

December 9, 2016

Mr. Michael Ackerman  
Project Director  
Nellis Air Force Base, NEPA Division  
99th Air Base Wing Public Affairs  
4430 Grissom Avenue, Suite 107  
Nellis AFB, Nevada 89191



Dear Mr. Ackerman:

This letter is on behalf of the 8,000 supporters of Friends of Nevada Wilderness. The Desert Refuge is a well-known wildlife refuge not only for the animals it was set aside to provide quality habitat for but also refuge to men and women who seek solitude and want to experience a primitive place in contrast to Las Vegas, just a few miles away. For decades our supporters have visited the refuge to see wildlife, camp in an undisturbed landscape, hunt, backpack, auto tour, visit cultural sites and countless other activities. Over the years hundreds of volunteers have spent thousands of hours of their own time improving habitat by removing fences, planting native vegetation, removing invasive species, naturalizing decommissioned roads, and improving water developments to name a few. Volunteers have also enhanced the visitor's experience by building hiking trails and designating campsites along the back country roads. The Desert Refuge is a very special place to many people. We want to ensure that the Draft LEIS addresses a wide variety of issues including habitat, wildlife, wilderness, plants and more.



*Students from UNR & UNLV volunteering their Spring Break to restore northern parts of the Desert Refuge, 2013 & 2015.*

## Importance and Conservation Mission of Desert National Wildlife Refuge

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The Desert Refuge has been recognized as a special place since 1907, first by President Theodore Roosevelt when he established the Moapa National Forest and again in 1936 by President Franklin D. Roosevelt when he established the Desert Game Range for “the conservation and development of natural wildlife resources” (EO 7373). The 2.25 million-acre Game Range, under the joint administration of what is now the US Fish and Wildlife Service and Bureau of Land Management, included most of the lands within the current Refuge boundary, but stretched south to include portions of the Spring Mountains, including some of the area currently occupied by the Red Rock Canyon National Conservation Area. Seventy years later the US Fish and Wildlife Service identified and proposed over 1.3 million acres as wilderness. Today the Desert National Wildlife Refuge stands in contrast to the sprawling city of Las Vegas and provides a haven for plants, animals and people who seek to escape the hum of the city.

The Desert National Wildlife Refuge was designated as a unit of the National Wildlife Refuge System in 1936 primarily for the protection of Bighorn Sheep, an animal whose population at that time was very much reduced from historic numbers. The original refuge boundaries included land in the Spring Mountains on the west side of highway US 95 in addition to the current protected area. The Sheep Mountain Range had been previously protected under Forest Service management as the Moapa National Forest. The mission of the US Fish and Wildlife Service is to conserve and protect the nation's wildlife. As part of implementing that mission the Fish and Wildlife Service published a Comprehensive Conservation Plan for the Desert National Wildlife Refuge in 2009, which provided a framework of principles and actions to guide management of the Refuge for the next 10 to 15 years.

The Air Force needs to provide a detailed description of how it will adhere to and implement the management plans laid out in that document for each of the alternatives being considered in the LEIS for the reauthorization and possible expansion of the NTTR. As part of the LEIS the Air Force needs to provide a proposed budget for management of wildlife on the NTTR under each of the action alternatives. We also recommend that all action alternatives include efforts to improve wildlife and habitat management on lands for which the NTTR has either primary or secondary jurisdiction, including providing additional access and support for refuge staff.

## Importance of Wilderness Resource in Desert National Wildlife Refuge

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In 1971, the official agency proposal on Wilderness was to designate approximately 1.3 million acres of land within the Desert NWR as wilderness. This wilderness proposal was submitted to Congress in 1974 but Congress has yet to act on the proposal. However, the US Fish and Wildlife Service continues to manage these areas to protect their wilderness values.

As part of the Refuge Complex CCP planning the Service reviewed the earlier Wilderness Proposals for the Desert National Wildlife Refuge. *“The purpose of a wilderness review is to identify and recommend for*

*Congressional designation National Wildlife Refuge System (System) lands and waters that merit inclusion in the National Wilderness Preservation System (NWPS). Wilderness reviews are a required element of comprehensive conservation plans (CCPs) and conducted in accordance with the refuge planning process outlined in 602 FW 1 and 3, including public involvement and the National Environmental Policy Act (NEPA) compliance.”*

On September 24, 2009, the US Fish and Wildlife Service signed the Record of Decision for Final Comprehensive Conservation Plan and EIS for the Refuge Complex. They reiterated their support for Wilderness in the Refuge.

*Specially Designated Areas: Protect and maintain the wilderness character of the proposed Desert Wilderness Area by prohibiting motorized vehicles and pursuing technical corrections to the wilderness proposal in limited cases.*

We have attached as an Appendix the 1971 Wilderness Proposal for the Desert National Wildlife Refuge. During the 1970's Friends of Nevada Wilderness (prior to formal incorporation) had members involved in the public meetings supporting wilderness for the Desert National Wildlife Refuge. The importance of the Wilderness Resource in the Desert National Wildlife Refuge has not diminished over the years, but has vastly increased in importance as the Las Vegas Valley has exploded with development. Our supporters continue to use and value the wilderness resources of the Desert National Wildlife Refuge and we do not want to see any actions taken by the military that diminish the wilderness values and public's access to these remarkable wilderness proposals.

## Historical Mentions of Withdrawal Issues Affecting the Desert National Wildlife Refuge

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*Executive Order 8578 establishes the "Tonopah Gunnery and Bombing Range" consisting of 3,560,000 acres with the stipulation that **"the withdrawal made by this order... shall not rescind or revoke... the withdrawals made by Executive Order No. 7373 of May 20, 1936, withdrawing certain lands for wildlife..."** [This included less than 420,000 acres of aerial bombing and gunnery training range superimposed over the refuge.]*

*REPORT REVEALS AMAZING EXTENT OF LAND GRABS [From Desert Magazine October 1956]  
During the 2nd session of the 84th Congress, Representative Claire Engle of Red Bluff, California, introduced H.R. 12185 which would forbid any further withdrawal of public lands for military and naval purposes without authority from Congress. Twelve other similar resolutions were introduced by other congressmen. In a report accompanying his resolution, Congressman Engle presented the following facts. In 1937, the land owned or controlled by the Defense agencies totaled—including civil functions land—3.1 million acres. In 1940, on the eve of World War II, the figure stood at 4.3 million acres. On June 30, 1945, the Defense withdrawals had increased to 25.1 million acres. On June 30, 1953, at the close of the Korean War the figure had dropped to 21.1 million acres, including 3.9 million acres for civil functions. On June 30, 1955, the withdrawals had climbed again to 25.4 million acres, with applications on file from various Defense agencies for an additional eight million acres. In other words, the Defense agencies have now posted No Trespass signs on a domain greater than the combined areas of Connecticut, New Jersey, Massachusetts, New Hampshire, Vermont and Rhode Island, and are seeking additional lands amounting to nearly the area of Maryland. Congressman Engle, and Senator Malone of Nevada are making a vigorous fight not only to block further withdrawals of public land by the military, but **also to force the various armed forces to coordinate***

**their training operations so that a considerable portion of the withdrawn lands may be restored to the public domain.**

**[Desert Magazine October 1956] No better expression of this thought is possible than that embraced in one sentence included in the report on the military landgrab hearings conducted before the Committee on Interior and Insular Affairs of the U.S. House of Representatives. Forming the closing paragraph of that report is this succinct observation: "The program for the defense of our nation's human and natural resources should not—and must not—be so conducted as to destroy the very resources it is aimed at preserving."\***

*\*This is also referenced in the Reno Gazette Journal Tuesday July 31, 1956 page 7 "In the committee report filed this week, the house group concludes: the program for the defense of our nation's human and natural resources should not and must not be so conducted as to destroy the very resources it is aimed at preserving." Nevada Rep Cliff Young was the co-author of the report.*

## Comments

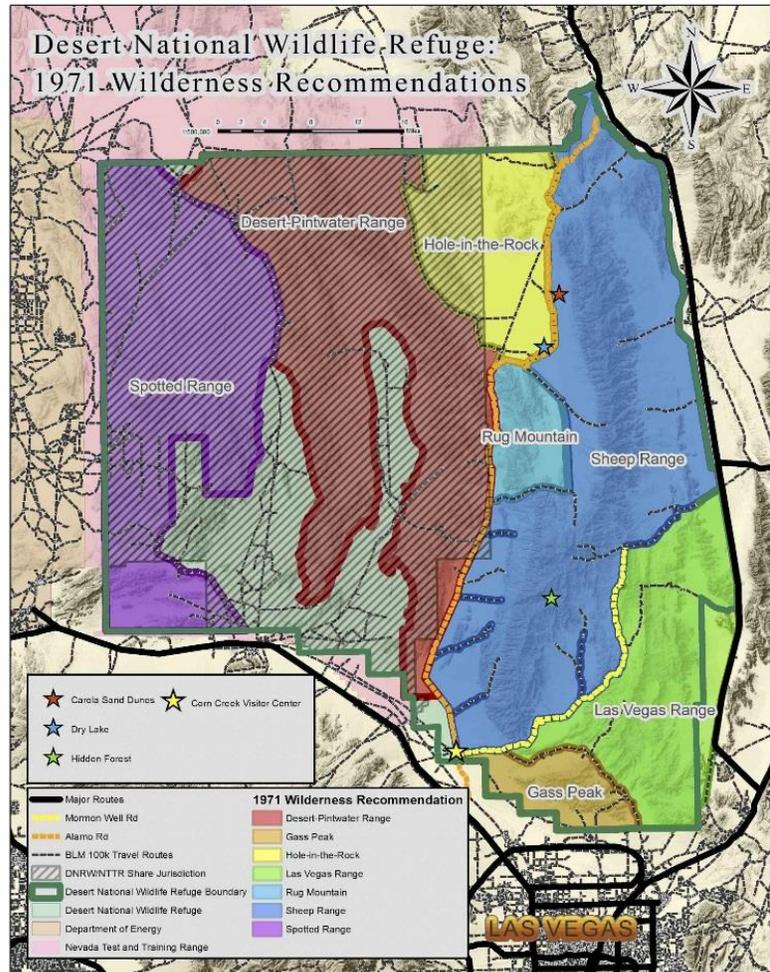
After careful review of the materials and information the military presented at the scoping meetings we have the following general and specific comments to offer:

### Range of Alternatives

To date, from the information presented to the public it does not appear that the military is considering a full range of alternatives required for this Legislative EIS. In order to adequately analyze the full range of alternatives, we ask that you include the following alternatives and give these alternatives the full range of analysis and do not dismiss them as alternatives considered but dropped.

### Full Wilderness Alternative

Under this alternative the LEIS should analyze wilderness designation for all the wilderness areas proposed by the (now) USFWS in the 1970's, Appendix A. These proposals were formal agency recommendations made with full public involvement. The military expansion over the years has been impacting the wilderness values of the Desert National Wildlife Refuge along with extensively limiting public access.



## Expand Operations into DOE Land

Alternatives should consider joint use of the Department of Energy land, namely the National Security Site (NSS), which is essentially embedded within the NTTR and which amounts to nearly 800,000 acres. This acreage is completely surrounded by the NTTR and it would seem sensible to make use of its airspace on a cooperative basis. Also, this land is already impacted, as opposed to the mostly untouched parts of the NTTR that are in the Refuge and the proposed expansion areas within the DNWR.

Given the ongoing moratorium on nuclear testing and the existing threshold test limits imposed by treaty along with DOE's failure to justify a clear need for any future use of the area, the Air Force should evaluate alternative management strategies, uses, and institutional controls for Pahute Mesa over the period of the anticipated withdrawal. In effect, Pahute Mesa constitutes public lands that have been temporarily withdrawn for military use, and then subsequently "loaned" to DOE for nuclear testing activities - activities that no longer appear viable. This is an issue the LEIS must address. Finally, under the general category of existing operations, site conditions, and future developments, there are other activities that may individually or cumulatively cause impacts to the environment that must be evaluated in the LEIS.

## Specific Issues to be Addressed in the Draft LEIS

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We expect to see comprehensive discussions on the affected environment and impacts by alternative for each of the following issues:

### Public Access

The Air Force has closed and restricted public access to over half of the Desert National Wildlife Refuge, a refuge belonging to the American people. We are very concerned about alternatives which would close an additional 280,000 acres of the refuge to the public, and restrict access to the popular Alamo Road, an historic and traditional road between the Pahranaagat Valley and Corn Creek. The LEIS should address why NTTR activities cannot be confined to the existing 2.9 million acres of public lands already controlled by the Air Force. We are very concerned that once the military has control of the land, the public will never be allowed access.

### Military Use

The Air Force needs to analyze known or anticipated changes to aerial warfare that will take place in the foreseeable future. As equipment becomes more high-tech, how much of the training will be done in simulators rather than actual aircraft? Simply due to issues of cost and safety, more and more training will be accomplished using simulators. This is an issue that needs detailed analysis in this LEIS. There is no point in transferring several hundred thousand acres of the public domain to the Air Force if the agency is moving toward simulators rather than using very expensive aircraft for routine training. In addition, how will the transition to unmanned aircraft affect the future of the Air Force mission?

The LEIS should address existing conditions and planned operations, as well as reasonably foreseeable actions that are expected to occur over the duration of the withdrawal period. In reference to existing operations, the LEIS should provide a complete description of each air-to-air and air-to-ground bombing range. Each range (both active and inactive) should be described in terms of use, existing range facilities and condition, type of ordnance expended or in use, size of impacted area, munitions management and cleanup activities, as well as size of range buffer zones. A brief discussion and status of existing Air Force Range Air Installation Compatible Use Zones (RAICUZ) documents for each range should also be addressed in the LEIS.

