

SPECIAL REPORT ON THE
JOSHUA TREE NATIONAL MONUMENT
WITH REFERENCE TO ANTELOPE AND BIGHORN

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by

E. Lowell Sumner, Jr.
Regional Biologist

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INTRODUCTION

The period January 13-14 was spent by the writer in an investigation of the Joshua Tree National Monument while en route to Death Valley National Monument. This inspection had long seemed advisable in view of numerous problems in connection with this national monument which have arisen in the Regional Office. A letter of September 20 from a Mr. Edmund B. Jaeger of Riverside, California, to the Biological Survey suggesting a reintroduction of antelope into the Joshua Tree National Monument was referred by the Washington Office of the Wildlife Section to the Biologist, and this request for information served to emphasize the need for an inspection.

Prior to making this trip, the writer conferred with Superintendent Merriam and with Junior Park Naturalist James E. Cole of Yosemite National Park. The tremendous difficulties which at present beset any attempt at administration or protection of the area, and the inadvisability of taking active steps toward the reintroduction of antelope now, were brought out by the Yosemite staff. The assistance of Mr. Cole in outlining an itinerary of inspection is deeply appreciated. The writer also found exceedingly useful Mr. Cole's "Report on Field Inspection Trip of Superintendent Lawrence C. Merriam and Junior Park Naturalist James E. Cole of Joshua Tree National Monument, April 14 and 15, 1938."

GENERAL DESCRIPTION OF THE AREA

In view of the excellence and completeness of the above mentioned report by Mr. Cole, it seems unnecessary to duplicate here any extensive description of the topography, water sources or vegetation of the monument. The Joshua Tree National Monument lies in the Mojave Desert and partakes of the high elevation, sparse vegetation and relative scarcity of water which typifies the latter.

The monument is divisible roughly into an eastern and a western half. The eastern portion comprises the Pinto Basin which is an enormous, broad, very gently sloping and somewhat monotonous desert wash (Fig. 1) flanked on the north by the rugged Pinto Mountains and on the south by the almost equally precipitous Hoxie and Eagle Mountains.

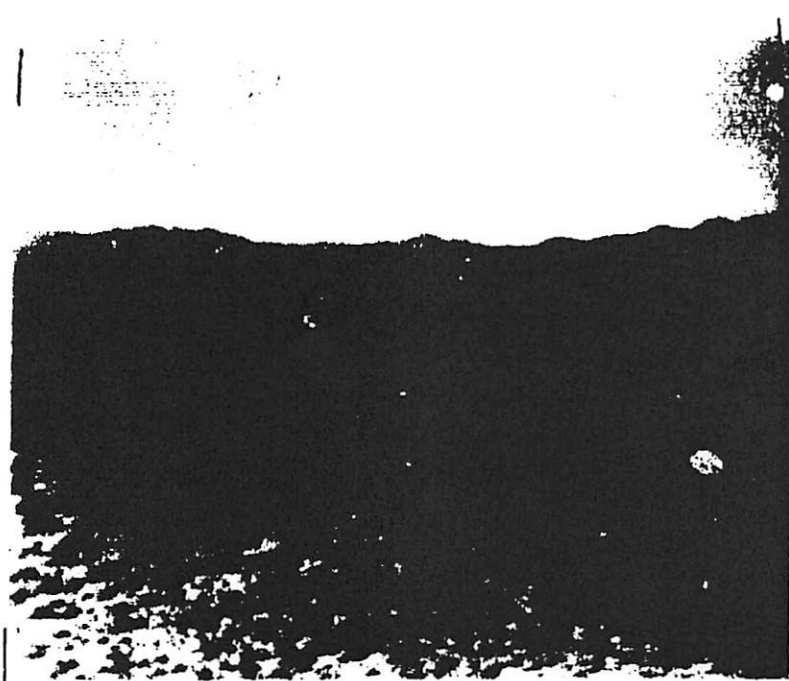


Fig. 1. View of the Pinto Basin looking eastward from near the Golden Bee Mine; Hoxie Mountains, visible at the extreme right.

Creosote Bush is the dominant shrub. Catclaw and the Smoke Tree occur in little "groves" along certain of the cross washes where there is a little underground water. Near the western end of this basin is an extensive garden of the picturesque cactus Opuntia bigelovii (Fig. 2). Whatever ultimate boundary revisions are made, it would seem important to include this cactus garden within the monument.

