowed.
2. The use of all-terrain vehicles (ATVs) or other vehicles on Refuge lands is prohibited except on designated routes of travel.
3. The use of nails, wire, bolts, etc., to attach a stand to a tree is prohibited, as is the use of a tree with existing nails, wire or bolts.
4. Hunting over bait is prohibited.
5. The use or possession of alcoholic beverages while hunting is prohibited.
6. The use of motorized decoys is prohibited

B. State Regulations

All state regulations will apply to hunting on the Refuge, and all state licenses, tags and stamps will be required.

C. Refuge-Specific Hunting Regulations: Subject to change annually.

D. Anticipated Public Reaction

All of our hunts are according to state regulations and therefore should the state determine a change is needed then the Refuge will follow that ruling unless it violates a Federal regulation or Refuge objective.

E. Hunter Application and Registration Procedures

All persons hunting on the Refuge will be required to obtain the necessary state licenses, tags and stamps. Migratory game bird hunters will be required to have a Federal Migratory Bird Hunting and Conservation Stamp ("Duck Stamp") and be registered in the Harvest Information Program.

F. Description of Hunter Selection Process

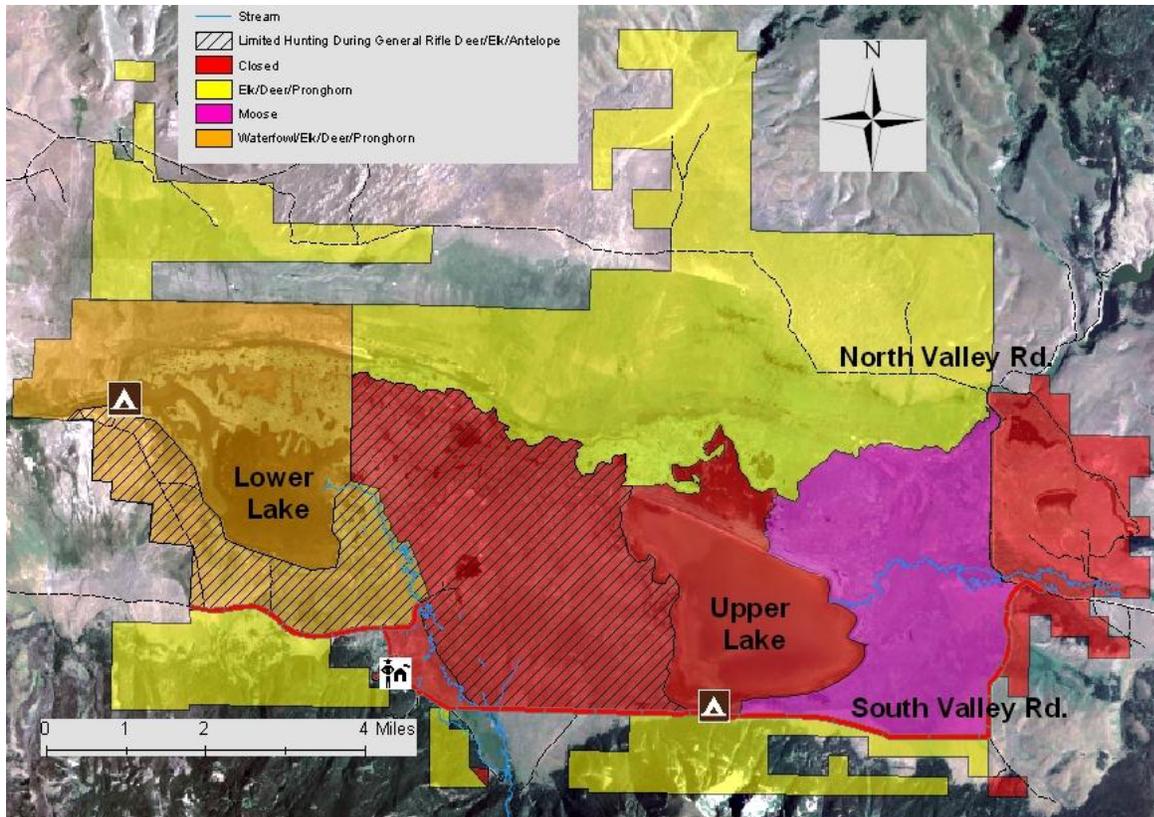
Applications for the limited big game hunt will be accepted in August of 2012. A maximum of two hunters per day will be selected. Applicants must fill out a U.S. Fish and Wildlife Service Big Game Hunter application form and submit to the Refuge manager by August 31st. Names will be selected at random on September 4th. Applicants are not required to be present to win. If selected, hunters will be contacted by mail. If applicants do not show by one hour prior to shooting hours on the date they were selected, the permit(s) will be given away at a first come first served basis. If the drawing method proves effective, a similar process will be used in subsequent years.

Please send applications electronically (Bill_West@fws.gov) or to the following address:

Red Rock Lakes NWR
Attn: Bill West - Limited Big Game Hunt Application
27650B S. Valley Rd.
Lima, MT 59739.

G. Media Selection for Announcing and Publicizing Hunts

The public will be informed of Refuge hunting regulations and the drawing through news release to all media contacted during the public comment period for the draft EA/Hunting Plan. If the Hunting Plan requires changes, a program update will be sent to the same media and public outlining those changes. Rules and regulations will be published in the Federal Register as required.



Appendix Figure 1. Hunting boundaries on Red Rock Lakes National Wildlife Refuge, Montana.