At a minimum, the LEIS should detail past, current and projected urban growth patterns in the "noise" vicinity of the Nellis AFB and assess noise-impacted populations resulting from changes in land use (population density) around the base. Such analyses should be developed at the census tract level and evaluated against day-night sound levels for separate noise contours over the period of the withdrawal; such an evaluation should also consider current and projected changes in the mix of aircraft type (fleet mix) at Nellis AFB. Correspondingly, the LEIS should also provide a similar analysis of sonic boom effects over those portions of the NTTR airspace that are inhabited and/or contain public-use recreational areas, National Monuments, Wilderness and Proposed Wilderness. The analysis of sonic booms should include an assessment of average day-night sound levels as well as single-event levels at specific inhabited areas and recreational use locations.

## Contamination

### Depleted Uranium

The LEIS should also discuss the use, management, and disposition of depleted uranium (DU) munitions.

- Does the NAFR have a Nuclear Regulatory Commission license to utilize DU on the NAFR? If so, when was this license issued and what are the terms of the license?
- Is it legal to utilize radioactive materials on a Wildlife Refuge?
- When were DU weapons first utilized on the DNWR?
- Have tanks with DU shielding been transported to the Desert National Wildlife Refuge? If so, how many tanks or other vehicles are on the DNWR, and what then are the potential long-term contamination impacts of these tanks and the use of DU munitions?
- What is the potential for radiological contamination from the use of DU?
- Can mammals, ungulates and other animals on the NAFR ingest or inhale DU particles?
- Can the particles be ingested by management personnel on the NAFR? Have resource managers such as BLM and Fish and Wildlife personnel received training to avoid the health risks of DU?
- Have recreational users been notified of the potential risks?
- If ingested or inhaled, what are the potential long-term health risks?
- Since DU munitions are extremely pyrophoric, burning on impact at extremely high temperatures, what is the dispersal range of DU particles on the DNWR?
- Since DU burns at such a high temperature, do the particles become ceramic and lodge in the lungs for extended periods of time?
- Has the use of DU and other munitions caused cancers, birth deformities or health concerns in humans and/or animals?
- Is DU water soluble?
- Are there water resources such as streams or wildlife guzzlers which have been or potentially could be contaminated with DU or other toxic materials associated with all munitions utilized on the DNWR?
- Are cluster bombs utilized on the DNWR? If so, what is the dispersal range of the munitions?
- Has munition contamination occurred off range? If so, where has the contamination occurred? Mapping of this contamination must be provided. Mapping of the contamination and remedial actions must be addressed in the LEIS.

The significant issues that should be described and assessed in the draft LEIS include the effects of the dispersal of chaff and flares on the natural environment, impacts and hazards associated with electromagnetic radiation, the effects of high-speed jet overflight noise and sonic booms on both the human and natural environment, and the effects of gaseous emissions from aircraft operations along with safety hazards associated with unexpected losses of unexploded ordnance and aircraft fuels.

## Chaff

- What type of chaff is utilized?
- What is the dispersal area for chaff?
- Is chaff biodegradable?
- Can chaff be ingested by wildlife and humans?
- Do birds utilize chaff clumps for nesting?
- When inhaled, does chaff lodge in the lungs of impacted species, including humans? If so, what are the health risks?
- What are the similarities of chaff and fiberglass?
- Does the use of chaff and flares on public and private lands constitute littering?
- How much chaff bundles or flares would be utilized each year, and how much chaff bundles or flares will be utilized for the duration of the proposed withdrawal?
- The dangers of fires started as a result of flare use must be addressed in full.
- How many fires have occurred?
- Where have these fires occurred?
- What are the socioeconomic impacts of these fires?

## Long-Term Impacts

In reference to contamination areas, the LEIS should provide documentation of all known contaminated sites, including current and future plans for individual site remediation activities. For areas on the NAFR complex that may have been contaminated with munitions before actual ranges and targets were constructed (i.e., bombing of naturally occurring features), the LEIS should document historical contamination including past, current and planned cleanup activities with special emphasis on subsurface identification and ordnance removal programs.

We have serious long-term concerns with how the military is using the proposed wilderness areas along with the valley portions of the Desert National Wildlife Refuge. In past documents, the military has made it clear that it is contaminating the wildlife refuge yet has no plan in place to clean up the contamination for future visitor and wildlife safety. We have provided a few examples below.

Under a No Action Alternative in EIS in 1979, the military states:

*This alternative would require relocating the air-to-air, air-to-ground and DOE operations to other locations...*

***In addition, this alternative would not permit the return of the lands to public use due to existing contamination and difficulties with rehabilitation.***

- *Pg 3-17 The potential safety hazard from unexploded ordnance precludes public access on the Range. The impacts to recreationists and others who want access to the Range have been present for many years. Withdrawal renewal would continue to restrict access to the Range. No attempt to remove subsurface ordnance, except in the area of existing targets, is anticipated. The environmental consequences of trying to ordnance-free the entire Range is considered to far outweigh that of restricting access.*

***Pg 1-17 This change was necessary because too much aircrew training time was lost due to the range clearance program. Additionally, the size of the Nellis AF Range and limited number of ordnance personnel available for range clearance prevented full implementation of the 1963 directive. Nellis AF Range***

*personnel initiated the 1972 requirements in early 1974 and are still in effect today. **These procedures provide some degree of safety for range personnel; however, there is no guarantee that the Range is completely free of unexploded ordnance.** Since 1958 range clearance activity has been only for ordnance on the surface. **No subsurface clearance program has been conducted except in the immediate areas of presently used targets.***

*Pg 1-18: From 1958 until 1975, all ordnance collected on the Range was buried in pits on the Range (See figure 1-4 for burial site locations.) Since 1975, all ordnance of market value, is deactivated and sold. **The remainder is buried on the Range.***

Americans own these public lands that make up the Desert National Wildlife Refuge. Past experience shows that the military has not been a good steward of our public lands. If the military wants to use these lands, treat them responsibly and clean up its contamination, we would be more supportive of the current use. Public lands are a diminishing resource. It is totally unacceptable that the military can withdraw and use public lands and then leave them in a state unfit for any future public use in perpetuity. Military withdrawals should be treated like any other temporary-use impact to public lands. This LEIS should include provisions for a bond which insures that the military has the financial resources to do the necessary clean-up and restoration to return these lands to the public in a condition similar to what they were before the military impacted them.

### Military Infrastructure

The LEIS should clearly explain by alternative exactly what the Air Force is planning on building and where. It should also fully address how these plans will affect public access, wildlife, wilderness, invasive weeds, plant and animal species of concern, etc.

Specifically,

- The Air Force needs to list how it will maintain the Alamo Road/infrastructure to preserve public access.
- Desert Lake: What is the need for a landing strip capable of accommodating C-130 aircraft and how will that new infrastructure be built and maintained? Will a new access road be needed? Will any new road be paved or unpaved and to what standard will it be constructed? What sort of permanent facilities will be needed at that site and how will they be supplied and maintained? What restrictions will there be on public access to the northern portion of the Sheep Range along with the playa areas?
- Infrastructure: What road network and infrastructure will be built? The Air Force needs to list in detail what roads and other facilities it will build, etc. It must describe in detail what it will be doing with helicopters/drop off and retrieval of personnel, including all potential impacts on the land and fire regimes.
- What will the Air Force be doing that can only be done right there, that it cannot do on other lands in the western US already controlled by the military? What is so unique about this area of the DNWR that it is necessary to conduct the proposed activities on National Wildlife Refuge lands?

### Wildlife & Plants

While the Desert National Wildlife Refuge was originally designated primarily for the protection of Bighorn Sheep, it is now tasked with protecting and managing all forms of native wildlife (both plant and animal)

found within the boundaries. The LEIS needs to analyze and describe in detail how the proposed expansion of the NTTR will impact the life forms within the expansion area, but also look at how a change to primary or exclusive jurisdiction will affect wildlife management in the areas of current and proposed Air Force jurisdiction over time. Since wildlife management is not part of the mission of the Air Force, how does the Air Force propose to manage their portion of the DNWR for the protection of a native ecosystem in an era of climate change and increased rate of introduction of non-native invasive species due to globalization of trade?

This LEIS needs to analyze and describe the impacts on native plant communities in the Sheep Range that may be affected by any future proposed Air Force operations. Due to being a protected area for more than a century, the Sheep Range portion of the DNWR has some of the most pristine native plant communities in the Mojave Desert/Great Basin deserts. It is also at the junction of these two desert ecosystems so it is quite rich in its variety of plant life.

Also needing to be addressed is the propagation of non-native invasive species. Movement of vehicles, equipment and people is the primary source of new infestations of invasive non-native plants, many of which have severe negative impacts on native ecosystems. How does the Air Force propose to minimize new introductions caused by Air Force activities, and more importantly, what sort of monitoring program and follow-up treatment and removal program will be established?

Specifically, these are some of the impacts that should be addressed in the LEIS:

A) *Wheeled/Tracked Vehicles*: Perhaps the most insidious and permanently damaging to wilderness and wildlife habitats are the various types of terrestrial vehicles that would pervade and fragment the landscape under this proposal. By definition, roads and tracks fragment wildlife habitats over time and make them less secure and less productive for native wild species that make a living in these areas. Several examples from the literature include reduced productivity and survival of Desert Bighorn Sheep and Desert Collared Lizards. Single vehicle 'tracks' often devolve into deeply incised trails making the habitat fragmentation permanent in desert landscapes.

B) *Winged Vehicles*: A second example of vehicles that would lead to reduced productivity in wilderness-quality wildlife habitats include manned and unmanned aircraft. Vehicles in this class include jets, helicopters and unmanned drones. Low-level flights occur on a regular basis by these vehicle classes. Wildlife harassment and loss of productivity would increase significantly under this proposed expansion. Examples include insecurity and lower productivity in lambing and fawning areas for Bighorn and Mule Deer populations, and nest abandonment and lower productivity in nesting birds of prey including Golden Eagle, Prairie Falcon and Northern Goshawk populations.

C) *Bombing*: For hopefully obvious reasons, expansion of bombing into new valley or mountain wildlife habitats is completely anathema to healthy and secure wildlife populations in wilderness-quality landscapes. Native bat, large and small mammal, bird and reptile populations would be affected.

D) *Infrastructure*: For hopefully obvious reasons, expansion of naval infrastructure into new valley or mountain wildlife habitats is completely anathema to healthy and secure wildlife populations in wilderness quality landscapes. Native bat, large and small mammal, bird and reptile populations would be impacted.

Much of the impact to date in the Desert National Wildlife Refuge from the military has been in the valley bottoms. There are many wildlife and plant species that are found specifically in these lower elevation areas. In Appendix B we have highlighted some of these species most at risk from military operations on the refuge

in these valley regions. Please ensure the LEIS addresses specifically the impacts of both ongoing and proposed expanded operations on these species.

### Fire Management

If the military is planning to take over the Sheep Range, the issue of wildfire caused by Air Force operations needs to be addressed. The higher elevations of the Sheep Range are much more heavily vegetated than the low elevation areas currently used by the Air Force, hence wildfire will be a much more important issue in the future if the Air Force expands its jurisdiction into the Sheep Range. The Air Force needs to provide detailed information about how it will help to suppress wildfires directly caused by Air Force actions.

As the area warms through climate change, risk of catastrophic wildfire will increase, especially at higher elevations. The Air Force needs to thoroughly analyze and describe how Air Force operations will affect wildfire risk, especially with regard to flares and crashes, and what actions the Air Force will take with regard to wildfire management, including suppression and the potential use of prescribed fire as a management tool.

### Cultural Resources

The west side of the Sheep Range is rich in cultural resources. The Air Force needs to describe how it will manage cultural resources on any newly acquired lands as well as currently administered land. Since much of the DNWR has never been surveyed for cultural resources, will the Air Force arrange for formal surveys of cultural resources so that cultural sites are not damaged or destroyed inadvertently?

Assuming that the Air Force will initiate formal government-to-government consultation with the Native American Tribes with historical ties to the area of the NTTR, what weight will be given to Native American concerns? What allowances will be made for Native American access to traditional sites?

### Interagency Cooperation

Interagency cooperation and coordination needs attention in the LEIS. The parties involved - DOD, DOE, BLM, FWS and the Nevada Division of Wildlife - should be brought together by the Air Force as part of its LEIS scoping process to review the commitments necessary to manage the resources of the greater NTTR/NTS/DNWR ecosystem. Clearly, a federal initiative on resource stewardship through ecosystem management is justified. The LEIS should also clarify the roles of other agencies in relation to that of the Air Force itself with respect to all aspects of environmental protection and resource management. We request the establishment of a federal advisory board to help address environmental issues and resource management challenges.

### Natural Resource Management Plan

An updated Integrated Natural Resources Management Plan (INRMP) must be prepared for Air Force lands such as the NTTR. The plan should be based on an interdisciplinary approach to ecosystem management.

It is important that an INRMP for NTTR be incorporated as part of the draft LEIS for two reasons. It will constitute the baseline for environmental information for the LEIS to analyze, and the document will serve as a focal point for the Air Force to coordinate and cooperate with other agencies in managing the greater ecosystem represented by NTTR and the NTS.

### Documentation of the Legislative Approval Process

The LEIS should discuss the legislative review and approval process that will be followed to comply with the requirements of the Council on Environmental Quality, as well as the applicable provisions of the Engle Act,

the Federal Land Policy and Management Act and the Sikes Act. In other words, the LEIS should specifically discuss the process and procedures the Air Force and the Department of Interior will follow to obtain an Act of Congress and/or a joint resolution required for reauthorization of the withdrawal for the NAFR complex [See PL 99-606 Section 5(c)]. In a related matter, CEQ regulation 40 CFR 1506.8(c) requires the comments on legislative statements to be forwarded by the lead agency to the Congressional committee(s) of jurisdiction. These committees should be identified in the LEIS.

### Cumulative Impacts

What is the connection between current NTTR activities, the proposed expansion on DNWR lands, and current and future activities at other military bases? Can some or all of the Air Force's stated needs be met elsewhere? We recognize that modern warfare requires heightened coordination, and that begs the question: If the military cannot work that out here at home across existing bases and lands, how can it execute it on the battlefield?