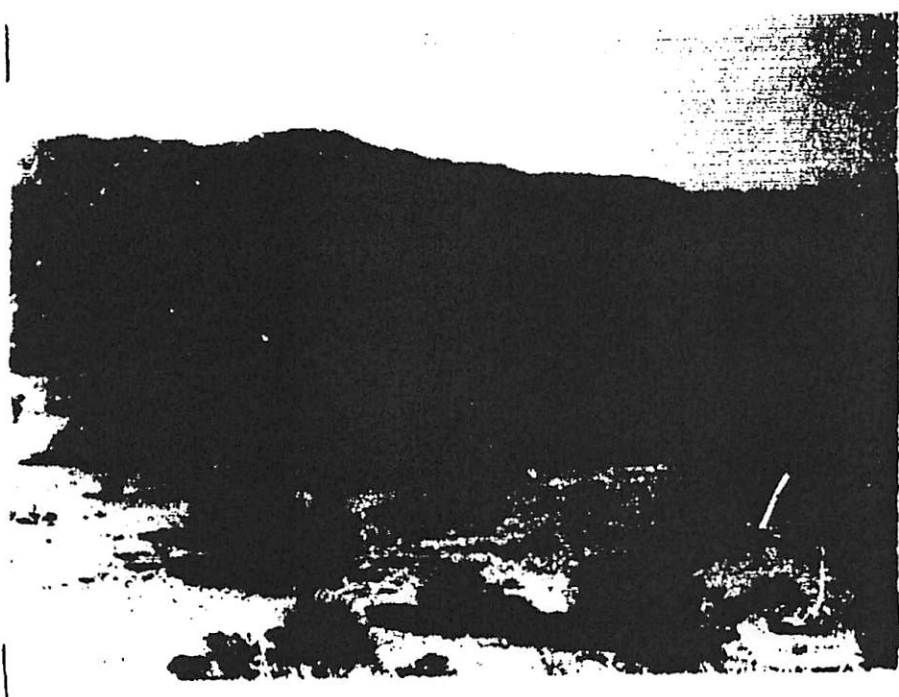


Fig. 2. Part of the immense garden of Opuntia bigelovii near the western end of the Pinto Basin. This scientifically interesting and picturesque display deserves to be retained within the future monument boundaries.

The western portion of the monument averages some 2,000 feet higher than the Pinto Basin and is strikingly different from the standpoint of scenery, vegetation and no doubt also as regards potential recreation. It is this western portion which contains the Joshua trees (Fig. 3). In addition to the Joshua trees there are scattered among these great picturesque rocks the Spanish Dagger (Yucca mohavensis), the California Juniper, Palo Verde, Burro Fat, Ocotillo, Desert Ironwood, and an undetermined species of oak. Intermingled with these are extensive clumps of native grass (Fig. 4) and the whole comprises what once must have been good antelope range.

