

*The Economic Impact
of
Organ Pipe Cactus
National Monument*

Prepared for the

NATIONAL PARK SERVICE

UNITED STATES DEPARTMENT OF THE INTERIOR

by

THE DIVISION OF ECONOMIC AND BUSINESS RESEARCH

COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION

THE UNIVERSITY OF ARIZONA

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**THE ECONOMIC IMPACT
OF
ORGAN PIPE CACTUS NATIONAL MONUMENT**

**Prepared for the
National Park Service,
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FOREWORD

One of the explicit objectives of the National Park Service of the United States Department of the Interior is the development and administration of the National Park System through the development and supervision of particular areas of special scenic, scientific, historic, and recreational value to the people of the United States. In planning for the operation of areas already included in the National Park System, and in planning for the authorization of areas not yet included, it is necessary to give proper consideration to both the actual and probable impacts of park establishment and operation upon nearby local and regional economies. This is so, not because National Parks or Monuments are primarily economic enterprises, but because even though they are principally non-economic in nature, like many other such activities and institutions they do exert significant influences upon the economic sector.

Adequate consideration of the economic effects of National Park Service operations and facilities requires the compilation and analysis of a comprehensive body of data concerning the economic characteristics of areas administered by the National Park Service. In addition, the present and projected relationships between these area and the relevant local and regional economies must also be measured or estimated.

One unit of the National Park System that possesses many characteristics and involves many economic relationships of relevance to all National Park Service areas in the Southwestern United States is Organ Pipe Cactus National Monument. Established in 1937, the Monument is an area administered primarily for its scenic, scientific, and historic interest. It covers an area of approximately 516 square miles in the relatively remote southwestern portion of Pima County, Arizona, immediately adjacent to the United States-Mexico border. Organ Pipe Cactus National Monument is an integral part of the economy of Pima County, Arizona, and lies in close proximity to and apparently associated with the economies of Southwestern Maricopa County and Yuma County in Arizona and the *Municipio* (Township) of *Puerto Penasco* in Sonora, Mexico. In addition, there appear to be somewhat more distant relationships between the Monument and the economies of Mohave and Santa Cruz Counties in Arizona as well as with nearby areas of Southern California.

Because of the joint interests of the National Park Service and the Division of Economic and Business Research of The University of Arizona in Organ Pipe Cactus National Monument and its economic influences upon various parts of Arizona the study reported herein was undertaken. At the outset, the basic objective of the study became to investigate the nature and structure of the economies of Pima County, Yuma County, Southwestern Maricopa County, and other related areas in Arizona and the *Municipio* of *Puerto Penasco* in Sonora, Mexico, and to examine the relationships of Organ Pipe Cactus National Monument to these economies.

In conducting the study, two major phases were involved. The first, as presented in this report, involved descriptions of the existing economies surrounding Organ Pipe Cactus National Monument. Most of this work was performed by Mr. de Gennaro and Dr. Leaming. The second phase involved a detailed examination of the economic characteristics of the Monument itself and the relationships of the Monument and its economic features to the surrounding economies. A major portion of this phase involved a personal interview survey of nearly 500 overnight Monument visitors during the 1967-68 travel season. This work was performed primarily by Mr. Broer and Mr. Jarnagin, assisted by Dr. Leaming. Both Mr. Broer and Mr. Jarnagin were pursuing studies toward graduate degrees at the time of the survey and were also engaged as Research Assistants by the Division of Economic and

Business Research, College of Business and Public Administration, The University of Arizona. Dr. Leaming and Mr. de Gennaro are currently Research Specialists with the Division.

The authors would like to express their appreciation to the National Park Service for providing the opportunity to perform this study in conjunction with the Division's continuing program of tourism and recreation research. Particular thanks are due to Mr. Neil W. Newton, Chief, Branch of Statistics Analysis of the Park Service, whose cooperation, assistance, and patience were unexcelled. Other members of the Park Service also provided vital help in the successful completion of the study. These included Mssrs. Foy Young and Matt H. Ryan, both Superintendents at Organ Pipe Cactus National Monument at differing times during the course of the study, Mr. James W. Carrico, Chief Park Ranger at Organ Pipe Cactus National Monument during the overnight and day-use visitor survey portion of the study, and various others who provided data and reviewed the final manuscript.

A grateful note of appreciation is also due to Mrs. Evelyn Van Dyke and her staff in the Division of Economic and Business Research who performed the myriad secretarial tasks necessary in the conduct of the study and the preparation of this report. Particular credit should be given to Mrs. LaRene Perkins who prepared the final copy and Mrs. R. Christine Denton and her assistants in the Division's Reference Section who were instrumental in the development of the study bibliography and in the compilation of much of the published data used in the study.

Perhaps greatest credit, however, should go to those many anonymous visitors to Organ Pipe Cactus National Monument who responded so well to the questions asked of them by curious researchers. Without their enthusiastic and wholehearted cooperation, we would indeed know very little about the economic impact of Organ Pipe Cactus National Monument.

—George F. Leaming
Principal Investigator

Tucson, Arizona
April, 1970

SUMMARY

Organ Pipe Cactus National Monument, located in the southwestern corner of Pima County, Arizona, is one of the principal visitor attractions in Southern Arizona and an integral part of the regional economy. Containing about 516 square miles of Sonoran Desert, the Monument is situated approximately 140 miles southwest of Phoenix and the same distance due west of Tucson, the state's two largest urban centers. The Monument is bounded on the south by Mexico, on the east by the huge Papago Indian Reservation, and on the west by the vast expanse of the Cabeza Prieta Game Range, an area administered by the United States Bureau of Sports Fisheries and Wildlife. To the north lies a mixture of both private and public lands under various agencies and ownerships and used for various purposes.

In recent years the total direct impact of Organ Pipe Cactus National Monument and its visitors on the regional economy of the United States and Mexico has been in excess of three-quarters of a million dollars per year. Agricultural activity conducted on Monument land has contributed an additional amount in excess of \$100,000 annually.

In the last several years Organ Pipe Cactus National Monument, as an operating federal agency, has injected approximately \$170,000 annually in payrolls and local purchases into the nearby economies of Southwestern Arizona. Major construction projects at the Monument over the past decade have contributed even more, but on an irregular basis.

The principal economic impact of Organ Pipe Cactus National Monument upon the surrounding region, however, has been through the local expenditures made by Monument visitors. Most of this impact has been created by visitors using the Monument's campground facilities. In the travel year extending from September 1967 through August 1968, such visitors contributed more than \$541,000 to the regional economy, including parts of California and Mexico as well as Southern and Western Arizona. More than half of this money was spent for the operation and maintenance of motor vehicles in travelling to, at, and away from the Monument. Substantial amounts were also spent on food and beverages while staying in or travelling through Southern Arizona and nearby areas.

Almost \$300,000 of the total amount spent locally by campers at Organ Pipe Cactus National Monument were spent in Pima County, in which the Monument is situated. Another \$120,000 were spent in Yuma County, just to the west, and a somewhat smaller amount was spent in the Phoenix Metropolitan Area and other parts of Arizona. Relatively small amounts were spent by these visitors in nearby communities of Mexico and California.

The expenditure patterns of overnight visitors (campers) at Organ Pipe Cactus National Monument strongly reflects many of their characteristics. Of the more than 100,000 overnight visits made to the Monument in 1969, by far the greatest number were made during the winter season with virtually none in the period from June through September. During the 1967-68 travel year, a survey of campground users found that those who visited Organ Pipe Cactus National Monument for overnight stays were mostly (76 percent) couples with single individuals and families with children relatively rare. More than half of the visitor parties stayed three days or less while the average length of stay was slightly more than five days. Most of the campers were elderly persons; three out of four were over 60 years of age and one out of five was over 70. In fact, only seven percent of these visitors were under 50 years of age.

The mostly middle-age and elderly couples who visited the Monument's camping facilities came in a variety of vehicles but followed a similar pattern of travel. About half came with travel trailers while a fourth used campers mounted on pickup trucks. Some used self

propelled camping vehicles that ranged from small vans and station wagons through large motor homes. Only one in ten used the traditional tent camping equipment. While approximately 60 percent were residents of the Southwest, less than 20 percent were residents of Arizona. More than a third of the total overnight visitors were from California and appeared to visit the Monument as part of a general eastward travel movement across the Southwest during the late autumn and winter. Other areas administered by the National Park Service, as well as various government and private facilities in California, Arizona, New Mexico, and Texas, were also important links in this general travel pattern. Arizona visitors to the Monument came largely from the Phoenix and Tucson Metropolitan Areas.

Local expenditures by day-use visitors at Organ Pipe Cactus National Monument during the 1967-68 travel year amounted to less than one tenth of the total spent by overnight visitors. The not quite \$50,000 spent in the area by day-use visitors went mostly for gasoline and other transportation-related goods and services obtained while in the immediate vicinity of the Monument.

The origins of day-use visitors at the Monument were similar to those who stayed overnight. More than half were from the Southwest, mostly Arizona and California. The Midwest provided about 20 percent of these visitors while one in eight was from the Northwest.

The third category of visitor at Organ Pipe Cactus National Monument, the through-traveller, accounted for an economic impact of more than \$80,000 in 1967-78. These visitors, most of whom were Arizona residents, simply drove through the Monument en route from Phoenix or Tucson to *Puerto Peñasco, Sonora*, on the Gulf of California. Such expenditures would probably be made, however, with or without the presence of Organ Pipe Cactus National Monument. The same is true of the economic contribution of cattle grazing on Monument lands, which in recent years has been an estimated \$135,000 annually. Nevertheless, the immediate economic impact of those agency and visitor expenditures directly attributable to the existence of Organ Pipe Cactus National Monument in Southern Arizona has exceeded \$760,000 per year. Secondary impacts would undoubtedly put the total annual contribution of the Monument to the regional economy at well over one million dollars.

ORGAN PIPE CACTUS NATIONAL MONUMENT

The Setting of the Monument

The *Sonoran Desert* is one of the four major desert areas in North America. The others are the *Mohave Desert* of California and small areas of Nevada, the *Chihuahuan Desert* of West Texas, Chihuahua, and other parts of Mexico east of the Continental Divide, and the *Great American Desert* of the basin and range region of Nevada, Utah, and adjacent states. The Sonoran Desert itself extends from the state of Sinaloa on Mexico's west coast northward across the state of Sonora into southern and western Arizona, and from the Gulf of California eastward to the Sierra Madre Occidental, between Sonora and Chihuahua. Organ Pipe Cactus National Monument is situated within the northern reaches of the Sonoran Desert and comprises part of the southernmost stretch of Sonoran Desert in the United States.

The *Southwestern United States* has been defined in many ways for many purposes. As an economic entity it is comprised of a minimum of Arizona, New Mexico and Southern California, with adjacent areas of Nevada, Utah, Colorado, and West Texas. In more general terms, the Southwestern United States consists of the entire states of California, Arizona, Nevada, Utah, Colorado, and New Mexico, as well as a sizeable portion of West Texas. Although portions of this entire area have strong economic ties to other regions (e.g., California to the Pacific Coast Region; Nevada, Utah, and Colorado to the other Mountain States; and West Texas to the South Central region of the nation), the entire area does have a particular economic homogeneity. This homogeneity is particularly characteristic in economic activities related to tourism and recreation. Organ Pipe Cactus National Monument is located in the heart of the Southwestern United States on its border with Northwestern Mexico.

Northwestern Mexico has also been defined in several ways. As an economic unit, it is generally considered to be comprised of the states of Sonora, Sinaloa, and Nayarit, all lying along Mexico's Pacific Coast between the sea and the Sierra Madre Occidental, the southward extension of the Rocky Mountains of the United States and Canada. In some instances, Northwestern Mexico has also been defined to include the state of Baja California and the territory of Baja California Sur, extending south from California between the Gulf of California and the open Pacific. In the present economics of tourism and recreation, this broader definition of Northwestern Mexico is most relevant.

Organ Pipe Cactus National Monument is located adjacent to the northern edge of this region, midway between its western and eastern extremities. Economically, the Monument is part of both the Southwestern United States and Northwestern Mexico, just as it is physically part of the Sonoran Desert.

The National Park Service of the United States Department of the Interior is responsible for the administration of Organ Pipe Cactus National Monument through its Southwestern Region, headquartered in Santa Fe, New Mexico. The Monument is one of many national parks, monuments, and recreation areas supervised by the Southwestern Region. The Region itself is one of several operated by the Park Service for the administration of many areas throughout the entire United States.

The Monument

Organ Pipe Cactus National Monument is located in the southwestern corner of Pima County, Arizona, approximately 140 miles southwest of Phoenix and the same distance

North American Deserts

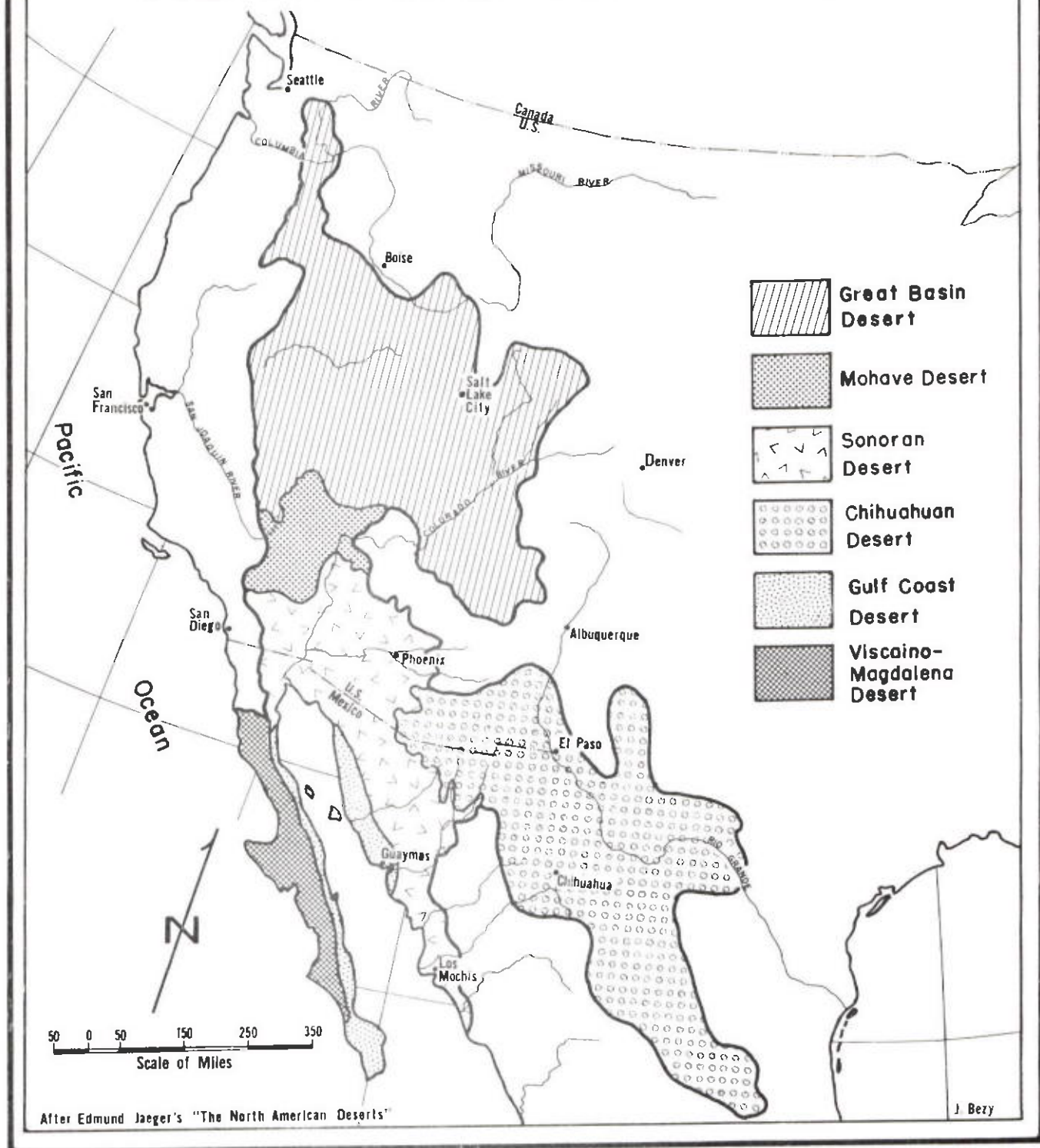


Fig. 1 - The Sonoran Desert covers an extensive area of the Southwestern United States and Northwestern Mexico. It is one of the major deserts of North America.

west of Tucson. The northern boundary of the Monument lies about 15 miles south of Ajo, Arizona, a copper mining town of about 7,000 residents. The Monument is bounded on the east by the Papago Indian Reservation and on the west by the Cabeza Prieta Game Range. The southern boundary of the Monument is the international border between the United States and Mexico.

The Monument headquarters is located on Arizona State Highway 85 in the eastern portion of the Monument, about five miles north of Lukeville, Arizona, and approximately 17 miles south of the Monument's northern entrance near the small community of Why, Arizona. A visitor center is located at the headquarters, and a campground and picnic facilities are nearby.

Organ Pipe Cactus National Monument covers more than 330,000 acres (or 516 square miles) and is one of the nation's largest national monuments. The Monument extends from 15 to 25 miles north and south and averages about 25 miles long from east to west. There are several hundred acres of privately held land within the Monument's boundaries, including approximately 150 acres at Lukeville.

Organ Pipe Cactus National Monument contains a broad sample of Sonoran Desert terrain, with rugged mountain ranges scattered throughout large alluvial plains or desert flatlands. On the eastern edge of the Monument, the Ajo Mountains reach heights of more than 4,000 feet, with Ajo Peak, the highest point in the Monument, reaching 4,808 feet.

Through the center of the Monument, in a general northwest-southeast direction (consistent with the pattern found throughout most of the basin and range province of the Southwest), the *Growler*, *Bates*, and *Puerto Blanco Mountains* reach heights of about 3,000 feet. *Kino Peak*, in the Bates Range in the northwestern part of the Monument, extends nearly 3,200 feet above sea level.

Over most of the eastern half of the Monument, the desert plains between the mountains have an average elevation of about 1,600 feet above sea level. These plains are mostly gentle in slope, fanning out broadly and away from the higher elevations, but they are also cut by numerous small washes and arroyos.

In the southwestern part of the Monument, the *Cipriano* and *Quitobaquito Hills* average from 1,500 to 2,000 feet in elevation. Along the western edge of the Monument lies the broad plain known as the *Growler Valley* at an average elevation of about 1,100 feet above sea level.

Most of the mountain ranges in the Organ Pipe Cactus National Monument are composed of extrusive igneous rocks. The major exception is the Quitobaquito Hills, in the southwestern corner of the Monument, which is composed of granite metamorphic rocks. In the far northwestern corner of the Monument, the geology is more complex, with the mountainous areas composed of sedimentary formations of Paleozoic age as well as both intrusive and extrusive igneous rocks. The intermountain plains are covered by largely unconsolidated sediments from the adjacent mountains.

The winter climate at Organ Pipe Cactus National Monument is relatively mild, although nighttime temperatures occasionally drop below freezing. Summers are hot. The highest recorded temperature at the Monument is 116°, reached in July, while the lowest is 14°, reached in January. The average number of days in which a temperature less than freezing has been reached has averaged about 21 days per year, and these are usually in December and January. The number of days when temperatures have exceeded 100° has averaged 83 days per year, and these are usually spread from June through September.