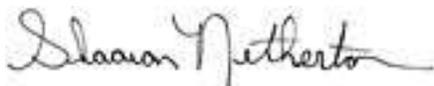
The LEIS needs to fully assess and analyze the cumulative impacts of all the recent and proposed military withdrawals in the Desert Southwest. Most of the military bases in the desert regions of California, Arizona and Nevada either have been expanded in recent years or are requesting expansion. The long-term cumulative impacts of all these withdrawals needs to be addressed in the LEIS.

### Future Needs

The Air Force has stated that due to the expanded range and capabilities of modern aircraft and missile systems, greater buffer zones around target areas are needed for public safety. Assuming that the trend toward weapons with increased range continues, what are future needs going to be? Given the impacts to the public domain from military training exercises involving live fire weapons systems, what does the future look like? The human population is expanding at a relatively rapid rate while the land base is either stable or shrinking, so land that is off-limits to the public either long term or permanently represents a resource loss to the nation. This issue needs to be thoroughly discussed and analyzed in the LEIS.

Friends of Nevada Wilderness is committed to supporting our national security. We also believe strongly that Nevada, more than any other state, has already sacrificed enough public lands to the military to keep our country safe. Our remaining public lands belong to the wild ecosystems essential to wildlife survival and to the American Public, who long ago made a decision to protect public lands for all people.

Sincerely,



Shaaron Netherton  
Executive Director  
Friends of Nevada Wilderness

## Appendix A – US Fish & Wildlife Service 1971 Wilderness Proposal

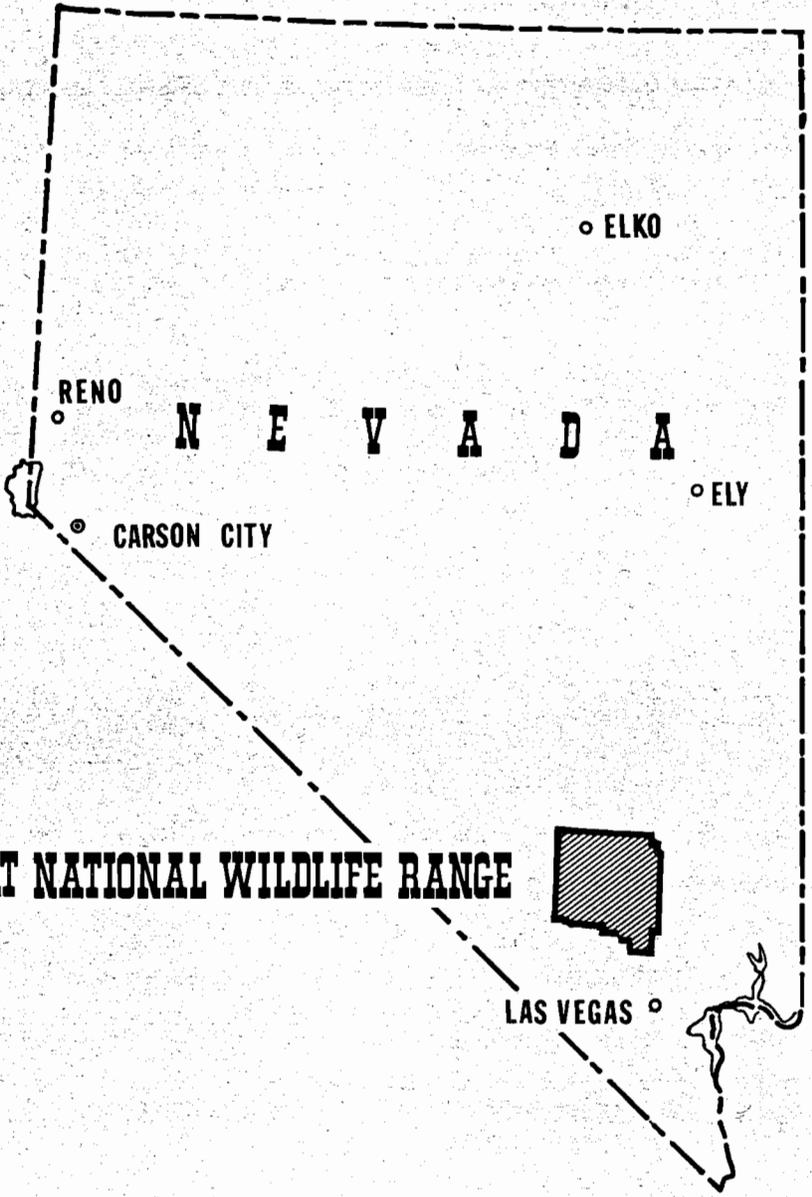
*Taken from:*

*Desert National Wildlife Refuge Complex  
Final Comprehensive Conservation Plan and  
Environmental Impact Statement*

**DESERT WILDERNESS PROPOSAL**  
**DESERT NATIONAL WILDLIFE RANGE**



**NEVADA**



**DESERT NATIONAL WILDLIFE RANGE**

◦ ELKO

◦ RENO

◦ CARSON CITY

◦ ELY

LAS VEGAS ◦

## PREFACE

The Wilderness Act of September 3, 1964 (Public Law 88-577) requires that the Secretary of the Interior review every roadless area of 5,000 contiguous acres or more and every roadless island, regardless of size, within the National Wildlife Refuge System within ten years after the effective date of the Act and report to the President of the United States his recommendations as to the suitability or nonsuitability of each area or island for preservation as wilderness. A recommendation of the President for designation as wilderness does not become effective unless provided by an Act of Congress.

In defining wilderness, the Act also included areas of less than 5,000 acres that are of sufficient size to make preservation and use in an unimpaired condition practicable.

The National Wildlife Refuge System is a National network of lands and water managed and safeguarded for preservation and enhancement of the human benefits associated with wildlife and their environments. It presently consists of over 320 units embracing nearly 30 million acres in 46 states and is administered by the Bureau of Sport Fisheries and Wildlife. About 90 of those units, containing over 25 million acres in 32 states, qualify for study under the Wilderness Act.

Sections 4(a) and (b) of the Wilderness Act provide that: (1) The Act is to be within and supplemental to the purposes for which units of the Refuge System are established; and (2) Wilderness areas shall be administered so as to preserve their wilderness character and shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation and historical use insofar as primary Refuge System objectives permit. Wilderness designation does not remove or alter an area's status as a unit of the National Wildlife Refuge System.

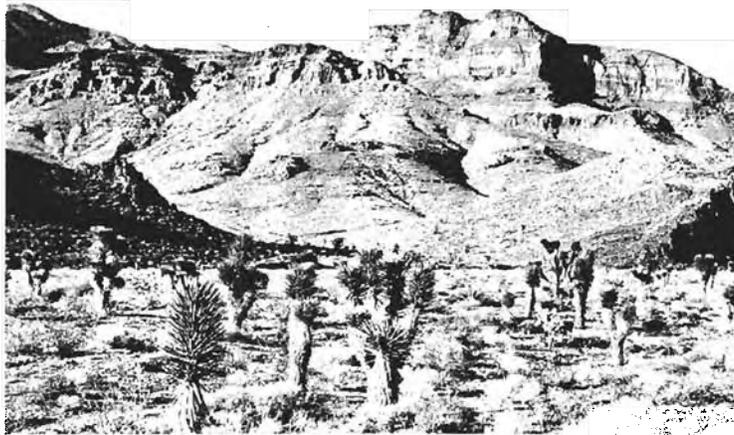
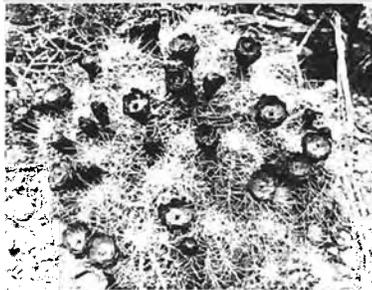
This brochure concerns a National Wildlife Range that has been studied by the Bureau of Sport Fisheries and Wildlife at the direction of the Secretary of the Interior. Its purpose is to summarize the wilderness study in sufficient detail to enable the reader to form an opinion regarding study conclusions concerning the suitability and desirability of including all or part of the Range within the National Wilderness Preservation System.



Desert tortoise.



Gambel's quail—  
common below the pinyon belt.



Typical bighorn lambing area.  
Yucca Peak in background. Sheep Range unit.

# INTRODUCTION

Lying at the very edge of metropolitan Las Vegas, Nevada is the largest unit of the National Wildlife Refuge System outside of Alaska—the Desert National Wildlife Range. Established in 1936 by Executive Order of President Franklin D. Roosevelt, this vast 1,588,000-acre area was set aside for the protection of a remnant population of the desert bighorn sheep—a species believed native to this harsh region for over 300,000 years.

Sensitively intolerant of human settlement and development, the desert bighorn is now largely confined to small, isolated areas within its former range in the Southwestern United States and Mexico. Within the protective confines of the Desert Wildlife Range, its numbers have gradually recovered until there are now an estimated 1,000 animals. This is the largest known population of desert bighorn sheep.

The Range is situated in the northeastern portion of the Mohave Desert in Clark and Lincoln Counties, southern Nevada. The administrative headquarters is in Las Vegas, with a field station at Corn Creek, 23 miles northwest. The southernmost boundary is about one-half mile from the Las Vegas city limits.

The western portion of the Range is used by the U. S. Air Force as an aerial bombing and gunnery range for training purposes. Public access to these lands is restricted.

The wilderness study area comprised the entire Desert National Wildlife Range and 58,000 acres of adjacent public domain lands, included because they are logical ecological and topographical extensions of the Range. The study area was divided into several study units on the basis of Wildlife Range management and development programs and plans, Air Force use, and the status of private inholdings. Permanent road and vehicle trails, contour lines, and legal subdivisions all served as unit boundaries. Approximately 88 percent of the study area, or 1,443,100 acres, were judged suitable for further consideration as wilderness within seven separate units.



*Petroglyphs remain as visual reminders of a rich part of America's cultural heritage.*

## HISTORY

Petroglyphs on canyon walls and in caves attest to the existence of an aboriginal people in southern Nevada. Their primitive way of securing food is also evidenced by the presence of "mescal" pits, a number of which are located on the Wildlife Range.

Paiute Indians were found living near the watering places in the 1770's when Europeans first visited the region. These were Spanish pioneers searching for a more northerly route for the Spanish Trail between their settlements in present-day New Mexico and California.

The white man's culture was first introduced in the mid-1880's when Mormon settlers moved into the Las Vegas Valley and settled near the springs. By 1900, a wagon trail linked the gold fields of central Nevada with the railroad in Las Vegas.

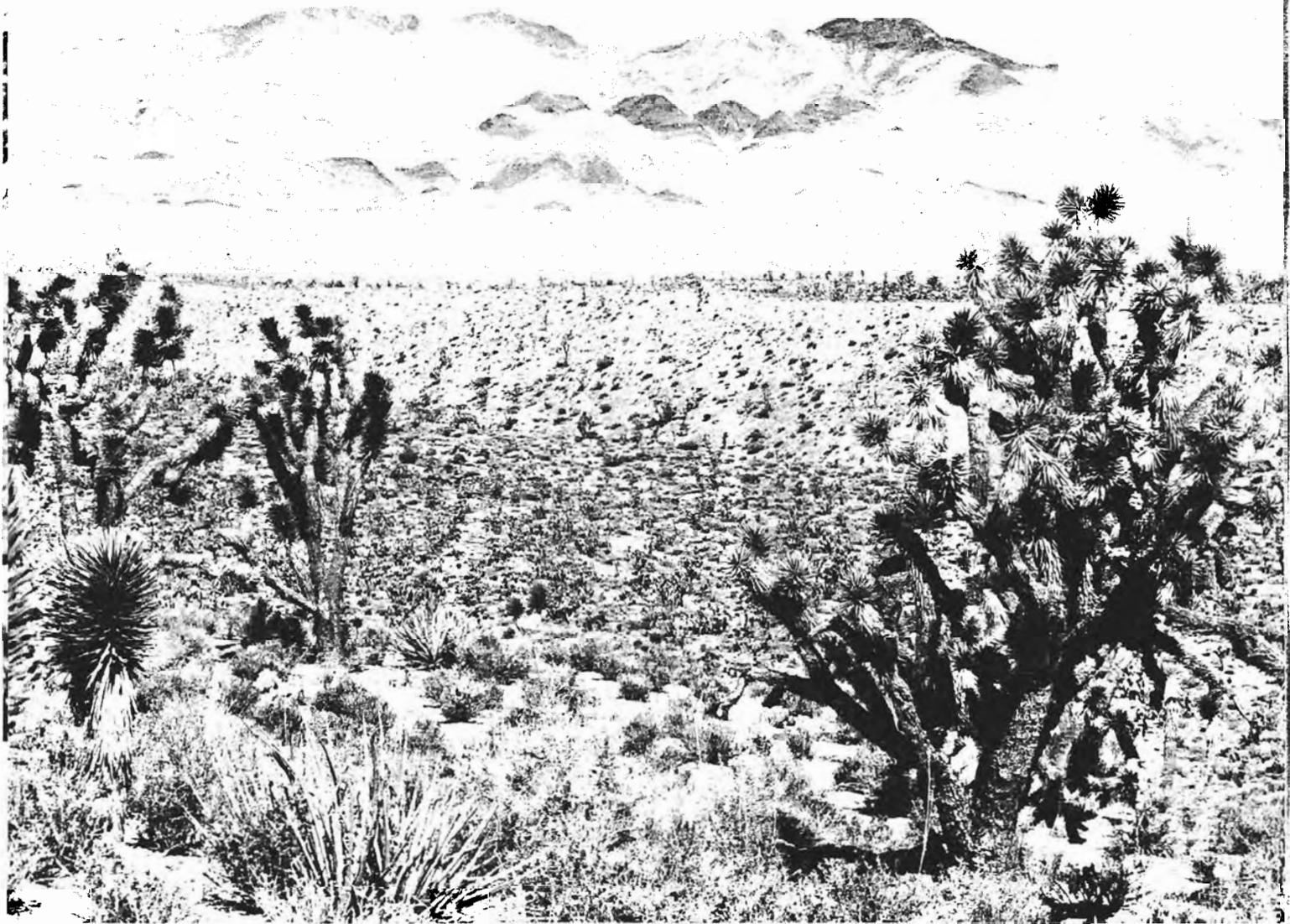
Freight teams traveled north over the Alamo and Mormon Wells Road through what is now the Wildlife Range, hauling supplies and lumber to the mining camps. Corn Creek Springs, purchased in 1939 by the Federal Government, was originally an old ranch site and stagecoach stop. Up until that time, the Range was used by a growing number of prospectors, cattlemen, poachers, bootleggers and lumbermen. Shacks and corrals were built near the best springs. Livestock competed for meager supplies of forage and water. The desert sheep was a ready source of fresh meat, and had little resistance to diseases introduced by domestic animals. Its numbers began to decline.

