DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

JOSHUA TREE NATIONAL MONUMENT
SUPERINTENDENT'S REPORT
for
CALENDAR YEAR 1981

Rick Anderson
Superintendent
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## JOSHUA TREE NATIONAL MONUMENT

### Travel Statistics by Month 1980

<table>
<thead>
<tr>
<th>Month 1980</th>
<th>Total Visitation</th>
<th>Percent of Annual Visitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>30,441</td>
<td>6</td>
</tr>
<tr>
<td>Feb.</td>
<td>46,464</td>
<td>8</td>
</tr>
<tr>
<td>Mar.</td>
<td>69,247</td>
<td>13</td>
</tr>
<tr>
<td>Apr.</td>
<td>83,052</td>
<td>15</td>
</tr>
<tr>
<td>May</td>
<td>64,908</td>
<td>12</td>
</tr>
<tr>
<td>June</td>
<td>27,550</td>
<td>4</td>
</tr>
<tr>
<td>July</td>
<td>26,706</td>
<td>5</td>
</tr>
<tr>
<td>Aug.</td>
<td>30,252</td>
<td>6</td>
</tr>
<tr>
<td>Sept.</td>
<td>32,311</td>
<td>6</td>
</tr>
<tr>
<td>Oct.</td>
<td>31,968</td>
<td>6</td>
</tr>
<tr>
<td>Nov.</td>
<td>56,617</td>
<td>10</td>
</tr>
<tr>
<td>Dec.</td>
<td>48,206</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>547,722</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

1981

<table>
<thead>
<tr>
<th>Month 1981</th>
<th>Total Visitation</th>
<th>Percent of Annual Visitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>53,247</td>
<td>8</td>
</tr>
<tr>
<td>Feb.</td>
<td>57,286</td>
<td>9</td>
</tr>
<tr>
<td>Mar.</td>
<td>63,996</td>
<td>10</td>
</tr>
<tr>
<td>Apr.</td>
<td>85,729</td>
<td>14</td>
</tr>
<tr>
<td>May</td>
<td>63,761</td>
<td>10</td>
</tr>
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<td>June</td>
<td>22,253</td>
<td>4</td>
</tr>
<tr>
<td>July</td>
<td>22,574</td>
<td>4</td>
</tr>
<tr>
<td>Aug.</td>
<td>22,505</td>
<td>4</td>
</tr>
<tr>
<td>Sept.</td>
<td>38,026</td>
<td>6</td>
</tr>
<tr>
<td>Oct.</td>
<td>77,153</td>
<td>13</td>
</tr>
<tr>
<td>Nov.</td>
<td>61,571</td>
<td>10</td>
</tr>
<tr>
<td>Dec.</td>
<td>47,389</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>615,490</strong></td>
<td><strong>100</strong></td>
</tr>
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</table>
## A. Important Visitors

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>02/24/81</td>
<td>Al Miller</td>
<td>Highway Engineer, Federal Hwy Admin., Denver, Colo.</td>
</tr>
<tr>
<td>02/24/81</td>
<td>George White</td>
<td>Fish &amp; Game Warden, North Shore, Salton Sea, CA</td>
</tr>
<tr>
<td>02/24/81</td>
<td>Jim Clayton</td>
<td>BLM</td>
</tr>
<tr>
<td>03/20/81</td>
<td>Russ Butcher</td>
<td>Natl Parks &amp; Conservation Assoc., SW Reg. Representative</td>
</tr>
<tr>
<td>03/23/81</td>
<td>Guida Veronda</td>
<td>USGS</td>
</tr>
<tr>
<td>04/09/7k</td>
<td>Destry Jarvis</td>
<td>NPCA - Natl Park Conserv. Assn.</td>
</tr>
<tr>
<td>10/28/81</td>
<td>Corrine Valdez</td>
<td>Aide to Congressman Lewis</td>
</tr>
<tr>
<td>10/28/81</td>
<td>Mrs. Bernice Loman</td>
<td>Cong. Liaison to L. A. Immigration &amp; Naturalization</td>
</tr>
</tbody>
</table>

