WILDERNESS REVIEW

IN THE EAST MOJAVE NATIONAL SCENIC AREA, CALIFORNIA

by

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INTRODUCTION

ETYMOLOGY OF WILDERNESS REVIEW

> The place was one of singular wildness, and its aspect brought to my mind the descriptions given by travellers of those dreary regions marking the site of degraded Babylon.
>
> Edgar Allan Poe
> Narrative of Arthur Gordon Pym

It is the wilderness review of the East Mojave National Scenic Area that is singularly bringing a larger question, that of whether wilderness in deserts can be evaluated in the same manner as that in forested or alpine environments. Deserts, once thought to be the dreariest of regions by most Americans, are now largely the staging point for the largest land management agency wilderness review ever attempted--that of the Bureau of Land Management's.

The East Mojave BLM lands, as part of an accelerated review of Bureau lands in the California Desert Conservation Area (CDCA), have qualities that have been recognized by the agency with the creation of a National Scenic Area (NSA). It is this recognition, coupled with the recommendations for wilderness of the Bureau's lands in the CDCA (to be made up to three years prior to those concerning BLM land in other states), that allows wilderness review in the NSA to be indicative of how the agency will examine its desert lands for possible wilderness designation though the final decision rests with Congress.

BLM intentions regarding what it recommends as wilderness on its desert lands should be clearer if the three phases of its

wilderness review--1) inventory, 2) study, and 3) reporting--are looked at along with issues such as resource conflicts, tract size, sufficiency of wilderness characteristics, and intensity of use on lands in the East Mojave. The suitability of the BLM's wilderness review process to deserts will be examined from the results of the review in the NSA.

Nash (1973,5) asserts that wilderness is what people think it is. Wilderness is a deceptively concrete term, its inherent subjectivity poses problems in application, especially when planning and designation processes are characterized by the use of "objective" criteria or measures. Since this study analyzes (meaning the separation of a whole into its component parts) the Bureau of Land Management's wilderness review process in the East Mojave, it is necessary to discuss the etymologies (literal meanings of words according to their origins) as well as connotations of key terms used in the review.

Two distinct cultural traditions affect the American view of wilderness. These cultural perceptions have been partly codified into laws and/or agency regulations. Both traditions, the northern European and the Mediterranean, define and portray wilderness as a landscape of fear-- that which is outside the safer bounds of human settlement (Tuan 1979). The term wilderness is from the Anglo-Saxon wild-dēor, meaning an uncontrolled animal or wild beast; ness suggests a quality that can be associated with a certain place. Thus, wilderness is "place of wild beasts."

The romance languages such as French and Spanish have words for wilderness that hint at its qualities, such as the French

phrase lieu desert (deserted place) relies on an attribute to convey the idea. In Spanish, wilderness is immensidad or falta de cultura (lack of cultivation) with Italian using scene di disordine o confusione (Nash 1973,2). The Latin root of desert, de + serere (to break apart, becoming solitary) connotes the loneliness and fear associated with separation from the human community but also an arid, barren tract lacking cultivation. Historically associated with both desert and wilderness is the word waste, deriving from the Latin vastus. Etymologically related are vast, desolate, empty and the synonyms boundless and immensity.

Wilderness, according to Neilson (1934) is:

> "...uncultivated and uninhabited by human beings; a waste; hence a pathless waste....Synonym--desert is not only relatively uninhabited, but commonly uninhabitable, through barreness. Wilderness is an unreclaimed but not necessarily irreclaimable tract of land, frequently suggesting pathlessness..."[3]

A historical dichotomy exists between wilderness and paradise, the Persian word for garden. That which is civilized or refined by man and the fear of the uncontrolled is a relationship useful when examining etymons of other terms related to wilderness review.

While the point should be made that there is a conflict over meanings and perceptions inherent in the differences in landscape, wilderness as a term has been applied to desert and forest settings. Both desert and forest (the latter from the Latin foris, meaning to lie outside) lie beyond human settlement, and as such, could be perceived as wilderness. Under medieval English law, a forest was a waste as well as a woodland, usually belonging to the sovereign, set apart for the keeping and hunting of game and having special

laws and officers. A crucial difference between desert and forest is that a forest is set apart and a desert is a product of aridity (having insufficient rainfall to support agriculture).

Paradoxically, terms associated with wilderness review usually indicate control by man. Road has an Anglo-Saxon root, rād or rīdan (to ride, meaning a journey on horseback). Management takes its root from the Latin manus (hand, in the sense of governing horses). The French menáge (housekeeping) is related to management, but it was also used in its original form to mean the handling of horses. Economics and ecology derive from the same Greek word oikos (house) with the former term meaning its management and the latter its study. Park is derived from the Latin parra, an enclosed garden. Preserve is also Latin rooted, prae (before) + sevare (save) having the same origin as conserve (to save). Resource, re + sugere (to rise, spring up again, resurrect), and recreation, re + creare (to create, refresh) have Latin origin and have some religious connotation.[1]

The previous paragraph begins to blur the original wilderness-paradise dichotomy. Indeed, there is now wilderness in parks, wilderness as part of formal gardens, and the term has been applied to any situation where a person feels lost, confused, or stripped of guidance. It is Grabner's (1975,16) contention in her work Wilderness as Sacred Space that wilderness "purists"[2] ascribe to wilderness those virtues associated with paradise as taken from the northern European and Mediterranean cultural traditions. To "purists" and others concerned about the issue, wilderness is a resource--since resource use is determined by the particular

culture. Wilderness recreation to the "purist" performs the same function as that of a religious service, with the word re-creation sometimes appearing in conservationist literature (Wellborn 1983,3).

Light is important in the literature about wilderness, serving to illuminate the darkness or fear associated with such a landscape while also heightening the experience of the "purist".[3] The wilderness "experience" has as its most important unifying element light, as is also true in landscape art. Grabner quotes Kenneth Clark's Landscape into Art to emphasize this point:

> "...facts become art through love, which unifies them and lifts them to a higher plane or reality; and in landscape, this all embracing love is expressed by light." (Grabner 1975,60)

The intertwining of light and wilderness in the desert does not fit European derived ideals of natural beauty so lovingly expressed in 19th century landscape art that Clark describes. Grabner says that light in the desert appeals to the European on an instinctive[4] level:

> "The value of the desert is that its intense clarity of light and form seems to burn away the myths of theology and philosophy, leaving the landscape stripped of its overburden of human association...Of all possible landscapes, the desert suggests the abandonment of human qualification most strongly." (Grabner 1975,44)

She goes on to state that land protection measures in the desert, such as the designation of an area as wilderness, are a European expression of an impulse to hold on to an aspect of the environment that has always been within the experience of humanity: the uninhabited place and the danger associated with wilderness.

It is interesting to note that context is defined by Gove

(1969,180) as "...the parts of a discourse preceeding a text or passage, or so intimately associated with it as to throw light (emphasis mine) upon its meaning..." Stewart (1972) asserts that the English language (especially that used by Americans) largely depends on context; to understand wilderness review, its historical context must be understood. This study's object is not only the wilderness study areas of the East Mojave National Scenic Area but the procedures of the Bureau of Land Management, operating within the context of wilderness reviews conducted by a sister agency within the U.S. Department of Interior--the National Park Service as well as the Department of Agriculture's U.S. Forest Service. Some state agencies and other federal agencies such as Interior's U.S. Fish and Wildlife Service have conducted wilderness reviews but it is the Forest Service and Park Service reviews that provide the antecedents and models for the Bureau's efforts.

The most important facet of this study is the development of a spatial context, the "geography of wilderness" in the East Mojave. If more than a simple restatement of Nash's contention is to be obtained, then the synoptic qualities of geography as an end-product of knowledge have to be employed to answer the thesis problem.

CHAPTER ONE

AGENCIES INVOLVED IN WILDERNESS REVIEW

The agencies important to wilderness review in the East Mojave are the U.S. Forest Service as the leading player in the development of policy toward wilderness protection, the National Park Service because it has conducted reviews in the California Desert's two national monuments, and the Bureau of Land Management.

To examine the development of Forest Service policy toward wilderness it must be understood that a program with such broad scope to preserve and protect land owes its implementation to a fortuituous combination of land availability, environmental diversity, and cultural receptivity in the United States (Hendee 1978, 58). Appreciation for wilderness in the U.S. has grown while the wilderness resource has diminished to less than two percent of its original size (at the time of first European contact less than 500 years ago) in the conterminous 48 states.

The argument has been advanced in several works (Nash 1973; Lowenthal 1976; Hendee 1978) that an important force behind the interest to preserve some remaining wilderness was the desire to lend a distinctive quality to American culture. Lacking the profusion of artistic and literary accomplishment of Europe, Americans had, in extent, a wilderness for which there was no European counterpart. Largely as a result of this desire came the 1872 designation of the Yellowstone region as a national park, an American invention that has spread in various forms to over 1000 reserves in 100

nations (Hendee 1978, 43)

While the national park concept has spread, designation of wilderness as a land protection measure has had only limited international acceptance. Three main reasons have been advanced to explain this. The first is that in many countries (expecially European) there is no wilderness left to protect (Hendee 1978, 43). Secondly, only cultures based on controlling and modifying the environment are capable of distinguishing between wilderness and civilization. Societies classified by Europeans as underdeveloped and nontechnological have no concept of wilderness or its preservation (Hendee 1978, 45). The third is that extensive wilderness is a disadvantage to its protection, even in Canada and Australia where the frontier--which vanished in the conterminous United States by 1890--elicits attitudes of indifference toward the urgency of protecting wilderness (Hendee 1978, 53). Though some provision for wilderness has been made in other countries' national parks (such as in Japan) only in the United States does an institutionalized system exist for wilderness allocation and preservation both in and outside of national parks.

To understand how the American system of wilderness preservation came about the events surrounding the creation and development of the three most important federal land management agencies must be examined--starting with the movement to reserve lands from the public domain that resulted in the creation of Yellowstone National Park in 1872.

The U.S. Forest Service

While having its roots in the legislative movement aimed at stopping the complete disposal of all federal lands in the new states and territories located within the western United States, the agency resulted from the creation of "Forest Reserves" by Presidents Harrison and Cleveland in the last decade of the nineteenth century. A slightly different term, "Forest Reservations" was used by Congress in 1890 to set aside three areas in California--Yosemite, Sequoia, and General Grant. The separate acts creating each of the three "Reservations" had language similar to that of the Yellowstone Act, though the term "National Park" was never used (Allin 1982, 32).[5]

Forest reserves to be designated by the President were the result of forestry and land preservation advocates joining together to attach Section 24 on to the 1891 general land law revision enacted by Congress. The main purpose of the revision was to repeal both the Preemption Act of 1841 and Timber Culture Act of 1873 among other things, all of which contributed to the disposal of lands in the public domain but were also the subjects of abuse by speculators and lumber interests.[6] Though virtually unnoticed by the legislators when passed as part of the 1891 revision, by 1897 Section 24 had been used to reserve over 38 million acres--though there were no provisions for the protection or administration of the reserves that might be created.

The period 1890 and 1897 saw the rise and fall of a unified conservation front among foresters and preservationists in the

United States (Allin 1982, 36). At the end of this period came the split between forester Gifford Pinchot and preservationist John Muir along with a changing political tide brought on by the McKinley administration, one that strengthened western development interests. A forest management plan, offered as an amendment to an appropriations bill, passed as the Forest Management Act of 1897--a victory for development interests in the West over the more preservation-bent East (Rakestraw 1979). The measure, also called the Forest Service's Organic Act, directed that the reserves were to be administered by the Secretary of the Interior to improve and protect the reserves, aid in water flow, and to sell timber without giving up title to the land. This act also suspended President Cleveland's addition of 21 million acres of reserves for a year, and provided new land at equal acreage for settlers whose holdings had been preempted by the reservations,[7] and gave administration of the reserves to the General Land Office. Nothing in the act provided for wilderness preservation or recreational use in the reserves but it was under the authority of the act that the subsequently created Forest Service could designate wildlands by administrative action beginning in 1923.[8]

The U.S. Department of Agriculture's Bureau of Forestry changed its name to the U.S. Forest Service upon transfer of all of the nation's forest reserves to it from the Interior Department in 1905. Gifford Pinchot facilitated the transfer and the fact that all of the Government's trained foresters were in the Bureau helped his cause. At the time, the Department of Interior was capable

only of protection, having restricted livestock grazing among other things. Pinchot's Bureau was more sympathetic to grazing and western livestock interests swung the balance in favor of the transfer. Subsequent attempts to get national forest (the name change from forest reserves occurred in 1910) land back under Interior's control have failed to the revenue sharing programs the Forest Service has with state and local governments in areas where the national forests are located.[9]

After the Transfer Act, Theodore Roosevelt added 109 million acres to the forest reserves before executive authority to withdraw forest land from the public domain was revoked by Congress in 1907. By the end of his term in 1908, gross acreage of forest reserves totaled 194.5 million acres (roughly its present size). Though executive authority for creating reserves had been revoked in 1907, the Weeks Act of 1911 set up the machinery for federal acquisition of land to be administered as national forests. It was the Weeks Act that demonstrated Congress was vacating the long-held policy of converting the public domain into private ownership as fast as possible in addition to changing a policy of making no appropriations for federal lands (which served to condone extensive vandalism and timber trespass) by the adoption of a program that committed Congress to considerable expense (Allin 1982, 42).

By the time the Weeks Act had passed, Pinchot had left the scene--to be replaced by Henry Graves as the Chief of the Forest Service (Hendee 1978, 33).[10] Pinchot's emphasis on commodity uses was expanded by Graves to include recreation. Graves' successor,

William B. Greeley, managed to secure budgetary appropriations for recreation beginning in 1922--this on the heels of a post-war road building boom that allowed greater access for outdoor activities.

Wilderness preservation gained significantly from the inter-bureau rivalry between the heads of the National Park Service (Steven T. Mather) and the Forest Service (Greeley) that went on between 1920 and 1928. Greeley was enthusiastic about wilderness reserves because he feared Park Service takeover of national forest land if the Forest Service did not move to protect and develop its recreational resources. This rivalry allowed a landscape architect named Arthur Carhart to make non-development recommendations in Colorado and Minnesota with Greeley's approval. In 1919 Aldo Leopold had met with Carhart and discussed the topic of wilderness preservation. By 1924 Leopold had the satisfaction of seeing the first allocation of national forest land specifically for a wilderness reserve, having been instrumental in getting 574,000 acres in the Gila National Forest, New Mexico so designated (Hendee 1978, 35).

Until his resignation in 1928, Greeley recommended to western district rangers that they create wilderness reserves (some five million acres had by 1928 been administratively designated), but the policy was sufficiently vague enough that Greeley's assistant, L.F. Kneipp, drew up regulations so that wilderness areas could be designated only at the highest administrative level--that of the Secretary of Agriculture. Before Kneipp could finish the draft regulations, Greeley and Leopold had resigned from the Forest

Service and Mather had retired from the Park Service (Mather was replaced by Horace Albright).

The new Chief of the Forest Service, R.Y. Stuart, officially proclaimed Kneipp's Regulation L-20 in 1929. Opposition to the draft regulations within the agency had significantly weakened the new regulation with regard to Forest Service wilderness. Although Regulation L-20 established "primitive areas" (Kneipp and his colleagues discarded the term "wilderness", thinking that word's connotations would be distasteful to the public) and "research reserves" (called experimental forests after 1930) it was much less restrictive than a casual reading of it would suggest (Hendee 1978, 35-36). Regulation L-20 was also considered to be a temporary measure by the Forest Service, to remain in effect until supplanted by more permanent regulations.

The Copeland Report of 1933 was the first comprehensive report on United States forest policy. Robert Marshall was selected to write the forest recreation chapters of the report, seizing the chance to recommend protected status for every substantial de facto wilderness tract in the country, whether publicly owned or not. By 1937 Marshall had become chief of the Recreation and Lands Division of the Forest Service and immediately initiated discussions aimed at strengthening Regulation L-20. His efforts culminated in the "U" Regulations that were promulgated just before his death in 1939.

Designed to be implemented upon review of each L-20 primitive area, Regulations U-1, U-2, and U-3(a) were to govern wilderness,

wild, and roadless areas respectively. The U Regulations were considered to be permanent but resistance by local and regional foresters (who delayed reviews of primitive areas while demand for commodity resources increased) caused great dissatisfaction among advocates of wilderness preservation who now began to push for legal rather than administrative protection for the areas. Twenty-five years after the proclamation of the U Regulations the passage of the 1964 Wilderness Act was gained, in part due to wilderness preservation advocates' dissatisfaction with the laissez-faire management associated with the U Regulations and the delays in reviewing primitive areas proclaimed under Regulation L-20.

Also important to the passage of the Wilderness Act was the role that the National Park Service played as rival to the Forest Service. Though only one of several public land management agencies within the Interior Department, the Park Service nevertheless played the key role among Interior agencies in helping to formulate wilderness review procedures under the Act.

The National Park Service

The year 1906 saw Congress pass the Antiquities Act, having as one of its results executive withdrawals of public domain for the creation of national monuments (Allin 1982, 41). The powers given to Theodore Roosevelt were sufficiently broad enough for him to declare Arizona's Grand Canyon and California's Lassen Peak as national monuments in addition to other areas. Though used by Roosevelt partially in response to Congress' 1907 re-

vocation of his power to create forest reserves, the Act empowered the President to proclaim any federal lands that contained historic or prehistoric landmarks in addition to any other sites of scientific interest as monuments (Everhart 1972, 12).[11]

The term national monument originated in Europe where unusual natural features were so described, national monuments in the United States have been used to preserve caves, Indian pueblos, and sand dunes among other things. As of 1970, twelve of the 36 national parks had been originally designated national monuments (though the designation monument has been a continual source of confusion, efforts to change the title have failed).

The need for an agency to administer national parks and monuments was clearly recognized by 1916. The Hetch Hetchy controversy where preservation efforts failed to prevent dam construction in Yosemite National Park and the efforts by Interior secretaries Ballinger and Fisher aided in the passage of a bill creating the National Park Service.

Both chief foresters Pinchot and Graves opposed the creation of the Park Service as uneconomic (Allin 1982, 49), though the real reason was that with Mather as director and Albright as assistant, the Park Service posed a threat to Forest Service holdings. At the time of the Forest Service's creation, Pinchot wanted the national parks (the administration of national monuments was originally left to whatever agency had jurisdiction over the land) to be entrusted to it. Instead, Congress saw the new Park Service as the most logical to administer a preservation policy,

even though many new parks already had national forest status and park creation would mean a loss of Forest Service domain. One factor in the Park Service's creation was the implied (not specifically stated by law) policy of scientific forestry and "wise use" (as Pinchot termed it) of forest resources which usually stressed commodity values (Allin 1982, 67).

Railroads and park concessionaires were key interests that fostered the creation and expansion of the National Park System--preservation ideals never monopolized Park Service policy at any point in the agency's history. Preservationists, though sometimes disillusioned with Mather's park policy of promotion and maximum access, did gain influence with the Forest Service--and so were effectively courted by both agencies to the benefit of wilderness preservation.[12]

After World War II a boom in automobile tourism and timber sales from public lands put increasing pressure on de facto wilderness, as associated road building along with recreational developments worked to rapicly diminish the wilderness acreage remaining on public lands that was still in wilderness condition.[13]

In 1956 the Park Service launched Mission 66, a billion dollar effort aimed at improving the parks' capability to handle more visitors. National park backcountry was still legally unprotected from recreational developments and little was said about wilderness values at the outset of Mission 66. A similar program, Operation Outdoors, was launched by the Forest Service that year. Both programs worried preservationists who seemed always to be on the

defensive against roadless area development.

The crucial preservation battle of 1956 was the controversy surrounding the proposed Echo Park Dam in Dinosaur National Monument. A Bureau of Reclamation plan to dam a portion of the upper Colorado River was stopped (though a trade was made that eventually resulted in the Glen Canyon Dam) largely through protest that such development would violate the sanctity of Park Service lands. It was largely as a result of this hard-won victory that preservationists decided to pursue a system of statuatory protection for wilderness lands. From 1956 to 1964 they went hard after what became the Wilderness Act.

The Bureau of Land Management

Created to manage those federal lands not already reserved for some other purpose, the Bureau of Land Management is the nation's largest land holder whether acreage in Alaska is counted or not.[14] Unlike the predecessor agencies of the Forest Service and Park Service, the Bureau did not receive its organic act until 30 years after its birth.[1]

Disposal of the public domain was the purpose for the General Land Office, a BLM forerunner. Created in 1812 to facilitate such disposal, the GLO found itself immediately caught in the struggle to either sell public lands (a practice begun by Alexander Hamilton) or allow them to be "preempted" (which would allow them to be settled prior to their being offered for sale). Land sales to settlers on credit as well as the land that fell into the hands of

speculators were sources of continual headache for the GLO as was the General Preemption Act of 1841 that led to widespread abuse. By 1850 it was clear that land sales were no longer regarded as a revenue-raising device for the government. Instead, the general consensus was that the land belonged to anyone who could work it for a profit.

Administration of land grants just prior to, during, and after the Civil War characterized the business of the General Land Office until its merger with the Grazing Service in 1946 to become the BLM. Land disposal legislation beginning with the Swamp Land Act of 1850 signaled the shift from government revenue raising to that aimed at rapid western development. Landmark legislation was passed with the 1862 Homestead Act (in which one-fifth of the original public domain eventually passed to private hands). Also passed in the same year was the first in a series of railroad grants, the Pacific Railway Act (where a 400 foot right-of-way and 20 odd-numbered sections totaling 12,800 acres were given to trans-continental railroads for every mile of track built) as was the nation's first comprehensive tariff, the Morrill Act (which had a provision for states receiving revenue from the sale of "school sections" present in each township for use toward public purposes).

The Homestead Act opened the door for other bills that gave free land to settlers in the same manner as the Pacific Railway Act had done for railroads (Allin 1982, 20). Fraudulent acquisition of lands under the Timber Culture Act of 1873, the Desert Land Act of 1877, and the Timber and Stone Act of 1878 had much to do with the passage of the general land law revision of 1891

that contained the provision for forest reserves.

When the 1897 Forest Management Act was passed the General Land Office got the responsibility for administering the forest reserves along with the unfortunate "land lieu" provision[15] that once again led to abuse (Boly 1976; Rakestraw 1979). Stagnation that had by this time set in on the GLO was one of the contributing factors to the ease that Pinchot had in transferring the forest reserves from the Interior Department to the Department of Agriculture. Stripped of the reserves, the GLO was left to administer what was considered the least valuable portion of the public domain.

By the 1920s the General Land Office was no force at all in federal land management (Clawson 1971). For decades, GLO officers and commissioners were political appointees while Congress never gave the agency adequate funding. Land Office employees found it difficult to do their jobs--trespassers were dangerous to apprehend with employees frequently losing their jobs in the process (Conlin 1982). The movement for establishing national parks and national forests came from the East, not the West and respect for public land law had a similar spread. Not until after the passage of the Weeks Act and the increases in public land management appropriations that followed World War I did the responsibilities that had been heaped on the GLO begin to be directed toward the more newly created conservation agencies in the Interior Department..

The Federal government's role as a major permanent landowner had been accepted since the creation of forest reserves and

statuatory strength had been added to the role by the Pickett Act of 1910 (Franklin Roosevelt used his authority under this act to withdraw from entry nearly all public domain outside of Alaska in 1934 after the Taylor Grazing Act) and the Weeks Act of 1911. Marking the end of the disposal era was the passage of the Taylor Grazing Act in 1934. Under the Act, the Secretary of Interior was empowered to establish grazing districts from vacant, unappropriated, and unreserved lands. The effect was to give the Secretary the authority to classify public lands as to their most productive use (Robinson 1975, 4). No longer could title to lands in the public domain be obtained under the pretext of it being agricultural land nor would "tramp" sheepmen (who moved their flocks from place to place with little regard for the damage inflicted on public land) be allowed to continue their operations any longer. The Act also authorized the charging of grazing fees on public domain lands which up to that time had been grazed for free (the Forest Service had charged a grazing fee since 1906).

The mid-thirties marked the final time that the Department of Interior attempted to get its lost forest reserves back. Interior secretaries Franklin Lane (under Taft) and Albert Fall[16] (Harding) preceded Harold Ickes' attempt under Franklin Roosevelt to merge all federal land agencies under a single Department of Conservation within Interior. After Ickes had failed to consolidate the numerous Interior agencies that sometimes overlapped in their jurisdictions into a single agency, it became apparent that a new agency was needed to administer the Taylor Grazing Act on the unappropriated public domain.[17] To collect the fee of five cents per

cow that had been levied in 1936, the Bureau of Grazing was created over Forest Service objections in 1937 and renamed the Grazing Service in 1939.

For its brief, harried existence the Grazing Service was beset by problems, primarily stemming from the level of grazing fees. With the agency's creation, the grazing fee controversy-- in which ranchers that used public lands lobbied to keep fees absurdly low (Sandvig 1983, 22)--moved from the Forest Service (where Senator Stanfield of Oregon was doing battle with the agency) to the Interior Department where Senator Pat McCarran of Nevada was attacking the Grazing Service and its successor, the BLM (Steinberg 1950). The Grazing Service had such an insufficient budget and staffing that it became a clear captive of livestock interests (Foss 1960) while the General Land Office's level of appropriations made it difficult for the agency to administer its charge of mineral leases. By 1942 the combined budget for the Grazing Service and the General Land Office was barely $5 million (Clawson 1971, 20).

McCarran took advantage of Ickes' understimation of grazing fees and low appropriation recommendations in his orchestration of the combining of the Grazing Service and the General Land Office into the Bureau of Land Management in 1946. The new BLM had a 1947 budget that was reduced by McCarran to the point where it could not perform the functions originally assigned to the Grazing Service (DeVoto 1955, 355). The success in destroying the Grazing Service and rendering the BLM impotent led stockmen to attack the Forest Service beginning in 1947 over grazing policy that by this time had called for grazing reductions due to range deterioration.

Though by 1955 the Forest Service had largely fended off such attacks (Stegner 1974; DeVoto 1955), the BLM was susceptible to cuts in appropriations due to livestock interests' hostility to range regulation.[18] Chronically underfunded and understaffed, having neither an organic act nor the prominence in the public eye that the Forest Service used to insulate itself against being intimidated by one commodity interest at the expense of all the functions it was supposed to perform, the BLM was known half-seriously for many years as the "Bureau of Livestock and Mining."

The lands that the BLM inherited from the Grazing Service and the General Land Office have had limited economic value, primarily being what remained after other areas that were once in the public domain had been withdrawn or were homesteaded. The major use of these lands is grazing, though grazing fees are only a small fraction of the total revenue that the agency derives from its timber sales or mineral leases. Grazing is, however, the most widespread use of Bureau lands with some 90 percent of its lands outside of Alaska presently incorporated into grazing districts.

Besides the problematic place of grazing in BLM operations, the agency found itself enmeshed in a tangle of public land laws created by years of piecemeal legislation. By 1964, when the Public Land Law Review Commission[19] was created to help abate the problem, a total of 2,699 laws that had some bearing on the administration of public lands were still in effect (Clawson 1971).

In 1973, a federal court ruling on a lawsuit filed by the Natural Resources Defense Council forced the BLM to prepare site-specific Environmental Impact Statements on their grazing programs

to comply with the National Environmental Policy Act (NEPA) of 1969. For the first time the agency was to gather baseline information on vegetation, wildlife, soil, water and other resources. The sudden shift to having to plan within a multiple-use framework along with increasing commodity and recreational pressure on BLM lands made the Bureau eager to become a full multiple-use agency. Wilderness review (required of the Forest Service, Park Service, and Fish and Wildlife Service since 1964) was one of several mandates that the BLM received as a multiple-use agency with the passage of the Federal Land Policy and Management Act (FLPMA) of 1976.

CHAPTER TWO

WILDERNESS REVIEW LEGISLATION ON FEDERAL LANDS

In the wake of the 1956 Echo Park Dam controversy, wilderness proponents such as Howard Zahniser of the Wilderness Society[20] pressed harder for statuatory protection of wilderness. Chief among their opponents was the Forest Service, still smarting from the congressional attacks that it had undergone since 1947, which voiced fears that its long-held "multiple-use" policy would be changed to that of "dominant" use should wilderness legislation be passed (Allin 1982). Upon recognition that some form of wilderness legislation would eventually be enacted by Congress, the Forest Service sought legislation that would codify multiple use into law. Since neither Congressional house was willing to pass the Multiple-Use and Sustained Yield Act of 1960 in a form that would be inconsistent with wilderness legislation, the Forest Service had to make concessions such as recognizing wilderness preservation as a legitimate national forest use. In return for passage of the Multiple-Use Act, the agency would endorse a bill creating a national wilderness preservation system.

The Wilderness Act of 1964 is important to this study of the East Mojave because it set the requirements and general pattern that wilderness review was to follow after its passage. The Act was passed in part to address the conclusions of a 1962 report to the Outdoor Recreation Resources Review Commission that stated wilderness as a resource was in danger (ORRRC 1962) due to:

1. Land administering agencies could put wilderness to other uses.

2. Agencies lacked full jurisdiction over some land uses (e.g. mining) within wilderness.

3. There was a lack of coordinated control over wilderness uses.

4. There was a lack of coordinated management policy.

The National Wilderness Preservation System's creation was legislated not without compromise, stemming from over nine years of deliberations since the initial introduction of a wilderness bill in 1956. These compromises included:: 1) Exclusion of Bureau of Indian Affairs lands (five million acres had been administratively declared wilderness through the efforts of Bob Marshall in 1937); 2) Elimination of the National Wilderness Advisory Council (which had some layman representation that would review agency wilderness recommendations); 3) Noninclusion of unclassified primitive areas (those primitive areas classified under the U Regulations as "wilderness", "wild", and "canoe" were made "instant" designated wilderness upon passage of the Act) until such time as affirmative action by Congress (designating areas through subsequent legislation) was obtained; 4) Allowance of some nonwilderness uses.

