

Draft Environmental Assessment
Buenos Aires National Wildlife Refuge Hunt Plan

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DRAFT Environmental Assessment for Buenos Aires NWR Hunt Plan

This Environmental Assessment (EA) is being prepared to evaluate the effects associated with this proposed action and complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations (40 CFR 1500-1509) and Department of the Interior (43 CFR 46; 516 DM 8) and U.S. Fish and Wildlife Service (550 FW 3) regulations and policies. NEPA requires examination of the effects of proposed actions on the natural and human environment.

Proposed Action

The U.S. Fish and Wildlife Service (Service) is proposing to open hunting opportunities for gallinule, merganser, snipe, mountain lion, badger, bobcat, white-nosed coati, kit and gray foxes, raccoon, and ringtail on the Buenos Aires NWR (BANWR/NWR/refuge) in accordance with the refuge's Hunt Plan. Opportunities would continue for hunting of duck, goose, coot, white-winged, mourning, and Eurasian collared-dove, white-tailed deer, mule deer, javelina, feral hog, black-tailed and antelope jackrabbits, cottontail rabbit, coyote, and skunks (hooded, hog-nosed, spotted, and striped). Scientific names provided in appendix 2. This action would re-open the species listed in the BANWR 1988 Hunt Plan to hunting, except weasel, which do not occur on the refuge. It would also open gallinule and merganser. The proposed action is change from the Buenos Aires NWR Comprehensive Conservation Plan, however, adopting the proposed action would bring refuge regulations into better alignment with Arizona Game and Fish Department (AZGFD) regulations in accordance with Secretarial Orders (SO) 3356 and 3366.

This proposed action is often iterative and evolves over time during the process as the agency refines its proposal and learns more from the public, tribes, and other agencies. Therefore, the final proposed action may differ somewhat from the original. The final decision on the proposed action will be made at the conclusion of the public comment period for the EA and the Draft 2020-2021 Refuge-Specific Hunting Regulations.

Background

National wildlife refuges are guided by the mission and goals of the National Wildlife Refuge System (NWRS), the purposes of an individual refuge, Service policy, and laws and international treaties. Relevant guidance includes the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, Refuge Recreation Act of 1962, and selected portions of the Code of Federal Regulations and Fish and Wildlife Service Manual.

The refuge was established on August 1, 1985 under the authority of the Federal Property and Administrative Service Act of 1949 (40 U.S.C. 471-535), as amended; Fish and Wildlife Coordination Act of 1934 (16 U.S.C. 661-666c) as amended; Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j Stat. 1119) as amended; the Act of May 19, 1948, Public Law 80-537 (16 U.S.C. 667b-667d; 62 Stat. 240) as amended; and The National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd-668ee) “. . .to conserve (A) fish or wildlife which are listed as endangered species or threatened species. . .or (B) plants . . .” 16 U.S.C. 1534 (Endangered

Species Act of 1973) and for the “. . . development, advancement, management, conservation, and protection of fish and wildlife resources . . . “ 16 U.S.C. 742(a) (4) (Fish and Wildlife Act of 1956).

The primary purpose of the refuge is to establish a self-sustaining population of endangered masked bobwhite quail and to protect a grassland ecosystem unique to south-central Arizona. Other refuge objectives are to preserve the natural diversity of wildlife native to southeast Arizona and to provide for wildlife-oriented recreation and education.

In the 1978 Recovery Plan for the Masked Bobwhite Quail (U.S. Fish and Wildlife Service 1978), it was recommended that the Buenos Aires Ranch be purchased for the reestablishment of the species. Congress approved the \$4,900,000 needed to purchase the central part of the ranch under the authority of the Endangered Species Act of 1973 and the Fish and Wildlife Act of 1956. Since the ranch owners would only sell the entire ranch, an additional \$4,000,000 was approved in 1984. The purchase was finalized in August, 1985 when BANWR was officially established in the Altar Valley of Pima County, Arizona. Approximately 21,000 acres were received in fee title and 90,000 acres were in state leases. In 1991, the state lease lands were exchanged for federal lands. Three tracts of land remained under the administration of the Arizona State Land Department. The refuge eventually acquired these state leases, including the 801-acre El Cazador Ranch, half of which was under state lease.

The mission of the NWRS, as outlined by the National Wildlife Refuge System Administration Act (NWRSA), as amended by the National Wildlife Refuge System Improvement Act (16 U.S.C. 668dd et seq.), is:

“... to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

The NWRSA mandates the Secretary of the Interior in administering the System to (16 U.S.C. 668dd(a)(4):

- Provide for the conservation of fish, wildlife, and plants, and their habitats within the NWRS;
- Ensure that the biological integrity, diversity, and environmental health of the NWRS are maintained for the benefit of present and future generations of Americans;
- Ensure that the mission of the NWRS described at 16 U.S.C. 668dd(a)(2) and the purposes of each refuge are carried out;
- Ensure effective coordination, interaction, and cooperation with owners of land adjoining refuges and the fish and wildlife agency of the States in which the units of the NWRS are located;
- Assist in the maintenance of adequate water quantity and water quality to fulfill the mission of the NWRS and the purposes of each refuge;

- Recognize compatible wildlife-dependent recreational uses as the priority general public uses of the NWRS through which the American public can develop an appreciation for fish and wildlife;
- Ensure that opportunities are provided within the NWRS for compatible wildlife-dependent recreational uses; and
- Monitor the status and trends of fish, wildlife, and plants in each refuge.

The Secretary of the Interior Order 3356 continues the Department of the Interior's efforts to enhance conservation stewardship; increase outdoor recreation opportunities for all Americans, including opportunities to hunt and fish; and improve the management of game species and their habitats for this generation and beyond. It directs several components of the Department to assess past and ongoing implementation of the recommendations set forth in Executive Order 13443, "Facilitation of Hunting Heritage and Wildlife Conservation," to inform how best to enhance and expand public access to lands and waters administered by the Department, lands and waters owned by all Americans-for hunting, fishing, recreational shooting, and other forms of outdoor recreation.

The Secretary of the Interior Order 3366 mandates all Bureaus to ensure public lands and waters under the management and administration of the U.S. Department of the Interior (Department) are open and accessible for recreational pursuits by all Americans and visitors to the United States. Therefore, it is a priority of the Service to provide for wildlife-dependent recreation opportunities, including hunting and fishing, when those opportunities are compatible with the purposes for which the refuge was established and the mission of the National Wildlife Refuge System.

The refuge is located in a region of high biological diversity, with influences from the Chihuahuan, Sonoran, and Madrean geographic provinces. The refuge has documented more than 330 species of birds and has recorded 61 species of mammals, 49 species of reptiles, and 12 species of amphibians.

History of hunting on the refuge

Buenos Aires Ranch comprised much of the present-day refuge. Hunting was permitted by the Buenos Aires Ranch owners, and hunting activities continued uninterrupted after 1985. An initial Hunt Plan was written in 1988 allowing the take of duck, goose, coot, snipe, white-winged dove, mourning dove, white-tailed deer, mule deer, javelina, feral hog, mountain lion, jackrabbit, cottontail rabbit, kit fox, gray fox, ringtail, skunk, bobcat, coyote, coati, badger, weasel, and raccoon. The refuge was open to hunting from September 1 to March 31 with hunt seasons conforming to state regulations within those dates. No hunting was allowed from April 1 to August 31.

Due to management objectives at the time refuge hunting regulations were amended in 1994 to restrict hunted species to duck, goose, coot, mourning and white-winged dove, cottontail rabbit, white-tailed deer, mule deer, javelina, and feral hogs. All predator (coyote and skunk) hunting was ceased except by Special Use Permit (SUP). Feral hogs were only allowed to be taken during other permitted hunts. Refuge regulations likely remained unchanged from 1995 to 2002

(no record of regulation changes). In the refuge hunting regulations dated 2003, there was no mention of feral hogs or skunks, and coyote hunting was permitted by SUP only.

In 2006, the SUP restriction for coyotes and skunks was lifted and predator hunting was open year round in accordance with State regulations. In 2008, refuge hunting regulations listed Eurasian collared-doves as a legal species for the first time. In 2012, the refuge included jackrabbits as a legal species. No opening package was completed for these actions.

In 2019, the refuge aligned season dates and method of take for cottontail rabbits and jackrabbits with AZGFD regulations and removed the restriction that feral hogs may only be taken during other permitted big game hunts.

Refuge Hunt Units

The refuge is comprised of portions of three separate state game management units (GMU) (Fig. 1):

GMU 36A = 617.24 square miles, 80.46 square miles on refuge

GMU 36B = 560.80 square miles, 72.50 square miles on refuge

GMU 36C = 314.95 square miles, 23.28 square miles on refuge

Purpose and Need for the Proposed Action

The purpose of this proposed action is to provide compatible wildlife-dependent recreational opportunities on Buenos Aires NWR and to bring current hunting activities and regulations into compliance with service policy. The need of the proposed action is to meet the Service's priorities and mandates as outlined by the NWRSA to "recognize compatible wildlife-dependent recreational uses as the priority general uses of the NWR" and "ensure that opportunities are provided within the NWR for compatible wildlife-dependent recreational uses" (16 U.S.C. 668dd(a)(4)).

The purpose of this EA is to evaluate the effects of increased hunt management for gallinule, merganser, snipe, mountain lion, badger, bobcat, white-nosed coati, kit and gray foxes, raccoon, and ringtail on Buenos Aires NWR. The purpose of the proposed action is to manage the select species on the refuge and offer hunting opportunities for the public on a national wildlife refuge. Hunting on refuge lands has been occurring for decades for duck, goose, coot, mourning and white-wing doves, coyote, skunk, mule and white-tailed deer, javelina, and feral hog. The refuge has provided a terrific opportunity for the public for generations of users. The goal of hunting on the refuge is to offer opportunities to the public and to fulfill one of the Service's priority public uses and offer maximum hunting opportunity that is also compatible with the operations of the refuge and strengthens our mission.

This action is also needed to effectively implement Secretarial Order 3356, which directs bureaus and offices within the Department of the Interior (DOI), in collaboration with states, tribes, and territorial partners, to implement programs to enhance hunting, fishing, and recreational shooting opportunities on DOI-managed lands and waters, while also promoting conservation activities.

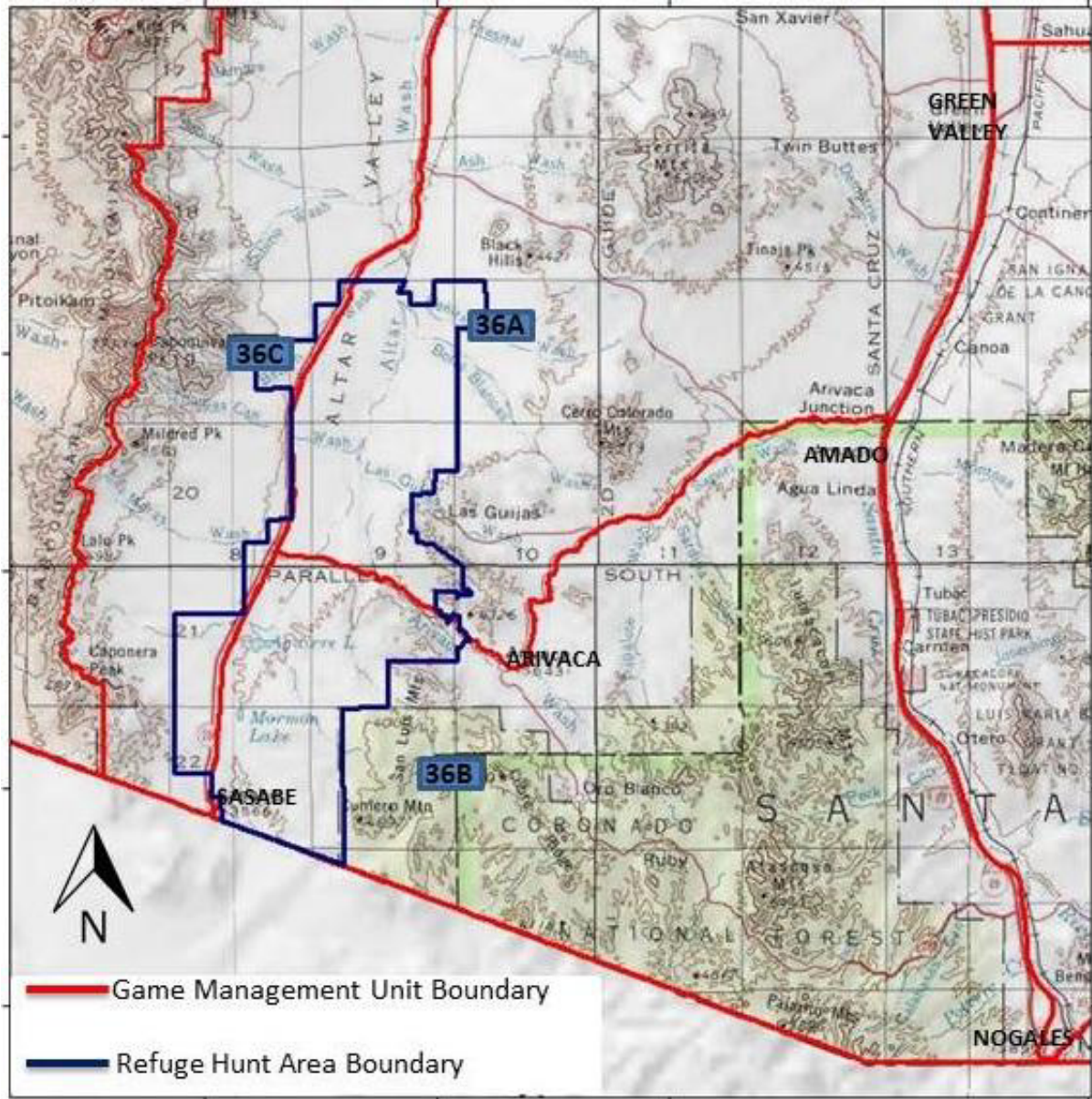


Figure 1. Buenos Aires NWR and associated Arizona Game Management Units

Alternatives

Alternatives Considered

Alternative A – No Action (Current Management):

The No Action Alternative would continue the current hunt program. This action permits public hunting for duck, goose, coot, mourning and white-wing doves, Eurasian collared-dove, coyote, skunk (hog-nosed, hooded, spotted, and striped), jackrabbits (black-tailed and antelope), cottontail rabbit, mule and white-tailed deer, javelina, and feral hog on Buenos Aires NWR in accordance with AZGFD regulations, seasons, and methods of take. All other wildlife are protected. Approximately 89 percent (105,113 acres) of the refuge would remain open to

hunting and there would be no change to the current no hunt zones. An estimated 3,300 hunters pursue big game and 300 pursue small game and migratory birds on the refuge each year.

Hunting seasons and quantity of permits are regulated by the AZGFD. Deer firearm hunts are limited to six seasons, ranging from 4 – 14 days in late October through December. Javelina firearm hunts are similarly regulated and limited to two week-long seasons during late winter and early spring. Archery hunting is also permitted on BANWR. Deer may be harvested during a two-week archery season in September and again during a six-week season in December and January. One javelina archery season extends throughout the month of January. Cottontail, jackrabbit, dove, and waterfowl seasons are more extensive than the deer and javelina seasons, and hunter numbers are not regulated. Hunting guide service providers are required to obtain a special use permit (SUP). Coyote and skunk are open to hunting year-round. No trapping is allowed for any species.

This alternative would result in no change in management of any other game species on the refuge, and the loss of fulfilling one of the Service priority public uses which is providing hunting opportunity.

Alternative B – Proposed Action - Expand Hunting Opportunities as Described in the 2020 Hunt Plan

The refuge has prepared a hunt plan (Buenos Aires National Wildlife Refuge Migratory Bird, Upland Game, Big Game, Predator, and Fur-bearing Mammal Hunt Plan), which is presented in this document as the Proposed Action Alternative. Proposed uses within this plan have been determined to be appropriate and are expected to be found compatible with the mission of the Refuge System and purposes for which the refuge was established.

Under the Proposed Action Alternative, the refuge would expand the hunted species to include badger, bobcat, white-nosed coati, foxes, gallinule, merganser, snipe, mountain lion, raccoon, and ringtail. The hunt program for duck, goose, coot, mourning and white-wing doves, Eurasian collared-dove, mule and white-tailed deer, javelina, feral hog, cottontail rabbit, jackrabbits, coyote, and skunks would remain the same. Hunt seasons, bag limits, and methods of take will continue to be established by AZGFD. The refuge will not allow pursuit with dogs or night hunting of these species nor will falconry be permitted. The refuge investment in time and resources are unlikely to increase as the seasons for new species overlap with existing open seasons. Most of these new species were previously open to hunt on the refuge as described in the 1988 Hunt Plan. Many of the proposed species are potential predators of quail and their nests. Opening the opportunity to hunt these species could potentially be beneficial to the masked bobwhite quail recovery efforts. Additionally, opening the refuge to the take of bobcats and foxes may indirectly increase coyote take through increased predator hunter use. Several hunters have specifically stated they would hunt on the refuge more often if they were not prohibited from taking other species that come to their predator calls. Increasing coyote take, directly or indirectly, may be beneficial to deer and pronghorn herds as well as jackrabbits.

There are no proposed changes to refuge hunting regulations aside from allowing additional species to be taken.

Mitigation Measures to Avoid Conflicts:

- Areas of high public use around the headquarters, the Arivaca creek management unit (all service lands east of mile 8.1 on Arivaca-Sasabe Road), Brown Canyon, and ¼ mile buffers around residences will remain No Hunt Zones.
- Hunting with dogs is being limited to retrieving downed game. Pursuit or harassment of wildlife by dogs is not permitted to reduce the chance of disturbing the endangered masked bobwhite quail.
- Hunting and/or discharging firearms at night is not being considered to avoid conflict with border security operations and to foster a safe environment at dispersed campsites throughout the refuge.
- Trapping will not be permitted due to the risk to the endangered masked bobwhite quail being caught as bycatch. Additionally, leaving unattended equipment is against refuge regulations.
- The refuge will continue to be closed to all quail hunting to minimize the opportunity for direct mortality of the endangered masked bobwhite quail by hunters.
- Refuge hunt information brochures will be available at all kiosks and hunt information boxes at most access points.

The proposed action alternative offers increased opportunities for public hunting/fishing and fulfills the Service's mandate under the National Wildlife Refuge System Improvement Act of 1997. The Service expects that the hunt plan will be compatible with the purposes of the Buenos Aires National Wildlife Refuge and the mission of the NWRs. This action is also needed to effectively implement Secretarial Orders 3356 & 3366, which direct bureaus and offices within DOI, in collaboration with states, tribes, and territorial partners, to implement programs to enhance hunting, fishing, and recreational shooting opportunities on DOI-managed lands and waters, while also promoting conservation activities.