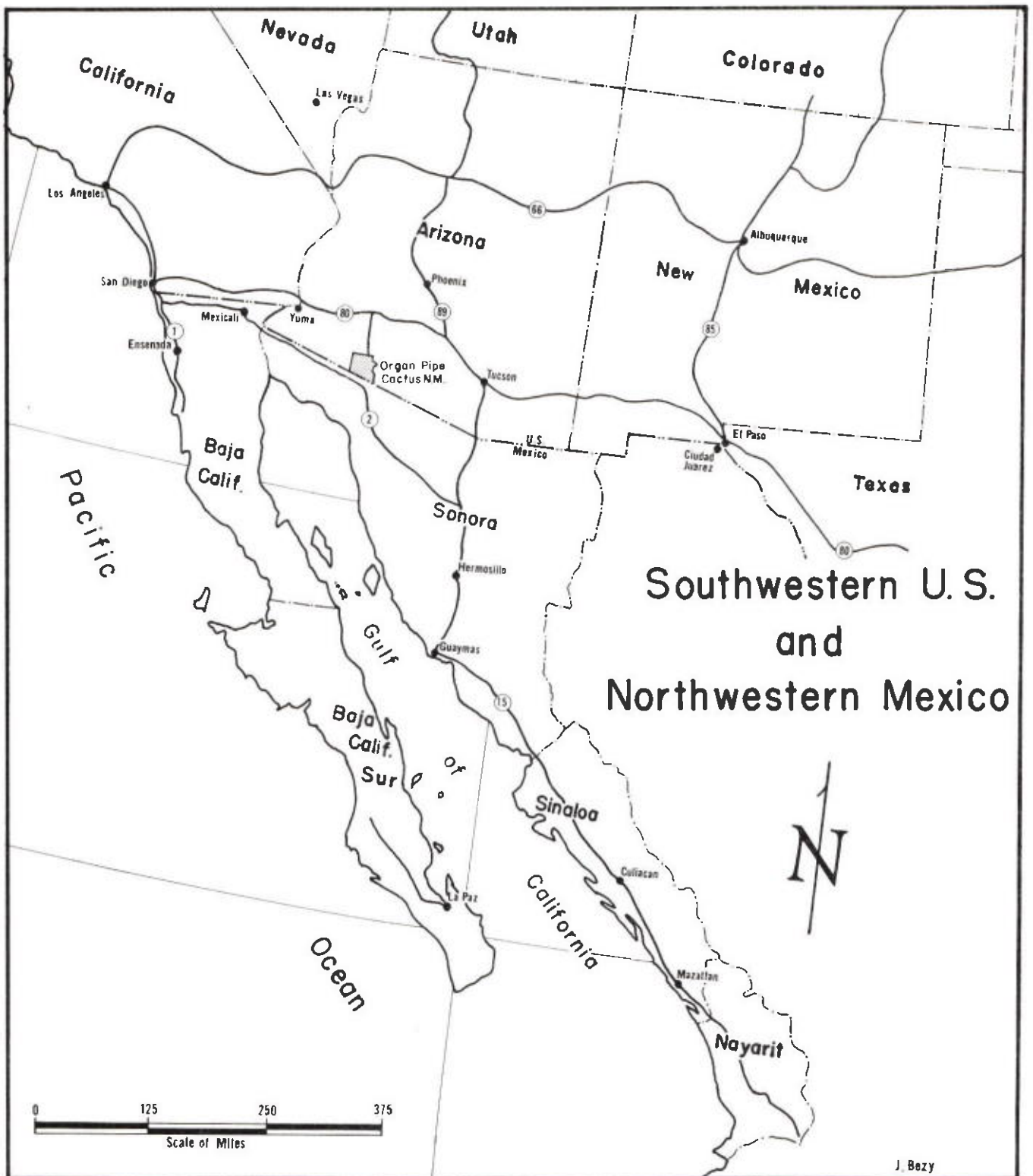


Fig. 2 - Organ Pipe Cactus National Monument is located near the center of the Sonoran Desert, on the border between Mexico and the United States.

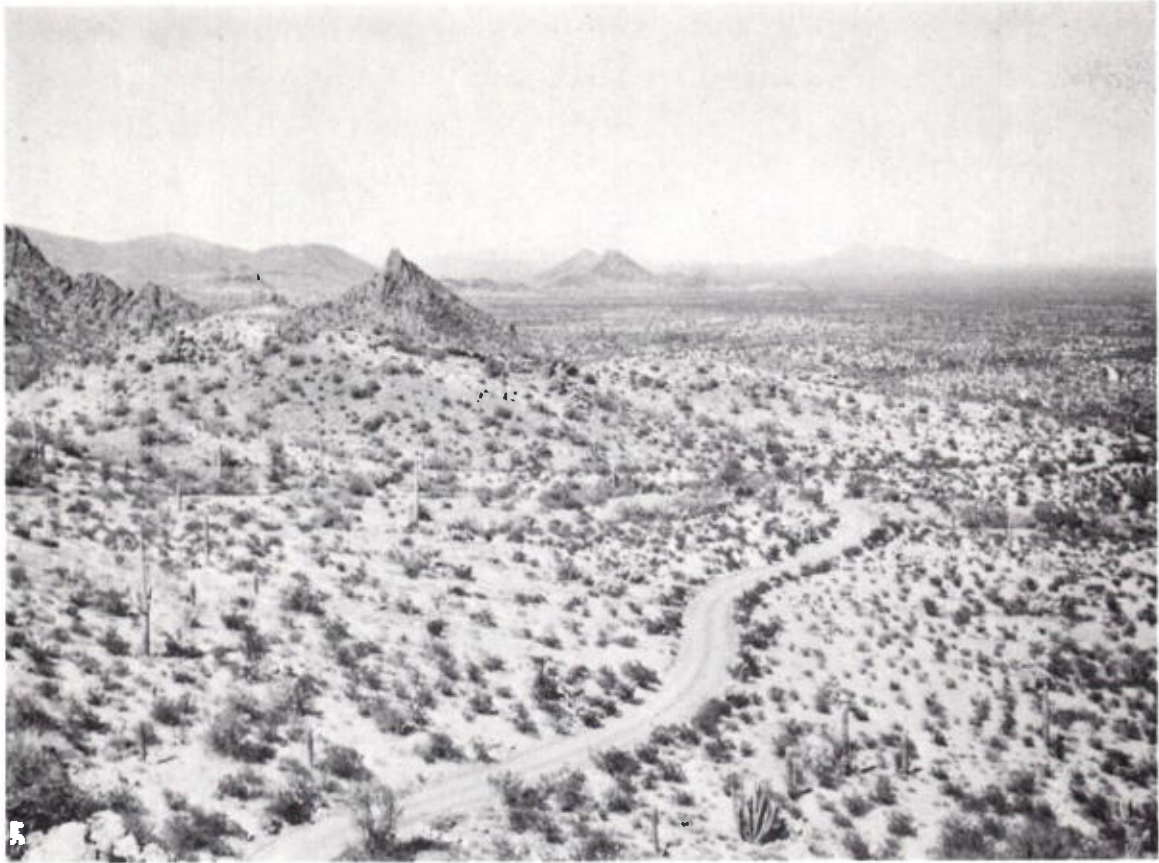


Fig. 3 - The Sonoran Desert is a region of semi-arid plains and mountains with a wide variety of desert vegetation. This view looks generally westward along the Puerto Blanco Loop Road in Organ Pipe Cactus National Monument.

Rainfall is infrequent at Organ Pipe Cactus National Monument, and what rain there is may be highly variable from one year to the next. While annual rainfall over the past two decades has averaged about eight inches, some years have received as much as 15 inches and others as little as three inches. At least half of any year's rainfall normally occurs during the period from late June through early September when humid air masses from the Gulf of Mexico cause scattered but dramatic summer thunderstorms. October and November are usually dry at Organ Pipe Cactus National Monument, but December and January normally experience some light precipitation. In February, a drying and warming period usually sets in which lasts until the start of the summer rains in June. The sparse and infrequent rainfall gives the Monument's atmosphere a relatively low humidity. Despite the dryness, dust and blowing sand are rare.

Undoubtedly one of the most outstanding features of the Sonoran Desert in general and Organ Pipe Cactus National Monument in particular is the variety of cactus and other desert plants that abound. Within the Monument alone, some 30 species of cactus have been identified. These vary in size from the *giant saguaro* which may reach a height of 50 feet to the minute *fishhook mamillaria* which grow to a height of only a few inches.

The most notable cactus in the Monument is, of course, the *organ pipe cactus* for which the Monument was named. This plant is found widely throughout the Mexican portion of the Sonoran Desert, but outside of Mexico it occurs only in a small area in the south central

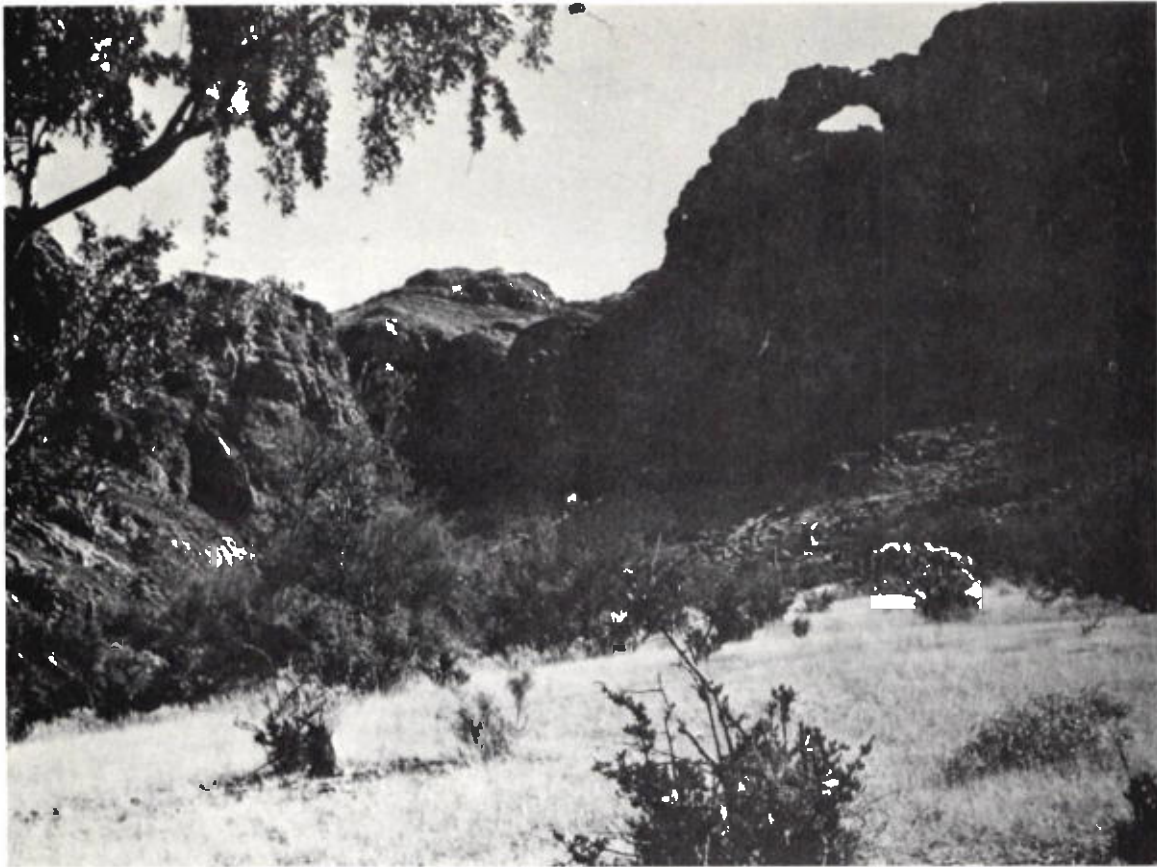


Fig. 4 - Grasses and trees mingle with cacti in the higher elevations of the Sonoran Desert. This view looks generally eastward toward even higher reaches of the Ajo Mountains on the eastern edge of the Organ Pipe Cactus National Monument.

region of Arizona. It is rarely found outside the Monument's boundaries in the United States. The organ pipe cactus is second in size only to the saguaro in the United States, and one plant may produce 30 or more stems, some of which may reach a height of 20 feet.

One of the rarest of the cacti in the Monument is the *senita*, in Spanish, literally, the little old one. It got this name from the thin spines which grow at the tops of the longer arms of the plant and resemble gray hair. Otherwise, the *senita* resembles somewhat the organ pipe cactus in its manner of branching and growth. It differs from the organ pipe cactus, however, in its preference for sandy washes, while the organ pipe is normally found on the rocky ridges between the outwash plains and on the well-drained, lower slopes of the mountains.

Throughout the Monument are other cacti common to the Sonoran Desert. These include the various species of *cholla*, *barrel* and *hedgehog* cactus, and the everpresent *prickly pear*. Many plants that are not cactus, however, also form an important part of the Monument's vegetation. Perhaps most significant of these are the *palo verde*, the *ocotillo*, *mesquite* and *desert ironwood*. Throughout the lower plains, the *creosote bush* dominates while *desert saltbush* and *sage* also abound.

Perennial grasses are limited at the lower elevations of the Monument, but the higher mountain areas contain significant amounts of grass which respond particularly to the



Fig. 5 - The organ pipe cactus is found throughout large areas of the Sonoran Desert south of the United States-Mexico border. North of the border, however, the organ pipe is found in only a limited area of Southwestern Arizona.

summer rains. The moderate elevations in the eastern half of the Monument also support a wide variety of perennial flowers such as the *California poppy*, *lupine*, *owl clover*, and many others common to the Sonoran Desert.

The animal life of the Monument is also typical of the Sonoran Desert and varies considerably depending upon the elevation, the terrain, and the vegetation available for both cover and food. For many birds from the northern parts of the western United States and Canada, the Monument is a winter home. For others, it is a summer home. For still other birds such as the *gambles quail*, the *cactus wren*, and the *roadrunner*, the Monument is a year-round residence. The presence of limited water supplies, particularly at Quitobaquito Springs, also provides a habitat for ducks and water birds, particularly during migration periods. The same pond also provides a type of animal life rare to arid lands, fish in the form of the *desert pupfish*.

The Monument's many mammals are also those typical of the Sonoran Desert environment. The *javelina* or *peccary*, the *desert mule deer*, *pronghorn antelope*, the *coyote*, the *kangaroo rat*, and many others small mammals abound throughout the Monument. Within some of the ranges of the higher and less accessible mountains there are also *desert big horn sheep*. Small reptiles are also common within the Monument, with small lizards and the desert tortoise predominant. The Monument also has its share of desert rattlesnakes and the much rarer *gila monster*.

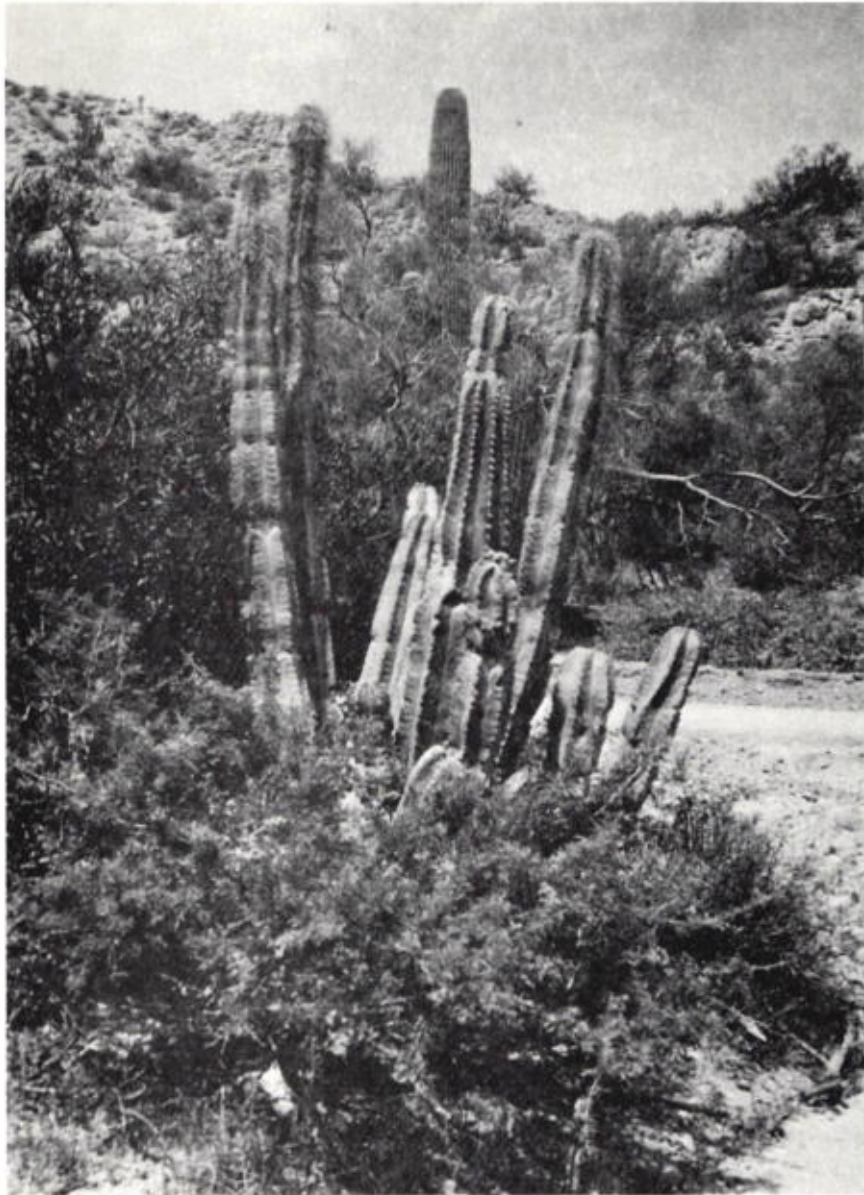


Fig. 6 - Senita (literally, little old man) cactus are found only in a limited area within Organ Pipe Cactus National Monument. Fine needles at the tops of the longer arms give the appearance of gray hair.