For the twenty years after the Wilderness Act's passage on September 3, 1964, controversial compromise was that concerning nonwilderness uses--specifically mining. As passed, prospecting and filing for new claims within designated wilderness areas (valid existing claims could be worked in perpetuity) was to be permitted to continue until the end of 1983, though Congress slapped moritoriums on wilderness prospecting beginning in 1981.

It is not the purpose here to present the entirety of Public Law 88-577, the Wilderness Act. There are, however, important features of it that are drawn on by FLPMA (pronounced FLIP-ma) which governs BLM actions. In Section 2(a) of the Wilderness Act, Congress clearly established a wilderness system, reserving it for the people's use and enjoyment and that no federal lands except those protected by the Act or subsequent Acts would be designated "wilderness". Congress reserved the responsibility of designating wilderness to itself though the Act does not prohibit administrative agencies from managing lands for wilderness purposes (the Forest Service, for instance, had such authority based on the Multiple-Use and Sustained Yield Act of 1960).

Section 2(c) of the Wilderness Act is important because it defines wilderness in the legal sense:

> "A wilderness, in contrast with those areas where man and his own 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 and are 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; (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value (Hendee 1978, 82).

The above passage has been noted for its ambiguities, the most important of which surrounds the criterion "substantially unnoticeable". As applied to a situation where a tract of modified

land was considered for wilderness along with a contiguous area of essentially unmodified land, would the criterion "substantially unnoticeable" be based upon the aggregate area or upon the modified portion (Hendee 1978, 68)? In making the national forest "wilderness", "wild", and "canoe" areas instant wilderness under the Act, Congress had determined that these areas med the standards set forth by Section 2(c). Yet many contained the features that the Forest Service argued would disqualify the areas for wilderness study: areas previously logged, others that contained old mines, abandoned roads and railroads (Allin 1982, 158).

What has been called the Forest Service's "purity doctrine" has been used by the agency in interpreting the "substantially unnoticeable" criterion of the Act. This doctrine hinges on the notion that only those areas that have never sustained any human impact and which show no evidence of human presence could be considered for wilderness designation. Forest Service defense of this position originates from the argument that in order to justify resource benefits foregone from wilderness designation, the areas selected for wilderness must be of the highest quality. Admitting areas of lesser quality meant that the public was paying too much. This conclusion has little to substantiate it according to several conservation groups (Hendee 1978) and in the ten years after the Act's passage the Forest Service had but 22 economists, with only four actually working in the national forests themselves.[21]

This purity doctrine has been rebutted by many authors as well as key legislators who participated in the drafting and passage of the Wilderness Act (Hendee 1978, 69). Against Congressional

charges that the Forest Service was misapplying the law (it, like the Park Service and the Fish and Wildlife Service, recommends to Congress the areas that the agency considers suitable for wilderness though Congress can choose to ignore such recommendations) the agency defended itself with the contention that purity in admissions and administrative policy were necessary to check uncontrolled growth of the wilderness system. This uncontrolled growth, it was feared by the Forest Service, would lead to the mortgaging of the forest's multiple use potential (Allin 1982, 159).

Controversy about the purity of admissions to the National Wilderness Preservation System (during the 1960s the Forest Service expressed fears of a wilderness review--during which agencies could not diminish an area's wilderness character--could affect up to a third of the land in the national forest system) also extended to the Forest Service's purity of wilderness administration. Though it generally pleased preservationists, the administrative purity doctrine that dictated minimum interference with natural damage from fire, insects, and disease, also extended to the tight regulation of motor vehicles in wilderness areas where their use had already been established prior to designation as well as generally denying motorboat and snowmobile access to users who became unhappy at an area's designation as wilderness.

It should seem clear that the Forest Service was caught between what it saw as a threat to its multiple use objectives and what constituted a legal mandate to establish a wilderness system. Moreover, Section 3(d) of the Wilderness Act required both public notice and public hearings prior to any administrative decision to alter

the wilderness system. Public participation, from the viewpoint of administrative agencies, turned loose a horde of amateur land managers--most of which had preservationist leanings (Allin 1982, 156). Congress, having reserved the final decision on wilderness to itself, frequently went beyond the recommendations of the Forest Service in number and size of areas designated as wilderness so that the desires of these amateurs could be satisfied.

Public participation in land management decisions was furthered by passage of the National Environmental Policy Act of 1969. Section 102 of NEPA required an Environmental Impact Statement (EIS) to be filed by the agency when "any major Federal actions significantly affect the quality of the human environment". More important to preservationists, every EIS was to contain a detailed statement available to the public on any "irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented". Along with the preliminary wilderness proposal, a Draft Environmental Impact Statement (DEIS) must be prepared by the agency and contain the following information:

1. Description of the proposed action and the probable impact of the proposed action.
2. Probable adverse and unavoidable environmental effects (this required the agency to resolve scientific uncertainty and fill data gaps, and in some cases, to write a worst-case analysis).
3. Alternatives to the proposed action.
4. Relationship between the local short-term environmental uses and the maintenance and enhancement of long-term productivity.
5. Any irreversible commitment of resources that would be involved if a proposed action is implemented.

A sixth requirement was later added by judicial interpretation, that of a benefit/cost analysis. Public review of the proposed action was to come between the draft and final EIS preparations.

Public participation also forced a compromise between preservationists and the Forest Service in 1975. It was born of a court case won by opponents of clearcutting in the Monanogahela National Forest (located in West Virginia) that resulted in the National Forest Management Act of 1976. A product of bargaining between commodity and preservation interests in Congress, the NFMA gave statuatory permanence to the National Forest System in return for the Forest Service issuing regulations to protect plants, animals, lakes, and streams (Allin 1982, 157; Natural Resources Defense Council 1978).

Attack on the Forest Service's purity doctrine (which was considered by many observers to be blocking wilderness proposals that would then be subject to NEPA) was stepped up by the White House in a 1971 draft executive order (due to Forest Service objections it was never issued). It would have required the agency to use the wilderness standard of Section 2(c) in the Wilderness Act rather than its own purity doctrine on a mandated roadless inventory (this would have required the Forest Service to identify all areas that appeared to have wilderness characteristics and protect their status until Congress could have decided their fate). Allin (1982) suggests that the order was dropped in exchange for the Forest Service conducting its own roadless inventory. The agency settled for a quick look at its roadless lands that would

serve to speed up wilderness designation so that development options could be considered. Conducted in 1971-72, it was called the Roadless Area Review and Evaluation (or RARE I).

Conducted in a ten month period with the complication of many areas being snowbound during the field stages of the process, RARE I's objectives were to:

1. Obtain as much wilderness value as possible relative to the cost and value of the foregone opportunities to produce other goods and services for society.

2. Disperse the future wilderness system as widely as possible over the United States.

3. Represent as many ecosystems as possible so that scientific and educational purposes of wilderness preservation are best served.

4. Obtain the most wilderness value with the least relative impact on the Nation's timber product output.

5. Locate some new wilderness areas closer to densely populated areas so that more people can directly enjoy wilderness benefits (Hendee 1978, 103).

Goals 2 and 5 are statements of social goals, with 2 (and to some degree 5) being unattainable as wilderness cannot be spatially redistributed. Goal 4's inherent contradiction--speaking to two goals simultaneously--seeks to maximize wilderness value and minimize impact on timber output. Timber production and wilderness are inversely interdependent, if not mutually exclusive (Hendee 1978, 103). Goal 3 recognizes the scientific value of wilderness though such values are not included in the statement of the National Wilderness Preservation System's purpose in Section 2(a) of the Wilderness Act, the only mention of scientific values in Section 2 is that in subsection (c)--where it states that wilderness areas

may contain areas of scientific and educational value. Goal 1 relies on a benefit/cost analysis that was to be incorporated into the RARE methodology but was shown subsequently to have serious deficiencies.

Though the RARE I process was the first systematic attempt to relate benefits and costs to management of roadless lands, it is important that the deficiencies of this particular benefit/cost method be mentioned. Central to the method were attempts to measure the primitive recreation potential through the use of a quality index and the roadless area's recreational carrying capacity by deriving an effectiveness index.

The Quality Index (QI) was figured for each roadless area by adding the sums of three primitive recreation components that were each assigned a score on a scale that ranged from 1 to 20. The components were: a) scenic quality; b) isolation and dispersion of use; c) the variety of experiences available. No attempt to measure the ecological condition of an area was made, only its primitive recreation potential. Further, Quality Indices were largely dependent on the perceptions of the measurer, while being difficult to justify with there being no uniform guidelines nor training for personnel doing them. Reliability of Quality Indices were highly suspect (Hendee 1978, 104).

An Effectiveness Index (EI) was derived by multiplying the QI by area size. This made the value of the EI almost wholly a function of size. Also, since the QI (as one of its measures was that of isolation and dispersal potential) had size already included, it is represented twice in the EI. Size was overemphasized in the

calculations of the EI and often worked against the admission of areas because the aggregate size of large contiguous blocks of roadless lands often overlapped administrative units (usually ranger districts but sometimes into different national forests). When overlap occurred, the area was cut up into smaller tracts to match district jurisdiction.

RARE I benefit/cost methodology was also criticized for its clumsy attempt at assessing opportunity cost (the value of opportunity foregone by choosing one mutually exclusive alternative such as wilderness over another). Preservation values (most of which were not quantified nor estimated) were pitted against overvalued roadless area timber. The average high bid stumpage price that was used to fix value on the foregone timber was based on an average of three years (1969-1971) during which timber prices went atypically upward, then sank beginning in 1972. Also old growth timber, usually of high value in low elevation forests, was of generally marginal value in higher elevation roadless areas as well as having a high harvest cost and/or low commercial value (Hendee 1978, 105).

Criticisms of RARE I methodology eventually landed the Forest Service into U.S. District Court in 1972. Though the Sierra Club complaints were dismissed, the case could come before the court again (owing to the dismissals being without prejudice). In an out-of-court settlement, the Forest Service promised an EIS consistant with NEPA before any roadless area was released to multiple-use management (thereby having to reconsider the wilderness pre-

servation option before development could be authorized).

The RARE I inventory failed to put to rest the question of which roadless areas were to be studied for wilderness preservation and which were not. This Forest Service failure was further demonstrated by passage of the Eastern Wilderness Areas Act of 1974 which explicitly repudiated the purity doctrine as a test of admission into wilderness study (Allin 1982, 161).

At the time of the RARE I settlement between the Forest Service and the Sierra Club, the Bureau of Land Management was continuing to interpret the 1964 Wilderness Act to mean that no wilderness could exist on BLM lands (Kerr 1978). Though the Act did not prevent agencies from managing lands as wilderness, some of this interpretation was due to the fact that forests, parks, and wildlife refuges had been historically excluded from the public domain. Under the authority of the 1964 Multiple Use and Classification Act (which expired in 1970), the BLM established an administrative designation to manage lands for wilderness preservation purposes called "primitive areas" (not to be confused with the Forest Service areas established under Regulation L-20). The first BLM primitive area was designated in 1969 and by 1976 eleven areas totaling 234,003 acres were so classified, with management aimed at maintaining the same quality as lands in the NWPS (Foster 1975). One big difference between BLM primitive areas and those that had been formerly designated by Congress was that the BLM areas were closed to mineral entry while designated wilderness areas were open until December 31, 1983.

Though not large in extent, the acreage managed as BLM primitive areas represented one of the ways that the Bureau was trying to assert itself as a multiple-use agency, though after the Multiple-Use and Classification Act expired in 1970 it had no statuatory authority to do so. Also under the Multiple-Use and Classification Act's provisions was the order to the BLM that the agency was to identify public land that was to be sold and retained by the government. The Bureau identified five million acres to be sold and 154.4 million to be retained, the Public Land Law Review Commission then went to work to prepare recommendations for management of the land that was to be retained. What resulted was the 1970 PLLRC report <u>One Third of the Nation's Land</u> which led Senator Henry Jackson to introduce a bill called the National Resource Land Management Act, the first of several bills over the next several years aimed at making the BLM a full multiple-use agency as well as providing direction for the management of public lands.

Jackson's first bill, like the one introduced by Morris Udall in the House two years later, could not get out of committee largely because of the power wielded by stockmen (who resisted any attempt to increase grazing fees on BLM lands) exercised through their Congressional representatives (Lavender 1983). The cries, however, for some kind of BLM organic act that would allow the agency to manage its lands on a continual multiple-use basis would not abate (the PLLRC report pointed to the deterioration in the quality of public rangelands and the low levels of appropriations with which to manage them--the 1971 BLM budget equalled

that of the Smithsonian--as the most urgent problems).[22] In early 1976 Jackson introduced S. 507, the Federal Land Policy and Management Act. Election year politics speeded the bill's way through Congress and on October 21, 1976 the Bureau of Land Management had an organic act, Public Law 94-579.

FLPMA reaffirmed the Federal government's policy of public land retention while amending or repealing over 2000 public land laws in the process. Designed to reassert Congressional authority over public lands after a long history of Executive inroads, the Act enjoyed widespread support in Congress. Several sections deal specifically with BLM management decisions that must be sent to Congress for review and are subject to veto by concurrent House and Senate resolutions. These decisions are cited as: that which would eliminate one or more principal uses of public land for two or more years in tracts containing more than 100,000 acres (Section 202), decisions to sell tracts of public land in excess of 2500 acres (203), and withdrawals of public land in tracts that exceed 5000 acres (204).

Under FLPMA certain powers and responsibilities are delegated to the Secretary of the Interior. It allows the Secretary to dispose of certain omitted lands without a survey (211) while authorizing him to make rules and regulations pertaining to the public lands (310). The Secretary also has power in terms of uses, having the authorization to control mining to the extent of taking actions necessary to prevent unnecessary or undue degradation of public land (302) while also authorizing a study of domestic livestock

grazing on public lands so that an equitable fee can be established; such fees cannot be raised until report, due within one year of authorization, is submitted to Congress (401).

The BLM mandate included a provision for the inventory and identification of public lands and provides authority for the mapping of these lands as funds and manpower are available (201) while also calling for comprehensive land use planning and public participation with submission of written comments prior to reaching many kinds of land management decisions (202). Authorization is granted to the BLM to revoke use permits when the permittee violates certain laws (302) while also prohibiting unauthorized use, occupancy, or development of public lands (303). FLPMA sanctions also covered major uses of the public lands such as requiring persons holding mining claims on public land under the General Mining Law of 1872 to record those claims with the BLM. Failure to do so will be considered evidence of abadonment (314). FLPMA provides a formula for the distribution of funds collected from grazing fees, also exempting the annual distribution and use of range improvement from NEPA provisions (401).

The California Desert has a special provision under the Act that contained a directive for a comprehensive long-range plan and an interim program that would be effective in the period between FLPMA's passage and the acceptance by the Secretary of the Interior of the final plan (601). FLPMA also directed the BLM to complete a study of its lands for inclusion in the National Wilderness Preservation System within 15 years (603). The application of

Section 603 in the California Desert (which is the subject of this study) can be better understood if overviews of the National Park Service's wilderness review (especially that in the California Desert's two national monuments) and the U.S. Forest Service's RARE II process are first presented.

It may seem surprising that the Park Service would approach wilderness preservation with reluctance, though given the "mass-merchandising mentality" (Allin 1982, 146) of providing tourist conveniences, the NPS generally looked upon wilderness designation as constricting its management options. This was evident when it took eight years from the passage of the Wilderness Act for the Department of Interior to establish criteria to be followed in determining an area's suitability for wilderness designation as well as for the first NPS unit to become part of the National Wilderness Preservation System (Hendee 1978, 107).

Despite conflicts over interpretation of official guidelines for wilderness classification (many Interior officials regard the decision to recommend an area as suitable for wilderness in a way that would virtually stop all management activity for the area) the two national monuments in the California Desert (Death Valley and Joshua Tree) have large proposed or formally designated wilderness areas.

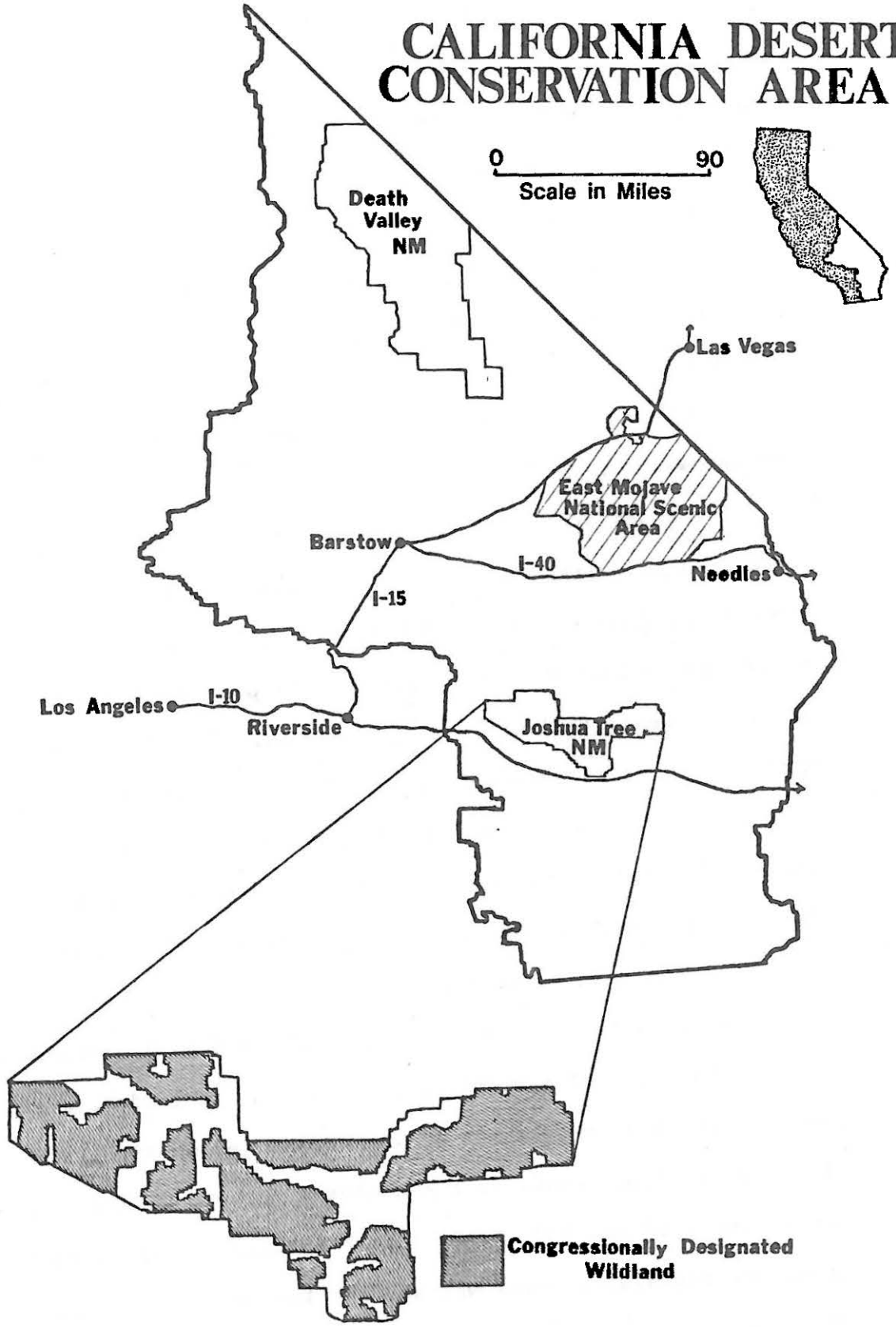
Death Valley National Monument to the north and west of the East Mojave National Scenic Area is the largest national monument in the conterminous United States. Established in 1933, the Monument contains an area of over 1.9 million acres that is proposed

for wilderness designation--an addition to the NWPS that would by itself more than double Park Service wilderness representation in the System (NPS wilderness in 1983 was about eight percent of the total acreage in the NWPS).

In 1976, as part of National Park Service wilderness omnibus wilderness legislation, some 429,000 acres of Joshua Tree National Monument were added to the NWPS. At the time of the bill's passage, the Joshua Tree acreage constituted 39 percent of all Park Service wilderness acreage.

The significance of proposed or formally designated wilderness acreage by the NPS in the California Desert is that lands so designated make up large portions of both monuments. Joshua Tree's designated wilderness comprises over 75 percent of the Monument, [23] while the Death Valley proposal calls for over 90 percent of that monument to be so designated. The California Desert Conservation Area (created by FLPMA section 601) map on the following page shows the spatial relationship between the two national monuments and the East Mojave National Scenic Area along with that portion of Joshua Tree that has been designated wilderness.

Before turning to Section 603 of FLPMA (which concerns the BLM's conducting of a wilderness review on its lands), events surrounding the formulation of the second review of all the roadless, undeveloped lands in the national forests should be noted. As a result of the 1972 RARE I court settlement, the Forest Service's land-use planning process was used by the agency to decide whether to release roadless areas to multiple-use management. A Forest



Source: National Park Service

Service inventory of its roadless lands in 1973 identified 56 million acres of potential wilderness on its lands. Of that total, 12.3 million acres were to be officially studied by the Forest Service under the provisions of the Wilderness Act (this was the acreage that the agency found to be suitable for wilderness under RARE I). Heated controversy over the land-use planning process with regard to the remaining 44 million acres led to what was again called the Roadless Area Review and Evaluation (RARE II).

Capitol Hill politics again played a part in the decision to inventory and evaluate for wilderness roadless lands in the national forests for the second time. The morass created by the procedural requirements on the agency's land-use planning resulting from the passage and judicial interpretation of NEPA as well as the passage of Forest and Rangeland Renewable Resources Planning Act in 1974 and the National Forest Management Act in 1976 made the Forest Service seek a way toward making expeditious decision with regard to roadless tracts on its lands. With the encouragement of the new Carter administration as well as the prodding provided by the threat of the Endangered American Wilderness Act (which eventually received an endorsement from the Department of Agriculture) which was to set aside areas in the West that had been classified as multiple-use lands under RARE I,[24] RARE II was announced in mid 1977.

Crucial to the formulation of RARE II methodology was Assistant Secretary of Agriculture M. Rupert Cutler's repudiation of the purity doctrine as departmental overseer of the Forest Service in

a colloquy with Oregon Congressman Jim Weaver (Cutler and Weaver 1977). Like RARE I, RARE II's purpose was to speed up the process of land use allocation (O'Toole 1978)--some 67 million acres were to be reviewed before the results were announced in January 1979. Roadless tracts were categorized into those that should be immediately designated as wilderness, ones that required additional study before Congress was asked to decide on whether to designate them as wilderness ("further planning"), and those that were to be devoted to non-wilderness uses.

The RARE II results were announced on January 4, 1979. Once again, dissatisfaction with the allocation to nonwilderness use (58 percent of 67 million acres reviewed) felled the entire review by court injunction that prevented the release of the roadless lands allocated to nonwilderness due to failure to follow NEPA requirements. As of early 1984, RARE II based bills for each of several western states are pending before Congress with most of the disagreement on them stemming from the size (how much acreage will be designated wilderness) of the bill and its "release language" ('hard' language requires the Forest Service to manage the roadless areas not designated wilderness for nonwilderness uses whereas 'soft' does not).

Since FLPMA's intention was to model the BLM after the Forest Service with regard to its leadership as a multiple-use agency (Baker 1983), Section 603 or FLPMA is shaped to some degree by Forest Service precedent in wilderness review. The statute directed the BLM to review its lands within 15 years of FLPMA's passage

to determine which have wilderness characteristics, to study those lands, and to formulate recommendations for the President to submit to Congress as to which lands should be designated as wilderness. The BLM was to protect all lands with wilderness characteristics until Congress had a chance to review the BLM's recommendations and decide which lands should be designated as wilderness. Section 603 states:

> "(a) Within fifteen years after the date of approval of this Act, the Secretary shall review those roadless areas of five thousand acres or more and roadless islands, identified during the inventory required by section 201(a) of this Act as having wilderness characteristics described in the Wilderness Act of September 3, 1964 (78 Stat. 890; 16 U.S.C. 1131 et seq.) and shall from time to time report to the President his recommendation as to the suitability or nonsuitability of each such area or island for preservation as wilderness: Provided, That prior to any recommendations for designation of an area as wilderness the Secretary shall cause mineral surveys to be conducted by the Geological Survey and the Bureau of Mines to determine the mineral values, if any, that may be present in such areas: Provided further, That the Secretary shall report to the President by July 1, 1980, his recommendations on those areas which the Secretary has prior to Novemberl, 1975, formally identified as natural or primitive areas. The review required by this subsection shall be conducted in accordance with the procedure specified in section 3(d) of the Wilderness Act.
>
> (b) The President shall advise the President of the Senate and the Speaker of the House of Representatives of his recommendations with respect to designation as wilderness of each such area, together with a map thereof and a definition of its boundaries. Such advice by the President shall be given within two years of the receipt of each report from the Secretary. A recommendation of the President for designation as wilderness shall become effective only if so provided by an Act of Congress.
>
> (c) During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his

> authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on the date of approval of the Act: Provided, That, in managing the public lands the Secretary shall by regulation or otherwise take any action required to prevent unnecessary or undue degradation of the lands and their resources or to afford environmental protection. Unless previously withdrawn from appropriation under the mining laws, such lands shall continue to be subject to such appropriation during the period of review unless withdrawn by the Secretary under the procedures of section 204 of this Act for reasons other than preservation of their wilderness character. Once an area has been designated for preservation as wilderness, the provisions of the Wilderness Act which apply to national forest wilderness areas shall apply with respect to the surveys required by section 4(d)(2) of the Wilderness Act, and mineral development, access, exchange of lands, and ingress and egress for mining claimnants and occupants."

To comply with Section 603's requirements, the BLM began a wilderness review consisting of three phases: a) wilderness inventory; b) wilderness study; and c) reporting. Discussion of their formulation is necessary in order to discern how the wilderness review affects BLM lands in the East Mojave National Scenic Area.

CHAPTER THREE

THE BLM'S WILDERNESS REVIEW PROCESS

The development of a wilderness review process for the Bureau represented a milestone for the agency as it managed no designated wilderness under the 1964 Wilderness Act. Small tracts, totaling 12,000 acres, were added to the National Wilderness Preservation System beginning in 1977.[25] However, these lands are managed by either the Forest Service or the U.S. Fish and Wildlife Service and have little to do with the formulation of the process that is part of the BLM's mandate from FLPMA. The Bureau's wilderness review has some similarity to the Forest Service's RARE II process in that it is supposed to settle the wilderness allocation question and that it is a massive undertaking conducted in a relatively short period of time with little or no use of quantitative techniques. In large part owing to the speed that the BLM was conducting not only its wilderness inventory and study phases of the review but also to the rapidity that the agency was assuming its role as a full multiple-use agency, a land disposal movement called the Sagebrush Rebellion was threatening both the BLM and the Forest Service as it had 30 years earlier.

Wilderness Inventory Phase

The conducting of a national BLM wilderness inventory was a massive undertaking as the Bureau administers 284 million acres of

public land, of which 173.7 million were subject to inventory. While the BLM did an inventory of roadless areas for budgetary and planning purposes in 1977, it was preparing a draft Wilderness Policy and Review Procedures that it released on February 27, 1978. After a public comment period it released the final Procedures in April 1978 that excluded the following BLM holdings from wilderness review: "split estate" lands (where the Government owned the minerals but the surface is not Federally owned), lands being held for the benefit of Native Americans, lands that were tentatively approved for State selection in Alaska, holdings on the Outer Continental Shelf, and lands that the BLM has identified as commercial timber areas on the revested Oregon and California (O & C) Railroad lands.

Though the wilderness inventory had already begun during the public comment period following the issuance of the draft Procedures the BLM issued a Wilderness Inventory Handbook dated September 27, 1978 that outlined procedures for the inventory. The objectives for the inventory were spelled out on page 4:

a. Determine and locate areas of public lands that have wilderness resources which meet criteria established in Section 603 or FLPMA and identify them as Wilderness Study Areas.

b. Identify the public lands that do not qualify as Wilderness Study Areas under those criteria, on which restrictions imposed by Section 603 of FLPMA no longer apply.

c. Document in narrative and map form, the inventory consideration of all public lands administered by the BLM.

d. Fully involve the public in the inventory process by providing for public participation and comment,

> and consideration of such input, throughout the inventory process.

The deadline for the inventory was September 30, 1980 but this did not affect areas that the Bureau had decided to perform accelerated inventories. These included lands where there was a high interest in energy exploration (such as the Overthrust Belt located in the Intermountain states) and the California Desert (which was the subject of FLPMA'S Section 601).

In order to review two and half times the acreage that the Forest Service was considering in its RARE acreage, the more limited BLM (in 1983 the BLM had $507 million appropriated to it while the Forest Service got $1,627,282,000; personnel figures show roughly the same ratio of three full-time Forest Service employees for every one Bureau employee) had to have an inventory procedure that would quickly release much of its holdings from Section 603 restrictions. By the end of 1979 the wilderness inventory allowed the BLM to release 117 million of its 174 million acres to multiple-use management (Babb 1981).

Before conducting the inventory the Bureau had to come up with a definition of "road" as it had no agency-wide definition prior to the issuance of the draft Procedures. Public comment demanded a definition other than the Forest Service purity doctrine position that unmaintained jeep trails constituted roads, so the BLM decided to use the definition from FLPMA'S legislative history. On page 17 of the House of Representatives Report 94-1163 (May 15, 1976) is the definition that the Bureau adopted:

> "The word 'roadless' refers to the absence of roads

> which have been improved and maintained by mechanical means to insure relatively regular and continuous use. A way maintained solely by the passage of vehicles does not constitute a road."