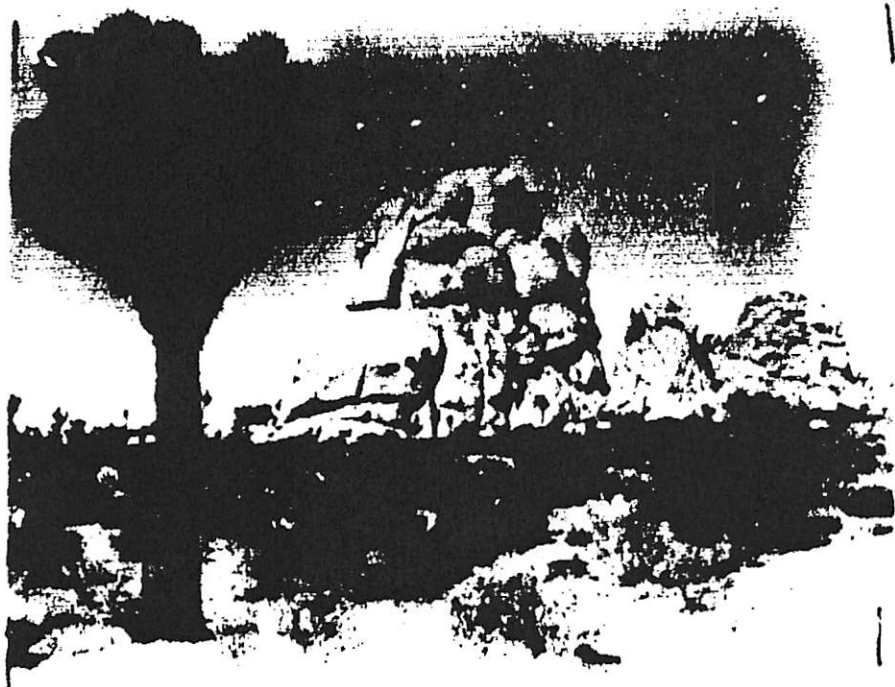


Fig. 3. Joshua trees and spectacular granite outcroppings characteristic of the western half of the Joshua Tree National Monument.

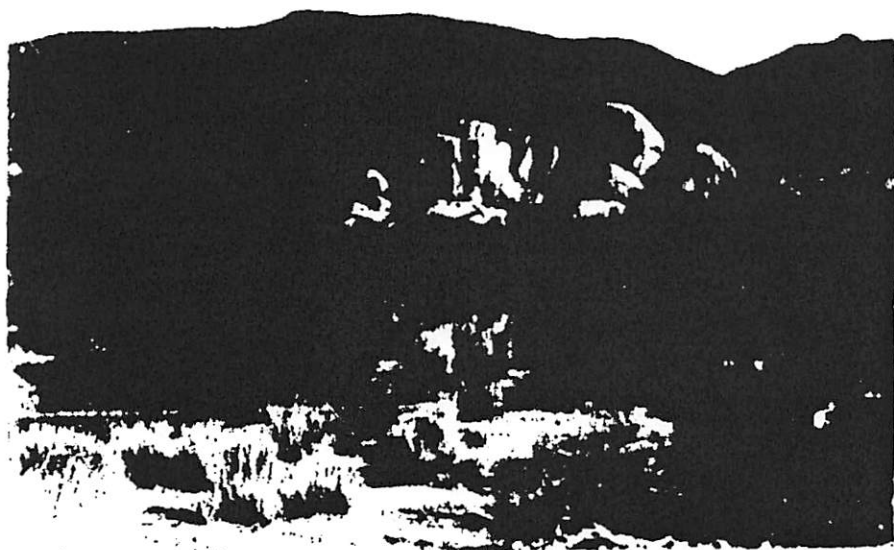


Fig. 4. Portion of the western half of the Joshua Tree National Monument in the "Split Rock Area" showing abundance and variety of vegetation.

In addition to being potential antelope range, as well as supporting a remnant bighorn and deer population, this high western portion of the monument is cool enough and scenic enough to offer undoubted recreational attractions of a high order (Fig. 5).



Fig. 5. One of the innumerable fantastically piled up granite formations typical of the western half of the Joshua Tree National Monument. This country, in addition to being scenic, could support much greater numbers of bighorn and deer and would be suitable for antelope, at least during the summer.

If one climbs from the broad, gently sloping valleys into the rugged mountains on the north and south, a somewhat different vegetational type associated with increased cold and moisture is encountered. Juniper and Single-leaf Pine (*Pinus monophylla*) appear, as well as numerous shrubs characteristic of desert mountain areas. These higher elevations receive a light snow mantle during the winter (Fig. 6) which results in greater soil moisture. There is also less evaporation than at the lower levels.



Fig. 6. Juniper-Joshua Tree association at 5,500 feet elevation in the Little San Bernardino Mountains, Joshua Tree National Monument. A light snow mantle is visible in the upper left. A heavy frost appeared here at 6:30 p.m. January 14, 1940, although the sun had hardly set. This area would be relatively cool even in midsummer.

LAND STATUS

Mr. Cole's report clearly indicates the impossibility of adequate wildlife protection until the Service obtains a more workable jurisdiction over the area. In addition to the scattered mining properties, most of the best springs and strategic areas have been in private hands for many years. These areas are just the ones which are of the most importance to wildlife.