Alternative(s) Considered, But Dismissed from Further Consideration

The Arizona Game and Fish Department has requested full alignment with state hunting regulations on national wildlife refuges in Arizona. The following are requests by AZGFD that were considered but dismissed from further analysis:

- The AZGFD requested "daylong" hunting for coyote, raccoon, ringtail, badger, and skunk. The refuge is not considering nighttime hunting with the use of lights or firearm discharges because it will interfere with border security law enforcement and cause disruption to campers throughout the refuge.
- Other nongame mammal or bird hunting is not being proposed because the species (house sparrows, starling, crow, pigeons) are not generally present on the refuge.
- Falconry and use of trailing dogs may cause disturbance to masked bobwhite quail, therefore, is not being considered at this time for any refuge in Arizona.
- The Service's annual station-specific hunting and sport fishing regulation does not consider opening refuges to the take of reptiles and amphibians (recreational herping), therefore, this request is outside the scope of the proposed action. Additionally, recreation herping is not consistent with Service policy. Collections, as defined in 701 FW 5, is the taking of flora and fauna in accordance with applicable State and Federal

regulations by Service personnel for official purposes or by other agencies individuals for scientific and educational purposes. The refuge considers take of reptiles and amphibians for research purposes on a case-by-case basis through issuance of a special use permit when found to be a compatible use of the refuge.

- The Service’s annual station-specific hunting and sport fishing regulation does not open or expand trapping. Hunting and fishing are priority public uses of national wildlife refuges; trapping is evaluated separately from hunting. In House Report 105-106, Congress makes a distinction between hunting and trapping by stating that management tools encompass actions “such as hunting, trapping and fishing.” Trapping is a wildlife management tool used in the conservation and management of wildlife populations. Trapping occurs on some national wildlife refuges in accordance with the conservation mission of the National Wildlife Refuge System however, where trapping does occur, some individual refuges may prohibit trapping by the public and conduct trapping only as a tool for management concerns like invasive species control or to prevent damage to infrastructure. Trapping is outside the scope of the proposed action and is not being considered on the refuge.

Public Scoping

During scoping the refuge received 21 comments, 18 either supported (11) or opposed (7) the proposed action without modification. Only 3 offered an alternate suggestion. The alternate offered by those 3 commenters was to eliminate hunting on the refuge entirely. Hunting is an historic use of this land and in accordance with the National Wildlife Refuge System Improvement Act of 1997 is an appropriate use of refuge lands. Hunting has previously been determined to be compatible with the refuge mission. Our mission has not changed. During the Department wide hunt and fish assessment refuge management considered which species we could and could not open with consideration to compatibility. The proposed action alternative was crafted under those same considerations. Eliminating hunting opportunities on the refuge that are not in conflict with the refuge mission would be inconsistent with Service policy and the mission of the refuge system.

Affected Environment and Environmental Consequences

Affected Environment

The BANWR consists of approximately 117,310 acres in Pima County, Arizona (Figure 1). The refuge is managed as three management units: Semi-desert Grasslands Unit, Arivaca Unit, and Brown Canyon Unit. The proposed action is located in the semi-desert grassland unit. No hunting occurs in the Arivaca unit or the Brown Canyon unit. The following resources are not discussed in this EA because the proposed hunting activities are not expected to have any impacts on them: geology, minerals, water quantity, visual resources, and wilderness. The tables below describe the resources that could be impacted (directly or indirectly) by the alternatives discussed in this document. For more information regarding the affected environment, please see Sections 2.0 – 2.7 of the refuge’s Comprehensive Conservation Plan.

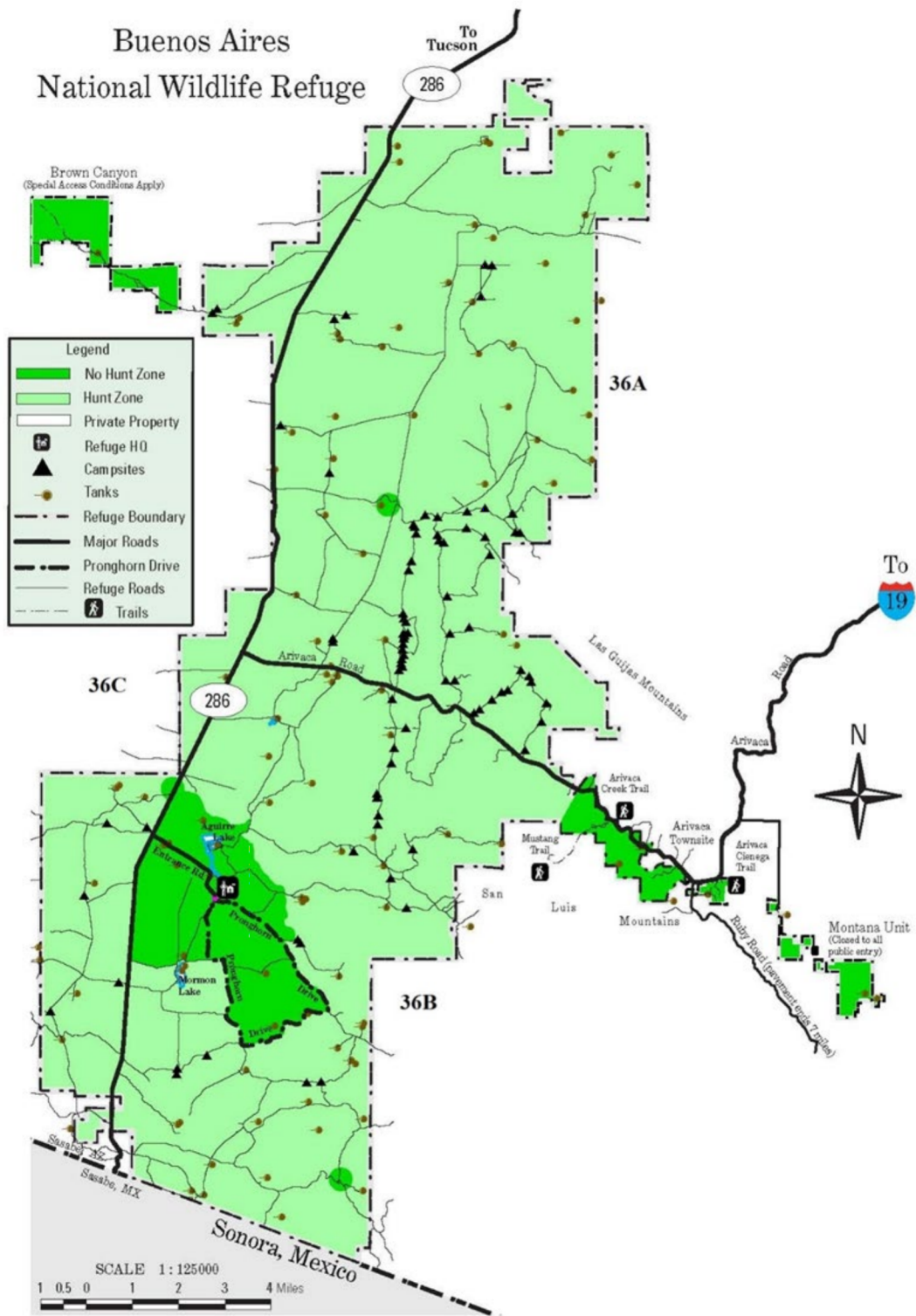


Figure 2. Refuge hunt map showing refuge boundaries, roads, and no hunt zones.

Environmental Consequences of the Action

This section analyzes the environmental consequences of the action on each affected resource, including direct and indirect effects. This EA only includes the written analyses of the environmental consequences on a resource when the impacts on that resource could be more than negligible and therefore considered an “affected resource.” An analysis of the effects of management actions has been conducted on the physical environment (air quality, water quality, and soils); biological environment (vegetation, wildlife, and threatened and endangered species); and socioeconomic environment (cultural resources, socioeconomic features including public use/recreation, and visual and aesthetic resource). Any resources that will not be more than negligibly impacted by the action have been dismissed from further analyses.

Impact Types:

- *Direct effects* are those that are caused by the action and occur at the same time and place.
- *Indirect effects* are those that are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.
- *Cumulative impacts* result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions.

The sections below contain brief descriptions of each resource affected by the alternatives considered and anticipated direct, indirect, and cumulative impacts on each resource.

Affected Natural Resources and Anticipated Impacts of the No Action and Proposed Action Alternatives

Currently hunted species. Will remain open under both alternatives.

Hunted Species – Badger
<p><u>Regional Analysis</u> Widely distributed, the badger occurs almost anywhere in Arizona having ground suitable to dig in and excavate burrows. Although the take of badger pelts averaged more than a 1,000 a year in the late 1970s and early 1980s, the number of these animals recently trapped in Arizona is virtually insignificant. A few badgers are undoubtedly also taken incidental to pursuing other game, but these numbers too are very small. In all, probably less than 50 badgers a year are taken in the state (www.azgfd.com).</p>
<p><u>Local Analysis</u> Badger numbers on the refuge are unknown. Sightings are not numerous (5 per year) but also not uncommon. This may be due to low detection probability as badgers spend much of their time under ground and are typically nocturnal or crepuscular (active at twilight) in nature.</p>
<p>Direct and Indirect Impacts <u>Alternative A (No Action Alternative)</u></p>

Under Alternative A badger hunting would remain closed on the refuge. Badgers will continue to have a direct predation impact on rabbits, rodents, ground nesting birds, snakes, and lizards.

Alternative B (Proposed Action Alternative)

Under alternative B badger hunting would be allowed in accordance with AZGFD season dates and bag limits. Method of take would be restricted to not allow pursuit with dogs or trapping. Take will largely be incidental. The most direct impact will be increased mortality of badgers on the refuge, though take is expected to be zero or less than five due to their nocturnal and crepuscular activity and spending most of their time underground. Allowing the take of badgers may have a positive impact on reptile and small mammal populations and may be beneficial to refuge masked bobwhite quail recovery efforts through decreased predation mortality by badgers of those species (Fletcher et al. 2010).

Hunted Species – Bobcat

Regional Analysis

Distributed throughout the state, bobcats (*Lynx rufus*) are considered one of the most common predators in Arizona. They are particularly abundant in rugged and brushy habitats associated with Sonoran desert scrub and interior chaparral. Solitary animals such as bobcats are often secretive and are therefore rarely seen. But they exist in large numbers across the continent. The U.S. population has been estimated to be between 2.3 and 3.6 million bobcats (Roberts and Crimmins 2010). In 2010, Arizona’s statewide bobcat population was estimated to be between 62,000 and 66,000. Arizona has documented some of the highest densities of bobcats in the western U.S. (www.azgfd.com).

Local Analysis

Bobcats are a common sight on the refuge. Staff and visitors report sightings of 1–2 bobcats weekly. Scat and tracks can be observed in washes and near water sources consistently. A trail camera near the visitor center captures images of 1–2 bobcats each week.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under Alternative A, bobcat hunting would remain closed on the refuge. Bobcats will continue to have a direct predation impact on rabbits, reptiles, rodents, quail, and other bird and small mammal species.

Alternative B (Proposed Action Alternative)

Under Alternative B, bobcat hunting would be allowed in accordance with AZGFD season dates (August through end of March) and with unlimited bag limits. Method of take will be restricted to not allow pursuit with dogs or trapping. The most direct impact would be an increase in bobcat mortality on the refuge. Take is expected to be between 10 and 20 bobcats based on current estimate of population and number of predator hunters. Allowing the take of bobcats may have a positive impact on bird and small mammal populations and may be beneficial to refuge masked bobwhite quail recovery efforts through reduced predation mortality of those species (Fletcher et al. 2010). Additionally, allowing bobcat take may indirectly lead to increased coyote take as more predator hunters may be attracted to the refuge as a result of opening more species to hunt.

Hunted Species – White-nosed Coati (Coati)

Regional Analysis

White-nosed coatis occur in Arizona, New Mexico, Texas, and south through Mexico and Central America into the far northwestern portion of South America and in over nearly the entire south half of Arizona. White-nosed coatis primarily occur in mixed conifer forest, coniferous and mixed woodlands, and juniper savanna; they are also commonly observed in montane scrub, Chihuahuan desert scrub, closed basin scrub, plains-mesa grassland, and desert grassland (Biota Information System of New Mexico 2008a).

Local Analysis

Coatis in Arizona inhabit woodlands consisting primarily of oaks, sycamores, and walnuts. They are also found in canyons that contain a mixture of oaks and pines, shrubby woodland, or grassland and shrubs in the lower canyons of the southeastern mountains. They are usually found near streams or creeks or some source of water, probably living in natural retreats such as rock crevices, cavities among tree roots, and caves or mines (Rosemont EIS). White-nosed coatis are occasionally seen in the Arivaca creek riparian areas. No surveys have been conducted and population numbers are unknown. Casual observations suggest 2–3 solitary males and 2 troops of 7–11 females with young. Coati habitat on the refuge is rather limited and mostly within no hunt zones.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under Alternative A, white-nosed coati hunting would remain closed on the refuge. Coatis will continue to have a direct predation impact on rabbits, reptiles, rodents, quail, and other bird and small mammal species.

Alternative B (Proposed Action Alternative)

Alternative B would allow for the take of coatis on the refuge in accordance with AZGFD season dates (September 1–March 31) and bag limits (1 per year). Method of take will be restricted to not allow pursuit with dogs or trapping. Coatis are typically taken incidentally while pursuing other game and are seldom specifically targeted. The most direct impact will be increased mortality in coatis on the refuge though take is expected to be minimal. Take is anticipated to be near 0 because most coati habitat is in the no hunt zone.

Hunted Species – Fox (Gray fox, Kit fox)

Regional Analysis

Gray fox are the most numerous and most often seen fox in Arizona. They are regularly active during daylight hours and are found throughout the state. Kit fox prefer sandy areas and are almost exclusively nocturnal spending much of the day underground. Whatever the species, the annual take of about 3,500 fox by hunters, predator callers and trappers has been relatively stable in recent years and not a major source of mortality in the statewide fox population. Diseases such as rabies, distemper and other canine sickness as well as drought related factors control the fox population much more than any human related source of mortality (AZGFD.com). Population data are unavailable.

Local Analysis

Foxes on the refuge are most evident by their tracks and scat in washes and arroyos. They are seldom seen. Coyote hunters report seeing them while predator calling on the refuge.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under Alternative A, fox hunting would remain closed on the refuge. Foxes will continue to have a direct predation impact on rabbits, reptiles, rodents, quail, and other bird and small mammal species.

Alternative B (Proposed Action Alternative)

Alternative B would allow for the take of foxes on the refuge in accordance with AZGFD season dates and bag limits. Method of take will be restricted to not allow pursuit with dogs or trapping. The most direct impact will be increased mortality in foxes on the refuge. Take is expected to be between 10 and 20 foxes based on current estimate of population and number of predator hunters. Additionally, allowing fox take may indirectly lead to increased coyote take as more predator hunters may be attracted to the refuge as a result of opening more species to hunt. Small mammals and birds, including the endangered masked bobwhite quail may benefit, through decreased predation mortality, from allowing fox hunting on the refuge.

Hunted Species – Mountain Lion

Regional Analysis

The mountain lion is a successful, far-ranging species that occupies a broad range of habitats in both temperate and tropic environments from the southern tip of Argentina in South America to northern British Columbia in North America. Breeding populations of mountain lions are known to occur in at least 16 western states. Since 1990, 10 additional states east of this range have reported mountain lion sightings, suggesting an eastward range expansion.

Local Analysis

In Arizona, mountain lions are widely distributed and are expanding into previously unoccupied areas or areas where they were once considered to be only transient. Before 2001, mountain lions in southwestern Arizona were rare. Now, it is not uncommon to observe mountain lion sign in those mountain ranges. Those mountain lions most likely immigrated from adjacent populations in Mexico and southern Arizona. The current population estimate range of 2,000-2,700 is based on population reconstruction models and supports previous estimates of 2,500 (AZGFD 2017).

The refuge is likely a small portion of the home ranges of several mountain lions that spend most of their time on adjacent public and private lands. Sightings by staff and visitors are not uncommon which suggests an elevated local population as sightings of this secretive cat are rare range-wide (AZGFD 2017).

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under Alternative A, mountain lion hunting would remain closed on the refuge and the population would remain unregulated. Mountain lions will continue to have a direct impact on

most mammal species present on the refuge through predation mortality. Deer, pronghorn, and javelina are most impacted as they are the primary prey species.

Alternative B (Proposed Action Alternative)

Under Alternative B, mountain lion hunting will be allowed in accordance with AZGFD season dates and bag limits. Method of take will be restricted to not allow pursuit with dogs. Take will largely be incidental to other hunts. The most direct impact will be an increase in mountain lion mortality on the refuge though take is expected to be less than 3 per year. Allowing the take of mountain lions may have a positive impact on ungulate populations and may be beneficial to refuge pronghorn recovery efforts through reduced predation mortality.

Hunted Species – Raccoon

Regional Analysis

A relatively common animal along Arizona’s perennial streams, lakes, and reservoirs, raccoons can also be found near some of the larger stock tanks and in rural areas where permanent water is available. Although not often seen in the wild because of its nocturnal habits, the raccoon’s distinctive five-toed tracks are commonly observed in mud around stock tanks and along river courses.

Local Analysis

Raccoon tracks are often seen near permanent water sources on the refuge. Photographs of raccoons are often captured on refuge camera traps. Population data are unavailable.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under Alternative A, raccoon hunting would remain closed on the refuge.

Alternative B (Proposed Action Alternative)

Alternative B would allow for the take of raccoons on the refuge in accordance with AZGFD season dates and bag limits. Method of take will be restricted to not allow pursuit with dogs, night hunting, or trapping. Take will largely be incidental. The most direct impact will be an increase in raccoon mortality on the refuge. Take is expected to be minimal or zero as raccoons are nocturnal and also mainly occur in the no hunt zones.

Hunted Species – Ringtail

Regional Analysis

Ringtails are found in rocky areas throughout Arizona with about the only areas devoid of ringtails being flat, alluvial valleys.

Local Analysis

Due to their nocturnal nature ringtails are seldom observed on the refuge. Scat and tracks can be found in most washes and canyons. Population data are unavailable.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under Alternative A ringtail hunting would remain closed on the refuge.

Alternative B (Proposed Action Alternative)

Alternative B would allow for the take of ringtails on the refuge in accordance with AZGFD season dates and bag limits. Method of take will be restricted to not allow pursuit with dogs, night hunting, or trapping. Take will largely be incidental. The most direct impact will be a reduction in ringtails on the refuge. Take is expected to be minimal or zero as ringtails are nocturnal.

Hunted Species – Snipe

Regional Analysis

Wilson’s snipe are among the most widespread shorebirds in North America. IUCN conservation status is “Least Concern.”

Local Analysis

Snipe are migratory birds found in the wetlands of the refuge during the winter. Their numbers vary from year to year. The snipe season in Arizona coincides with the general waterfowl season. The daily bag limit is 8.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under Alternative A, snipe hunting would remain closed on the refuge.

