

*Appendix I.*  
*Wilderness Review*

This appendix contains the wilderness inventory conducted for the Ash Meadows, Moapa Valley, and Pahrangat National Wildlife Refuges (NWRs) as part of the Comprehensive Conservation Plan (CCP) development process. The wilderness inventory concluded that none of the lands within Ash Meadows and Moapa Valley NWRs meet the criteria for wilderness designation. However, three small units of Pahrangat NWR along the western side of the Refuge and adjacent to the proposed Desert Wilderness on Desert NWR do meet the criteria for wilderness designation.

This appendix also contains a copy of the proposal 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 Service continues to manage this area to protect its wilderness values. As part of the CCP implementation, the Service plans to prepare a revised proposal which includes technical corrections to the existing proposed wilderness such as: correcting overlap with US Air Force's bombing range; allowing repair/relocation of hazardous sections of roads; and allowing the use of helicopters to repair/maintain water developments and access remote areas for wildlife surveys. Details of these revisions will be provided in a revised proposal.

# **APPENDIX I-1**

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## **Wilderness Inventory: Ash Meadows, Moapa Valley, and Pahrnagat NWRs**

**Desert National Wildlife Refuge Complex  
Clark County, Nevada**

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.

There are three phases to the wilderness review: 1) inventory, 2) study; and 3) recommendation. Lands and waters that meet the minimum criteria for wilderness are identified in the inventory phase. These areas are called wilderness study areas (WSAs). WSAs are evaluated through the CCP process to determine their suitability for wilderness designation. In the study phase, a range of management alternatives are evaluated to determine if a WSA is suitable for wilderness designation or management under an alternate set of goals and objectives that do not involve wilderness designation. The recommendation phase consists of forwarding or reporting recommendations for wilderness designation from the Director through the Secretary and the President to Congress in a wilderness study report.

If the inventory does not identify any areas that meet the WSA criteria, we document our findings in the administrative record for the CCP, fulfilling the planning requirement for a wilderness review. We inventoried Service lands and waters within Ash Meadows, Moapa Valley, and Pahrnagat NWRs and found no areas that meet the eligibility criteria for a WSA as defined by the Wilderness Act. This appendix summarizes the wilderness inventory for these three refuges.

## ***Inventory Criteria***

The wilderness inventory is a broad look at the planning area to identify WSAs. These are roadless areas that meet the minimum criteria for wilderness identified in Section 2(c) of the Wilderness Act.

*“A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions, and which: (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological or other features of scientific, educational, scenic, or historical value.”*

A WSA must be a roadless area or island, meet the size criteria, appear natural, and provide outstanding opportunities for solitude or primitive recreation. The process for identification of roadless areas and application of the wilderness criteria are described in the following sections.

### *Identification of Roadless Areas and Roadless Islands*

Identification of roadless areas and roadless islands required gathering and evaluating land status maps, land use and road inventory data, and aerial and satellite imagery for the refuges. “Roadless” refers to the absence of improved roads suitable and maintained for public travel by means of motorized vehicles primarily intended for highway use. Only lands currently owned by the Service in fee title or BLM lands managed under a cooperative agreement were evaluated.

## Evaluation of the Size Criteria

Roadless areas or roadless islands meet the size criteria if any one of the following standards applies:

- An area with over 5,000 contiguous acres. State and private lands are not included in making this acreage determination.
- A roadless island of any size. A roadless island is defined as an area surrounded by permanent waters or that is markedly distinguished from the surrounding lands by topographical or ecological features.
- An area of less than 5,000 contiguous Federal acres that is of sufficient size as to make practicable its preservation and use in an unimpaired condition, and of a size suitable for wilderness management.
- An area of less than 5,000 contiguous Federal acres that is contiguous with a designated wilderness, recommended wilderness, or area under wilderness review by another Federal wilderness managing agency such as the Forest Service, National Park Service, or Bureau of Land Management.

### *Evaluation of the Naturalness Criteria*

In addition to being roadless, a WSA must meet the naturalness criteria. Section 2(c) defines wilderness as an area that "... generally appears to have been affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable." The area must appear natural to the average visitor rather than "pristine." The presence of historic landscape conditions is not required. An area may include some human impacts provided they are substantially unnoticeable in the unit as a whole. Significant human-caused hazards, such as the presence of unexploded ordnance from military activity, and the physical impacts of refuge management facilities and activities are also considered in evaluation of the naturalness criteria. An area may not be considered unnatural in appearance solely on the basis of the "sights and sounds" of human impacts and activities outside the boundary of the unit.

### *Evaluation of Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation*

In addition to meeting the size and naturalness criteria, a WSA must provide outstanding opportunities for solitude or primitive recreation. The area does not have to possess outstanding opportunities for both solitude and primitive and unconfined recreation, and does not need to have outstanding opportunities on every acre. Further, an area does not have to be open to public use and access to qualify under this criteria; Congress has designated a number of wilderness areas in the Refuge System that are closed to public access to protect resource values.

Opportunities for solitude refer to the ability of a visitor to be alone and secluded from other visitors in the area. Primitive and unconfined recreation means non-motorized, dispersed outdoor recreation activities that are compatible and do not require developed facilities or mechanical transport. These primitive recreation activities may provide opportunities to experience challenge and risk; self reliance; and adventure.

These two "opportunity elements" are not well defined by the Wilderness Act but, in most cases, can be expected to occur together. However, an outstanding opportunity for solitude may be present in an area offering only limited primitive recreation potential. Conversely, an area may be so attractive for recreation use that experiencing solitude is not an option.

### *Evaluation of Supplemental Values*

Supplemental values are defined by the Wilderness Act as “...ecological, geological, or other features of scientific, educational, scenic, or historic value.” These values are not required for wilderness but their presence should be documented.

## ***Inventory Findings:***

### Ash Meadows NWR

As documented below, none of the lands within Ash Meadows NWR meet the criteria necessary for a WSA. Figure 1 shows the units, and Table 1 summarizes the inventory findings for each unit.

#### *Roadless Areas and Roadless Islands/ Size Criteria*

Ash Meadows NWR is a total of approximately 23,488 acres. There are approximately 32 miles of public roads on the Refuge, and these roads divide the refuge into ten units. These units can be classified by their size. Only one unit is greater than 5,000 acres (Area A), and there are numerous unimproved roads within the unit. Three other units are relatively large, consisting of 4,561, 4,058, and 4,461 acres (Areas F, G, & A).

#### *Naturalness Criteria*

The land within Ash Meadows NWR was intensively farmed in the 1960s and 1970s, prior to its establishment as a Refuge. As a result, many of the visual qualities associated with that use are still evident. Agricultural fields, fences, utility lines, fences, levees, roads (maintained and not), ditches, and a reservoir are examples of some of the remains of this agricultural legacy. The Refuge is currently in the habitat restoration stage and will likely remain so for years to come.

Of the four sections that are close to being large enough for wilderness management;

- Area A consists of 4,461 acres, includes several levees, the Peterson Reservoir, the Longstreet cabin, approximately 24 miles of unimproved roads, and extensive agricultural fields.
- Area D consists of 5,092 acres, contains Crystal Springs Reservoir and dam, several levees, approximately 23 miles of unimproved roads and old agricultural fields.
- Area F is 4,561 acres, contains the Point of Rocks interpretive site, has approximately 28 miles of unimproved roads, and old agricultural fields.
- Area G consists of 4,058 acres, contains several structures, irrigation or well infrastructure, old agricultural fields, and approximately 17 miles of unimproved roads.