Grazing. According to evidence presented by Mr. Cole, cattle have been grazed on the land now in the Joshua Tree National Monument since 1895. Numbers ran as high as eight hundred or more head of stock at various times, although even in its pristine condition the area could not have been considered as well adapted to domestic stock grazing. The writer was informed by Mr. Keys, who settled in the area more than twenty years ago, that originally bunch grass

dominated throughout the area but that it has gradually been supplanted by cactus and sagebrush. Doubtless this change has been responsible for the gradual abandonment of cattle operations. Mr. Keys and a few of the old timers still own a few head of stock but obviously are dependent upon other means for their livelihood. Even many of these old timers admit that the native range has been greatly injured by overgrazing in the past.

Water. Mr. Cole's report well summarizes the water situation. The eastern half of the monument contains very little natural water. A few wells have been dug in connection with mining operations. The evidence indicates that additional wells might be dug in the Pinto Basin area if there were any reason for doing so. About the only reason would be to provide water for antelope, if these were reintroduced. The western half of the monument contains a somewhat greater number of natural springs, but even here the natural water sources are decidedly scarce. In this respect the Joshua Tree area differs markedly from Death Valley National Monument which, for a desert region, has quite abundant water supplies. Various wells in the western part of the former monument have been dug for household use or for domestic stock, but these are mostly privately owned or else they are adjacent to well traveled roads so that they would not be very attractive to bighorn or antelope. Stubbs' Spring would be a partial exception, but here there is evidence that poaching of bighorn has taken place.

WILDLIFE POSSIBILITIES

Mr. Cole has devoted considerable time to field studies in the Joshua Tree area and has submitted a good preliminary list of birds, mammals and reptiles which need not be duplicated here since we are chiefly concerned in this report with the protection of bighorn, deer and antelope.

Burro Deer. Said to enter the monument at times. An extension of the present area to include the Little San Bernardino Mountains to their base, as discussed below, should provide better protection for this species.

Antelope. No antelope have been seen since about 1895, although prior to that date they appear to have been rather abundant. It will be recalled that cattle were introduced into the area about 1895 and there is no doubt that the latter, together with associated activities, were responsible for the disappearance of the antelope. In addition to being shot, as they undoubtedly were by the early stockmen, the antelope had to compete with the domestic stock, not only for forage which gradually was destroyed but also for water which was almost completely preempted as far as the antelope were concerned. Those famil-

lar with antelope habits agree that the latter require watering places which are well out in the open and permit a view in all directions of the approach of enemies. Such places were rare even under original conditions. The numerous "tanks", or artificial drainage basins in the rocks which the stockmen constructed, would be suitable for antelope now if they were on public land and could be controlled by the Service. Additional tanks of similar nature might even be built in the Pinto Basin if antelope were to be reintroduced. Such a reintroduction is inadvisable at the present, however, because of the excessively complicated jurisdictional problems already mentioned. If these can be straightened out the reintroduction of antelope would be immensely worth while. A few areas seem not to have been completely overgrazed (Fig. 7) and eventually those which have may be expected to recover (Fig. 8).



Fig. 7. View of the northwest corner of Joshua Tree National Monument near Quail Spring. Bunch grass still exists here.



Fig. 8. Sage brush country five miles southeast of Keys ranch. Although this area has been overgrazed in the past, complete protection should gradually restore the original grasses and permit the reintroduction of antelope.

Desert Bighorn. Mr. Cole saw fresh bighorn tracks near Stubby Spring, as well as evidence of poaching there. Mr. Keys told the writer that there are about fifty bighorn within the present monument but that they are scattered widely. Only seven or eight occur in the band which occasionally appears at his ranch. As in the case of Death Valley bighorn, these animals appear to travel widely during the rainy season, especially when they see local thunder storms in the distance. Under such conditions they often head in a straight line toward the distant storm, although it may be miles away. This habit presents an argument for spacious boundaries in the case of the Joshua Tree National Monument.

BOUNDARY CONSIDERATIONS

Little San Bernardino Mountains. The Wildlife Section is not making specific recommendations regarding boundary changes because it is realized that many considerations other than wildlife are involved. From the strictly wildlife point of view, only three species might be considered important enough to warrant boundary revisions for their protection. Of these, the burro deer probably never was numerous enough to justify boundary changes. However it should be

pointed out that if serious consideration is to be given to extending the southwest boundary of the monument so as to include the base of the Little San Bernardino Mountains as well as Fargo Canyon, as has been suggested by some people, this additional territory would undoubtedly protect the deer and might promote their increase. Still more important would be the increased protection to the Desert Bighorn which such an extension would give. At the present time there seems to be considerable poaching in this area, which is rather remote. The extension referred to, by taking in all of these barren mountains, would prevent poachers from entering via the canyons which open to the southwest. This rugged barren strip is of practically no value for anything except scenery (Fig. 9) and wildlife.