## B. National Park Service Visitors

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Duty Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/07/81</td>
<td>John Crockett</td>
<td>Western Regional Office</td>
</tr>
<tr>
<td>01/07/81</td>
<td>Don Spalding</td>
<td>Western Regional Office</td>
</tr>
<tr>
<td>02/10/81</td>
<td>Dale &amp; Marilyn Schmidt</td>
<td>John Day Fossil Beds, Oregon</td>
</tr>
<tr>
<td>02/26/81</td>
<td>Ray Murray</td>
<td>Sequoia Kings Natl Park</td>
</tr>
<tr>
<td>03/09/81</td>
<td>Chris Cameron</td>
<td>Western Regional Office</td>
</tr>
<tr>
<td>05/04/81</td>
<td>Howard Chapman</td>
<td>Director, Western Region</td>
</tr>
<tr>
<td>05/28/81</td>
<td>Curt Townsend</td>
<td>Denver Svc Ctr</td>
</tr>
<tr>
<td>06/18/81</td>
<td>Kathy Davis</td>
<td>Western Regional Office</td>
</tr>
<tr>
<td>06/18/81</td>
<td>Don Christiansen</td>
<td>Western Regional Office</td>
</tr>
<tr>
<td>07/24/81</td>
<td>Matt Bullion</td>
<td>Western Regional Office</td>
</tr>
</tbody>
</table>
### B. National Park Service Visitors (Continued)

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/05/81</td>
<td>Andrew M. Loveless</td>
<td>Kings Mountain Natl Military Park and Cowpens Natl Battlefield</td>
</tr>
<tr>
<td>10/13/81</td>
<td>Jim Mills</td>
<td>Western Regional Office</td>
</tr>
<tr>
<td>10/27/81</td>
<td>Bruce Black (retired)</td>
<td>Natchez Trace</td>
</tr>
<tr>
<td>10/28/81</td>
<td>Matt Bullion</td>
<td>Western Regional Office</td>
</tr>
<tr>
<td>11/04/81</td>
<td>Ray Murray &amp; John Shoaf</td>
<td>Sequoia Kings</td>
</tr>
</tbody>
</table>
I. GENERAL SUMMARY AND TRENDS

A sizable increase in visitation occurred during 1981 over 1980 (1981 - 615,490; 1980 - 547,722). Travel statistics indicate an ever-increasing use by visitors during the hot summer months, although overnight camping use remains minimal during the summer. A very large percentage of the summer visitors are from foreign countries, predominantly from Europe.

Of concern with regard to resource management and protection is the continued increase in personnel assigned to the U. S. Marine Corps Base at Twentynine Palms. There are currently approximately 8,000 Marines stationed on the base and the Commanding General estimates that by 1985, this number will increase to 12,000-15,000 Marines.

Joshua Tree National Monument is the closest recreational outlet for these Marines and therefore, use and abuse of the Monument occurs on a year-round basis. Current funding levels are not adequate for year-round staffing of rangers to adequately protect the natural and physical resources. Increases in personnel are essential on a year-round basis to adequately protect the resources and to serve the legitimate visitor.

The communities of Twentynine Palms, Joshua Tree and Yucca Valley on the northeastern boundary of the park are experiencing rapid growth and development. The prime real estate for housing development in Yucca Valley and Joshua Tree are those properties immediately adjacent to the Monument's north boundary; consequently, successful efforts have been made to this point of time with the County Zoning Commission in keeping these tracts of land at low density housing areas. In the Coachella Valley to the south, as Palm Springs and its suburbs continue to expand, development adjacent to our southern boundary is more enticing to developers. The one community, Desert Hot Springs, is also expanding at a rapid rate and this expansion is expected to continue. A consequence of this increased development along our boundaries is a proportionate increase in illegal uses of the Monument, primarily offroad vehicle use and poaching.

The Monument's close proximity to the Los Angeles basin and its 13 million inhabitants results in highly concentrated weekend visitor use during the prime visitor seasons of spring and fall. This close proximity to the basin also results also in the air space inheriting pollution from the basin. An air quality study identifying visibility and particulate matter is our primary research need.

The major significant threats to park resources are the increasing number of incidences of poaching, vandalism and illegal offroad vehicle trespass. With a less than sufficient number of rangers on our staff, it is impossible to adequately patrol the 190+ miles of boundary.
II. ADMINISTRATION

A. Procurement

During 1981, the following procurement actions were conducted:

- Purchase orders: 209
- Blanket purchase orders: 19
- GSA orders: 6
- Bill of Collection: 97
- Utility Payments: 202
- Imprest: 109
- Contract, Garbage: 1
- Base Agreement: 1

B. Fee Collection

Campground fees collected at the two fee campgrounds totaled $13,877.

- 68 Golden Eagle passports were sold.
- Issued 471 Golden Age passports, and 3 Golden Access passports.