#### *Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation*

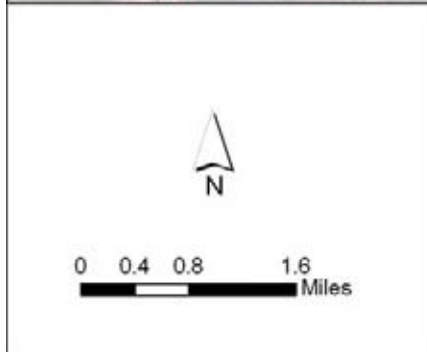
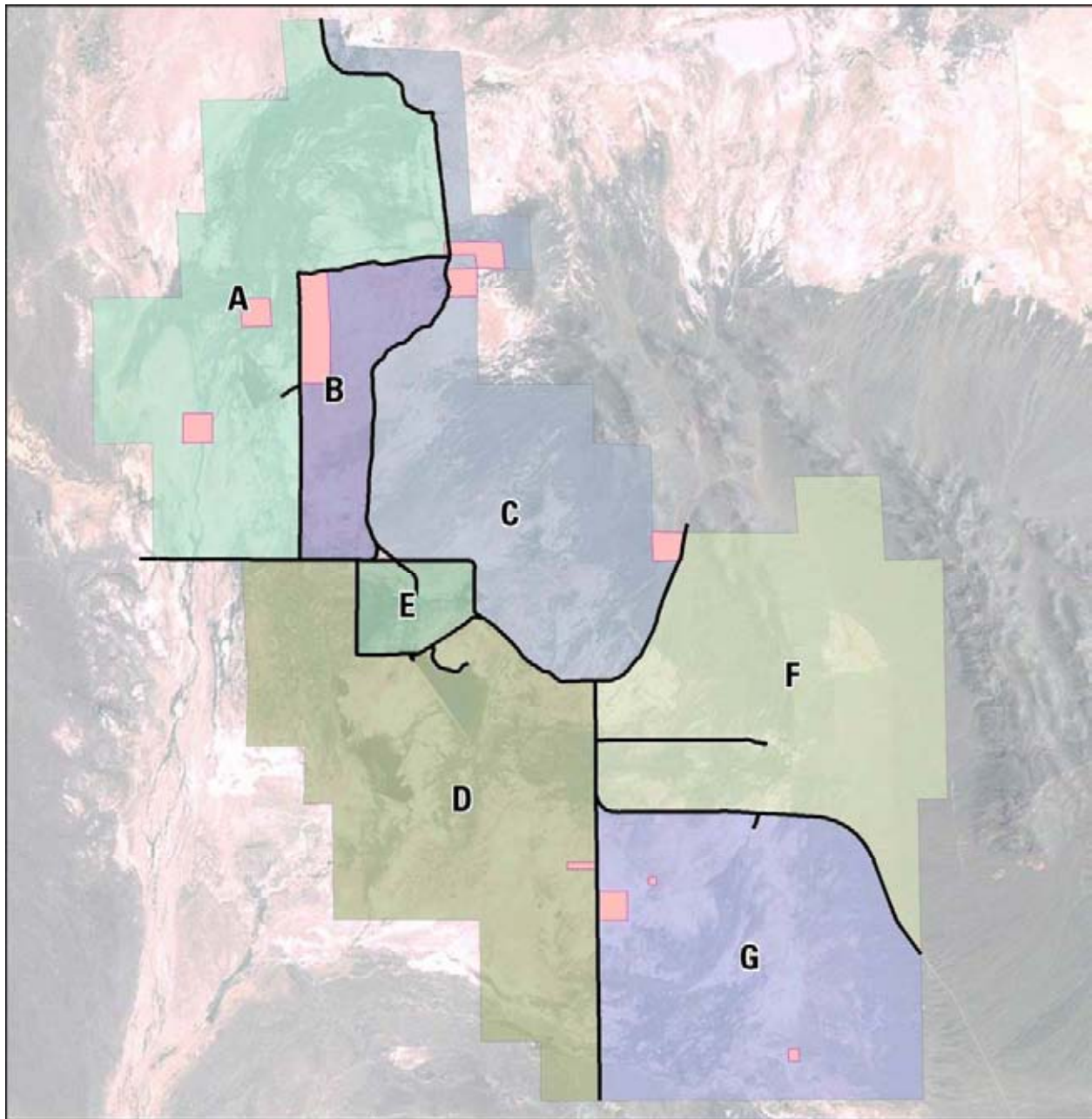
There are opportunities for solitude or primitive and unconfined recreation; however, sights and sounds from visitors, refuge personnel, or over flights from the military may interfere with solitude.

#### *Supplemental Values*

Ash Meadows NWR consists of more than 23,000 acres of spring-fed wetlands and alkaline desert uplands and is a major discharge point for a large underground aquifer system stretching 100 miles to the northeast. Water-bearing strata reach the surface in more than 30 seeps and springs, providing a rich and complex variety of habitats. Wetlands, springs, and springbrook channels are scattered throughout the Refuge. Sandy dunes, rising up to 50 feet above the landscape, appear in the central portions of the Refuge. The Refuge provides habitat for at least 25 plants and animals found nowhere else in the world and provides a unique visual opportunity.

Mesquite and ash groves flourish near wetlands and stream channels and saltbush dominates large portions of the Refuge in dry areas adjacent to wetlands. Creosote bush habitat occurs in the drier elevated areas along the east and southeastern portions of the Refuge. Cacti occur along the outer eastern edge of the Refuge with a variety at Point of Rocks.

The Refuge provides excellent views of the night sky for stargazers due to the lack of light sources in the vicinity.



A, 4545 ac	E, 475 ac
B, 1257 ac	F, 4562 ac
C, 4039 ac	G, 4105 ac
D, 5103 ac	Refuge Roads
	Inholdings

Figure 1  
**Wilderness Inventory**  
 Ash Meadows NWR



Table 1 Ash Meadows NWR Roadless Units

Refuge unit and acreage	Yes/no and Comments					Unit qualifies as a wilderness study area (meets criteria 1, 2, and 3a or 3b)
	(1) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition;	(2) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;	(3a) has outstanding opportunities for solitude;	or (3b) has outstanding opportunities for a primitive and unconfined type of recreation;	(5) contains ecological, geological or other features of scientific, educational, scenic, or historical value.	
A	No, 4,461 acres	Includes several levees, the Peterson Reservoir, the Longstreet cabin, approximately 24 miles of dirt roads, and extensive agricultural fields.	Yes	Yes	Yes, Longstreet cabin and ecological, educational, and scenic values.	No, insufficient size and management as wilderness would conflict with restoration plans.
D	Yes, 5,092 acres	Crystal Springs Res. & dam, several levees, approximately 23 miles of dirt roads and old agricultural fields.	Yes	Yes	Yes, ecological, educational, and scenic values.	No, the human imprint on the environment is substantially noticeable.
F	No, 4,561 acres	Contains Point of Rocks interpretive site, has approx. 28 miles of dirt roads, and old agricultural fields.	Yes	Yes	Yes, ecological, educational, and scenic values.,	No, insufficient size and management as wilderness would conflict with restoration plans.

Refuge unit and acreage	Yes/no and Comments					Unit qualifies as a wilderness study area (meets criteria 1, 2, and 3a or 3b)
	(1) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition;	(2) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;	(3a) has outstanding opportunities for solitude;	or (3b) has outstanding opportunities for a primitive and unconfined type of recreation;	(5) contains ecological, geological or other features of scientific, educational, scenic, or historical value.	
G	No, 4,058 acres	Contains several structures, irrigation or well infrastructure, old agricultural fields, and approximately 17 miles of dirt roads.	Yes	Yes	Yes, ecological, educational, and scenic values.	No, insufficient size and management as wilderness would conflict with restoration plans.

## Moapa Valley NWR

As documented below, none of the parcels in the Moapa Valley NWR meet the criteria necessary for a WSA.

### *Roadless Areas and Roadless Islands*

The Moapa Valley NWR is a total of approximately 116 acres. Warm Springs Road (Hwy 168) parallels the eastern border to the Refuge, and from Warm Springs Road there are Refuge roads leading to the stream viewing chamber, and to the Pederson Unit, which leads to the Pederson residence and outbuildings. The Apcar Unit is also bisected by unimproved roads used by both Refuge staff and by the Moapa Valley Water District to access the capped spring head. The Moapa Valley NWR does not meet the size criteria for a wilderness study area.