Alternative B (Proposed Action Alternative)

Alternative B would allow for the take of snipe on the refuge in accordance with AZGFD season dates and bag limits. Most snipe are taken incidentally by waterfowl hunter. Take is expected to be minimal as there are approximately 30 waterfowl hunting visits per year. If every waterfowl hunter fulfilled their bag limit of 8 snipe per day, we would expect a maximum harvest of 240 snipe taken per year.

Hunted Species – Mule Deer

Regional Analysis

Mule deer are the most abundant big-game animal in Arizona, with the statewide population estimated at 75,000 to 80,000 post-hunt adults in 2009. Mule deer are found in most areas of the state, from desert to high mountain elevations. Rocky Mountain mule deer are present in northern Arizona, with desert mule deer in the more southern GMUs, including the refuge. Mule deer population levels are largely determined by the number of fawns that survive to be yearlings. Fawn survival is mainly influenced by climatic events, with wet, mild winters contributing to high fawn survival rates. Dry winters and springs lead to poor fawn survival. Today, about 47,000 mule deer permits are offered annually by the AZGFD. Mule deer are “boom and bust” animals, and their populations are lessened at present but can improve with better winter rains.

Local Analysis

Presently, mule deer comprise just over 56 percent of the annual Arizona deer harvest. The ten-year average (2007–2016) harvest is 7,671 mule deer per year. The AZGFD does not estimate population at the state or GMU level. Over the past five years, the number of permits (approximately 1,075) issued for mule deer in the GMUs (36A, 36B, and 36C). These number have remained static.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

The current mule deer hunts would be continued. Mule deer hunting on the refuge occurs during five hunt periods. There are two mule deer specific firearms hunts, two separate archery hunts and one youth only hunt for any antlered deer during which mule deer may be taken. The AZGFD will continue to conduct surveys and determine the number of permits issued. Permits will be issued through the AZGFD draw system. Hunting mule deer on the refuge in accordance with AZGFD regulations should not negatively impact the deer herd. During mule deer hunts, campsites and road usage temporarily increases. The refuge hosts approximately 332 mule deer hunters annually resulting in an estimated 1,000 visitor use days. This estimate includes permit holders and their hunting companions. During the past five years, mule deer harvest in the 3 GMUs combined have fluctuated from a low of 220 harvested in 2012 to 341 harvested in 2015. The statewide mule deer harvest follows this generally increasing trend with 7,117 harvested in 2012 to 9,947 harvested in 2016. This data suggests mule deer populations are currently increasing in Arizona. Using harvest data divided by GMU acreage, we are able to estimate a harvest rate average of 0.027 deer per acre across all 3 GMUs. Multiplying the deer per acre by refuge hunting area acres we are able to estimate that the 5 year average mule deer take on the refuge is 17 in GMU 36A, 12 in GMU 36B, and 3 in GMU 36C.

Alternative B (Proposed Action Alternative)

Impacts to mule deer would be similar to Alternative A. Mule deer on the refuge may experience decreased predation mortality from increased predator hunting including mountain lions as proposed in Alternative B (Harrington and Conover 2007). No changes are being proposed to the mule deer hunt.

Hunted Species – White-tailed deer

Regional Analysis

In the early 1900s, there were an estimated 500,000 white-tailed deer in the United States. Unregulated commercial hunting and subsistence hunting removed the white-tailed deer from much of its range. At that time many state wildlife agencies were formed, hunting regulations were put into place, and the harvest of antlerless (female) deer was prohibited. White-tailed deer populations have rebounded, so that today there are over 20 million white-tailed deer in the United States, and numbers are rising.

The Coues' white-tailed deer is a small subspecies, most common in Arizona's southern mountains. The Arizona population estimate is 70,000–75,000 post-hunt adults (2009). This subspecies requires areas of predictable summer rain and is most common in oak woodlands and chaparral hillsides with oaks and pines. In Arizona's southern mountain ranges, they are generally found at higher elevations and rougher country than mule deer.

Local Analysis

On the refuge, white-tailed deer are seen on the eastern, more dissected landscapes, in the oak woodlands of the Baboquivari Mountains, and in the riparian sections of Arivaca Creek and Arivaca Cienega. Coues' white-tailed deer are more resilient toward hunt pressure than mule deer, less tolerant of drought, and may be more affected by livestock grazing (Hunt Arizona 2017). The ten-year average (2007–2016) harvest is 5,912 whitetails per year. Presently,

whitetails comprise just under 44 percent of the annual Arizona deer harvest. The AZGFD does not estimate population at the state or GMU level. Over the past 5 years, the number of permits (approximately 4,355) issued for white-tailed deer in the GMUs included in the refuge have remained static.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

The current white-tailed deer hunts would continue. The AZGFD will continue to conduct surveys and determine the number of permits issued. Permits would be issued through the AZGFD draw system. Hunting white-tailed deer on the refuge in accordance with AZGFD regulations should not negatively impact the deer herd. During white-tailed deer hunts campsites and road usage temporarily increases. The refuge hosts approximately 498 white-tailed deer hunters annually resulting in an estimated 1,500 visitor use days. This estimate includes permit holders and their hunting companions. Hunting white-tailed deer on the refuge in accordance with AZGFD regulations should not negatively impact the deer herd. During the past five years, white-tailed deer harvest in the 3 GMUs combined have fluctuated from a low of 1,091 harvested in 2012 to 1,932 harvested in 2017. Using harvest data divided by GMU acreage, we are able to determine a harvest rate average of 0.129 white-tailed deer per acre across all 3 GMUs. Multiplying the deer per acre by refuge hunting area acres, we are able to estimate that the 5 year average white-tailed deer take on the refuge is 54 in GMU 36A, 96 in GMU 36B, and 19 in GMU 36C. These estimates for refuge take constitute 0.024 of the statewide white-tailed deer take for 2017. These estimates are clearly high as the majority of habitat on the refuge is mule deer habitat.

Alternative B (Proposed Action Alternative)

Impacts to white-tailed deer would be similar to Alternative A. White-tailed deer on the refuge may experience reduced predation mortality from increased predator hunting, including mountain lions and coyotes, as proposed in Alternative B (Harrington and Conover 2007). No changes are being proposed to the white-tailed deer hunt.

Hunted Species – Javelina

Regional Analysis

Javelina have increased in distribution in Arizona during the 20th century and are now common throughout southern Arizona (Hunt Arizona 2017; Crosswhite 1984). They suffer periodic setbacks, however, primarily due to diseases such as distemper, parvo, and by freezing temperatures. The AZGFD increased the annual bag limit for javelina from 1 to 2 in 2013 due to large numbers of permits going unsold.

Local Analysis

Javelina are seldom seen on the refuge as their preferred habitat is limited and typically not adjacent to roads where most observations are made.

The refuge does not comprise as much javelina habitat compared to the other portions of GMUs 36A, B, and C. The rolling slopes and flats of the refuge do not harbor as many javelina as do the upland canyons and mountains.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

The current javelina hunts would continue. The refuge hosts approximately 700 javelina hunters per year. Javelina hunting primarily occurs in late winter from January 1st through the first week of March. The AZGFD issues permits through the annual spring big game draw and through the first-come leftover permits available over the counter after the draw. The annual bag limit is two javelina per calendar year with no more than one (1) javelina taken per open area as defined in each hunt number. The bag limit may be filled in any combination of permit-tag (draw tag or first-come left over draw tag as long as differing hunt numbers) or nonpermit-tag (over-the-counter tag) hunts as prescribed in R12-4-114. No more than one (1) permit-tag shall be issued per hunter through the initial draw. Since populations have remained stable, hunting javelina on the refuge in accordance with AZGFD regulations should not negatively impact the javelina herd.

Alternative B (Proposed Action Alternative)

Impacts to javelina would be similar to Alternative A due to a potential reduction in javelina predators (mountain lions, bobcats, coyotes). Javelina on the refuge may experience some benefit from increased predator hunting as proposed in Alternative B. No changes are being proposed to the javelina hunt.

Hunted Species – Feral Hog

Regional Analysis

The USDA APHIS reports that there are few, small populations throughout the state. Most feral hogs in the state are associated with riparian areas adjacent to permanent rivers. There are populations along the Colorado River near Havasu NWR, Virgin River near Littlefield, Agua Fria River near Cordes Junction, and San Pedro River near Redington (Basmajian 2017). Active hog control does occur at Havasu NWR, which is along the Colorado River approximately 400 miles northwest of the Buenos Aires NWR. Since 2017, a total of 203 feral hogs have been removed from Havasu NWR and that population is nearing eradication.

Local Analysis

Sightings of feral hogs on the refuge were never common and are now increasingly rare. There have been no reported sightings in a decade. The USDA APHIS considers the refuge population to be eradicated.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Feral hog hunting is open on the refuge year round with unlimited take. Feral hogs are an invasive species and eradication is the goal. Hunter participation is likely zero as feral hogs have not been observed on the refuge in more than 10 years. Since this is an invasive species, feral hog hunting will remain as a management tool for controlling hogs on the refuge in the event that populations return.

Alternative B (Proposed Action Alternative)

Impacts are the same as those described in Alternative A.

Hunted Species – Cottontail Rabbit

Regional Analysis

Populations can vary dramatically, and because of these wide fluctuations in numbers, annual take is highly erratic. The state season is year-round. Arizona populations range from a high of 850,000 in 1979 to fewer than 26,000 in 2014. Presently, 10,000–25,000 hunters in Arizona take 45,000 to 120,000 cottontails annually (Hunt Arizona 2017). Long-term harvest and hunt success data show an inexplicable decline in the numbers of cottontails harvested in Arizona. Cottontails have litter sizes ranging from 2.6–3.6 young per litter and because of the length of the breeding season, seven to eight months, four litters per year are likely (Sowls 1957; Chapman and Ceballos 1990).

Local Analysis

Cottontails are frequently observed throughout the refuge by visitors and staff primarily early in the morning and late evening.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Cottontail rabbit hunting is open year round on the refuge. The daily limit is 10 cottontails per day. Hunter participation is low with very few hunters reporting pursuing cottontails. Although some hunters consider cottontail hunting as their primary sport, cottontails traditionally have been taken in Arizona in conjunction with dove and quail hunting (Hunt Arizona 2017). Cottontail populations are not likely be impacted by hunting on the refuge due to their prolific breeding capabilities and the more than adequate refuge habitat. Hunting cottontails on the refuge in accordance with AZGFD regulations should not negatively impact the cottontail population because they are nocturnal and hunting without a dog decreases success of take.

Alternative B (Proposed Action Alternative)

No changes to the cottontail rabbit hunt are proposed. Impacts to cottontails would be similar to Alternative A. Due to a potential reduction in cottontail predators (bobcat, badger, fox, coyote) cottontails on the refuge may experience some benefit from increased small predator hunting as proposed in Alternative B.

Hunted Species – Jackrabbits

Regional Analysis

Arizona’s jackrabbit populations are not systematically surveyed, nor are their harvests and hunt success reported. This is unfortunate, as black-tailed jackrabbit populations (*L. californicus*) appear to be at a low level compared to previous years. The status of antelope jackrabbits (*L. alleni*) appears to be secure except where affected by habitat alterations (Brown, pers. comm.).

Local Analysis

Jackrabbit numbers appear to be stable on the refuge and surrounding ranches (Altemus unpublished data). Detection of jackrabbits varies greatly depending on vegetation density and annual rainfall.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Jackrabbit hunting is open year round on the refuge. Take is unlimited. Annual hunt participation is low (less than 40 hunters/year) and has minimal impact on the jackrabbit population. Hunting jackrabbits on the refuge in accordance with AZGFD regulations should not negatively impact the jackrabbit population significantly because hunter success during the annual Junior Jack Kamp (a youth jackrabbit hunt camp) over the past five years averages to 0.97 jackrabbits per hunter day (1.93/2 day event) (pers. comm., Karen Klima, Arizona Game and Fish Department). This event comprises the majority of the jackrabbit hunting that occurs on the refuge and adjacent lands.

Alternative B (Proposed Action Alternative)

No changes to the jackrabbit hunt are proposed. Impacts to jackrabbits would be similar to Alternative A. Due to a potential reduction in jackrabbit predators (bobcat, badger, fox, coyote) jackrabbits on the refuge may experience some benefit from increased small predator hunting as proposed in Alternative B.

Hunted Species – Waterfowl –Ducks, Geese, Coots, Mergansers, Gallinules

Regional Analysis

Today, the hunting of waterfowl in the United States is based on a thorough regulatory process that involves numerous sources of waterfowl population and harvest monitoring data, including surveys and estimates each year by the Service. Annually, the AZGFD sets harvest regulations within the limits set by the Service’s Division of Migratory Birds. These regulations are enforced for waterfowl hunters on the refuge.

In 2019, the total breeding duck population estimate was 38.9 million, which is 10 percent above the long-term average. Canada goose numbers are at or above the 10-year average across all flyways and populations. Light geese numbers are also at or above the 10-year average (Raftovich et al. 2019).

Local Analysis

Arizona is included in the Pacific Flyway for population and harvest reporting. Arizona waterfowl harvest fluctuates widely, ranging from more than 150,000 in 1979–80 to fewer than 18,000 in 1990–91. The total reported duck harvest for 2018 was 15,800 and the total reported goose harvest for 2018 was 1,200. Arizona only accounts for 0.65 percent of the national coot harvest at 900 coots in 2016 (no data reported for 2017 or 2018). Waterfowl harvest in Arizona (18,000) is only 0.0013 percent of the total U.S. harvest (13.3 million).

In southeastern Arizona, significant habitat is provided by farm ponds and other small wetlands. The refuge has 152 earthen stock water tanks. Many rarely contain water; others contain water during portions of the year, especially in the summer rainy season. The vagaries of precipitation, drought, and undependable presence of water in stock tanks and Aguirre Lake will continue to result in low or fluctuating numbers of waterfowl for migration stopovers or wintering on the refuge. Most waterfowl on the refuge are transient and spend little time in the area. The refuge has very few goose observation records, they seldom occur on refuge lands and waters. In 2019, only two geese were reportedly seen on the refuge. Water sites are scattered and ephemeral, resulting in fewer than 30 waterfowl hunters per year.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

The refuge gets approximately 30 waterfowl hunt visits per year. Waterfowl hunting on the refuge is typically the jump shooting ducks off tanks (earthen ponds). Limited visitor reports indicate that success rates are typically low (less than half the bag limit per hunt). Based on these estimates the maximum harvest of waterfowl on the refuge would be approximately 210 animals and we estimate less than half of that number are taken (0.006–0.013 percent of state take). Hunted animals may be disturbed from regular life activities such as feeding, resting, and drinking by hunter presence or activities. Another potential disturbance impact may be avoidance of an area by animals. Under the no action alternative duck, goose, and coot will remain open to hunting. Hunting waterfowl on the refuge in accordance with State and Federal regulations should not negatively impact the seasonal waterfowl density on the refuge significantly. The refuge does not actively manage for waterfowl. Waterfowl are managed at a national level by the Service.

Alternative B (Proposed Action Alternative)

Refuge management of waterfowl hunts would remain the same as Alternative A. Alternative B would open the refuge to the take of mergansers and gallinules. In the past, these species have been lumped in with ducks, specifically allowing them removes any confusion. Impacts to waterfowl would be similar to Alternative A. The daily bag limit for gallinules and coots is 25; mergansers are included in the duck daily bag limit of 7 birds. Refuge hunters would have the option to include gallinules and mergansers in their waterfowl take. Direct mortality of the two species may increase. No increase in hunter participation or success rates is anticipated. Gallinule and merganser are not primary target species and are not popular table fare.

Hunted Species – Doves

Regional Analysis

Mourning Doves

Mourning Doves are found statewide and are the most common and widely-ranging game bird in Arizona. The high period of harvest was in the 1960s and 70s. Hunting success has declined due to urban expansion, changing farm practices, and more restrictive seasons. The reported statewide harvest for 2016 was 395,800 (Raftovich et al 2017) which is 2.93 percent of the national harvest of 13,502,000.

White-winged Doves

White-winged doves range through the southern half of Arizona. Population numbers were high before World War I and after World War II. Since the 1960s, there were fewer doves and hunting opportunities due to the decline of nesting habitat and virtual replacement of grain farming by cotton and alfalfa plantings. Numbers were low in the 1980s but populations and hunting capacity have gradually increased since that time (Hunt Arizona 2017).

Most white-winged doves migrate out of state prior to the opening of dove season on September 1. Thus, they constitute a very small proportion of the state dove harvest. Colonial populations may stay later along river bottoms adjacent to agricultural areas. Those are the birds taken most often after September 1st. The reported Arizona harvest in 2016 was 69,000, which is 4.14 percent of the national harvest of 1,667,100.

Eurasian Collared-Doves

This exotic species originates from Asia and was introduced to the Bahamas in 1970. It spread to Florida by 1972 and is now found as far west as California. It has greatly expanded its range and numbers since 2000. Eurasian collared-doves are common residents over much of urban and rural Arizona, they seem to prefer to live near buildings and are seldom seen far from inhabited areas. These birds are prolific, capable of producing up to six broods per year. The first collared-doves were seen on the refuge in approximately 2002, since then sightings have become more common but are still infrequent. State regulations allow hunting for Eurasian collared-doves year round with unlimited take.

Local Analysis

Mourning Doves

During the early season (September 1–15) Mourning doves are abundant as they migrate through the refuge. Several hundreds of birds roost around every available water source. Hunter effort during the early season is estimated at 75 hunter days. During the late season (November 24– January 8), mourning dove numbers are reduced to only resident birds. The flight activity is less predictable and hunters are far less successful. Hunter effort during the late season is estimated at 45 hunter days.

White-winged Doves

White-winged doves are only open to hunting during the early dove season (September 1–15). By that time, most white-winged doves have already migrated out of state.

Eurasian Collared-Doves

Eurasian collared-doves are rarely seen outside of the no hunt zones. There have been no reports of take by hunters.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

The refuge is open to dove hunting during state seasons as described above. Approximately 120 dove hunting visits occur on the refuge annually, most during the September 1–15 early season. Most hunts occur at earthen water tanks (Figure 2, brown circles represent water tanks). State bag limits for dove are 15 in the aggregate, of which no more than 10 may be white-winged doves. Eurasian collared-doves are open year round with unlimited take allowed. Dove hunting is open 60 days per year divided between two seasons. Hunter success is highly variable and contingent on rain events. If it rains immediately before or during the season, the doves are less concentrated around water sources and success declines. Maximum take on the refuge is approximately 1,800 mourning and white-wing doves in the aggregate. Hunted animals may be disturbed from regular life activities such as feeding, resting, and drinking by hunter presence or activities. Another potential disturbance impact may be avoidance of an area by animals. Hunting doves on the refuge in accordance with State and Federal regulations is not likely to negatively impact the dove populations. The reported statewide harvest for 2016 was 395,800 (Raftovich et al. 2017), which is 2.93 percent of the national harvest of 13,502,000. Refuge take accounts for 0.004 percent of the annual harvest for Arizona. Hunters comprise approximately 6 percent of all visits to the refuge annually.