Statistics indicate that one out of four campers at the two fee campgrounds (Black Rock Canyon and Cottonwood Springs) used a Golden Age passport for discount camping rates.

C. Personnel

The following permanent positions filled during the year were:

- William Truesdell, GS-12, Chief of Interpretation
- Ernest Quintana, GS-9, Supervisory Interpretive Specialist
- Carol Metzger, GS 7/9, District Ranger
- Wesley Seckler, GS-7, Park Ranger
- Michael Brinkmeyer, GS-5, Park Ranger
- Frank Terbוסic, WG8, Maintenance Worker

Permanent less than full time employees hired were:

- Thomas Roberson, WG 5/6, Maintenance Worker
- Patrick McFarland, WG 2/3/4, Motor Vehicle Operator
- Arthur Ayala, WG 4/5, Motor Vehicle Operator

The EEO employment posture at years end was as follows:

- 24 full time positions
- 11 majority males
- 6 majority females
- 5 minority males and
- 2 vacancies
- 9 less than full time positions.
- 4 majority males
- 4 minority males
- 1 minority female
D. Annual Operating Program

The Fiscal Year 1981 Monument budget was under-obligated by 2.2%. The annual operating program is attached.

III. Maintenance

A. The Maintenance Division operated with the following personnel during the year:

<table>
<thead>
<tr>
<th>Personnel Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent Full Time</td>
<td>9</td>
</tr>
<tr>
<td>Permanent Subject to Furlough</td>
<td>6</td>
</tr>
<tr>
<td>Seasonal</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15.5 work years</strong></td>
</tr>
</tbody>
</table>

At the start of the year there were additionally six YACC enrollees assigned to the Monument staff from the BLM Riverside YACC camp. On February 1st, the BLM YACC was dissolved at the Monument, and the six enrollees were picked up on California Conservation Corps Mt. San Jacinto rolls, until by natural attrition these positions became vacant. The California Conservation Corps has continued to provide spike crews from their San Jacinto camp for work projects. These projects include trail construction and maintenance, road and camp site maintenance, repair and painting of buildings and other structures and wildlife guzzler maintenance, etc.

A disabled veteran was placed on the Maintenance rolls by the Veterans Administration, but was forced to terminate after two weeks of employment by doctors orders. Further attempts to utilize this program have been unsuccessful to this time.

During the summer season eight SYEP-CETA personnel work with the Maintenance Division in all phases of work projects. The division has three worker trainee positions to provide opportunities for advancement in the maintenance field.

B. Maintenance General

Routine maintenance of camp and picnic grounds included table maintenance, fireplace repair, campsite brushings and toilet cleaning. Roads maintenance continues on in such projects as pot hole patching, shoulder maintenance, sign repair or replacement and roadside brushing. Repair or replacement of all types of signs has reduced our stock of replacement signs and/or repair materials. Funding is required in this area to add some stock of replacement signs or repair materials. Al Miller, DOT, conducted the second survey of the Monument road system in February.

The radio system was upgraded with the replacement of 4 portable, 3 base stations, 9 remote control units and the repeater. A survey is underway by DSC and WRO, to identify necessary equipment, repeater location and funding requirements to upgrade the communication systems. Future 10-237
and 10-238's will be formulated to reflect the results of this survey. Radio maintenance is now performed by a GSA contract shop, Commercial Radio from Indio, with the exception that portables and chargers are maintained by the Sequoia/Kings Canyon Radio shop.

C. Cyclic Maintenance

Contracts were let for 6 miles of chip and seal in the Cottonwood District and 20 miles of center line in the Cottonwood and Central Districts. However, due to cold weather, this project was delayed and will be finished in late spring of 1982.

A cyclic painting project was completed in the Headquarters and Pinto Wye district. The exterior of all buildings in these areas and 90% of the interior portions of the Headquarters, Visitor Center and Administrative buildings received a coat of paint.

Cyclic funds were received for purchase of 19 picnic tables frames and for purchase of materials to repair existing tables.

D. Maintenance Add-On

We had three maintenance add-on projects in the Monument. A new water pump engine, chlorinator, and air bleeders were installed on the Cottonwood water system.

Work was begun in late December to repair the Black Rock Canyon water tank. The project consists of installing a fiber-glass bottom, interior tank coating and exterior tank painting. The project is nearing completion and should be completed mid-February, 1982.