### **Naturalness Criteria**

The 116-acres Refuge contains a stream viewing chamber, with parking for visitors. The Refuge is comprised of four adjacent, but visually distinct units. The Pedersen Unit, to the west, is 30 acres in size. The Plummer Unit, to the east, is 28 acres in size. The Apcar Unit is 48 acres in size. The Pederson #2 Unit is 11 acres in size. Each unit has a separate stream system supported by the steady and uninterrupted flow of several springs that come to the surface at various places throughout the Refuge. The Pederson Unit #2 includes a residence and outbuildings. The Apcar Unit has a spring house, and the Plummer Unit contains the stream viewing chamber and parking lot.

With an active restoration program, native riparian species have begun to return, including ash trees, honey mesquite, and screw bean mesquite. Plant species on the drier, upland areas of the Refuge are fourwing saltbush and creosote bush. Removal of non-native species, such as Canadian thistle and salt cedar is an on-going task. A visitor on the Refuge may see either see houses or roads and could hear cars driving on these roads.

### *Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation*

There are no opportunities for solitude or primitive and unconfined recreation due to the size of the Refuge; sights and sounds from Warm Springs Road may interfere with solitude, depending on the amount of traffic on the road.

### *Supplemental Values*

The desert landscape combined with the springs can provide the visitor with an interest in geology and ecology and glimpse into an area where the Moapa Dace is uniquely adapted to life in this harsh landscape. The Refuge was created because of the Moapa Dace, as it is found no where except this valley.

## Pahranagat NWR

As documented below, three units within Pahranagat NWR meet the criteria necessary for a WSA. Figure 2 shows the units, and Table 2 summarizes the inventory findings for each unit.

#### *Roadless Areas and Roadless Islands/Size Criteria*

Pahranagat NWR consists of 5,382 acres. The Refuge is long and narrow in shape, and varies from 0.5 to 2 miles in width (1.5 mile average), with US Highway 93 paralleling the eastern boundary along the Refuge's approximate 10-mile length. The north half of the Refuge, including Upper Pahranagat Lake is well visited because of a campground located on the east side of the lake and a county road (Old Corn Creek Road) which bisects the Refuge about 1 mile south of Upper Pahranagat Lake. This road continues on to Bureau of Land Management lands, and is used as a boundary for the Proposed Desert Wilderness. There are five levees positioned east-west that are used to cross the lake and wetlands for administrative purposes. By using roads to divide the Refuge into units, and eliminating units less than 100 acres results in 14 units in which to evaluate the refuge for wilderness values.

The middle section of the Refuge includes (immediately west of current US Highway 93) a section of old US Highway 93, currently used by vehicles accessing the Refuge. The lower section of the Refuge contains larger units, none larger than 730 acres.

The Refuge is adjacent to the Proposed Desert Wilderness, on Desert NWR. In 1974, approximately 1.3 million acres of land within the Desert National Wildlife Refuge were proposed for wilderness designation under the Wilderness Act of 1964. In the President's message to Congress accompanying the proposal, he recommended that Congress defer action on the proposal until a mineral survey is completed. The Final EIS for the proposal was released on August of 1975. A mineral assessment of the Refuge was completed in 1993 as part of the mineral withdrawal which was later completed in 1999. However, Congress has yet to act on the wilderness proposal, and the area continues to be managed to protect its wilderness values. The proposed wilderness is directly adjacent to the eastern boundary of Refuge units, 1, 4, 11, and 14. Unit 6 is separated by an administrative road from this proposed wilderness.

#### *Naturalness Criteria*

The Refuge encompasses a ten mile stretch of Pahranagat Valley and associated desert uplands at an elevation of slightly less than 4,000 feet above sea level. The White River, an ancient perennial stream which was a tributary of the Colorado River, flowed through the Pahranagat Valley from the north. It established a well-defined, but relatively narrow flood plain. The river bed is dry for many miles upstream and downstream from Pahranagat Valley, but there is water in the valley that comes from large, thermal springs along the flood plain. This spring water is stored in the Refuge's Upper Lake and North Marsh and is released to create conditions which will enhance the growth of wildlife food plants and to supplement lakes, marshes, and grasslands south of the Refuge headquarters. Water from the springs rarely flows past Maynard Lake at the southern end of the Refuge. The inlet to the upper lake is concrete lined for approximately 20 feet on either side of a stop log control structure. There are five levees which are used for water management, and administrative roads on the levees. There is a concrete lined ditch that is used to transfer water. There is a campground with fourteen camp sites, and numerous dirt roads, with three of these roads continuing through the Refuge to the west. Roads created in this desert environment tend to remain as scars on the desert floor for a very long time. Refuge buildings consist of an office/shop, equipment shelter, manager residence, bunkhouse, and fire cache.

#### *Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation*

The eastern portion of the Refuge does have opportunities for solitude. The section south of Lower Pahranagat Lake contains the only remaining naturally occurring lake and the only part of the Refuge not accessible by automobile. The section includes an abandoned section of the historic Corn Creek Road that is washed out and can no longer be traveled by auto. Sights and sounds from Highway 93 may interfere with solitude, depending on the amount of traffic on the road.

### *Supplemental Values*

The lower section of the Refuge includes historic dry lake beds, upland desert habitat, a historic (late 1800) home site, naturally occurring springs, petroglyphs, native American artifacts and geological formations including volcanic tuff and other upland areas. The desert landscape, wildlife, and wetland, open water, and riparian habitats on Pahrnagat NWR provide significant scenic value to visitors of the Refuge. The Refuge's managed water also provides regionally significant ecological value for migratory birds and other wildlife.

### *Map and Table*

The following map (Fig. 2) and accompanying table (Table 2) show Pahrnagat National Wildlife Refuge segmented by roads, and grouped into units greater than 100 acres. Refuge units lesser than 100 acres were deemed too small to be suitable for wilderness management. Adjacent to the Refuge to the west is the Desert Proposed Wilderness.

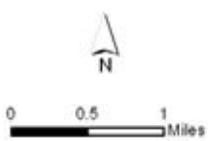
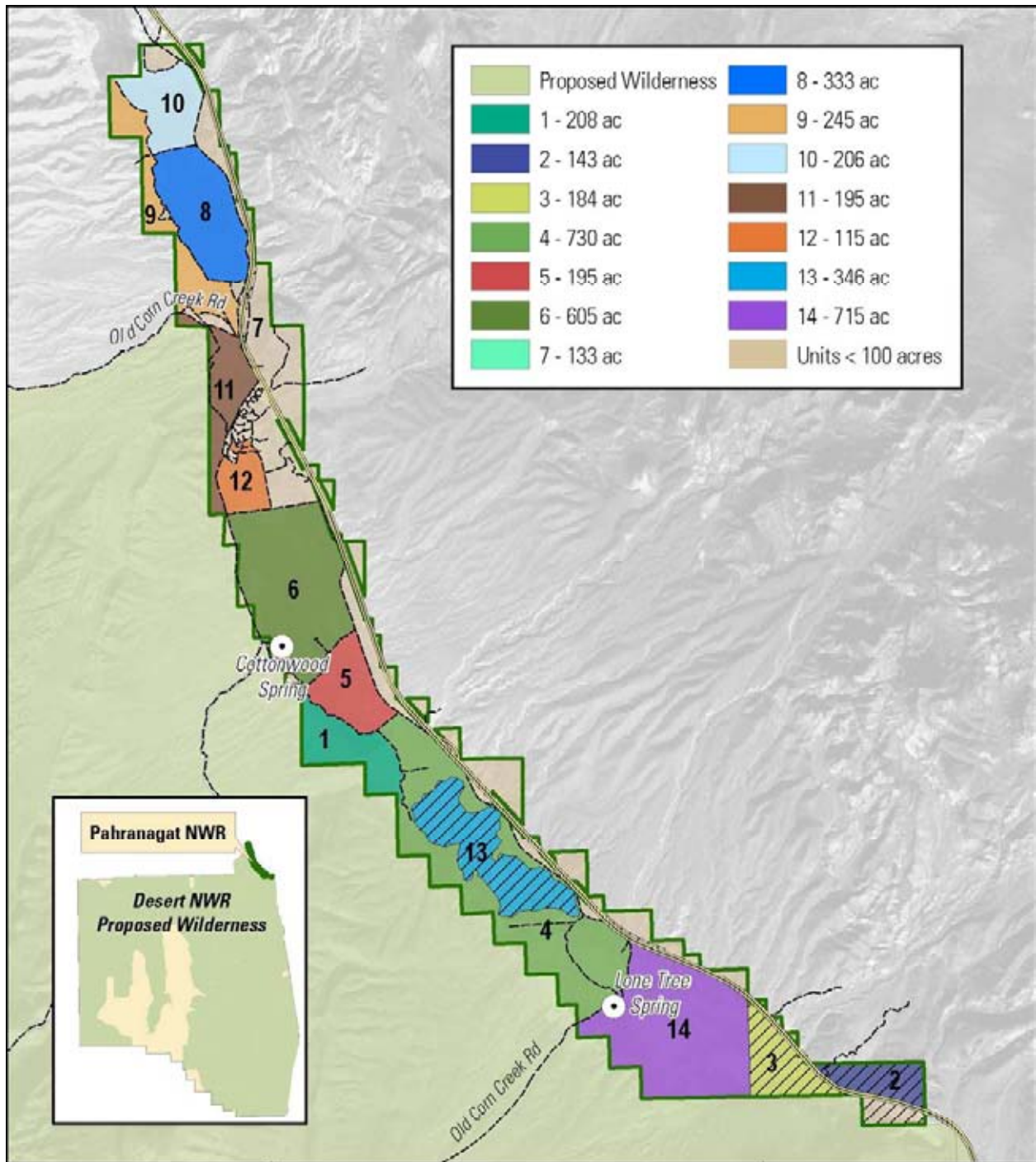