Though this definition is subject to a variety of somewhat contradictory interpretations, it improved upon what was presented in the draft Procedures and was further clarified when the BLM adopted the following subdefinitions on page 5 of the Wilderness Inventory Handbook:

> "Improved and maintained"--Actions taken physically by man to keep the road open to vehicular traffic. "Improved" does not necessarily mean formal construction. "Maintained" does not necessarily mean annual maintenance.
>
> "Mechanical means"--Use of hand or power machinery or tools.
>
> "Relatively regular and continuous use"--Vehicular use which has occurred and will continue to occur on a relatively regular basis. Examples are: access roads for equipment to maintain a stock water tank or other established water sources; access roads to maintained recreation sites or facilities; or access roads to mining claims.

The Bureau further stated that the determination of roadlessness was also to include public involvement.

After the BLM State Directors started the wilderness inventory with a public announcement, Initial Inventory was necessary to determine which public lands "clearly and obviously" did not meet the criteria for identification as Wilderness Study Areas (WSAs) and which lands might possibly meet the criteria and would require more intensive inventory. To do this, BLM districts had to first identify inventory units with existing or readily available information. Reference numbers for each unit were then assigned (California Desert Conservation Area inventory unit number

127 would appear as CDCA-127).

After inventory numbers were assigned, a Site Evaluation (SE) was prepared for each unit, based on a description of the general condition of the unit. As described on page 10 of the Wilderness Inventory Handbook, the SE:

> "...will be developed from existing knowledge and data. Limited field verification might be needed in certain cases. The knowledge and experience of District personnel and current information on hand will be the principal source of data."

The SE was to help district personnel by documenting which inventory units did not possess wilderness characteristics (described in the second part of the inventory phase, Intensive Inventory) though only a minimum description in narrative form was needed for a nonwilderness determination. Other purposes of the SE were to document ownership patterns, permanent structures, size and other descriptions of the inventory units as well as to be a way to display BLM findings for public review. The SE was not to be used to recommend for or against WSA identification on the basis of competing demands for other resource uses (BLM 1978, 10).

The SEs and the District Manager's initial recommendations as to which areas should undergo intensive inventory for possible identification as WSAs were to be forwarded to the State Director for review. The State Director was to prepare a proposed initial inventory decision for the BLM lands in that particular state or special area (such as the California Desert Conservation Area) being inventoried. The decision was to be prepared in map and narrative form for all public lands in the area inventoried. Once

the State Director announced his proposed action a 90 day public review period began. Public meetings were to be held and the opportunity for the public to submit written comments was to be given during the review period; should public comment cast doubts on the decision as it affects areas that "clearly and obviously" lack wilderness characteristics and the State Director agrees, the area(s) would be returned to the District Manager for intensive inventory. At the end of the 90 day period, the State Director announced his final decision as to which areas did not meet the criteria for WSA identification. Section 603's restrictions no longer applied to these inventory units that did not go into intensive inventory.

Kerr (1978, 6) criticized this initial inventory process by stating that no EIS is prepared in two key parts of the process: the determination of roadless areas (inventory units) and the decision to eliminate areas from intensive inventory. He believed both to be substantial actions which require an Environmental Impact Statement under NEPA. He used BLM's wilderness review program in Oregon as an example of the acreage that can be involved in the initial inventory, the 14 million BLM acres in that state were reduced to eight million that were to undergo intensive inventory (Tryon 1983, 8).

For those areas that made it into the intensive inventory, the characteristics that were to be assessed for the area's identification as a Wilderness Study Area were: size, naturalness, solitude, opportunity for a primitive or unconfined type of recre-

ation, supplemental values, and possibility of returning to a natural condition. The Wilderness Inventory Handbook has a model for an intensive inventory, which was to be done on each area, devoting a page to each of the six characteristics plus one for map documentation and a summary sheet for each unit intensively inventoried.

The size criteria was to be satisfied for inventory units in the following situations and circumstances:

a. Roadless areas with over 5,000 acres (as alluded to in the Wilderness Act, the English acre is used in the United States to equal 43,560 square feet or 4047 square meters) of contiguous public land. State or private lands were not to be included in the acreage determination.

b. Any roadless island of public land that is less than 5000 acres.

c. Roadless areas less than 5000 acres of contiguous public lands where any one of the following apply (not all of these conditions were mentioned on the model sheet for size that Bureau personnel were to use in the field):

1) they are contiguous with lands managed by another agency which have been formally determined to have wilderness or potential wilderness values, or

2) strong public support for study of an area less than 5,000 acres and it is of sufficient size to make practicable its preservation in an unimpaired condition and is of suitable size for wilderness management, or

3) they are contiguous with an area of less than 5000 acres administered by a Federal agency with authority to study and preserve wilderness lands, and the combined total exceeds 5000 acres.

Mentioned in the Wilderness Inventory Handbook is the possibility that intensive inventory of a unit's size could generate more data on roads and characteristics that might reduce the size of a inventory unit. This periodic occurrence led to appearances by conser-

vationists in front of the Interior Board of Land Appeals (IBLA), protesting deleted acreage.

Naturalness was to be assessed according to Section 2(c) of the Wilderness Act which states that wilderness

> "...generally appears to have been affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable;"

The Wilderness Inventory Handbook takes care to avoid implying what could be construed to be a purity doctrine, stating that some imprints of man's work are allowed provided that they are substantially unnoticeable. Examples of what is allowed originally appeared in House Report 95-540 and are cited by the BLM on page 13 in the Handbook. Included are trails, trail signs, fire towers, pit toilets, fire rings, hitching posts, wildlife enhancing facilities, fencing, and spring development. Significant man-caused hazards such as unexploded shells from military activity and radioactive contaminated sites would probably disqualify an area from further consideration as wilderness.

Solitude or a primitive and unconfined type of recreation characteristics were to be assessed with the requirement that the inventory unit have at least one of the two characteristics; the unit must allow for "outstanding" (defined by the Bureau as conspicuous or superior to others of its kind) opportunities for solitude or primitive recreation. The Handbook states that in most cases the agency expects the two elements to go together. Determination of opportunity for solitude was made through an assessment of topography or vegetation, where visitors could screen

themselves from one another (called in the intensive inventories "vegetative screening"). This particular way of assessing solitude is thought to have discouraged the inclusion as WSAs large, flat open areas such as playas and plateus (Baker 1983). Outstanding opportunities for primitive recreation were to be assessed by the diversity of the number of primitive (meaning non-motorized and independent of facility development) and unconfined recreational activities possible in the inventory unit or the quality of one opportunity.

Supplemental values are those mentioned in the Wilderness Act:

> "...ecological, geological, or other features of scientific, educational, scenic, or historical value."

Presence of these values is considered to enhance wilderness quality, as well as being important in the later Study phase of the review should the unit achieve WSA status.

The sixth characteristic, possibility of certain areas returning to a natural condition, is where man's work in the inventory unit is substantially noticeable but does contain other wilderness characteristics. The area may be considered for WSA status when it is reasonable to expect that the imprint of man's work to return or be returned to a substantially unnoticeable level either by natural processes or hand labor. The Handbook cites as an example an abandoned railroad bed as what might allow an area to be considered as a WSA.

The proposed Wilderness Study Area recommendations were to be based on specific District recommendation for each intensively

inventoried unit, information acquired during District staff evaluation of the unit, and pertinent information offered by the public. The District recommendations were to be forwarded to the State Director who was to compile them and announce in the Federal Register that a 90 day public review period of the recommendations on a statewide or special area (as in the case of the CDCA) basis was to ensue. The State Director was to analyze all public comments, with District Managers using the analysis to prepare their final WSA recommendations. The State Director then made a final decision on what were to be WSAs, with the decision being both in narrative and map form. Thirty days after the list of WSAs is published in the Federal Register, the State Director's decision as to what inventory units are to be WSAs becomes final. At that time, unless no amendments based on new information are formally added, restrictions imposed by Section 603 of FLPMA no longer apply to those inventory units not declared to be WSAs.

By the time that the inventory phase of the BLM's wilderness review was completed, the acreage that was to enter the second phase of the review was reduced to 23.7 million acres in 967 WSAs. A summary provided by page 15086 of the March 3, 1981 Federal Register shows the number of WSAs and their total acreage by state:

Table 1. BLM Wilderness Study Area Acreage by State

	BLM lands inventoried	Number of WSAs	WSA Acreage	WSA Acreage as a percentage of state inventory
Arizona	12,596,000	124	2,994,000	24.8
California	16,585,000	230	5,838,000	34.9

(cont.)

Table 1. Cont.

	BLM lands inventoried	Number of WSAs	WSA Acreage	WSA Acreage as a percentage of state inventory
Colorado	7,996,000	86	804,000	10.0
Idaho	11,949,000	63	1,592,000	13.4
Montana	8,140,000	45	430,000	4.9
Nevada	49,118,000	121	5,249,000	10.6
New Mexico	12,847,000	54	1,024,000	7.8
North Dakota	68,000	0	0	0
Oklahoma	7,000	0	0	0
Oregon	13,965,000	92	2,501,000	16.6
South Dakota	277,000	0	0	0
Utah	22,076,000	100	2,577,000	11.8
Washington	310,000	3	6,000	1.9
Wyoming	17,793,000	49	581,000	3.4
Total	173,727,000	967	23,689,000	13.5

As of the date that the table was published, some 148 million acres of public lands were found to lack sufficient wilderness characteristics to receive wilderness study consideration. Since over 85 percent of the Bureau's land no longer was bound by Section 603's restrictions, conservation writers such as Kerr (1978) have contended that the final decision concerning identification of WSAs should be accompanied by an EIS--as the release of these lands into multiple-use management is a substantial Federal action that significantly affects the quality of the human environment.

Several problems also surround the intensive inventory such

as the use of the word "outstanding" to describe opportunities for solitude or primitive recreation. Though the word was drawn from Section 2(c) of the Wilderness Act, its use by the BLM to evaluate inventory units for identification as WSAs drew charges from writers such as Tryon (1983) that units were being disqualified without any standardized basis for comparison. Though solitude and primitive recreation were to be considered separately and only one of the two characteristics had to be present in order to merit consideration as a WSA, the lack of "vegetative screening" (where visitors could seclude themselves from one another and often difficult to find where inventory units were desert lands) worked against inclusion of arid and low relief units. Since the agency expected the wilderness characteristics of outstanding opportunities for solitude and primitive recreation to commonly go hand-in-hand (there is an exception cited on page 13 of the Handbook where a body of water could make an area so attractive for recreation use that it would be difficult to maintain an opportunity for solitude), the lack of vegetative screening might dissuade the evaluator from citing primitive recreation opportunities that would warrant identification as a WSA. Further, nowhere in the policy and direction for wilderness inventory is a requirement for district staffs to field check their recommendations stated, only implied. Public participation may have been negated somewhat in influencing WSA identification because the recommendations concerning an entire state are presented all at once to a public not always fully cognizant of public hearings or announce-

ments in the Federal Register. Though the BLM took steps to insure public participation (all information concerning the decisions arising out of the wilderness inventory phase are to be kept available for public inspection at the District office), there is no method for incorporating it into the identification decision, except at the State Director's discretion.

Wilderness Study Phase

Ten weeks prior to the Federal Register's publication of the BLM's Wilderness Study Areas, the agency had worked up a draft wilderness study policy. Published in the Register on December 19, 1980, more than a year lapsed between its appearance and that of the final policy. Duplication with land-use planning criteria as well as the advent of the Reagan administration (which had as a stated intent a desire to reduce regulations) were instrumental in the BLM's reduction from nine wilderness study criteria to two. These criteria were the evaluation of wilderness characteristics and manageability, each of which had several components. It is important to note that wilderness study in the East Mojave and the California Desert Conservation Area was based upon the draft criteria (the CDCA's wilderness study phase ended the month that the draft policy appeared).

The nine criteria of the draft wilderness study policy were aimed at determining whether a WSA was suitable for wilderness designation. A WSA's suitability as wilderness was to be weighed against the criteria of:

1. A full range of public benefits and manageability "sufficient to offset" resource values foregone;
2. Specific consideration of local publics;
3. Social and economic effects of wilderness designation;
4. Energy and critical mineral resources;
5. Consistency with other plans;
6. Impacts on other resources;
7. Effects of non-designation on wilderness values;
8. Evaluation of wilderness values;
9. Diversity in the National Wilderness Preservation System.

Public comment on the criteria convinced the BLM that benefits of wilderness could not be utilized as a specific criterion, they were instead incorporated into the Bureau's land-use planning process. The second criterion was not acceptable to most of the 300 respondents who sent the BLM written comments. Criteria 3 and 5 were incorporated as quality standards under the final policy's criteria of manageability, as were criteria 4, 6, and 7. Criterion 9 was incorporated into 8 (which became one of the two criteria in the final policy). Included in criterion 8 was consideration of outside sights and sounds, a consideration that when used by the Forest Service had met with charges that it was a tactic to eliminate areas from wilderness review.

Additional changes between the draft and final policies came about through policy external to the agency and budget direction impacting the BLM wilderness program. On December 10, 1981 the Bureau published a proposed mineral rating system to be used to

evaluate the WSAs for energy and mineral potential, as conflicts in land-use with regard to energy and minerals affect about ten percent of the WSA acreage (Babb 1981). The final wilderness study policy also allowed comparisons to be made between the WSAs (Kerr in his 1978 work saw this as a way of eliminating WSAs from further review, suggesting instead that comparisons between the WSAs and the developed land in the region would give a better indication as to what was suitable for wilderness) without detailing the methodology used to make the comparisons.[26]

Wilderness Study Areas recommended unsuitable for wilderness designation during the study phase were to be managed under the Interim Management Policy (IMP) adopted by the BLM in December 1979. The IMP had a nonimpairment clause that directed that lands under wilderness review (in reality all WSAs) were to be managed so as to not impair their suitability for preservation as wilderness. This policy has an important "grandfather" clause, in that those grazing, mining, and mineral leasing uses that existed on October 21, 1976 (the date when FLPMA passed Congress) may continue in the same manner and degree as on that date, even if such use would impair wilderness suitability. WSAs under review continued to be subject to claims under the General Mining Law of 1872 as interpreted under regulation 43 CFR 3802, with new claims being carried out in accordance with the nonimpairment standard that included the location, assessment, and exploration activities. Lands under wilderness review are also subject to patent (where title to the land of a mining claim is transferred to the claimnant) in which case the land claimed is no longer subject to

wilderness review or the IMP (Catlin 1983, 34).

The wilderness study phase is to be incorporated into the BLM's land-use planning process, and the groups of suitability recommendations (in the case of New Mexico, Utah, and Oregon, the grouping is for the entire state) will be accompanied by an EIS. The BLM's final wilderness study policy does not allow the creation of protective buffer zones around wilderness areas, so in cases where partial wilderness recommendations are made, deletions of acreage from the suitability recommendation must be based upon development conflicts or manageability problems (this was the BLM's way of distancing itself from the descredited purity doctrine). Many of these partial recommendations as well as WSA boundary disputes that arose during intensive inventory were appealed to the IBLA by conservation groups.

Changes in policy and top personnel brought by the Reagan administration further impacted the study phase of the BLM's wilderness review. Brewing since the passage of FLPMA in 1976, the "Sagebrush Rebellion" was a movement whose proponents demanded that Federal lands should be transferred to the states. The transfer presumably would allow the states to transfer the lands into private ownership, though the "rebellion" has been seen by Baker (1983) and Ferguson (1984) as a tactic by commodity interests that use Federal lands to intimidate the agencies that manage them. In 1979 Senator Orrin Hatch of Utah introduced a bill that died in committee but which would have given Forest Service and BLM holdings west of the 100th meridian to the states in which they

were located. This was reminiscent of bills originating from the Wyoming and Nevada delegations thirty years before and though the Hatch bill was killed, it, like its predecessors, received national attention. California went so far that year as to pass its own "Sagebrush Rebellion" bill that authorized the state's attorney general to sue for state ownership of BLM lands. Governor Brown killed the bill with a veto in September, but court actions initiated by organizations like the Mountain States Legal Federation (which represented the rebels) had an intimidated BLM backing away from its WSAs, especially when Sagebrush rebels had a disproportionate representation on the BLM's local citizen advisory boards--which were originally set up by an underbudgeted and understaffed BLM in the 1950s for citizen (usually users of rangeland such as ranchers) input into public land management (Baker 1983; McWherter 1983).

One of the Bureau's former National Directors, Marion Clawson, has noted that the agency is essentially a line and staff organization that takes on the coloration of its head (Clawson 1971, 53); this despite claims by the BLM that it is "decentralized" in its decision making.

Another former National Director, Frank Gregg (1977-81), commented on the gulf between the BLM and the Forest Service. He said the Bureau could not sustain its decisions within the Interior Department as it was not insulated from departmental politics as was the Forest Service over in Agriculture. Gregg went on to say that management decisions tended to be influenced from the top (by

either state or national directors) and that field staffs often did not feel safe to "call them the way they see them", characterizing BLM personnel as primarily interested in long careers. Troublemakers can be removed by a "reduction in force"--position elimination--or through a "directed reassignment"--forced transfer to a new post (Baker 1983, 12).

In 1981, President Reagan replaced the outgoing Secretary of the Interior Cecil Andrus with Mountain States Legal Federation head James Watt. In the BLM, Frank Gregg was replaced by a Colorado rancher who had been an active Sagebrush rebel, Robert Burford. Soon after these changes had been made, two highly regarded BLM state directors, Jim Ruch (California) and Bob Buffington (Idaho), were fired--presumably because they had fallen into disfavor with either Burford or Watt. BLM budget cuts reflected a new set of priorities than those under Gregg, as noncommodity programs were drastically reduced while programs such as mineral exploration increased in one year by 426 percent over its 1980 funding level (Baker 1983, 13).[27]

The FLPMA-mandated land-use planning process that was supposed to have wilderness review incorporated into it led to the writing of new BLM regulations that became effective on September 6, 1979. The Bureau wanted only a minor revision of its pre-FLPMA planning system that was based on comprehensive Management Framework Plans (MFPs). Instead, the new Resource Management Plans (RMPs) placed more emphasis on full costs of management decisions, required the eliciting of public participation, and management priority was to

be given to Areas of Critical Environmental Concern (Strunk 1980). The RMPs are to be prepared and maintained for each resource area (of which there are two to four in each BLM district), having an average planning cycle of ten years during which they are to be redone at least once.

By the end of 1983 only six RMPs were in operation within the entire Bureau. Most BLM districts continued planning with their MFPs that did not meet the requirements of the new regulations while conservationists charged that in many cases there was failure on the part of BLM personnel to collect adequate data with which to base planning decisions on even the MFPs (Baker 1983). Though Environmental Impact Statements are to be incorporated into the new plans (RMPs have an EIS format where the Bureau always lists four alternatives on either document: no action, maximum protection, maximum development, and balanced use), in September 1982 Director Burford issued a memorandum directing that the proposed action alternative in every grazing EIS should be "no action". Since an EIS was to be written for every BLM grazing district by 1988 as part of the Natural Resources Defense Council decision of 1973, the Burford memo would negate the court's intent and does not bode well for the new planning system. In May 1983 the NDRC reluctantly reopened its suit in federal court (Baker 1983, 23).

While the planning process has been slow to fuse with wilderness review, the Sagebrush Rebellion gained strength when President Reagan issued Executive Order 12348 in February 1982. The

Order directed 27 Federal agencies to form lists of lands identified for disposal. A Property Review Board was established by the order to oversee transactions involving the sale of Federal land. The Board, while having no land management agency representation, hoped to sell up to five percent of the Federal lands per year--aiming at collecting $2 billion in land sales for 1983 and double that figure in 1984. Privatization, as the proposed land sales were now called, was aimed at reducing government debt--though there is no historical evidence that such a program ever having accomplished this (Zaslowsky 1982).

A General Accounting Office study on privatization (officially known as "asset management") found that disposal on a scale envisioned by the Administration would need a considerable staff[28] while creating different real estate values in many areas where private land values would drop and the value that the Federal Government would receive would be less than the land values based on a Federal policy of land retention (Oregon Natural Resources Council Staff Report 1982; Zaslowsky 1982).

Fears that large capital-intensive business would be able to out-bid individual citizens for the lands in a disposal program were expressed even by privatization advocates. Secretary Watt, however, gave his full support to the program--even suggesting transfer of 2.1 million acres of O & C timber lands to the State of Oregon (Oregon Natural Resources Council 1982, 8).

At the time that Watt talked of the O & C transfer (which was in a January 1982 conversation), he also offered a bill that found

little, even right-wing, Congressional support. The proposed legislation would have automatically opened for immediate development any BLM Wilderness Study Area the President recommends for wilderness should Congress have failed to act within two years of the President's recommendation as well as permanently bar consideration of wilderness protection for all national forest roadless areas.

While failing to spur large-scale privatization or put an end to Congress' ongoing consideration of the wilderness question, Watt did summon his power as Secretary of the Interior in December 1982 to order all BLM Wilderness Study Areas under 5000 acres dropped from wilderness review. This action was met by an immediate Sierra Club lawsuit, as the club could take little solace that the WSAs were still being studied for wilderness potential in the Bureau's land-use planning process due to the BLM's reluctance to initiate the Resource Management Plans (Catlin 1983, 22).

Before Watt's forced resignation in mid-1983[29] serious doubts about the ability of the BLM to bring off wilderness review on its lands began to surface. First came controversial amendments to the California Desert Conservation Area plan (McWherter 1983) on the heels of rumors that Watt would remove from consideration all WSAs in the CDCA because of their identification and recommendations as suitable for wilderness under the Carter administration (California Wilderness Coalition 1982, 5). Next, and more damaging, was the Interior Board of Land Appeals finding that the BLM had unjustifiably deleted from WSA status 21 units or portions

thereof totaling 325,000 acres in Utah. In addition to repeated violations of the BLM's wilderness study policy in the Moab District of Utah, energy corporations operating under mineral leases had been allowed to bulldoze roads into other Utah WSAs as well as some in Colorado (Baker 1983). The action that the IBLA ruled on was part of a review that Secretary Watt had instituted to drop certain WSA acreage as unacceptable.[30] By the summer of 1983, some 1.5 million acres--affecting 289 WSAs--were deleted, supposedly because they were under 5000 acre units, were "split-estate" lands, or were WSAs simply because they bordered wilderness lands managed by another agency. It was into this climate that the CDCA wilderness review entered into its reporting year, 1984.

The Reporting phase is where the State Director forwards his recommendations on what the BLM thinks should be designated as wilderness to the Secretary of the Interior. These recommendations (which involve all or part of WSAs the Bureau considered suitable for wilderness as the result of the study phase) are to be accompanied by mineral surveys, the EIS, and a record of public comment on the BLM's recommendations (Catlin 1983, 6). The recommendations are then presented to Congress who has the final decision as to what is to be designated wilderness.

Kerr (1978) criticized the procedures for the reporting phase by citing the BLM's own soliciter who agreed to the contention that there needs to be as much information on nonsuitable areas as there is on suitable ones. The soliciter also agreed to the notion that mineral evaluation and NEPA should be applied to all WSAs. These suggested changes, like others suggested by

conservationists for the inventory and study phases of BLM wilderness review, have largely been ignored by an administration unsympathetic to wilderness protection. Conservationists, fearing BLM wilderness recommendations stemming from accelerated reviews, are preparing alternative proposals in the hope that Congress will once again exceed agency recommendations when designating wilderness areas (Allin 1982; Catlin 1983).[31]

CHAPTER FOUR

WILDERNESS IN THE EAST MOJAVE NATIONAL SCENIC AREA

To this point this study has developed a historical context for wilderness review in the California Desert while also describing the BLM's wilderness review procedures. It is now necessary to apply that framework to a study area in order to determine whether the question of whether evaluation of wilderness in deserts should be similar to that in forest or alpine environments. The East Mojave National Scenic Area was selected as the study area to answer this question because of its special designation as an NSA, its place in the accelerated wilderness review ongoing in the CDCA (which is entering its final phase in 1984), and the investigator's on-site study during December 1982 and 1983.

This chapter is divided into four sections so that a "geography of wilderness" in the East Mojave may be developed to test the desert wilderness evaluation question. The first section, by presenting an overview of the East Mojave's physical and cultural geography, delineates the place of the NSA within the California Desert. Second, since the NSA designation for the East Mojave was a product of a movement for a national park, there must be reasons for its special status as well as some for why it failed to become a national park. Third, the East Mojave NSA is incorporated into the California Desert Conservation Area plan--a plan that has special status under FLPMA and which had wilderness review proced-

ures that were slightly different than the final ones the BLM formulated. Last and most important, the identification of WSAs in the East Mojave NSA along with BLM recommendations as to their suitability for wilderness designation are given.

Physical and Cultural Geography of the East Mojave

The East Mojave National Scenic Area is 1.38 million acres of the 25 million acre California Desert Conservation Area shown on Map 1, page 40. An area of this size presents quite a task to one who seeks to assess its physical features for possible wilderness designation as well as for an investigator who wants to develop a spatial context with which to evaluate wilderness review in the area.

Geological works by Hewitt (1956), Sharp (1966), Diblee and Hewitt (1970), as well as Norris and Webb (1976) are helpful in getting a physical description and assessment of the East Mojave geomorphology and mineral resources. As a tool to examine the area's topography, maps such as the BLM's small scale (1:250,000 or one foot on the map equals 250,000 feet on the ground) Needles Resource Area are useful as are five (Dumont-Clark Mountain, Irwin, Providence Mountains, New York Mountain, and Sacramento Mountains) of the 1981 CDCA map series of 1:500,000 Vehicle Access Guides. More detailed, larger scale maps are available from the U.S. Geological Survey with their 1955-57 series of 1:62,500 quadrangles of the East Mojave. Available as of April 1984 are the 1:24,000 USGS Provisional topographic maps with metric scaling that when

joined together show the NSA in the space of an average living room floor.

On a physiographic map of North America the East Mojave is included in the Basin and Range province. The Basin and Range is characterized by fault-block mountain ranges (ranges that are formed by the displacement of rock along a fault) that are oriented north-south. Elevation of the ranges can exceed 10,000 feet with the average elevation of the valleys that separate the ranges being between four and six thousand feet. Much of the Basin and Range (which includes parts of Oregon, Idaho, New Mexico, Arizona, California, and almost all of Nevada) is still slowly rising and includes some of North America's greatest relief.

In the southern part of the province, however, the ranges have stopped rising and are gradually wearing away to inselberge; thereby burying themselves in their own waste. Valleys here are basins with long pediment slopes extending toward the ranges in both directions, forming bajadas or "seas" of sediment. This description fits much of southeastern California and the southern tip of Nevada and is the general pattern of the landforms in and adjacent to the NSA as indicated by McPhee (1981, 47).

Within the Basin and Range physiographic province lies the Mojave Desert geomorphic province, covering the eastern portion of the CDCA and southern Nevada. The Mojave is bounded by the San Andreas fault and the Transverse Ranges (the San Gariel and the San Bernardino Mountains) on the southwest with the Garlock fault the Tehachapi and Basin (such as the Rand, Owlshead, and

Spring Mountains) Ranges on the northwest and north ends of the province. The southern boundary is designated as the San Bernardino-Riverside County line with the arbitrary citing of the Nevada-Arizona stateline and/or the Colorado River forming an eastern boundary. The Mojave is sandwiched between other desert provinces such as the Great Basin Desert (which is characterized by interior drainage whereas the Mojave has the outlets of the Colorado and Mojave Rivers) to the north, the Colorado Desert to the south, and the Sonoran Desert to the south and east (Norris and Webb 1976). Covering 25,000 square miles or 65,000 square kilometers, the Mojave Desert is neither one of the largest, nor one of the harshest, but is considered one of the most geologically and ecologically varied deserts in North America (Jaeger 1957).

The western half of the Mojave is geologically older than its eastern half, having a comparatively smooth surface. The eastern portion is dominated by numerous, more recently formed parallel ranges of sharp angular mountains with gently sloping bajadas. Similar to the structural pattern of the Basin and Range geomorphic province, the directional trend of the eastern Mojave's ranges and drainage basins is from north to south. These drainage basins, or linear valleys often contain playas (dry lakes, the catchment of interior drainage) as drainage is usually blocked by almost imperceptible rises between playas. Alluvial fans are less common here (as the eastern Mojave's structural pattern would indicate) for the ratio of depositional area to mountain area is large--mainly because of extensive erosional modification of tectonic relief (Cooke and Warren 1973, 175).

Within the East Mojave National Scenic Area, several stages of igneous activity, metamorphism, and thrust faulting serve to complicate the geology (California Desert Planning Program 1977). The resulting landforms contain numerous kinds of rock, from the oldest Precambrian (such as that found in the Colton Hills near the Providence Mountains that have been dated to as much as 1.4 billion years old) to the relatively recent volcanic cinder cones west of Cima. Bedrock is as much as two to three thousand feet under the surface of the large valleys but the NSA also contains Cima Dome, a granitic pediment that is covered with areas of lava and volcanic cones.[32] Other intrusive features of the NSA include the Granite Mountains which have prominent examples of exfoliation (the removal of concentric sheets or slabs of rock by predominately mechanical weathering).

The fault block ranges such as Old Dad Mountain, the Ivanpah Mountains, and the northeast-southwest trending New York and Providence Mountains (which include the Castle Peaks, New York Mountains, Mid Hills, Providence and South Providence Mountains WSAs) contrast sharply with the granitics. These summits are craggy, even angular with the west face of the Providence Mountains so abrupt (about one mile high) that it affords climbing as it is suggestive of the Sierra Nevada's eastern escarpment. Also evident in the NSA are volcanic features such as the flat-topped Wild Horse Mesa, tufa cliffs of compacted volcanic ash at Hole in the Wall and small ranges such as the Woods Mountains that exhibit weathering features such as desert varnish, the formation of which is not completely understood.