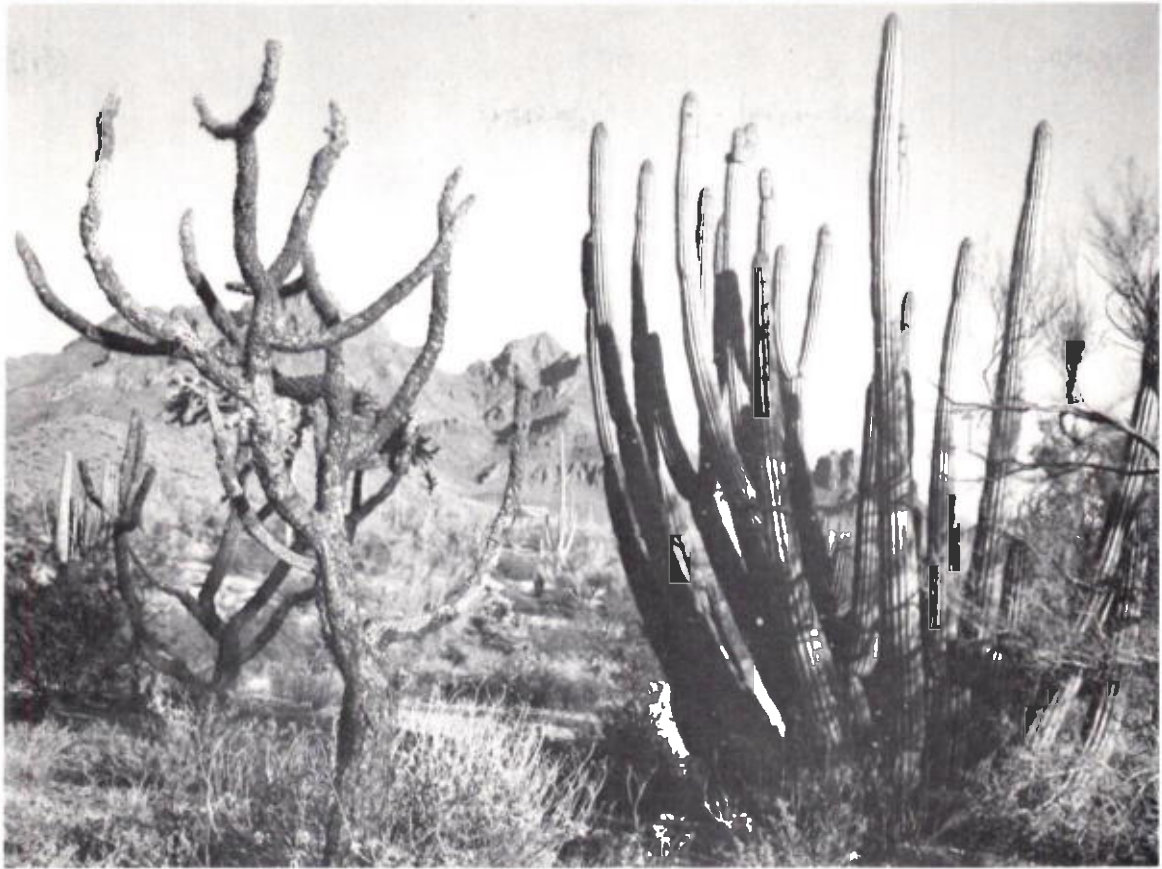


Fig. 7 - Organ pipe cactus and cholla are both cacti native to the Sonoran Desert. Various forms of cholla, a more widespread plant than organ pipe cactus, are found widely throughout the Southwest. (National Park Service photo by Fred Mang, Jr.)

Monument Facilities

The headquarters for Organ Pipe Cactus National Monument is located on Arizona State Route 85, just 17 miles south of the Monument's north entrance. At the headquarters site is a Visitor Center, constructed in 1957. The Center provides exhibits in a small museum as well as an auditorium for lectures by park rangers. In addition to the exhibits and lectures, literature is available at the Visitor Center.

A short distance from the Visitor Center is a campground with facilities for overnight visitors. The campground has 208 regular spaces for trailers and other types of camping equipment. There is a small overflow area adjacent to it. Throughout the Monument, along the two loop drives and near the campgrounds, are picnic facilities for use by day visitors.

The Monument at present has two scenic loop drives, both of which depart from locations close to the Visitors Center. The shorter of the two, the *Ajo Mountain Drive*, is a 21-mile, one-way road which winds along the base of the Ajo Mountains in the eastern portion of the Monument. This drive, which requires approximately two hours to complete, takes the visitor through many stands of different varieties of cactus, including the organ pipe cactus, and almost to the eastern border of the Monument.



Fig. 8 - Ocotillo, barrel cactus, and hedgehog cactus are all common to the Sonoran Desert. They abound within Organ Pipe Cactus National Monument as well as elsewhere throughout the Southwest.

The other loop drive is the *Puerto Blanco Drive*, which extends to the west from the Visitor Center. This drive, which is a two-way road, extends northwest from the Visitor Center, around the Puerto Blanco Mountains, then south to the Mexican border near the oasis at Quitobaquito, and then southeast along the Mexican border back to Arizona State Route 85 just north of Lukeville. A side trip within the Puerto Blanco drive loop involves a short road into *Senita Basin* where there is an abundant display of the *senita* cactus. The Puerto Blanco drive is a 51-mile long loop and requires from three to four hours for completion.

In addition to the loop drives, there are a number of short foot trails extending into the desert from points along the roads. One, from the Ajo Mountain Drive on the east, leads to *Bull Pasture*, one and one-half miles up in the Ajo Mountains. Another is a quarter-of-a-mile long trail from a point on the Puerto Blanco Drive to the site known as *Dripping Springs*. A third is a short trail around the pond and to the springs at *Quitobaquito*.

A full-time staff of park rangers is on duty at Organ Pipe Cactus National Monument the year round. Including maintenance personnel, the full-time permanent staff of the Monument numbers more than a dozen. Although the Visitor Center closes in the early evening throughout most of the year, in the winter, evening programs are scheduled both at the campground and at the Visitor Center. No food and lodging (other than camping facilities) are available in the Monument, but there is a post office, grocery store, service station and related facilities in Lukeville, on the Mexican border, five miles south of the



Fig. 9 - The Visitor Center at Organ Pipe Cactus National Monument was erected in 1957. In the mid-1960's, an auditorium was added. The Center contains a small museum as well as Park Service offices. (National Park Service photo by Fred Mang, Jr.)

Visitor Center. There are also similar facilities (except for the post office) in the community of Why, 22 miles north of the Visitor Center. There are also hotels, motels, and restaurants in Ajo and Gila Bend, to the north of the Monument, and in Sonoyta, just two miles south of Lukeville in Sonora, Mexico. No user charges are made for day use of the facilities at Organ Pipe Cactus National Monument, but fees for the use of the campground have been collected under the provisions of the Land and Water Conservation Fund Act of 1965.

The History of the Monument

Although the Monument itself has been in existence only since 1937, the area in which it is situated has a long and colorful history. Long before the coming of the Spaniards, Indians mined copper in the Ajo area just to the north of the Monument. In 1540, Melchior Diaz, one of Coronado's captains, passed through the area now occupied by the Monument and was apparently the first European to see the land. Some 150 years later, the Jesuit priest, Father Eusebio Kino, established a mission near the present Mexican town of Sonoyta, just two miles south of the Monument. The route that Captain Diaz took through the area from Sonoyta west to Yuma and California became known as the road of the devil, "El Camino del Diablo," especially during the years of the California gold rush when this route to California was often lined with the remains of both men and animals that were unable to survive the journey.

Organ Pipe Cactus National Monument

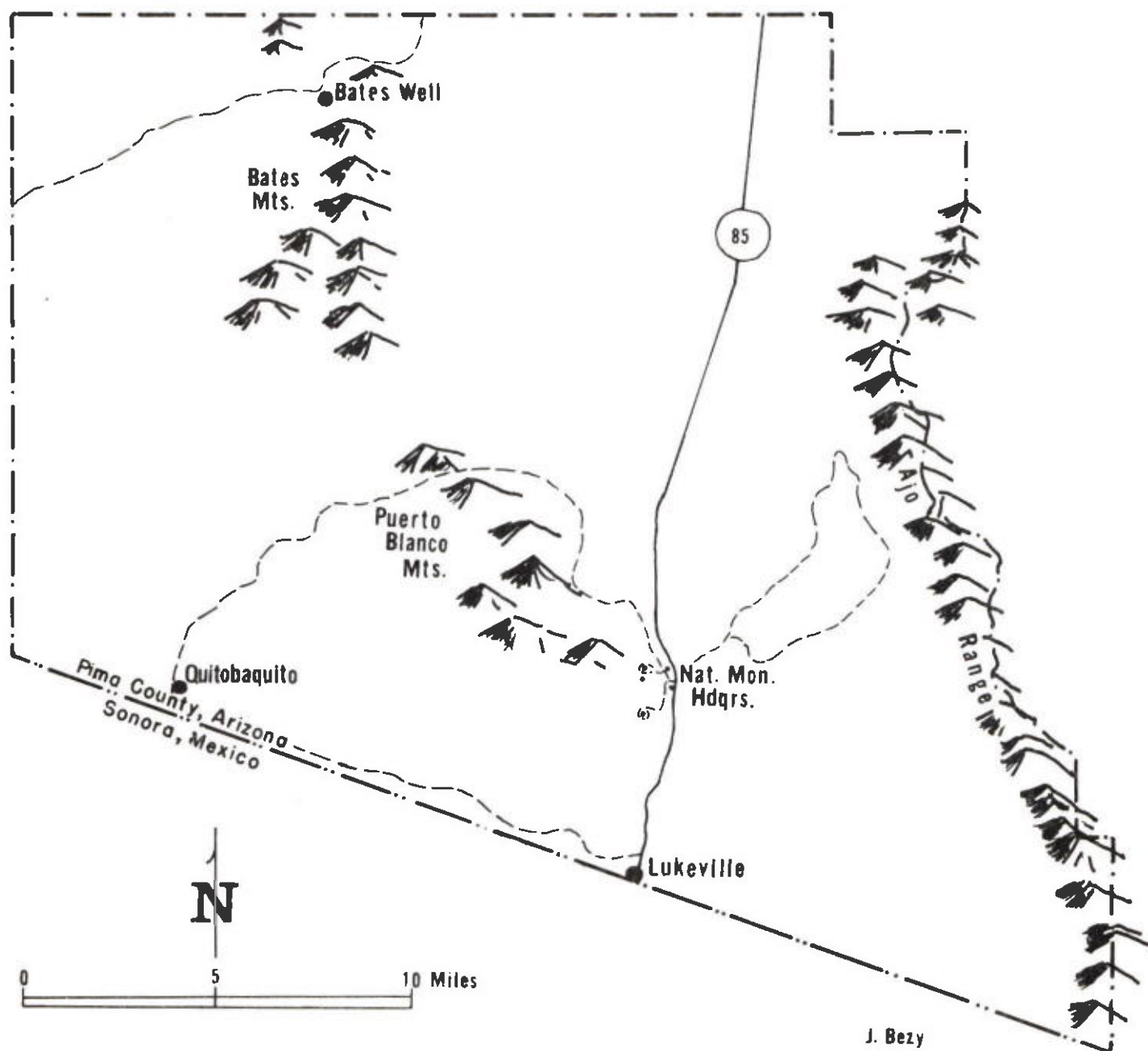


Fig.10 - Organ Pipe Cactus National Monument is one of the nation's largest national monuments. Its facilities include a visitor center and nearby campground and picnic areas. Two loop roads wind through separate areas of the Monument.



Fig. 11 - A campground with regular facilities for 208 overnight units is located near the Visitor Center at Organ Pipe Cactus National Monument. There is also some space for group camping in an adjacent area. Both are usually filled to capacity during the Winter.

In the early 1850's, after the close of the Mexican War, the area that now includes the Organ Pipe Cactus National Monument was acquired by the United States under the terms of the Gadsden Purchase. From that time until 1937, although largely isolated from the rest of Arizona, the area was occupied mainly by Papago Indians, a few ranchers, and prospectors.

In 1863, the area now encompassed by the Monument became part of the Arizona Territory, and in 1865 it was made a part of Pima County. Throughout the late 1800's, the *Camino del Diablo*, to the west of the Monument, the mining district around Ajo to the north, and the vicinity of Sonoyta, Mexico, to the south experienced a variety of events from mining and grazing to revolution and filibustering. During the latter half of the 19th Century, substantial amounts of gold, silver, and copper were mined in the Monument area, particularly in the Puerto Blanco Mountains and the Sonoyta Hills.

In 1930, several years after the completion of the first graded road between Tucson and Ajo, an order was issued by President Herbert Hoover withdrawing 10 acres of public land at Lukeville for customs and immigration inspection facilities. In 1932, the superintendent of Yellowstone National Park began a study of the Southwestern Arizona area for suitability as a national monument. In 1935, the superintendent of the Southwestern Monuments Region of the National Park Service led an additional study of the area. As a result of the preliminary studies, in April 1937, President Franklin D. Roosevelt created Organ Pipe Cactus National Monument from public domain by proclamation.

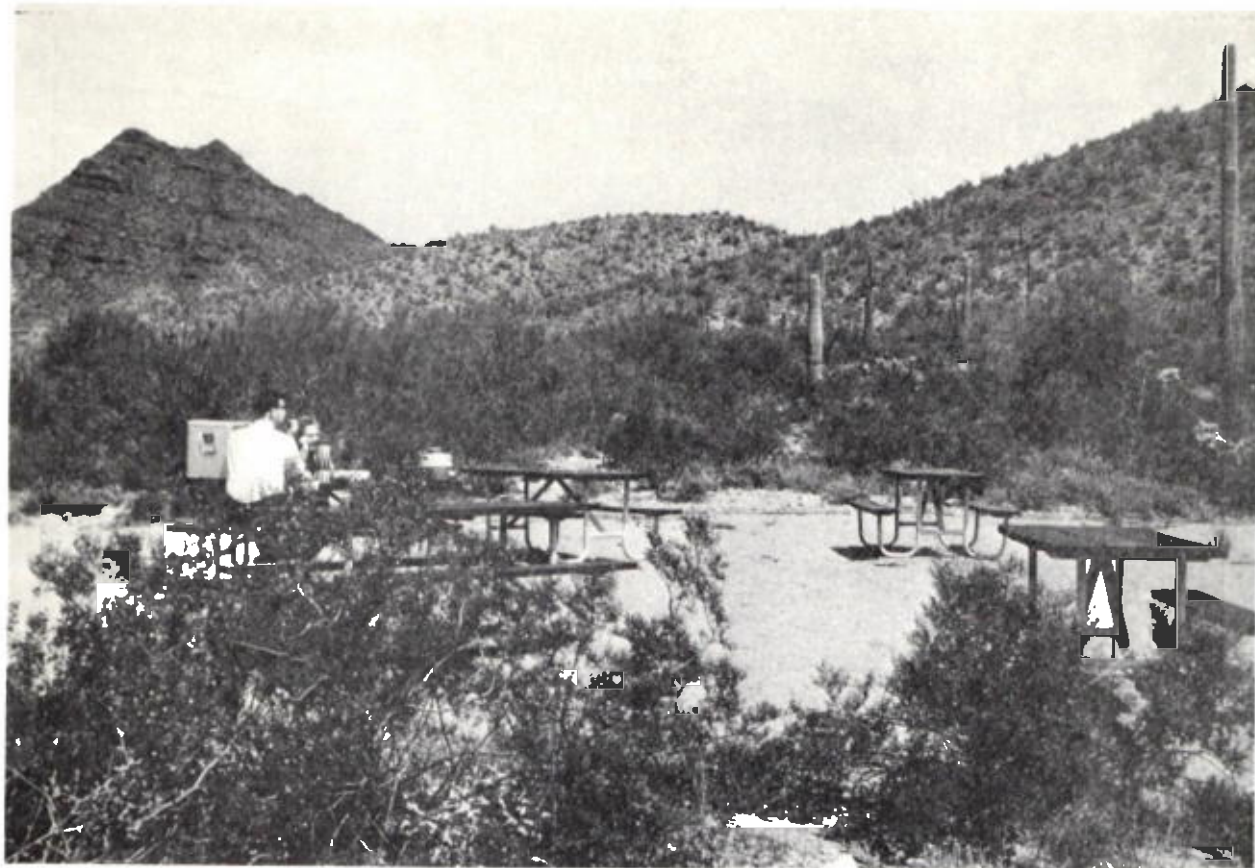


Fig. 12 - Picnic facilities for the use of Monument visitors are located near the campground and at various sites along the two loop roads. All are within easy reach of those seeing the Monument by automobile.

The creation of the Monument did not mean a halt to agricultural and mining activity, however. In 1938, a Papago Indian living at the site of Quitobaquito was given approval to graze 100 head of cattle in the Monument. A year later, the Gray family, which had been living in the Monument area, was issued its first grazing permit for the use of Monument land. That same year, the Cabeza Prieta Game Range (under the jurisdiction of the Fish and Wildlife Service) was established just west of the Monument for the primary purpose of protecting the desert bighorn sheep. In October 1941, just prior to American entry into World War II, Congress passed legislation permitting mining and prospecting within the Monument's boundaries. That same year, the Mexican road from Sonoyta to *Puerto Penasco* was completed as a graded road. A year later, a graded road was completed and oiled between Ajo and Sonoyta.

Several years after the end of World War II, a post office and small school were established at the settlement of Lukeville. Two years later a primitive camp ground was established within the National Monument itself and the Puerto Blanco 40-mile loop drive was completed. The following year, the road from Ajo to Tucson across the Papago Indian Reservation was paved. In 1953, State Route 85 within the Monument was paved, as was Mexican Highway 2, running along the border from Sonoyta to Baja, California. In 1954, a new campground containing 62 campsites was opened in the Monument.

In 1957, the National Park Service's Mission 66 program started at Organ Pipe Cactus National Monument with the building of a Visitor Center and the addition of 32 campsites

to the existing campground. This increased the total capacity to 94 campsites. In addition, the Ajo Mountain Drive was completed as an 18-mile, one-way loop. Also in 1957, a payment was made to the son of one of the ranchers who had previous grazing rights at Quitobaquito in order to halt grazing in that area. Four years later, the area at Quitobaquito was cleaned, existing buildings were razed, the pond was deepened, and the site was fenced to prevent the entry of cattle. During the same year, the Growler Mine area of the Monument was given similar treatment, with all buildings razed and shafts and other openings blocked. In the mid-1960's, further additions were made to existing campside facilities, and an auditorium was added to the Monument's Visitor Center.

Other Recreational Facilities in the Southwest

Organ Pipe Cactus is only one of many National Parks and Monuments in the Southwest. There are also facilities in the area operated by the United States Forest Service, other federal agencies (including the Bureau of Land Management, the Bureau of Indian Affairs, and the Bureau of Sports Fisheries and Wildlife), the States of Arizona and California, and by Pima County. Arizona National Park Service operations include several National Parks, two National Recreation Areas, and a score of National Monuments. The accompanying map (Figure 13) illustrates the number of facilities administered by the National Park Service alone in the Southwest. Most of these are administered through the Southwest Region headquarters in Santa Fe, New Mexico, but several in Southern California are under the Service's Western Region with headquarters in San Francisco.

Many of the National Parks and Monuments in the Southwest are, like Organ Pipe Cactus National Monument, focused on natural wonders. These include (in addition to Grand Canyon, Petrified Forest, and Carlsbad Caverns National Parks) areas such as White Sands, Sunset Crater, Chiricahua, and Death Valley National Monuments, all emphasizing geological features; and others, such as Casa Grande Ruins, Tumacacori Mission, Wupatki, Montezuma's Castle, Tonto, Tuzigoot, Canyon de Chelly, and Navajo National Monuments that are centered on prehistoric Indian ruins. A few, such as Organ Pipe Cactus, Saguaro, and Joshua Tree National Monuments, focus attention on botanical features. At Lake Mead and Glen Canyon National Recreation Areas, the emphasis is on water.

Seasonal factors play a strong part in the visitor traffic at many of the National Parks and Monuments in the Southwest. Most of those in Northern Arizona and New Mexico are essentially summer attractions, although the Grand Canyon has large numbers of visitors throughout the entire year. Most of those in Southern Arizona, Southern California, Southern New Mexico, and Southwest Texas are most significant as winter tourist attractions. The major exception in this region is Carlsbad Caverns National Monument which also has substantial numbers of summer visitors.

There are also many winter tourist sites in this belt from Los Angeles to Big Bend that are administered by other federal agencies. The most significant of these are the National Forests. Most of the areas under Forest Service jurisdiction in Southern Arizona fall within the Coronado National Forest, although there are also large areas within the Tonto National Forest. Visitor attractions within the National Forests of Southern Arizona include *Pena Blanca* Lake, Sabino Canyon, Mt. Lemmon, and a number of other sites in the Coronado National Forest, as well as several lakes along the Verde and Salt Rivers in the Tonto National Forest. In Southern California there are facilities for winter (and summer) tourists in the Cleveland National Forest. In New Mexico, the Gila and Lincoln National Forests perform a similar function.