Figure 2  
**Wilderness Inventory**  
 Pahranagat NWR

Table 2 Pahrana gat NWR Roadless Units

Refuge unit and acreage	■ Yes/no and Comments					Unit qualifies as a wilderness study area (meets criteria 1, 2, and 3a or 3b)
	(1) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition;	(2) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;	(3a) has outstanding opportunities for solitude;	or (3b) has outstanding opportunities for a primitive and unconfined type of recreation;	(5) contains ecological, geological or other features of scientific, educational, scenic, or historical value.	
1	Yes, 208 acres and Contiguous with Desert Proposed Wilderness.	Yes, unpaved road on east boundary.	Yes, on west boundary.	Yes, if combined with Desert Proposed Wilderness.	Scenic	Yes
2	No, 143 acres	Inholding	No, bordered by highway	No	Yes, contains historic road bed, petroglyphs, geological features, historical rock corrals, rock rings, ecologically important to the area because of shear fault zone, old lake bed, ancient river bed	No, inholding.

Refuge unit and acreage	■ Yes/no and Comments					Unit qualifies as a wilderness study area (meets criteria 1, 2, and 3a or 3b)
	(1) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition;	(2) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;	(3a) has outstanding opportunities for solitude;	or (3b) has outstanding opportunities for a primitive and unconfined type of recreation;	(5) contains ecological, geological or other features of scientific, educational, scenic, or historical value.	
3	No, 184 acres	Inholding	No, bordered by highway	No	Yes, Contains historic road bed, petroglyphs, geological features, historical rock corrals, rock rings, ecologically important to the area because of shear fault zone, old lake bed, ancient river bed	No, inholding.
4	Yes, 730 acres and Contiguous with Desert Proposed Wilderness.	No, highway and dirt roads evident, water control structure, water ditch, power lines parallel hwy.	Yes, on the w. boundary.	Yes, if combined with Desert Proposed Wilderness.	Yes, ecological, scenic, historical river channel, historical lake bed, historical home site, spring.	No



Refuge unit and acreage	■ Yes/no and Comments					Unit qualifies as a wilderness study area (meets criteria 1, 2, and 3a or 3b)
	(1) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition;	(2) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;	(3a) has outstanding opportunities for solitude;	or (3b) has outstanding opportunities for a primitive and unconfined type of recreation;	(5) contains ecological, geological or other features of scientific, educational, scenic, or historical value.	
5	No, 195 acres	No, levees on n. & s. boundary, roads on e. & w. boundary, channelized stream.	Yes, on the w. boundary.	No, too small an area.	Yes, ecological, scenic.	No, insufficient size.
6	No, 605 acres	No, roads on e. and w. boundary, levee on the s. boundary, check dams in stream.	Yes	Yes	Yes, ecological, and Cottonwood Spring.	No, insufficient size.
7	No, 133 acres	Highway, petroglyphs, old agricultural fields, abandoned portion of highway.	No, too close to hwy.	No, too small an area.	Yes, petroglyphs.	No, insufficient size.
8	No, 333 acres	Highway, levee to s. & n., road on e. & w. shore, campsites, levee overlook.	No, lake used for fishing, campers nearby	No, too small an area.	Yes, scenic Upper Pahrnagat Lake.	No, insufficient size.
9	No, 245 acres	Eastside road defines boundary.	Yes	No, too small an area.	Yes, scenic desert.	No, insufficient size.

Refuge unit and acreage	■ Yes/no and Comments					Unit qualifies as a wilderness study area (meets criteria 1, 2, and 3a or 3b)
	(1) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition;	(2) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;	(3a) has outstanding opportunities for solitude;	or (3b) has outstanding opportunities for a primitive and unconfined type of recreation;	(5) contains ecological, geological or other features of scientific, educational, scenic, or historical value.	
10	No, 206 acres	Water control structure, refuge boundary fence, hwy, levee on south boundary.	No, lake used for fishing, road nearby.	No, too small an area.	Yes, scenic Upper Pahrnagat Lake.	No, insufficient size.
11	Yes, 195 acres and Contiguous with Desert Proposed Wilderness.	Unmaintained road, and hwy.	Yes, if combined with Desert Proposed Wilderness.	Yes, if combined with Desert Proposed Wilderness.	Yes, scenic desert.	Yes
12	No, 115 acres	Abandoned agricultural fields, concrete ditch, levee on s. boundary, roads on e. & w. boundary.	No, too close to refuge headquarters.	No, too close to headquarters.	No	No, insufficient size.
13	No, 346 acres	Inholding	No, too small an area.	No	Scenic, ecological.	No, inholding.
14	Yes, 715 acres and Contiguous with Desert Proposed Wilderness.	Highway on the e. boundary.	Yes, on the w. boundary.	Yes, if combined with Desert Proposed Wilderness.	Old farmstead foundation and Lone Tree Spring.	Yes

# **APPENDIX I-2**

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## **1971 Desert NWR Wilderness Proposal**