Alternative B (Proposed Action Alternative)

Impacts to doves would be similar to Alternative A. Doves on the refuge may experience some benefit through decreased mortality by predation from increased small predator hunting as proposed in Alternative B.

Other Wildlife and Aquatic Species

The refuge supports a diversity of wildlife species of Southern Arizona, including game and nongame mammals, birds, reptiles, amphibians, and invertebrates, which are important contributors to the overall biodiversity on the refuge. The refuge has documented more than 330 species of birds and has recorded 61 species of mammals, 49 species of reptiles, and 12 species of amphibians. Management of many of these species remains a collaborative effort with the AZGFD.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

This alternative currently results in some negative impacts on small mammals, birds, and other wildlife due to disturbance in areas where human access for hunting activities occur. The active breeding season for most birds and small mammals is between March and July. Hunting during this period is extremely limited due to inhospitable climatic conditions and limited opportunity, adverse impacts would be negligible. Raptors (e.g., red-tailed hawks, great horned owls) may be nesting during periods of hunting activity (0–10 hunters) so disturbance is expected to be minimal. During the autumn and winter hunting seasons, most amphibians and many reptiles are hibernating underground and would not be exposed to disturbance caused by hunting activities. Invertebrate populations are most abundant during spring and summer months. During most hunting seasons, invertebrate populations die off, and their dormant eggs are protected from disturbance underground or under tree bark until spring and are not exposed to hunt disturbance.

Alternative B (Proposed Action Alternative)

Impacts would be similar to Alternative A. The hunting seasons overlap and no previously closed areas are being opened. Despite opening many new species, hunter participation is not expected to increase significantly. Most of the new species are not primary target species and several are nocturnal. With the exception of mountain lion, bobcat, and fox all take of new species is expected to be incidental while pursuing other game.

Reducing small predators may reduce quail and kangaroo rat mortality. Kangaroo rats are landscape architects that are believed to slow the invasion of invasive grasses. Predator reduction may also benefit jackrabbits, which are key seed dispersers for cacti, including the Pima Pineapple Cactus (*Coryphantha scheeri* var. *robustispina*) (PPC). Allowing for the take of more predator species will likely indirectly lead to more coyote take, which may be beneficial to the deer, javelina, and pronghorn herds. Opening the refuge to mountain lion hunting may have a similar effect.

Threatened and Endangered Species and other Special Status Species

Endangered Species

Masked bobwhite quail (*Colinus virginianus ridgwayi*) recovery efforts have been ongoing since the 1970s. Current reintroduction efforts have resulted in a small wild population concentrated in three distinct areas of the semi-desert grasslands unit. Chiricahua leopard

frogs (*Lithobates chiricahuensis*) occur in many earthen ponds across the refuge. They are rather wary and enter the water at the slightest disturbance. PPC occur in very specific habitat types throughout the semi-desert grassland unit of the refuge. They are a small, low profile cactus. Kearny's Bluestar (*Amsonia kearneyana*) occurs in the lower reaches of Brown Canyon along Brown creek. They all occur within the Brown Canyon no hunt zone.

Threatened Species

Southwestern willow flycatcher (*Empidonax traillii extimus*) are rarely observed on the refuge, most often within the Arivaca creek management unit no hunt zone.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under the No Action Alternative, these species of concern are not significantly impacted (1994 FONSI).

Masked bobwhites are found within the refuge hunt zone however there is no open season for quail of any species on the refuge. Masked bobwhites tend to live in areas that do not lend themselves to the style of hunting common in southern Arizona and thus disturbance should be minimal.

There is no season for frogs of any species on the refuge. Hunting activity may have a positive effect for Chiricahua leopard frogs by scaring their predators (herons and egrets) away from their habitats.

Hunting activity could pose a threat to PPC as hunters are likely to walk the ridges on which they occur and may accidentally step on them. Javelina hunting may benefit PPC by increasing javelina mortality. Javelina are known to uproot PPC and eat their taproots. Jackrabbit hunting may negatively impact PPC as antelope jackrabbits (*Lepus alleni*) are the primary seed dispersers for the species (R. Schmalzel, pers. comm.). However, jackrabbit take is generally low.

When observed, southwestern willow flycatchers are most often with the Arivaca Creek Unit where no hunting is allowed thus disturbance should be minimal.

Alternative B (Proposed Action Alternative)

Under Alternative B, impacts to species of concern are expected to be similar or identical to Alternative A due to a negligible increase in hunter participation (<5 percent).

Vegetation

The refuge hunt zone is limited to 105,133 acres of the Semi-desert Grassland unit. No hunting occurs in the Arivaca or Brown Canyon units. The Semi-desert Grassland unit is dominated by large stands of exotic grasses, such as Lehmann's lovegrass (*Eragrostis lehmanniana*), Johnsongrass (*Sorghum halepense*), and several sub-shrub species such as snakeweed (*Gutierrezia sarothrae*), burroweed (*Isocoma tenuisecta*), and Russian thistle (*Salsola kali*). Historically, mesquite (*Prosopis* spp.) was considered to be rare. However, today it dominates as the overstory woody plant species and has displaced native grasses in over 75 percent of the Altar Valley. Lehmann's lovegrass remains the dominant grass on most

shallow upland range sites; however, discrete patches of native perennial grasses such as the grammas, cane beardgrass (*Bothriochloa barbinodis*), Arizona cottontop (*Digitaria californica*), and buffalograss (*Buchloe dactyloides*) have increased in size on most uplands. Important native woody species that have increased on uplands include fairy duster (*Calliandra eriophylla*) and white-ball acacia (*Acacia angustissima*) (USFWS 1999).

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under Alternative A, minor long-term adverse impacts to refuge vegetation are expected from continuation of current management. The spreading of invasive plants through hunter access could occur adjacent to parking areas and roadsides. This is considered a minor negative impact due to the low number of hunt participants (approximately 4000 hunt visits per year), over 105,113 acres during winter when most vegetation is dormant. Current herbivore populations have not had an observable negative affect on vegetation communities through browsing or grazing on the refuge.

Alternative B (Proposed Action Alternative)

Under Alternative B, minor long-term adverse impacts to refuge vegetation are expected similar to Alternative A. Increased take of predator species could lead to increases in herbivore populations, which could have a negative effect on vegetation abundance and composition. Increased take is expected to be minimal as most of the proposed species are not primary targeted species and several are nocturnal.

Soils

Soils in the valley belong to the White House-Bernardino-Caralampi Association, comprised of soils of more than 60 inches in depth. The rock outcrops and ridges have shallow to very shallow soils of the Rock-Outcrop-Lampshire-Cellar Association. The mountainside soils are shallow, steep, and where sufficient soil is present, well drained. Soils formed on uplands/foothills are transitional and show a variety of features that reflect local topography. They are shallow to deep, gently sloping, and well drained. The surface can be deeply dissected and rock outcrops may be exposed. The soils of the valley slopes are deep, well-drained, and on slopes up to 10 degrees. They form on and from older alluvial layers; sediments are unsorted and have variable textures. The alluvial fan/floodplain soils are level to near level, deep soils formed from older alluvium.

The majority of the refuge is composed of three soil types: Loamy Upland (47 percent), Sandy loam Upland (15 percent), and Loamy Bottom (12 percent).

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under Alternative A, the potential exists for vehicular traffic on unpaved refuge roads to contribute to erosion through driving on wet roads and disturbing natural drainage patterns occur adjacent to parking areas and roadsides. Refuge maintenance personnel monitor road conditions and frequently repair damaged roads.

Alternative B (Proposed Action Alternative)

Under Alternative B, impacts to soils are expected to be similar or identical to Alternative A due to a negligible increase in visitation (<5 percent).

Air Quality

The refuge is located in Pima County, AZ. It is near, but outside of PM10 non-attainment area in Tucson, AZ.

The Clean Air Act, as amended in 1990, requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment. Pima County has not been designated by the EPA as Nonattainment Area for the 1997 8-Hour Ozone (O3) NAAQS. PM10 is defined as particulate matter that is 10 micrometers in diameter or smaller. A portion of Pima County, not including the refuge, is designated as a Moderate Nonattainment Area for the PM10 NAAQS.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Under alternatives A, negligible negative impacts to air quality exist due to vehicle emissions from hunter visits. In 2018, an estimated approximately 4,000 hunt visits took place on the refuge. The addition of several secondary target species hunts are not expected to significantly increase hunt visits in the future (<5 percent or less than 200). Any potential increase in hunter visits compared to overall public use visitors (70,131) on the refuge is considered insignificant.

Alternative B (Proposed Action Alternative)

Under Alternative B, impacts to air quality is expected to be similar or identical to Alternative A due to a negligible increase in hunt visitation (<5 percent or less than 200).

Water Quality

The refuge has a variety of surface water resources including the Arivaca Cienega, Arivaca creek, and more than 150 earthen ponds fed by rain run-off. Additionally there are dozens of wells in varying states of function, many of which have been converted to solar wildlife drinkers (6). There are also 3 wildlife “trick tanks” on refuge lands. A 2013 NPS study indicated that of the baseline water quality parameters tested at Arivaca Cienega, all were within expected values or standards set by the Arizona Department of Environmental Quality or the U.S. Environmental Protection Agency.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Hunting activity has little to no impact on water quality on the refuge. Service hydrologist have indicated that they are not aware of any major water quality concerns. The area is remote and has not been developed. Therefore, the Service does not expect serious water quality impairments.

Alternative B (Proposed Action Alternative)

Under Alternative B, impacts to water quality is expected to be similar or identical to Alternative A due to a negligible increase in visitation (<5 percent).

Affected Visitor Use and Experience Resources and Anticipated Impacts of the No Action and Proposed Action Alternatives

<p>Visitor Use and Experience</p> <p>The refuge currently receives approximately 70,131 visitors per year. These visitors take part in a variety of public use activities, including hunting (4,000), fishing (0), wildlife observation (51,000), wildlife photography (21,548), environmental education (578), interpretation (5,271), and other uses such as hiking, biking, camping (4,466). Current hunting opportunities on Buenos Aires NWR include duck, goose, coot, white-winged dove, mourning dove, Eurasian collared-dove, white-tailed deer, mule deer, javelina, feral hog, jackrabbit, cottontail rabbit, skunk, and coyote hunting. Buenos Aires NWR is one of the top hunting refuges in the southwestern United States with approximately 4,000 hunting visits during the 2018–2019 hunt season.</p>
<p>Direct and Indirect Impacts</p> <p><u>Alternative A (No Action Alternative)</u></p> <p>Under Alternative A, there would be no change in existing visitor services and recreational opportunities on the refuge. Hunt zones remain open for other uses during hunts (See Figure 2). Permanent no hunt zones exist in areas of high-public use for participants in non-consumptive activities. Sound disturbance does occur during the hunts, which is minor and temporary. There are no known or anticipated conflicts between other refuge user groups.</p> <p><u>Alternative B (Proposed Action Alternative)</u></p> <p>This alternative would offer additional recreational opportunities on the refuge. Mitigation measures to minimize impact on non-hunting visitors include not allowing night hunting or pursuit with dogs because of concerns for hunter safety and disturbing camping activities. These measures should reduce the likelihood of visitor conflicts.</p> <p>Non-hunters would be free to enjoy other wildlife-dependent recreational activities in areas held in reserve to reduce hunting conflicts. It is known that some visitors avoid the refuge during existing hunts. The noise and traffic associated with expanding hunting opportunities may temporarily impact other visitors.</p>

Affected Cultural Resources and Anticipated Impacts of the No Action and Proposed Action Alternatives

<p>Cultural Resources</p> <p>Various cultural resources exist on the refuge varying from native American artifacts to ranch structures and artifacts. These cultural resources are distributed throughout the refuge. Evidence of prehistoric farming, pottery shards, matates, and morteros are encountered often. Ranching artifacts, structures, corrals, and agricultural equipment litter the landscape. See section 3.13 of the Comprehensive Conservation Plan for BANWR.</p>
<p>Direct and Indirect Impacts</p> <p><u>Alternative A (No Action Alternative)</u></p> <p>Under the No Action Alternative, cultural resources may be adversely impacted. Artifacts can be found at specific sites and scattered throughout the landscape. Cultural resources could be affected by collectors and vandals or by hunters traversing the refuge.</p>

To minimize the effects of visitor use the public is notified of cultural resource rules and regulations via refuge brochures and on the official website.

Alternative B (Proposed Action Alternative)

Impacts to cultural resources under Alternative B are expected to be similar to Alternative A because hunter participation is anticipated to increase less than 5 percent (approximately 200 people), we do not anticipate an increase in non-hunting users.

Affected Refuge Management and Operations Resources and Anticipated Impacts of the No Action and Proposed Action Alternatives

Refuge Management and Operations

Land Use

The refuge is composed of an intermixture of desert scrub, semi-desert grassland and mesquite/Lehmann’s lovegrass communities across nearly 118,000 acres. Management of invasive species are conducted through chemical applications and manual removal occur periodically during late spring season.

More than 250 miles of maintained dirt roads network the refuge are open to the public. Blading occurs after rainstorms. The Arivaca-Sasabe road bisects the refuge running east to west from its intersection with highway 286 to the town of Arivaca. State highway 286 runs the length of the west side of the refuge for approximately 24 miles (managed by County and State with trash pick-up done by refuge on a quarterly basis. There are 86 dispersed primitive campsites throughout the refuge, which are maintained throughout fall and winter. Trash and other facilities are not available at the sites. Pack it in and pack it (Leave No Trace) principles are required. Campsite use is free and no reservations are required. There are 17 miles of established trails which are maintained on an as need basis. Brown Canyon is maintained on an annual basis.

Administration

The refuge is funded for 4 administrative personnel (management, administrative officer), 4 biology personnel, 3 law enforcement personnel, 4 maintenance personnel, and 9 fire personnel. Several of these positions are currently vacant.

Current budget expectations are sufficient to manage a hunting program. The refuge is funded to support three full-time law enforcement officers. A portion of their duties are enforcement of hunting regulations, and this enforcement takes most of their time from September through February. The overall cost to run the program is approximately \$81,000, which is approximately 6 percent of the total funding for the refuge each year. Costs include, but are not limited to, hunt-related portions of law enforcement staff salaries; vehicle maintenance and repair; fuel; sign maintenance and replacement; and printing of brochures.

Direct and Indirect Impacts

Alternative A (No Action Alternative)

Land use impacts include volunteer and staff time to maintain campsites and roads through trimming encroaching vegetation. The refuge has provided public hunting opportunities since

1985. Large-scale invasive species spraying and manual removal take place during late spring or early summer to avoid hunting and other public use activities. Maintenance of roads are only done after rainstorms to improve access to areas so impacts may affect hunting and other public use activities depending on where the damage to roads occurs. Trail maintenance will not affect hunting activities because they occur in the no hunt zones.

Administrative impacts include staff time and expense to produce brochures and signs. Volunteers maintain the various refuge campsites 2–3 times a week on rotating basis. Law enforcement to support hunt programs takes place mainly from September through February. During hunting season, visitor services staff dedicate 5 percent of their workweek to assist with hunting logistics information.

Alternative B (Proposed Action Alternative)

There is no planned infrastructure development specific to the hunt program. No additional access roads would be constructed. Alternative B may result in a slight increase in traffic on refuge roads. This impact is expected to be negligible as the increase in hunting participants is expected to be minimal and the hunt dates are identical to Alternative A. Refuge roads and trails receive frequent maintenance regardless of the hunt program. Most of this maintenance occurs during the rainy season when few hunts are open. No additional increase in staff time is anticipated. Aside from an initial cost to produce new hunting regulation brochures and maps (<\$1000), no new administrative impacts are anticipated as a result of Alternative B.

Affected Socioeconomic Resources and Anticipated Impacts of the No Action and Proposed Action Alternatives

Socioeconomics
<p>Local and Regional Economies</p> <p>Buenos Aires NWR is located in Pima County (population 980,263), approximately 7 miles north of the town of Sasabe (population 51), approximately 20 miles west of Arivaca (population 700) and approximately 35 miles south of the town of Three Points (population 5,581). Tucson, with a population of 523,832, is approximately 55 miles northeast of the refuge. Several small towns are within 60 miles of the refuge. Populations are estimates by the U.S. Census Bureau for 2010.</p> <p>The predominant land use in the vicinity of the refuge is livestock grazing. The refuge averages about 40,000 visitors per year. Wildlife observation visits account for about 90 percent of the total annual visitation. Expenditures on hunting activities accounted for 15 percent of all expenditures, followed by non-consumptive activities at 85 percent. Total expenditures from hunters were \$249,000 with non-residents accounting for approximately fifty percent of total expenditures (Banking on Nature 2018).</p>
<p>Direct and Indirect Impacts</p> <p><u>Alternative A (No Action Alternative)</u></p>

There would be no change in revenues to the local economy associated with hunting on the refuge. The refuge does not charge fees for access or hunting. No additional manpower or funding would be required to implement the No Action Alternative.

Alternative B (Proposed Action Alternative)

Under the proposed action, minor positive impacts to local and regional economies are possible due to a potential increase in visitation. Hunting visits may increase slightly. Hunters would likely purchase gas, food, lodging, and other supplies from local merchants.

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities.

Direct and Indirect Impacts

This EA has not identified any adverse or beneficial effects for either alternative unique to minority or low-income populations in the affected area. Additionally, neither of the alternatives will disproportionately place any adverse environmental, economic, social, or health impacts on minority or low-income populations.

Indian Trust Resources

There are no known Indian trust resources on the refuge.

Direct and Indirect Impacts

No direct or indirect impacts.

Cumulative Impact Analysis

Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts are the overall, net effects on a resource that arise from multiple actions. Impacts can “accumulate” spatially when different actions affect different areas of the same resource. They can also accumulate over the course of time from actions in the past, the present, and the future. Occasionally, different actions counterbalance one another, partially cancelling out each other’s effects on a resource. But more typically, multiple effects add up, with each additional action contributing an incremental impact on the resource.