Other federal agencies within the Department of the Interior are also responsible for



Fig. 13 - National Park Service areas in the United States.

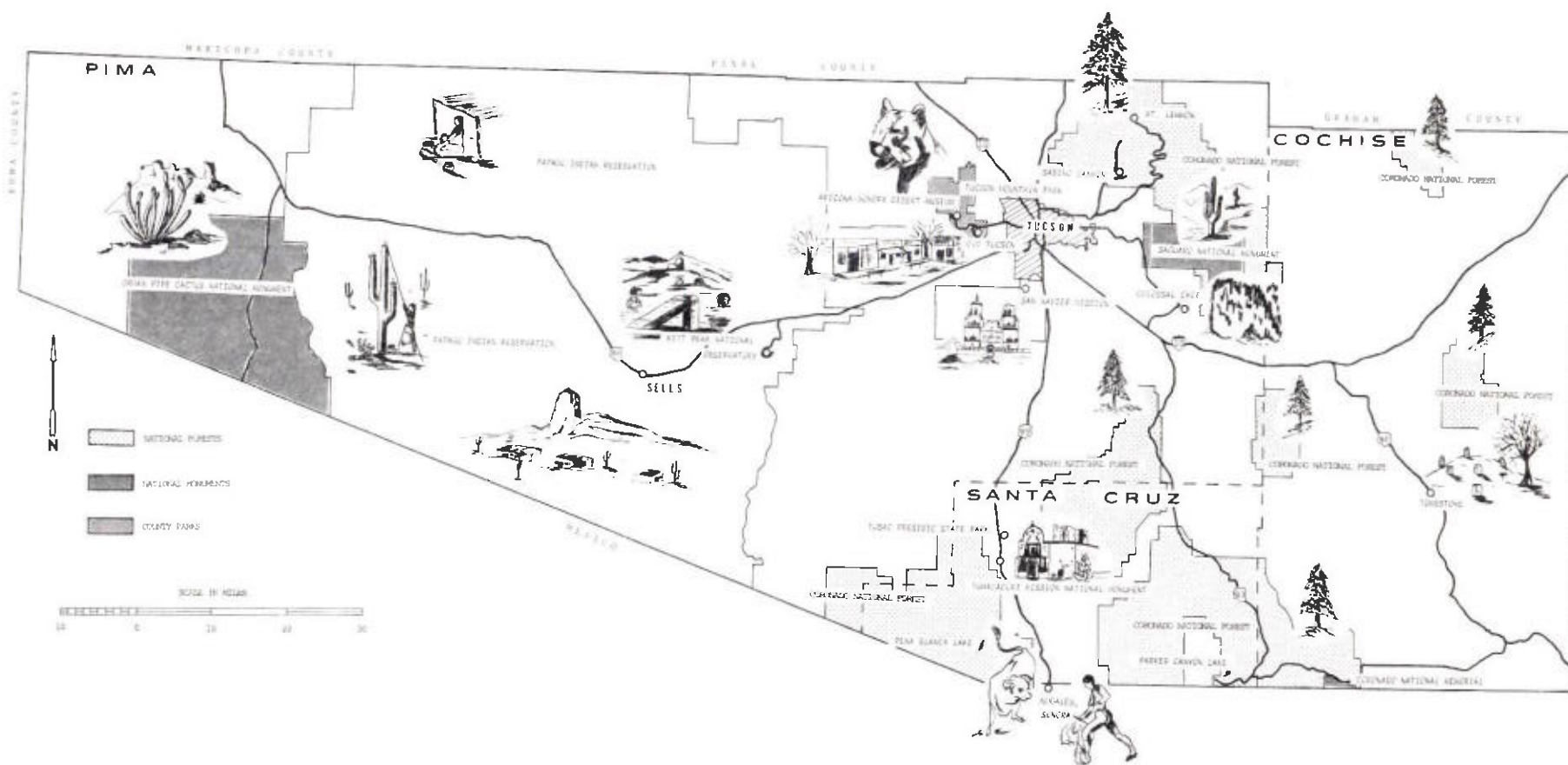


Fig. 14 - Major tourist attractions in South-Central Arizona include several National Monuments as well as other governmental and private facilities.

significant numbers of sites throughout the Southwest. The Bureau of Sports Fisheries and Wildlife administers several areas including the Cabeza Prieta Game Range, just west of Organ Pipe Cactus National Monument, and the Kofa Game Range just north of the Cabeza Prieta. The Bureau of Land Management is responsible for even greater areas of the Southwest, but few of its lands have been developed specifically for recreational uses. Several deposits of semiprecious stones on public domain in Southern Arizona, however, have become significant tourist attractions.

Those areas administered by the Bureau of Indian Affairs in the Southwest include many Indian Reservations of strong interest to visitors. On the Apache and Navajo Reservations in Northern and Central Arizona, the tribes themselves have developed facilities specifically for tourists. The sprawling Papago Indian Reservation, immediately adjacent to Organ Pipe Cactus National Monument, is also of interest to visitors.

Throughout the Southwest various state and local governments have developed parks and other sites for recreational use. These, as well as many locally maintained historic sites serve as significant tourist attractions. In Southern California, the Anza Borrego Desert State Park has become a well-known area, heavily used particularly by winter vacationers. In Arizona, several state parks are scattered throughout the southern part of the state. Most of these are small, however, and although significant as attractions, most do not have overnight facilities for tourists. From Organ Pipe Cactus National Monument, the nearest public park with overnight facilities is maintained by Pima County in the Tucson Mountains, just west of Tucson, and more than 100 miles from Lukeville.

Other tourist attractions within a day's drive of Organ Pipe Cactus National Monument include privately owned sites (such as at Tombstone and Old Tucson) and semipublic facilities such as Kitt Peak National Observatory and the San Xavier Mission, both on the Papago Indian Reservation. The principal tourist attractions of Pima County (in which Organ Pipe Cactus National Monument is situated) are shown in Figure 14.

THE ECONOMY OF PIMA COUNTY

Pima County has what is probably the most diversified economy in Arizona. Although government (state and local, as well as federal) forms the largest sector of the county's economy, positions of major significance are also occupied by manufacturing, mining, agriculture, and tourism. Even government activity is well diversified, with state and local government operations accounting for major portions of all governmental employment. The federal sector, however, is heavily influenced by national defense activity. Services other than government are also an important part of Pima County's basic economy, perhaps even more than in other locales. In addition to tourist services, medical and educational services also provide significant amounts to the county's basic economic activity. Retirement is likewise a significant factor in the regional economy.

Since the early 1950's, except for a few years in the early 1960's, Pima County has followed a consistent pattern of strong economic growth. A rapidly increasing population, resulting from both natural increase and heavy immigration, has been linked closely with the county's economic expansion. This has been reflected in the major importance of the construction industry in the county.

Population and Labor Force

Approximately 104,000 persons were employed in Pima County during 1968. This was almost three percent greater than the average employment in the previous year and about two-thirds higher than in 1956. In 1960, more than a third of the county's work force was

Table 1

POPULATION OF PIMA COUNTY 1950 - 1969

Year	Population
1950	141,000
1951	155,000
1952	173,000
1953	190,000
1954	197,000
1955	205,000
1956	212,000
1957	226,000
1958	239,000
1959	255,000
1960	265,700
1961	282,000
1962	301,000
1963	311,000
1964	311,500
1965	313,700
1966	313,900
1967	322,200
1968	330,000
1969	343,200

Source of Data: Employment Security Commission of Arizona, *Population Estimates of Arizona*, various issues, 1950-1969.

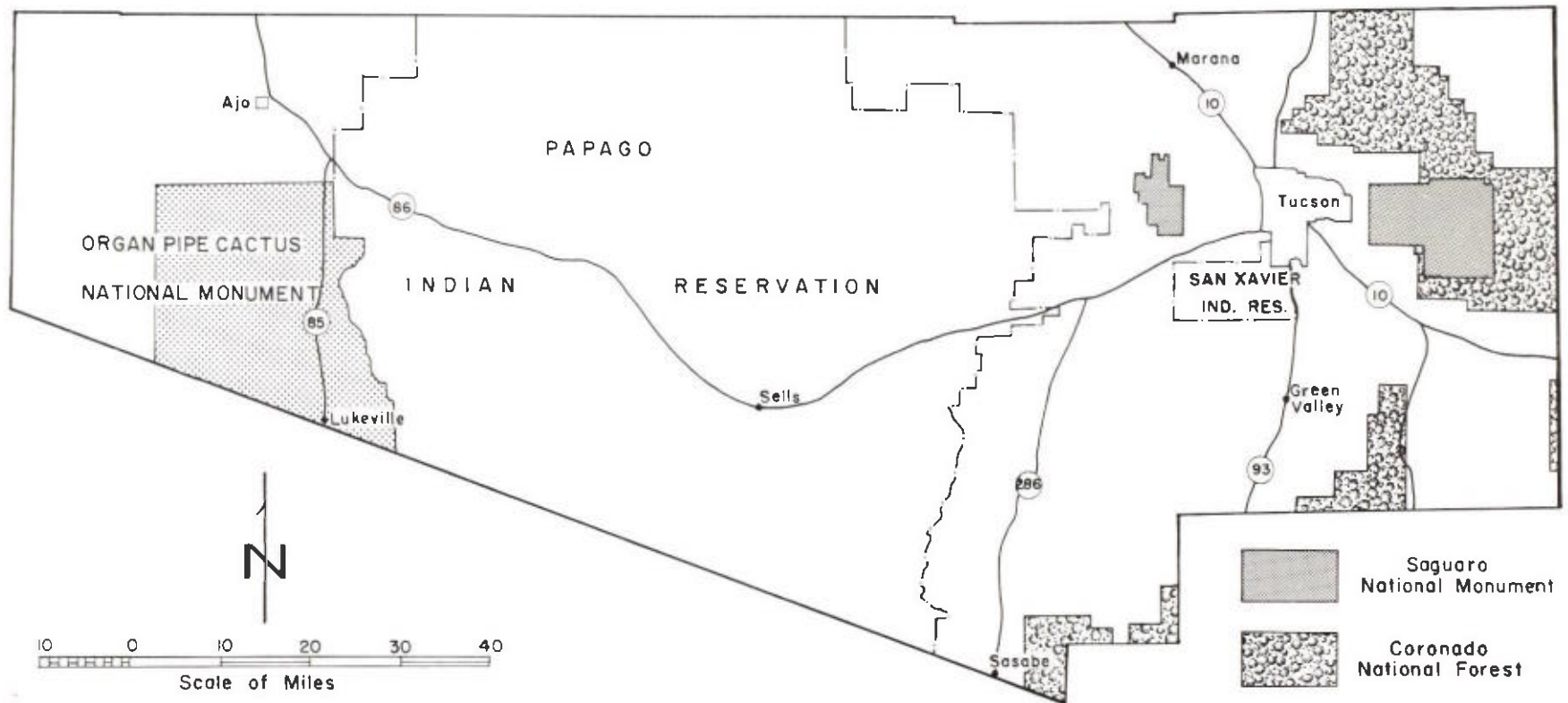


Fig. 15 - Organ Pipe Cactus National Monument is an integral part of the economy of Pima County, Arizona, even though located at a distance from Tucson, the main population center.

composed of women. This exceeded the 30 percent figure for Arizona as a whole. That same year, wage and salary workers comprised nearly 85 percent of the county's employed labor force, while self-employed persons made up almost nine percent and unpaid family workers the remainder. These proportions are somewhat different from the Arizona statewide ratios. In 1960, almost 90 percent of the state's employed were wage and salary workers and more than 10 percent were self-employed.

Table 2
EMPLOYMENT IN PIMA COUNTY
1954 - 1969

Year	Government	Trade	Services	Mfg.	All Other	Total
1954	8,300	10,100	7,000	4,700	24,100	54,200
1955	8,900	10,700	7,700	6,900	25,200	59,400
1956	10,200	12,100	8,600	9,800	26,300	67,000
1957	11,600	13,200	9,200	9,400	28,100	71,500
1958	12,700	13,500	10,300	8,900	28,100	73,500
1959	13,700	14,700	11,100	9,500	30,300	79,300
1960	15,300	15,900	12,200	8,500	31,900	83,800
1961	16,500	16,200	13,400	8,300	32,600	87,000
1962	17,500	17,300	14,000	8,900	37,200	94,900
1963	19,100	17,600	14,200	10,200	33,400	94,500
1964	20,500	17,200	14,300	6,500	32,600	91,100
1965	20,900	17,400	13,700	6,200	31,800	90,000
1966	22,500	18,700	14,400	6,800	33,600	96,000
1967	24,200	18,700	15,800	8,700	33,300	100,700
1968	24,800	19,500	16,600	7,700	35,000	103,600
1969	26,100	25,400	17,800	8,000	35,900	113,200

Source of Data: Employment Security Commission of Arizona, *Arizona Basic Economic Data* and *Arizona Labor Force Trends*, various issues, 1954-1969.

Table 3

**TAXABLE BUSINESS INCOME IN PIMA COUNTY
FISCAL YEAR ENDING JUNE 30, 1969**

Business Category	Taxable Gross Income ^a	
	Amount	Percent of Total
Retail Trade	\$ 518,219,953	49
Mining	216,482,541	20
Contract Construction	108,865,200	10
Visitor Services (restaurants and rentals)	105,114,215	10
Public Utilities (including communications)	79,746,441	7
Printing and Publishing	18,781,591	2
Other	24,115,208	2
Total	\$1,071,325,149	100

^aAs computed for the Arizona Privilege Sales Tax.

Source of Data: State Tax Commission of Arizona, *Statistical Statement Fiscal Year 1968-1969*

Table 4

**BUSINESS INCOME IN PIMA COUNTY
1954 - 1969**

Year ^a	Taxable Business Income (in millions of dollars)					Total
	Retail Trade	Mining	Contracting	Restaurants	All Other	
1954	176.6	38.5	34.4	18.3	41.9	309.7
1955	183.0	52.0	39.2	18.8	50.2	343.2
1956	220.4	73.5	41.7	23.1	60.4	419.1
1957	239.0	67.2	54.9	23.3	59.9	444.3
1958	245.6	47.6	54.2	24.0	66.5	437.9
1959	328.4	59.2	60.5	26.8	75.0	549.9
1960	306.5	78.8	73.0	29.7	86.4	574.4
1961	314.2	73.3	71.5	30.6	90.6	580.2
1962	336.7	89.0	79.1	32.9	106.2	643.9
1963	359.0	96.1	86.0	35.3	116.9	693.3
1964	359.1	100.2	89.7	35.2	117.4	701.6
1965	362.1	125.3	70.9	35.7	120.6	714.6
1966	388.0	121.4	62.2	36.9	127.6	736.1
1967	423.4	155.5	86.4	41.2	143.2	849.7
1968	459.1	83.0	79.7	45.6	163.0	830.4
1969	518.3	216.5	108.9	51.4	176.2	1,071.3

^aFiscal year ending June 30.

Source of Data: Arizona State Tax Commission, *Biennial Reports*, 1954-1969.

BUSINESS INCOME IN PIMA COUNTY

MILLIONS
OF DOLLARS
1400

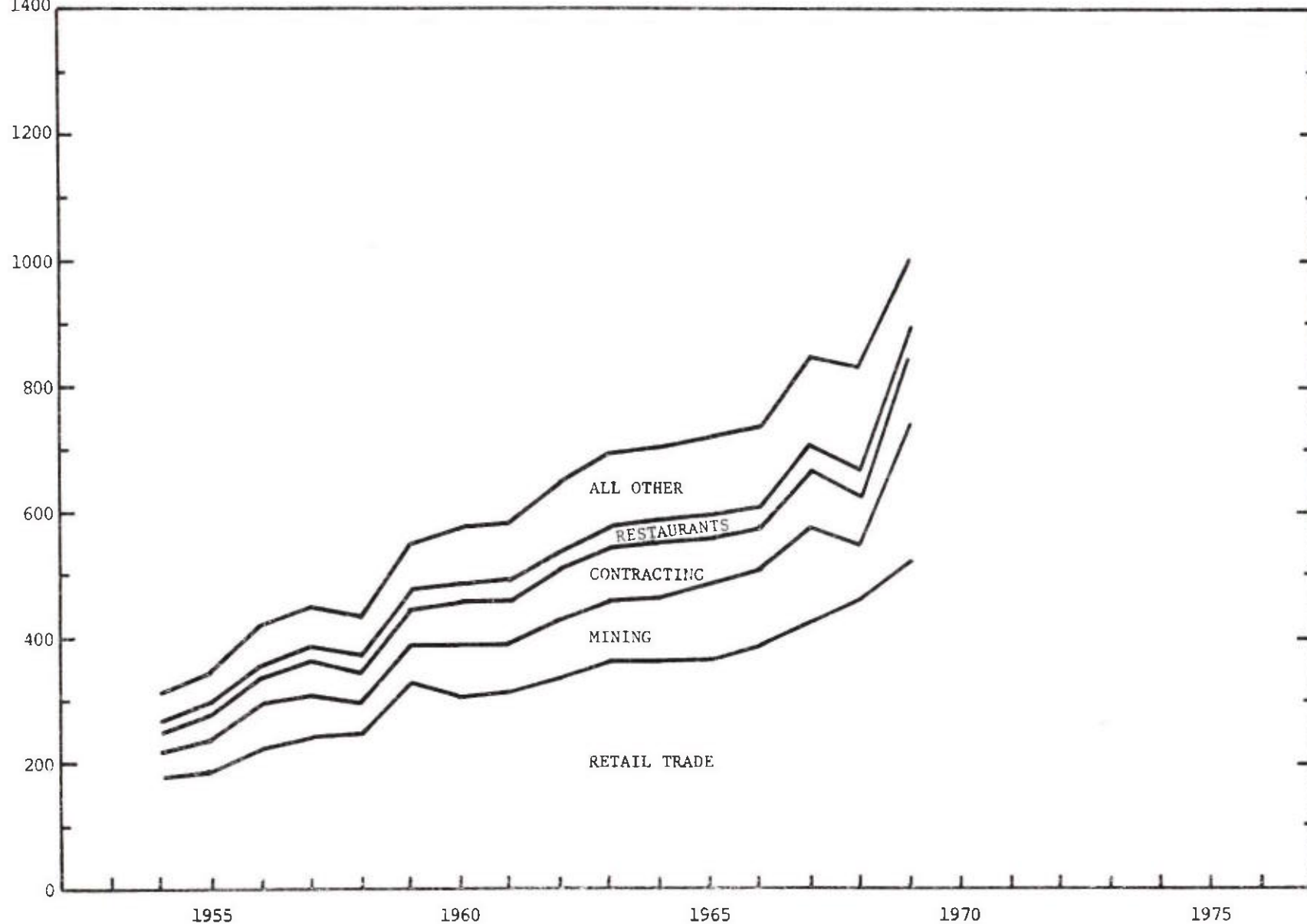


Fig. 16 - Business income in Pima County has risen substantially since the early 1950's.