**Desert National Wildlife Refuge Complex  
Clark County, Nevada**

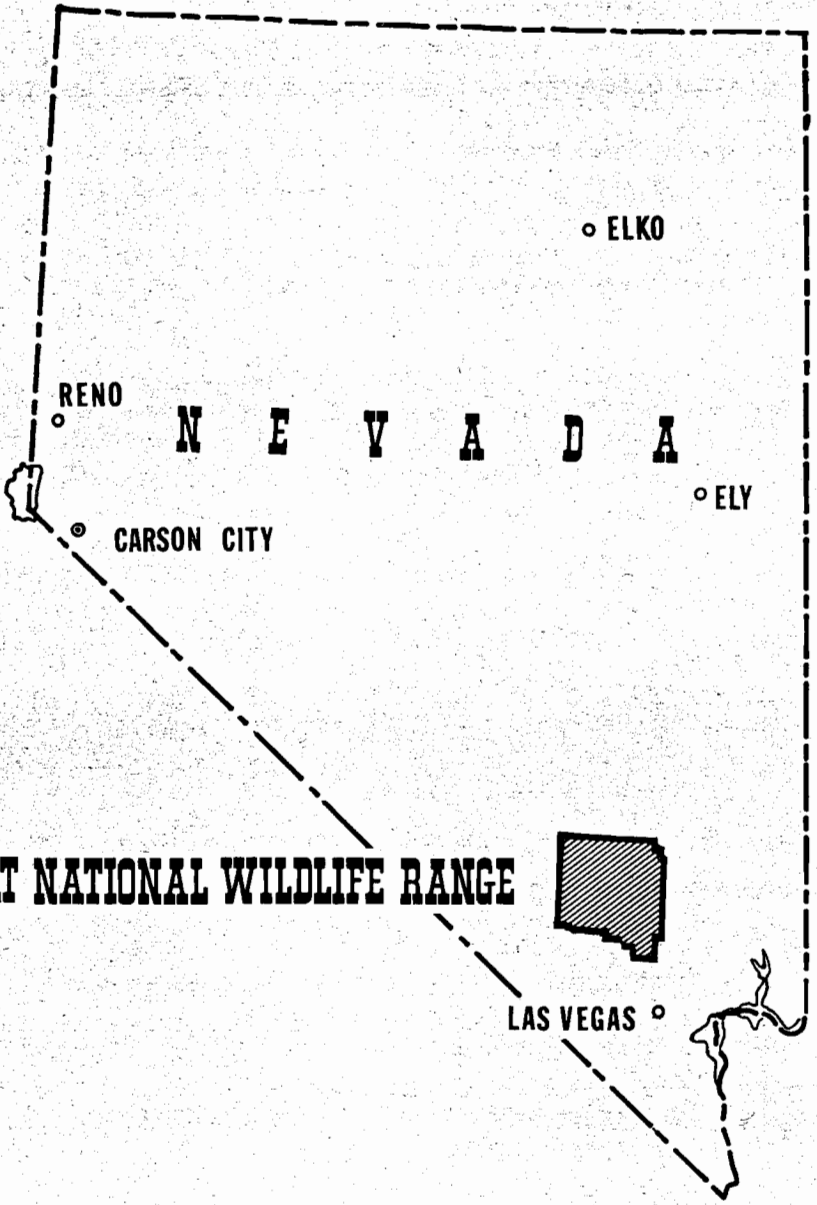
United States Department of the Interior  
**Fish and Wildlife Service**

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**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.

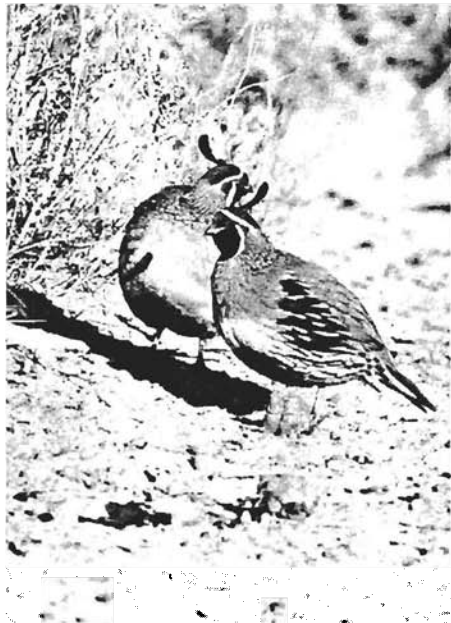
The National Wildlife Refuge System is a National network of lands and water managed and safeguarded for preservation and enhancement of the human benefits associated with wildlife and their environments. It presently consists of over 320 units embracing nearly 30 million acres in 46 states and is administered 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.

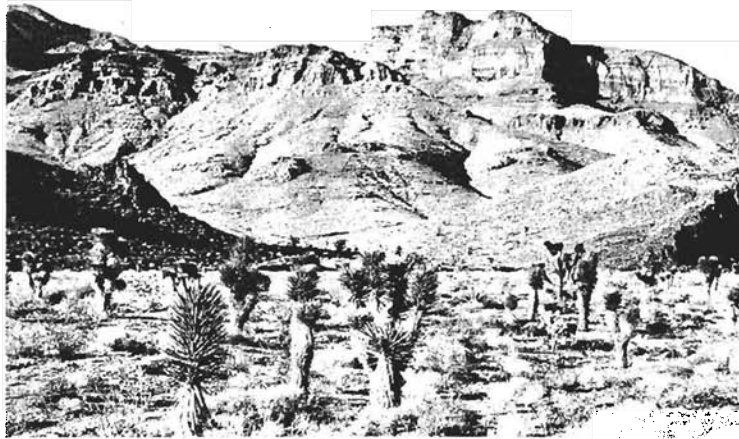
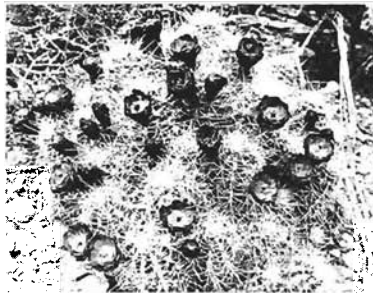
This brochure concerns a National Wildlife Range that has been studied by the Bureau of Sport Fisheries and Wildlife at the direction of the Secretary of the Interior. Its purpose is to summarize the wilderness study in sufficient detail to enable the reader to form an opinion regarding study conclusions 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.

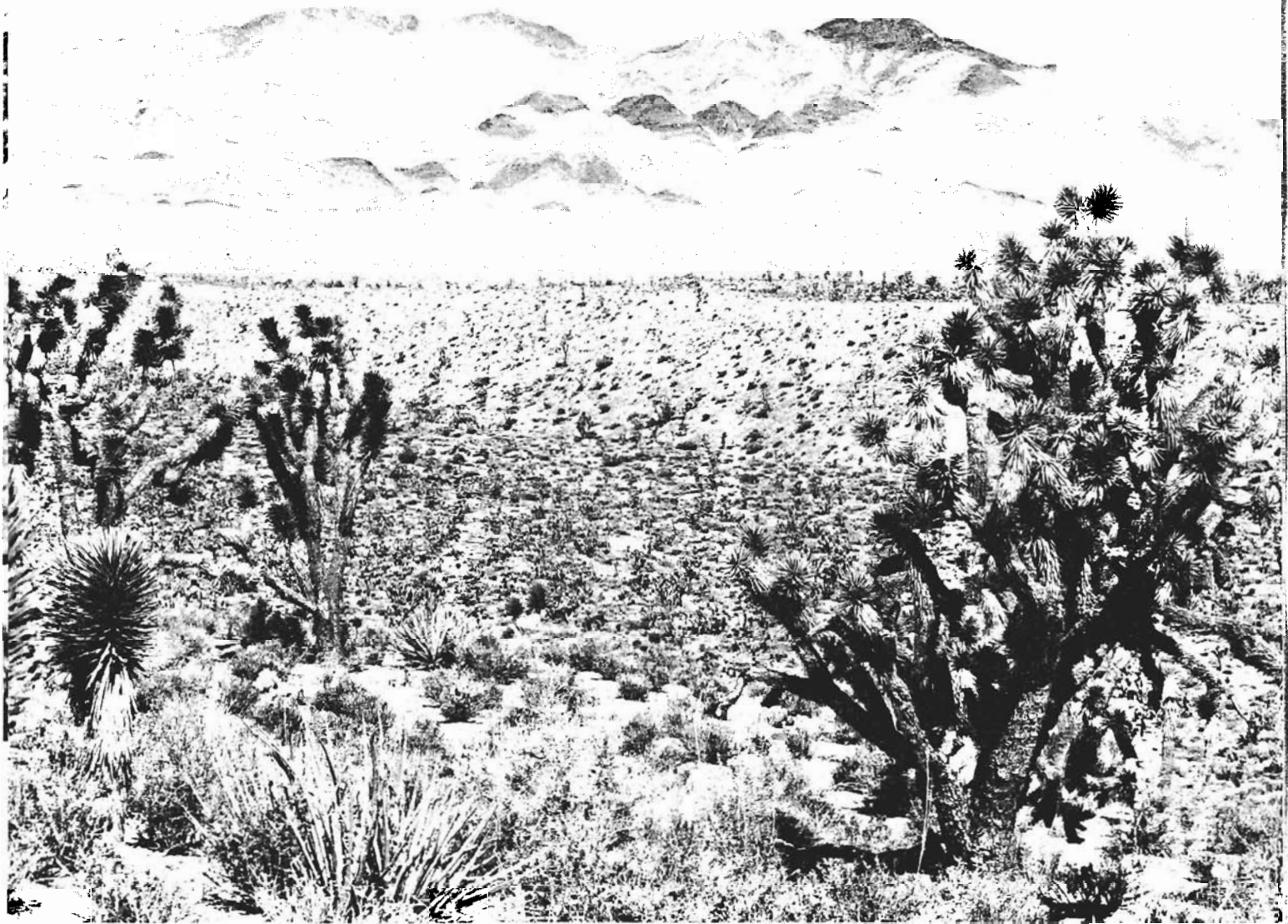
Freight teams traveled north over the Alamo and Mormon Wells Road through what is now the Wildlife Range, hauling supplies and lumber to the mining camps. Corn Creek Springs, purchased in 1939 by the Federal Government, was originally an old ranch site and stagecoach stop. Up until that time, the Range 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.*