When originally established, the Wildlife Range comprised over two million acres and was jointly managed with the Bureau of Land Management. Joint administration was terminated in 1966, when a division in administrative responsibility between the two agencies was made. Range boundaries were adjusted accordingly, and the Bureau of Sport Fisheries and Wildlife was granted primary jurisdiction over all lands within the present-day Desert National Wildlife Range, except for about 3,200 acres subject to a primary withdrawal by the Air Force in the southeast corner of the Range.

During the early stages of World War II, an aerial bombing and gunnery training range was superimposed on the western portion of the Wildlife Range, encompassing an area of about 819,000 acres. U. S. Air Force use of this area continues under a Memorandum of Understanding between the respective Secretaries of Interior and the Air Force. Under this agreement, ground operations have been authorized on designated target areas which collectively total about 139,000 acres. Considerable physical disturbance has occurred in these areas. Use of the remaining portion of the bombing and gunnery range is limited by agreement to air space. The land remains essentially undisturbed.



Prospector's shelter from another era.



*Rug Mountain, from vicinity of Mule Deer Ridge. Rug Mountain unit.*

## **PHYSICAL DESCRIPTION**

For long periods of early geological time, southern Nevada was submerged under a shallow sea. It was during this period that the material that now forms the seven distinct mountain ranges found within the study area accumulated. This was followed by constricting, folding and erosion which wore off the tops of the folds, leaving the lower as well as the upper strata in various degrees of exposure.

The steep and generally bare mountain sides are cut by deep ravines and canyons composed almost entirely of bedrock. Remnants of young alluvial aprons found high in the ranges indicate that portions of the mountains were once buried and have only recently been exposed.

Many of the basins are now sites of deposits of alluvial material transported down slope during occasional cloudbursts. The higher parts of the alluvial aprons are composed of coarse debris deposited in the geologically recent past. They are now being gradually eroded and cut by deep gullies. The lowlands or dry lake beds are underlain by fine-grained lake and stream deposits with some windblown materials.

The period of geological rejuvenation is still continuing, but at a slower rate—due to the arid conditions that have developed in this region.

With elevations ranging from 2,600 feet to nearly 10,000 feet, the climate varies widely. The mean temperature is approximately 60°F, with occasional extremes of 117°F in the valleys to below zero in the higher mountains. Summertime temperatures regularly exceed 100°F, broken occasionally by torrential thunderstorms which form quickly and deliver rain in sudden showers. These often cause flash flooding and erosion. Snow occurs almost every year in the Sheep Range, which contains the highest peaks on the area.

The diverse topography, differences in soils, and variations in precipitation and temperature have resulted in the development of several well-defined plant communities. Vegetation varies from low-growing, widely-scattered desert shrubs at lower elevations to a well-developed coniferous forest at the upper elevations. Animal occurrence and distribution also tend to correspond to the different vegetative zones with each species associated with those areas which best fulfill their seasonal requirements.

The study area embraces a veritable mosaic of nearly every ecological type that occurs in Southern Nevada. It exists as a largely pristine, strikingly beautiful example of a unique kind of American wilderness.

## RESOURCES

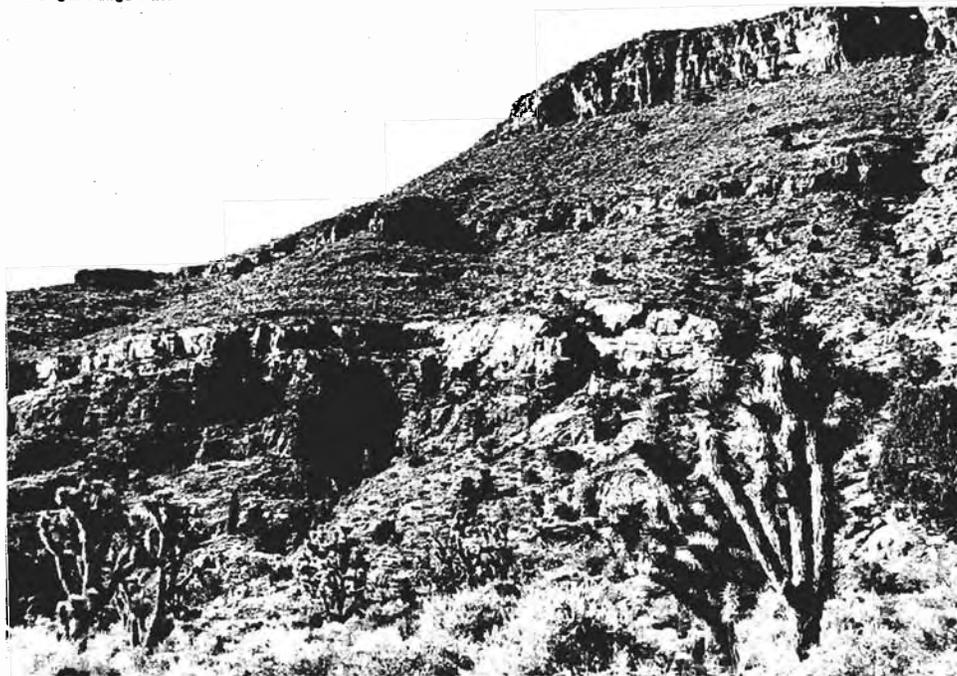
The wide range of elevation and rainfall has created a diverse habitat suited to a wide variety of wildlife species—the most notable, of course, being the desert bighorn sheep.

The overall range of the desert bighorn has not changed markedly since white man's arrival; but the animal has disappeared from many areas within its original range, and its numbers are dangerously low in others. Conversely, available information suggests that their numbers may be as great as they ever were in some parts of their range. The desert bighorn on the Wildlife Range recovered from an estimated low of 300 in the late 1930's to around 1,000 presently. It is estimated that there are about 10,000 desert bighorns in the United States (in Arizona, California, Nevada, New Mexico and Utah—traces in Colorado, Texas and Wyoming); and 4,000 in Mexico (in Baja California and Baja California Sur, Coahuila and Sonora).

Typical desert bighorn habitat cannot support more than a few animals, due to limitations imposed by food and water availability. Further, psychological make-up of the animal seems to inhibit its population size. Because of the typically low population densities, the bighorns' sensitive psychology, and their delicate adjustment to a harsh environment, human interference—even on a small scale—could have disastrous results for the animal. The evidence that desert bighorns cannot successfully co-exist with humans and their development is overwhelming.

Bighorns in Southern Nevada commonly use the range of elevations between 3,500 and 8,500 feet. The Desert National Wildlife Range contains the essential requirements of the species within this elevational range—a wide variety of food, available water, mountainous terrain, comparative isolation from disturbance, and space. It is, therefore, imperative that all these requirements be preserved to help assure the desert bighorns' continued existence.

Peek-a-boo Canyon along Mormon Well Road is spring range for bighorn rams. Las Vegas Range unit.



Collared lizard

Ewe and lamb



Water improvement at Rye Patch Spring.





It is doubtful that any part of the State of Nevada offers a greater diversity of animal life than the Desert National Wildlife Range.

The study area supports a total of 53 species of native mammals, including the threatened kit fox, and mule deer at higher elevations. Over 250 species of birds have been recorded, including the rare prairie falcon during migration. The desert tortoise and gila monster are two of the most interesting of the 30 species of amphibians and reptiles that occur on the area.

Water is scarce throughout the study area. There are no free-flowing streams, ponds or marshes, except at Corn Creek. The dry

lakes occasionally collect run-off water during wet years, but only remain wet for a few weeks. All known springs and seeps have been improved to enhance the supply of water for wildlife. These are the only natural sources of water.

The vegetative zones change markedly with elevation, and seven distinct plant communities are easily recognized by the casual observer. Over 500 species of plants have been identified in plant communities varying from creosote bush on valley floors to pine-fir and bristlecone pine communities at upper elevations. The Sheep Range mountains contain the only well-developed coniferous forest—one of only four bristlecone pine forests occurring in the entire state.



*The rare mountain lion occurs at higher elevations in Sheep Range.*

*The docile king snake.*

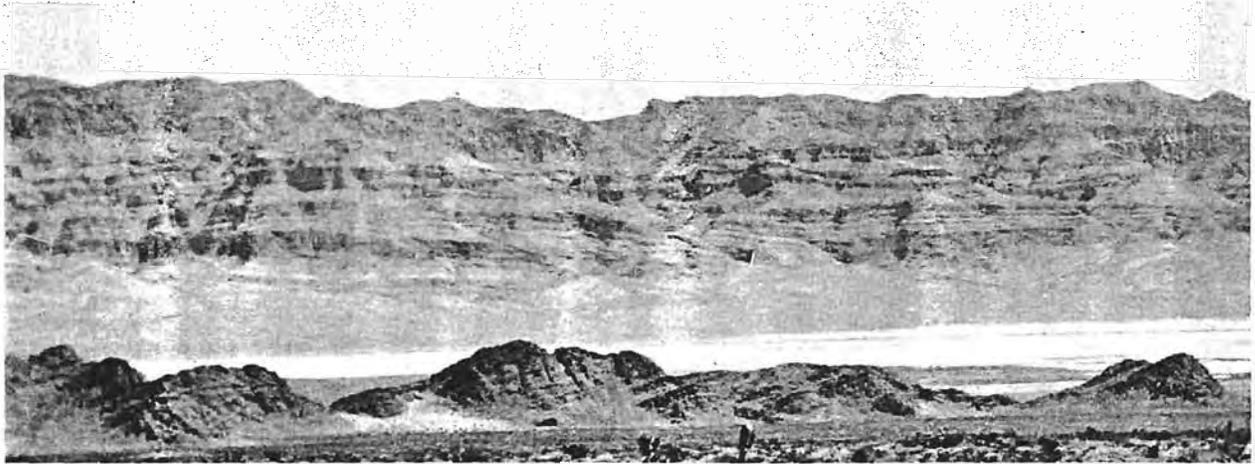
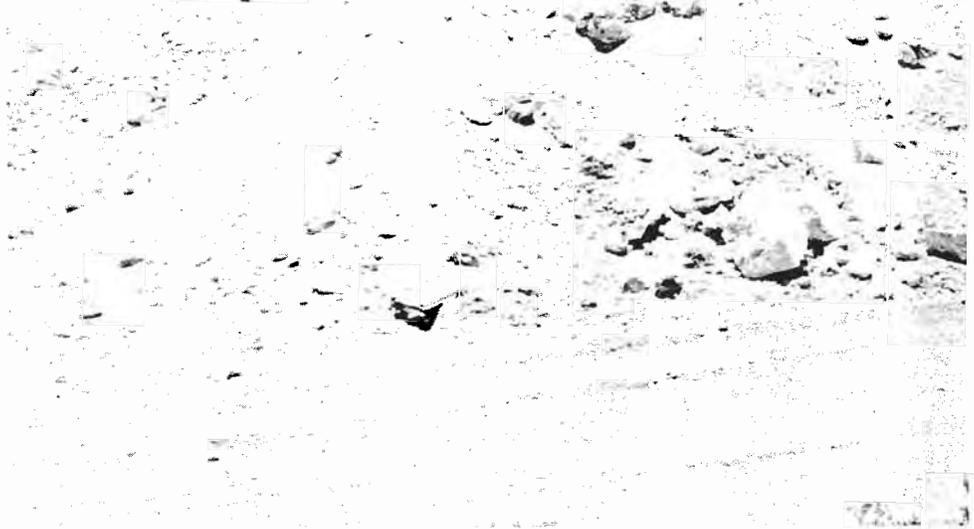


*The inimitable roadrunner.*





*Recent mineral prospect site in Gass Peak unit.*



*Desert Lake, with north end of Sheep Range in background.*



*Creosote bush zone typical of low valleys. Corn Creek visible in background—Sheep Range beyond.*

The western portion of the Wildlife Range used by the Air Force is closed to location under the mining laws. The remaining lands within the study area are largely open to mineral entry.

No information was found that would indicate that important ore-bearing zones exist within the boundaries of the study area. In fact, peripheral mineral surveys suggest that these lands are probably the least mineralized in Nevada.

No patented mining claims existed within the area at the time of the study. Visual examination of the study area also failed to reveal any valid unpatented mining claims. Prospect sites located were concentrated in the extreme southern portion of the Wildlife Range, and few showed signs of recent activity.

In order to protect the desert bighorn on the Wildlife Range, it is necessary that large areas of undisturbed natural habitat be maintained. It is important, therefore, that the entire Range ultimately be excluded from mineral exploration and development. Plans to accomplish this have been initiated by the Bureau of Sport Fisheries and Wildlife.

Areas considered to be the most critical bighorn sheep habitat have already been excluded from application of the oil and gas leasing laws. Operations associated with oil and gas exploration and development would not be compatible with wilderness.