Table 5
BUSINESS ACTIVITY IN PIMA COUNTY
1962 - 1969

Month	Index of Business Activity (1960 average = 100)							
	1962	1963	1964	1965	1966	1967	1968	1969
January	113	115	127	117	135	139	130	167
February	121	132	112	117	123	146	134	170
March	111	127	117	116	121	151	140	173
April	115	124	114	128	131	148	138	190
May	125	129	128	122	129	157	159	197
June	109	117	102	117	124	150	168	178
July	116	120	127	107	147	132	155	182
August	113	108	106	104	121	116	163	181
September	116	115	104	113	132	134	168	185
October	118	89	113	115	129	130	171	200
November	117	130	117	120	143	128	179	202
December	130	122	126	115	141	149	186	212
Average	117	119	116	116	131	140	158	186

Source of Data: Division of Economic & Business Research, The University of Arizona.

Table 6
EMPLOYMENT IN PIMA COUNTY, 1969

Industry	Average Employment	
	Number	Percent
Agriculture	1,800	1.5
Mining	5,500	4.7
Construction	9,000	7.7
Manufacturing	8,100	6.9
Public Utilities (including transportation)	5,600	4.8
Wholesale and Retail Trade	25,400	21.6
Finance, Insurance, and Real Estate	4,000	3.4
Services	17,800	15.2
Government	26,100	22.2
Other (mostly proprietors)	14,100	12.0
Total	117,400	100.0

Source of Data: Employment Security Commission of Arizona, *Arizona's Current Employment Developments and Arizona Labor Force Trends*, various issues 1969.

EMPLOYMENT IN PIMA COUNTY

THOUSANDS
OF PEOPLE
140

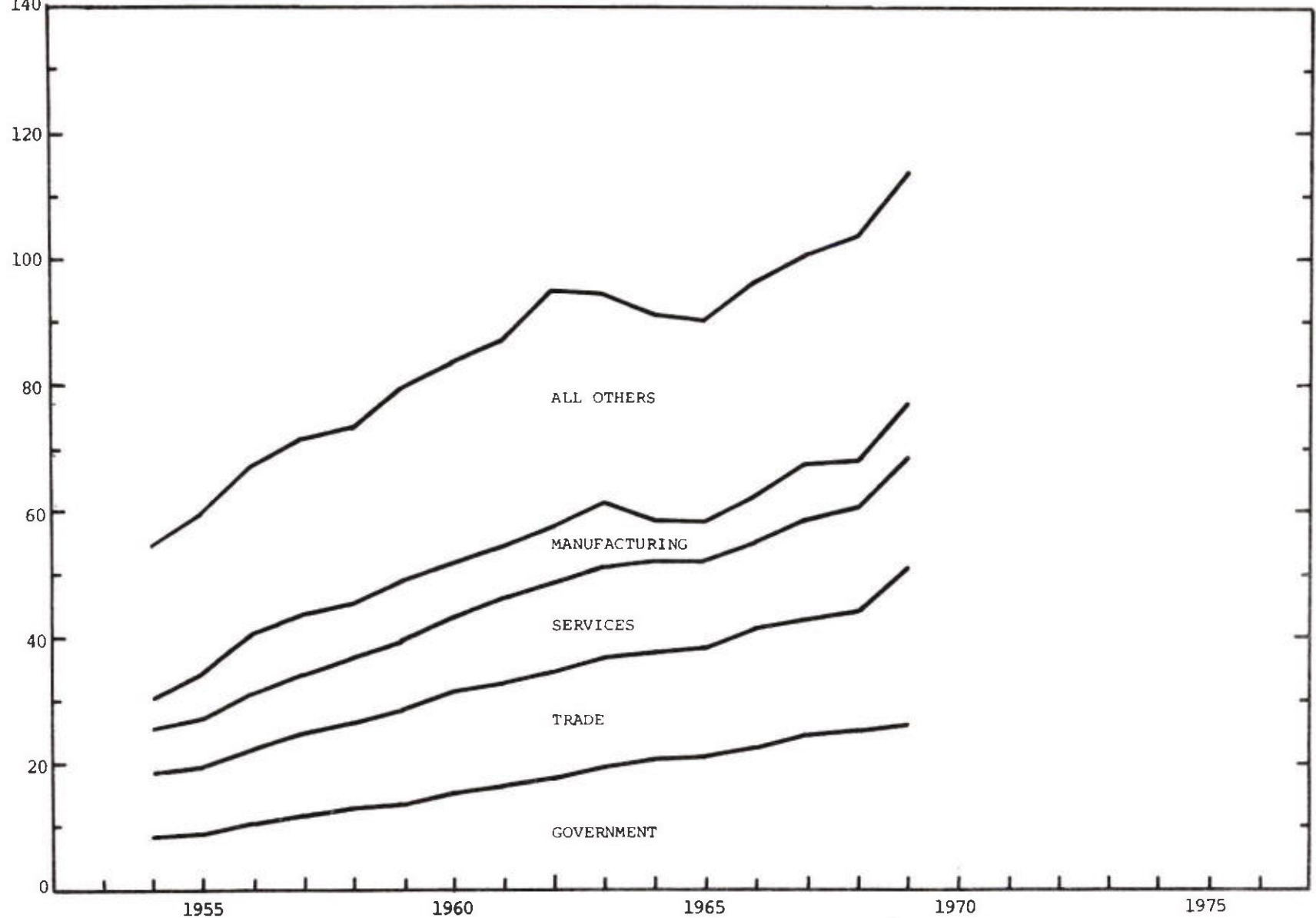


Fig. 17 - Employment in Pima County has grown sharply since 1965, resuming the upward trend followed from 1954 to 1962.

Agriculture¹

Almost three-fourths of Pima County's total area is devoted to farming and ranching, and despite urban development the proportion has been slowly increasing. In 1954, approximately 70 percent of the county's land was used for agricultural purposes. By 1959, the proportion of such land had increased to slightly more than 71 percent, and by 1964, the latest Census of Agriculture reported that the figure had climbed to 73 percent.

While the land area devoted to agriculture in Pima County has been growing slowly, the number of farms and ranches has been declining rapidly. In 1964, the county had less than 400 farms and ranches compared to more than 640 in 1954. The result of the decline in the number of operations during the decade prior to the last agricultural census was a substantial increase in the average size of those remaining farm and ranch units—from about 6,500 acres each in 1954 to nearly 11,000 acres in 1964.

Along with the change in the average size of unit has come an increase in the relative importance of both the large ranch and the small farm. Less than 19 percent of the county's farms and ranches contained more than 1,000 acres in 1954, while about 41 percent had less than 50 acres. Ten years later, the proportion of large units (those with more than 1,000 acres each) had risen to nearly 30 percent, and the proportion of small units had increased to almost 43 percent despite a substantial numerical decline (from 263 to 170). The number of large units remained at about 120. The number of moderately sized units dropped to less than half of the 1954 figure, and the 110 such units remaining were far less important than either the very large or very small.

¹ Data on agriculture in Pima County are largely from the 1954, 1959, and 1964 editions of the *Census of Agriculture*, United States Department of Commerce, Washington, D. C.

Table 7

AGRICULTURE IN PIMA COUNTY

	1950	1954	1959	1964
Number of Farms	778	641	421	398
Land in Farms (in acres)	4,135,745	4,156,421	4,217,593	4,312,995
Average Size of Farm (in acres)	5,316	6,484	10,018	10,837
Cropland Harvested (in acres)	27,679	54,177	49,778	49,864
Irrigated Land in Farms (in acres)	31,185	56,274	57,942	54,383
Irrigated Cropland Harvested (in acres)	27,391	53,425	49,316	49,817
Value of all crops sold (in dollars)	5,015,613	12,518,107	9,159,583	9,888,281
Value of all livestock and livestock products sold (in dollars)	4,329,295	5,105,412	10,549,626	11,521,372

Source of Data: U.S. Department of Commerce, Bureau of the Census, *U.S. Census of Agriculture*: 1954, 1959, 1964.

The pattern of ownership and management control in Pima County's agricultural sector has also changed since 1954. In that year, 84 percent of the county's farms and ranches were operated by full or part owners, with tenants and hired managers accounting for the remaining 16 percent. That 16 percent, however, comprised nearly 76 percent of the county's agricultural land. By 1964, the proportion of farms and ranches operated by hired managers or tenants had increased slightly to 21 percent, but the acreage controlled by them had fallen to 62 percent of the total. Along with the increase in farm and ranch acreage operated by full or part owners came an increase in the relative importance of part-time operations, from less than 10 percent in 1954 to more than 21 percent in 1964.

There have also been significant changes in the type of agricultural activity carried on in Pima County since the early 1950's. As urban growth has continued, cotton markets diminished, and water tables dropped, the relative importance of irrigated crop raising has also declined. In 1954, more than 56,000 acres were under irrigation in Pima County. By 1964, this had dropped to about 54,000 acres. The average size of irrigation farms also decreased, from about 9,300 acres in 1954 to about 8,100 acres a decade later.

The cutback in irrigated farm acreage in Pima County from 1954 to 1964 was reflected in a substantial decrease in the value of the county's crop output. In 1954, total crop production in Pima County was valued at \$12.5 million. By 1964, this had fallen to less than \$10 million. A more than twofold increase in the value of livestock output, however, helped Pima County's total agricultural production to increase over the same period. From \$5.1 million in 1954, the value of livestock and livestock products produced in the county soared to nearly \$12.5 million in 1964. As a result, the total value of agricultural output climbed from about \$17.6 million to nearly \$22.5 million. Livestock and livestock products now account for more than 55 percent of Pima County's total farm and ranch output.

Mineral Industries

Mining has long been a significant factor in the overall economy of Pima County. Until relatively recently, however, the only part of the county where mining operations of substantial size were carried on was at Ajo. Copper mining in the vicinity of Ajo, in what is now the western part of Pima County, was begun before the coming of the Spaniards and was conducted by them as early as the 1750's. Operations by the first United States mining company commenced there around 1855. At that time the ore was hauled by wagon westward to the Colorado River, then floated south to the Gulf of California for shipment via Cape Horn to smelters in Wales. Until 1954, Ajo remained the site of Pima County's only major copper mine, the Phelps Dodge Corporation's New Cornelia open pit. The size of the New Cornelia was such, however, that it alone qualified Pima County as one of the state's leading mining counties. It currently ranks seventh in output among copper producing mines in the United States.

In the early 1950's, intensive mining activity began in the eastern part of the county, in the Greater Tucson area. The influx of investment in new mines and the reactivation of old mining districts was aided by the continuing depletion of higher-grade properties, coupled with technological advances which made the extraction and processing of low-grade deposits economically feasible. Governmental stockpiling of the red metal since the Korean War has also been an important factor.

In late 1951 the American Smelting and Refining Company signed a purchase agreement with the federal government for copper to be produced from low-grade deposits located at Silverbell, about 40 miles northwest of Tucson. At about the same time, the Banner Mining Company reactivated its mine in the Twin Buttes area approximately 20 miles southwest of Tucson. These underground workings were closed down in 1963, but shortly thereafter the Anaconda Company announced plans to develop the property and an additional area as a

large-scale open pit mine. The Twin Buttes mine began operation in 1969 and was expected to reach full production in 1970.

Also in the Twin Buttes area are the properties of the Pima Mining Company, an operating firm owned by the Cyprus Mines Corporation; the Utah Construction and Mining Corporation; and the Union Oil Company of California. Underground development of the Pima orebody began in 1952. In 1955, stripping of the overburden from the orebody was begun and full production as an open pit mine began in 1957. A few miles away is the Esperanza pit of the Duval Corporation. Work was started on this orebody in 1957 with production of copper concentrates from the mill erected at the site commencing in 1959. American Smelting and Refining, already active at Silverbell, also started operating its Mission property, adjacent to the Pima mine in the Twin Buttes area in 1961.

In January of 1968 the Duval Corporation signed a contract with the General Services Administration to develop its Sierrita mine in the Twin Buttes area south of Tucson. It was to be the largest copper mine in Arizona and the second largest in the nation. Further increases in production have also been made at ASARCO's Silverbell and Mission mines, by the Pima Mining Company at its Pima mine, and by the Duval Corporation at its Esperanza mine.

Improved technology has played a significant part in this development of lower-grade ores, and it will probably continue to become more important as higher-grade orebodies are exhausted. Duval Corporation, for example, has expanded its research and development facility in Tucson. Anaconda and ASARCO also maintain significant research and development operations in Tucson. In 1953, Pima County mines were the source of seven percent of the copper mined within the United States. By 1962, the county's share of the nation's output had more than doubled to 15 percent, and it had not only become the leading copper producing county in Arizona but the second largest in the nation, surpassed only by Salt Lake County in Utah.

The economy of Pima County has benefited not only from mining activity within its borders, but also from helping to supply the needs of mining communities in adjacent counties. An estimated 500 employees of the San Manuel Division of the Magma Copper Company in nearby Pinal County live in Tucson. Although no exact statistics are available, the company and the residents of San Manuel (the town at the mine site) do much of their purchasing in Tucson, the nearest metropolitan center.

While copper accounts for most of the dollar value of minerals produced in Pima County, by-products of copper producing operations include gold, silver, and molybdenum. Small amounts of lead, zinc, and tungsten have also been produced in Pima County.

Arizona's earliest cement plant was built by the Arizona Portland Cement Company at Rillito, near Tucson, in December 1949. Present capacity of the plant is about 8,000 barrels per day. Clays used in clay products are also found in Pima County, and some marble has been produced. Sand and gravel, a common and essential mineral product, is also produced in Pima County. The total value of mineral production in the county in 1966 amounted to \$162,020,777, leading its nearest rival Pinal County by approximately \$10 million.

The importance of the mining industry, particularly copper mining, to the economy of Pima County is highlighted by the fact that its percentage share of business payrolls in the county has been running around three times its percentage share of total employment. This reflects the relatively high wage levels of employees in the mining industry which have normally only been exceeded by employees in the construction industry.

The mining industry has been the second largest source of sales tax revenues in Pima

Table 8

TOTAL VALUE OF MINERAL PRODUCTION, PIMA COUNTY

1953	\$ 46,081,720
1954	54,747,243
1955	82,748,688
1956	91,431,712
1957	75,739,870
1958	66,089,879
1959	91,325,129
1960	98,271,821
1961	106,865,830
1962	127,418,897
1963	131,656,225
1964	148,899,356
1965	149,153,395
1966	162,020,777
1967	150,770,174
1968	200,000,000 ^e
1969	216,500,000 ^e

^eEstimated by the Division of Economic and Business Research, The University of Arizona.

Source of Data: U.S. Bureau of Mines, *Minerals Yearbook*, various issues, 1954-1967, and Arizona State Tax Commission.

County. Whereas other businesses paying sales tax are able to pass most of such taxes on to the consumer, mining firms are in the position of having the prices of most of their products determined by national and international markets. As a result, such taxes cannot be shifted to the local resident. The industry has also been a substantial payer of property taxes in Pima County.

Within the last ten years, mining production in Pima County has more than doubled. In the same time period, mining employment has also doubled to an average monthly level of more than 5,000. Pima County has become one of the leading copper mining areas in the country, producing about 16 percent of the nation's copper. Extensive development of new ore reserves, the expansion of existing mines, and the establishment of mining research laboratories in Tucson presage further growth of the industry within the county's

boundaries in employment, wages, and the amount and value of output. Inasmuch as growth in other sectors of the county's economy should also take place, it remains to be seen, however, whether or not mining will increase its relative position as an economic mainstay. It should at least maintain its current position.

Manufacturing

Employment in manufacturing in Pima County has been characterized over the past decade by considerable instability arising in part because Hughes Aircraft, the county's largest manufacturer, is completely dependent on defense contracts. After reaching a high of 10,200 in 1963, total manufacturing employment in the county fell to a low of 6,200 in 1965. Average factory employment in 1967 was 8,700, but by early 1969 it had dropped below 8,000. While still substantially below the 1963 peak, this was a gain of almost 30 percent over the 1965 low. These variations in employment reflect in large part the awarding, completion or cancellation of defense contracts.

The largest non-defense contractor in Pima County is the Krueger Manufacturing Company, with a current employment of over 600. This firm makes air conditioning and air handling equipment. Several other firms have established facilities in the Tucson area. These include General Electric (with a tool, die, and mold shop), Bell Aerosystems, Motorola, and Control Data Corporation. A number of other firms in the electronics industry have research and development facilities or small production operations in the Tucson area. Most of these are heavily dependent upon national defense activity. Several other manufacturing industries are significant in the Pima County economy. Printing and publishing is a major employer in the Tucson area, while food processing and garment manufacture play somewhat smaller but still substantial roles.

Government

Government is undoubtedly the most pervasive factor in the economy of Pima County. It is the largest landowner, the largest employer, the largest contractor, and the largest purchaser of goods and services. The 1962-65 downturn in the county's economy has been attributed in large part to the completion of government contracts, particularly the completion of Titan Missile sites and contracts held by Hughes Aircraft. At the same time, the severity of Pima County's 1962-65 recession was mitigated by increasing government employment in other sectors, including public schools, The University of Arizona, and both federal and local governmental agencies. Government employment in the county in 1969 exceeded 26,000 or approximately one-fourth of all non-agricultural employment. The average for the United States as a whole in the same year was around 18 percent.

Government is not a monolithic entity in Pima County, however. Local government agencies and schools account for an estimated 11,000 jobs. The University of Arizona accounts for another 5,000, while other state agencies provide employment for 2,000. Davis-Monthan Air Force Base employs about 1,800 civilians and other federal agencies about 2,000. In addition, there are approximately 8,000 military personnel stationed at Davis-Monthan and almost 800 persons working at Fort Huachuca who reside in Pima County. Furthermore, the impact of the federal government on the county's economy is felt indirectly through jobs in the manufacturing sector that are dependent on federal funds. Federally supported research at the University of Arizona (which amounted to approximately \$17 million in 1967) is also a substantial factor in the local economy. Social security benefits paid to retired persons (about \$3.5 million per month) and other retirement benefits paid to military and civil service personnel residing in the county are also of strong economic significance.

While much government-based employment can be looked upon as providing a stabilizing effect on the economy (since it is relatively assured and not subject to fluctuations induced by business booms or recessions), that segment related to national defense (which is heavily represented in Pima County) is subject to wide fluctuations. When military as well as civilian personnel are considered, Davis-Monthan Air Force Base is the largest employer in Pima County by a wide margin. Hughes Aircraft Company, which is dependent on defense contracts for its existence, is the third largest employer in the county and the largest single employer in the private sector. Defense contracts are also substantial factors in the remainder of the county's manufacturing sector.

Retail and Wholesale Trade

Trade is exceeded only by government as an employer in Pima County. In 1968, the county's more than 19,000 wholesale and retail trade workers accounted for about 18 percent of overall employment in Pima County and nearly a fourth of all private employment. In 1959, the number of workers engaged in wholesale and retail trade in Pima County was less than 15,000, but this still comprised about 19 percent of the total work force. To these figures should be added the large numbers of individual proprietors likewise engaged in retail trade in Pima County. Not counted in the total of retail and wholesale trade employees, the number of individual proprietors and self-employed persons in Pima County in 1967 was close to 13,000.

Of the more than 1,500 retail establishments with employees in Pima County in the first quarter of 1967, a little less than half had less than four employees. Nearly 1,400, however, had no more than 20 employees and only one had more than 50. The county's largest retail operations in 1967 were a department store and a supermarket.

Pima County's moderate dependence on tourism is reflected in the composition of its retail trade sector. In 1967, gasoline service stations accounted for over 17 percent of all retail trade outlets. Eating and drinking places accounted for more than one-fourth of all retail outlets and over 16 percent of all retail payrolls. During the fiscal year ending June 30, 1967, restaurant sales accounted for almost 10 percent of total retail sales in the county. During the same period, however, in the state of Arizona as a whole, restaurant sales were more than 10 percent of total retail trade.