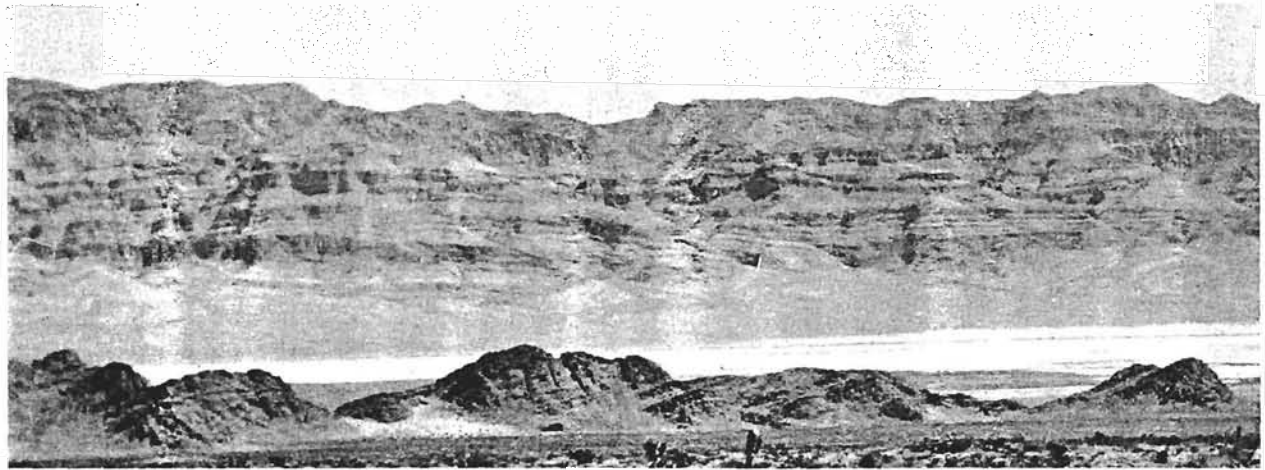
*The inimitable roadrunner.*







*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.



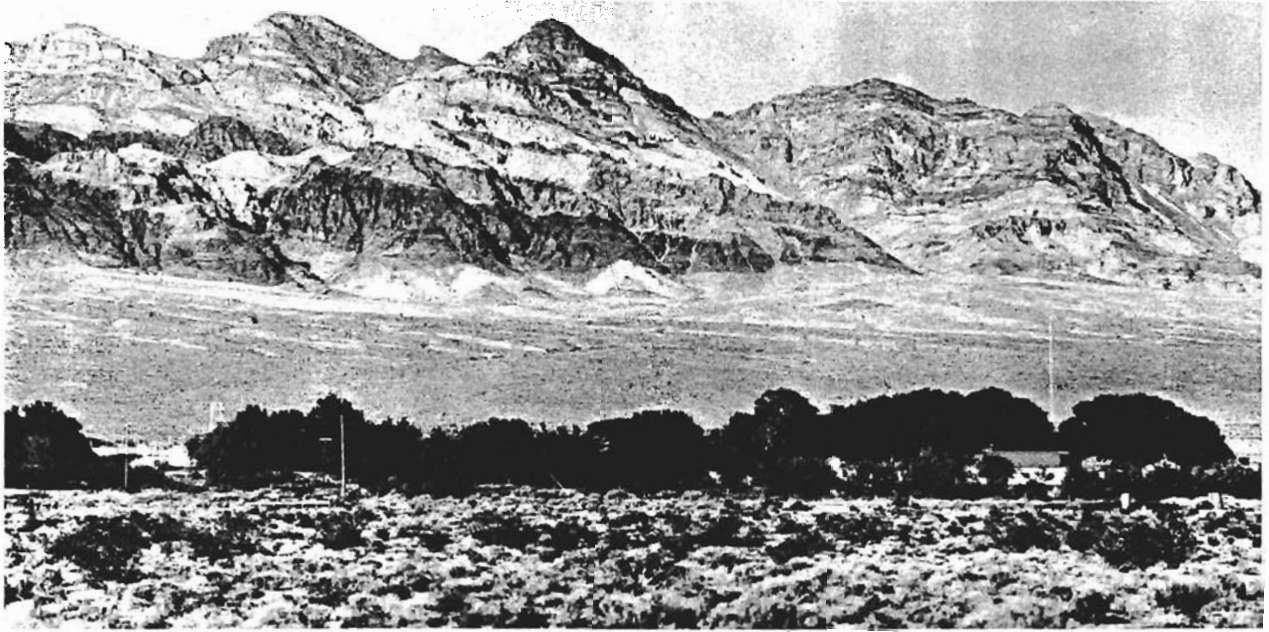
*Picnic area at Mormon Pass. Mormon Well Road visible at left.*



*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.

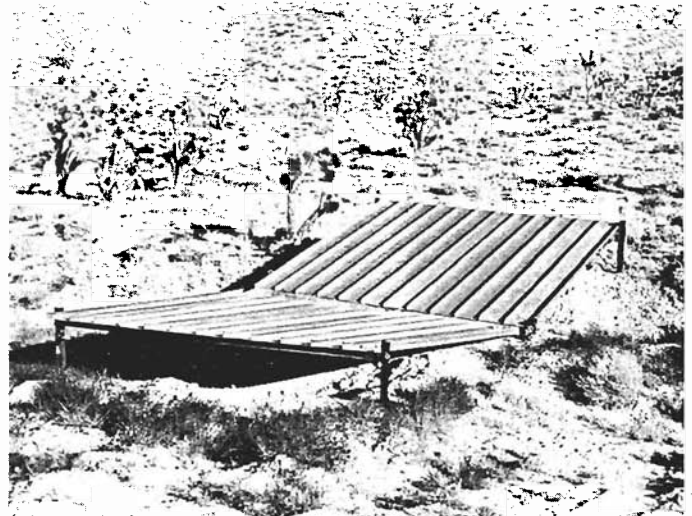
When the June Bug Mine site in the Gass Peak Unit is no longer required for local civil defense purposes, the site and access trail would be suitable for inclusion in the proposed wilderness. The old mine involves a minimum of surface disturbance and represents the type of early-day mining activity which 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.