*Solitude high in the Sheep Range.*

## **PUBLIC USE**

There are many opportunities on the Wildlife Range for public recreation which is compatible with the requirements of desert bighorn sheep and related natural values. However, the number of people engaged in any one recreational activity at any given time must remain relatively limited to avoid conflict with wildlife and preserve the element of solitude and freedom from human presence that the area possesses. Herein lies one of the very special values of the Desert National Wildlife Range—the opportunity preserved for a truly unique desert wilderness experience.

Public use presently totals about 15,000 visits annually, with the greatest visitation occurring at the Corn Creek subheadquarters. Most of the area is managed as a wild area, with recreation generally limited to day use only. Hiking, wildlife observation, scenic driving, and photography are popular uses of the area. The areas of most interest to visitors are Hidden Forest within the Sheep Range Mountains, Mormon Pass, and Fossil Ridge within the Las Vegas Range Mountains. The Alamo and Mormon Pass Roads provide year-round access for conventional highway vehicles, while a few primitive "spur" roads permit seasonal access to areas which would otherwise seldom be visited because of water scarcity and the rigors of foot travel in the hot temperatures. Public access within the bombing and gunnery range is limited by military restrictions.

Recreational uses near springs and other sources of water are closely regulated to avoid conflicts with wildlife. The hunting program is coordinated with the Nevada State Fish and Game Department, with hunting limited to the taking of a few mature bighorn rams. The qualitative aspects of the hunting experience are emphasized.

Unauthorized cross-country travel by four-wheel drive and so-called "dune buggy" vehicles is an increasing problem and often difficult to control—particularly, along the southern perimeter of the Range. Wilderness designation could be highly beneficial in this respect, in terms of providing additional legislative protection.

One Research Natural Area has been officially designated and two proposed in the Sheep Range, primarily for research and educational purposes. All would be compatible with wilderness designation.

*The Wildlife Range's value as outdoor laboratory for educational purposes will increase with passage of time.*



# MANAGEMENT

The primary management objectives within the Wildlife Range are to preserve and protect natural environmental qualities required for the survival of an optimum population of desert bighorn sheep and other native wildlife. To assure that these objectives will be fulfilled, there is a continuing need for periodic resource inventories, applied research to provide information for management and maintenance, fire suppression, and routine patrol for protection of Wildlife Range values. When vehicles are required, their use will normally be restricted to established roads and trails excluded from the wilderness proposal. Exceptions involve six primitive vehicle trails included in the wilderness for administrative use only. Use of aircraft, including fixed-wing aircraft and helicopters, will continue to be required; however, landings within the proposed wilderness will not be necessary—except in emergencies. Wildlife management requirements within the

proposed wilderness are considered entirely compatible with wilderness designation.

Management and use of lands within that portion of the study area used by the Air Force is governed by the Memorandum of Understanding between the respective Secretaries of the Interior and the Air Force. Essentially, this agreement authorizes exclusive use of the area by the Air Force for training purposes, with provision for access during certain specified periods by Range personnel for wildlife and public use management purposes.

The public domain lands included in the study are managed by the Bureau of Land Management, primarily for livestock grazing as part of much larger grazing districts. However, livestock seldom graze these areas since water is generally unavailable. The lands lack developments of any kind and are wholly natural. With wilderness designation, grazing would be eliminated.



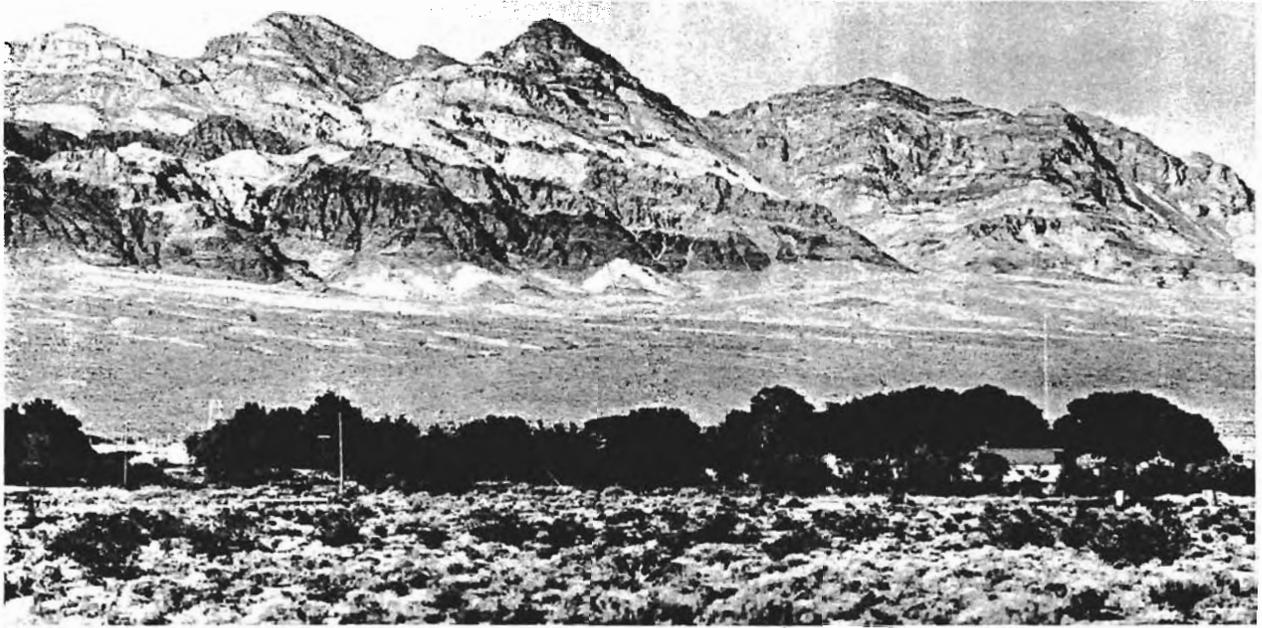
*Picnic area at Mormon Pass. Mormon Well Road visible at left.*



*Bighorns captured in permanent trap near Wamp Spring are used to re-establish populations in areas where species formerly occurred.*

*View from Angel Peak area south of Wildlife Range. From left to right in background: Indian Springs Valley; Pintwater Range; Three Lakes Valley; and the Desert Range.*





*Corn Creek Subheadquarters, with Sheep Range in background.*

## DEVELOPMENT

Although the study area is remarkably free of human disturbance, a variety of existing and planned developments have a bearing on wilderness considerations. Many are not compatible with wilderness, while others are minor and will not detract from the natural quality of the area in which they are located.

Developments excluded from the wilderness proposal include lands within the bombing and gunnery range where target facilities are located; permanent roads; Corn Creek subheadquarters; and private inholdings.

Developments included in the proposal are the primitive Nye Canyon, White Sage Gap, Pine Spring, Mormon Well Spring, Wamp Spring, and Quail Spring Trails, which are required for administration of the Range; several abandoned vehicle trails which will gradually revert to their natural condition; the bighorn sheep trap at Wamp Spring; a well used for monitoring purposes by the

Atomic Energy Commission; the June Bug Mine, authorized for use as a National Radiation Shelter; water improvements, necessary for proper management of desert bighorn sheep; and mineral prospect sites.

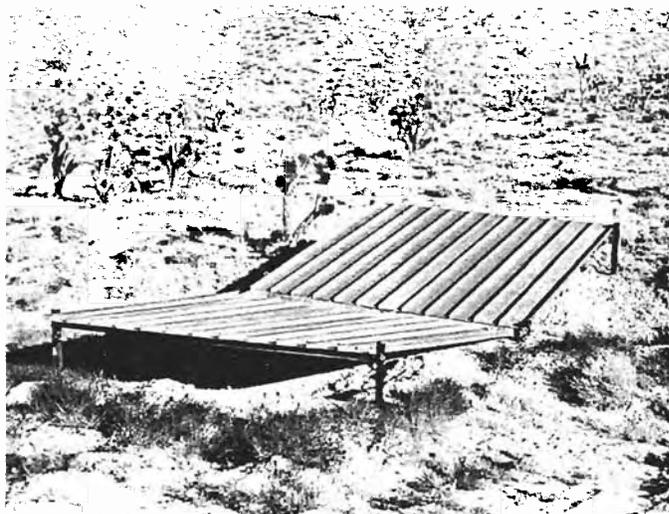
When the June Bug Mine site in the Gass Peak Unit is no longer required for local civil defense purposes, the site and access trail would be suitable for inclusion in the proposed wilderness. The old mine involves a minimum of surface disturbance and represents the type of early-day mining activity which is now very much a part of the American West. The access trail would gradually revert to a natural condition with a minimum of restorative assistance.

At such time as the test well in the Spotted Range Unit is no longer required by AEC in conjunction with their monitoring program, the site and access trail would be suitable for inclusion in the proposed wilderness with a minimum of restoration.



Looking north along Alamo Road toward Sheep Pass.

Water is a primary requirement of desert bighorns and is in short supply on a large portion of the Wildlife Range. For this reason, 28 springs have been improved and six "guzzlers" have been developed to enhance water availability. The water developments do not significantly detract from the wilderness character of the areas within which they occur. Future "guzzler" installations will be developed in a manner that will minimize their impact on natural values.

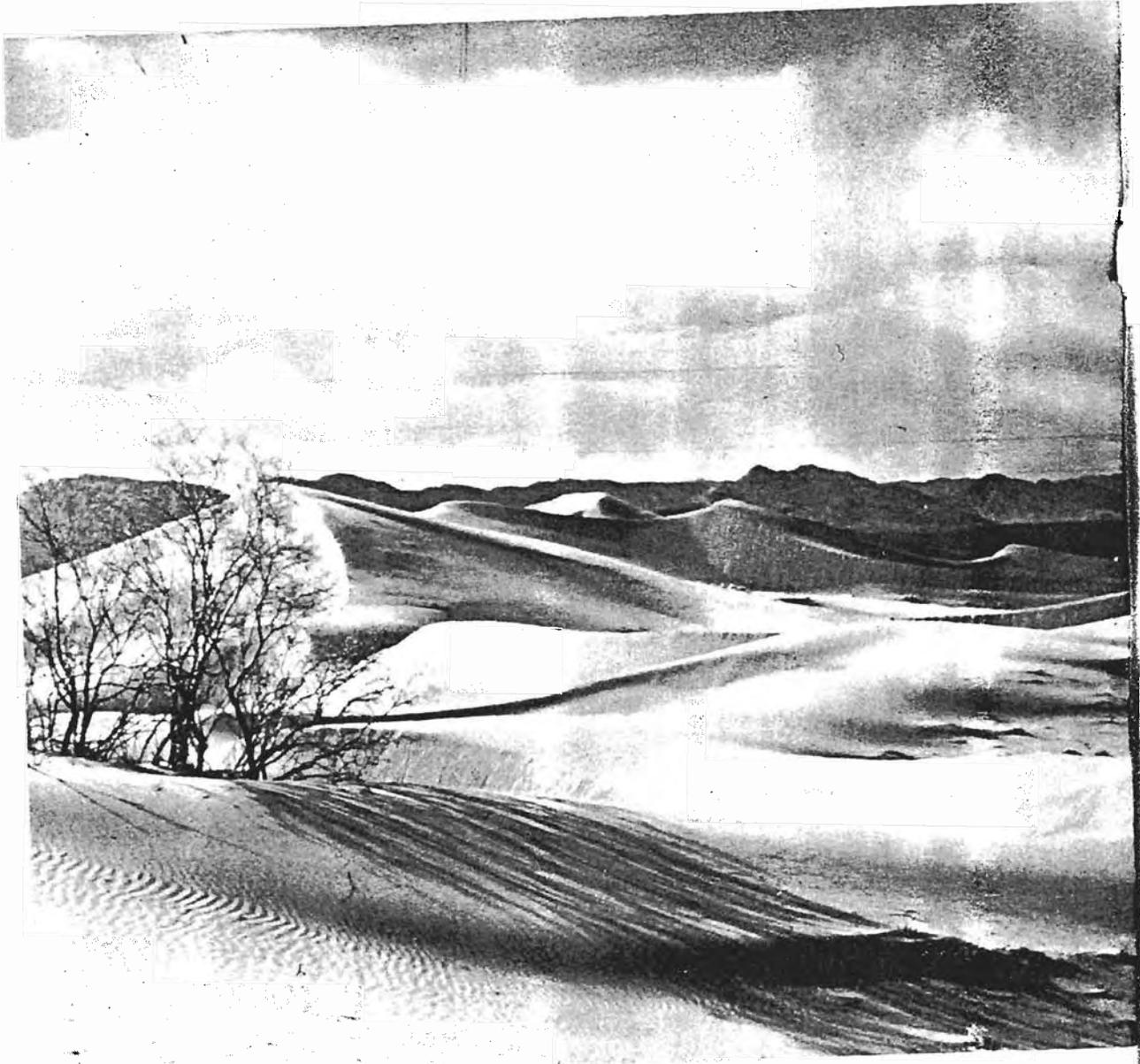


"Guzzler" collects precipitation and delivers it to underground storage tank and small drinking trough.