The main valleys of the NSA are the Clipper Valley, Kelso Wash, Devils Playground, Lanfair Valley, Halloran Wash, and parts of the Soda Lake, Shadow, Ivanpah, and Fenner valleys. The Ivanpah Valley and Kelso Wash line up in an orientation to the northeast but drain in opposite directions, being separated by a scarcely noticeable northwest trending divide near the town of Cima. Lanfair Valley drains through the Piute Wash into the Colorado River, with the remainder of the valleys having interior drainage--some display playas such as Soda Lake at the NSA's western edge and Ivanpah Dry Lake which is just outside the NSA, northwest of Nipton. All of the East Mojave water basins are undeveloped, with very little information available on all but the Soda Lake and Lanfair valleys which have only general information on relevant parameters. Localized use problems are evident in all the basins (Water Resources Board 1979, 69; Thompson 1929).

Some of the largest, highest, and most extensive sand dunes in North America are found between Baker and Kelso, in an area known as the Devil's Playground. Most of the sand was derived from the Mojave River (though some may have been added from old beaches around Soda Lake, the pleistocene Lake Manix), the dune field extends for some 35 miles. Outstanding among an area consisting largely of low dune groups and sandy areas anchored by vegetation are the Kelso Dunes, the only known barking dunes in the California Desert. A phenomena that has yet to be fully explained, the low-pitched barking sounds can be heard when certain dunes are disturbed by the activity of people or when apprently spontaneous sand slides occur. The southern ridge of the Kelso Dunes

is its highest (560 feet) and nearly four miles long (Norris and Webb 1976).

The effects of climate in the East Mojave are tempered somewhat by elevation. While Needles on the banks of the Colorado River (elevation 1000 feet above sea level) has only eight days of freezing temperatures, Baker (elevation 2100 feet) on the NSA's northwestern border has 50. Baker is typical of the western fringes of the NSA where elevations reflect the desert-wide average in the Mojave of 2500 feet. The central and eastern portions of the NSA are where relief becomes more extreme (Interstate 15's elevation some 16 miles east of Baker is 4000 feet at Halloran Summit) where mountains rise above the pediment slopes to heights of 6900 feet in the Providence Mountains, 7445 feet in the New York Mountains, with the highest point in the NSA being the 7929 foot elevation of Clark Mountain. Relief from summer temperatures that can exceed 120 degrees fahrenheit in Needles can be attained at the Mid Hills or Hole in the Wall campgrounds located in the NSA, both of which have elevations between four and five thousand feet where temperatures typically are in the 85° to 95°F range.

Prevailing winds in the East Mojave are westerly but there are locally important spatial and temporal variations in pattern. The "Nevada high" and "Mojave low" pressure cells produce distinct winter wind circulations in the Mojave (Cooke and Warren 1973, 17). Rainfall in the California Desert responds to two winter cyclonic storm systems and a relatively small number of high intensity, localized summer convectional thunderstorms (Lyesis, Weide and

von Till Warren 1980). The Mojave, like most deserts, has a highly variable rainfall that averages from between 2.2 and 6.5 inches annually (though in 1982 over 22 inches of precipitation were recorded at Mitchell Caverns in the Providence Mountains State Recreation Area with the 1983 figure exceeding that total by another six inches). Needles has ten days with precipitation per year whereas Kelso has 20 days due to the orographic influence of the Providence and New York Mountains.

The largely mountainous character of the East Mojave NSA gives it a greater vegetative diversity than the rest of the desert. The Providence, New York, and Clark ranges have been noted for their containing a number of species with limited distribution (the latter two ranges have isolated Ice Age relict stands of white fir) and for plants which have an affinity with those of the Colorado and Sonoran Deserts. Clark Mountain has been referred to as a "sky island" which spans the life zones from the Lower Sonoran to the Canadian (Butcher 1981, 31). The Mojave Desert is commonly designated a floristic province and of the about 1000 species of vascular plants estimated to be in the entire California Desert, over 700 have been recorded in the East Mojave.

The density of the joshua tree (which is only present above 4000 feet) is another unique feature of the NSA. The Cima Dome joshua tree forest is the most expansive of its kind in the California Desert while the Mojave yucca and the Spanish bayonet communities also reach their ultimate nearby (BLM 1977, 2). Washes in the East Mojave support catclaw (acacia) and smoke trees. Higher elevations have pinion pine, juniper, oak, sagebrush, and grass-

land present. A desert oasis plant community can be found at Piute Spring, near the NSA's eastern boundary.

The Bureau states in its Planning Area Analysis for the East Mojave that it knows of no finer grouping of different wildlife habitats than those in the NSA--this from a perspective of both the total number of species (some 300 are present) and the total number of animals. The Kelso Dunes, Granite, Providence and New York Mountains along with Cima Dome are said to be the finest examples of their particular types in California as well as being the best preserved. Notable reptiles found here include the desert tortoise, the desert-striped whip snake, the Mojave green rattlesnake (which, incidentally, possesses both a neurotoxin and a hemotoxin, making it North America's most poisonous snake), and the Mojave fringe-toed lizard. The most significant bird habitats for the area are the Lanfair Valley and around Kelso in the spring and fall. Most of the ranges have had desert bighorn sheep sighted in them as well as an occasional mountain lion, porcupines, rock squirrels, and the feral burro (who is very unpopular among wildlife biologists and/or BLM employees).

Of importance, too, is the human habitation of the East Mojave. As the cooperation of local residents is an essential component in the workings of the wilderness review, consideration of population density, settlement patterns, and sequent occupance should be made. An increasing number of visitors from large urban centers to the East Mojave have had the effect of accelerating wilderness review in the California Desert as well as casting a spotlight on the BLM's wilderness program.

The East Mojave National Scenic Area is within a five hour drive from one of the nation's largest population centers, Los Angeles. Making up significant portions of the NSA's boundaries are two freeways, Interstates 15 and 40. Though these freeways are but transportation corridors with regard to their impact on the East Mojave's residents, they form two sides of a triangle that connect Barstow with Las Vegas on I-15 and Barstow with Needles on I-40. Though U.S. Highway 95 connects Needles with Las Vegas, the triangle assumes a more conventional shape if the road that begins as Nevada state highway 164 from Searchlight, Nevada, and continues as a county road through Nipton, California on its way toward connecting with I-15 at Mountain Pass, California.

Towns located along the freeways are typical examples of those whose existence is tied to tourist services, having an assemblage of service stations and motels. Communities such as Baker have sustained themselves due to their siting on Interstate 15 (which at that point is along the same route as old U.S. Highway 91) whereas towns located along the old National Trails Highway (U.S. 66) such as Essex and Amboy were not as fortunate because Interstate 40 was located some 10 to 15 miles north of the old road. These latter communities exhibit traits of dying service centers, having to depend upon local needs for groceries and gasoline. Due to the ease of access created by the road network, residents of the "triangle" look to the towns located adjacent to or within relatively short driving distance of the NSA for services. Needles

is the largest with a population of 4100 people as of 1976, while Baker has 830, Mountain Pass 150, and Ludlow 180. In Nevada, Searchlight has 425 people and Jean 90 (BLM 1977).

Between the freeways live some 250 people in what some local residents and visitors alike call the "Lonesome Triangle". The population density here is one of the lowest in California, as the number of residents in the NSA (for our purposes the NSA and the Lonesome Triangle are synonymous) make up one-sixteenth of one percent of the California Desert's total population. Of the 250 (a figure from the Planning Area Analysis and substantiated by local residents, though there is no 1980 census data for the area) people that live here, the BLM estimates that approximately twenty percent are part-time residents. Most of the full-time residents live in small settlements of less than 25 people with an estimated distribution as follows:

Kelso	50
Cima, Nipton, Ivanpah, Goffs	85
cattle ranchers	25
other persons in isolated dwellings (miners, government employees, etc.)	40
Total	200

Approximately 100 people are employed in the NSA. Over 40 people work for the State of California (Department of Fish and Game, Highway Department, and at the Providence Mountains State Recreation Area for the Parks Department), San Bernardino County (Roads Department) and the Federal Government (Bureau of Land Management). Next in number of employees is the railroad (the two lines that run through or are near the NSA--the Southern Pacific and the Atcheson, Topeka, and Santa Fe--have now merged) which accounts for the

existence of Kelso (Reyner Banham 1982). After that comes employment on cattle ranches, in retail trade, and for utility companies (BLM 1977, 69).

By the standards of the conterminous United States, the East Mojave has always been a remote area. Population here has stabilized since the brief homesteading boom of the 1920s (Hewitt in his Geology of the Ivanpah Quadrangle includes a 1926 count that showed some 160 people living within the area of the present NSA) that followed a wet cycle that the Mojave had experienced since 1918. Most attempts at agriculture (centered primarily in the Lanfair Valley) failed when the water sources dried up; the residents that remained went back to ranching and mining, two activities most prevalent on the landscape of the East Mojave to the present time.

Early exploration of the East Mojave was part of an effort to link coastal southern California to interior settlements. Though the Mojave and Colorado deserts presented more obstacles to early exploration than any area of similar size in the United States, men such as Jedediah Smith, John C. Fremont, and Kit Carson had all crossed parts of the NSA prior to 1850. It was geological exploration stemming from the opening of a military road through the center of the NSA in the late 1850's that led to the first gold strike in the NSA in 1861. Cattle ranching was largely absent from the area until the coming of the railroad in 1883.

Cultural resources, evident not only from the European occupance of the East Mojave but also from that of the Native Americans

to about 1870, are important in the historical development of wilderness review in the NSA. Occupance by a Native American group known as the Chemehuevi largely accounts for the rock shelters, petroglyphs, camp artifacts, aboriginal trails, natural water tanks, and pictographs present in specific localities throughout the NSA. Archeological resource areas located within East Mojave WSAs include Wild Horse Mesa (in WSA 263), Woods Wash (271), Cow Cove (239), Piute Gorge (267), and the Granite Mountains (256).

Numerous historic sites are also located within the NSA's Wilderness Study Areas and Areas of Critical Environmental Concern. The 1860s army outpost at Piute Spring is located within WSA 267 while mining towns of Providence (in WSA 263), old Ivanpah (227), Hart (266), and Vanderbilt (265) were in existence from about 1880 to 1910. A resort was located at the Zzyzx mineral springs until 1974 (within the Fort Soda ACEC), an abandoned local railway--the Barnwell and Searchlight--is present in WSAs 266 and 267, in addition to the Mojave Road (1859-1883) that runs through the center of the NSA and is tangent to several WSAs and ACECs.

With rapid increases in visitor use of the California Desert starting during the mid-1960s, concern arose for the protection of these cultural resources as well as for the natural features of the East Mojave. Damage to resources and features of the California Desert jumped markedly with the increase in visitor use of the desert. Publicity that came with increased interest in the desert also served to call for ways to curb the abuses. In 1972, two significant events occurred that affected the California

Desert in general and the East Mojave in particular. One was the hiring of the first desert rangers that had law enforcement authority, something that almost no BLM personnel had at that time. Second and more significant to this study was the designation of 700,000 acres as the Fort Piute and East Mojave Recreation Lands by the Secretary of the Interior. Though this designation gave recognition to recreation as a legitimate use on these BLM lands, little administrative protection was granted to the lands of the East Mojave. Fort Piute is part of WSA 267 while the East Mojave Recreation Lands included what are now WSAs in the National Scenic Area with the exception of WSAs 243, 249, 227, 272, and part of 267.

By 1974, the California Department of Fish and Game wanted 639,221 acres of the East Mojave set aside as a National Cooperative Land and Wildlife Management Area that would allow cattle grazing and mining in the area, though new businesses and homes would have been prohibited (Saldana 1974). Though this idea never got beyond the planning stage, interest in the East Mojave by conservation groups and other government agencies nevertheless was growing. As early as 1968 the California State Park Plan identified much of the area in the East Mojave as having the potential for a large state or national park (BLM 1977, 42).

Though the BLM in its Planning Area Analysis for the East Mojave had described the East Mojave as being "extraordinary" and having "remarkable natural, scenic, and cultural values", conservationists were concerned about protection of the area. The inability of the Bureau to control its sanctioned Barstow to Las Vegas

motorcycle race (Wilshire and Nakata 1976) as well as continuing off-road vehicle damage to areas that had been closed to ORVs cast doubts in the minds of members of conservation groups about the BLM's ability to manage the East Mojave. Though FLPMA was enacted in late 1976, a coalition of these groups began an effort that would have had over one million acres of BLM land in the East Mojave transferred to another agency within the Department of Interior, the National Park Service.

The East Mojave National Park Movement

In 1978 and 1979, several bills were introduced that proposed creation of a 1.2 million acre East Mojave National Park. A Mojave National Park Coalition (composed of the San Bernardino Valley Audobon Society, the California Wilderness Coalition, the Desert Conservation Association, Friends of the Earth, the Desert Protective Council, Desert Watch of the Society for California Archeology, the High Desert Environmental Defense Fund, and the Sierra Club) was formed to lobby for the park and set up its headquarters in Barstow. The Coalition charged that the Bureau had failed to provide the protection necessary for the 700,000 acres of national recreation lands and that a Park Service presence in the East Mojave would bring the stationing of rangers that the area needed.

The Mojave National Park Coalition proposed boundaries that were slightly different than the present ones of the NSA. Park boundaries would have omitted most of the NSA's southeastern portion (the Lanfair and Fenner valleys, much of which is privately

owned) with the exception of the southern end of the Piute Range and the Woods Mountains. The proposed park and present NSA boundaries were the same in their southwestern and northwestern portions except in the park's exclusion of Soda Lake. The northern boundary of the park would have included most of the Mesquite Mountains and Mesquite Lake while the present NSA includes only the more southerly Clark Mountain Range. The northeastern portions of the park and the NSA are similar, except that the northern end of the Ivanpah Mountains (not part of the NSA) would have been included in the park (Mojave National Park Coalition 1977).

To get a park bill passed, an uphill legislative battle faced the Coalition. A number of bills that would create national parks are presented to Congress every session, so the Park Service serves as a consultant for the legislators. The NPS generally takes a conservative view of new park bills, fearing an erosion of the distinction between national significance and local pride where such a blurring would trend the park system toward mediocrity (Everhart 1975, 137). All new parks are established by act of Congress (national monuments may still be declared by the President but there has been reluctance on the part of recent presidents to do so as Congress has thought this to be an intrusion on its authority, sometimes not appropriating funds for new monuments) having to pass both houses after getting out of each's Interior and Insular Affairs Committees. The interval between introduction and passage of a park bill can take several years as hearings are held in Washington DC and in the proposed park's locality (a greater

indulgence in the democratic process than major highway or defense projects). The Department of Interior (usually through the Park Service) is required to make comment on park proposals before passage, though Congress can disregard the recommendations.

The National Parks and Conservation Association (NPCA) was set up as an advisory board to Congress on national park proposals as well as being the most important link in facilitating citizen input into the formulation of national policy on parks. It was the NPCA that orchestrated the compromise between park proponents and the BLM that resulted in the creation of the East Mojave National Scenic Area. Five major considerations ran against the East Mojave National Park proposal that made the Coalition willing to compromise with the BLM.

First, there was perceived over representation of the California Desert in Park Service holdings should such a park be created. This was despite the argument that Death Valley National Monument is located in the Great Basin Desert while Joshua Tree National Monument is part of the Colorado Desert. The Mojave Desert geomorphic province has no representation in the park system.

Second, severe budgetary problems since the mid-1970s have limited the ability of the NPS to take on additional parks, especially with the prospect of making massive additions to the national park system from lands in Alaska.

Third, an East Mojave park would create another private inholdings headache for the NPS. As the Park Service has no control over private lands in parks, its only management option is to

purchase those lands--an increasingly expensive proposition. As of 1978, only seven of the 36 national parks were completely publicly owned and the Park Service has put great emphasis on increasing that percentage. The biggest inholdings in the California Desert parklands are mining claims--Death Valley, for example, has 4000 claims that are not under Park Service control.

Fourth, the historical animosity that exists because of the Park Service having to carve much of its holdings from Forest Service domain might be furthered by the creation of an East Mojave National Park from BLM holdings. What has been an interdepartmental feud could be widened intradepartmental problems between the Interior agencies of the NPS and BLM, as the Bureau would see such an action as damaging its new found credibility given to it by FLPMA--this occurring in the middle of the largest single resource evaluation and land-use planning project ever undertaken in the United States, that of the California Desert Conservation Area plan.

Fifth, steps were being taken by the Bureau to address the Coalition's major complaint, that of the lack of personnel to protect the East Mojave. In 1978, the Needles Resource Area office was established so that administration of the East Mojave could be a "showcase" of multiple-use management.

With these considerations in mind, NPCA entered into discussions with BLM National Director Frank Gregg to find some sort of land classification that would protect the East Mojave. By October 1980 in CDCA plan hearings held in Needles, NPCA Southwest

Regional Representative Russell Butcher had testified that the East Mojave could be protected by the BLM as the nation's first designated National Scenic Area (NPCA 1980, 8). Given the assurance that special attention was to be paid by the agency to wilderness and the protection of special features within the NSA, the conservation groups that formed the Coalition endorsed the designation (which provided that traditional uses were to continue--those of mineral prospecting and extraction, livestock grazing, rock hounding and hunting).

The National Scenic Area designation was included in the final CDCA plan that was approved in December 1980 by outgoing Secretary of the Interior Cecil Andrus. Adoption of the plan with the inclusion of the NSA made the East Mojave a Bureau priority, even though most of the work on the plan had been done before the NSA designation. In addition, most of the decisions about wilderness had already been made with the second phase of the review, wilderness study, largely concluding in February 1980 with the release of the first wilderness suitability recommendations.

The California Desert Conservation Area Plan

As the result of four years of field research and hearings, the CDCA plan directly affects 12 million BLM-administered acres in the California Desert. These holdings constitute about one-eighth of the state's total land area. In the plan a variety of designations were used to protect land in addition to that offered

WSAs by the BLM's Interim Management Plan of 1979.

Probably the single most important and widely used land protection designation used by the plan was the Area of Critical Environmental Concern (ACEC) of which there were 75 in the CDCA totaling 655,066 acres. ACECs are defined in Section 103 of FLPMA as an area:

> "...within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes or to protect life and safety from natural hazards..."

Management prescriptions (directions) are developed for each area proposed prior to designation with requirements being site-specific. These may include actions which the BLM has authority to carry out (posting signs, patrolling, fencing) and recommendations for actions which the Bureau does not have direct authority to implement--such as cooperative agreements with other agencies and mineral withdrawals. Anyone could nominate ACECs, having only a map and evidence (as described in August 1980's Final Guidelines for Areas of Critical Environmental Concern published by the BLM) of the designation's relevance for an area.

A Special Area program was also instituted by the plan to: 1) recognize significant natural and cultural resources found on BLM-administered lands in the CDCA; 2) provide for other uses in the designated Special Areas, compatible with the protection and enhancement of the significant natural and cultural resources; 3) monitor the qualities of the significant natural and cultural

resources on BLM-administered lands and the compatibility of other allowed uses with these resources. Eleven Special Area designation categories were used in the plan of which four were applied to areas within the East Mojave National Scenic Area (the NSA designation was also included within the program). The Special Area designations were largely for identification purposes so that cohesive management directives for the areas could be developed. The Kelso Dunes were to be a National Landmark Area, Cima Dome was designated a National Natural Landmark, the Mojave Road (some of which is called Old Government Road on the NSA's topographic maps) became a National Historic Trail, and the Granite Mountains attained Research Natural Area status, largely as the result of several university study projects conducted there throughout the 1970s.

The CDCA plan also designated all but 300,000 acres (which remained unclassified at the time of the plan's approval) of the BLM-administered land in the California Desert into four multiple use classes:

> Class C (Controlled Use) lands are being recommended as suitable for wilderness designation by the BLM. Though Class C lands have not been acted upon by Congress they were to be managed as wilderness. In the CDCA, 2,099,000 acres were designated under this category or 17.3 percent of the 12 million acre total.
>
> Class L (Limited Use) lands were to provede for lower intensity, carefully controlled multiple use of resources, while insuring that sensitive values were not diminished. Some 5.9 million acres in the CDCA were designated as such.
>
> Class M. (Moderate Use) lands provide for a variety of uses that include mining, grazing, recreation, energy, and utility development. Some 3.4 million acres were so classified in the CDCA.

> Class I (Intensive Use) lands were to provide for concentrated use of land and resources to meet human needs, usually in the form of off-road vehicle areas. About half a million acres or 4.1 percent of the total CDCA acreage was classified into this category.

It should be noted that the implementation of the Controlled Use designation was superseded by the Bureau's Interim Management Policy that prohibited areas being managed as wilderness solely because the lands were under wilderness review. Because of the IMP, class C lands were to be managed as Limited Use lands until such time as they were designated wilderness. As a result, almost eight million acres or over 65 percent of the CDCA were actually managed under the Limited Use classification.

In the NSA, most BLM lands were Class L or monitored multiple use. A few areas, such as that north of the town of Cima (the Ivanpah Mountains, Mescal Range, and the Mountain Pass area) were classified Moderate Use as were cinder pit mining areas on the lower western slopes of Cima Dome. Also included as Class M was a large area surrounding Halloran Wash in the northwestern corner of the NSA. The Class I land was restricted to a small area of land called the Rasor Ranch Open Area (which is part of the Mojave River Sink) that occupies the NSA's western edge, south of Soda Lake.

In June 1981 the BLM issued a series of one-half inch to the mile scale maps called Motorized Vehicle Interim Access Guides for the entire CDCA. The maps incorporated land-use classifications into their vehicle access designations.

Zone A (Open) applied to vehicles traveling anywhere within an area where: a) the area was specifically designated "open" for

vehicle travel; b) certain sand dunes and dry lake beds had been declared "open".

While Zone A corresponded to Class I, Zone B incorporated both Moderate and Limited Use classes, dictating that vehicle travel was to take place only on existing routes. Specified routes of travel were to be identified by 1983 and these interim maps revised. Another zone, B_1, was for the identification of WSAs recommended suitable for wilderness but the same rules as with Zone B applied.

Zone C was the most restrictive of the vehicle access designations. This was where motorized vehicle travel was prohibited, applying to: 1) all wilderness areas when established by Congress; 2) some lands in Areas of Critical Environmental Concern where provided for in the ACEC Management Plan; 3) certain sand dunes, dry lake beds, and washes. Zone C designation was actually the strongest land protection measure the Bureau could undertake, as it in effect applied a Controlled Use classification to certain areas in the CDCA.

In the NSA, the Zone C designation closed Soda Lake (Fort Soda ACEC), the Kelso Dunes and the southern two-thirds of Clark Mountain (which had been declared an ACEC). Mesquite Lake, while not part of the NSA, had been considered for inclusion in the proposed park and was closed under Zone C.

After the Interim Access Guides were published, the next event to significantly affect the CDCA plan's operation was the offering of amendments to it in late 1982. As originally intended,

amendments were to be implemented by the BLM's Advisory Committee only if a new issue arose after the Plan's approval that also had supporting rationale, if there were new data on an existing issue, or if a Congressional mandate affected the original plan. Forty-nine amendments were being entertained by the Committee, a body whose composition had changed from having representation by wildlife, native plant, and archeological interests to those largely of mining and utility companies (McWherter 1983, 116). About half of the amendments came from within the Bureau, the others from local governments and the public. Besides not having any of the amendments offered by conservation organizations approved, groups such as the Sierra Club found several of the 49 amendments objectionable and charged that their approval was a betrayal of the original CDCA plan's intent (McWherter 1983). In their eyes, the most objectionable amendments included the following:

> Amendment 6 - the Barstow/Vegas motorcycle race, discontinued in 1975 was proposed for revival (it was run in November 1983). The race course runs along the boundaries of several WSAs both in and outside of the NSA and there is some question as to its compatibility with the Bureau's Interim Management Policy for wilderness study areas.
>
> Amendment 14 - would eliminate the key criteria that would determine the carrying capacity for grazing allotments: the distance of forage from water and the degree of slope of the terrain. This amendment was proposed by BLM management but was not supported by the Bureau's staff comments.
>
> Amendment 18 - the proposed deletion of the NSA's northern section that would include the Clark Mountain ACEC along with portions of the Ivanpah Mountains and Mescal Range.
>
> Amendment 30 - the proposed addition to the list of WSAs suitable for wilderness of 11,520 acres in the

> Woods Mountains was rejected without explanation by the Advisory Committee.

McWherter (1983) quoted Jim Dodson of the Sierra Club's Desert Committee who said that the amendments "demonstrate in the most graphic way the BLM's abandonment of its congressional mandate to become a land-management agency, and its intent to go back to being a land-grant agency." McWherter concludes by saying that if Dodson's assessment is correct, wilderness in the California Desert and on all BLM land is in serious danger. In order to examine whether such a charge can be substantiated and to what degree, the East Mojave's wilderness review phases of inventory and study should first be scrutinized.

Wilderness Inventory and Wilderness Study in the East Mojave

The California Desert Conservation Area's wilderness inventory phase of the BLM's wilderness review was conducted from April 1978 to February 1979. Of the 1.1 million acres of BLM land in the NSA, 612,228 acres were included within the WSAs there. This WSA acreage figure shrank to 606,052 acres with the deletion of two WSAs that were under 5000 acres by order of Secretary Watt in December 1982.. Nonetheless, over 54 percent of the NSA's acreage (no matter which figure is used) went into the next phase of the review, wilderness study (this compares to the CDCA-wide figure of 46 percent).

The CDCA wilderness inventory commenced before the final Wilderness Inventory Handbook was released. The go ahead for it was given by BLM director Gregg, who also approved a wilderness

inventory for a Pacific Power and Light electrical transmission line right-of-way project in Oregon. In the Oregon project, an inventory was done in 1977 that met with subsequent charges of nonvalidity due to irregularities in methodology by Kerr (1978). It was the potential legal difficulties stemming from this inventory as well as the lack of standardized inventory procedures that led the Bureau to issue draft wilderness inventory criteria in February 1978 (the final criteria were included in the Wilderness Inventory Handbook that was issued September 27, 1978).

Initial inventory (where inventory units were delineated and those dropped from further review that "clearly and obviously lacked wilderness characteristics") started in the CDCA in April 1978.. While neither of the CDCA's initial or intensive inventories was done with very much field checking,[33] the methodological problems that surrounded the Oregon right-of-way inventory were not nearly so evident, or at least were not facing imminent legal challenges. The major difference between the draft and final criteria as far as the CDCA was concerned was that the BLM had greater latitude in deciding what a road was under the draft criteria which was used for the CDCA inventory.

The initial inventory eliminated most of the NSA's alluvium-filled valleys, dropping most of the Clipper, Fenner, Shadow, Ivanpah, and Lanfair valleys from further review as the result of Site Evaluations that were prepared on the inventory units. Eliminated as well were inventory units in the NSA that included the Halloran, Kelso, and Cedar washes plus the Mojave River Sink that

included Soda Lake.[34] Large transmission lines that bisected the Marl Mountains dropped that small unit from further review. The total estimated acreage dropped from further wilderness inventory as a result of the initial inventory was approximately 400,000 acres or about 80 percent of the acreage dropped during the entire inventory phase that was conducted in the NSA.[35]

After a 90 day public review period of all initial inventory decisions made that concerned the CDCA, the final decision on the initial inventory was announced. Restrictions imposed by FLPMA Section 603 no longer applied to the acreage dropped from the review during the initial inventory, so these areas were released to multiple-use management. Those lands that remained under review were now to enter the second step of the review's first phase, that of intensive inventory.

Under the draft criteria (which also held true under the final guidelines in the Handbook) for wilderness inventory that the BLM was using in the CDCA, an inventory unit must be shown to meet both the factors of naturalness (where the "imprint of man's work is substantially unnoticeable") and an outstanding opportunity for solitude or an outstanding opportunity for primitive recreation. Additionally, should an inventory unit be less than 5000 acres, it must have strong public support for WSA identification and/or be of a size suitable for preservation and use in an unimpaired condition.

What remained of the NSA to go through intensive inventory was of primarily mountainous terrain. The Naturalness factor

accounted for most of the acreage dropped from further review in this second step of the inventory, primarily because of the imprint left from previous mining activity. Dropped was acreage in the Ivanpah Mountains and Mescal Range, an area dotted with mines which had accompanying access roads running into them. In addition, grazing had been heavy on all but the steeper slopes of the two ranges while part of the area is affected by ongoing mining in the Mountain Pass Rare Earth Deposit (Martin 1979, 86).

Some of the larger inventory units that became Wilderness Study Areas in the NSA had adjacent roadless acreage dropped from them because of the dropped portion failing to meet one or more of the factors for identification as a WSA. A total of 13,440 acres was dropped from the north and east of the Clark Mountain unit due to mines on these slopes which also had largely old access roads. A combination of the failing to meet (at least in the eyes of the BLM personnel who were doing the inventory in the CDCA) the factors of naturalness and solitude caused the deletion of 4500 acres in the Castle Peaks unit (in the NSA's northeast corner) as well as that dropped from what eventually became the New York Mountains WSA. The Naturalness factor eliminated acreage in the Providence Mountains and the Mid Hills due to the presence of roads in the former and the nearness of a BLM campground in the latter. Not meeting the solitude factor eliminated 10,880 acres of the Woods Mountains unit, though it and all the aforementioned deleted intensively inventoried roadless lands in the NSA were appealed to the Department of Interior's Board of

Land Appeals by conservation groups.

Though the Bureau in its Wilderness Inventory Handbook admitted that its decisions regarding wilderness in inventory units had a great degree of inherent subjectivity and that there was going to be limited field checking in the inventory, it dropped FLPMA Section 603 restrictions on its lands that were not identified as Wilderness Study Areas in the CDCA. There was no Environmental Impact Statement forthcoming until a draft EIS was prepared for the entire CDCA upon completion of the wilderness study phase (and that was concentrating only on WSAs that the BLM recommended suitable as wilderness, not the majority of WSAs or land that had not attained WSA status) in the CDCA during February 1980. Most judgments as to what was going to attain WSA status in the CDCA were based upon existing information, inventory unit evaluations took a very brief narrative form and were presented as a group in the California Desert Conservation Area Wilderness Inventory that was dated March 31, 1979.