E. Maintenance Visitors, 1981

Roger Tege, Solar Water Heaters, NASA
Clark Emch, California Conservation Corps
Linda White, Veteran's Placement, VA
Ray Murray, Radio Survey, SEKI/WR
John Schoof, Denver Service Center, Radio Survey
Ed Otake, Western Region, Cyclic & Maintenance Add-On Projects
Matt Bullion, Western Region, Water and Wastewater facilities
Kurt Townsend, Denver Service Center, Water/Wastewater facilities
Roy Kohen, Denver Service Center, Generator/Furnace assistance
Robert Thielke, Denver Service Center, Generator/Furnace assistance
Jeff James, Western, SCA - Energy Survey
Rhonda James, Western Region/SCA - Energy Survey
Andreas Aeppli, Western Region/SCA - Energy Survey

IV. Interpretation and Visitor Services

A. General

Because of inflation and necessary budget cuts, the Interpretive Division operated throughout the year with an ever-decreasing number of employees. During Fiscal Year 1981, we were able to employ 15 seasonal employees in the spring; however, by fall of 1981 (FY 1982), the
seasonal staff was reduced to seven full time and three part time employees. This is the result of a budget cut from 1981 FY $180,000 to $154,000 in 1982 FY.

The impact on visitors brought about by the reduction was less service, information, and orientation provided. Indian Cove visitor contact station was only open part time during the spring. Then it closed during the summer and remained closed for the remainder of the year. Black Rock Canyon Visitor Center was open only part time in the spring and fall and closed during the summer. Joshua Tree west entrance contact station was open only on weekends in the spring and fall and closed the remainder of the year. Cottonwood Springs Visitor Center was operated full time during the spring and fall and for 11 weeks part time during the summer. In summary, the Oasis Visitor Center (1 out of 5) was the only one we were able to keep open throughout the year.

B. Personnel

The Division operated with three permanent, full-time positions and seasonal positions as follows:

Spring 1981 - 15 seasonal (7 full-time technicians, 1 part-time technician, 1 full-time park aid and 6 part-time park aids)

Summer 1981 - 2 seasonal full-time technicians

Fall 1981 - 10 seasonal (5 full-time park technicians, 2 full-time park aids, 2 part-time Cooperative Education aids and one part-time high school student aid.)

All seasonal personnel were required to take a three week LWOP break during the winter as a condition of employment.

Additional temporary personnel were utilized during July and August through the CETA-SYEP program. Four part-time aids worked at the visitor centers at no cost to the Interpretive Division.

During 1981, Division personnel participated in a total of approximately 154 man days of training. Training included Law Enforcement for Park Protection Commissions, Climbing and Rock Rescue, Advanced First Aid, Performance Standards and Appraisal, and the annual general orientation and interpretive training.

On June 14, 1981, Robert Woody, Chief of Interpretation and Visitor Services officially transferred to Cape Hatteras National Seashore as Chief Park Naturalist. The Joshua Tree Division Chief position was filled by William G. Truesdell, who transferred from McKinley Park, Alaska on September 20, 1981.

On two occasions, April and December, Ernie Quintana assisted in instructing two Marine Corps units in 2 days of rock climbing training.
C. Operations

The Division of Interpretation offered a somewhat reduced program of interpretive services during 1981; however, during the spring and fall interpretive walks, talks, and demonstrations were still offered on weekends in the major visitor use areas of the Monument. The following is a breakdown of programs offered and numbers of visitors contacted:

<table>
<thead>
<tr>
<th>Program</th>
<th>Number of Visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpretive Walks and Hikes</td>
<td>218 for 2672</td>
</tr>
<tr>
<td>Historic tours</td>
<td>106 for 2011</td>
</tr>
<tr>
<td>Information and Orientation Talks</td>
<td>116 per 8511</td>
</tr>
<tr>
<td>General talks</td>
<td>104 for 1848</td>
</tr>
<tr>
<td>Evening Programs</td>
<td>145 for 6595</td>
</tr>
<tr>
<td>Interpretive Demonstrations</td>
<td>65 for 953</td>
</tr>
<tr>
<td>Audiovisual programs</td>
<td>5,718 for 29,842</td>
</tr>
<tr>
<td>Visitor Center visitation</td>
<td>63,103</td>
</tr>
<tr>
<td>Contact Station visitation</td>
<td>19,292</td>
</tr>
</tbody>
</table>

During the spring months of 1981, Environmental Education programs were offered to the local Junior High and High Schools. Twenty-one on-site programs were presented to 479 students and seventeen off-site programs were presented to 404 students.