In 1960, less than one percent of Pima County's employed labor force was engaged in wholesale trade. By 1967, the proportion had climbed to more than four percent. The county had more than 300 wholesale firms in the first quarter of 1967, but only one of these employed more than 100 persons. In 1967, approximately two-thirds of the county's wholesale firms employed less than seven persons.

Services

The growing prominence and increasing importance of the service industries in the national economy in the wake of rising per capita income, increasing emphasis on health services, and greater use of business services is apparent in Pima County. In recent years, employment in service occupations in Pima County has been exceeded only by that in government and trade. Service employment reached an estimated 16,600 in 1968.

The service industries include hotels and other lodging places, personal services (such as laundry and dry cleaning, barber shops and beauty shops), business services (such as advertising and credit reporting), automotive and electrical repair services, amusement and recreation, medical and health services, and legal and private educational services. Medical and other health services form the largest subcategory in Pima County, employing almost 5,000 in 1967. Personal services, accounting for 2,000 employees, ranked second, while the lodging industries placed third with not quite 2,000. During the past 10 years, employment in the service industries group has shown an increase of almost two-thirds.

The medical and other health services component of the service industries deserves more than passing mention as a factor in Pima County's economy. In 1967, persons employed in providing medical and health services in the county exceeded those employed in agriculture, in mining, in contract construction, or in finance, insurance and real estate. Tucson boasts five large community hospitals, plus a major facility operated by the Veteran's Administration. In addition there is a private hospital exclusively for psychiatric patients and numerous private rest homes and sanatoriums. Complexes designed specifically as permanent residences for the elderly, with resident medical services available on a full time basis, are growing in number. Medical centers or clinics are found throughout the community.

Table 9
**TRADE AND SERVICES
IN PIMA COUNTY
1967**

Business Category	Number of Establishments	Total Receipts	Annual Payroll
Eating & drinking places	516	\$ 39,047,000	\$ 9,375,000
Gasoline service stations	346	35,828,000	3,845,000
Food stores	365	116,303,000	8,752,000
Automotive dealers	167	103,444,000	11,821,000
Apparel & accessories stores	152	24,517,000	3,439,000
Farm equipment, hardware & building materials dealers	76	19,169,000	2,803,000
Household furnishings stores	146	24,765,000	3,306,000
General merchandize stores	80	79,810,000	12,025,000
Drug stores	78	21,316,000	2,850,000
All other retail establishments	511	29,442,000	3,644,000
Non-Store Retailers	128	5,196,000	482,000
Retail Total	2,565	\$498,837,000	\$62,342,000
 Personal services	 672	 20,702,000	 7,388,000
Hotels, motels, trailer courts, and camps	262	16,449,000	4,203,000
Auto repair services	277	12,782,000	2,657,000
Other repair services	275	5,039,000	NA
Business services	361	17,584,000	6,550,000
Amusements and recreation services	188	8,621,000	NA
 Total Selected Services	 2,035	 \$81,177,000	 \$24,383,000

Source of Data: U.S. Bureau of the Census, *1967 Census of Retail Trade and Selected Services*.

Tourism

Tourism has long been considered a major part of the Pima County economy. As the economy has grown, however, the relative importance of tourism has declined. Although subject to gross overestimates by some sources, the direct contribution of recreational tourists to the economy of Pima County in recent years has varied between \$10 million and \$30 million. The economic impact of tourism in the county has been quite variable and highly subject to seasonal conditions and other factors outside the immediate area. In 1966 the direct contribution of recreational tourists to the Pima County economy was about \$11 million. This was one-third below the 1965 total of more than \$16 million and almost 45 percent below the 1964 figure of nearly \$20 million. In 1967 and 1968, the impact again increased, exceeding \$20 million in 1968.

Throughout Pima County, a number of major and numerous minor attractions serve the recreational tourist. Important among these are the several national monuments found in

Table 10

TOURISM IN EASTERN PIMA COUNTY

	Visits to Saguaro National Monument	Visits to Arizona- Sonora Desert Museum	Visits to Kitt Peak National Observatory
1960	141,012	183,959	NA
1961	145,139	196,413	NA
1962	146,258	184,908	NA
1963	177,049	208,973	58,883
1964	215,893	210,980	43,837
1965	229,708	229,589	51,198
1966	228,374	228,971	49,133
1967	267,787	223,284	52,979
1968	307,147	250,417	52,842
1969	409,027	275,546	57,353

Source of Data: U.S. National Park Service, *Monthly Visitor Use Reports, Saguaro National Monument* and *Tumacacori National Monument*, various issues, 1960-1969; Arizona-Sonora Desert Museum; and Kitt Peak National Observatory.

the area. In 1968 more than 300,000 persons visited Saguaro National Monument near Tucson, while 375,000 visited Organ Pipe Cactus National Monument in the western part of the county.

Non-federal areas are also important as tourist attractions in Pima County. In the immediate Tucson vicinity, the Arizona-Sonora Desert Museum in recent years has consistently drawn more than 200,000 visitors annually, while other privately owned attractions, such as Old Tucson and the San Xavier Mission, also are visited regularly by large numbers of tourists. Public, but non-federal facilities, such as Kitt Peak National Observatory (operated by Associated Universities for Research in Astronomy) and Colossal Cave County Park, similarly serve as important tourist attractions. Kitt Peak alone regularly draws more than 50,000 visitors each year.

Retirement

Largely because of its moderate climate that includes an abundance of sunshine, Southern Arizona has become a haven for retirees. It is estimated that there are 12,000 "full retirement households" and 5,000 "semi-retirement households" in Pima County. These 17,000 households account for approximately one out of every six households in the county. The economic impact of this group, therefore, is significant. The average annual income of retirees in the county has been estimated at \$8,000. Pension payments and other income of retirees brought an estimated \$119 million into the county in 1967.

There has been an increase of nearly one-third in retirement households in Pima County since 1960. As more personnel are covered by retirement plans and more self-employed persons, particularly in the professions, take advantage of the recent legislation which provides tax incentives for establishing retirement income plans, the number of persons in this category should increase. The outlook for maintaining this rate of growth, therefore, is quite favorable.

Construction

The importance of contract construction in the economy of Pima County has increased substantially in the past several years, after a sharp decline in construction activity that began in 1962 and hit bottom in 1965. In 1968, the construction industry employed an average of more than 6,000 persons in Pima County, a little less than six percent of the county's entire work force. In 1962, however, the industry had employed about twice that many and was responsible for almost 12 percent of the county's total employment. By mid-1969, the total number of construction workers in Pima County exceeded 9,000.

The taxable value of construction put in place in Pima County has also varied substantially over the past decade. In the fiscal year ending in June 1969, taxable sales by Pima County contracting firms amounted to almost \$109 million. This was nearly 50 percent above the 1960 total and three times the 1954 figure. In fiscal 1969, contracting revenue accounted for more than 10 percent of Pima County's total taxable business income, putting the industry third behind retail trade and mining. A significant portion of the resurgence since 1965 in Pima County construction activity has been caused by an increase in residential building, but the greatest gain has been in industrial and commercial construction. Rebounding construction has been a strong feature of the economic recovery that Pima County has experienced since 1965.

Public Utilities

The relative importance of the public utilities industry (including transportation and

communications) as an employer of Pima County labor has declined steadily, but not greatly, over the past decade. In 1956, transportation and public utilities employed approximately 5,300 persons in Pima County. This represented a little more than six percent of the county's total work force. By early 1969, the average employment in such activities was still only about 5,500, but the share of total employment had dropped to little less than five percent. Over the entire period, variation in the industry's total employment has been less than 500.

The stability in the total employment level for public utilities has not been a reflection of stability within the industry. Quite the contrary, there have been substantial changes, particularly in the transportation sector. Since the late 1950's the number of persons employed in rail transportation in Pima County has declined drastically, but this has been more than offset by gains in air and motor transportation. These gains have reflected a sharp rise in the importance of air and highway travel in the county's economy. These two modes of transportation should become even more important in the decade to come.

Table 11

**UTILITIES AND COMMUNICATIONS SALES
IN PIMA COUNTY**

Fiscal Year Ending June 30	Utilities	Communications	Total
1959	\$24,985,425	\$ 9,054,889	\$34,040,314
1960	29,255,929	9,745,081	39,001,010
1961	32,775,752	11,562,370	44,338,122
1962	38,835,326	13,199,868	52,035,194
1963	42,731,081	14,470,585	57,201,666
1964	44,801,364	15,446,374	60,247,738
1965	45,753,294	15,884,818	61,638,112
1966	48,012,005	16,597,408	64,609,413
1967	50,987,674	17,847,437	68,835,111
1968	54,600,647	18,243,441	72,844,088
1969	57,447,279	22,299,162	79,746,441

Source of Data: State Tax Commission of Arizona, *Biennial and Annual Reports*, various issues, 1960-1969.

Finance, Insurance, and Real Estate

Financial, real estate, and insurance businesses account for a relatively minor portion of the economic activity of Pima County. In 1968, the approximately 3,700 persons involved in such operations comprised less than four percent of the county's total employment. In the first quarter of 1967, almost two-thirds of the more than 500 firms engaged in finance, real estate, or insurance activities in the county employed fewer than four persons. One financial institution, however, employed more than 500 to rank as a major county employer.

Despite the relatively high proportion of industrial and commercial property in Pima County, the county's property tax rate has been one of the highest in the state of Arizona. In 1967, the county's rate was \$3.24 per \$100 of assessed valuation. Only two other of Arizona's 14 counties had higher rates. These two, Graham and Santa Cruz Counties, are both immediately adjacent to Pima County in the southeastern portion of the state.

Summary

Since the early 1950's, the economy of Pima County has grown at a rate averaging approximately six percent per year as measured by total employment. In terms of taxable business income, the county's economy has grown at a rate averaging nine percent per year. Total taxable business income in Pima County in 1969 was in fact more than three times the figure for 1954. Government, mining, tourism, and retirement have been the major activities behind this rapid growth.



Fig. 18 - The New Cornelia copper mine at Ajo, Arizona, approximately 20 miles north of the Visitor Center at Organ Pipe Cactus National Monument, is the major factor in the economy of Western Pima County.

THE ECONOMY OF WESTERN PIMA COUNTY

The Greater Tucson Area dominates the economy of Pima County, and in fact, the Bureau of the Census considers the Tucson Standard Metropolitan Statistical Area and Pima County to be identical. With more than 95 percent of the county's population living in the portion east of the sprawling Papago Indian Reservation, the Tucson area does account for most of the county's economic activity. Nevertheless, the area west of the Papago Reservation has its own separate and distinct economic structure.

Separated from Tucson by more than 100 miles of the Papago Reservation and from Phoenix by the same distance of desert and Air Force gunnery range, Western Pima County has an economy all its own. It is an economy based primarily on mining, but also dependent to a certain extent on tourism, agriculture, and national defense. Its total population is relatively small, less than 10,000, most of whom live in Ajo, a town of about 7,000. Others live in Lukeville, on the Mexican border, and at Why, a small community on the edge of the Papago Indian Reservation.

The economy of Western Pima County is heavily dominated by the copper producing operations of the Phelps Dodge Company at Ajo. In 1960, of a total of approximately 2,300 employed, almost 1,400 (60 percent) were engaged in copper production and closely related activities. Most of the remainder were employed in retail trade and services. Government, in

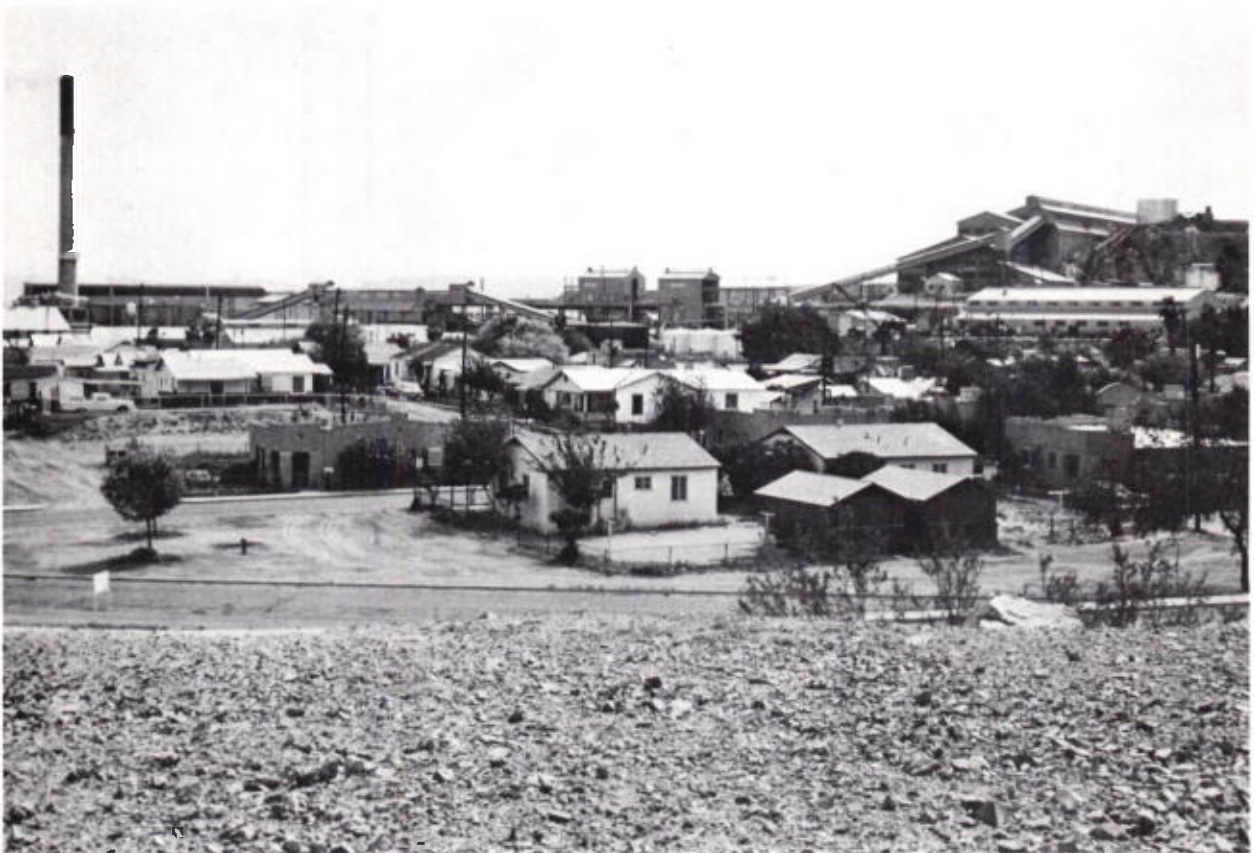


Fig. 19 - Portion of the town of Ajo, Arizona, in Western Pima County. The copper concentrator and smelter in the background are the mainstays of the Ajo economy, but expenditures by tourists travelling to Organ Pipe Cactus National Monument also have an impact on the community.



Fig. 20 - Lukeville, Arizona, looking north from the Mexican border. This small community, situated on a private enclave within Organ Pipe Cactus National Monument, has become a significant port of entry for both commercial and tourist trade with Mexico.

the form of the local school district, also has provided a significant number of jobs.

In the 1960's, an Air Force radar station near Ajo added the national defense element to the economy of Western Pima County, but such activity has now been sharply curtailed. In addition, as tourist travel between Phoenix and the Mexican port of *Puerto Penasco* has grown, the portion of the local economy dependent upon highway travel has increased. At the same time, changing technology in the copper industry has allowed the New Cornelia mine and plant to increase copper output without increasing employment. As a result, the relative role of the mineral industry in the economy of Western Pima County has declined slightly. Nevertheless, the mining and smelting of copper remains the greatest single factor in the area's economic picture.

The importance of livestock raising in Western Pima County has also declined in recent years. While still significant as a basic economic activity in the region, cattle grazing has seriously diminished in both absolute and relative importance to the area. This has been the result of increased cattle feeding operations outside the area as well as growth in other sectors of the local economy.

THE ECONOMY OF YUMA COUNTY

Yuma County has one of the most stable economies in Arizona. The county has experienced a moderate but steady economic growth that has lacked some of the wide variations in activity that have characterized growth in many other areas of the Southwest.

Yuma County's economy is based primarily on its climate (hot, with little rainfall) and its location along the Colorado River approximately midway between the metropolitan areas of Arizona and the population centers of Southern California. These natural characteristics have been reflected in an economy heavily dependent upon agriculture, tourism, and national defense. Attempts to introduce other types of business activity, namely manufacturing, have not met with any notable success.

Population and Labor Force

Nearly 25,000 persons were employed in Yuma County in 1967. This was almost 10 percent greater than the average employment in the previous year and about 30 percent higher than in 1956. In 1960, less than 27 percent of the county's work force was composed of women. This was significantly below the 30 percent figure for the state as a whole. That same year, wage and salary workers comprised nearly 88 percent of the county's employed labor force, while self-employed persons made up more than 12 percent. These proportions are only slightly different from the Arizona statewide ratios. In 1960 almost 90 percent of the state's employed were wage and salary workers and more than 10 percent were self-employed.

Table 12

POPULATION OF YUMA COUNTY 1950-1969

Year	Population
1950	28,000
1951	30,000
1952	31,000
1953	33,000
1954	37,000
1955	38,000
1956	41,000
1957	42,000
1958	44,000
1959	45,000
1960	46,200
1961	50,000
1962	59,200
1963	51,400
1964	54,000
1965	56,000
1966	58,500
1967	61,200
1968	62,700
1969	63,000

Source of Data: Employment Security Commission of Arizona, *Population Estimates of Arizona*, various issues, 1950-1969.