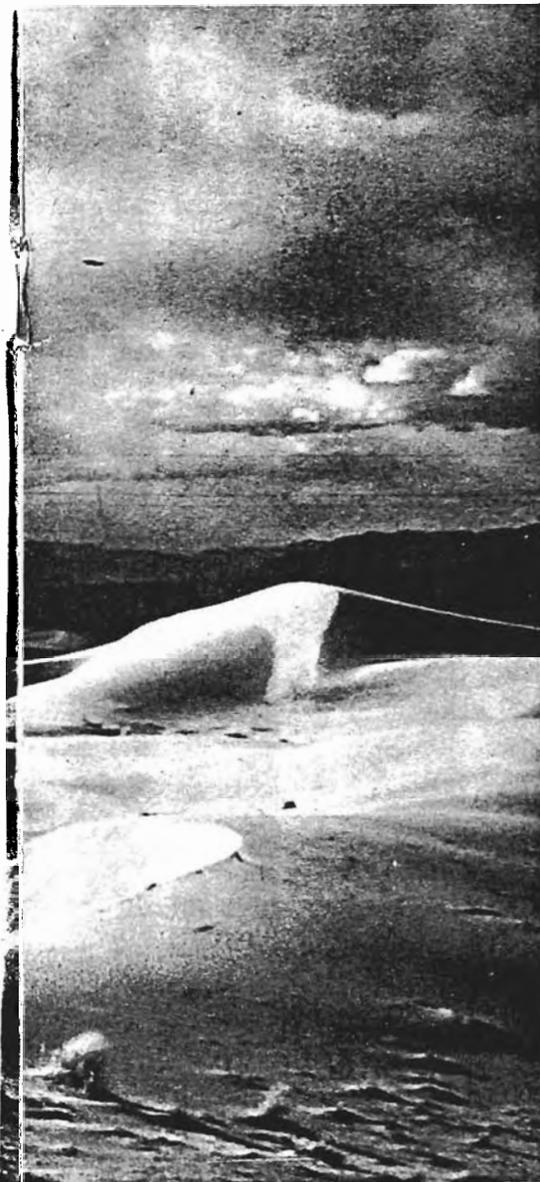


Air Force target area west of Spotted Range in Indian Springs—Gunnery Range unit.

Recreational development is planned for certain areas excluded from the proposed wilderness to facilitate public use and enjoyment of the Range. These will generally be rather minimal, with emphasis on environmental interpretation and preservation of the primitive character of the area. The most extensive development will occur at Corn Creek, where facilities planned will include a visitor center complex complete with desert bighorn sheep display areas, photographic blinds, interpretive foot trails, and a ten-mile interpretive automobile loop route.



# **SOCIO-ECONOMIC CONSIDERATIONS**



Sand dunes near Desert Lake.

Las Vegas is one of the fastest growing metropolitan areas in the United States. The resident population of Clark County has increased by more than 157 percent since 1958, from 105,000 to nearly 300,000 at present. It also attracts around 14.5 million annual visitors. Projections made by the Las Vegas City Planning Department indicate that by 1980 the area will contain 700,000 people. The area is also well under a six-hour drive via auto from Southern California metropolitan complexes, with populations collectively in excess of eight million.

The desert is an important part of the recreation environment of southern California. In **THE CALIFORNIA DESERT, A CRITICAL ENVIRONMENTAL CHALLENGE**, the recent report released by the California State Office of the Bureau of Land Management, it is noted that annual visitor use on public lands of the California desert is increasing at about four times the national average. In the same report, a 1968 survey recorded nearly 5,000,000 visitor days for the area. By the year 2000, the report predicts that use may reach as high as 50 million visitor days.

The above illustrates the expanding use of the desert as a recreation resource by the growing population of southern California. This uncontrolled use of the fragile desert environment for recreation and other purposes has resulted in a widespread deterioration of the resource. Huge areas that no more than a few years ago were *de facto* wilderness are now visibly scarred by indiscriminate and uncontrolled use.



*Desert patriarch*

The Desert National Wildlife Range's accessibility by highway to the huge Los Angeles metropolitan complex and its proximity to the rapidly expanding Las Vegas metropolitan area make it a prime candidate for desert recreation uses which can adversely affect natural values. The regional recreation picture shown by the data indicates a little more than two percent of the total Class V (primitive) recreation lands now protected by the Wilderness Act. Thus, wilderness designation for the Desert National Wildlife Range would help to balance the regional recreation supply and, at the same time, protect the ecological integrity of at least a portion of the diminishing southwestern American desert.

To date, the economic values derived from mining operations have been negligible. Where there is an intermittent interest in locating claims, the damaging impact on the landscape greatly exceeds the apparent potential economic value of mineral devel-

opment. Prospecting for minerals and mining operations would not be compatible with wilderness designation.

Since competition for forage and water by domestic livestock is not compatible with wildlife management objectives, grazing is not allowed on the Wildlife Range. As indicated earlier, livestock grazing subject to provisions of the Taylor Grazing Act is permitted on the public domain lands adjacent to the Range. The lands included within the wilderness study are portions of four large allotments which are grazed intermittently when conditions are suitable. Grazing in the desert is quite variable and relies to a great extent on short-lived vegetation. Distribution is difficult to obtain, since animals tend to remain near the limited sources of water and, as a result, seldom drift west of the highway onto the study area. Termination of grazing on these lands would, therefore, have little effect on the economic stability of the area.

Looking northwest from above Cow Camp Spring. Alamo Road visible in near foreground—  
Desert Range Mountains beyond.



Hiking in year-round bighorn habitat—Sheep Range unit.



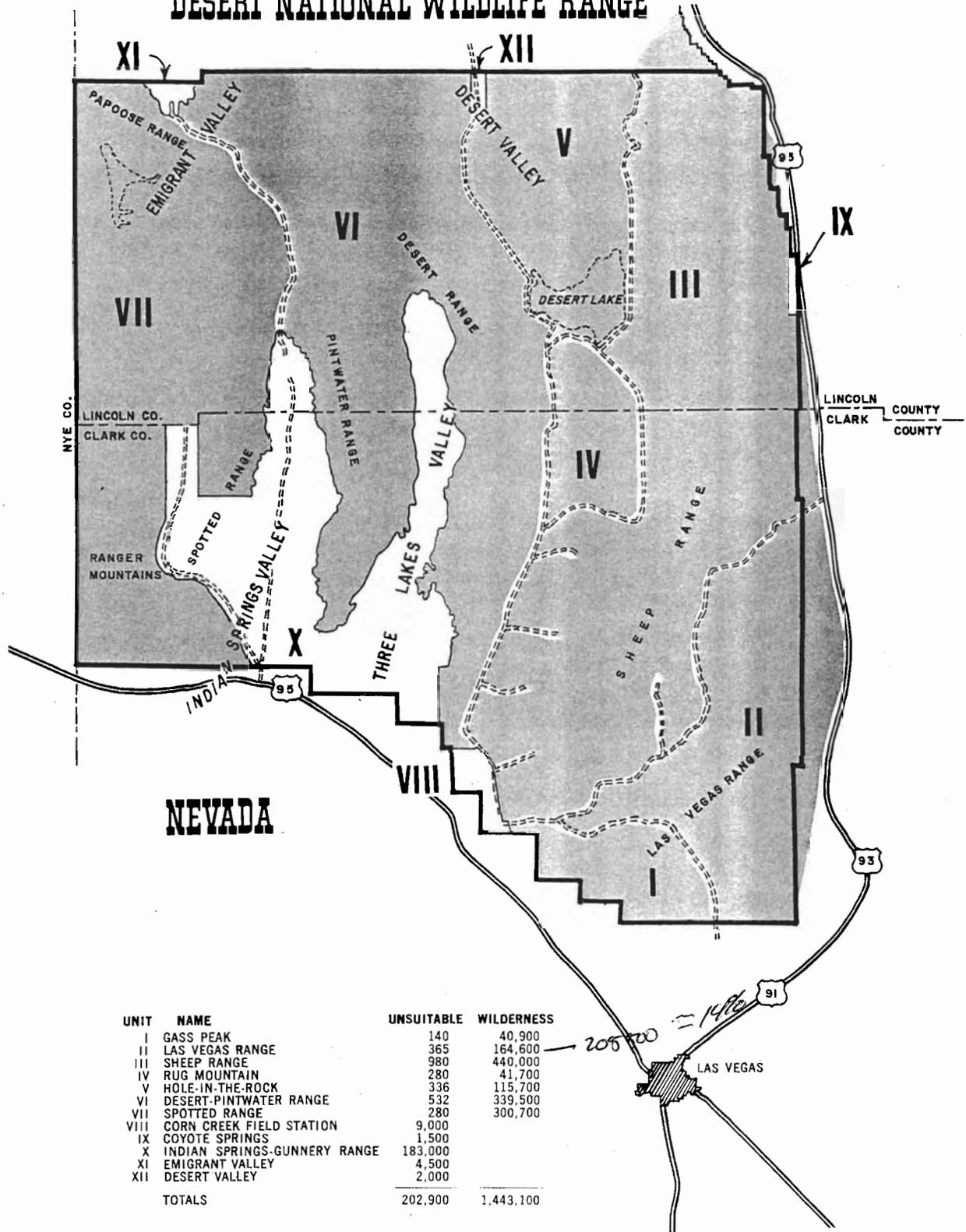
Coyote



Winter scene along Alamo Road. Sheep Range in background.

# DESERT WILDERNESS PROPOSAL

## DESERT NATIONAL WILDLIFE RANGE



NEVADA

LAS VEGAS

208,700 = 1476

# CONCLUSIONS

## THE PROPOSAL

A total of about 1,443,100 acres within the Desert National Wildlife Range wilderness study area were found suitable for further consideration as wilderness, and are proposed for designation as a unit of the National Wilderness Preservation System. The proposed Desert Wilderness consists of seven individual wilderness units varying from 40,900 to 440,000 acres in size, with the following proposed stipulations:

- Permanent roads and primitive vehicle trails which serve as wilderness unit boundaries shall be 16 feet in width, with a total right-of-way 116 feet in width, measuring 58 feet on either side of the center line of the existing road or trail. This will provide a suitable area for roadside parking and a buffer for future road maintenance.

- The primitive terminal access vehicle trails excluded from the proposed wilderness shall be 10 feet in width, with a total right-of-way of 110 feet, measuring 55 feet on either side of the center line of the existing trails. The vehicle parking and turn-around area at the end of these trails shall be an area two acres in size.
- Use of vehicles on the Nye Canyon, White Sage Gap, Pine Spring, Mormon Well Spring, Wamp Spring and Quail Spring Trails will be authorized for administrative purposes only.
- Surface exploration for minerals within proposed wilderness units would not be permitted.
- Use of the Wamp Spring sheep trap will be authorized for the trapping and transplanting of desert bighorns.

*Caliente Power Line right-of-way forms southeastern boundary of proposed Las Vegas Range Wilderness Unit, at left.*



## THE EXCLUSIONS

Approximately 202,900 acres of the study area are proposed for exclusion from wilderness, because the lands no longer possess the character of wilderness or have existing or planned uses occurring on them which are currently inconsistent with wilderness.

Specific developments in Unit VIII include the Corn Creek administrative subheadquarters, 360 acres of private inholdings involving eight individual owners, and numerous roads.

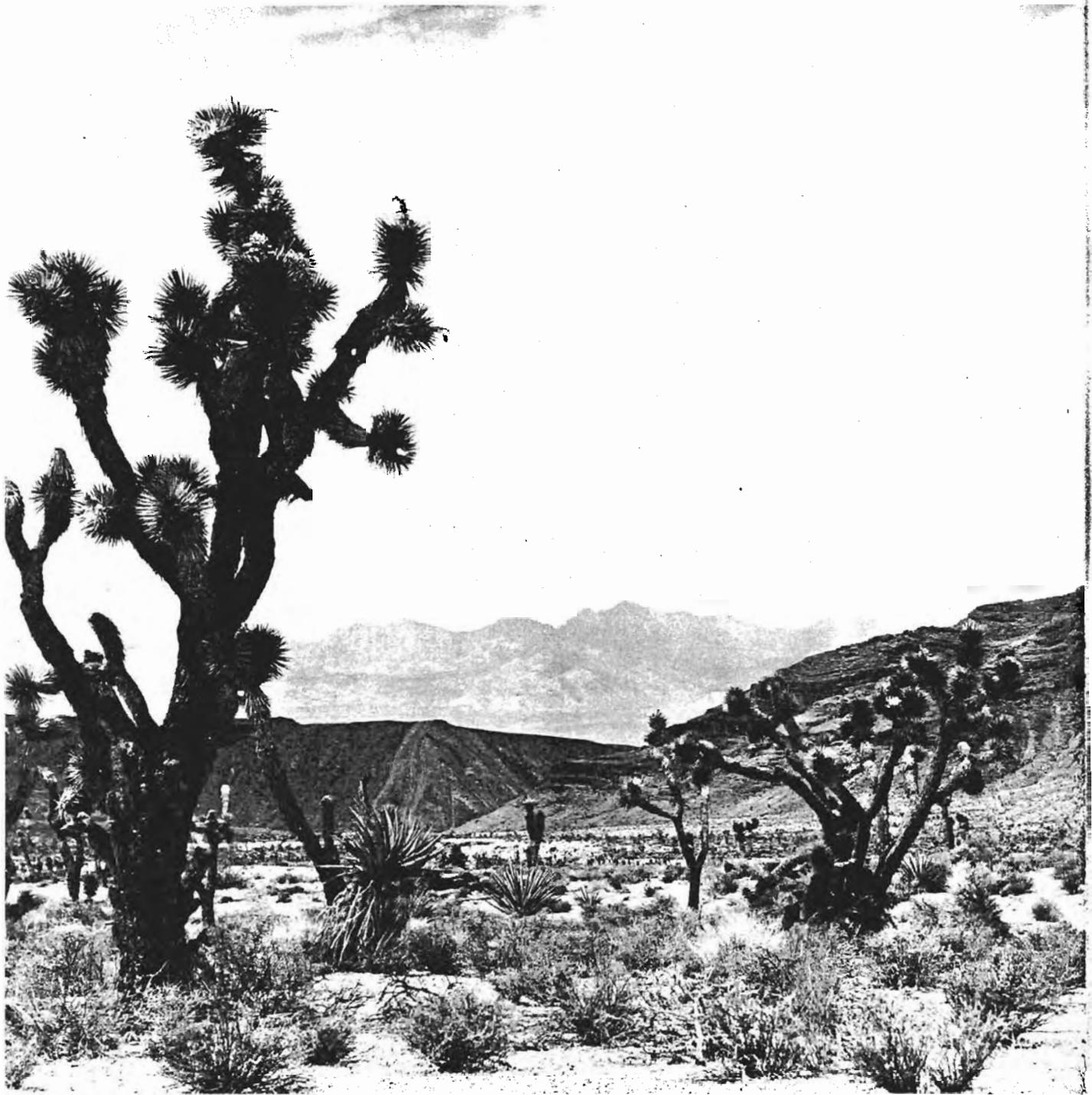
Unit IX is located along the northeast boundary of the Wildlife Range and contains 600 acres of private inholdings with two individual owners. Both tracts have extensive developments, as well as all-weather access roads from Highway 93.