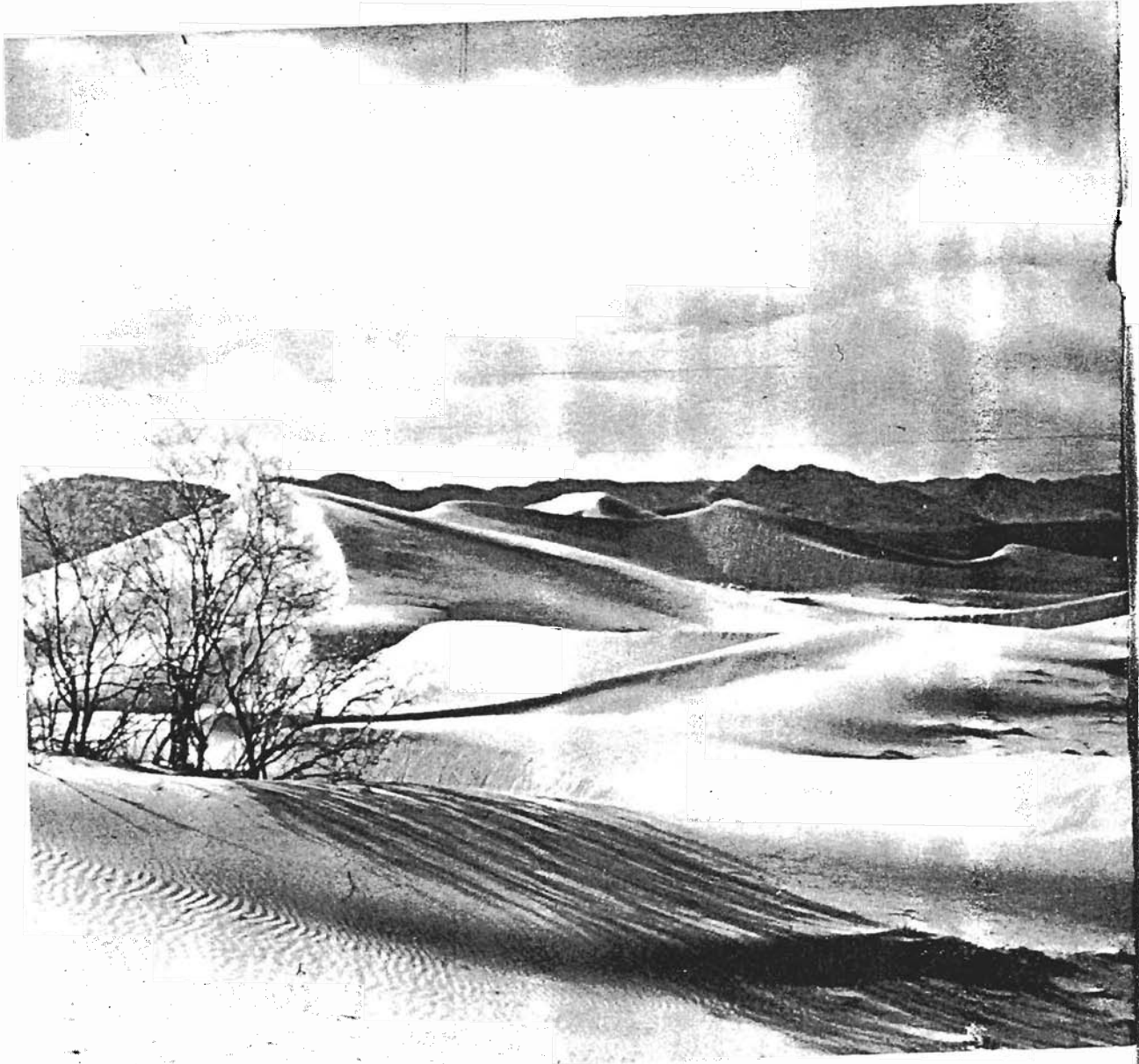
"Guzzler" collects precipitation and delivers it to underground storage tank and small drinking trough.



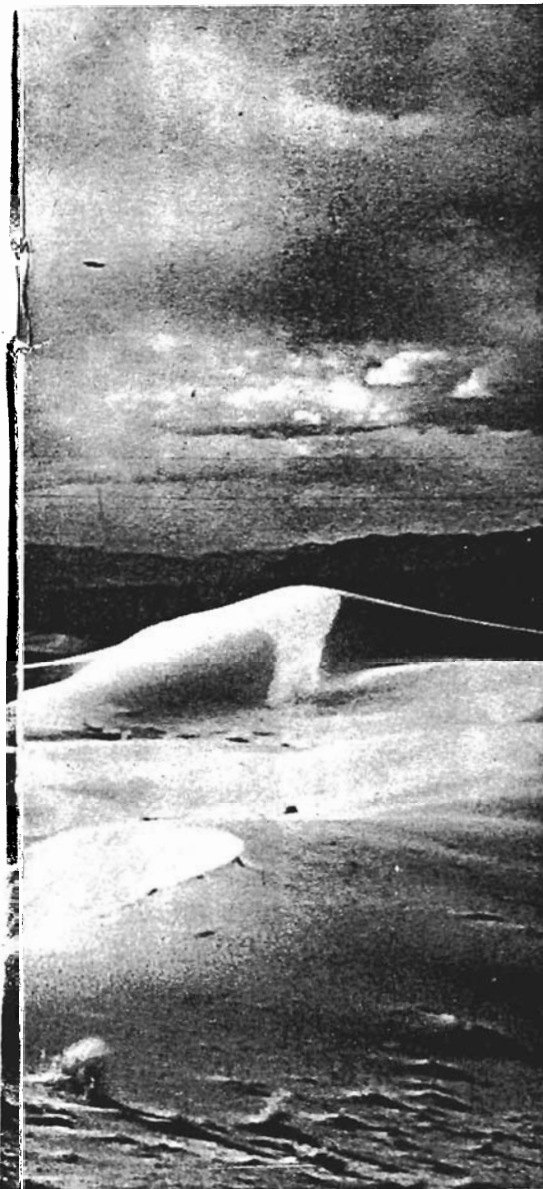
Air Force target area west of Spotted Range in Indian Springs—Gunnery Range unit.

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.



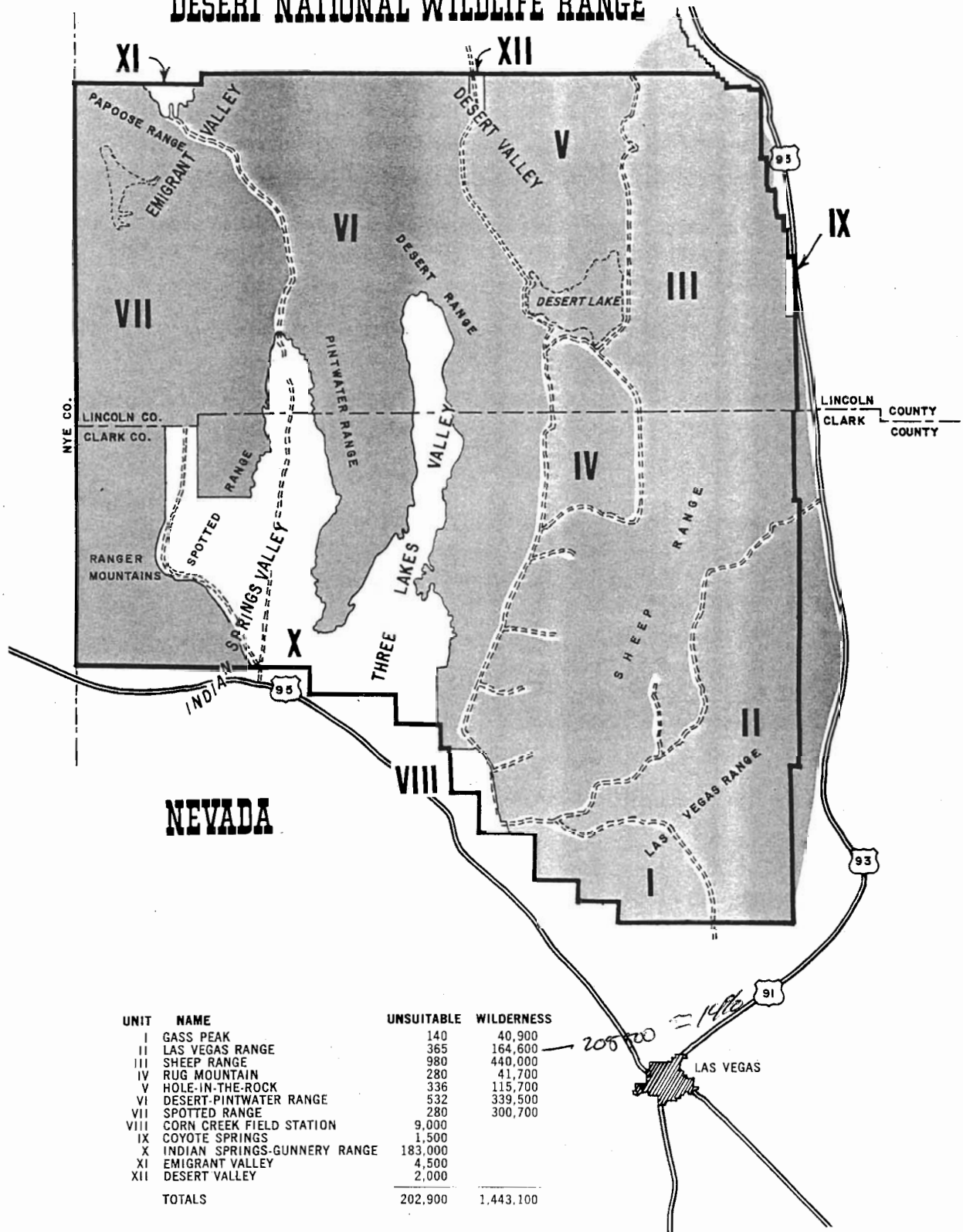
Coyote



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.