The table that appears on the next two pages is a list of WSAs in the East Mojave NSA, adapted from the national list of BLM WSAs that appeared on March 3, 1981 in the Federal Register on page 15090. Acreage appearing in the table was tabulated by the Desert Planning Staff in Riverside, California, who cut paper that fit the area and then "weighed" them in relation to the map area covered.[36] Corresponding to the table are maps that follow it--showing by WSA number those areas in spatial relation to each other.

Table 2. Wilderness Study Areas in the East Mojave National Scenic Area

WSA no.	Name	Acreage[1]	Notes[4]
227	Clark Mountain	14,107	An additional 13,440 acres were appealed
235A	Shadow Valley	10,452	
237	Magee/Atkins	11,092	
237B	Valley View	3,200	Dropped from further review by Sec. Watt
238A	Teutonia Peak	2,976	Dropped from further review by Sec. Watt
238B	Cima Dome	15,333	
239	Cinder Cones	44,992	43,520 ac suitable, 9340 ac nonsuitable
243	Old Dad Mountain	49,301	
244	Rainbow Wells	16,019	
245	Eight-Mile Tank	18,714	
249	Kelso Mountains	64,273	
250	Kelso Dunes	42,850[2]	all acreage suitable
256	Bristol/Granite Mountains	43,450[3]	38,940 acres suitable
262	South Providence Mountains	23,938	23,660 ac suitable, 5350 ac nonsuitable
263	Providence Mountains	51,057	54,343 ac suitable, 4480 ac were appealed

(continued)

Table 2 (cont.)

WSA no.	Name	Acreage[1]	Notes[4]
264	Mid Hills	13,300	An additional 1220 acres were appealed
265	New York Mountains	35,583	An additional 16,640 acres were appealed
266	Castle Peaks	36,239	37,680 ac suitable, 5000 ac nonsuitable, an additional 4480 ac were appealed.
267	Fort Piute	37,561	37,040 ac suitable, 11,100 ac nonsuitable
270	Table Mountain	7,556	
271	Woods Mountains	37,758	An additional 10,880 acres were appealed
272	Signal Hill	32,477	
	Total	612,228	

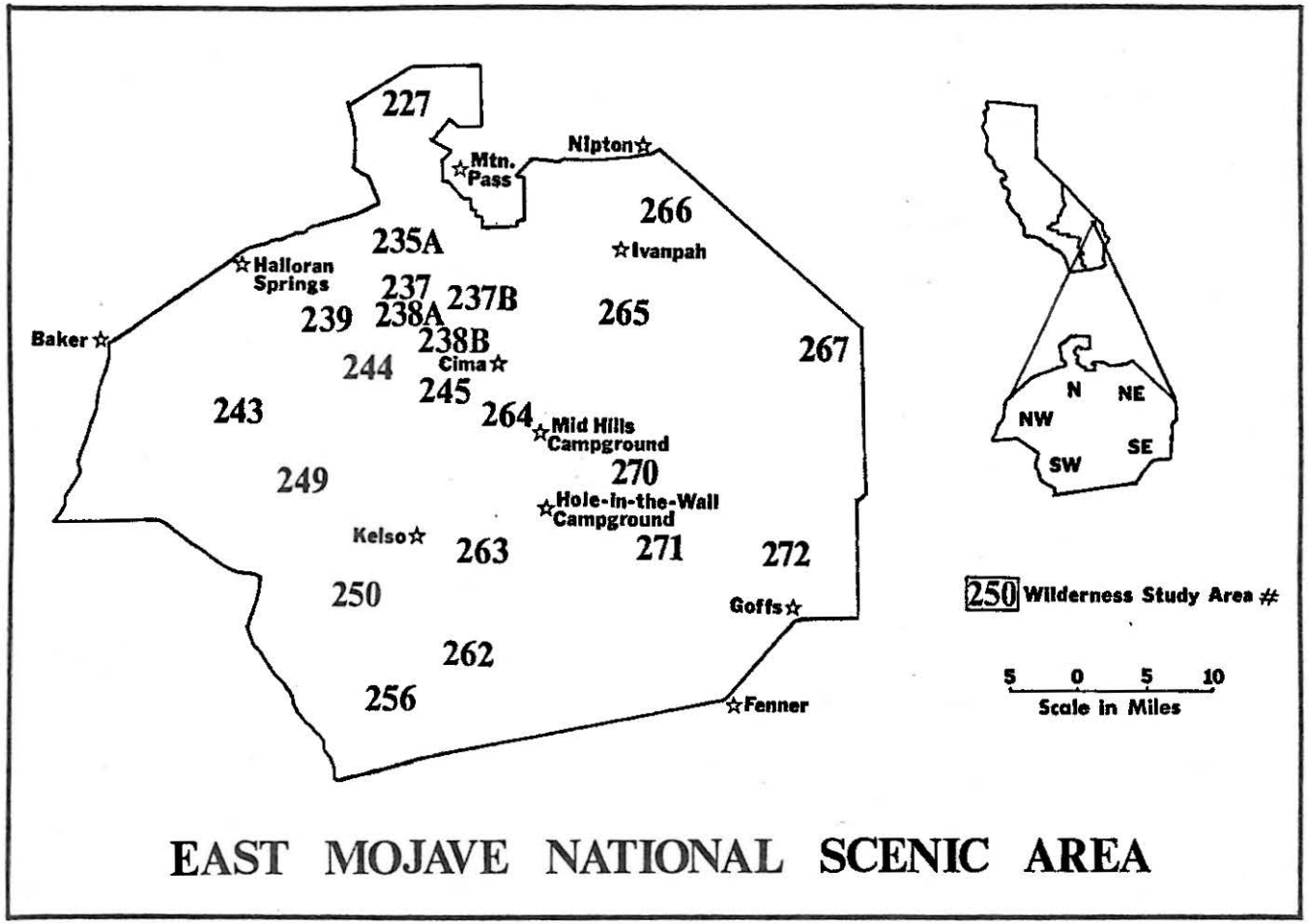
[1]Acreage figures generated by the BLM Planning Staff, Riverside.

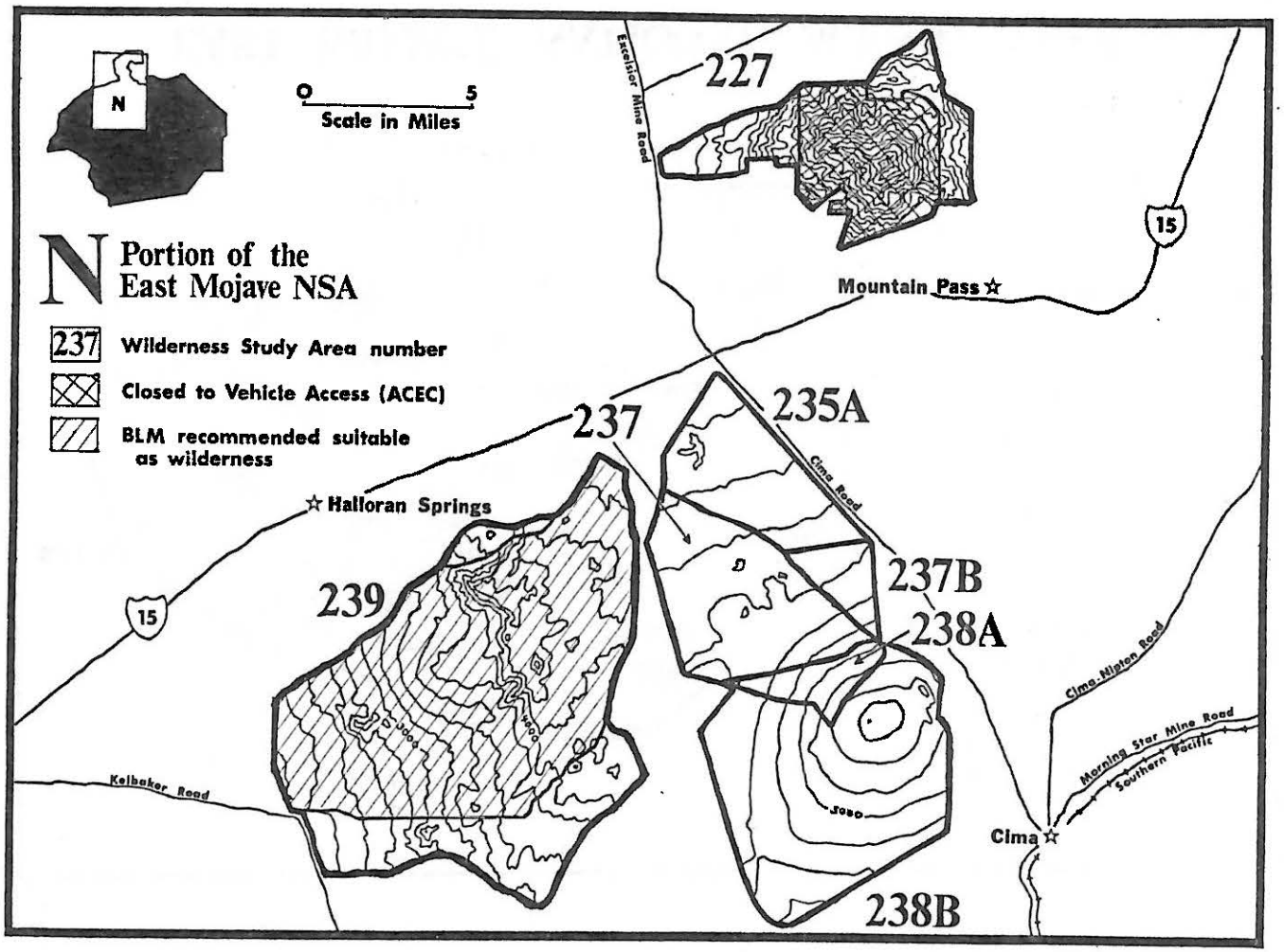
[2]Estimate from the CDCA plan.

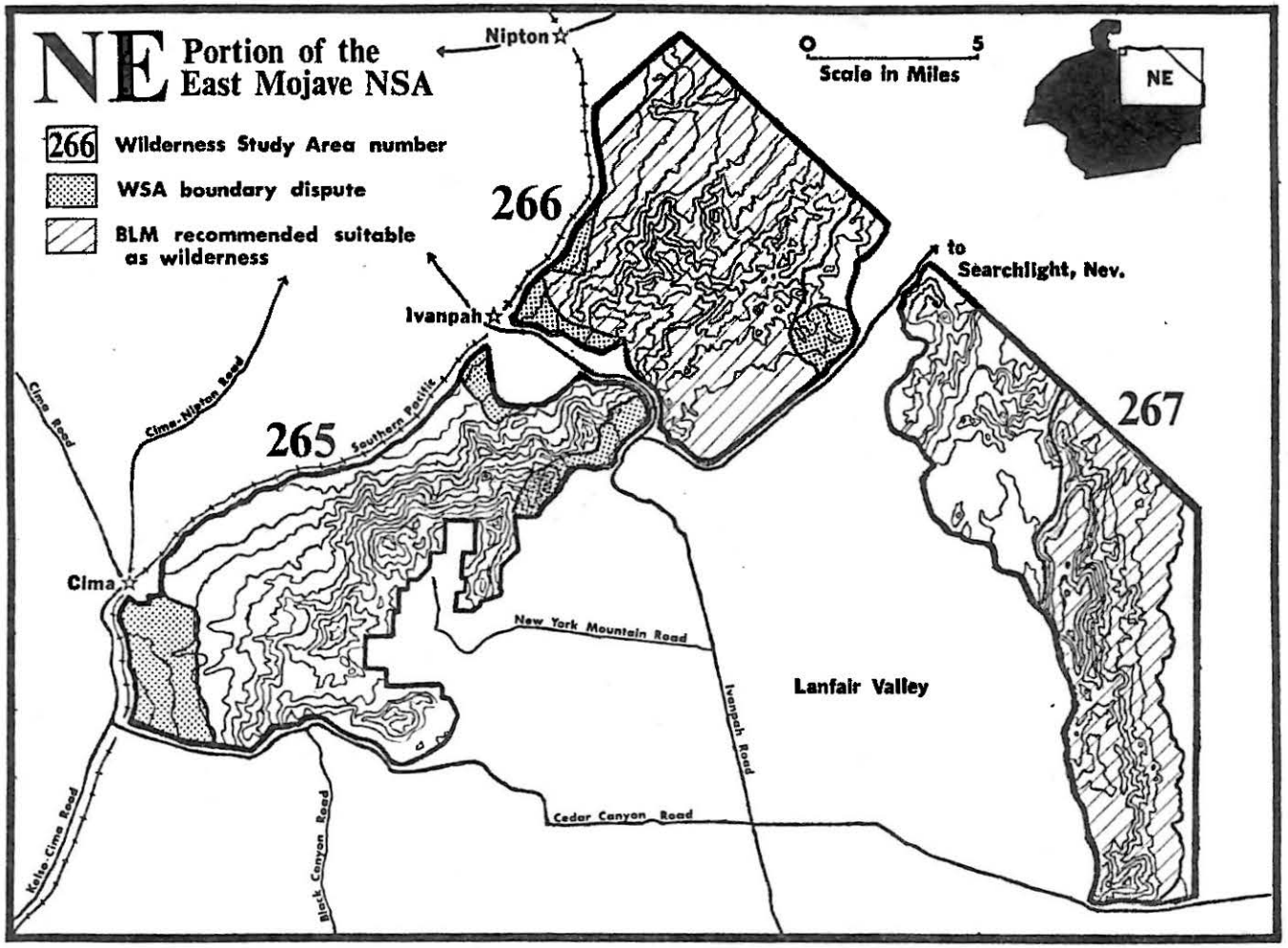
[3]Estimated.

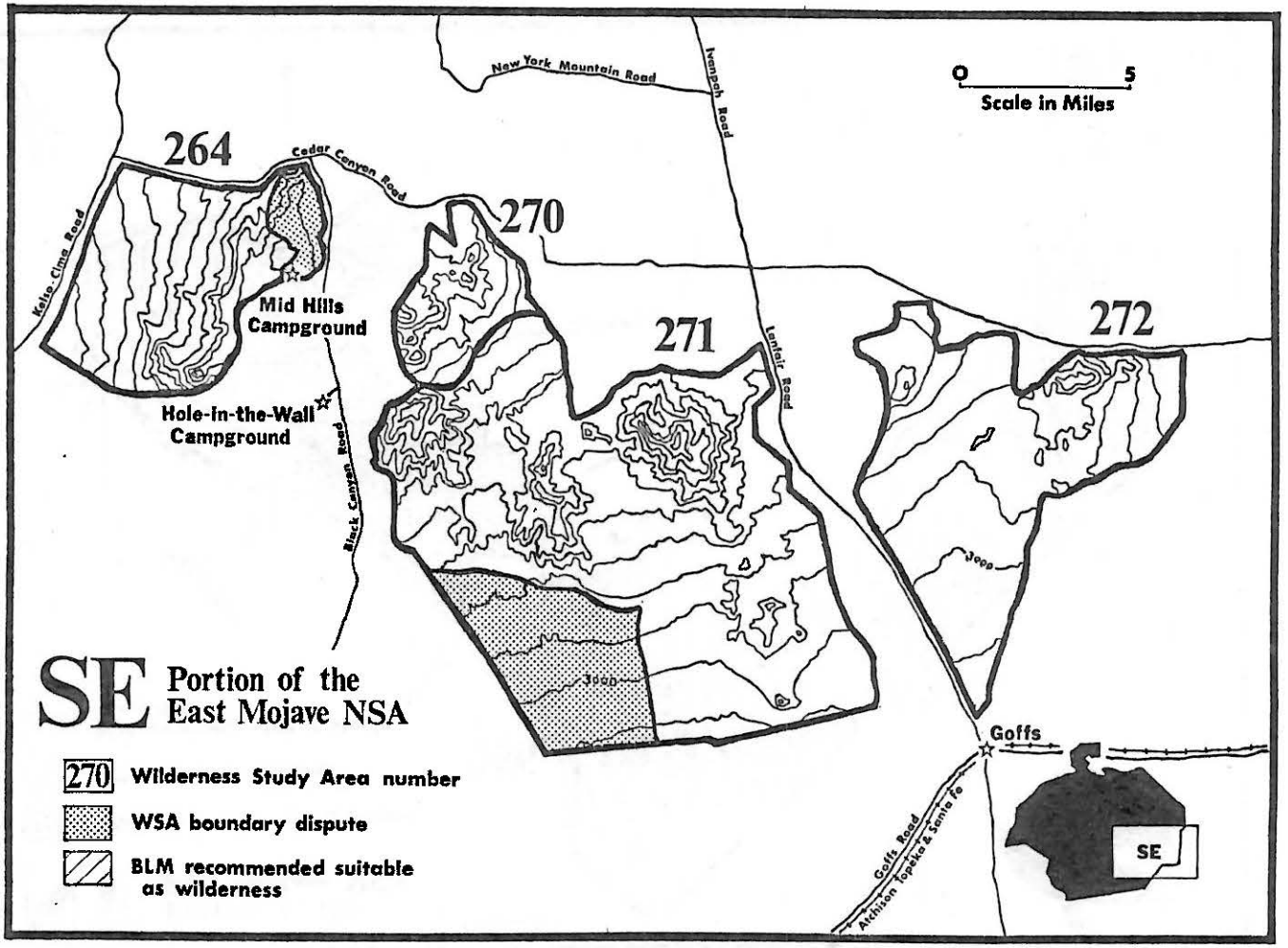
[4]Suitability acreage generated by the BLM's Needles Resource Area office personnel.

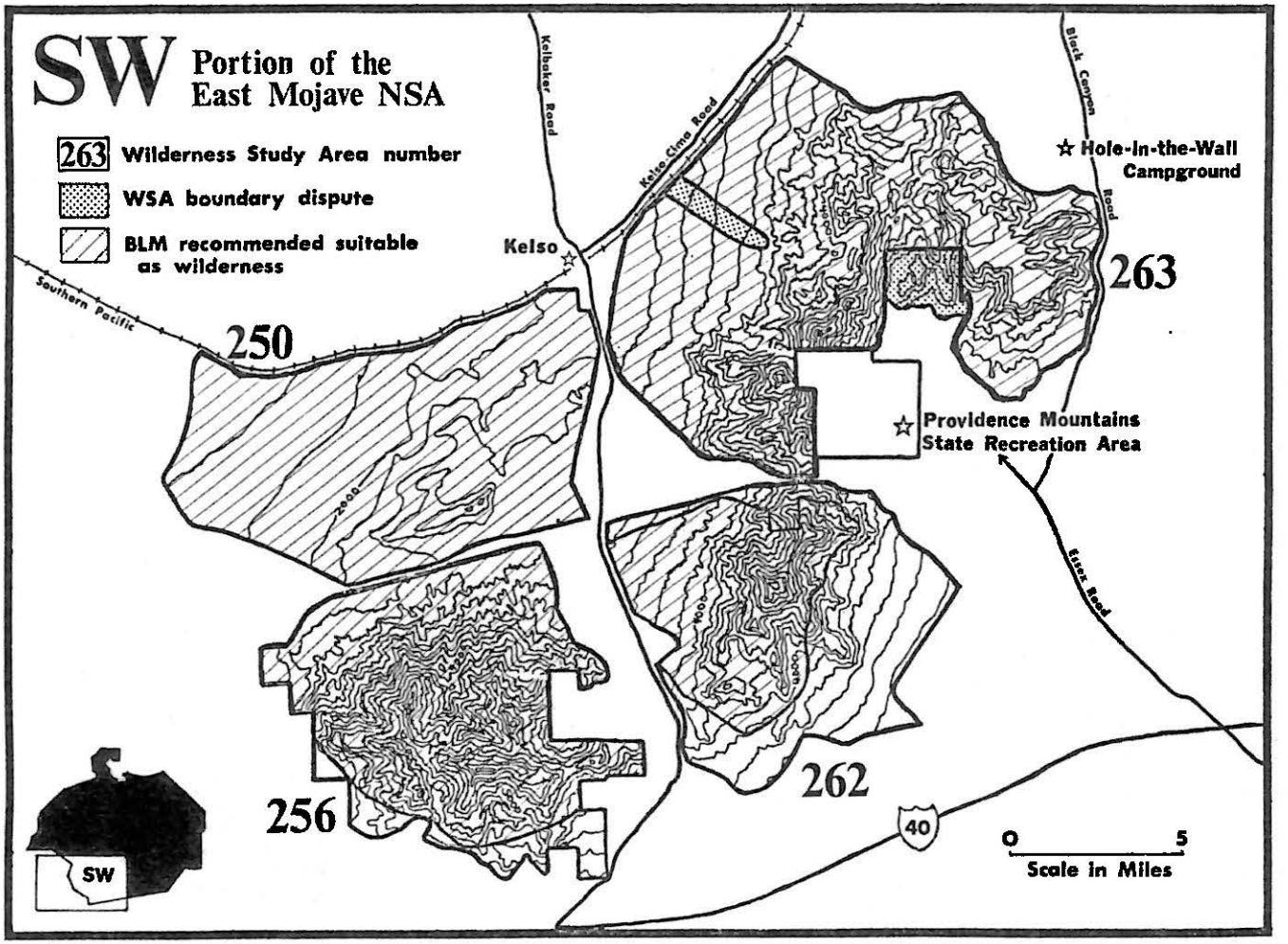
Acreage under appeal figures are from the November 14, 1980 Federal Register, page 75583.

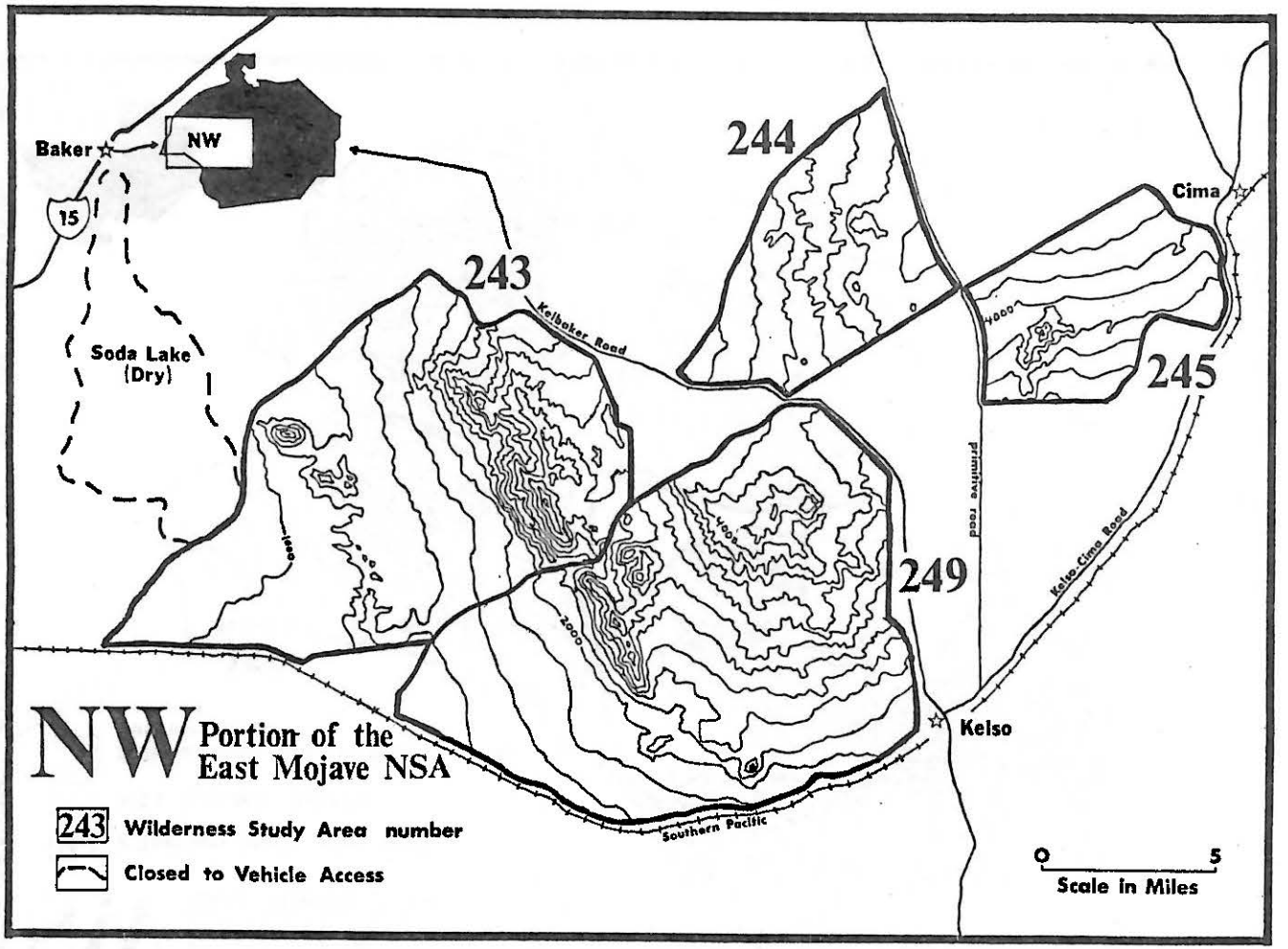

227
Nipton☆
☆Mtn. Pass
266
235A
☆Ivanpah
☆Halloran Springs
237
237B
265
239
238A
238B
267
Baker☆
Cima☆
244
245
243
264
☆Mid Hills Campground
270
249
☆Hole-in-the-Wall Campground
Kelso☆
263
271
272
250
Goffs☆
262
256
☆Fenner
N
NE
NW
SE
SW
250 Wilderness Study Area #
5 0 5 10
Scale in Miles
EAST MOJAVE NATIONAL SCENIC AREA


N
0
5
Scale in Miles
N Portion of the East Mojave NSA
237 Wilderness Study Area number
Closed to Vehicle Access (ACEC)
BLM recommended suitable as wilderness
227
Excelsior Mine Road
15
Mountain Pass
237
235A
Cima Road
Halloran Springs
239
237B
238A
15
Cima Nipton Road
Morning Star Mine Road
Southern Pacific
Kelbaker Road
Joso
Cima
238B


NE Portion of the East Mojave NSA
266 Wilderness Study Area number
WSA boundary dispute
BLM recommended suitable as wilderness
Nipton
Scale in Miles
5
NE
266
to Searchlight, Nev.
Ivanpah
Cima-Nipton Road
Cima Road
265
Southern Pacific
267
Cima
New York Mountain Road
Lanfair Valley
Ivanpah Road
Cedar Canyon Road
Kelso-Cima Road
Black Canyon Road


New York Mountain Road
Ivanpah Road
0 5
Scale in Miles
264
Cedar Canyon Road
270
Kelso-Cima Road
Mid Hills Campground
271
272
Hole-in-the-Wall Campground
Black Canyon Road
Lanfair Road
3000
3000
SE Portion of the East Mojave NSA
Goffs
270 Wilderness Study Area number
WSA boundary dispute
BLM recommended suitable as wilderness
Goffs Road
Atchison Topeka & Santa Fe
SE


SW Portion of the East Mojave NSA
263 Wilderness Study Area number
WSA boundary dispute
BLM recommended suitable as wilderness
Kelso
Kelbaker Road
Kelso-Cima Road
Black Canyon Road
Hole-In-the-Wall Campground
Providence Mountains State Recreation Area
Essex Road
Southern Pacific
250
263
256
262
40
SW
0 5
Scale in Miles


Baker
NW
15
Soda Lake
(Dry)
243
244
245
249
Kelbaker Road
Primitive road
Kelso-Cima Road
Cima
Kelso
Southern Pacific
NW Portion of the East Mojave NSA
243 Wilderness Study Area number
Closed to Vehicle Access
0
5
Scale in Miles

Several of the sectional map legends denote a "WSA boundary dispute". This means that this acreage of the WSA was at one time under appeal to the IBLA. "BLM recommended suitable as wilderness" means that a WSA or portion thereof in the NSA was to enter the third phase of the BLM's wilderness review, that of reporting, as a result of its receiving an endorsement as suitable in the second phase of the review, that of wilderness study.

The wilderness study phase of the wilderness review in the CDCA had to be completed in the same amount of time as had the ten month wilderness inventory. Wilderness study in the California Desert commenced in April 1979 and ended with the release of the Draft CDCA Plan Alternatives and EIS on February 15, 1980. In reality, however, the wilderness study phase ended with the release of the final wilderness suitability recommendations by the BLM in December 1980, after a long public comment period that included hearings in several locations throughout southern California. The designation of the NSA in October 1980 seems to have little or no influence on the wilderness suitability recommendations because the final list was released less than two months later, having shown little change from the preliminary list (at least as far as the WSAs in the NSA are concerned).

Different from the two main criteria of the final wilderness study policy (which resulted from a combination of factors that have already been mentioned) were the nine draft criteria that were used in the CDCA. These were largely aimed at analyzing the relative wilderness quality of each WSA in the CDCA. In

addition, specific criteria for resource conflict resolution were applied: 1) ecosystem and landform representation and uniqueness; 2) proximity to urban centers; 3) accessibility to all segments of the population.

The criteria used for the CDCA allowed for all or part of 45 WSAs containing 2.1 million acres to be BLM-recommended suitable as wilderness. Within the NSA, seven areas containing 278,033 acres (by Needles Resource Area personnel calculations, another figure of 215,613 acres will result if one sums the suitability acreage given in the September 1981 Sunset article on the East Mojave) entered the reporting phase of the BLM's wilderness review in the CDCA.