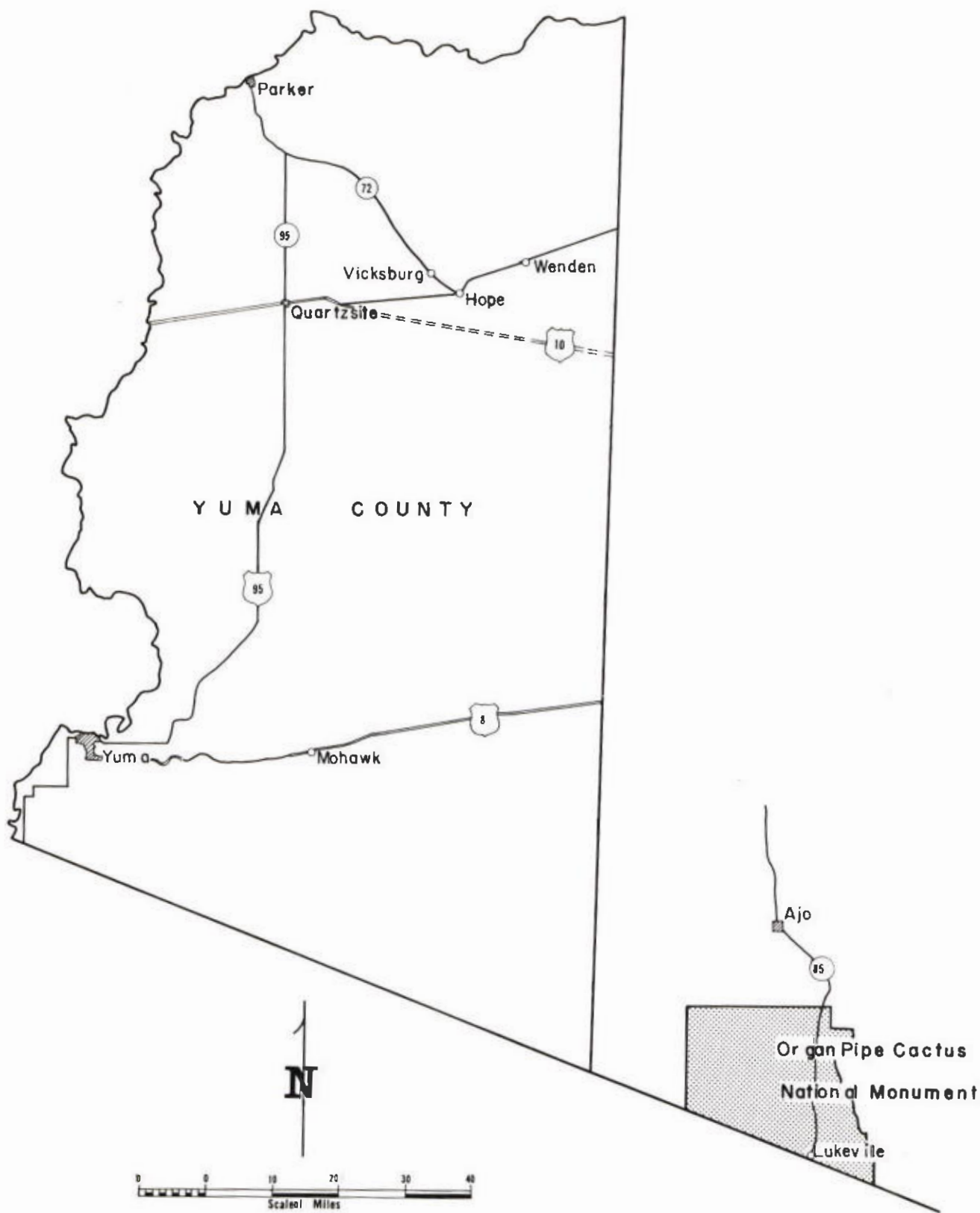


Fig. 21 - Organ Pipe Cactus Monument is closely related to the economy of Yuma County.

Table 13
EMPLOYMENT IN YUMA COUNTY
1954-1968

Year	Agriculture	Government	Trade	Services	All Other	Total
1954	4,800	2,600	2,500	1,000	4,900	15,800
1955	7,100	2,700	2,600	1,100	5,300	18,800
1956	7,000	2,800	2,800	1,100	5,700	19,400
1957	7,000	3,000	2,900	1,200	5,400	19,500
1958	7,200	3,300	2,800	1,500	5,300	20,100
1959	7,800	3,300	2,800	1,800	5,700	21,400
1960	7,900	3,500	2,800	1,500	4,500	20,200
1961	7,400	3,700	2,700	1,600	4,400	19,800
1962	6,200	3,800	2,700	1,700	4,300	18,700
1963	5,800	4,100	2,900	1,900	4,700	19,400
1964	7,800	4,100	2,600	2,000	4,900	21,400
1965	7,400	4,300	2,700	2,200	5,200	21,800
1966	7,500	4,500	3,000	2,200	5,500	22,700
1967	9,100	4,900	3,200	2,200	5,400	24,800
1968	9,100	5,700	3,525	2,175	5,300	25,800

Source of Data: Employment Security Commission of Arizona, *Arizona Basic Economic Data*, various issues, 1954-1968.

TABLE 14
TAXABLE BUSINESS INCOME IN YUMA COUNTY
Fiscal Year Ending June 30, 1969

Business Category	Taxable Gross Income^a	
	Amount	Percent of Total
Retail Trade	\$ 92,615,003	63.6
Tourist Services (restaurants and rentals)	19,188,176	13.2
Public Utilities (including communications)	13,457,808	9.2
Contract Construction	7,223,638	5.0
Wholesale Feed	5,974,284	4.1
Printing and Publishing	1,649,970	1.1
Timbering ^b	790,398	0.6
Other	4,689,772	3.2
Total	\$145,589,049	100.0

^aAs computed for the Arizona Privilege Sales Tax.

^bPrincipally the manufacture of wooden containers for agricultural products plus the manufacture of some other basic wood items.

Source of Data: State Tax Commission of Arizona, *Statistical Statement Fiscal Year 1968-1969*.

Table 15

**BUSINESS INCOME IN YUMA COUNTY
1954-1969**

Year ^a	Taxable Business Income (in millions of dollars)					Total
	Retail Trade	Utilities	Restaurants	Contracting	All Other	
1954	42.0	2.9	6.3	7.0	6.3	64.5
1955	43.0	3.5	6.0	7.1	7.3	66.9
1956	48.1	4.0	6.8	6.9	11.4	77.2
1957	49.8	5.2	6.9	7.5	7.0	76.4
1958	49.4	5.4	6.4	6.8	6.9	74.9
1959	52.6	6.0	7.0	6.6	8.5	80.7
1960	53.8	9.7	7.1	8.2	8.6	87.4
1961	54.3	8.5	7.4	8.4	8.6	87.2
1962	58.0	9.4	7.9	8.2	8.6	92.1
1963	63.7	9.9	8.5	8.6	10.6	101.3
1964	68.6	9.7	9.3	10.8	11.4	109.8
1965	74.8	10.3	9.9	11.3	12.7	119.0
1966	77.5	10.6	9.9	10.2	16.1	124.3
1967	75.7	11.9	9.5	10.2	17.0	124.3
1968	83.2	12.2	10.2	9.0	19.9	134.5
1969	92.6	13.5	11.0	7.2	21.3	145.6

^aFiscal year ending June 30.

Source of Data: Arizona State Tax Commission, *Biennial Reports*, 1954-1969.

Table 16

**BUSINESS ACTIVITY IN YUMA COUNTY
1962-1969**

Month	Index of Business Activity (1960 average = 100)							
	1962	1963	1964	1965	1966	1967	1968	1969
January	111	88	129	141	154	134	162	160
February	109	158	137	126	146	143	154	172
March	111	135	123	139	139	142	155	174
April	102	120	132	131	144	149	158	176
May	114	121	150	144	150	140	165	180
June	124	135	144	151	167	153	177	192
July	106	118	140	146	148	164	158	197
August	100	107	136	130	130	143	145	172
September	102	107	134	125	140	150	155	169
October	102	71	122	135	142	140	164	163
November	104	151	132	136	137	150	164	192
December	139	159	158	165	148	168	191	227
Average	110	123	136	139	145	148	162	181

Source of Data: Division of Economic and Business Research,
The University of Arizona.

MILLIONS
OF DOLLARS

BUSINESS INCOME IN YUMA COUNTY

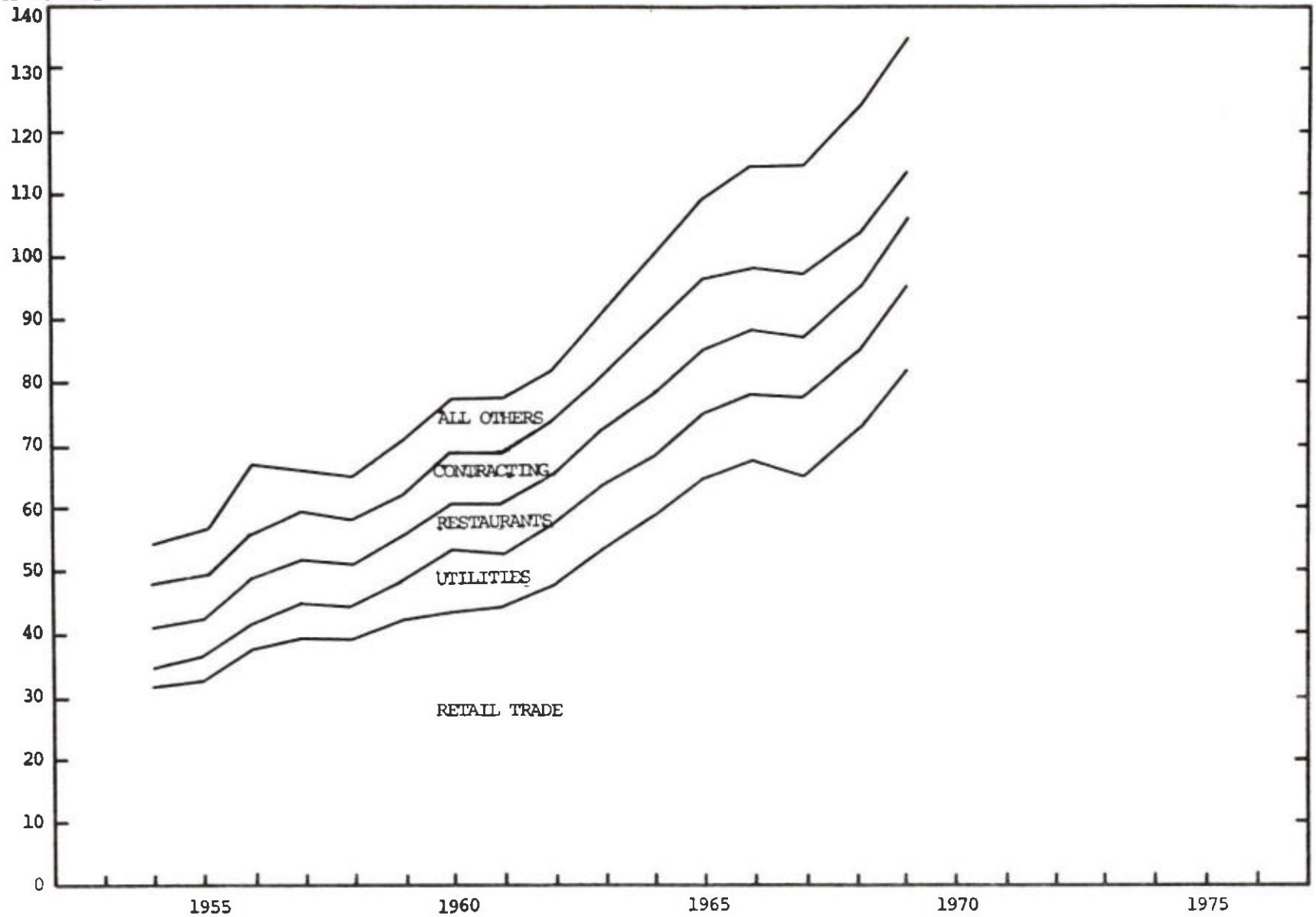


Fig. 22 - Business income in Yuma County has risen substantially since the late 1950's.

EMPLOYMENT IN YUMA COUNTY

THOUSANDS
OF PEOPLE

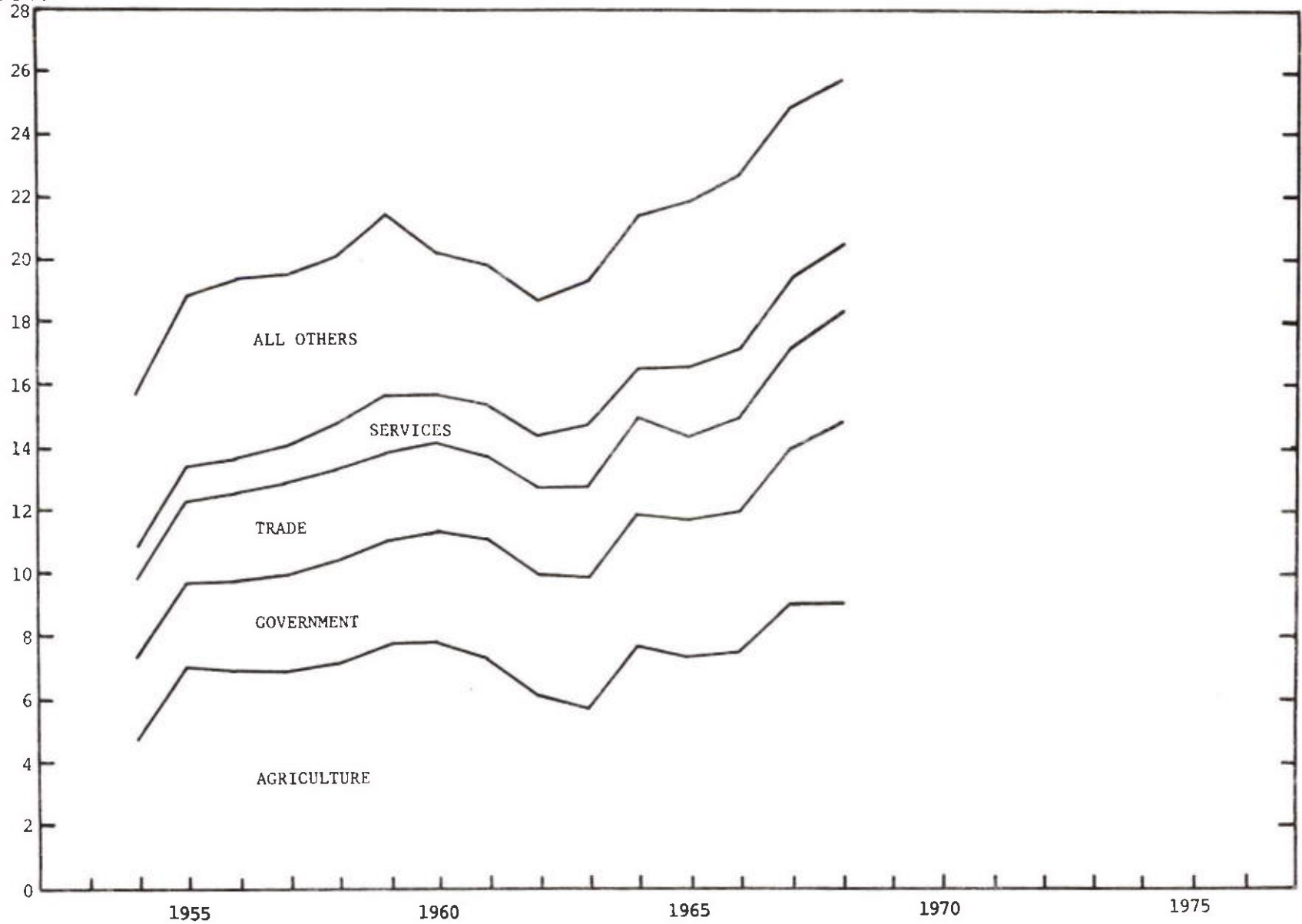


Fig. 23 - Employment in Yuma County, although relatively stable in the late 1950's, has grown sharply since 1962.

Table 17

EMPLOYMENT IN YUMA COUNTY, 1968

Industry	Average Employment	
	Number	Percent
Agriculture	9,100	35.3
Mining	50	0.2
Construction	725	2.8
Manufacturing	800	3.1
Public Utilities (including transportation)	1,050	4.1
Wholesale and Retail Trade	3,525	13.7
Finance, Insurance, and Real Estate	500	1.9
Services	2,175	8.4
Government	5,700	22.1
Other (mostly proprietors)	2,175	8.4
Total	25,800	100.0

Source of Data: Employment Security Commission of Arizona, *Arizona Basic Economic Data*, 1969.

Agriculture²

Despite the great importance of agriculture in the Yuma County economy, only about eight percent of the county's total land area is devoted to farming and ranching. Curiously enough, the area so involved has declined as the industry's importance has grown. In 1954, approximately nine percent of the county's total area was used in farming and ranching. By 1959, this had decreased by nearly 60,000 acres to about eight percent of the total land area. Agricultural acreage in Yuma County has increased only slightly since 1959.

While the amount of land devoted to agriculture in Yuma County has declined, the number of farms and ranches has remained virtually unchanged. This is contrary to the pattern found in most other areas of the Southwest. In 1954, Yuma County had 569 farms and ranches; in 1964, it had 568. The result of the declining acreage but stable number of establishments has been a *decrease* in the average size of farms. In 1954 the average agricultural enterprise occupied a little more than 1,000 acres. By 1964 the average had dropped to little more than 900 acres.

²Nearly all data on agriculture from the U.S. Bureau of the Census, *U.S. Census of Agriculture*: 1954, 1959, and 1964.

Along with the change in the average size of unit has come a change in the relative importance of the very large units. In 1954, about seven percent of Yuma County's farms and ranches contained more than 1,000 acres and they used 83 percent of the county's agricultural land. Ten years later, the proportion of large units had risen to more than nine percent of the county's farms and ranches, but the area utilized by such units had dropped to 79 percent of the farm and ranch total.

The relative importance of very small farms in Yuma County's agricultural sector has remained almost unchanged since 1954. In that year, approximately 28 percent of the county's farms and ranches contained less than 50 acres, and they occupied less than one percent of the county's total agricultural acreage. Ten years later, such units still accounted for 28 percent of the county's agricultural enterprises, and they still used less than one percent of the total farm and ranch acreage.

The pattern of ownership and management control in Yuma County's agricultural sector has changed somewhat since 1954. In that year slightly less than three-fourths of the county's farms and ranches were operated by their full or part owners, while tenants operated about 22 percent and hired managers only four percent. By 1964, however, the proportion of tenant farmers had dropped to less than 17 percent, while the number of

Table 18
AGRICULTURE IN YUMA COUNTY

	1950	1954	1959	1964
Number of Farms	619	569	771	568
Land in Farms (in acres)	450,434	575,084	518,722	524,770
Average Size of Farm (in acres)	728	1,011	673	924
Cropland Harvested (in acres)	87,152	123,853	179,151	175,842
Irrigated Land in Farms (in acres)	92,137	128,301	194,725	188,011
Irrigated Cropland Harvested (in acres)	86,742	123,853	179,131	175,835
Value of All Crops Sold (in dollars)	19,618,324	30,255,682	41,693,540	58,782,979
Value of All Livestock and Livestock Products Sold (in dollars)	2,620,662	5,776,068	13,533,602	17,593,621

Source of Data: U.S. Department of Commerce, Bureau of the Census, *U.S. Census of Agriculture: 1954, 1959, 1964.*

hired managers had more than doubled, rising to nearly nine percent of the total. The relative importance of owner-operators remained relatively unchanged.

Although the number of units operated by hired managers increased sharply from 1954 to 1964, the acreage controlled by them declined from nearly 75 percent to less than 60 percent of the county's total agricultural land. On the other hand, the relative importance of owner-operators increased in this respect. Units operated by full or part owners accounted for about one-fifth of all agricultural acreage in Yuma County in 1954. By 1964, such units accounted for more than a third. The area controlled by tenant farmers remained about seven percent.

Changes also have occurred in the type of agricultural activity carried on in Yuma County. Over the ten year period from 1954 to 1964, the number and relative importance of part-time farms more than tripled, from less than five percent of the county's total to almost 15 percent. At the same time, the relative importance of livestock raising also increased. In 1954, 16 percent of the total value of the county's farm and ranch output was accounted for by livestock and livestock products. By 1964, the share of such output had increased to 23 percent of the total and had tripled in absolute dollar terms, from not quite \$6 million to almost \$18 million. At the same time, the value of crops produced in Yuma County almost doubled, from \$30 million to \$59 million, but their relative share of the county's farm and ranch output declined. Total agricultural output in the county increased from \$36 million in 1954 to almost \$77 million in 1964.

Mineral Industries³

While not considered one of Arizona's principal mining counties, Yuma County has yielded minerals worth an average of more than \$2 million each year since 1964. The greatest share of this production has been accounted for by copper mining. In 1967, almost 70 percent of the total value of the county's mineral output was attributable to copper.