Anticipated Cumulative Impacts of the No Action and Proposed Action Alternatives

Other past, present, and foreseeable activity impacting the affected environment	Descriptions of Anticipated Cumulative Impacts
<p>Hunting has been allowed on the refuge since 1985. Hunting occurs throughout the entire state of Arizona and United States.</p> <p>Migratory bird populations throughout the United States are managed through an administrative process known as flyways. The refuge is located in the Pacific Flyway. In North America, the process for establishing hunting regulations is conducted annually. The refuge follows the regulations set by the state of Arizona and published in the annual Arizona hunting regulations.</p> <p>The refuge comprises a small portion of three separate GMUs. Access onto the refuge is not controlled so estimating the number of hunters utilizing the refuge is difficult and likely inaccurate. For example, GMU 36B offers 2,400 white-tailed deer permits through four hunts. GMU 36B consists of approximately 560 square miles, approximately 72 square miles (12.86 percent) is on refuge. However, very little of the refuge is white-tailed deer habitat. As such, few whitetail hunters utilize refuge lands. The mule deer hunt (300 permits/2 hunts) is the opposite. Refuge lands within GMU 36B are high-quality habitat for mule deer whereas the remainder of the GMU (off refuge) is more suited for white-tailed deer. Thus, it is likely a disproportionate number of mule deer hunters utilize refuge lands in GMU 36B.</p> <p>Based on voluntary reporting AZGFD estimated 1,667 mule and white-tailed deer were harvested in GMUs 36A, 36B, and 36C during the 2016 hunting season. This represents 0.0018 deer harvested per acre.</p>	<p>Hunting on the refuge does not add to the cumulative impacts of migratory bird management on local, regional, or Pacific Flyway populations because the percentage taken on the refuge, though possibly additive to existing hunting takes, is an insignificant fraction of the estimated populations. In 2019, breeding duck, Canada goose, and light geese were all at or above the 10-year average (Raftovich et al. 2019). In 2019, only two geese were reportedly seen on the refuge. Water sites are scattered and ephemeral, resulting in fewer than 30 waterfowl hunters per year. In addition, no cumulative impacts are anticipated because overall populations will continue to be monitored and future harvests would be adjusted as needed under the existing flyway and State regulatory processes.</p> <p>Locally, the impact of harvest at this rate from the Buenos Aires NWR is likely negligible. Mathematically 185 deer per year could potentially be harvested from the refuge (105,113 acres multiplied by 0.0018 deer/acre). However, as stated above very little of the refuge is whitetail habitat and whitetails account for 83 percent of the deer taken in these GMUs resulting in a realistic take estimate of 32 deer. The refuge will continue to support a healthy deer herd under both alternatives. So, even at the local level, the refuge only adds slightly to cumulative impacts on the resident wildlife, and a negligible amount to regional and statewide populations. Wildlife management of populations is important to ensure the health of the ecosystem, and the refuge's hunt program provides minor, additional beneficial impacts to the cumulative impacts of wildlife management in the State.</p>

	<p>Deer are the most pursued species on the refuge resulting in the most hunter use days. All other take of hunted species is expected to result in negligible cumulative impacts on local and regional populations.</p> <p>Any take under the current or proposed hunt program of any of the other hunted species on the refuge will not incrementally add to the impacts of statewide hunting because harvest on the refuge is expected to be zero or minimal.</p>
<p>U.S. Customs and Border Protection (USCBP) Activities Border related activity, both illegal and enforcement activities, are present on the refuge. USCBP agents traverse the landscape in trucks, all-terrain vehicles (ATVs), on horseback, and on foot. Helicopters are frequently used in concert with other patrolling methods.</p>	<p>Border related activities generate significant disturbance to humans and wildlife alike. Vehicles frequently travel at high speeds on refuge roads generating noise and dust pollution. Animal/vehicle collisions have not been surveyed but roadkill is observed daily. Customs and Border Protection operations that include roads, off-road impacts, border fence, and road maintenance will also likely result in habitat loss and disturbance to wildlife. USCBP related activity is likely to temporarily displace wildlife, cause mortality through vehicle strikes, and disrupt normal behavior. The Service will continue to coordinate with USCBP on projects impacting national wildlife refuges and through the Endangered Species Act Section 7 process to minimize impacts to trust resources to the extent possible. Providing additional hunting opportunities, which are minimal and temporary in nature, are incrementally negligible when put in the context of border-related activities (enforcement and foot traffic from cross border violators).</p>
<p>Surrounding Land Uses and Local Economy Nearly all of the lands surrounding the refuge are public and open to hunting, the primary land use is cattle grazing. Most of the refuge is bordered by Arizona State Land Trust lands. The southeast portion of the refuge is bordered by the Coronado National Forest.</p>	<p>Wildlife dependent recreation other than hunting contributes greatly to the local economy in the town of Arivaca. The Arivaca Cienega is a popular birding destination receiving up to 25,000 visits per year. The town also benefits from hunting but primarily from visitors hunting outside refuge lands.</p>

<p>Recreation activities on the Coronado National Forest include hiking, hunting, camping, birding, horseback riding, picnicking, sightseeing, and visiting historic areas.</p> <p>There are also several Bureau of Land Management tracts nearby. Unless specifically prohibited, public lands managed by the BLM are open to hunting.</p> <p>The majority of lands within the refuge boundary were ranch lands and leased grazing allotments hunted as private lands prior to being acquired by the Service. Currently there is no grazing on the refuge. Agriculture is a part of the regional economy. Cattle grazing on this landscape has been occurring for multiple generations. Ranches adjacent to the refuge have active cattle operations or BLM-issued grazing allotments.</p>	<p>The refuge will use an adaptive management approach for its hunt program to ensure that the refuge will only mitigate and not add to the impacts on surrounding land uses. All surrounding land use activities (grazing, hunting, and other public use) occur on adjacent lands and have occurred for decades, so the brief increase in activity (potential slight increase in hunters from September through February) and under the proposed action is not likely to result in any cumulative impacts.</p>
<p>Climate Change</p> <p>The complexity of ecological systems means that there is a tremendous amount of uncertainty about the impact climate change will actually have. In particular, the localized effects of climate change are still a matter of much debate. The USGS Southwest Climate Adaptation Science Centers are examining topics such as how future temperatures will impact streamflow in the Colorado River basin, how severe wildfires might contribute to forest loss and how managers can plan for post-fire recovery. In the coming years, the region is likely to experience changes in precipitation frequency, intensity, and seasonality. These changes will influence key ecological, hydrological, and societal processes. Improved understanding of these linkages will inform decisions about safeguarding ecosystem and infrastructure assets (USGS 2017). The Service's has been working with the U.S. Geological Survey, the academic community, and other natural resource management agencies and interest groups to translate available and emerging</p>	<p>Under both alternatives, the refuge would use adaptive management for refuge activities, including hunting. Hunting will be monitored and the refuge has the ability to modify public use activities to ensure they do not further contribute to climate change.</p>

<p>science into concrete actions that reduce the impacts of a changing climate on the broadly diverse ecosystems in Arizona, New Mexico, Oklahoma, and Texas.</p>	
<p>Use of Lead Ammunition Lead ammunition is permitted for all species on the refuge with the exception of waterfowl. Lead poisoning has been identified as the leading cause of diagnosed death in endangered condors and the main obstacle to a self-sustaining population in Arizona and southern Utah. Studies suggest that lead shot and bullet fragments found in animal carcasses and gut piles are the most likely source of lead exposure. Many hunters do not realize that the carcass or gut pile they leave in the field usually contains lead bullet fragments. Gut piles from animals harvested with non-lead ammunition provide an important food source for the condors and should be left in the field (AZGFD 2019).</p>	<p>Under both alternatives, the refuge has no restrictions on the use of lead ammunition other than federal requirements for non-toxic shot for waterfowl. The refuge encourages non-toxic ammunition but use is voluntary. When looking at the total number of hunter visits (3,960) on the refuge compared to the surrounding GMUs, the continued use of lead ammunition will not incrementally add to lead in environment.</p>

Summary of Analysis

The purpose of this EA is to briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

Alternative A – No Action Alternative

As described above, this alternative would continue to offer hunting duck, goose, coot, mourning and white-wing doves, Eurasian collared-dove, coyote, skunk (hog-nosed, hooded, spotted, and striped), jackrabbits (black-tailed and antelope), cottontail rabbit, mule and white-tailed deer, javelina, and feral hog on Buenos Aires NWR. Additional hunting opportunities would not be permitted on the refuge. Hunting opportunities would be limited to those interested in only hunting species currently allowed for hunting on the refuge. Effects on wildlife and habitat would be negligible because there would likely be the same amount of use by hunters and hunting has been permitted on the refuge since 1985. There may be some negative impacts to masked bobwhite quail by not allowing additional predator control.

The no action alternative represents a hunt program that has been in place for 25 years with only minor changes. An environmental assessment and FONSI were completed in 1994 and no cumulative impacts have been observed or identified since. There is no record of conflict between hunters and non-consumptive recreational user. The no hunt zones cover areas of high visitor use and the remainder of the refuge is largely undeveloped. There remains the potential for conflict or interaction at water sources outside the no hunt zones as these are popular

locations for both hunters and birders but in 25 years of hunting there have no conflicts reported on record.

This alternative also meets the purpose and needs of the Service as described above, because it would provide wildlife-dependent recreation opportunities. However, it does not allow for the variety of hunting opportunities that could be offered nor allow for alignment with state regulations.

Alternative B – Proposed Action Alternative

Under the Proposed Action Alternative, the refuge would expand the hunted species to include badger, bobcat, white-nosed coati, foxes, gallinule, merganser, snipe, mountain lion, raccoon, and ringtail. The hunt program for duck, goose, coot, mourning and white-wing doves, Eurasian collared-dove, mule and white-tailed deer, javelina, feral hog, cottontail rabbit, jackrabbits, coyote, and skunks would remain the same. Hunt seasons, bag limits, and methods of take will continue to be established by AZGFD. The impacts of the proposed action are similar to those of the no action alternative for most areas of consideration. The season dates, hunt locations, and times will not change. The expected increase in visitation is minimal as most of the new species are hunted incidental to other hunts. Additionally, many of the proposed species are nocturnal and night hunting is not proposed on the refuge. Areas around walking trails would remain closed to hunting and may offer other wildlife-dependent public use opportunities during hunting season. The impacts to other wildlife and endangered species are potentially beneficial in many ways. The majority of the species proposed to be opened are predatory and affect many facets of the ecosystem.

This alternative helps meet the purpose and needs of the Service as described above, because it provides additional wildlife-dependent recreation opportunities on the refuge meeting the Service's priorities and mandates. This alternative also helps align Service regulations with State regulations in an effort to making hunting more accessible to the public. The Service has determined that the proposed action is compatible with the purposes of the Buenos Aires NWR and the mission of the NWRS. The Service has the resources necessary to carry out the proposed action and has is compatible with the purposes of the Buenos Aires NWR and the mission of the NWRS.

Monitoring

The AZGFD set harvest limits in each of the adjoining GMUs. AZGFD will continue to establish hunting seasons, method of take, and bag limit for all hunted species within the limits set forth above.

Biological monitoring of masked bobwhite, Pima pineapple cactus, Chiricahua leopard frog, and pronghorn will continue and an adaptive management approach for hunting if it is determined that this activity is impacting a listed species.

List of Sources, Agencies, and Persons Consulted

List of Preparers and Persons Consulted

Smith, Joshua T. Wildlife Refuge Specialist, Buenos Aires NWR
William R. Radke, Buenos Aires, Leslie Canyon, San Bernardino NWR, Complex Refuge Manager
Stan Culling, Buenos Aires NWR, Assistant Refuge Manager
Juli Niemann, FWS Region 2, Landscape Architect
Anibal Vazquez, FWS Region 2, Natural Resources Planner
Arizona Game and Fish Department

State Coordination

Throughout this planning process, the refuge supervisor for Arizona met with, in person or by telephone, AZGFD on several occasions. Key meetings occurred on May 17, 2019, September 13, 2019, and October 2, 2019. AZGFD supports the proposed action and requests further regulatory alignment outside the scope of this effort. Cooperation between the AZGFD, the Service, and BANWR has resulted in many positive and mutually beneficial outcomes.

Tribal Consultation

The refuge supervisor for Arizona sent a letter advising the leadership of the listed tribes of the proposed action and inviting comment on the Hunt Plan and this Environmental Assessment. The Service will send these documents directly to the tribes upon release for public comment.

Tribes consulted:

Fort McDowell Yavapai Nation
Cocopah Tribe of Arizona
Hualapai Indian Tribe
Tonto Apache Tribe of Arizona
Salt River Pima-Maricopa Indian Community
White Mountain Apache Tribe
Gila River Indian Community
White Mountain Apache Tribe
Navajo Nation
Ak-Chin Indian Community
Yavapai-Prescott Indian Tribe
Tohono O'odham Nation of Arizona
San Carlos Apache Tribe
Colorado River Indian Tribes
Kaibab Band of Paiute Indians
Yavapai-Apache Nation
Hopi Tribe of Arizona
Havasupai Tribe
Pascua Yaqui Tribe of Arizona
San Juan Southern Paiute Tribe

Public Outreach

During informal scoping, public notices were displayed at the refuge visitor center, four kiosks, the library, post office and mercantile in Arivaca, the post office and mercantile in Sasabe, the refuge Facebook page, and the refuge website.

This Environmental Assessment will be available for public review and comment, along with the Buenos Aires National Wildlife Refuge Hunt Plan and the compatibility determination during the 30-day period between April 1st and April 30th, 2020 via a Public Notice posted at the Sasabe and Arivaca post offices and on three kiosks within the refuge. Copies of this compatibility determination will be posted on our refuge webpage and hard copies will be available to visiting public at the visitor center.

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Appendix 1

OTHER APPLICABLE STATUTES, EXECUTIVE ORDERS & REGULATIONS

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS	
<p>Cultural Resources</p> <p>American Indian Religious Freedom Act, as amended, 42 U.S.C. 1996 – 1996a; 43 CFR Part 7</p> <p>Antiquities Act of 1906, 16 U.S.C. 431-433; 43 CFR Part 3</p> <p>Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa – 470mm; 18 CFR Part 1312; 32 CFR Part 229; 36 CFR Part 296; 43 CFR Part 7</p> <p>National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470-470x-6; 36 CFR Parts 60, 63, 78, 79, 800, 801, and 810</p> <p>Paleontological Resources Protection Act, 16 U.S.C. 470aaa – 470aaa-11</p> <p>Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001-3013; 43 CFR Part 10</p> <p>Executive Order 11593 – Protection and Enhancement of the Cultural Environment, 36 Fed. Reg. 8921 (1971)</p>	<p>The proposed action includes no ground-disturbing activities, or other activities that might disturb undocumented paleontological, archaeological, or historic sites.</p>

<p>Executive Order 13007 – Indian Sacred Sites, 61 Fed. Reg. 26771 (1996)</p>	
<p>Fish & Wildlife</p> <p>Bald and Golden Eagle Protection Act, as amended, 16 U.S.C. 668-668c, 50 CFR 22</p> <p>Endangered Species Act of 1973, as amended, 16 U.S.C. 1531-1544; 36 CFR Part 13; 50 CFR Parts 10, 17, 23, 81, 217, 222, 225, 402, and 450</p> <p>Fish and Wildlife Act of 1956, 16 U.S.C. 742 a-m</p> <p>Lacey Act, as amended, 16 U.S.C. 3371 et seq.; 15 CFR Parts 10, 11, 12, 14, 300, and 904</p> <p>Migratory Bird Treaty Act, as amended, 16 U.S.C. 703-712; 50 CFR Parts 10, 12, 20, and 21</p> <p>Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (2001)</p>	<p>There are five federal threatened or endangered species on the refuge: the masked bobwhite, Chiricahua leopard frog, Pima pineapple cactus, Kearny’s bluestar, and Southwestern willow flycatcher. An Intra-Service Section 7 Consultation was conducted with the Service’s Tucson Ecological Services Field Office.</p> <p>The proposed action is consistent with Executive Order 13186 because the Environmental Assessment for Hunting on Buenos Aires NWR evaluates the effects of agency actions on migratory birds.</p>
<p>Natural Resources</p> <p>Clean Air Act, as amended, 42 U.S.C. 7401-7671q; 40 CFR Parts 23, 50, 51, 52, 58, 60, 61, 82, and 93; 48 CFR Part 23</p> <p>Wilderness Act, 16 U.S.C. 1131 et seq.</p> <p>Wild and Scenic Rivers Act, 16 U.S.C. 1271 et seq.</p>	<p>The Service has evaluated the suitability of the Buenos Aires National Wildlife Refuge for wilderness designation and concluded that the Refuge does not meet the basic criteria for inclusion into the National Wilderness Preservation System.</p> <p>The Service has evaluated the eligibility of streams on Buenos Aires National Wildlife Refuge for wild and scenic river designation and concluded no streams meet the basic criteria for inclusion into the National Wild and Scenic Rivers System</p>