Unit X includes the lands used for target areas by the Air Force as provided by the agreement which authorizes their use. The

areas subject to physical disturbances are located in the valleys below 3,600 feet elevation and were so delineated, as contour lines provide the only practical basis for establishing a wilderness management boundary in the absence of a legal land survey.

Units XI and XII are located along the north boundary of the Wildlife Range within the bombing and gunnery range and contain target facilities used by the Air Force. Much physical disturbance has occurred in conjunction with these activities.

Should military use of lands now proposed for exclusion be discontinued, much of this area would be suitable for addition to the proposed Desert Wilderness. However, rather extensive cleanup and restoration work would be required in some of the practice target areas.



*Scenic diversity is outstanding quality of the Desert National Wildlife Range.*

**PHOTO CREDITS:**

PEN AND INK DRAWING ON FRONT COVER, MRS. PAT HANSEN; PAGE 2 (UPPER LEFT), 10, 17 (CENTER), 20, 22 AND 23 (LOWER), CHARLES G. HANSEN; PAGE 2 (UPPER RIGHT), 9 (LOWER LEFT), AND 11 (UPPER RIGHT), E. P. HADDON; PAGE 2 (LOWER RIGHT), 5, AND 11 (LOWER RIGHT, SIMULATION), JACK B. HELVIE; PAGE 2 (CENTER AND LOWER LEFT), 4, 6, 9 (UPPER LEFT AND LOWER RIGHT), 13, 17 (LOWER), 18, 23 (UPPER AND RIGHT CENTER), 28, AND REAR COVER, DAVID B. MARSHALL; PAGE 9 (UPPER RIGHT), REX GARY SCHMIDT; PAGE 11 (CENTER LEFT), COURTESY COLORADO DIVISION OF GAME, FISH AND PARKS; PAGE 12 (UPPER), 17 (UPPER), 19, AND 26, MARVIN L. PLENERT; PAGE 12 (LOWER), AND 15, RODGER D. JOHNSON; PAGE 14, FRANK W. GROVES; AND PAGE 23 (LEFT CENTER), E. R. KALMBACH.



As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources."

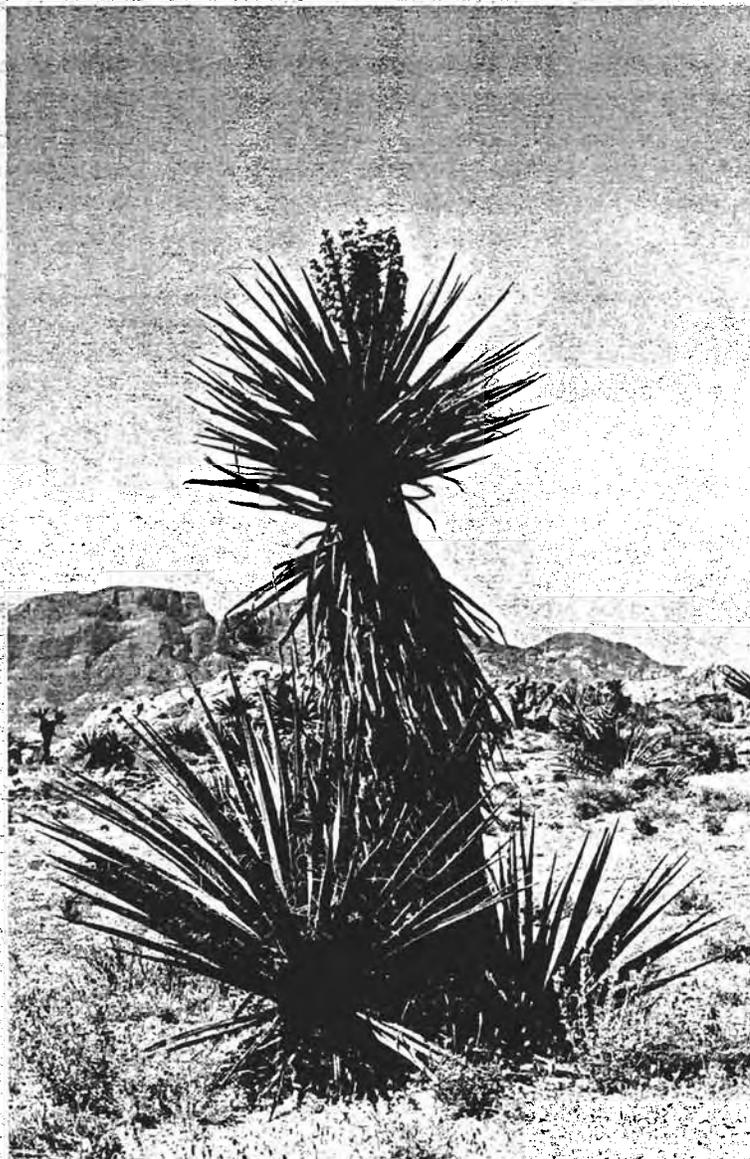
The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.



**INSPECTION**

Anyone interested in this proposal is urged to personally inspect the Desert National Wildlife Range wilderness study area. Additional information may be obtained from the Refuge Manager, Desert National Wildlife Range, 1500 North Decatur Boulevard, Las Vegas, Nevada 89108, or the Regional Director, Bureau of Sport Fisheries and Wildlife, Box 3737, Portland, Oregon 97208.

October 1971



UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE

CHANGES AS A RESULT OF THE PUBLIC HEARING

There were two changes made in the area proposed for wilderness status as the result of the public hearing and additional information gained subsequent to our initial recommendations. These changes are as follows:

1. The Mule Deer Ridge Trail was determined to be unnecessary and is to be closed and let revert to its natural condition. This, in effect, consolidated Units III and IV into a single unit.
2. The lands outside the existing range suitable for addition to the range and for wilderness status were recalculated at 76,000 acres instead of 58,000 acres. These lands are proposed as "Potential Wilderness Addition".

As a result of these changes the proposed wilderness units are as follows:

<u>UNIT</u>	<u>ACRES</u>	<u>P.W.A.</u>
Unit I Gass Peak	40,900	
Unit II Las Vegas	123,640	40,000
Unit III Sheep Range/Rug Mountain	463,900	36,000
Unit IV Hole-in-the-Rock	115,700	
Unit V Desert Pintwater	339,500	
Unit VI Spotted Range	300,700	
	<u>1,394,340</u>	<u>76,000</u>

Final Recommendations

1,460,340

Based upon our review, the surface lands of this proposal are suitable for wilderness designation. However, our knowledge of the minerals which may underlie the proposed area is conjectural. Without the benefit of a thorough mineral survey of the area, we are unable to balance its wilderness values and mineral resources. For this reason, we recommend that the Congress appropriate the funds necessary to conduct such a survey and defer action on this proposal until its completion.

## Appendix B – Plants and Wildlife on the Desert Refuge and Potential Impacts

DESERT NATIONAL WILDLIFE REFUGE  
SPECIAL STATUS SPECIES LIST

Pete's Comments  
- 5 pages

Total Count	Group Count	SCIENTIFIC NAME	COMMON NAME	STATE RANK	GLOBAL RANK	USFWS RANK	NEVADA STATUS	ENDEMIC to DNWR	Clark Co. MSHCP	NOTES	Group
AMPHIBIANS											
1	1	<i>Anaxyrus (Bufo) cognatus</i>	Great Plains Toad	S2	G5			No			Amphibians
2	2	<i>Anaxyrus (Bufo) nelsoni</i>	Amargosa toad	S2	G2		PA	No			Amphibians
3	3	<i>Rana (Lithobates) onca</i>	relict leopard frog	S1	G1, G2		PA	No	Yes		Amphibians
4	4	<i>Rana (Lithobates) pipiens</i>	northern leopard frog	S2S3	G5		PA	No			Amphibians
REPTILES											
5	1	<i>Arizona elegans</i>	glossy Snake	S4	G5			No	Yes		Reptiles
6	2	<i>Chionactis occipitalis</i>	western Shovelnose Snake	S4	G5			No			Reptiles
7	3	<i>Coleonyx variegatus</i>	western Banded Gecko	S4	G5			No	Yes	• WBGE is thinly distributed across the landscape & extremely susceptible to changes in land use. Many found in southern mine claim markers - dead.	Reptiles
8	4	<i>Crotalus cerastes</i>	sidewinder	S4	G5			No	Yes		Reptiles
9	5	<i>Crotaphytus bicinctores</i>	Great Basin Collared Lizard	S4	G5			No	Yes		Reptiles
10	6	<i>Diadophis punctatus</i>	ring-necked Snake	S3	G5			No			Reptiles
11	7	<i>Dipsosaurus dorsalis</i>	desert Iguana	S3	G5			No	Yes		Reptiles
12	8	<i>Gambelia wislizenii</i>	longnose Leopard Lizard	S4	G5			No	Yes		Reptiles
13	9	<i>Gopherus agassizii</i>	Mojave desert tortoise	S2, S3	G3	T	TR	No	Yes		Reptiles
14	10	<i>Heloderma suspectum cinctum</i>	banded Gila monster	S2	G4, T4		PR	No			Reptiles
15	11	<i>Lampropeltis pyromelana</i>	Sonoran Mt. Kingsnake	S2	G4, G5		PR	No			Reptiles
16	12	<i>Phrynosoma platyrhinos</i>	desert Horned Lizard	S4	G5			No	+		Found near, but no records from DNWR
17	13	<i>Phyllorhynchus decurtatus</i>	spotted Leafnose	S4	G5			No	Yes	Reptiles	
18	14	<i>Plestiodon gilberti</i>	Gilberts Skink	S2	G5			No		Reptiles	
19	15	<i>Plestiodon gilberti rubricaudatus</i>	western red-tailed skink	S2, S3	G5, T4, Q			No		Reptiles	
20	16	<i>Rena humilis</i>	western threadsnake	S4	G5			No		Reptiles	
21	17	<i>Sauromalus ater (obesus)</i>	chuckwalla	S3	G5			No	Yes	Reptiles	
22	18	<i>Tantilla hobartsmithi</i>	Smith's Blackhead	S4	G5			No	+	Found near, but no records from DNWR	Reptiles
23	19	<i>Uma inornata ssp.</i>	fringe-toed lizard	N/A		E		No		Observed at Big Dunes in early September 2016 by NDOW Biologists. Species identity is still speculative but could constitute a range extension for <i>Uma inornata</i> or a new <i>Uma</i> species. <i>Uma inornata</i> is listed as threatened under ESA.	Reptiles
24	20	<i>Xantusia vigilis</i>	desert Night Lizard	S4	G5T5			No			Reptiles
BIRDS											
25	1	<i>Accipiter gentilis</i>	Northern Goshawk	S2	G5		PR	No			Birds
26	2	<i>Amphispiza belli</i>	Sage Sparrow	S4B, S4N	G5			No			Birds
27	3	<i>Aquila chrysaetos</i>	Golden Eagle	S4	G5			No			Birds
28	4	<i>Athene cunicularia hypugea</i>	Western Burrowing Owl	S3B	G4, T4			No			Birds
29	5	<i>Buteo regalis</i>	Ferruginous Hawk	S2	G4			No			Birds
30	6	<i>Buteo swainsoni</i>	Swainson's Hawk	S2B	G5			No			Birds
31	7	<i>Centrocercus urophasianus</i>	Sage Grouse	S3	G3, G4		PR	No			Birds
32	8	<i>Charadrius nivosus nivosus</i>	Western Snowy Plover	S3B	G3, T3			No			Birds
33	9	<i>Chordeiles minor</i>	Common Nighthawk	S5B	G5			No			Birds
34	10	<i>Coccyzus americanus occidentalis</i>	Western Yellow-billed Cuckoo	S1B	G5, T3, Q	T	S	No	Yes	Added to the list due to proximity to Pahrnagat NWR.	Birds
35	11	<i>Empidonax traillii eximius</i>	Southwestern Willow Flycatcher	S1B	G5, T1, T2	E	EB	No	Yes	Added to the list due possible Corn Creek habitat and proximity to Pahrnagat NWR.	Birds
36	12	<i>Falco mexicanus</i>	Prairie Falcon	S4	G5			No			Birds
37	13	<i>Falco peregrinus</i>	Peregrine Falcon	S2	G4	Delisted	EB	No	Yes		Birds
38	14	<i>Gymnorhinus cyanocephalus</i>	Pinyon Jay	S3, S4	G5			No			Birds
39	15	<i>Haliaeetus leucocephalus</i>	Bald Eagle (contiguous US Population)	G5	S1B, S3N	Delisted	EB	No		Added to the list due to proximity to Pahrnagat NWR population of Bald Eagles and general Bald Eagle habitat	Birds

• There is little doubt that these species live to a greater or lesser extent within the bounds of DNWR, specifically in valley and bajada habitats most susceptible to bombing and infrastructure proposals.