After the release of the final WSA suitability list, an EIS was written for the 45 areas. Bureau policy allowed for an EIS covering a group of WSAs studied together, interpreting the NEPA requirement for such a document to be written as meaning that major Federal action significantly affecting the human environment was the decision not to develop a group of wilderness study areas. Oddly (when one considers the intent of NEPA), some Environmental Assessment (EA) work was done to aid in resource analysis (an EA is done where Federal actions are presumed to be small-scale relative to that requiring an EIS) and before proposed developments in WSAs. EAs also offset the general lack of field checking in the first two phases of the wilderness review, though even in the reporting phase there is little evidence that suggests that BLM personnel concerned with wilderness review have spent

any overnight stays in the WSAs while doing the final phase of the review in the CDCA.

The EIS filed for the entire California Desert included the suitable as wilderness recommendations for the NSA. The seven suitable WSAs included all of the Kelso Dunes WSA (CDCA-250) and the Providence Mountains WSA (CDCA-263) as well as portions of five others. The partial recommendations, though based partly on the resolution of possible resource conflicts, had boundaries set by no specific criterion or reference.

Cinder Cones WSA (CDCA-239) has its namesake located largely outside the portion recommended suitable as wilderness. The southern boundary of the suitable portion follows section lines, irregardless of contours. The other boundaries of the suitable portion are delineated to some degree by roads though in two separate areas washes are used as borders. There is some potential for mining the cones (three are currently being mined) so the portion that was considered nonsuitable was labeled as such largely because of this possible resource conflict.

Granite Mountains WSA (CDCA-256) includes both the Bristol and Old Dad Mountains (which are not to be confused with WSA 243), ranges outside the NSA. Suitability status was not conferred on any portion of the WSA outside the scenic area, leaving only the Granite Mountains to be considered. Some slight adjustment for sections adjacent to private land and roads in the Granite Mountains was made as well as countouring suitability boundaries around the base of the range was made.

South Providence Mountains WSA (CDCA-262) had its eastern side dotted with mining activity and accompanying access routes that had been originally included within the WSA. When the suitability boundaries were drawn, the western part of the WSA was largely intact, while the eastern portion had a line drawn through it to exclude the mines from the suitable part of the WSA.

Castle Peaks WSA (CDCA-266) had part of its northern boundary excluded from being suitable as wilderness. This portion of the WSA fronted the southern extension of the McCullough Range (mountains that are mostly located in Nevada) and included a small part of the Ivanpah Valley. The southeastern portion of the WSA had a line drawn through contours to separate the suitable from the nonsuitable portion; this was to exclude some springs located on the lower slopes of the peaks from the possible wilderness area.

Fort Piute WSA (CDCA-267) includes old mines that dot the area near the townsite of Hart. The WSA includes the Piute Range that was largely considered suitable as wilderness while the Castle Mountains that are located within the WSA were not. The suitability boundary is drawn through contours to separate the two ranges, though Martin (1979) says that mining and grazing are negligible in the Castle Mountains while the BLM's own Planning Area Analysis of 1977 treated the Piute Range and the Castle Mountains as a single unit. The eastern boundary for the suitable portion of the WSA is drawn along a contour line that runs north to south, parallel to the Piute Range.

Since it would appear that the absence of resource conflicts has much to do with the extent of wilderness suitability recommendations in the NSA, there is a need to briefly review the major land uses of the East Mojave. It is these uses that the Bureau analyzed against what it considered to be the relative wilderness quality of each WSA in the NSA before it determined what it called the "highest and best" use of each WSA (BLM 1980,53).

CHAPTER FIVE

LAND USE IN THE EAST MOJAVE NSA

Though a greater percentage of BLM land was recommended suitable as wilderness (24.8 percent by the Needles office calculations or 19.1 percent by Normark's calculations) than the desert-wide average of 17.1 percent, land uses common to the entire CDCA are all common to the NSA, though in varying intensities. Components regarding land use such as land tenure, livestock grazing, mining, wildlife management, recreation, and impacts on cultural resources are to be examined as to their relationship to what was considered suitable as wilderness by the BLM. This relationship is important in providing a base for answering the thesis question about the evaluation of desert wilderness.

Land Tenure in the East Mojave

Of the remaining 20 percent of the NSA lands not controlled by the BLM, ten percent or about 130,000 acres is owned by the Southern Pacific Land Company, while other private owners have six percent and the State of California administers the remaining four percent. Many of these holdings made integrated management of BLM land difficult, as they were interspersed with Bureau land--at best, one section of state land per township; at worst, composing every alternate section throughout several townships forming a "checkerboard" pattern of both BLM and private ownership.

Most of the Southern Pacific's land holdings are a result of railroad grants given to the company during the last decades of the nineteenth century. From what was originally granted as 20-odd numbered sections for every mile of track built, subsequent land trades and sales show a pattern of two to three adjoining sections of railroad land interspersed with four to five sections of BLM land in the southern part of the NSA. This pattern of land ownership is of little benefit to neither the Bureau nor the railroad, as the objectives of both concerns are different for similar areas. The CDCA Plan mentions a proposed mutually beneficial land exchange program on page 121 whose magnitude is to be contingent upon management and the program's funding (which has been small, given the privatization emphasis of the Government that stems from President Reagan's 1982 Executive Order 12348).

Southern Pacific lands affect four WSAs within the NSA, all in the East Mojave's southern portion. These are the Granite Mountains (CDCA-256), the South Providence Mountains (CDCA-262)--which both have some suitable for wilderness acreage affected--while the nonsuitable Woods Mountains (CDCA-271) and Signal Hill (CDCA-272) have railroad land within them. Although the Southern Pacific leases over 80 percent of its California Desert Animal Unit Months in the NSA, the Bureau in its 1977 Planning Area Analysis rates much of this rangeland in the NSA's southern portion (and especially that located within WSAs) as poor. Of lesser importance to the SP than grazing leases is income from vegetative sales. In 1976, cactus from railroad holdings within the NSA

brought the company approximately $1000 while yucca took in about $3000 (BLM 1977, 59).

State lands are dispersed throughout the NSA with most being scattered school sections,[37] though the Providence Mountains State Recreation Area (which contains the Mitchell Caverns, a major tourist attraction in the California Desert) occupies 5900 acres of the range's east slope adjacent to the Providence Mountains WSA (CDCA-263). The CDCA Plan targets school sections that are present in most California Desert townships (usually Section 36, though Section 16 is sometimes additionally designated) to be exchanged for BLM lands elsewhere in California, providing that the school land is multiple use Class C of L under the Plan (BLM 1980, 120).

Private land holdings (by those other than the railroad) in the NSA are centered around the Lanfair Valley (which includes both the Pinto and Round valleys) as well as the several communities, though Kelso is almost exclusively owned by the railroad. Isolated private holdings can take the form of less than a quarter section with maybe one often abandoned dwelling on it to those comprising a square mile or more. These latter properties contain most of the area's fewer than a dozen ranches which are usually located at the base of ranges where waterflows from springs are situated. Since most of these and other private inholdings also have access roads into them, their location along with the uses their owners make of the adjoining land (usually grazing and mining) often have far more impact upon the BLM's wilderness program than just their relatively small numbers would indicate.

Livestock Grazing

There is no inherent statuatory or administrative conflict between grazing and wilderness, so long as the wilderness resource is not diminished by overgrazing. The East Mojave NSA is the California Desert's most productive rangeland in terms of Animal Unit Months (one AUM is enough feed to sustain a 1000 pound cow and her up to six month old calf for one month), containing 43 percent of those utilized in the CDCA.[38] Insignificant at only 0.4 percent of the total AUMs available on all California rangeland, the NSA's nine ranches do approach some $9 million (1976 figures) in beef sales--giving it between 25 and 50 percent of the desert-wide total (BLM 1977, 5).

The approximately 41,000 AUMs leased from the BLM by East Mojave area ranchers account for about 40 percent of all grazing fees collected on the Bureau's CDCA land, or some 25 percent of that on all BLM land in California--again using 1976 figures in the Bureau's 1977 Planning Area Analysis.

The grazing fee is determined by a complicated formula[39] that has been criticized by Sandvig (1983) and O'Toole (1981) as only considering the cost of production to the grazier, not the cost to the Government.[40] The drop from a high of $2.36 per AUM in 1980 to the $1.37 per AUM charged by the Bureau in 1984 has not affected the percentage of grazing fees (which amounts to 50 percent) that go to San Bernardino County from ranchers who lease BLM rangeland in the NSA. A large share (which varies from year to year) of the county grazing fee comes back to the ranchers in the form of range

improvements done on the basis of recommendations of a range improvements committee, which is composed of various fee-paying operators. An additional source of range improvement monies are those derived from the Public Range Improvement Act of 1978, which is aimed at getting more cattle on public rangeland by building more watering facilities and introducing exotic grasses. Ferguson (1984) charges that the current level of grazing fees and PRIA give operators whose cattle graze public range a massive subsidy while further contributing to the deterioration of the range with the encouragement given by funds from the PRIA, which serves only to promote overgrazing.

Some ranchers in the NSA also lease grazing land from the Southern Pacific Land Company, though AUMs on railraod land usually cost at least twice as much (in 1975, the grazing fee on SP land was $2 per AUM while BLM land was $1 per AUM). SP range is largely emphemeral (defined by the CDCA Plan to be populated by range types that usually occur in regions below 3500 feet where the annual forbs and grasses vary widely from year to year; perennial range is that found usually above 3500 feet in elevation, where forage production is more consistant in the Mojave, largely woody shrubs and bunchgrass) whereas the BLM rangeland is mostly a mix between ephemeral and perennial in the NSA.

The NSA is divided by the Bureau into nine grazing allotments, of which two, Clark Mountain and Lanfair Valley, overlap into adjacent areas (there is no grazing allotment in the NSA's western corner around Soda Lake). Almost exclusively used for cattle,

some small portions of the allotments have been set aside for wildlife--usually in mountainous areas, often in WSAs. Carrying capacity (a term first used in range conservation and which means that this is the level of use that can take place without causing either an increase or decrease in range production over time) is generally higher than what is currently being utilized in the NSA, though estimates of capacity stem from 1980 data that reflected favorable weather conditions that promoted plant growth. The BLM considered these estimates (which were obtained from multi-stage sampling of remotely sensed imagery) satisfactory because they compared favorably with earlier survey results from common areas (BLM 1980, 68).

Range condition classes (related to carrying capacity in that the rating for an allotment refers primarily to the status of the composition, cover, and vigor of the vegetation relative to the natural potential of the area under consideration) in the NSA vary between good, fair, and poor. Good range condition is defined by the CDCA Plan as somewhat similar to climax condition ("climax" for the areas is judged from relict areas, exclosures, fenceline contrasts, and/or historical information), forage invaders (less-desirable that become more abundant when range conditions deteriorate) are present though insignificant, forage production is between 50 and 75 percent of potential, and accelerated erosion is minor. Fair condition means that forage decreasers (which reduce in the vegetative composition under heavy grazing pressure while forage "increasers" are certain forage plants that multiply in the composition under heavy grazing pressure) show little vigor and have

Table 3. Grazing Allotments and Range Conditions in the East Mojave NSA[1]

BLM file no.	Name	NSA map section	BLM Acreage	Range Condition Class	Condition factors[2]	Existing AUMs	Ephem. AUMs	Carrying Capacity
7200	Valley View	NW	281,802	Good	B	8485	1500	9418
7202	Colton Hills	SW	147,827	Good	B	2880	480	3986
7203	Clark Mountain	N	88,312[3]	Fair	B	1872	0	2633
7208	Kessler Springs	N	252,172	Good	A,B	8016	1700	10334
7210	Lanfair Valley	SE	339,553[3]	Good	A,B,C	12168	2300	15853
7211	Granite Mountains	SW	276,125	Good	B,C	4716[4]	1845	4145
7212	Gold Valley	SE	16,190	Good	B	1200	0	1314
7213	Crescent Peak	NE	31,780	Good		1560	0	1704
7216	Round Valley	NE	653	Poor	A	27	0	62
	Totals		1,434,414			40924	7825	49449

[1]Table derived from data on page 81 of the 1980 California Desert Conservation Area Plan.

[2]Condition factors are keyed as follows: A=Unauthorized use and/or high historical use
B=Burro populations affecting range
C=Off-road vehicles impact

[3]Includes lands outside the NSA.

[4]Existing AUMs exceed carrying capacity as of 1980.

remnant populations occurring in sheltered areas, cover tends to be reduced, invaders are common, forage production is between 25 and 50 percent of potential, and accelerated erosion is evident but not common. Poor means that invaders predominate with forage decreasers gone and accelerated erosion is evident.

Though the preceding table does not convey specifically how grazing impacts the wilderness resource, it can be used to support the contention that carrying capacity is underutilized because of the lack of water and the prevalence of mountainous terrain in the East Mojave. In the one case where the existing AUMs exceed the carrying capacity (in the Granite Mountains allotment), most of the grazing impact is on the emphemeral part of the range and not in the WSA--largely due to its relief.

Off-road motorized vehicle use has created livestock management and forage production potential problems desert wide (the problem is particularly acute in the western part of the California Desert). A rise in feral burro populations stemming from their protection under the Wild and Free-Roaming Horse and Burro Act of 1971 is also somewhat of a factor in the forage potential problem, but competes more directly against other wildlife such as the Desert Bighorn sheep (Swarthout 1976).

The increase in visitor-use days in the East Mojave have begun to make ranchers in the NSA aware of the detrimental effects of ORVs on the range and their operations. As motorized vehicles are prohibited in wilderness areas and heretofore primitive recreation use of WSAs has been slight, the BLM may be able to cultivate an important ally in promoting its wilderness recommendations

(though it should not be forgotten that use prior to designation as wilderness is no index to use after designation and that most grazing is done outside WSAs). While ranchers may find themselves not opposing wilderness in the NSA, another group, miners, have their interests running counter to such designations on BLM land.

Mining

Mining and/or mineral potential has the greatest impact of all the uses of the East Mojave upon wilderness review. Since potentially high mineral values were most often cited when the BLM made a recommendation of nonwuitability as wilderness during the study phase of the review (the New York Mountain ACEC which largely corresponds to Wilderness Study Area CDCA-265 is but one example where this occurred), it is necessary to examine the circumstances regarding mineral extraction on public lands and the basis for comparison that the BLM used in making its suitability recommendations.

The mining laws of 1860, 1866, and 1872 have been a significant means of public domain land disposal. Though modest in acreage compared to other disposal measures, these laws could convey title to the surface area of land bearing minerals as well as to the minerals themselves. The laws were also the subject of fraud and were and are a source of frustration to public land management agencies. Land holdings claimed under these laws often became more valuable than the minerals they contained, particularly in areas strategically situated in national forests, national parks now in potential BLM wilderness areas.

In 1866, mining was considered the most important use for the land remaining in the public domain, though the eastern and western Congressional delegations had different ideas as to how to go about it. The Easterners, favoring the surveying followed by the sale of land at public auction, favored orderly development of the west. As was the case in other later "Western" positions on water and grazing, the Easterners lost out to Western interests who favored immediate, capital-intensive development. The Western mining interests were headed by Senator William Stewart of Nevada, who was perceptive enough to realize that real power for a western congressman lay in the obscure committees that dealt with public lands. He created the Senate's Committee on Mines and Mining, then proceeded to draft a bill opening up lands to mineral exploration with the right to later obtain title to a mining claim (called "patenting" a claim) for a nominal fee. In 1866, Stewart's bill passed the Senate and then was attached as a rider on a canal act to pass the House, this occurring with a large number of Congressmen absent at the time of the vote (Fradkin 1981, 116-7).

With no substantial additions the 1866 bill became the Mining Law of 1872, still the basic statute governing hard rock mining in the United States. It has been criticized from the day of its enactment and has remained in force largely because of the mining industry's lobby which has exerted its influence upon western members of Congress (Ostrander 1966). The largest concerted effort to change it came under the leadership of Interior Secretary Andrus during the Carter Administration of 1977-81. This effort was

defused due to several members of the House Committee on Mines and Mining facing recall movements led by miners in their districts. Despite several amending laws that removed certain minerals from the law's province, the Mining Law of 1872 remains the last significant bastion of laissez-faire management of public lands still in existence (Conlin 1982).

Originally, the 1872 law applied to all minerals except coal (which was already being sold by the Government) upon "discovery of a valuable mineral deposit" as defined by various Interior Department decisions.[41] A mining claim could then be "staked" or "located" on public lands for a nominal filing fee at the nearest county courthouse. County taxes could be levied on the claim but the Federal Government was to receive no rents or royalties. All the claimnant had to do was do $100 worth of labor or improvements on each claim every year to retain it. While holding a claim, there is acquisition of certain rights including that which serves to exclude others (property rights). The "patent" provision of the 1872 law allowed purchase of the claim (which includes surface and mineral rights) upon discovery of a "valuable mineral deposit". For $5 an acre, a lode claim (located along veins or lodes of rock in place, being no larger than 20 acres) could be patented, as could a placer claim (staked typically for gold occurring with alluvium, also used for certain bedded deposits such as bentonite, limestone, and gypsum; it may not exceed 20 acres per claimnant though an "association placer" consisting of 160 acres through eight or more claimnants is allowed) for $2.50 (Williams 1984).

Amendments to the Mining Law of 1872 began with the Mineral Leasing Act of 1920 that established a leasing system for oil, gas, coal, sodium, potassium, and phosphate on public land. The Surface Resources Act of 1955 provided for the disposal (sale) of sand, stone, gravel, cinders, pumice, and clay. In addition, the 1955 Act subjected mining claims to the right of the Government to manage the surface resources on claims that had not been patented. The Surface Resources Act effectively divided the minerals on public lands into three classes: leasable (those minerals included in the 1920 Act), salable (those minerals included in the 1955 Act) and locatable (those minerals such as gold, silver, copper, turquoise, limestone, cobalt, chromium, and uranium which are not identified under either of two subsequent acts and remain under the provisions of the 1872 law).

The passage of FLPMA in 1976 amended the 1872 law further, with specific provisions regarding the BLM. FLPMA requires the recordation of new mining claims with the Bureau (at the appropriate BLM state office in addition to the county courthouse)[42] with claimnants required to pay a $5 one-time fee for each notice of location. The Bureau still had the problem of not knowing just how many prior claims had been filed with the counties, though FLPMA did have a provision about the claims reverting back to the Government given evidence of abandonment (such as not doing the annual $100 worth of labor or improvements on the claim). Each year an affadavit has to be filed with the BLM and county stating that the labor and/or improvements (called assessment work) has been done.

Since FLPMA's passage the BLM has managed the surface resources during unpatented locatable mineral operations.

FLPMA also required the prevention of unnecessary degradation of BLM lands affected by mineral operations. To accomplish this, subsequent regulations such as 43 CFR 3809 let the Bureau monitor all mining (prior to these 1978 regulations only the U.S. Geological Survey could oversee operations, the USGS is still charged with doing the mineral surveys that required prior to any WSA's designation) and required reclamation on public lands. Regulations that are concerned with mining in WSAs (43 CFR 3802) are aimed at prohibiting permanent impairment of wilderness suitability. Both sets of regulations apply to three distinct levels of operations:

> 1. Casual Use--No Notice or Plan required. Designed for part-time or weekend prospectors who cause negligible disturbance. Earth-moving equipment and explosives are not allowed, and the operators need not contact the BLM.
>
> 2. Surface disturbance of less than five acres--Notice required. Submission of a written letter or "Notice" to the BLM 15 days prior to starting operations is required, though no approval has to be gained--simply a description of the operation. Primarily aimed at the siting and impacts of access roads as the Bureau will consult with operator to select the best possible location for such access.
>
> 3. Disturbance of greater than five acres--Plan of Operations required. Plan describes the entire operation (equipment, location of access, support facilities, drill sites, measures to prevent undue degradation and to provide reclamation of site) and must be done if operations are proposed in the California Desert Conservation Area as well as in Areas of Critical Environmental Concern, the National Wilderness Preservation System, off-road vehicle "closures" or "limited" areas (Williams 1984).

In the CDCA, only Casual Use and operations conducted under an approved plan of operations are authorized (BLM 1980, 101). The Bureau has requested that Notice procedures be implemented for CDCA

lands in the Moderate and Intensive multiple-use classes. Neither designation affects the East Mojave's WSAs but could apply to the Ivanpah Mountains and the Mescal Range as well as to the areas adjacent to the eastern, western, and northwestern boundaries of Cinder Cones WSA (CDCA-239). An Environmental Assessment (EA) is required to be completed on each plan of operation submitted in the CDCA, focusing only on the proposed operation and mitigation requirements necessary to prevent undue degradation. No mining operations under these regulations (43 CFR 3802 and 43 CFR 3809) may be denied unless a proven case of noncompliance[43] with the regulations is demonstrated.

Mineral leasing in the CDCA's multiple-use Class L lands (which comprises most land in the East Mojave including the WSAs) is subject to an EIS procedure if the "significant" criterion under NEPA is exceeded.[44] All other leasing activities in multiple-use Classes L, M, and I will be processed in accordance with the Bureau's Environmental Assessment procedures.

Mineral material sales in Class L (which covers most of the NSA, as previously mentioned) are confined to existing extraction areas. The CDCA Plan (BLM 1980, 102) goes on in its next sentence to be somewhat contradictory by saying that if a new extraction area larger than five acres in Class L is required, then it will be handled as a programmatic EIS that would cover the entire area of potential extraction, not one specific site.

As of 1979, California was third among the states in the U.S. for its value of mineral production. Using 1979 data, the CDCA

Plan stated that the California Desert produces 50 percent of the state's revenue from mineral resources when oil and gas are excluded (BLM 1980, 96).

Within the NSA, over 3000 known mining claims have staked and filed with San Bernardino County though virtually no productive mining activity is presently occurring there (BLM 1977, 5). Although intensive mining activity for gold, silver, copper, iron, and tungsten happened historically at several localities within the NSA, only one district is considered noteworthy by Hewitt (1956, 115)--that being the eastern slopes of Clark Mountain. He remarks that the rest of the region (his Ivanpah quadrangle includes the northern two-thirds of the present NSA) has metal deposits of modest size and grade, though there is no place in the Ivanpah quadrangle where there are bodies of igneous rocks that can be regarded as stocks[45] with which so many mining districts of the West are associated.

The most important nonmetallic locatable minerals in the NSA are situated in the Mountain Pass Rare Earth Deposit, adjacent to the district on Clark Mountain mentioned by Hewitt. Mined largely by the Molybdenum Corporation of America (a subsidiary of Union Oil Corporation), it was discovered in 1950 and is the largest ore body of its type (largely baestnaesite as well as lesser quantities of other rare-earth minerals) in the world (Evans 1974).[46] This is where almost all of the active mining is done in the East Mojave except for some small-scale extraction of magnetite, an iron ore present in the "black sand" of Kelso Dunes.

Much of the Mountain Pass rare-earth deposit was thought to be of sufficient significance so as to get much of it (the southern end of the Clark Mountain Range as well as some of the Mescal Range and the Ivanpah Mountains) excluded from the NSA. The fringes of the deposit that lie within the NSA are in the Mescal Range and Ivanpah Mountains. Molycorp would like to see these areas as well as Clark Mountain deleted from the NSA, even though there were no wilderness suitability recommendations for the northern portion of the NSA (McWherter 1983).[47]

Leasable mineral areas in the NSA consist of the Prospective Geothermal Resource Area (PGRA, as the BLM calls it) that coincides with the area of Cima Dome and its volcanic field (WSAs 235A, 237, 237B, 238A, 238B, and 244--none of which got wilderness suitability recommendations). Also leasable are Prospective Sodium Resource Areas in the NSA that include one in the southern part of the Lanfair Valley extending into the northern end of Signal Hill WSA (CDCA-272) and another south of Soda Lake, half of which is in Old Dad Mountain WSA (CDCA-243). Prospective for oil and gas affects possible wilderness designation in the NSA by being a contributing or the dominant factor in drawing some WSA boundaries (such as the southern and western boundaries of Castle Peaks WSA and the western border of Cinder Cones WSA, both of which were considered suitable for wilderness) or leading to nonsuitable recommendations (along with the presence of locatable minerals) in others, such as that for Old Dad Mountain WSA or the Castle Mountains portion of Fort Piute WSA (CDCA-267).

Saleable minerals in the East Mojave that affect WSAs consist of existing or prospective sand and gravel operations in the Kelso Dunes (CDCA-250), Kelso Mountains (CDCA-249), and Old Dad Mountain (CDCA-243) along with the cinder pits of Cinder Cones WSA (CDCA-239).

The table following is largely derived from two BLM-Riverside documents, the East Mojave's Planning Area Analysis (1977) and the California Desert Conservation Area Plan (1980). It serves to summarize how mining and the potential for minerals affects the wilderness study areas in the East Mojave, also helping to show where the zones of "no-conflict" exist between mining and wilderness--that which often resulted a suitability recommendation for WSAs or portions thereof at the end of the BLM's wilderness study phase in the CDCA wilderness review.

What emerges from the table is that in five of the seven WSAs recommended suitable as wilderness, little conflict with mining exists (in the partial recommendations for Cinder Cones, the Granite Mountains, and Fort Piute the boundaries specifically avoided possible mineral resource conflicts). The other two suitable recommendations, Providence Mountains and Kelso Dunes have small areas of inferred economic mineral deposits (the Providence Mountains had historic production of lead and silver while experimentation and analysis on the mineralized black sand of the Kelso Dunes has resulted in the BLM's "economic" conclusion about the mineral potential of the WSA) while containing largely submarginal potentially locatable minerals.

While the seven suitable WSAs seem to have a minimum of potential mineral conflict, two Areas of Critical Environmental Concern

Table 4. Mining and Mineral Potential of East Mojave WSAs.

WSA no.	Name	Mineral Potential[1] Locate	Lease	Sale	CARS[2]	Notes[3]
227	Clark Mountain	X				Economic locatable metals, potential Category I minerals
235A	Shadow Valley		X			PGRA
237	Magee/Atkins		X			PGRA
237B	Valley View		X			PGRA
238A	Teutonia Peak		X			PGRA
238B	Cima Dome		X			PGRA
239	Cinder Cones	X	X	X	463	Potential locatable and saleable minerals submarginal, situated outside suitable area; leasable are PGRA; saleable cinders
243	Old Dad Mountain	X	X	X		Inferred economic iron deposit; prospective oil & gas; potentially locatable metals and saleable sand
244	Rainbow Wells	X	X			Potential locatable submarginal; leasable is PGRA
245	Eight Mile Tank	X				Submarginal locatable
249	Kelso Mountains	X		X		Submarginal locatable; potentially saleable sand
250	Kelso Dunes	X		X	?	Economic magnetite deposit; potentially locatable and saleable submarginal

Continued

Table 4. Continued

WSA no.	Name	Mineral Potential[1] Locate	Lease	Sale	CARS[2]	Notes[3]
256	Bristol/Granite Mts.	X			9	Submarginal locatable very little of which applies to suitable portion
262	South Providence Mts.	X			?	Submarginal locatable
263	Providence Mountains	X			446	Inferred economic deposits of lead and silver; submarginal locatable
264	Mid Hills	X				Submarginal locatable
265	New York Mountains	X	X			Inferred economic deposits of metallic and nonmetallic minerals; subeconomic locatable and leasable minerals
266	Castle Peaks	X			60	Submarginal locatable in part of suitable portion
267	Fort Piute	X			42	Inferred economic nonmetallic deposit and potentially locatable Category I,II minerals in nonsuitable area; some locatable mineral potential in suitable portion
270	Table Mountain	X				Potential Category II minerals
271	Woods Mountains	X				Potential Category I,II minerals as well as other potentially locatable
272	Signal Hill	X				Inferred economic copper deposit; potential Category II minerals

Continued

Table 4. Continued (Notes)

[1]Mineral potential is divided into three categories (locatable, leaseable, and saleable) previously described on page 116.

[2]Mining claims within the area recommended suitable for wilderness.

[3]Explanation of terms used in Notes column:

Category I Minerals - most of the strategic and energy related mineral resources; minerals imported 50 percent or more and those minerals of which the U.S. is a new exporter, both existing in significant quantities in the CDCA; other mineral and/or energy resources of local, national, and/or regional importance and of which the CDCA is a source.

Category II Minerals - strategic and/or imported, and/or nationally important minerals which occur in the CDCA, but so far are known in significant quantities; other minerals which although known in significant quantities in the CDCA, have not enough demand yet.

PGRA - Potential Geothermal Resource Area.

Economic - profitable extraction of minerals given current technology.

Inferred - material in unexplored but identified deposits for which estimates of the quality and size are based on geologic evidence and projection.

Submarginal - the portion of subeconomic resources which would require a substantially higher price (more than 1.5 times the price at the time of determination) or a major cost-reducing advance in technology.

Subeconomic - includes the submarginal portion defined above and a portion called paramarginal which is either bordering on being economically producible or is not commercially available solely because of legal, political, or technological circumstances.

(Clark Mountain ACEC and New York Mountain ACEC) were created in response to nonsuitability recommendations. These recommendations were the result of what were thought to be potentially high locatable mineral values in both WSAs, so both ACECs got fairly restrictive (as far as plans for development are concerned) management plans. It should be stressed, however, that the ACEC designation is a form of administrative protection, not statuatory protection. As such, administrative designations can be changed much more easily than can legal ones.

The remainder of the WSAs in the East Mojave are covered by the nonimpairment mandate (where lands under wilderness review are to be managed so as not to impair their suitability for preservation as wilderness) of the Bureau's 1979 Interim Management Policy. However, the IMP states that lands under wilderness review may not be closed to appropriation under the mining laws in order to preserve their wilderness character. The nonimpairment mandate comes from Section 603(c) of FLPMA and has the previously mentioned exception of "grandfathered" uses which applied to mining and mineral leasing. To qualify under this exception, a use must have caused actual physical impacts on the land before October 21, 1976. Catlin (1983) states that the Bureau has interpreted the Section 603(c) exception by writing into its IMP a clause for a "logical pace and progression" to occur under the grandfather clause. This means that exploratory mineral operation could proceed to the development stage, even if wilderness suitability is impaired.