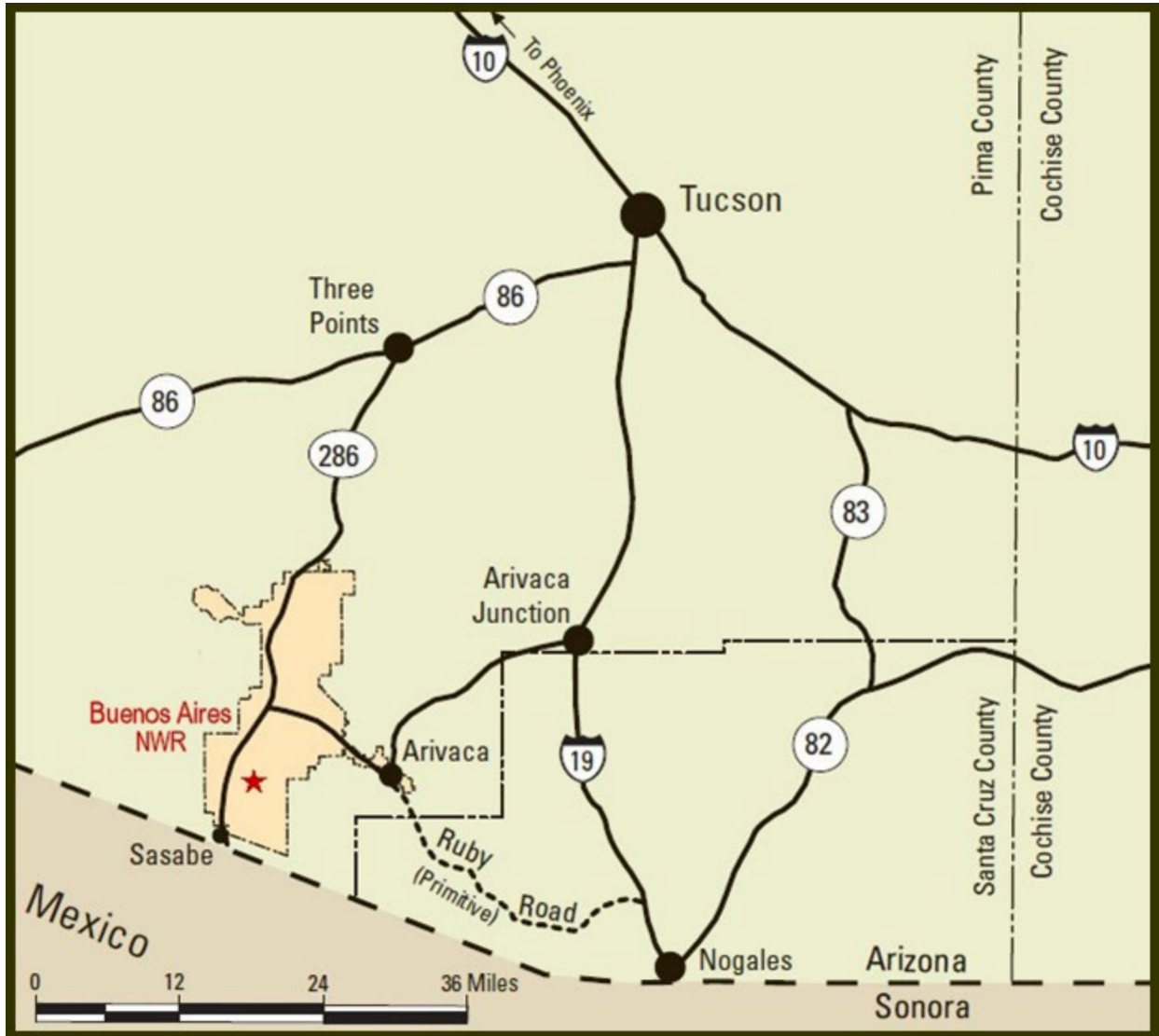
<p>Executive Order 13112 – Invasive Species, 64 Fed. Reg. 6183 (1999)</p>	<p>The proposed action would have negligible effects to air quality.</p> <p>The proposed action is consistent with Executive Order 13112 because stipulations in permits would be designed to prevent the introduction of invasive species.</p>
<p>Water Resources</p> <p>Coastal Zone Management Act of 1972, 16 U.S.C. 1451 et seq.; 15 CFR Parts 923, 930, 933</p> <p>Federal Water Pollution Control Act of 1972 (commonly referred to as Clean Water Act), 33 U.S.C. 1251 et seq.; 33 CFR Parts 320-330; 40 CFR Parts 110, 112, 116, 117, 230-232, 323, and 328</p> <p>Rivers and Harbors Act of 1899, as amended, 33 U.S.C. 401 et seq.; 33 CFR Parts 114, 115, 116, 321, 322, and 333</p> <p>Safe Drinking Water Act of 1974, 42 U.S.C. 300f et seq.; 40 CFR Parts 141-148</p> <p>Executive Order 11988 – Floodplain Management, 42 Fed. Reg. 26951 (1977)</p> <p>Executive Order 11990 – Protection of Wetlands, 42 Fed. Reg. 26961 (1977)</p>	<p>The refuge does not lie in a coastal zone, and contains no rivers, harbors, or navigable waters.</p> <p>There would be negligible impacts of the proposed action on water quality or water resources.</p> <p>The proposed action is consistent with Executive Order 11990 because implementation of the Hunt Plan would protect existing wetlands.</p> <p>The proposed action is consistent with Executive Order 11988, because implementation of the Hunt Plan would not result in the modification or destruction of floodplains.</p>

Appendix 2

Hunted Species List

Common Name	Scientific Name
Gallinule	<i>Gallinula</i> spp.
Merganser	<i>Mergus</i> spp., <i>Lophodytes cucullatus</i>
Snipe	<i>Gallinago delicata</i>
Mountain lion	<i>Puma concolor</i>
Badger	<i>Taxidea taxus</i>
Bobcat	<i>Lynx rufus</i>
White-nosed coati	<i>Nasua narica</i>
Kit fox	<i>Vulpes macrotis</i>
Gray fox	<i>Urocyon cinereoargenteus</i>
Raccoon	<i>Procyon lotor</i>
Ringtail	<i>Bassariscus astutus</i>
Duck	<i>Anatidae</i>
Goose	<i>Anser</i> spp., <i>Branta</i> spp.
Coot	<i>Fulica americana</i>
White-winged dove	<i>Zenaida asiatica</i>
Mourning dove	<i>Zenaida macroura</i>
Eurasian collared-dove	<i>Streptopelia decaocto</i>
White-tailed deer	<i>Odocoileus virginianus cousei</i>
Mule deer	<i>Odocoileus hemionus</i>
Javelina	<i>Tayassu tajacu</i>
Feral hog	<i>Sus scrofa</i>
Black-tailed Jackrabbit	<i>Lepus californicus</i>
Antelope jackrabbit	<i>Lepus alleni</i>
Cottontail rabbit	<i>Sylvilagus audubonii</i>
Coyote	<i>Canis latrans</i>
Hooded Skunk	<i>Mephitis macroura</i>
Hog-nosed Skunk	<i>Conepatus mesoleucus</i>
Spotted Skunk	<i>Spilogale gracilis</i>
Striped Skunk	<i>Mephitis mephitis</i>

Attachment 1: Refuge proximity map.



COMPATIBILITY DETERMINATION

USE: Hunting

REFUGE NAME: Buenos Aires National Wildlife Refuge (NWR/refuge)

ESTABLISHING AND ACQUISITION AUTHORITIES:

Buenos Aires Ranch, located in Pima County, Arizona was recommended for purchase in the 1977 Recovery Plan for the masked bobwhite quail. Congress approved \$5,000,000 for purchase of the central part of the ranch under of the authority of the Endangered Species Act of 1969, authorizing expenditure of funds for habitat acquisition. Owners would only sell the ranch as a whole, and in 1984, Congress approved an additional \$4,000,000 to affect the purchase. The U.S. Fish and Wildlife Service (Service) approved the purchase in September of 1984. The Secretary of the Interior approved the purchase in February of 1985. The transaction was completed in August of that year, when the Buenos Aires National Wildlife Refuge was officially established. Approximately 21,000 acres were received in fee title, and 90,000 acres were in state leases. In March of 1991, the state-lease lands were exchanged for federal lands as part of the Idaho-Utah Bill. Additional lands have been purchased to protect valuable riparian systems along Arivaca Creek (4,000 acres) and in Brown Canyon (2,000 acres) with Land and Water Conservation Funds.

REFUGE PURPOSE(S):

The refuge was established on August 1, 1985 “to conserve (A) fish or wildlife which are listed as endangered species or threatened species or (B) plants” 16 U.S.C. 1534 (Endangered Species Act of 1973) and for the “development, advancement, management, conservation, and protection of fish and wildlife resources” 16 U.S.C. 742f(a)(4) (Fish and Wildlife Act of 1956):

- a) For lands acquired under the Endangered Species Act, the purpose of the refuge is to preserve, restore, and enhance the Sonoran grassland ecosystem for the reintroduction and management of endangered masked bobwhite; to preserve the natural diversity and abundance of birds, animals, and plants; to provide wildlife recreational experiences that are compatible with refuge management plans and that emphasize interpretation of the refuge environment and masked bobwhite.
- b) For Arivaca Creek lands, the purpose is to preserve one of the highest quality and last remaining unprotected riparian systems in Southeast Arizona and to protect a number of plant and animal species of special concern.
- c) For Brown Canyon lands, the purpose is to protect a unique Southwestern riparian ecosystem and its watershed for a variety of resident wildlife, plants and neo-tropical migratory birds that exemplify an almost natural fauna community and to connect wildlife corridors between public lands.

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

“The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (National Wildlife Refuge System Improvement Act of 1997, Public Law 105-57).

DESCRIPTION OF USE:

What is the use?

This Compatibility Determination evaluates hunting, an existing wildlife-dependent recreational use on Buenos Aires National Wildlife Refuge. The refuge provides hunting opportunities for migratory birds, including geese, ducks, coots, gallinules, mergansers, snipe, mourning doves, white-winged doves, and Eurasian collared-doves; upland game, including black-tailed and antelope jackrabbits and cottontail rabbits; predators and fur-bearers, including badger, bobcat, white-nosed coati, coyotes, kit and gray foxes, raccoon, ringtail, and hog-nosed, hooded, spotted and striped skunks; and big game, including mule deer, white-tailed deer, mountain lion, javelina and feral hogs. No other species may be taken. Season dates and bag limits are determined by the Arizona Game and Fish Department (AZGFD).

Where is the use conducted?

Hunters may hunt approximately 89 percent of the refuge acreage. No-Hunt Zones include all Service property east of milepost 8.1 of Arivaca Road within the Arivaca Creek Management Area, all Service property in Brown Canyon, all Service property within ¼ mile (0.4 km) of refuge residences, and the posted No-Hunt Zone encompassing refuge headquarters and area bounded by the 10-mile (16 km) Pronghorn Drive auto tour loop. Refuge property in Brown Canyon is closed to hunting for administrative purposes. However, hunters can access State Trust land in Brown Canyon by parking near the Brown Canyon gate on state land and hiking on foot to enter Arizona state property. Additionally there is no hunting within a quarter mile of refuge residences. The no hunting zones are identified on refuge maps within the public use and hunting brochures.

The refuge comprises a portion of game management units (GMUs) 36 A, B, and C. Roads and campsites make the refuge attractive to hunters and can potentially lead to a higher proportion of hunters at the refuge, compared to the remainder of the units. Many of these hunters use campsites on the refuge but harvest deer outside of the refuge. Hunttable area in refuge portions of these GMUs is approximately 162.65 square miles.

GMU 36A – 51,500 acres on the refuge.

This portion of the refuge is in the southwest part of the unit east of state highway 286 and north of Arivaca Road (excluding posted No Hunt Zones).

GMU 36B – 46,400 acres on the refuge.

This portion of the refuge is in the southwest part of the GMU, east of state highway 286 and south of Arivaca Road (excluding posted No Hunt Zones).

GMU 36C – 14,900 acres on the refuge.

This portion of the refuge is located west of state highway 286 (excluding closed area of Brown Canyon).

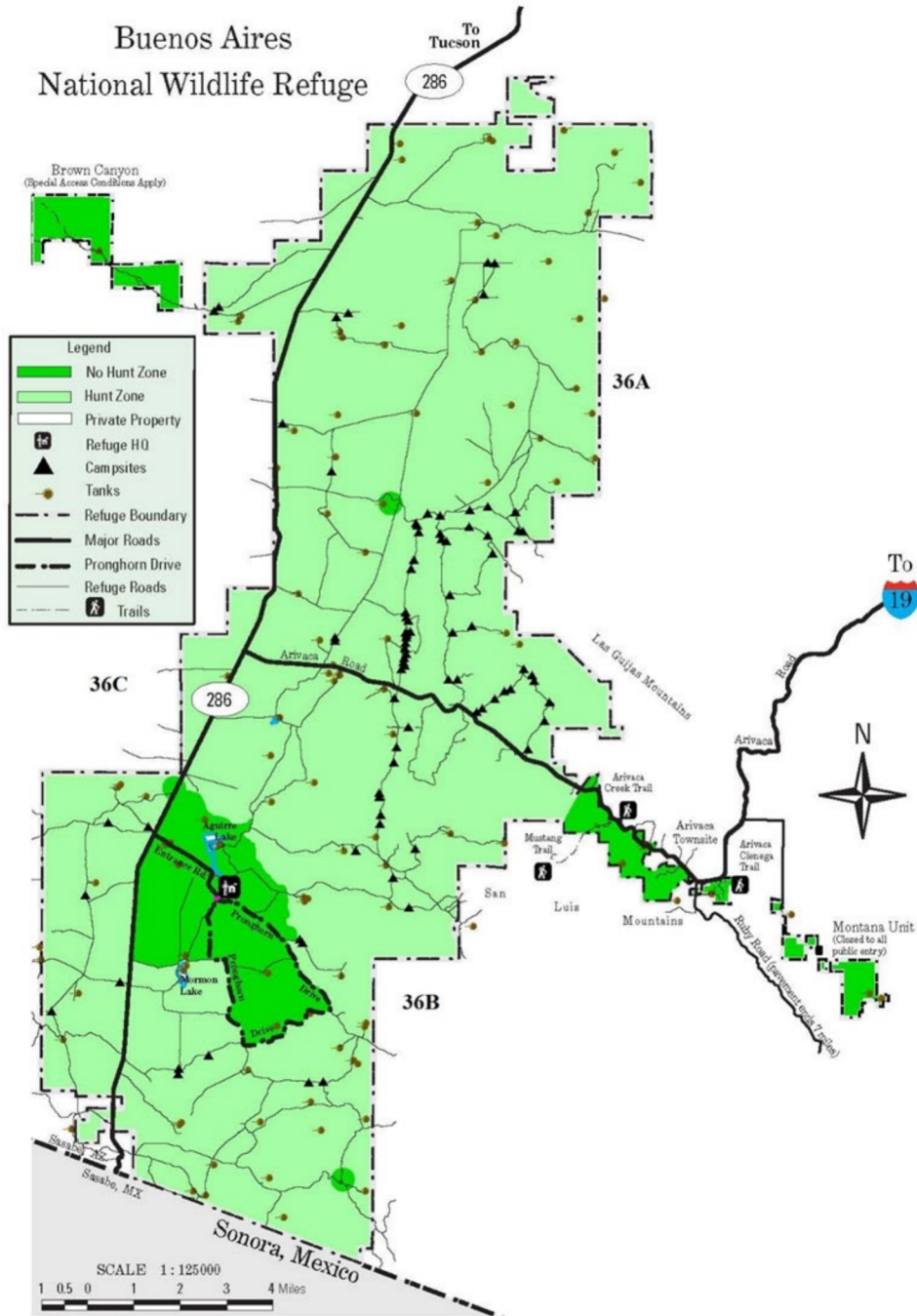


Figure 1. Refuge hunt map showing refuge boundaries and no hunt zones.

Access

Access to the refuge is every day of the year, 24 hours a day, with the exception of nature trails (Arivaca Cienega, Arivaca Creek), which are open dawn to dusk. Some refuge property in the Arivaca area is not open to the public and is posted accordingly.

Visitors may arrive at the refuge from the east via Arivaca Road or the north by using highway 286. Access is paved on these routes and on the entrance road to headquarters. The refuge may also be accessed by forest roads from the Coronado National Forest and across State Trust lands from Arivaca. More than 260 miles of dirt roads network the refuge, remaining from ranching days. These roads are available to visitors; high clearance vehicles are recommended.

Hunt zones are generally reached from Arivaca Road or Arizona state route 286. Hunters can access the mountain areas to the east of the refuge from refuge roads. Alternatively, eastern portions of the refuge can be entered by primitive roads from those uplands.

When is the use conducted?

Listed time periods follow the state-regulated seasons. Upland and big game may be hunted during daylight hours. Taking wild animals or birds by moon light or artificial light is illegal. (page 99 2017-18 Arizona Hunting Regulations). Migratory birds may only be hunted from half an hour before sunrise to sunset.

Hunts for deer, javelina, and mountain lion require a big game permit obtained from AZGFD. The seasons for big game, doves, and waterfowl runs from approximately August 26 to March 1, mountain lion is open until May 31. The cottontail and jackrabbit seasons are year-round. Coyote, and skunk seasons are year-round. Badger, bobcat, coati, fox, raccoon, and ringtail, seasons are August 1–March 31.

How is the use conducted?

Hunting for all species is in accordance with AZGFD regulations, seasons, and methods of take. Hunting seasons and quantity of permits are regulated by the AZGFD. Deer firearm hunts are limited to six seasons, ranging from 4 – 14 days in late October through December. Javelina firearm hunts are similarly regulated and limited to two week-long seasons during late winter and early spring. Archery hunting is also permitted on BANWR. Deer may be harvested during a two-week archery season in September and again during a six-week season in December and January. One javelina archery season extends throughout the month of January. Cottontail, jackrabbit, dove, and waterfowl seasons are more extensive than the deer and javelina seasons, and hunter numbers are not regulated. No trapping is permitted for any take. Hunting guide service providers are required to obtain a special use permit (SUP).

A valid Arizona state hunting license and state-issued permit is required to be in the hunter's possession to hunt big game species. Hunters must be in possession of a valid AZ hunting license and any valid big game permit to hunt feral hogs. In addition to a hunting license, a Migratory Game Bird Stamp is necessary to hunt doves and waterfowl. Additionally, a federal Duck Stamp is also required by hunters 16 years and older to hunt waterfowl. Public use and

hunt regulations are available at the refuge headquarters and kiosks at primary refuge access points and trailheads.

Why is the use being proposed?

Hunting is priority public use on System lands as identified in the National Wildlife Refuge System Improvement Act of 1997. Allowing access to the refuge for hunting certain species is consistent with goals of the refuge and the System.

The Buenos Aires Ranch comprised much of the present-day refuge. Hunting was permitted by the Buenos Aires Ranch owners, and hunting activities continued uninterrupted after 1985. Hunting provides the public with a recreational experience on refuge lands, including wildlife viewing and sport hunting opportunities unique to the refuge and south-central Arizona. Additionally, it fosters support of refuge goals and objectives by working in close association with the public, AZGFD, and other agencies and land managers to manage wildlife and its supporting habitat on the refuge.

We propose to continue this existing use because the hunting program does not materially interfere with or detract from the fulfillment of the purposes of the refuge or mission of the System. Populations of hunted species currently considered by the AZGFD are said to be healthy and able to withstand a percentage of harvest.

AVAILABILITY OF RESOURCES:

Administering the refuge hunting program is accomplished by current staff and does not require any additional facilities on the refuge, except for office sites.

Current budget expectations are sufficient to manage a hunting program. The refuge is funded to support three full-time law enforcement officers. A portion of their duties are enforcement of hunting regulations, and this enforcement takes most of his their time from September through February. The overall cost to run the program is approximately \$81,000, which is approximately 6 percent of the total funding for the refuge each year. Costs include, but are not limited to, hunt-related portions of law enforcement staff salaries; vehicle maintenance and repair; fuel; sign maintenance and replacement; and printing of brochures.

ANTICIPATED IMPACTS OF THE USE:

Short- and Long-term Impacts:

Populations of game will be slightly impacted year-to-year as a result of hunting, however, as long as hunters are following State regulations, this should not affect animal populations dramatically in the long-term.

The use of refuge roadways and trails to facilitate hunting may result in some environmental impacts to the refuge, its habitat, and wildlife species. Motor vehicles traveling the roads may result in a small number of incidents that result in the incidental injury or death of wildlife. Motor vehicles may produce emissions that could negatively affect air quality or contribute to climate change. Littering is nominal and the vast majority of visitors have been respectful and compliant with refuge policy, to date. Campfires have the potential to ignite wildfires; however,

there have been no wildfires on the refuge attributed to campfires in the past 25 years. The refuge currently has the infrastructure in place to accommodate for hunting activities.

Hunting may result in long-term beneficial impacts to the refuge and may, under certain circumstances, serve as a valuable management tool. This activity will increase visitors' understanding and appreciation of wildlife and their habitat as well as the role of the National Wildlife Refuge System (Refuge System) in resource conservation. The refuge's visitor facilities provide opportunities for the public to observe wildlife in a variety of habitats throughout the refuge while enhancing the overall mission of the System.