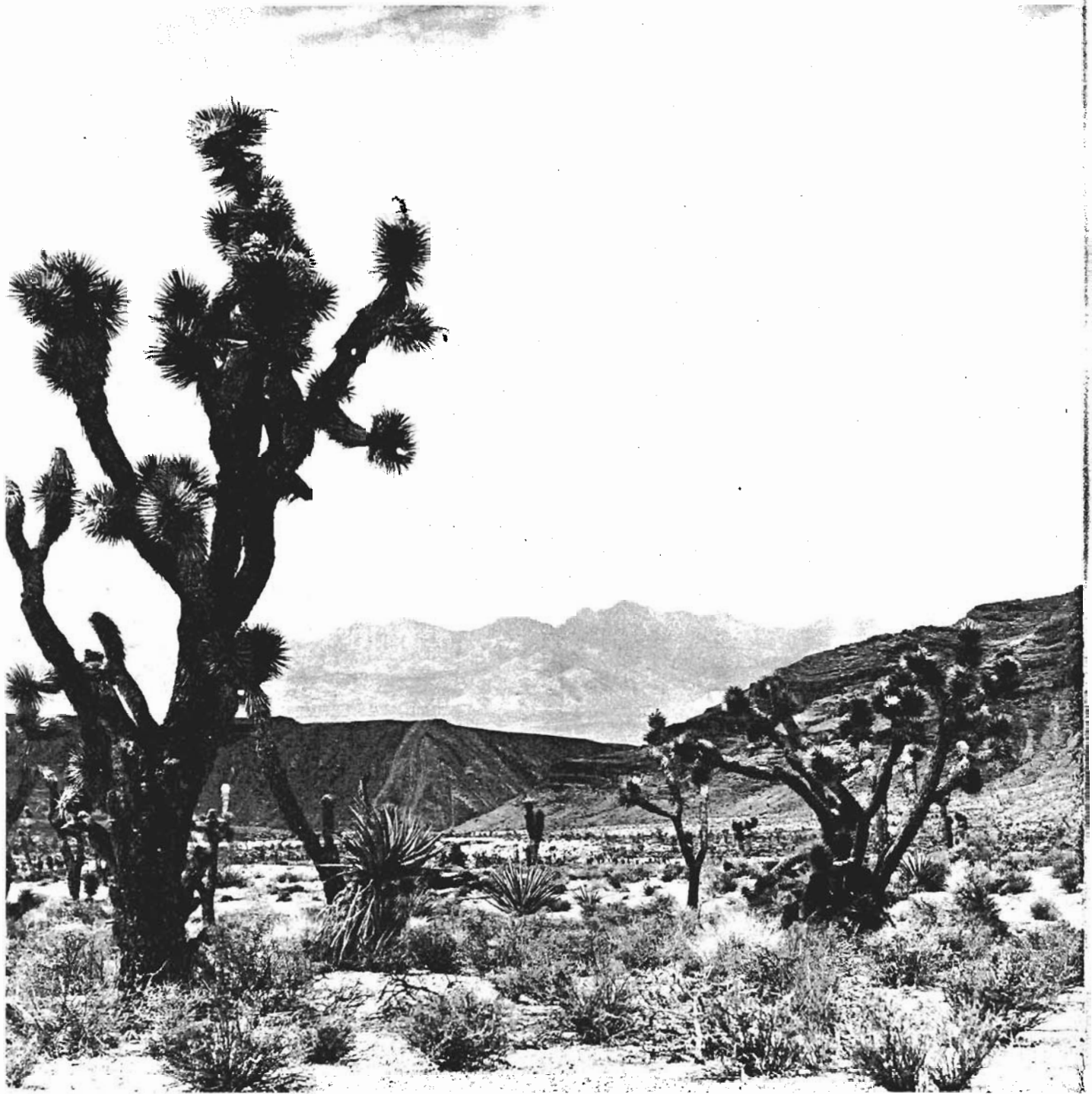
Unit X includes the lands used for target areas by the Air Force as provided by the agreement which authorizes their use. The

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:**

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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."

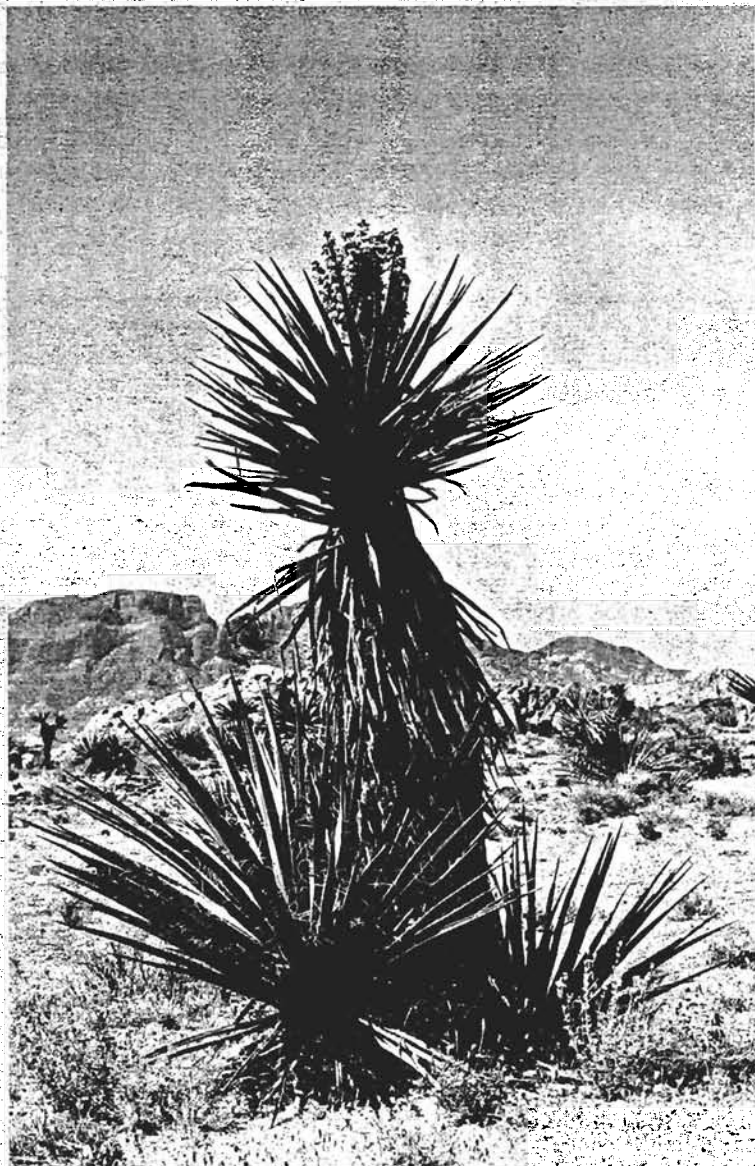
The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.



**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