Under the IMP, projects like geothermal development of the

Cima Dome WSAs (CDCA-235A, 237, 237B, 238A, 238B, 244) could proceed, even though the Dome is designated a National Natural Landmark (which simply encourages the Bureau to formulate a cohesive management plan for the area, one in keeping with the designation). Other leasing activities, such as for oil and gas, could proceed in parts of two East Mojave WSAs--Old Dad Mountain and Fort Piute (in the Castle Mountains area).

The attention that the BLM must pay to minerals within WSAs is due in part to the mining industry's ability to keep the Mining Law of 1872 and its amendments in force. Also, the Bureau does not fully control the management of the mineral resource, so often large planning concessions to mining have to be made. Not all resources that are subject to management by more than one agency in the same area are granted so many concessions as are minerals. One of the less fortunate is the wildlife resource (especially with regard to habitat) as the politics surrounding land management have concentrated on commodities and/or hunting where wildlife were concerned.

Wildlife Management

Though the words "wildlife management" may be inherently contradictory (the Anglo-Saxon root of wild means uncontrollable, whereas management originally applied to the governing of horses, hence control of domestic animals), the BLM is nevertheless charged with managing wildlife habitat as a multiple-use agency. This charge is complicated in the East Mojave as well as on other Bureau

lands throughout the country by the states having jurisdiction over the wildlife within their borders. In California, the State's Department of Fish and Game (DFG, as it is sometimes called) has the control over hunting seasons and the responsibility of maintaining game populations. It is up to the various Federal land management agencies to provide adequate habitat on public land for wildlife.

In 1974, the DFG proposed a 639,000 acre National Cooperative Land and Wildlife Management Area that would have classified a portion of the present NSA primarily as a wildlife habitat and management area. The proposal (which would have had the DFG and BLM act jointly to establish and manage such an area) was a more formalized version of a 1962 DFG request that the important wildlife areas of the East Mojave be withdrawn from sale and designated as a NCLWMA.

A 1976 report by the Southern Council of Conservation Clubs reiterated the DFG proposal and emphasized the need to protect desert bighorn sheep habitat in addition to limiting development in the East Mojave and urged that public land holdings should be consolidated to protect wildlife (Powell 1976). The report was attached to an article on the decline of desert bighorn numbers in the East Mojave called The Providence Mountains by Donald M. Swarthout of the Society for the Conservation of Bighorn Sheep.

At the back of the report/article was Appendix 3, a map showing known bighorn habitat. The map corresponds with one in the CDCA Plan for sensitive, rare, threatened, and endangered wildlife species that shows known range and probable corridors

traveled by the desert bighorn between mountain habitats. The sheep are known to occur in all WSAs in the East Mojave with the exception of those on Cima Dome (CDCA-235A, 237, 237B, 238A, 238B, 244), the Cinder Cones (CDCA-239), Kelso Mountains (CDCA-249), and Kelso Dunes (CDCA-250).

Swarthout (1976) points out that although the desert bighorn has been protected from hunting in California since 1882, its numbers have been declining mostly due to competition from introduced species such as the feral burro (brought to the desert by prospectors in the nineteenth century) and the mule deer (introduced by the DFG in 1948). Swarthout and most DFG personnel point to the rise in burro numbers (due partly to the protection they receive under the 1971 Wild Horse and Burro Act) as the single most important factor in the decline of the bighorn; the burros out-compete the sheep for watering and grazing sites. On a smaller scale, competitors such as cattle (which as a group do not like areas of high relief that the sheep favor) and deer (which have approximately the same range as the bighorn in the CDCA) are sometimes a problem at bighorn watering sites.

Deer in the East Mojave are subject to hunting, a pursuit whose adherents are sometimes responsible for damage to private property (Saldana 1974). Some trapping for bobcat occurs in the NSA, with much of it being recreational in nature though some area ranchers derive supplemental income from pelt sales.[48] Most trapping is done outside the WSAs due to their limited road access while hunting (and other recreational pursuits compatible with

wildlife such as nature study, hiking, and primitive camping) is more likely to take place in them and appears to be on the rise because of the East Mojave's increased popularity among visitors.

Recreation

The Mojave Desert is one of the world's most accessible deserts to visitors, with more than 95 percent of it being no more than three miles from a road and 50 percent of that is within one mile of a road (Badaracco 1979). The CDCA has 15,000 miles of paved and maintained road, 21,000 of unmaintained dirt roads, and 7,000 miles of vehicle-accessible washes. These routes are not evenly distributed and cross-country travel is not taken into account (the western half of the desert is more roaded and of generally less relief than the eastern portion).

Within a half-day's drive of one of the nation's largest population centers--the 15 million people that live in coastal southern California, the East Mojave has seen its Visitor Use Days (one VUD equals a twelve hour stay of one person) more than triple since 1967. That year the BLM commissioned the first Desert Study in which visitor use was one of the questions studied and an estimate of five million VUDs in the California Desert resulted (BLM 1977).

As of 1976, the East Mojave received less than two percent (44,000) of the annual VUDs desert wide. With the creation of the NSA in 1980, visitor use has undoubtedly increased in the wake of such designation, though no exact statistics are yet available. Additional publicity for the East Mojave resulted from several

articles published in travel and conservation magazines beginning in 1979 (Roundtree 1979; Normark 1981; McWherter 1983).

Though the overall figure of VUDs in the East Mojave probably continues to be relatively low when compared with certain other heavily used areas of the California Desert, two sites in the NSA receive intensive use (defined here to be more than 1000 VUDs per square mile) by visitors. The cave tour at Mitchell Caverns in the Providence Mountains State Recreation Area is the leading draw for visitors to the East Mojave followed by camping at the BLM's Hole in the Wall Campground. Both of these intensively used sites draw visitors who not only participate in these main activities, but also some who wish to use the access provided by trails that lead a short distance from these sites into some of the surrounding area.

Bureau personnel see trails as a management impact tool and not necessarily as part of any future wilderness area access, though the Providence Mountains WSA (CDCA-263) has partial trail access from both sites. The trail at Hole in the Wall is planned to extend north to Mid Hills Campground, and could be part of an interstate project that is still in its formative stages, the Desert Trail. Similar in scope to the renowned Pacific Crest Trail (which enables hikers to go from the Mexican border to the Canadian border by trail), the Desert Trail concept has been slower to take hold due to as yet small numbers of desert backpackers, problems with coordinating BLM districts and private landholdings, through which the trail would pass in five states, as well as an

unfavorable recommendation given it by a National Park Service report in 1975. These problems have not deterred its supporters, as trail guides for the two completed sections in southeastern Oregon are available (Desert Trail Association 1983). Though the BLM's Needles Resource Office relies on volunteers for its trailbuilding efforts in the East Mojave, the possibility remains that a section of the Desert Trail could be routed through the NSA from the Castle Peaks WSA in the northeast corner to the Granite Mountains WSA in the southwest, including the Providence Mountains, Mid Hills, and New York Mountains WSAs.

Some of the heavy use (meaning that a site receives between 500 and 1000 annual visitor use days per square mile) that Mid Hills Campground receives is because of its use as a base for backpacking, an activity that has made its appearance in the East Mojave since the mid-1970s.[49] Also heavily used is the rock collecting site at Hackberry Wash, adjacent to Woods Mountains WSA (CDCA-271). Moderately used (25 to 500 annual VUDs per square mile) are the Granite Mountains, Kelso Dunes, New York Mountains, Cima Dome (the BLM suggests Teutonia Peak as a possibility for climbers), Clark Mountain, Woods Mountains, and the Piute Range. The Bureau in its Planning Area Analysis of 1977 indicates that the rest of the East Mojave receives low intensity use, less than 25 annual VUDs per square mile.

Most recreation in the NSA is oriented toward the observation and enjoyment of the area's scenery and natural values (BLM 1977). Education and research are among the highest identified uses, with

five of the ten most studied areas in the California Desert being located in the NSA. These are the Granite Mountains, Kelso Dunes, Providence Mountains, Cima Dome, and New York Mountains (BLM 1977, 52-53).

Competitive motorcycle racing, a key element in the heavy use occurring in other California Desert BLM planning units, is a very low and localized use in the East Mojave, according to the 1977 Planning Area Analysis. That document was compiled during the suspension of the Barstow to Las Vegas race which was run in November 1983 after a seven year halt. The motorcycle event has impacted the northwest corner of the NSA in the past, especially at Soda Lake (Wilshire and Nakata 1976).[50] Impacts on desert land from motorcycle and other off-road vehicle use can take the form of denudation of plant cover, soil compaction, and a significant increase in the potential for erosion caused by the stripping of the protective desert pavement by vehicles. Though distance from large population centers and the public awareness of the desert's special features has increased with its NSA designation, WSAs in the East Mojave are susceptible in varying degrees to impacts created by off-road vehicles and/or other forces that could impair their suitability as wilderness. In the following table derived from the 1977 Planning Area Analysis, high impact means that a slightly evident occurrence or series thereof results in a negative impact upon the resource. Moderate impact is where a distinct occurrence or series thereof results in a negative impact upon the resource, while low impact means that a massive occurrence results in a

negative impact on the resource.

Table 5. East Mojave WSAs Susceptibility to Impacts.

WSA no.	Name	Soils Features	Landform Features	Visual Resources
266	Castle Peaks	high	high	high
235A, 237 237B, 238A 238B, 244	Cima Dome group (6 WSAs)	moderate	high	high
239	Cinder Cones	high	high	high
267	Fort Piute	high	high	high
	Piute Range and Castle Mountains	high	low	moderate
256	Granite Mountains	high	low	high
249	Kelso Mountains	high	low	moderate
250	Kelso Dunes	low	high	high
264	Mid Hills	high	low	high
265	New York Mountains	high	low	high
243	Old Dad Mountain	high	low	moderate
263	Providence Mountains	high	low	moderate
	Wild Horse Mesa	high	high	high
271	Woods Mountains	high	low	high

The increasing popularity of the East Mojave as well as its relatively good road access has created concern not only for the NSA's potential designated wilderness but for its largely unprotected cultural resources. Of the nearly 3000 prehistoric and historic sites recorded in the California Desert as of 1980, over 36 percent have been damaged so extensively that their condition has been reduced to fair or poor (Lyneis 1980). An as yet undetermined amount of damage to the cultural resources of the NSA

has gotten greater, correlating with increased visitor use of the area.

Cultural Resources of the East Mojave

In view of the high correlation between damage to cultural resources and increased access to them, wilderness is considered by some BLM personnel as one component of a management strategy in which other measures provide the protection for resources located in non-montane areas which are in proximity to designated wilderness and coincide largely to mountainous areas. Some passive protection to archaelogical sites that fall within WSAs could be conveyed with wilderness designation, though WSAs only have a skewed and disproportionately small sample of cultural resources (Lyesis 1980, 145). Within the NSA, known significant cultural resources are located in the following WSAs: Clark Mountain, Cinder Cones, Fort Piute, Granite Mountains, Kelso Mountains, Mid Hills, New York Mountains, Old Dad Mountain, Providence Mountains, and Woods Mountains.

Wilderness designation would not give cultural resources located within them full protection simply by their prohibiting motor vehicles. Among the drawbacks that limit the capacity of wilderness areas to protect prehistoric and historic sites are: mining as a preexisting use would continue, the non-representativeness of cultural resources in areas selected for wilderness designation (due to inaccessibility being one criterion in their selection, they tend to be created where there is little human use,

either past or present), the sometimes overzealous restoration of wilderness (destroying historic values such as cabins and mining structures), and the restrictions on motorized vehicle access prevent rangers patrolling cultural resource sites in wilderness areas (as of 1982, four of the BLM's 17 rangers in the California Desert were assigned to patrol the Needles Resource Area which includes the NSA).

The protection of cultural resources in the NSA is not any better facilitated by the special management plans arising from ACEC designation than from possible wilderness designation. Three of the five ACECs[51] in the East Mojave--Clark Mountain, Fort Piute, and New York Mountain--are already located within WSAs and have the previously cited drawback of non-representative or simply very few cultural resources. Except for the somewhat renowned and accessible by road Zzyzx Mineral Springs (Lavender 1983; Reyner-Banham 1982), Fort Soda ACEC has little in the way of prehistoric or historic sites, though beginning in 1981 Soda Lake and the summit of Clark Mountain (both are portions of ACECs that have few cultural resources) were closed to vehicle use. Camp Rock Spring ACEC has a number of prehistoric and historic sites, but about all the BLM can do is monitor the area and even that is difficult given the relative shortage of law enforcement personnel for a site so accessible by road.

Summary of Uses that Relate to Wilderness in the NSA

Potential wilderness designation in the East Mojave has varying impacts upon user groups in the NSA. Private land holders

cannot be denied access to their property that lies in a wilderness area or WSA, but in the East Mojave only four percent of the land is in private ownership (this figure excludes the mostly undeveloped Southern Pacific Railroad land and that belonging to the State of California which, when combined, make up 15 percent of land ownership in the NSA). The biggest access problems for the BLM with regard to potential wilderness are those involving mineral entry. Where mining is a preexisting use in a subsequently designated wilderness area, it is allowed with relatively few restrictions--most of those concern required consultation with the BLM before beginning operations and the building of access roads. When a resource conflict decision has to be made about the wilderness suitability of an area that has potentially valuable mineral resources, the laws concerning mining work to discourage suitability recommendations.

Livestock grazing is allowed within wilderness areas, though it is not to diminish the wilderness resource through overgrazing. Though what is usually recommended for wilderness supports limited grazing due to high relief, there are cases where the prospect of wilderness could be looked upon favorably by ranchers as the designation would limit motor vehicle access. The relatively easy accessibility of the Mojave has been a factor in the increase in damage to property and cultural resources as the California Desert becomes more popular among visitors.

Wildlife management as well as the fast-growing recreational pursuits of hiking, nature study, and primitive camping are compatible with wilderness designation, though hunting is still

responsible for the greatest number of visitor use days within the NSA's wilderness study areas. Noncompatible uses with regard to wilderness in the East Mojave such as competitive motorcycle racing and the operation of off-road vehicles are largely localized and/or insignificant. Cross-country travel in off-road vehicles as well as access provided by roads has resulted in increased damage to prehistoric and historic as visitor use of the present NSA has increased. Both wilderness and ACEC designation provide no more than passive protection for such cultural resources.

As for how these uses relate to the seven areas in the NSA that the BLM recommended suitable for wilderness, an argument could be advanced that the suitable areas represent those where the wilderness user public is strongest compared to those publics whose uses might cause resource conflicts. For example, in the suitable WSAs or portions thereof such as the Cinder Cones, Granite Mountains, Castle Peaks, and Fort Piute virtually no resource conflicts with wilderness exists while in the other three suitable WSAs (or portions thereof)--the Kelso Dunes, South Providence Mountains, and Providence Mountains--some locatable minerals exist but are outweighed by the strength of public awareness stemming from NSA designation and the literature generated by academics and/or conservationists.

Wilderness Study Areas where there was active presence of mining interests but had also some cries for protection by wilderness users got a "compromise" designation, such as the ACECs being established for Clark Mountain and the New York Mountains (both

have management plans that restrict development except for what they have to allow mining). Akin to those plans developed for ACECs is the management prescription that is supposed to be developed for Cima Dome as a National Natural Landmark, substitutes for legal protection (such as what wilderness designation would provide) by, among other things, the WSAs being located in a Prospective Geothermal Resource Area (PGRA).

Those WSAs or portions thereof lesser known by potential users or having potential resource conflicts (primarily minerals) did not get suitability recommendations. Examples of where this occurred in the NSA are the Castle Mountains portion of Fort Piute WSA (CDCA-267), Old Dad Mountain WSA (CDCA-243), and the Woods Mountains WSA (CDCA-271). Merely the potential for minerals and/or lack of wilderness characteristics relative to those suitable WSAs eliminated from further review wilderness study areas such as the Kelso Mountains (CDCA-249), Mid Hills (CDCA-264), and Signal Hill (CDCA-272).

CHAPTER SIX

ALTERNATIVES TO BLM WILDERNESS ALLOCATIONS

To fully develop a context with which to answer the thesis problem that concerns the question of evaluating desert wilderness, it became necessary to obtain the background and a description of the methodology used in the BLM's wilderness review. Examination of how the review was carried out in the East Mojave National Scenic Area was followed by a description of uses there and how they can affect the review's results. In order to answer the question about the evaluation of wilderness in deserts, alternatives confronting those whose job involves land protection in the California Desert need to be presented so that the thesis question can be answered, and the answer substantiated.

This chapter will be divided into two sections, the first has to do with land protection alternatives in addition to that of wilderness designation in the East Mojave. The second section concerns the application of economic analysis to wilderness review with particular attention paid to the possibilities of applying these techniques to desert lands administered by the Bureau.

Land Protection Alternatives other than Wilderness

The limitations of wilderness designation as a form of land protection have already been mentioned, first in the discussion of the Wilderness Act of 1964 and again in the last chapter about

land use in the East Mojave. Other forms of protection exist, both statuatory and administrative, that can be used to augment the acreage involved in an overall program for the preservation of natural diversity. Wilderness is, according to Hendee (1978) and Hoose (1981), just one part of the primitive end of the land conservation spectrum. A variety of other areas can complement or supplement wilderness while also serving purposes closely related to wilderness, or those quite different.

In the NSA, the acreage that will receive wilderness designation and/or will continue to be managed as an ACEC may be under 35 percent of the East Mojave's land area. The table below shows that while the BLM (1977) has indicated that a number of the NSA's features are significant and/or have primitive values, much of it will not be protected under wilderness and/or ACEC designation.

Table 6. Prospective Wilderness and/or ACEC Protection in the NSA.

WSA no.	Name	Area[1] Signif.	Prim.[2] Values	% WSA	% w.[3] suitable	% ACEC	HCRS[4] Rating
266	Castle Peaks		x	.95+	.85+		1-C
(six WSAs)	Cima Dome[5]	x		.80+		.90	2-B
239	Cinder Cones	x	x	.90	.70		
227	Clark Mountain	x	x	.50		.60	1-B
267	Fort Piute[6]	x	x	.95	.90	.10	1-B
	Castle Mountains		x	.85			3-C
256	Granite Mountains	x	x	.90+	.85	.90	1-B,C
	Ivanpah Mts. and Mescal Range	x				.20[7]	2-B,C
249	Kelso Mountains[8]			.90			

(continued)

Table 6. Continued

WSA no.	Name	Area[1] Signif.	Prim.[2] Values	% WSA	% w.[3] suitable	% ACEC	HCRS[4] Rating
250	Kelso Dunes[9]	x	x	.95+	.95+		1-C
	Lanfair and Pinto valleys	x		.30			
264	Mid Hills	x		.75			2-B,C
265	New York Mts.	x	x	.85		.95	1-B,C
243	Old Dad Mountain		x	.95			
263	Providence Mts.	x	x	.85	.70		1-B,C
	Wild Horse Mesa	x	x	.95+	.95+		2,3-B
	Round Valley	x					
	Soda Lake	x				.95+	1,2-B
271	Woods Mountains	x	x	.90			2,3-B

[1]Significant areas are those that have a quantity and/or quality of BLM-identified features that make the area important in the California Desert.

[2]Those areas having 50 percent or greater BLM 'excellent' and/or 'good' ratings for primitive values.

[3]Percent of the WSA recommended wuitable as wilderness by the BLM. All percentage figures in the three columns are approximate, the area's total contiguous roadless acreage used as base to estimate percentages.

[4]Heritage Conservation and Recreation Service priority system used by Martin (1979) in his survey of the Mojave Desert: 1=Highest National Significance; 2=Appears to be Nationally Significant; 3=Information Lacking; 4=Not Recommended; A=Site is in Serious, Impending Danger; B=Some Jeopardy; C=No Apparent Jeopardy; D=Relative Jeopardy Unknown.

[5]Cima Dome has been designated a National Natural Landmark.

[6]Includes the Piute Range.

[7]Dinosaur Trackway ACEC is located outside of the NSA.

(continued)

Table 6. Continued (Notes)

[8]An area containing significant features, but not having a sufficient number by BLM standards to make it important in the California Desert.

[9]Designated a Natural Landmark in the CDCA Plan, the adjacent Granite Mountains were designated a Research Natural Area under the Plan.

What is of prime importance in the table is the correlation between what Martin (1979) rated as priorities for protection in his work for the Heritage Conservation and Recreation Service and what was recommended suitable for wilderness and/or given a restrictive ACEC designation. Where Martin did not assign a "1" (Highest National Significance) will not likely receive the statuatory protection of wilderness designation, except in the case of the Cinder Cones WSA which was part of an earlier study done for the National Park Service on the Great Basin (Bostick 1975). In the NPS study, Cima Dome received a priority rating, but the cinder cones to the west of it were not mentioned.

Areas in the NSA that received a "2" in Martin's study and are, to the BLM's reckoning, significant in the California Desert and/or have sufficient primitive values to warrant identification will not necessarily receive any special management other than that common to Multiple Use Class L (the monitored multiple use under which about two-thirds of the CDCA is managed). Since there are a number of conflicting resource uses allowed under this class, Bureau decision makers might want to pursue a variety of administrative actions or designations for certain areas within the NSA

that would serve to protect the natural diversity there. Also, in the light of public scrutiny that the BLM faces by making the East Mojave a "showcase of multiple-use management",[52] the agency could explore its land preservation options for the relatively well-known areas such as Cima Dome, Mid Hills, and the Woods Mountains for some needed good publicity.

Withdrawal is an option on public land that strengthens protection by limiting the use of land to specific purposes, such as the protection of natural elements that can be jeopardized by claims under various laws (Hoose 1981, 73). Both the President and Congress have the power to withdraw Federal land, with the Congressional power in this case involving transfer of lands to the National Park Service--a doubtful occurrence for reasons already discussed.

The President's power to withdraw public lands has been, for the most part, delegated to the Secretary of Interior. The BLM can request permission to file an application for withdrawal of land through one of the Bureau's state or district offices. After prolonged hearings, negotiation, and review, a public land order can be issued by the Secretary recommending an area be withdrawn as either a BLM Natural Area or Primitive Area.[53] Once an area is withdrawn, the action can be modified or revoked by the Secretary using the same authority under which the withdrawal was made (National Park Service 1976, 102).

Within the NSA, the withdrawal designation most probable is that of one kind of natural area,[54] the Research Natural Area.

RNAs are part of an eight agency (those land management agencies within the Interior Department plus the Department of Agriculture's Forest Service) effort with a common objective--to preserve a representative array of significant ecosystems as baseline research areas on public lands. To those who seek to protect certain areas, RNA designation provides the twin advantages of peer pressure on land managers (which is often in the form of inter-district or inter-agency rivalry that might make a manager less likely to sacrifice such an area to another land use) as well as incentives for their establishment (designation is sometimes a strong enough measure to bolster a resource area or district's chances of receiving funds for projects or additional staff) which are not present in a more recently established program administered by a single agency. The Granite Mountains RNA was established (covering about the same area as the suitable portion of the Granite Mountains WSA) with the adoption of the CDCA Plan, one of four so designated in the California Desert at that time.[55]

One land protection option not yet part of the Bureau's policies has been discussed in the literature concerning Forest Service wilderness. The establishment of back country areas could help fill the gap between intensively developed sites and wilderness, relieving use pressures on increasingly crowded wilderness areas (Schomaker 1982). These roadless recreation areas with a semi-wilderness character would have less restrictive management of vegetation, wildlife, and facility development than in wilderness areas. Mining and motorized travel may be allowed in some of these areas. A

drawback to the concept is that recreationists who would use such areas have been found to hold the same values as wilderness visitors and would be negatively affected by increased use.

The backcountry concept might be considered by the BLM should there be a generally negative reaction on the part of the public and/or prominent conservation groups to the percentage of land in the NSA that becomes designated wilderness. Significant Areas (as per Table 6) that are more intensively used such as the Mid Hills, Ivanpah Mountains, and the Mescal Range may well fit into this category as might those that the Bureau has identified as having primitive values (such as Old Dad Mountain and the Woods Mountains) which would serve to disperse the increased use impacting the new wilderness areas upon their designation.[56]

Another, less probable option than either Research Natural Area designation or management as backcountry is disposal of certain NSA lands to the State of California for the creation of a state park and/or wilderness areas. Provisions for the state acquiring recreational land through purchase or exchange do exist, as the California Department of Parks and Recreation will consult with the state's Department of Finance to effect such acquisition. Though state school lands[57] make up only five percent of acreage within the NSA, the State of California is entitled to make lieu selections which still had not been exhausted as of 1981 (BLM 1981, 12). These lieu selections of Federal land could possibly be made for sections adjoining the state's one section holdings that already exist throughout the NSA. In areas not designated Federal

wilderness, these existing holdings could be grouped with lieu selections for a state wilderness area.

Under the Recreation and Public Purposes (R & PP) Act of 1926 as amended Section 212 of FLPMA, the BLM is allowed to dispose of public lands to any Federal, state, local, or political instrumentality, or any nonprofit organization for any recreational or public purpose. Anza-Borrego Desert State Park to the southwest of the NSA was largely conveyed to the State using the R & PP Act and special legislation at various times under different authorities.

Besides state parks and recreation areas, the California Department of Parks and Recreation administers state reserves, state wilderness areas, and natural preserves.[58] State reserves and wilderness areas can be designated by the California legislature on any state owned lands[59] providing that the criteria for them are met, but natural preserves can only be created within state parks.

State reserves encompass the values associated with natural areas, emphasizing quality, uniqueness, and integrity. The reserves differ from state parks in that the reserves are almost always smaller in size and usually protect single features or a closely related group of features while parks are larger with more extensive or complex features and values (National Park Service 1977, 45).

State wilderness areas differ from state reserves and natural preserves mainly with respect to size. A California Wilderness Preservation System was created by the 1974 California legislature

through passage of Senate Bill 1498. The definition of wilderness in the legislation is similar to that used in Section 203(c) of the 1964 Federal Wilderness Act. Also similar to the Federal law, the Act gave the legislature the authority to designate state lands as wilderness. Such designation can take place on either school lands or within the park system, with some five million acres of state land subject to review. Two state wilderness areas were created within two years of the 1974 Act, with the largest being the Santa Rosa Mountains State Wilderness of 87,000 acres in Anza-Borrego Desert State Park. As of 1980, ten other roadless areas in the 460,000 acre Anza-Borrego park were proposed wilderness; this designation could eventually apply to over 50 percent of the park.

Natural preserves are one of the unit classifications in which state park system lands can be placed. Closely related to wilderness, these preserves are usually small--though Sheep Canyon Natural Preserve alone consists of 44,800 acres.

The drawback to all of these alternative land protection measures (most especially the one calling for disposal of lands to the State) is the fear on the part of the BLM that it would be admitting to the charge that there are shortcomings in its wilderness review process. The accelerated CDCA wilderness review, with its reporting phase complete by the end of 1984, is taken by many observers to be an indication of what can be expected in the way of BLM wilderness recommendations. Alternative land protection measures in the NSA, beyond the fear of admitting shortcomings in the wilderness review process, might also have repercussions on

other BLM areas under wilderness reveiw that will not complete the reporting phase of the review until 1987.[60] Still, these alternatives warrant some consideration because the wilderness study phase's criteria make the chance of an arbitrary deletion of qualifying lands from further review a fairly large one. The problem of obtaining a quantifiable common denominator with which to make judgments as to the "highest and best use" of a WSA still haunts the review process and may yet be the subject of litigation.[61]

Uses of Economic Analysis in Wilderness Allocation

Inherent in the BLM's wilderness suitability decision of determining the "highest and best use" of a WSA is some allusion to the benefits and costs of wilderness designation. Though this section is not intended to be a short-course on benefit-cost analysis, it is important to relate some points concerning economic analysis and how it attempts to measure benefits and costs within the wilderness allocation process.

Economists working with outdoor recreation issues regard wilderness as a non-market resource (in that it is a good that is not distributed through markets) in addition to being nonrenewable. A decision to develop an area is irreversible, though a decision to designate a wilderness area is always revokable by Congressional action (O'Toole 1978b, 5). It is the irreversibility of a decision to develop wilderness that requires that one must not only consider the willingness of people today to pay for an area in its primitive state, but the willingness of future generations to pay

as well. A concept to be considered here is "option value", which is the retaining of something for the future even though the good is presently unavailable. Option value was incorporated into the economic techniques first developed by Krutilla and Fisher (1975).

The problem of option value has made decision makers rarely attempt to estimate the demand price of given amounts of wilderness. The aforementioned lack of a market by which the demand for wilderness may be calculated, intergenerational equity (meaning that the people paying the costs are also those receiving the benefits), and the risks of development of an area that might lead to some unknown irreversible consequence such as the extinction of a species have led some people to the conclusion that the values of wilderness must be infinite and insist that all roadless land must be classified as wilderness. Others take the opposite extreme that the values of wilderness being difficult to estimate must be zero, with the conclusion that all roadless lands should be developed for resource extraction (O'Toole 1978b). Stankey (1971) makes the point that social scientists have found that recreationists generally place high value on wilderness, making this latter position difficult to defend.

O'Toole (1978b) builds on Krutilla and Fisher (1975), using cost analysis to assess costs of development on the Forest Service's RARE II lands. He recognized that such development requires two investments:: that of capital into roadbuilding and that of land into developed uses. The land should be developed only if the benefits of development exceed the benefits of investing both the

capital and the land into other uses. This still skirts the problem of option value, as benefit analysis associated with wilderness allocation has not yet been sufficiently developed so as to be useful for decision making (Beardsley 1976).