Offsite programs were offered throughout the year to 21 clubs and organizations with 676 people in attendance.

The self-guiding facilities in Joshua Tree are very well received and very much utilized. Over the past year, particularly during the fall, an effort has been made to upgrade these trails. New labels have been placed along most of the trails and more attention will be given to maintaining them. Over 110,000 visitors used our self-guiding trails during 1981.

In another effort to provide visitor information, several new trail and interpretive leaflets were written during the year. The Cholla Cactus Garden trail leaflet was completed and printed. A Cactus Guide, Joshua Tree Leaflet and a Mining leaflet were written and reviewed and have gone to the printer. Two other trail leaflets have been drafted, one for Hidden Valley and another for the Barker Dam area. Both are still in need of further review and editing.

There were over 60,200 Monument brochures distributed during 1981 and 983 known information requests answered.

D. Volunteer-in-the parks program

There were eleven active volunteers during 1981. They were primarily involved in information/contact station operations, environmental education, curatorial activities and resource management. A total of 484 hours of volunteer time was recorded.
E. Cooperating Association

The Joshua Tree Natural History Association lost two of its Board Members this year with the deaths of Ed Kenney and Bill Supernauh.

The gross sales for the Association was $51,800, a 1.2% increase over FY 80.

F. Trends

Travel for the year increased 1.1% over last year; however, visitors contacted was down slightly due to reduced services and operation of facilities. Contacts at fixed stations decreased 4.3% this year.

The formal environmental education program became very popular with regional teachers and was ready to grow; however, the $26,000 reduction from the Interpretation budget all but eliminated the program.

As budgets get tighter, Interpretive personnel will find themselves more often operating from fixed stations and visitor centers and presenting fewer programs. At a time when visitor information, safety messages and natural resources presentation messages are becoming more important, an effort will be made to make more roving contacts whenever possible, and without the personnel more non-personal interpretive materials will be produced and distributed.

G. Special Services

Forty-one films were loaned during the year and viewed by 1827 people. Interpretive staff personnel participated in the Pioneer Days parade in Twentynine Palms.

V. Resource Management and Visitor Protection

A. Law Enforcement

Total visitation taken from entrance counts showed an increase of 1.1% during 1981 from 1980 levels. Overnight use, however, declined 12.7% in 1981. The number of law enforcement contacts remained constant and campgrounds continue to be the primary source of these actions indicating a per capita increase in violations occurring among campground users. A significant portion of incidents which occur are not related to camping, but stem from the use of campgrounds for party purposes which conflicts with intended use of the facilities.

A planned expansion of the Marine Corps Ground/Air Combat Training Center, Twentynine Palms, from 8,000 to 15,000 personnel will probably place increased pressure on Monument facilities by rising numbers of the "10% who never get the word." Recreation facilities in the local area are extremely limited for numbers of this age group and law enforcement personnel will be faced with increased challenge Monument users. During 1981, the emphasis on education for voluntary compliance continued in enforcement with citation and arrest used for willful, flagrant violations and "hard cases."
The level of cooperation between area law enforcement and emergency services agencies continued to be excellent throughout the year. The Morongo Basin Peace Officers Association continued to be active with monthly breakfast meetings scheduled. This was augmented by weekly Thursday morning coffee meetings involving agency higher supervisory and management personnel late in the year. This provides an increased opportunity for an informal exchange of information and discussion of problems which relate to all agency operations.

Prospects for concurrent jurisdiction showed no significant improvement during the year despite the San Bernardino County Sheriff's inability to increase his manpower levels.

B. Traffic Accidents

A total of 14 traffic accidents were investigated during the year, a 39% reduction from 1980's total of 23 which, in itself, was a 53% reduction from 43 investigated during 1979. All but one accident involved property damage only and the injuries incurred in that accident were minor. No fatalities occurred and total estimated property damage was $14,000 compared to $31,000 for 1980.

Given the facts that total vehicle travel increased 1.1% during the year and the number of traffic citations remained about the same, it follows that either visitor driving habits are improving, the deterrent effect of patrol vehicles on the roads is becoming evident or a combination of both influences is being manifested. If either of the latter two factors is indeed the case, increased costs in vehicle rental and mileage charges are more than offset by savings in repair costs and injuries for the public and we are making significant progress in our traffic safety programs.