Pinto Basin. The chief wildlife reasons for retaining the Pinto Basin area would be so as to provide adequate range for antelope. If only the western half of the monument were retained, it is doubtful that the antelope would remain within the monument boundaries throughout the year. Probably they would drift into the Pinto Basin, especially in winter. Since no one uses the Pinto Basin anyway, it can be argued that there is no reason for retaining it by the Service since the antelope probably would not be disturbed in any event.

The chief reason for retaining the Pinto Basin for antelope protection would lie in the possibility of developing water holes there strictly for antelope. These undoubtedly would be of great benefit if antelope were ever brought back to the monument, but if the area was not under the jurisdiction of this Service such water holes might not be developed - that is unless an arrangement for developing them could be worked out with the State Division of Fish and Game. As mentioned previously, the need of the bighorn for a spacious range would also be filled if the Pinto Basin were retained. We realize, however, that these considerations must be balanced against the fact that the area would not be very attractive recreationally and that steps must be taken to definitely discourage tourists from traveling through it in summer.

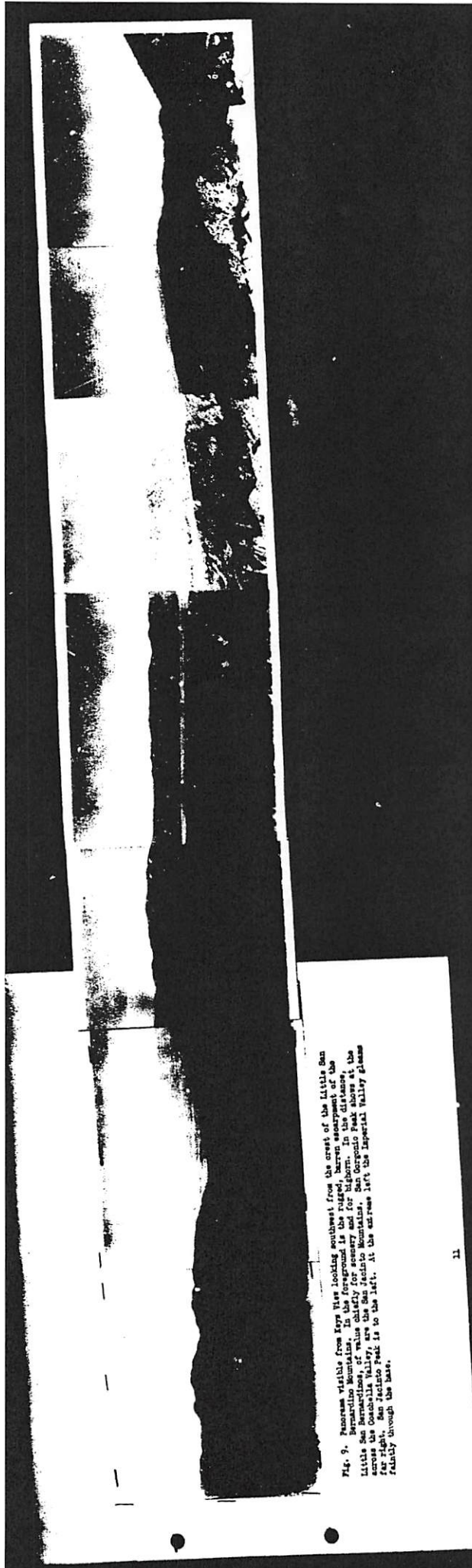


Fig. 9. Panorama visible from Keys View looking southwest from the crest of the Little San Bernardino Mountains. In the foreground is the rugged, barren escarpment of the Little San Bernardino Mountains. In the middle distance, the San Jacinto Mountains, across the Coachella Valley, are visible. In the far distance, the San Jacinto Peak is to the left. At the extreme left the Imperial Valley gleams faintly through the haze.