Walsh (1976) states that cost analysis can provide reliable information that is comparable for a wilderness of various sizes of for a regional or national system of areas until benefit quantification procedures are developed. O'Toole is not satisfied with that assertion and states that analyzation of the benefit of primitive recreation is possible using three assumptions as the basis for calculating primitive recreation value. The first, demand for primitive recreation, is said to be increasing at the rate of ten percent per year and has been so documented by Krutilla and Fisher. O'Toole uses as his second assumption the Krutilla and Fisher contention that the price individuals are willing to pay for primitive recreation is increasing five percent per year. The third assumption is Beardsley's (1976) statement that in addition to the recreation benefits to users, there may be significant benefits to nonusers from the preservation of natural resources for outdoor recreation activities. These values are by definition external to the consumer transaction and thus indirect values, though these indirect values have been quantified in several studies that involve fisheries (Meyer 1974; Horvarth 1973).

O'Toole (1978a) calls for further research to refine the data used in benefit analysis, especially that regarding the current value of primitive recreation, the capacity of individual roadless

areas to supply primitive recreation opportunities, and the selection of an appropriate interest rate. O'Toole (1978a, 5) explains the importance of interest rates to resource allocation decisions:

> "All things being equal, people normally prefer to consume something today rather than in the future. Any problem in which benefits and costs are unevenly distributed over time must take this into consideration. This is done through a discount rate, the rate at which people discount values over time. Market interest rates are sometimes used as a proxy for the social discount rate. The selection of a discount rate is important because a higher rate will significantly reduce the values of benefits and costs into the future as opposed to the near future. Two different discount rates may result in two completely different decisions."

He also criticizes the resource allocation decisions made by public land management agencies as failing to apply economic optimization techniques to any of their analysis problems, contending that public lands should be managed so as to provide a maximum of net benefits to the public.[62]

O'Toole (1978b) faults the methods by which allocation of resources was made by the agencies by commenting that the final decisions resulting from these methods contain unnecessary decision maker bias. McHarg's (1969) method of developing decision alternatives from overlays showing present and potential resources on a land unit by land unit basis meets with criticism by O'Toole because the trade offs that are to be visualized by the decision maker become obscured when the land area or number of allocation possibilities becomes large. Similarly, computer-generated output tables for such diverse resources as soil, wildlife habitat, and timber has the same difficulty when considering how many board feet of timber harvest should be sacrificed to save soils or other

values (O'Toole 1978a, 5).

As the result of using economic allocation techniques, O'Toole (1978b) found, based on assumptions regarding growth in demand for primitive recreation and the current value of such recreation, that in 1978 between 2.4 and 3.1 million acres of Forest Service roadless land in Oregon should be protected from timber harvesting in order to provide the greatest net benefits to the public.[63] This finding contrasts markedly with the RARE II recommendations for Oregon in which only 368,000 acres were recommended as wilderness and 400,000 acres for further planning. RARE II carried with it no economic analysis, save that of an input-output model that measured only changes in commodity production resulting from various land allocations to wilderness.[64] To recall the purpose of the RARE process for the Forest Service, the intent was to speed up the agency's land use planning with regard to possible wilderness in roadless areas. Before taking any action that might diminish a roadless area's wilderness characteristics, each area was to be classified into one of three categories--wilderness, further planning, and nonwilderness. Those lands classified nonwilderness would be released for other uses, similar to the result of the inventory phase of the BLM's wilderness review where lands that "clearly and obviously" lacked wilderness characteristics were dropped from further review. In both of the agencies' wilderness allocations more than half of the land reviewed was classified as nonwilderness, though RARE was a roadless area planning process and the BLM's inventory phase was policy interpretation of a legal

mandate that affected all of the Bureau's lands. However, the intent was the same in both cases (to speed up the allocation of lands to wilderness) as was the failure to use economic techniques upon which allocation decisions could be based and justified.

Critics can point to the simplified assumption that O'Toole (1978a) uses to conclude that economic analysis provides a viable methodology in determining roadless area allocations. O'Toole simplifies the problem of resource conflict by limiting his demonstration to two resources: timber and wilderness.[65] He cites documentation from Krutilla and Fisher (1975) that allows three assumptions to be advanced: 1) mining and grazing are not issue in a roadless area of potential wilderness; 2) losses of wildlife habitat and water quality are assumed to offset the reduction in potential for big game numbers; 3) the costs of developed recreation offset the benefits. Though O'Toole's assumptions in this case relate primarily to Forest Service roadless land in Oregon, the techniques that he and others have developed can be applied to other resource allocation questions such as grazing fees on public rangeland as his 1981 work demonstrates. Since the major resource conflict with wilderness in the California Desert is the presence of minerals, roadless area allocation using economic analysis could be done in much the same way as what has been done in forested areas where the resource conflict was between timber and wilderness.

O'Toole (1978b) refutes the argument that designation of an area as wilderness will cause it to become overused by stating

that advertising for wood products (relating to the timber versus wilderness allocation problem) is widespread and receives little criticism as an artificial generator of demand. He, like Wager (1974),[66] disputes the emphasis put on an area's recreational carrying capacity, commenting that while wilderness areas must be protected from congestion one important way of doing this is to increase the supply of wilderness.[67]

Both the Bureau and the Forest Service use and have used techniques other than economic analysis to make wilderness allocations. O'Toole (1978b, 2-3) criticizes these other techniques, which allow two people to arrive at widely differing resource allocations for the same area due to the variance in their value systems. It is the inconsistency of these other techniques that leads to lawsuits being filed and thousands of dollars to be spent while these court cases are in litigation over the issues of wilderness allocation and/or environmental degradation.[68] What economic analysis provides are findings of fact and a basis for justifying allocation decisions. Decisions with a factual base and justification derived from sound analysis are less likely to be contested in court (and have judgments rendered against them, resulting in what then becomes unjustified expenses on enjoined programs) and are therefore part of efficient management (meaning that which results in the maximum possible net benefits).

CHAPTER SEVEN

CONCLUSIONS

> It is easy to find fault if one has that disposition. There was once a man who, not being able to find any other fault with his coal, complained that there were too many prehistoric toads in it.
>
> Mark Twain
> Pudd'nhead Wilson's Calendar

In answering this study's thesis question, a good deal of material has been presented--not only about the evaluation of desert wilderness but also that concerning the operations of the Bureau of Land Management in the California Desert. This was done in order to substantiate the conclusion that economic optimization techniques should be developed and employed to evaluate desert wilderness, as such techniques can provide justification for decisions on wilderness and have been used successfully in roadless area allocations (Krutilla and Fisher 1975; O'Toole 1978b).

The introduction showed that be strict definition that there is no wilderness in the United States and very little elsewhere in the world. The term "wilderness management" is inherently contradictory as one cannot manage something that is uncontrollable and immeasurable. The existence of wilderness areas in the United States serves to prove Nash's (1973) contention that wilderness is what people say it is. This is not to discount the value of wilderness as a form of land protection, as such a system of designated areas is a significant cultural contribution of Americans to the

world.

The first two chapters outline the historical development of the National Wilderness Preservation System as well as the reasons behind the growth of the U.S. Forest Service, National Park Service, and the Bureau of Land Management. Once given the major factors surrounding the creation and the first thirty years of existence for the BLM, its policies and conduct of its wilderness review can be better understood--especially in the light of wilderness reviews done by the Forest Service and Park Service.

The wilderness review that the BLM has done in the East Mojave National Scenic Area indicates that the agency cannot escape its past, the factors influencing its operations prior to the passage of its organic act (the Federal Land Policy and Management Act) in 1976. There is sufficient evidence stemming from this particular review in the NSA to substantiate Baker (1983, 15) in his criticism of the Bureau nationwide:

> "Perhaps the most crippling flaw in the (BLM's) whole planning process is the fact that too much is decided upon in advance of proper study, much of it assuming the dominance of a single use....We might call this presumptive failure, and in no other aspect of planning is it more profoundly revealed than in the wilderness study program."

By the end of 1984, the final phase (reporting) of the California Desert's wilderness review will be concluded. Acreage receiving the BLM's wilderness recommendation (as a percentage of what the agency manages in the CDCA) will approximately equal[69] that which it offered for the "balanced use" alternative[70] on the environmental impact statement written at the conclusion of the wilderness study phase of the CDCA review in 1980.

Within the East Mojave, those wilderness study areas in which wilderness had little or no potential conflict with other resources (four WSAs--Cinder Cones, South Providence Mountains, Castle Peaks, Fort Piute) and where wilderness users were the strongest interest group (Kelso Dunes, Granite Mountains, and Providence Mountains) were the ones that got recommended suitable as wilderness. These suitability recommendations (where the BLM is deciding the "highest and best use" for each WSA) is the only place where the Bureau comes close to using economic optimization techniques for its roadless area allocation process. Cost analysis is ignored, with wilderness benefits being acknowledged only as difficult to calculate and these give way to the benefits of potential resource extraction (mining). Justification of the sort that will keep the wilderness review out of court[71] is lacking (this could also be said for decisions in both the inventory and study phases of the review) and as O'Toole (1978b) has maintained, the value systems of the decision makers play the biggest part in deciding what will be recommended as wilderness.

It is worth noting that just about the only use of a standardized rating or priority system for areas in the East Mojave was done by Martin (1979). He did a survey for the Heritage Conservation and Recreation Service[72] of potential natural landmarks in the Mojave and Sonoran desert regions that assigns a priority code for recognizing/preserving the biological features of selected areas. The priority system used by Martin was first utilized by inventories and studies done for the National Park Service (Bostwick 1975;

Wachter 1976) and is intended to rate biological or geological values within NPS land ecosystem themes, not the relative wilderness characteristics of an area.

Martin (1979, 30) qualifies his use of the priority system on desert mountains by stating:

> "For purposes of a natural area inventory requiring hierarchical rankings, the choice of "representative", "best", or "typical" desert mountains is agonizing. If a hierarchical scheme must be imposed on nature, I would assign a higher rating to those ranges displaying greater relative relief....In the east Mojave, the Clark, Kingston and New York Mountains would receive a higher rating than the Paiutes, Mid Hills and Ivanpah Mountains which display less relative relief. However, until a good deal more is known of the environments, biota and landforms of all desert mountains a defensible hierarchical ranking is premature."

Nevertheless, it is important to mention that with one exception,[73] only areas that Martin ranks as a "1" (Highest National Significance) got wilderness suitability recommendations or restrictive management plans (such as closure to motor vehicles on part of Clark Mountain and all of Soda Lake or a ban on recreational developments in the New York Mountains) under an ACEC designation in the East Mojave. No roadless area in the NSA that Martin assigned a "2" (Appears to be Nationally Significant) got a wilderness suitability recommendation.

Martin's rankings and the suitability recommendations have a suspiciously high correlation, in light of the fact that field checking is not a requirement in either the inventory or study phases of the BLM's wilderness review. It is possible to conclude that, given the factors which affect the BLM's operations in the California Desert Conservation Area, the wilderness suitability

recommendations for the NSA are the product of Martin's survey (which does not directly mention anything about wilderness characteristics), BLM personnel finding and drawing boundaries for the suitable areas that involve the least potential resource conflict, while keeping in mind to recommend those WSAs where the public and/or conservation groups would exert the greatest pressure for preservation.

Though there are severe time limitations in an accelerated wilderness review such as the one performed in the CDCA, Bureau policy written for the reviews conducted on a state-by-state basis called for the recommendations resulting from the completion of each of the phases to be presented in large groups with a relatively short period of public review. Decision makers (namely district managers and state directors) were given large discretionary power as to whether they effected change in the recommendations due to objections raised by public comment. Such insistence on decision maker omniscience (especially when the Bureau (1979, 5) admitted that the criteria in its wilderness inventory process call for highly subjective judgments and, in the wilderness study phase, may be using surveys such as Martin's[74] to make wilderness suitability recommendations) indicate that the BLM is still the product of its past, not the reborn creature of FLPMA.

The purpose of this study is not to suggest that the Bureau is a "captured" agency (meaning that it, faced by a hostile and homogeneous constituency, has come to identify with its captors and abandoned the pursuit of its proper mission), a notion which

Culhane (1981) has largely dispelled.[75] Instead, the evidence characterizes the BLM as an agency that has been continually handicapped and intimidated by Congress and the politics present in the Interior Department.

The profile of the BLM being an unwanted stepchild of the conservation movement began to emerge when Ballinger's reorganization of the General Land Office (Penick 1968) did not have lasting results, developed further with Hoover's offer to the states of all the unappropriated public domain (Kendrick 1984), the opposition of the Forest Service to the Taylor Grazing Act and the creation of the Grazing Service (Steen 1976), and McCarran's subsequent subjugation of the Grazing Service to be reorganized along with the GLO into the understaffed and underfunded BLM (Steinberg 1950; DeVoto 1955; Foss 1960; Stegner 1974). Inherited from the BLM's early years were difficulties described by Foss (1960), Clawson (1971), and Culhane (1981) that persisted in the post-FLPMA Bureau, as Gregg's characterization of the BLM's problems with departmental politics and its own bureaucratic structure indicates (Baker 1983, 12). In the midst of these problems came a wilderness review, one that in the agency's eyes had the promise of confrontation as the result of resource conflicts.

Due to past experience, the BLM seeks to avoid confrontations, and in so doing resorts to policies that allow it to make decisions in advance of proper study. To a public attempting to comment on BLM recommendations and policy at the designated time, the agency is bureaucratic wilderness--as arbitrary and inaccessible as nature

itself before it was subdued and made subject to land-use planning. Perhaps economic optimization techniques may be able to be used not only in the BLM's wilderness review process but also in the workings and the appropriations for the agency, serving to light the way towards the goals of efficiency and equity in public land management.

NOTES

[1]Both word origins bring to mind events in the New Testament of the Bible.

[2]Defined by her to be a person who postulates the attributes of wilderness, believes them, and allows them to shape his behavior. The purist differs in degree from the wilderness user with respect to the traits of spartanism, escapism, and aversion to social interaction, among others.

[3]This has been alluded to numerous times in literature calling for the preservation of wilderness. One notable example is John Muir's continual reference to California's Sierra Nevada as the "Range of Light" in his writings.

[4]She quotes Edward Abbey and Joseph Wood Krutch on this subject.

[5]Allin states that they became parks because the Secretary of the Interior and other interested parties persisted in calling them national parks.

[6]A tactic frequently used by both during this period to gain title to public land was the use of "dummy" entrymen. These "settlers" would be hired to file for title to such lands; once acquired, the land would find its way into the holdings of the speculating and/or lumber concern. The land would then later be resold at a much higher price to later settlers or if it was timber land, often be cut and then left to revert back to the respective county for taxes.

[7]This turned out to be a bonanza for railroads and timber companies who got to take advantage of this "land lieu" provision by trading their national forest holdings for prime timber and agricultural land still in the public domain.

[8]By 1903 national wildlife refuges were added to the existing types of reservations--national forests and national parks. The first refuge was created by Theodore Roosevelt's executive order after a bill to abolish hunting in the national forests had failed in 1902.

[9]The most serious was that beginning in 1935 by then Interior Secretary Harold Ickes who sought to have all public land management agencies under one "Department of Conservation". The Forest Service's aversion to having power centered in Interior is evident in its opposition to the Taylor Grazing act of 1934 which gave

administration of grazing on the public domain (which the service wanted) to a newly created Interior agency, the Grazing Service (Steen 1976, 205).

[10]Pinchot's departure was due to the Ballinger-Pinchot Affair (as it has been called by historians) of 1910. Ballinger was head of the General Land Office under Roosevelt and succeeded in reorganizing the agency to run more efficiently. This was in the face of continual criticism of the GLO by Pinchot and other progressives (the Forest Service had by this time taken administration of the national forests away from the Land Office) who believed in coordinated conservation policies that smacked of "monopoly" as far as Ballinger was concerned. Under Taft, Ballinger became Interior Secretary and he moved to undo what Pinchot and others had accomplished. Pinchot responded by attacking Ballinger's integrity but Taft exonerated his appointee and dismissed Pinchot. Ballinger had to retire within the year because of hearings conducted on his involvement in fraudulent Alaskan coal leases, one of Pinchot's charges. The Ballinger-Pinchot controversy helped split the Republican Party, leading to the election of Woodrow Wilson in 1916 (Penick 1968).

[11]Before the National Park Service was created, administration of national monuments was left to whichever agency had jurisdiction over the land that it was situated (usually the Forest Service or the General Land Office).

[12]Mather eventually got one-fourth of his proposed 2.3 million acre national park proposal, while the Forest Service administratively designated five million acres of wilderness between 1920 and 1928.

[13]Until World War II, Forest Service timber sales never reached two million board feet annually but by 1970 were up to over 11 million board feet per year.

[14]Exact figures have yet to be tabulated due to the implementation of the Alaska Lands Act. Culhane (1981, 44) estimates the total land jurisdiction for the BLM at 254.9 million acres followed by the Forest Service at 191 million acres, with the Fish and Wildlife Service third at 82.9 million acres, and the National Park Service fourth at 68.5 million acres.

[15]The provision is explained in a previous note, but abuses and fraud arising from the provision led to the Oregon Timber Land Fraud Trials of 1906. This involved a number of prominent Oregonians, including General Land Office Commissioner Binger Herrmann who had to burn his files in order to not be indicted (Boly 1976).

[16]Best known for his involvement in the Teapot Dome scandal that was responsible for his removal as secretary.

[17]A permit system was established on indivisual allotments within the grazing districts by the Taylor Grazing Act's Range Code. It should be noted that the Act was designed for cattlemen, having the effect of virtually ending sheep grazing on public range. In the year after its passage an estimated 10 million sheep on the public domain dwindled to barely more than 10,000.

[18]There was no combined study of grazing fees between the Forest Service and BLM until 1960.

[19]A creature of House Interior and Insular Affairs Committee chairman Wayne Aspinall, its creation was supported by backers of the Wilderness Act of 1964 in return for Aspinall's letting the bill out of committee so that it could be debated on the House floor.

[20]An organization created in 1935 by Bob Marshall, Aldo Leopold, Robert Sterling Yard, and Ernest Oberholtzer, among others.

[21]Krutilla and Fisher (1975) developed some techniques that have since been expanded upon to assess land use allocation alternatives.

[22]Other serious problems were: increases in strip mining on BLM lands in the intermountain states, recreational vehicles on southwestern deserts, and the pillaging of archeological sites. In addition to the above problems receiving widespread publicity, the Bureau had almost no law enforcement authority.

[23]Originally, Joshua Tree National Monument consisted of 825,000 acres when it was created in 1936 but was reduced to its present size of 558,000 acres in 1950 due to the presence of strong mining interests there.

[24]The Act was passed in 1978.

[25]These were the Bureau's portion of the Wild Rogue Wilderness in Oregon, the Oregon Islands Wilderness, and the Santa Lucia Wilderness in California. On October 21, 1983 the 6000 acre Bear Trap Canyon portion of the Lee Metcalf Wilderness in Montana became the first BLM-managed wilderness land.

[26]The draft wilderness study policy stated that no standardized rating or ranking system would be used to determine an area's suitability as wilderness. This was to avoid the legal pitfalls of RARE I's Quality Index, though many aspects of the draft policy were almost identical to those tools for assessment used in RARE I and II. Indeed, the Bailey-Kuchler Ecosystems of the United States that was used by the Forest Service in RARE II was utilized by the BLM in its wilderness study phase to facilitate comparison of the

WSAs as well as to assess diversity in the National Wilderness Preservation System.

[27]For the period 1981-84 appropriations were decreased for wildlife habitat by 48 percent, for wilderness by 42 percent, soil, air, and water management by 47 percent, and for land-use planning by 25 percent. Cultural resource management appropriations were increased 18 percent but this figure is related to the mandatory archeological inventories that had to take place in order to issue clearances for mineral exploration (Baker 1983).

[28]The Department of Agriculture deemed that only 51 million acres of its 191 million acres of national forest holdings are important enough not to sell.

[29]Watt, like Agriculture Secretary Earl Butz a decade before, had made some remarks to the press about minority groups that were considered inappropriate by colleagues and the President.

[30]This review was part of the same action taken by Watt in December 1982 when he ordered all WSAs of less than 5000 acres in size dropped from further wilderness review.

[31]The most prominent example was the passage of the Endangered American Wilderness Act of 1978. The 1984 passage of RARE-based Forest Service wilderness bills that would add acreage on a state by state basis is the product of numerous public hearings and negotiation by congressmen representing these states.

[32]In 1933 William Morris Davis tried to explain the Dome as a special case of mass wasting of a desert fault block to support his cycle of landscape development theory. Davis believed Cima Dome was unique because the rock was of uniform texture and composition, producing a convex surface. Sharp (1957) has since shown it to be the result of upwarping of the Ivanpah upland when the igneous (granitic) form rose into the area 100 million years ago. During or after this time volcanics buried the upland and subsequent erosion of the cover exposed the domal surface of the granite. Cima Dome is thought to be a two cycle weathering product rather than the one cycle envisioned by Davis.

[33]Personal communication from a meeting with BLM personnel at the Needles Resource Area office on December 13, 1982.

[34]Neither Ivanpah Lake nor Mesquite Lake (both near the WSA to the north) were accorded WSA status, though part of Silver Lake (which is five miles north of Baker near the NSA's northwestern boundary) was included in the Soda Mountains WSA (CDCA-242).

[35]Estimated by taking the total of the IBLA-appealed acreage (51,440) plus an estimate of the total acreage in the Ivanpah Mountains and Mescal Range (50,000) and subtracting that sum from

the 500,000 acres eliminated from the review in the inventory phase.

[36]Letter from Aline MacDonald, BLM volunteer, dated February 13, 1984.

[37]Conveyed to the state in 1853 after passage of the California Statehood Act. Other states had one section of every township conveyed to them (whose sale or resources would support public schools) by the 1862 Morrill Act.

[38]Local ranchers estimate that it takes 250 acres annually to feed one cow. Receipts from beef sales that area ranches receive account for about 0.1 percent of the statewide total.

[39]The fee is determined by taking the Congressionally figured fair market value of forage from 1964-68 and multiplying it by the Forage Value Index plus the Beef Cattle Price Index after subtracting the Prices Paid Index and then dividing the entire equation by 100.

[40]The criticism is justified by the argument that should the price of beef drop, so will the price of forage, even though it costs the same to produce. Sandvig (1983) says that the public subsidy paid ranchers in the form of low fees has never been greater because of the recent drop in the fee, which, even at its peak, never covered the costs of range management. The fee has always been below that charged for comparable private range, though the costs of producing forage are higher on public land than for private. This results in an inverse economic relationship that has the Government charging less for something because it costs more to produce.

[41]The most often quoted--Castle v. Womble 19 L.D. 455 (1894)--established a "prudent man rule" which was stated in terms where a person would have a reasonable chance to develop a valuable mine once having found minerals.

[42]From 1977 to 1983, approximately 1.7 million claims were filed nationally, of which 1.3 million were still active after this period. In 1983, 816 claims for locatable minerals were filed nationally, covering 15,140 acres (Williams 1984).

[43]Noncompliance involves the "unnecessary or undue degradation" stipulation regarding claims, though reclamation and filing provisions are also included under this heading. Unnecessary or undue degradation are difficult to prove, especially given the lack of legal precedents. The CDCA plan states that an operator is subject to possible enjoinment of activities and liability for damage in cases of noncompliance, but there is some doubt as to how strong this pronouncement is in actual practice.

[44]The Interior Department has provided guidance on certain categorical exclusions on NEPA requirements in the Federal Register of January 23, 1981 on pages 7492-7496.

[45]Stocks are defined as equidimensional discordant plutons having a surface extent of less than 40 square miles, putting it between a dike and a batholith in dimension.

[46]Union Oil's ownership of most of these claims illustrates the point that only about four percent of the claimnants under the Mining Law of 1872 hold almost two-thirds of all BLM-registered mining claims nationally.

[47]Clark Mountain's ACEC designation (which carries with it a closed to motor vehicles provision) resulted from a recommendation of it being nonsuitable as wilderness during the study phase of the wilderness review. It should be noted that ACEC designation is administrative, not legal protection, though an individualized management plan that is developed for each ACEC.

[48]The last wolf recorded in southern California was trapped in the Providence Mountains in 1922.

[49]Mid Hills Campground's elevation is 1400 feet higher than the 4200 foot Hole in the Wall Campground. In addition, Mid Hills has 30 sites to nine at Hole in the Wall. The campgrounds were established prior to the NSA and East Mojave Recreation Lands designations but by no means are as old as many Forest Service camps, as the Bureau did not get recreation appropriations until the late 1950s (the Forest Service first got recreation funds in 1923).

[50]Extensive damage to the desert was caused by the 1974 race even though an exhaustive EIS had been prepared and a permit system had been instituted.

[51]Dinosaur Trackway ACEC and Halloran Wash ACEC are located outside the present NSA.

[52]A phrase used at a meeting with BLM personnel at the Needles Resource Area office on December 13, 1982 as well as being implied throughout much of the Bureau's CDCA literature.

[53]The BLM is hesitant about using the Primitive Area designation (which closes it to mineral entry) since the passage of FLPMA with its mandated wilderness review program. Recommendations as to the wilderness suitability of BLM natural or primitive areas were due July 1, 1980, if they were so identified by November 1, 1975.

[54]The natural area designation does not always guarantee protection as the case of the 1968 designation of the Devils Playground Natural Area illustrates. Though natural areas are generally viewed by the BLM as a commitment to itself to manage a land

unit for specific purposes, the natural area designation was deleted in 1973 when the Devils Playground (which included the Kelso Dunes) Natural Area was turned into an open area for off-road vehicles. Bostick (1975, 564) expressed concern about the natural area designation after using the previous example but says little about the Cima Dome Natural Area which is also within the scope of his book.

[55]Administrative classification (as what occurred when the RNAs were designated by the CDCA Plan when it was adopted) is one of three ways of designating an RNA. The other two are withdrawal and legislative but these ways are little used owing to their difficulty. Procedures for RNA designation are contained in the Code of Federal Regulations 43 CFR 2071.1.

[56]It is important to keep in mind that levels of use in an area prior to its designation as a wilderness area are no index to its popularity once designated, the reasons being that it is subsequently "advertised" as being part of the National Wilderness Preservation System.

[57]State school lands (totaling 600,000 acres) were originally conveyed to the State of California in 1853, after passage of its statehood act. Sections 16 and 36 of every township in California were to support public schools through their sale or use of resources. Later surveys revealed that some of the designated sections were not in Federal ownership, or had already been set aside for other purposes. Natural deficiencies such as fractional sections or townships also contributed to the loss of school lands. To make up for some of these losses, the State is entitled to select other Federal lands in lieu of the designated sections, which are called lieu selections.

[58]As of 1977, California had 14 state reserves totaling 15,854 acres, two state wilderness areas totaling 97,040 acres, and 16 natural preserves totaling 48,786 acres.

[59]It is interesting to note that a 1975 inventory of school sections identified some 38 percent of them as having "significant environmental value", making future reserves and/or wilderness a possibility on these lands.

[60]The FLPMA-mandated deadline was 1991 but the reporting date was pushed up to 1987 by Interior Secretary Watt.

[61]As of June 1984, the Wilderness Society and the Sierra Club have made several public protests and issued a joint statement hinting that a lawsuit is imminent over the BLM's conduct in its wilderness review. Most of the allegations relate to the Bureau's failure to maintain the wilderness character of WSAs as directed under the Interim Management Policy.

[62]This goal is especially pertinent to the BLM, as it was stated in One Third of the Nation's Land, the report most instrumental to the creation of FLPMA.

[63]Limitations in data prevented specific roadless area recommendations, though refinements in the data were said to be easy for the Forest Service to do in most cases. While one conservationist group's proposal was for protecting 3.4 million acres of national forest as wilderness, the Oregon Wilderness Bill passed in June 1984 designated approximately one million acres as wilderness.

[64]Presented in the format of nine alternatives, all based on changes in total dollar value of output, total income, employment, population, and value-added of commodities.

[65]Should there be complexities arising from additional resource conflicts, a computer could be used in the analysis.

[66]Wager discounts carrying capacity, saying that the term was borrowed from range management and receives too much emphasis while other equally important factors are overlooked--especially those relating to a balanced system of recreational opportunities. He adds that the question of allocations for wilderness versus highly developed recreation is that of marginal utility and long-term wilderness benefits for people.

[67]Again, the demand for wilderness in an area cannot be known until the area is so designated. Should overuse ensue, then the demand for wilderness is very large.

[68]As demonstrated by the decisions that invalidated both RARE studies. This affects the BLM because of the Natural Resources Defense Council's reopening of their suit on grazing EISs.

[69]At the end of the wilderness study phase, just over 17 percent of all acreage that the BLM manages in the CDCA was recommended suitable as wilderness. It seems likely that another two percent will be pared off in the reporting phase due to the precedent in the NSA that the South Providence Mountains WSA is probably not going to get a favorable recommendation as wilderness (personal communication with Needles Resource Area personnel).

[70]The BLM includes four alternatives on planning actions such as an EIS which are: no action, maximum protection, no protection, and balanced use. Several writers (Kerr 1978; McWherter 1983; Baker 1983) have criticized the Bureau for presenting all but the balanced use alternative in such extreme terms that the only alternative available to choose is balanced use, the one that the agency endorses.

[71]Though the lawsuits or appeals that the agency has faced have not been directly concerned with the BLM's policy regarding wilderness review, this possibility remains open as both RAREs were attacked on that basis.

[72]This agency was a victim of budget cuts by the Reagan Administration in 1981.

[73]The only exception was the Cinder Cones WSA (CDCA-239), which was not rated by Martin.

[74]Which, when based on National Park Service criteria, is tantamount to using the discredited purity doctrine that the BLM has been so careful to avoid implying in its policy statements concerning wilderness.

[75]It should be remembered that Culhane's general optimism about the agency is shaped by his book being written in four years following the enactment of FLPMA, during the Carter Administration when there were many hopeful signs of the BLM possibly being able to function under a new mandate from Congress. Additionally, Culhane's book is published by Resources for the Future, an organization where a former BLM National Director, Marion Clawson, has been a key figure.

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