Cumulative Impacts:

No adverse cumulative impacts are expected to result from hunting. Ultimately, this activity will add to public use opportunities on the refuge, which will result in beneficial cumulative impacts. Making hunting opportunities available on the refuge will increase public awareness about conservation issues and the System. This will benefit the Service's overall mission and the purpose of the refuge. For a further detailed analysis of cumulative impacts from Buenos Aires' hunt program, please refer to the Environmental Assessment for Buenos Aires National Wildlife Refuge Hunt Plan.

PUBLIC REVIEW AND COMMENT:

This compatibility determination will be available for public review and comment, along with the Buenos Aires National Wildlife Refuge Hunt Plan and the Environmental Assessment during the 30-day period between April 1st and April 30th, 2020 via a Public Notice posted at the Sasabe and Arivaca post offices and on three kiosks within the refuge. Copies of this compatibility determination will be posted on our refuge webpage and hard copies will be available to visiting public at the visitor center.

DETERMINATION:

Use is not compatible

Use is compatible with the following stipulations:

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

To ensure compatibility with the Refuge System and refuge goals and objectives, hunting can only occur under the following conditions:

1. The No-Hunt Zones include all Service property east of milepost 8.1 of Arivaca Road within the Arivaca Creek Management Area, all Service property in Brown Canyon, all Service property within ¼ mile (0.4 km) of refuge residences, and the posted No-Hunt Zone encompassing refuge headquarters and area bounded by the 10-mile (16 km) Pronghorn Drive auto tour loop.
2. The refuge is closed to all quail hunting, in order to protect the endangered masked bobwhite quail.
3. Pursuit of wildlife with dogs is not allowed on the refuge to reduce the chance of disturbing the endangered masked bobwhite quail.

4. Groups using four or more horses must possess and carry a refuge permit. Groups using horses must provide their own water and weed-free feed and clean the campsite of horse manure to ensure invasive species are not introduced.

JUSTIFICATION:

As defined by the National Wildlife Refuge System Improvement Act of 1997, wildlife-dependent recreational uses may be authorized on a refuge when they are compatible and not inconsistent with public safety. Hunting is included as one of these six activities, which are to receive enhanced and priority consideration in refuge planning and management. Public hunting as described here and consistent with the management direction provided in the CCP will provide the visitor with a unique chance to experience the refuge and its wildlife firsthand.

Hunters and non-hunters generally use different portions of the refuge. Hunters use the hunt zones, while non-hunting visitors concentrate in the No Hunt Zones of Pronghorn Drive, the headquarters area, and the trails near Arivaca. The seasonality of opportunities and public interest provide separation among these priority public uses, minimizing conflicts between user groups. Non-hunting visitors do use the Hunt Zones. There has never been a conflict or incident involving hunters versus non-hunting visitors in the past and none anticipated in the future. If any problem should arise, the refuge will institute measures to rectify the conflict and ensure safety of all visitors.

This activity will not conflict with any of the other priority public uses or adversely impact biological resources. Therefore, through the compatibility determination process, the refuge has determined that hunting on the refuge, in accordance with the stipulations provided above, is a compatible use that will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose of the refuge.

Signature: Refuge Manager _____
(Signature and Date)

Concurrence: Regional Chief _____
(Signature and Date)

Mandatory 15-year Re-Evaluation Date: _____ 2035

REFERENCES:

Arizona Game and Fish Department. 2017. 2017-18 Arizona Hunting Regulations. Phoenix, AZ. 141pp

U.S. Fish and Wildlife Service. 2003. Buenos Aires National Wildlife Refuge, Final Comprehensive Conservation Plan and Environmental Assessment. Sasabe, Arizona, U.S. Fish and Wildlife Service, Region 2, Albuquerque, NM.

DRAFT

**BUENOS AIRES NATIONAL WILDLIFE REFUGE
MIGRATORY BIRD, UPLAND GAME, BIG GAME, PREDATOR, AND
FUR-BEARING MAMMAL HUNT PLAN**

April 2020

**U.S. Fish and Wildlife Service
Buenos Aires National Wildlife Refuge
P.O. Box 109
Sasabe, AZ 85633**

Submitted By:
Project Leader

Signature

Date

Concurrence:

Refuge
Supervisor

Signature

Date

Approved:

Regional Chief,
National Wildlife
Refuge System

Signature

Date

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I. Introduction

National wildlife refuges are guided by the mission and goals of the National Wildlife Refuge System (NWRS), the purposes of an individual refuge, U.S. Fish and Wildlife Service (Service) policy, and laws and international treaties. Relevant guidance includes the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, Refuge Recreation Act of 1962, and selected portions of the Code of Federal Regulations and Fish and Wildlife Service Manual.

Buenos Aires National Wildlife Refuge (NWR/refuge) was established on August 1, 1985, under the authority of the Federal Property and Administrative Service Act of 1949 (40 U.S.C. 471-535), as amended; Fish and Wildlife Coordination Act of 1934 (16 U.S.C. 661-666c) as amended; Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j Stat. 1119) as amended; the Act of May 19, 1948, Public Law 80-537 (16 U.S.C. 667b-667d; 62 Stat. 240) as amended; and The National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd-668ee). "...to conserve (A) fish or wildlife which are listed as endangered species or threatened species... or (B) plants..." 16 U.S.C. 1534 (Endangered Species Act of 1973) and for the "...development, advancement, management, conservation, and protection of fish and wildlife resources..." 16 U.S.C. 742(a)(4) (Fish and Wildlife Act of 1956).

The primary purpose of the refuge is to establish a breeding population of endangered masked bobwhite quail (*Colinus virginianus ridgwayi*) and to protect a grassland ecosystem unique to south-central Arizona. Other refuge objectives are to preserve the natural diversity of wildlife native to southeast Arizona and to provide for wildlife-oriented recreation and education.

In the 1978 Recovery Plan for the Masked Bobwhite Quail (U.S. Fish and Wildlife Service 1978), it was recommended that the Buenos Aires Ranch be purchased for the reestablishment of the species. Congress approved the \$4,900,000 needed to purchase the central part of the ranch under the authority of the Endangered Species Act of 1973 and the Fish and Wildlife Act of 1956. Since the ranch owners would only sell the entire ranch, an additional \$4,000,000 was approved in 1984. The purchase was finalized in August 1985, when Buenos Aires National Wildlife Refuge was officially established in the Altar Valley of Pima County, Arizona. Approximately 21,000 acres were received in fee title and 90,000 acres were in state leases. In 1991, the state lease lands were exchanged for federal lands. Three tracts of land remained under the administration of the Arizona State Land Department. The refuge eventually acquired these state leases, including the 801-acre El Cazador Ranch, half of which was under state lease.

The mission of the NWRS, as outlined by the National Wildlife Refuge System Administration Act (NWRSA), as amended by the National Wildlife Refuge System Improvement Act (16 U.S.C. 668dd et seq.), is:

"... to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."

The NWRSA mandates the Secretary of the Interior in administering the System to (16 U.S.C. 668dd(a)(4):

- Provide for the conservation of fish, wildlife, and plants, and their habitats within the NWRs;
- Ensure that the biological integrity, diversity, and environmental health of the NWRs are maintained for the benefit of present and future generations of Americans;
- Ensure that the mission of the NWRs described at 16 U.S.C. 668dd(a)(2) and the purposes of each refuge are carried out;
- Ensure effective coordination, interaction, and cooperation with owners of land adjoining refuges and the fish and wildlife agency of the States in which the units of the NWRs are located;
- Assist in the maintenance of adequate water quantity and water quality to fulfill the mission of the NWRs and the purposes of each refuge;
- Recognize compatible wildlife-dependent recreational uses as the priority general public uses of the NWRs through which the American public can develop an appreciation for fish and wildlife;
- Ensure that opportunities are provided within the NWRs for compatible wildlife-dependent recreational uses; and
- Monitor the status and trends of fish, wildlife, and plants in each refuge.

Therefore, it is a priority of the Service to provide wildlife-dependent recreation opportunities, including hunting and fishing, when those opportunities are compatible with the purposes for which the refuge was established and the mission of the National Wildlife Refuge System.

The refuge is located in a region of high biological diversity, with influences from the Chihuahuan, Sonoran, and Madrean geographic provinces. The refuge has documented more than 330 species of birds and has recorded 61 species of mammals, 49 species of reptiles, and 12 species of amphibians. Buenos Aires Ranch comprised much of the present-day refuge. Hunting was permitted by the Buenos Aires Ranch owners, and hunting activities continued uninterrupted after 1985. An initial Hunt Plan was written in 1988, allowing the take of duck, geese, coot, snipe, white-winged dove, mourning dove, white-tailed deer, mule deer, javelina, feral hog, mountain lion, jackrabbit, cottontail rabbit, kit fox, gray fox, ringtail, skunk (striped, hooded, spotted, and hog-nosed), bobcat, coyote, coati, badger, weasel, and raccoon. The refuge was open to hunting from September 1 to March 31 with hunt seasons conforming to state regulations within those dates. No hunting was allowed from April 1 to August 31.

Refuge hunting regulations were amended in 1994 to restrict hunted species to duck, goose, coot, mourning and white-winged dove, cottontail rabbit, white-tailed deer, mule deer, javelina, and feral hog. All predator (coyote and skunk) hunting was ceased except by Special Use Permit (SUP). Feral hogs were only allowed to be taken during other permitted big game hunts and did not have a bag limit. These changes occurred in conjunction with a new compatibility determination (CD), environmental assessment (EA), and associated finding of no significant impact (FONSI). Refuge regulations remained unchanged from 1995 to 2002 (no record of regulation changes). In the refuge hunting regulations in 2003, there was no mention of feral hogs or skunks, and coyote was by SUP only.

In 2006, the SUP restriction for coyotes and skunks was lifted and predator hunting was open year round in accordance with state regulations. In 2008, refuge hunting regulations listed Eurasian collared-doves as a legal species for the first time. In 2012, the refuge included jackrabbit as a legal species. No opening package was completed for any of these actions.

In 2019, the refuge aligned season dates and method of take for cottontail rabbits and jackrabbits with Arizona Game and Fish Department (AZGFD) regulations. We also removed the restriction that feral hogs may only be taken during other permitted big game hunts.

This updated hunt plan is being completed as part of a large opening package to bring the refuge into alignment with state regulations for species, method of take, and season dates to the extent practicable as a result of the Service-wide hunt and fish assessment in an effort to comply with Secretarial Order 3356. It is also to update old hunt plans and bring species that were added later only through CFR changes into compliance with Service hunt policy.

II. Statement of Objectives

The objectives of a migratory bird, upland game, big game, predator and fur-bearing mammals hunting program on Buenos Aires NWR are to provide:

1. The public with a recreational experience on refuge lands, including wildlife viewing and sport hunting opportunities unique to the refuge and south-central Arizona.
2. Wildlife-dependent public recreation as mandated by law and according to Service policy (National Wildlife Refuge System Improvement Act of 1997).
3. Maintenance of wildlife populations at levels compatible with the refuge habitat.
4. To foster support of refuge goals and objectives by working in close association with the public, AZGFD, and other agencies and land managers to manage wildlife and its supporting habitat on the refuge.

Hunting is consistent with the refuge's Comprehensive Conservation Plan's larger goal to provide hunting opportunities on approximately 90 percent of the refuge in cooperation with AZGFD.

III. Description of Hunting Program

A. Areas to be Opened to Hunting

Approximately 89 percent of the refuge is open to hunting, totaling 105,113 acres. The refuge hunt zone is located in the semi-desert grassland of the Altar Valley and the uplands on the eastern edge of the refuge. Hunting is permitted throughout the refuge except in high public use areas such as the Brown Canyon and Arivaca Management Units, the headquarters area, Pronghorn Drive, near residences, and in the vicinity of the quail breeding facility. These No Hunt Zones total 12,544 acres, which is approximately 11 percent of the entire refuge (Figure 1).

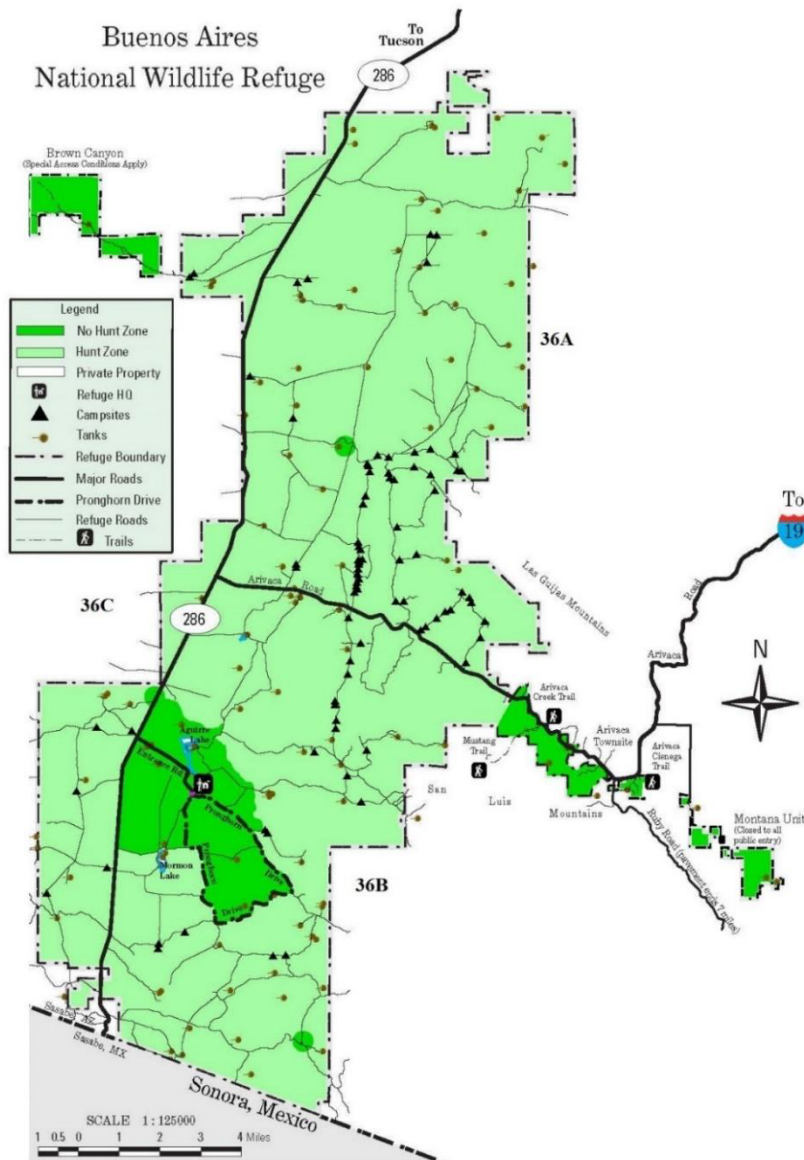


Figure 1. Refuge hunt map showing refuge boundaries, roads, and no hunt zones.

The No-Hunt Zones include all Service property east of the cattle guard just east of milepost 8.1 of Arivaca-Sasabe Road within the Arivaca Creek Management Area, all Service property in Brown Canyon, all Service property within ¼ mile (0.4 kilometer) of refuge residences, and the posted No-Hunt Zone encompassing refuge headquarters and area bounded by the 10-mile (16 kilometer) Pronghorn Drive auto tour loop.

The refuge is comprised of portions of three separate state game management units (GMU) (Fig. 2):

- GMU 36A = 617.24 square miles, 80.46 square miles on refuge
- GMU 36B = 560.80 square miles, 72.50 square miles on refuge
- GMU 36C = 314.95 square miles, 23.28 square miles on refuge

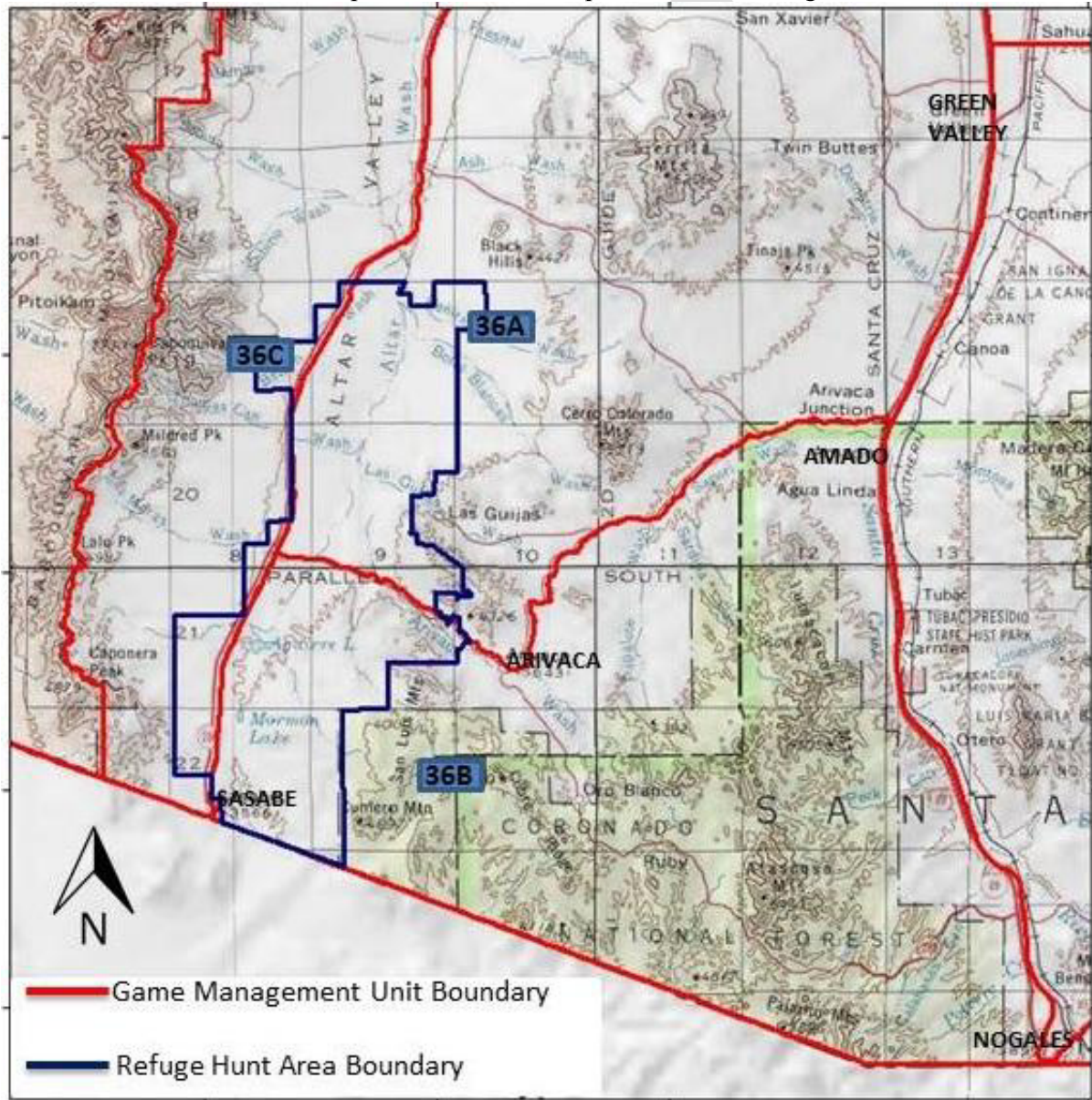


Figure 2. Buenos Aires NWR and associated Arizona Game Management Units

B. Species to be Taken, Hunting Periods, Hunting Access

Methods of take follow Arizona Revised Statute R 12-4-304 (Lawful Methods for Taking Wild Mammals, Birds, and Reptiles) and R 12-4-216 (Crossbow Permit). Two exceptions are trapping and falconry, which are not authorized methods of take for any refuge hunt. Hunting is allowed refuge-wide, except for posted “No Hunting” areas closed to all hunting. All bag and possession limits are in accordance with State regulations.