C. Fire Prevention and Suppression

No structural fires were reported during the year and the inspection and recharging of all fire extinguishers was accomplished by contract. One vehicle fire involving a contractor's refuse collection truck occurred as a probable result of charcoal being placed in a collection bin. The fire was extinguished by park and CDF forces with little damage to the truck.

Three small wildfires were fought during the year with a total involvement of less than six acres. Each fire resulted from a different cause; two resulted from usual causes - lightning and smoking. The third was caused by a hiker who followed advice he had read somewhere and burned his toilet paper after use.

The local operating plan between NPS and CDF was revised in conformance with the proposed Western Region/State of California agreement. Coordination between San Bernardino and Riverside Ranger Units (CDF) and the park will be finalized prior to May 1, 1982. The principles set forth in the new plan are much the same as in the old and the majority of changes concern terminology.
D. Backcountry/Wilderness Management

The restricted use areas established under the NRMP remained unchanged during the year, but changes were made in the self-registration points in response to visitor use patterns. One point located near the north boundary in the Old Dale area was removed because of lack of use and exposure to vandalism. A second registration point in Pleasant Valley was being used exclusively by drivers and was moved to a point better accessible to backcountry overnight users.

The total number of registered visitor use nights in the backcountry declined from 2,241 in 1980 to 1,173 in 1981. Total overnight use in Monument campgrounds during 1981 decreased 12.7% from 1980 levels.

E. Travel Statistics

Visitor use patterns were erratic throughout the year and final totals showed a 1.1% increase in total visits and a 12.7% decrease in overnight use as compared to 1980 totals.

January and February travel and camping totals started far ahead of 1980 levels due, primarily, to unseasonably warm weather. March, April and May recorded use comparable to, but lower than, 1980 figures. June, July and August use declined dramatically and gains which commenced with September were not able to compensate for reduced overnight use during the spring and summer periods.

F. General

Resources management operated with a budget of $27,800 for FY 1981.

G. Personnel

Resources Management operations were supervised by a permanent subject-to-furlough ecologist. Additional staffing include one part-time seasonal technician.

H. Operations

In C. Y. 1981, the resources management staff attended 160 hours of training. 80 hours of Air Quality Management, 40 hours of fire management and 40 hours of technical rock rescue. During this period this division provided 176 hours of training ranging from in-house orientations on subjects such as "Threats to Parks" to interagency programs on Desert Survival.

Eight scientists conducted research in the Monument this year. Research projects included Joshua Tree physiology, geology, fire succession, insect biogeography and others. We provided tissue samples to a research group investigating the discovery of a suspected fossilized Yucca brevifolia.
The coxcomb adit was completely rehabilitated this year through cooperative efforts with 29 Palms Marine Corps Base and a California Conservation Corps crew. Water in the adit was utilized throughout the year by bighorn sheep.

In February, procedural guidelines for NEPA/environmental compliance at divisional levels was developed and implemented.

In September a helicopter survey was conducted to determine the extent of burro populations in the Monument. Intrusion areas along the southern boundary were found to be seasonal only. Burros enter from the Coachella Valley, but appear to remain in canyon areas only through the winter and spring. Summer drought in these areas seems to prevent year round residence. Additionally, the band along the north boundary does not appear to have found a stable water source. However, it was confirmed that at least one foal was produced in this population this year. Water adjacent to the Monument boundary and forage within the Monument are used by this band.

Air quality management continues to be a significant resource issue at Joshua Tree. This year, Edison announced the potential sites for a proposed coal-fired generating plant and two of the sites were adjacent to the Monument. However, initial investigations and recommendations by the Air Resource Board have reduced (but not eliminated) the possibility of either of these sites being selected. The Lucerne Valley generating facility moved closer to eventual construction and remains a major concern for Monument air quality.

Resources Management has been involved with the development of a new interagency air quality group, "California Desert Conservation Area, Air Quality Working Group." The potential benefits from this association include combined efforts in monitoring and modeling of our shared air resources.

Land development adjacent to the JOTR's boundaries continue to accelerate. An application for building permits for a 250 residential unit development across the street from the Oasis of Mara in 29 Palms is nearing completion. The environmental reports are finished and permitting is moving ahead routinely. We were successful in gaining several mitigating modifications to the draft plan that include buffer zones and traffic control.

Other land development proposals include a large mobile home village south of the Oasis of Mara. Also, we have received a draft environmental report on a large 200-500 residential unit development along our south boundary in the Coachella Valley.