40	16	<i>Lanius ludovicianus</i>	X	Loggerhead Shrike	G4	S4		SB	No			Birds
41	17	<i>Numenius americanus</i>	X	Long Billed Curlew	S2, S3B	G5			No			Birds
42	18	<i>Oreoscoptes montanus</i>	X	Sage Thrasher	G5	S5B		SB	No			Birds
43	19	<i>Otus flammeolus</i>	X	Flammulated Owl	G4	S4B			No			Birds
44	20	<i>Phainopepla nitens</i>	X	Phainopepla	G5	S2B		PB	No	Yes		Birds
45	21	<i>Rallus longirostris yumanensis</i>	X	Yuma Clapper Rail	S1	G5, T3	E	LE	No		Added to the list due to proximity to Pahrnagat NWR.	Birds
46	22	<i>Spizella atrogularis</i>	X	Black-Chinned Sparrow	S3B	G5			No			Birds
47	23	<i>Spizella breweri</i>	X	Brewers Sparrow	G5	S4B		PB	No			Birds
48	24	<i>Toxostoma bendirei</i>	X	Bendire's Thrasher	S1	G4, G5			No			Birds
49	25	<i>Toxostoma crissale</i>	X	Crissal Thrasher	S3	G5			No			Birds
50	26	<i>Toxostoma lecontei</i>	X	Le Conte's Thrasher	S2	G4			No			Birds
51	27	<i>Vireo vicinior</i>	X	Gray Vireo	G4	S3B			No			Birds

PLANTS

52	1	<i>Abronia nana ssp. covillei</i>		Coville abronia	S1?	G4T3			No			Plants
53	2	<i>Agave utahensis var. eborispina</i>		ivory-spined agave	S3	G4T3Q			No			Plants
54	3	<i>Anulocaulis leiosolenus var. Leiosolenus</i>		southwestern ringstem	S2	G4, T3			No	Yes		Plants
55	4	<i>Arctomecon californica</i>		Las Vegas bearpoppy	S3	G3			No	Yes		Plants
56	5	<i>Arctomecon merriamii</i>		white bearpoppy	S3	G3			No	Yes		Plants
57	6	<i>Asclepias eastwoodiana</i>		Eastwood milkweed	S2, S3	G2Q			No			Plants
58	7	<i>Astragalus mohavensis var. mohavensis</i>		Mojave milkvetch	S2, S3	GG3, G4, T2, T3			No			Plants
59	8	<i>Astragalus ackermanii</i>		Ackerman milkvetch	S2	G2			Yes			Plants
60	9	<i>Astragalus amphioxys var. musimomum</i>		Sheep Range milkvetch	S2	G5T2			No			Plants
61	10	<i>Astragalus beatleyae</i>		Beatley milkvetch	S2	G2			No			Plants
62	11	<i>Astragalus calycosus var. monophyllidius</i>		one-leaflet Torrey milkvetch	S2	G5, T2, Q			No			Plants
63	12	<i>Astragalus fumereus</i>		black woollypod	S2	G2			No			Plants
64	13	<i>Astragalus geyeri var. triquetrus</i>		threecorner milkvetch	S2, S3	G4, T2, T3			No			Plants
65	14	<i>Astragalus gilmanii</i>		Gilman milkvetch	S1	G2			No			Plants
66	15	<i>Astragalus inyoensis</i>		Inyo milkvetch	S1	G3			No			Plants
67	16	<i>Astragalus mohavensis var. hemigyris</i>		halfring milkvetch	S2, S3	G3, G4, T2, T3			No			Plants
68	17	<i>Astragalus nyensis</i>		Nye milkvetch	S3	G3			No			Plants
69	18	<i>Astragalus oophorus var. clokeyanus</i>		Clokey eggvetch	S2	G4, T2			No	Yes		Plants
70	19	<i>Astragalus pseudiodanthus</i>		Tonopah milkvetch	S2	G2, Q			No			Plants
71	20	<i>Astragalus remotus</i>		Spring Mountain milkvetch	S2	G2			No	Yes		Plants
72	21	<i>Boechea dispar</i>		pinyon rockcress	S1, S2	G3			No			Plants
73	22	<i>Boechea shockleyi</i>		Shockley rockcress	S3	G3			No			Plants
74	23	<i>Camissonia megalantha</i>		Cane Spring suncup	S3	G3, Q			No			Plants
75	24	<i>Castilleja martinii var. clokeyi</i>		Clokey paintbrush	S3	G5, T3, Q			No	Yes		Plants
76	25	<i>Chrysothamnus eremobius</i>		remote rabbitbrush	S1	G1			Yes			Plants
77	26	<i>Cirsium arizonicum var. temusectum</i>		Keystone Canyon Thistle	S1, S2	G3			No			Plant
78	27	<i>Coryphantha vivipara var. rosea</i>		Clokey pincushion	S3	G5, T3		CY	No			Plants
79	28	<i>Cryptantha insolita</i>		Las Vegas Catseye	SH	GHQ		CE	No			plant
80	29	<i>Cryptantha tumulosa</i>		New York Mountains catseye	S2	G4?		WL	No			Plants
81	30	<i>Cymopterus ripleyi var. ripleyi</i>		Ripley biscuitroot	S2?	G3, G4, T2?, Q			No			Plants
82	31	<i>Cymopterus ripleyi var. saniculoides</i>		sanicle biscuitroot	S3	G3, G4, T3, Q			No			Plants
83	32	<i>Dudleya pulverulenta ssp. arizonica</i>		Chalk liveforever	S3	G4, G5, T4, T5			No			Plants
84	33	<i>Echinocereus engelmannii var. armatus</i>		armored hedgehog cactus	S1?	G5, T2?, Q		CY	No			Plants
85	34	<i>Ephedra funerea</i>		Death valley Mormon tea	S1	G3?			No			Plants
86	35	<i>Eremogone congesta var. charlestonensis</i>		Mount Charleston sandwort	S2?	G5, T2?			No			Plants
87	36	<i>Eremogone stenomeres</i>		Meadow Valley sandwort	S2	G2			No			Plants
88	37	<i>Ericameria cervina</i>		Antelope Canyon goldenbush	S1	G3?			No			Plants
89	38	<i>Ericameria compacta</i>		Charleston goldenbush	S2?	G2?			No			Plants
90	39	<i>Ericameria watsonii</i>		Watson goldenbush	S3	G3, G4			No			Plants
91	40	<i>Erigeron ovinus</i>		sheep fleabane	S2	G2			No			Plants

138	5	<i>Euphilotes bernardino inyomontana</i>		Bret's blue (Spring Mtns phenotype)	S2	G3, G4, T3, T4			No		Invertebrates
139	6	<i>Hesperia colorado mojavenis</i>		Spring Mountains comma skipper	S3	G5, T3			No		Invertebrates
140	7	<i>Limenitis weidemeyerii nevadae</i>		Nevada admiral	S2, S3	G5, T2, T3			No		Invertebrates
141	8	<i>Megandrena mentzeliae</i>		red-tailed blazing star bee	S2	G2			No		Invertebrates
142	9	<i>Miloderes sp.</i>		Big Dune miloderes weevil	S1	G1			No		Invertebrates
143	10	<i>Neivamyrmex nyensis</i>		endemic ant	S1	G1?			No	This is not the Charleston ant ( <i>Lasius nevadensis</i> ) which is also classified as a S1 and G1 species by the Nevada Natural Heritage Program	Invertebrates
144	11	<i>Perdita cephalotes</i>		big-headed perdita	SNR	G1, G3			No		Invertebrates
145	12	<i>Perdita meconis</i>		Mojave poppy bee	S2	G2			No		Invertebrates
146	13	<i>Pseudocotalpa giulianii</i>		Giuliani's dune scarab	S1	G1			No		Invertebrates
147	14	<i>Pyrgulopsis fausta</i>		Corn Creek pyrg	S1	G1			Yes		Invertebrates
148	15	<i>Pyrgulopsis micrococcus</i>		Oasis Valley pyrg	S2	G3			No		Invertebrates
149	16	<i>Pyrgulopsis turbatix</i>		southeast Nevada pyrg	S2	G2			No	Yes	Invertebrates
<b>BRYOPHYTES</b>											
150	1	<i>Entosthodon planoconvexus</i>		planoconvex cordmoss	S1	G1			No		Bryophytes
<b>FISH</b>											
151	1	<i>Empetrichthys latos</i>		Pahrump Poolfish	S1	G1	E	EF	No		Fish
<b>MAMMALS</b>											
152	1	<i>Antrozous pallidus</i>	●	pallid bat	S3	G5		PM	No		Mammals
153	2	<i>Chaetodipus penicillatus</i>	●	desert pocket mouse	S1, S2	G5			No		Mammals
154	3	<i>Corynorhinus townsendii</i>	●	Townsend's big-eared bat	S2	G3, G4		SM	No		Mammals
155	4	<i>Dipodomys deserti</i>	●	desert kangaroo rat	S2, S3	G5			No		Mammals
156	5	<i>Eptesicus fuscus</i>	●	big brown bat	S4	G5			No		Mammals
157	6	<i>Euderma maculatum</i>	●	spotted bat	S2	G4			No		Mammals
158	7	<i>Lasiorycteris noctivagans</i>	●	silver-haired bat	S3B	G5			No	Yes	Mammals
159	8	<i>Lasiurus cinereus</i>	●	hoary bat	S3N	G5			No		Mammals
160	9	<i>Microdipodops megacephalus</i>	●	dark kangaroo mouse	S2	G4, T2		PM	No		Mammals
161	10	<i>Microdipodops pallidus</i>	●	pale kangaroo mouse	S2	G3		PM	No		Mammals
162	11	<i>Microtus montanus</i>	●	montane vole	S3	G5			No		Mammals
163	12	<i>Microtus montanus fucosus</i>	●	Pahrnagat Valley montane vole	S1, S2	G5, T2		SM	No		Mammals
164	13	<i>Myotis californicus</i>	●	California myotis	S4	G5			No		Mammals
165	14	<i>Myotis ciliolabrum</i>	●	western small-footed myotis	S3	G5			No		Mammals
166	15	<i>Myotis evotis</i>	●	long-eared myotis	S4	G5			No	Yes	Mammals
167	16	<i>Myotis thysanodes</i>	●	fringed myotis	S2	G4		PM	No		Mammals
168	17	<i>Myotis volans</i>	●	long-legged myotis	S4	G5			No	Yes	Mammals
169	18	<i>Myotis yumanensis</i>	●	Yuma Myotis	S3, S4	G5			No		Mammals
170	19	<i>Notiosorex crawfordi</i>	●	Crawford's desert shrew	S3	G5			No		Mammals
171	20	<i>Parastrellus hesperus</i>	●	western pipistrelle	S4	G5			No		Mammals
172	21	<i>Sorex merriami</i>	●	Merriam's shrew	S3	G5			No		Mammals
173	22	<i>Sorex tenellus</i>	●	Inyo shrew	S2	G4			No		Mammals
174	23	<i>Tadarida brasiliensis</i>	●	Mexican free-tailed bat	S3, S4B	G5		PM	No		Mammals

**GLOBAL AND STATE RANKING CODES:**

S – State rank indicator, based on distribution within Nevada at the lowest taxonomic level

G – Global trinomial rank indicator, based on worldwide distribution at the species level

Q – Taxonomic status uncertain

T – Global trinomial rank indicator, based on worldwide distribution at the intraspecific level

1 – Critically imperiled and especially vulnerable to extinction or extirpation due to extreme rarity

2 – Imperiled due to rarity or other demonstrable factors

*\* - Carnivores completely missing from analysis.*

- There is little doubt that these species live to a greater or lesser extent within the bounds of DNWR, specifically in valley and bajada habitats most susceptible to impacts from bombing and infrastructure proposals.
- + A lack of data does not equate to the lack of a rare wildlife population. "No records from DNWR" is an extremely irresponsible statement. When data is lacking, the benefit of the doubt should go to the rare species. Err on the side of wildlife if we must err.
- DNWR provides migratory bird habitat for these species and many others. Valleys and bajadas provide critical migration routes that would be impacted by bombing and infrastructure proposals. Other birds that would be affected by these changes include Yellow-rumped Warbler, Black-throated Gray Warbler, American Goldfinch, Mountain Bluebird, Mourning Dove and Northern Harrier.
- DNWR provides nesting habitat in its valley and bajada habitats for these birds and many others. For example, Swainson's Hawks nest in Joshua Tree forests. Phainopepla nest in mesquite/catalaw. Prairie Falcons nest in rock cliffs near valley bottoms. All would be negatively impacted by proposed changes in land use. Other nesting birds that would be affected include Black-throated Sparrow, Hooded Oriole, Scott's Oriole, House Finch, Spotted Towhee, Northern Mockingbird, Say's Phoebe, Common Poorwill, American Kestrel, Cactus Wren, Canyon Wren, Rock Wren
- The Western Snowy Plover is a special case in this category. They nest opportunistically on alkali playas in unusually wet years. Other birds that use playas opportunistically include American Avocet, Black-necked Stilt, Western Sandpiper, Least Sandpiper and Long-billed Curlew. At ~~the~~ least two species of shrimp (Shield Shrimp and Ferry Shrimp) lay eggs in the playa mud that can lay dormant for over 20 years and revive during wet years providing food for these birds. In this way these shrimp mimic the life cycles of many ephemeral flowers. Bombing valley bottoms is in no way consistent with wildlife conservation.
- Bats - Lower elevation rock strata, tree habitats and springs provide maternity & hibernation roosting habitat as well as drinking water for these bat species on the DNWR. Bombing could destroy these critical (over)

- (Bats continued) habitats and could impact bats' ability to hunt insects if their echolocation is damaged. Other bats that could be affected include the Big Free-tailed Bat, Pocketed Free-tailed Bat, and Allen's Big-eared Bat.
- Many terrestrial small mammals use valleys and bajadas on the DNWR for their entire life cycle. Bombing and infrastructure proposals in the Lower 48's largest National Wildlife Refuge is anathema to the idea of wildlife and wildlife habitat conservation.

★ Carnivores - Many carnivores make the DNWR their home. I saw no indication they were even considered in this analysis. Carnivores help maintain healthy, thriving ecosystems. Their absence in a wildlife community can cause trophic cascade effects that can severely disrupt and/or destroy ecosystems. Some of the carnivores that would be affected negatively by a change from a National Wildlife Refuge to a bombing range include the Cougar, Bobcat, Gray Fox, Kit Fox, ~~ring~~ Ringtail, Spotted Skunk, American Badger and Long-tailed Weasel.