Migratory Game Bird Hunting. We allow hunting of goose, duck, coot, snipe, common moorhens (gallinule), mourning dove, Eurasian collared-dove and white-winged dove on designated areas of the refuge in accordance with State regulations.

WATERFOWL (ducks, mergansers, coots, and common moorhens (gallinules))

Hunting Period: Late October through most of January.

Method of take: 10-gauge shotgun or smaller, capable of holding no more than three shells. Steel or other approved nontoxic shot required, no lead shot.

GEESE (white geese (snow, blue, and Ross’s) and dark geese (Canada and white-fronted))

Hunting Period: Late October through January.

Method of take: 10-gauge shotgun or smaller, capable of holding no more than three shells. Steel or other approved nontoxic shot required, no lead shot.

JUNIORS-ONLY WATERFOWL (ducks, coots, white geese, and dark geese and common moorhens (gallinules)).

Hunting Period: First weekend in February.

Method of take: 10-gauge shotgun or smaller, capable of holding no more than three shells. Steel or other approved nontoxic shot required, no lead shot.

SNIPE

Hunting Period: Late October through most of January.

Method of take: 10-gauge shotgun or smaller, capable of holding no more than three shells.

DOVE (mourning dove, white-winged dove, Eurasian collared-dove)

Mourning, White-winged

Hunting Period:

Early Dove Season: September 1–15

Late Dove Season: late November – the first week of January

Method of take: 10-gauge or smaller shotgun, bow and arrow, or crossbow.

Eurasian Collared-

Hunting Period: Open year-round.

Method of take: 10-gauge or smaller shotgun, bow and arrow, crossbow or pneumatic weapons

Upland Game Hunting. We allow hunting of black-tailed and antelope jackrabbits, and cottontail rabbits on designated areas of the refuge in accordance with State regulations.

RABBIT (cottontail rabbit, and jackrabbit (black-tailed and antelope)).

Hunting Period: Open year-round.

Method of take: Lawful methods as described in R12-4-301 and R12-4-304. This includes centerfire and rim-fire rifles and handguns, shotguns, muzzle-loading rifles or rifle shooting black powder, black powder handgun, handgun shooting shot, crossbow, bow and arrow, pneumatic weapons, and slingshots. Trapping and falconry are not allowed.

Big Game Hunting. We allow hunting of mule and white-tailed deer, mountain lion, javelina, and feral hog on designated areas of the refuge in accordance with State regulations.

DEER (mule and antlered white-tailed deer)

Antlered mule deer

GMUs 36A, 36B, and 36C.

Hunting Period: Two periods in November, lasting one week each.

Antlered white-tailed deer

GMUs 36A, 36B, and 36C.

Hunting Period: Four periods in October, November and December, lasting from one to three weeks each.

Method of take for general deer hunt: Any firearm, crossbow, or bow and arrow as prescribed in R12-4-304. This includes centerfire rifles, muzzle-loading rifles, other rifles using black powder, centerfire handguns, handguns using black powder and shotguns.

Juniors-Only Deer

GMUs 36A, 36B, and 36C.

Any antlered deer.

Hunting Period: One week in October and one week in November.

Method of take: Any firearm, crossbow, or bow and arrow as prescribed in R12-4-304 and R12-4-216. This includes centerfire rifles, muzzle-loading rifles, other rifles using black powder, centerfire handguns, handguns using black powder and shotguns.

Archery-Only Deer

GMUs 36A, 36B, and 36C.

Nonpermit-tag required, any antlered deer.

Hunting Period: 3 weeks in August–September and six weeks in December–January.

Method of take for archery deer hunt: Bow and arrow as prescribed in R12-4-304 and/or crossbow as allowed under R12-4-216.

JAVELINA

No more than one permit-tag shall be issued per hunter through the initial draw.

Juniors-Only Javelina (population management seasons)

GMUs 36A and 36B.

Hunting Period: One week in November.

General Spring Javelina

GMUs 36A, 36B, and 36C.

Hunting Period: One week in February.

Juniors-Only Spring Javelina

GMUs 36A, 36B, and 36C.

Hunting Period: One week late January – early February.

Method of take for general hunt and juniors-only hunt: Any firearm, crossbow, or bow and arrow as prescribed in R12-4-104 and R12-4-114. This includes centerfire rifle or handgun, muzzle-loading rifle, or rifle shooting black powder, black powder handgun, and shotgun shooting slugs.

Spring Handgun, Archery, Muzzleloader (HAM) Javelina

GMUs 36A, 36B, and 36C.

Hunting Period: 10 days in February.

Method of take for HAM javelina hunts: Handguns, muzzle-loading rifles, muzzle-loading handguns, crossbow, or bow and arrow as prescribed in R12-4-304.

Archery-Only Spring Javelina

GMUs 36A, 36B, and 36C.

Hunting Period: During most of January.

Method of take for archery-only hunt: Bow and arrow as prescribed in R12-4-304, and crossbow as prescribed in R12-4-216.

MOUNTAIN LION

GMUs 36A, 36B, and 36C.

Hunting Period: Late August – May 31st.

Method of take: Any firearm, pre-charged pneumatic weapon, crossbow, or bow and arrow as prescribed in R12-4-304.

The refuge is in Mountain Lion Management Zone 15, which has an annual harvest threshold of 68 lions. When the number of mountain lions equaling the harvest threshold for a particular mountain lion management zone has been reached, that zone will close to hunting with the intent to kill a mountain lion at sundown the Wednesday immediately following for the remainder of the mountain lion hunting season. Hunters are responsible for calling 1-877-438-0447 before hunting to determine if any mountain lion management zones are closed.

FERAL HOG

GMUs 36A, 36B, and 36C.

Hunting Period: Open year-round.

Method of take: Any firearm, crossbow, or bow and arrow as prescribed in R12-4-104 and R12-4-114. This includes centerfire rifle or handgun, muzzle-loading rifle or rifle shooting black powder, black powder handgun, and shotgun shooting slugs.

Predator and Fur-bearing Mammal Hunting. We allow hunting of badger, bobcat, coati, coyote, fox, raccoon, ringtail, and skunk on designated areas of the refuge in accordance with State regulations.

COYOTE and SKUNK (coyotes and hog-nosed, hooded, spotted, and striped skunks)

GMUs 36A, 36B, and 36C.

Hunting Period: Open year-round. Daylight shooting hours only.

Method of take: Lawful methods as described in R12-4-301 and R12-4-304. This includes centerfire and rim-fire rifles and handguns, shotguns, muzzle-loading rifles or rifle shooting black powder, black powder handgun, handgun shooting shot, crossbow, bow and arrow, and pneumatic weapons. Trapping is not allowed.

BADGER, BOBCAT, COATI, FOX, RACCOON, and RINGTAIL

GMUs 36A, 36B, and 36C.

Hunting Period: August 1–March 31.

Method of take: Lawful methods as described in R12-4-301 and R12-4-304. This includes centerfire and rim-fire rifles and handguns, shotguns, muzzle-loading rifles or rifle shooting black powder, black powder handgun, handgun shooting shot, crossbow, bow and arrow, and pneumatic weapons. Trapping and falconry are not allowed.

Hunting Access

The refuge is accessible every day of the year, 24 hours a day, with the exception of nature trails (Arivaca Cienega, Arivaca Creek), which are open dawn to dusk. Some refuge property in the Arivaca area is not open to the public and is posted accordingly.

Visitors may arrive at the refuge from the east via Arivaca Road or the north by using State Highway 286. Access is paved on these routes and on the entrance road to headquarters. The refuge may also be accessed by forest roads from the Coronado National Forest and across State Trust lands from Arivaca. More than 260 miles of dirt roads network the refuge, remaining from ranching days. These roads are available to visitors; high clearance vehicles are recommended.

Hunt zones are generally accessed from Arivaca Road or Arizona State Route 286. Hunters can access the mountain areas to the east of the refuge from refuge roads. Alternatively, eastern portions of the refuge can be entered by primitive roads from those uplands.

Campsite use requires no reservation or fee and are available on a first-come first-served basis. The refuge features 86 primitive campsites in a variety of terrain. Many sites are placed on good roads with no wash or arroyo crossings, in order to be accessible to cars, recreational vehicles, or vehicles hauling trailers (Figure 1). Motorized travel is restricted to refuge roads. Hunters on horseback or foot may travel cross country.

The No-Hunt Zones include all Service property east of the cattle guard just east of milepost 8.1 of Arivaca-Sasabe Road within the Arivaca Creek Management Area, all Service property in Brown Canyon, all Service property within 1/4 mile (0.4 kilometer) of refuge residences, and the posted No-Hunt Zone encompassing refuge headquarters and area bounded by the 10-mile (16 kilometer) Pronghorn Drive auto tour loop.

C. Hunter Permit Requirements (if applicable)

No refuge permit or registration is required. A valid Arizona state hunting license and state-issued permit is required to hunt big game species. In addition to a hunting license, a Migratory Game Bird Stamp is necessary to hunt doves and waterfowl. Additionally, a federal Duck Stamp is also required by hunters 16 years and older to hunt waterfowl. Public use and hunt regulations are available at various locations on the refuge.

D. Consultation and Coordination with the State

The AZGFD determines regulations for taking game species on the refuge. They set the number of permits or tags for state GMUs. The number of permits is influenced by game species population status and trends, including sex ratios and number of young of the year.

The refuge reviewed the operations and regulations for neighboring State wildlife management areas and refuges to find consistency where possible. Refuge management met with state biologists on July 12, 2018 to determine which additional species to open for hunting on Service lands in accordance with State regulations. These new openings are part of the Service wide effort to align refuge and State regulations in compliance with SO 3356. Coordination with AZGFD are ongoing and occurring at the Regional Office level.

The refuge and the AZGFD law enforcement officers work closely together regarding patrols and game violations during peak hunting periods. The refuge provides law enforcement patrols year-round.

E. Law Enforcement

The refuge is funded to support three full-time law enforcement officers. AZGFD wildlife managers are also available for enforcement of state wildlife laws. The following methods are used to control and enforce hunting regulations:

- a. Refuge and hunt area boundaries are posted. Some of the refuge perimeter is not posted, but efforts are underway to post those unsigned areas.
- b. The refuge provides maps to visitors with hunt areas clearly marked.
- c. The refuge provides publications that detail hunting, camping, and public use regulations.
- d. AZGFD provides publications regarding hunt regulations, game laws, and permit application process.
- e. Service law enforcement officers check hunters for compliance with Federal and State laws as well as refuge-specific regulations pertinent to the hunt, including compatibility stipulations.
- f. Service law enforcement personnel conduct deer decoy operations on the refuge.

- g. Service law enforcement officers coordinate with the AZGFD, U.S. Border Patrol, Pima County Sheriff's Department, and other law enforcement agencies. Refuge law enforcement personnel conduct routine joint patrols with AZGFD.
- h. Information and regulations are available for the public at refuge headquarters.

F. Funding and Staffing Requirements

Administering the refuge hunting program is accomplished by current staff and does not require any additional facilities on the refuge.

Current budget expectations are sufficient to manage a hunting program. The refuge is funded to support three full-time law enforcement officers. A portion of their duties are enforcement of hunting regulations, and this enforcement takes most of his their time from September through February. The overall cost to run the program is approximately \$81,000, which is approximately 6 percent of the total funding for the refuge each year. Costs include, but are not limited to, hunt-related portions of law enforcement staff salaries; vehicle maintenance and repair; fuel; sign maintenance and replacement; and printing of brochures.

Annually the refuge hosts approximately 4,000 hunters who participate in the hunting programs offered on the refuge. Total number of big game (deer and javelina) permits in 2019 was 8,765 for GMUs 36A, B, and C combined. An estimated 3,357 of those permit holders hunted on the refuge in 2018.

IV. Conduct of the Hunting Program

A. Hunter Permit Application, Selection, and/or Registration Procedures (if applicable)

Hunters must possess a valid hunt or combination hunt and fish license, plus any required hunt permit-tags, non-permit-tags, or stamps. Hunters should refer to the AZGFD annual Arizona Hunting and Trapping Regulations for information about drawing a big game permit. The hunt permit-tag is obtained through the application and draw process as prescribed in R12-4-104 and R12-4-114. Neither a Class H three-day nonresident hunting license nor an apprentice hunting license is valid for big game. See state regulation tables for resident and nonresident license fees.

Hunters can apply for big game hunts and bonus points at www.azgfd.gov prior to deadline. Refer to the Arizona Game and Fish Department [website](#) for additional application and registration procedures. Guide service providers must obtain a Commercial Special Use Permit from the refuge before conducting business on refuge lands.

B. Refuge-Specific Hunting Regulations

Listed below are refuge-specific regulations that pertain to hunting on Buenos Aires NWR as of the date of this plan. These regulations may be modified as conditions change or if refuge expansion continues/occurs.

The refuge provides hunting opportunities in designated areas in accordance with all applicable State of Arizona regulations. Listed below are regulations that pertain specifically to the refuge, as of the date of this plan.

(b) Buenos Aires National Wildlife Refuge—(1) Migratory game bird hunting. We allow hunting of goose, duck, coot, merganser, moorhen (gullinule), common snipe, and mourning, white-winged, and Eurasian-collared dove on designated areas of the refuge subject to the following condition:

(i) We allow portable or temporary blinds and stands, but you must remove them at the end of each day's hunt (see §27.93 of this chapter)

(2) Upland game hunting. We allow hunting of black-tailed and antelope jackrabbit, cottontail rabbit, badger, bobcat, coati, kit and gray fox, raccoon, ringtail, coyote, and hog-nosed, hooded, spotted, and striped skunk on designated areas of the refuge subject to the following condition:

(i) Pursuing wildlife with dogs is not permitted.

(ii) We only allow daylight shooting hours (see § 32.22).

(iii) The conditions set forth at paragraph (b)(1)(i).

(3) Big game hunting. We allow hunting of mule and white-tailed deer, javelina, mountain lion and feral hog on designated areas of the refuge subject to the following condition:

(ii) The conditions set forth at paragraphs (b)(1)(i) and (b)(2)(i)(ii) apply

(4) [Reserved]

C. Relevant State Regulations

Hunter Safety Training – No one under the age of 14 may hunt big game without having completed a hunter education course. No one under age 10 may hunt big game in Arizona. To hunt big game, anyone 10 to 13 years of age must have a valid hunt or combination hunt and fish license in their possession, a valid hunter education course completion card, plus any required permit tags and stamps.

D. Other Refuge Rules and Regulations for Hunting

1. We prohibit the use of flagging tape, reflective tape, or other signs or markers used to identify paths or to mark tree stands, blinds, or other areas.
2. The No-Hunt Zones include all Service property east of milepost 8 of Arivaca Road within the Arivaca Creek Management Area, all Service property in Brown Canyon, all Service property within ¼ mile (0.4 km) of refuge residences, and the posted No-Hunt Zone encompassing refuge headquarters and area bounded by the 10-mile (16 kilometer) Pronghorn Drive auto tour loop.
3. The refuge is closed to all quail hunting to protect the endangered masked bobwhite quail.
4. The use or possession of alcoholic beverages while hunting is prohibited.
5. Bicycles (including mechanized vehicles) may only be operated on designated public

roadways. Roads are designated on published refuge maps. All travel off these designated roads is prohibited.

6. All motor vehicles, including OHVs and motorcycles, must be licensed, insured, and equipped to legally operate on state highways. OHVs and motorcycles registered in Arizona must have valid Arizona motorcycle (MC) plates. Many states do not allow for the modification of OHVs for legal operation on state highways and cannot be legally operated on national wildlife refuges.
7. Motor vehicle operators must possess a valid driver's license and insurance.
8. The speed limit on refuge roads is 25 miles per hour unless posted otherwise.
9. We require that all pets be under owner control at all times. While in areas of high public use (Arivaca Cienega, Arivaca Creek, refuge headquarters, and all public trails) pets must be on a leash no more than 6 feet in length. No pets are allowed in Brown Canyon.
10. Groups using four or more horses must possess and carry a refuge permit. Groups using horses must provide their own water and weed-free feed and clean the campsite of horse manure.
11. All accidents involving injury to persons or wildlife and/or property damage must be reported to an on-duty refuge official within 24 hours of the accident.
12. Persons under the age of 21 years may not possess or consume alcoholic beverages on the refuge. Providing alcoholic beverages to persons under age 21 is also prohibited.

Exceptions to State regulations:

- Dogs may only be used to recover downed game. No pursuit of wildlife with dogs is allowed.
- Hunting at night is not allowed on the refuge.

V. Public Engagement

A. Outreach for Announcing and Publicizing the Hunting Program

The refuge maintains a mailing list for news release purposes to local newspapers, radio, and websites. Special announcements and articles may be released in conjunction with hunting seasons. Refuge announcements and hunt publications are posted online, at the visitor center, and at kiosks near the north and east entry to the refuge. Hunt information is available in the Arizona Hunting Regulations booklet distributed each year by the AZGFD.

B. Anticipated Public Reaction to the Hunting Program

Hunting has been allowed on Buenos Aires NWR for more than 30 years and little negative public reaction is expected. Hunting is an important economic and recreational use of Arizona's public lands.

C. How Hunters Will Be Informed of Relevant Rules and Regulations

Literature and information regarding hunting and other public uses can be obtained by contacting the refuge at 520-823-4251 or Buenos Aires NWR, P.O. Box 109, Sasabe, AZ 85633.

Hunt information is provided at entrance kiosks, in brochure boxes at several locations on the refuge, and at the headquarters/visitor center, located approximately 7 miles north of Sasabe, Arizona, on Highway 286.

Refuge hunting information is also disseminated via Facebook and the refuge [website](#). The public also may contact the refuge manager or a refuge law enforcement officer at 520-823-4251.

Information about hunting in Arizona can be obtained from the AZGFD by visiting AZGFD.com or calling 602-942-3000. Hunting regulations are published annually and are available online, at Department offices and license retailers throughout the state.

VI. Compatibility Determination

A draft compatibility determination has been completed in conjunction with this hunt plan and the Environmental Assessment. Hunting and all associated program activities proposed in this plan are expected to be found compatible with the purposes of the refuge.

DRAFT

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