More than 80 percent of the remaining mineral output of Yuma County in recent years has been accounted for by sand and gravel. Most of this has normally been mined by private contractors for use on highway construction and maintenance. Less than a quarter of the sand and gravel produced in the county is normally used for building construction.

The balance of Yuma County's mineral production (worth about \$130,000 in 1967) has consisted primarily of crushed and broken stone used for various agricultural and construction purposes. A significant portion of this material has likewise been used in highway construction. Yuma County's industrial minerals industry has thus been heavily dependent upon travel and the provision of transportation facilities. Nevertheless, the greatest part of the county's total mineral industry has been involved with copper production.

Manufacturing

Despite repeated attempts to develop light manufacturing in Yuma County, the industry today remains a relatively minor part of the county's economy. Most manufacturing activity in Yuma County today is of the support variety, fabricating products for local use by other industries, principally construction and the growing and packing of agricultural products. Printing and publishing of materials for local use are also important. The local newspaper is, in fact, one of the largest single employers in the county. Other major manufacturing employers include an apparel producer and several food processing firms.

³Data largely from: U.S. Bureau of Mines, *Minerals Yearbook*, various issues, 1954-1968.

Government

Government has been, as it has in most of Arizona's counties, a major factor in the economy of Yuma County. In 1967, all levels of government (federal, state, and local) employed nearly 5,000 persons, more than a fifth of the county's entire civilian work force. This does not include more than 2,500 military personnel stationed in the county.

The Department of Defense is undoubtedly the single most important governmental entity in Yuma County. The Marine Corps Air Station at Yuma, while normally employing only several hundred civilians, maintains a complement of more than 2,000 military personnel and in recent years has had a combined annual payroll of more than \$14 million.

Table 19

TOTAL VALUE OF MINERAL PRODUCTION – YUMA COUNTY

1953	\$ 163,622
1954	78,909
1955	99,088
1956	331,363
1957	1,117,509
1958	1,652,166
1959	1,794,254
1960	584,511
1961	705,465
1962	1,080,304
1963	901,902
1964	2,428,721
1965	1,290,738
1966	2,364,802
1967	2,409,053
1968	3,119,000 ^e
1969	1,634,000 ^e

^eEstimated by the Division of Economic and Business Research, The University of Arizona.

Source of Data: U.S. Bureau of Mines, *Minerals Yearbook*, various issues, 1954-1967.

The Army's Yuma Proving Ground is also an important factor in the county's economy with a total military-civilian employment of nearly 1,500 and an annual payroll of more than \$9 million.

State and local government likewise form important segments of the Yuma County economy. In addition to normal governmental services, public education provides a substantial amount of employment in the Yuma area. Other federal agencies also contribute to the importance of government activity in the economy of the county.

Wholesale and Retail Trade

Wholesale trade activities connected with agricultural processing play a major role in the economy of Yuma County. Of the total of almost 1,000 wholesale trade workers employed in the county in the first quarter of 1967, more than half were engaged in the wholesale

Table 20
**TRADE AND SERVICES
IN YUMA COUNTY
1967**

Business Category	Number of Establishments	Total Receipts	Annual Payroll
Eating & drinking places	132	\$ 8,850,000	\$ 1,991,000
Gasoline service stations	96	12,700,000	1,459,000
Food stores	79	20,337,000	1,484,000
Automotive dealers	41	15,276,000	1,834,000
Apparel & accessories stores	29	4,493,000	554,000
Farm equipment, hardware & building materials dealers	33	9,820,000	1,244,000
Household furnishings stores	27	3,181,000	451,000
General merchandise stores	19	7,901,000	NA
Drug stores	18	3,159,000	NA
All other retail establishments	93	6,259,000	627,000
Non-Store Retailers	20	1,161,000	171,000
Retail Total	587	\$93,137,000	\$11,361,000
Personal services	108	3,119,000	1,187,000
Hotels, motels, trailer courts and camps	89	4,696,000	1,173,000
Auto repair services	61	2,898,000	665,000
Other repair services	42	1,321,000	352,000
Business services	52	2,452,000	920,000
Amusements and recreation services	22	1,146,000	274,000
Total Selected Services	374	\$15,632,000	\$ 4,571,000

Source of Data: U.S. Bureau of the Census, *1967 Census of Retail Trade and Selected Services*.

handling of fresh fruits and vegetables. These were employed by 12 of the county's 70 wholesale firms. Two of these each employed more than 100 persons. Another dozen of Yuma County's wholesalers deal in petroleum products, distributing to gasoline retailers in Southwestern Arizona. The greater than average importance of food wholesaling and petroleum products distribution in the Yuma County economy reflect the significance of agriculture and tourism in the area.

Retail trade in Yuma County has also been strongly affected by tourist activity. More than 12 percent of the county's retail trade employees in the first quarter of 1967 were employed in gasoline service stations, while another 21 percent were employed in eating and drinking places. Agriculture's importance was similarly reflected in retail trade, with more than eight percent of the county's retail workers involved in the sale of hardware and farm equipment. The total of over 3,000 employees in all retail trade categories represented more than a third of Yuma County's total private employment.

As in most Arizona counties, most of the retail establishments in Yuma County are small. Of more than 370 such firms in the county in 1967, almost half had fewer than four

Table 21
TOURISM IN YUMA COUNTY

Number of Cars and Buses Entering Arizona at:						
Ehrenburg			Parker		Yuma	
	Year	Monthly Average	Year	Monthly Average	Year	Monthly Average
1960	503,242	41,937	123,347	10,279	502,970	41,914
1961	429,444*	39,040	137,826*	12,530	556,334	46,361
1962	484,605	40,384	160,659	13,388	797,859	66,488
1963	507,052	42,254	230,625	19,219	836,528	69,711
1964	514,414	42,868	220,858	18,405	911,383	75,949
1965	552,857	46,071	238,857	19,905	1,118,481	93,207
1966	562,351	46,863	279,850	23,321	1,022,203	85,184
1967	603,887	50,324	178,503	14,875	1,035,922	86,327
1968	631,220	52,602	248,302	20,692	1,256,754	104,730
1969	719,743	59,978	291,606	24,301	1,367,102	113,925

*11 months totals

Source of Data: Arizona Commission of Agriculture and Horticulture.

employees and more than 70 percent had fewer than eight. While no retail firms employed more than 100 persons, eight did employ more than 50. Of these, three were food stores, two were farm equipment dealers, two were automobile dealers and one was an eating and drinking establishment.

Services

The service industries in Yuma County reflect only slightly the tourist influence on the nature of the local economy. In 1967 private service firms accounted for about nine percent of total civilian employment in the county, only half of the proportion accounted for by government and less than three-quarters of the total employment in wholesale and retail trade.

The composition of Yuma County's service industry has been somewhat more affected by tourist activity. In the first quarter of 1967, approximately 20 percent of the county's service workers were employed in the lodging industry. Less than 20 percent of the service firms, however, were in this category. Despite the presence of a few larger hotels and motels, more than half of such establishments employed fewer than four persons. Only one had as many as 100 workers.

Medical and health services are of far greater significance in the Yuma County economy than those activities directly serving the tourist. In the first quarter of 1967, the largest service firm in the county was the hospital at Yuma, with more than 250 employees. All employment in medical and health services was almost 30 percent of total services employment.

Finance, Insurance, and Real Estate

Financial, real estate, and insurance businesses account for a relatively minor proportion of the economic activity of Yuma County. In 1967 the 500 persons involved in such operations comprised only two percent of the county's total employment. About half of these were engaged in banking and similar financial activities. In the first quarter of 1967, more than two-thirds of the 70 firms involved in finance, insurance, or real estate operations in the county employed fewer than four persons. Two banks, however, employed more than 50 persons each.

Public Utilities

Public utilities, including rail, air, and motor transportation, have been a substantial and growing factor in the economy of Yuma County since the mid-1950's. In 1967 transportation and other public utilities employed more than a thousand persons and accounted for more than four percent of the county's work force. This share was greater than that attributable to any other industrial activity. Expansion in communications and trucking have been responsible for most of the growth in this sector of the county's economy.

Construction

The moderate, steady growth in the Yuma County economy over the past decade has been reflected in a similar pattern of growth in the county's construction industry. A lack of spectacular expansion has allowed the region's construction activity to remain relatively steady, with no serious booms or depressions since the late 1950's. In the first quarter of 1967, contract construction firms in Yuma County in fact employed somewhat fewer persons than in 1956, although the value of construction work performed was almost 50

Table 22

**AUTOMOBILES AND BUSES
ENTERING ARIZONA AT YUMA**

Month	Number of Vehicles						1966	1967	1968	1969
	1960	1961	1962	1963	1964	1965				
January	44,151	44,617	58,857	72,007	84,931	83,326	89,371	81,997	123,760	103,255
February	42,179	49,208	67,570	68,587	76,986	87,305	82,598	74,986	117,203	118,699
March	42,016	45,870	66,163	68,599	75,792	92,962	78,338	81,997	99,830	128,617
April	40,804	37,512	66,885	68,107	71,868	110,531	83,128	72,502	85,983	113,491
May	37,790	36,900	52,999	60,668	69,675	99,286	74,045	83,842	71,281	107,402
June	41,115	37,851	67,948	70,989	70,173	113,803	82,738	100,240	98,623	120,507
July	43,863	45,238	63,350	67,536	77,132	101,331	97,537	90,599	107,759	120,928
August	45,601	49,147	70,940	80,541	88,429	116,635	90,072	78,807	127,072	130,161
September	36,467	42,395	60,075	54,879	72,668	66,761	81,636	81,598	96,536	92,425
October	35,352	37,190	63,778	54,637	70,687	83,004	79,601	84,024	99,818	99,931
November	39,836	31,633	71,133	74,206	66,254	78,310	86,248	88,706	105,666	121,141
December	53,796	108,773	88,161	95,772	86,788	95,227	96,891	116,624	123,223	110,545
Total	502,970	556,334	797,859	836,528	911,383	1,118,481	1,022,203	1,035,922	1,256,754	1,367,102

Source of Data: Arizona Commission of Agriculture and Horticulture.

percent greater. This increase in contracting sales in the face of declining employment is partly accounted for by inflation and partly by the shift from residential construction to commercial building and non-building construction.

Table 23
UTILITIES AND COMMUNICATIONS SALES
IN YUMA COUNTY

Fiscal Year Ending June 30	Utilities	Communications	Total
1959	\$ 4,544,033	\$1,479,291	\$ 6,023,324
1960	5,970,716	3,711,939	9,682,655
1961	6,754,494	1,702,721	8,457,215
1962	7,431,550	1,951,277	9,382,827
1963	7,919,917	1,969,776	9,889,693
1964	7,459,844	2,194,129	9,653,973
1965	7,948,397	2,318,425	10,266,822
1966	8,075,754	2,521,419	10,597,173
1967	9,057,263	2,815,956	11,873,219
1968	9,365,110	2,802,442	12,167,552
1969	10,110,615	3,347,193	13,457,808

Source of Data: State Tax Commission of Arizona, *Biennial and Annual Reports*, various issues, 1960-1969.

THE ECONOMY OF SOUTHWESTERN MARICOPA COUNTY

The Greater Phoenix Area dominates the economy of Maricopa County, and in fact, the Bureau of the Census considers the Phoenix Standard Metropolitan Statistical Area and Maricopa County to be identical. With almost 99 percent of the county's population living in the densely settled area east of Buckeye (see Figure 24), the Phoenix urban area does account for almost all of Maricopa County's economic activity. Nevertheless, the southwestern portion of Maricopa County has its own distinct economic structure, although it is strongly influenced by the Greater Phoenix Area.

The economy of Southwestern Maricopa County is small and based primarily on travel, agriculture, and national defense. The focal point of the area's economy is the town of Gila Bend with a current population of about 2,500. Since the early 1960's, the number of residents in the community has increased more than 40 percent, largely as the result of stepped-up activity at the nearby Air Force base.

The Air Force is today a major factor in the economy of Southwestern Maricopa County, with an auxiliary air base just south of Gila Bend employing significant numbers of both military and civilian personnel. The local economy at Gila Bend, however, is more firmly planted in its position with respect to major transportation routes. The town is located at the junction of Interstate 8 (and 10), the main highway between Tucson (and points east) and Yuma (and points west), and U.S. Route 80, the main highway from Phoenix to Yuma. In addition, Arizona State Route 85 extends southward from Gila Bend to Ajo, Mexico, and the Gulf of California, providing the shortest route between Phoenix and the sea. But the east-west traffic through Gila Bend provides the principal market for the community's tourist services. This traffic has grown significantly since the early 1960's, as shown in Table 24.

Even before the advent of the interstate highway system, Gila Bend and nearby areas of Southwestern Maricopa County were the site of intensive agricultural activity. Today, approximately 90,000 acres of irrigated cropland are under cultivation immediately north and west of Gila Bend along the valley of the Gila River. The principal crops raised in the area include cotton, melons, winter vegetables, and grain. In recent years, cattle feeding operations have also become important along the route of the Southern Pacific Railroad, west of Gila Bend.

The rest of Maricopa County is larger, far more economically diversified, and much more removed than its southwestern corner from Organ Pipe Cactus National Monument. Consequently, the economic impact of Organ Pipe Cactus National Monument upon the entire economy of Maricopa County is relatively slight. The converse is not true, however. The Phoenix Metropolitan Area is the largest metropolitan area in Arizona and it is less than half a day's drive from the Monument. With a population of actual and potential Monument visitors approaching one million, who are less than four hours away, the economic activity of the entire county is definitely relevant to activity at Organ Pipe Cactus National Monument.

THE ECONOMY OF NORTHWESTERN SONORA

The northwestern part of the Mexican state of Sonora is a rather sparsely settled region lying between the United States border and the Gulf of California. Its economic base is primarily agricultural, including some crop raising as well as more widespread cattle ranching. The region contains no major population centers other than San Luis, Rio Colorado, and Nogales, a city of about 60,000 located adjacent to the Arizona border and forming a single metropolitan community with the city of Nogales, Arizona, which itself has

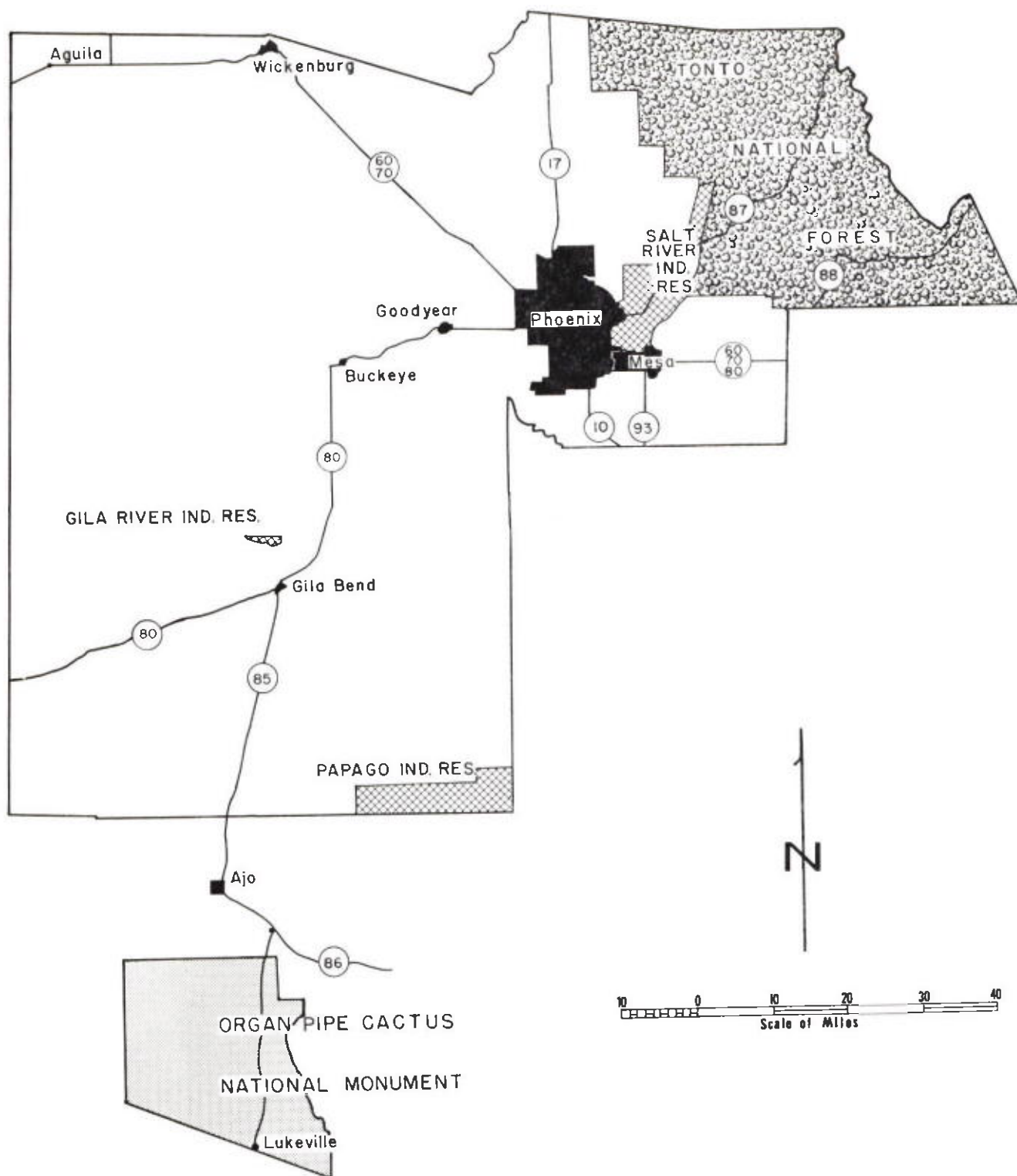


Fig. 24 - Maricopa County, Arizona, site of the Phoenix urban area, exerts a strong influence on visitor activity at Organ Pipe Cactus National Monument.

a population of about 15,000. Even Ambos Nogales, as the twin cities are called locally, is not really a part of Northwestern Sonora, however, but is rather the northern terminus of the central economic core of Sonora that extends southward from Nogales through Hermosillo, the state capital, to Guaymas on the Pacific Coast and on into the states of Sinaloa and Nayarit. Similarly, San Luis is more closely linked to the Mexicali Valley region of the state of Baja California to the west.

The northwestern part of Sonora immediately adjacent to Organ Pipe Cactus National Monument is included in the *Municipio* (township) of *Puerto Peñasco*. The *Municipio* contains two population centers, one at Sonoyta, just a mile or so south of Lukeville, near the border, and the other at *Puerto Peñasco* on the Gulf of California. The latter is the seat of local government.

The principal economic bases for the town of Sonoyta are its proximity to the border and a limited amount of agriculture dependent upon the waters of the Rio Sonoyta. Tourism is extremely important in Sonoyta, but it is not solely the tourism created by Arizonans travelling back and forth between the United States and the Gulf of California.

Table 24
HIGHWAY TRAVEL IN WESTERN MARICOPA COUNTY

Average Daily Traffic on Interstate 8 at Gila Bend (number of vehicles)									
Month	1961	1962	1963	1964	1965	1966	1967	1968	1969
January	3,280	3,633	3,751	4,039	4,198	4,382	4,634	3,909	4,169
February	3,144	3,515	3,592	3,958	4,212	4,373	4,606	3,893	4,287
March	3,226	3,318	3,514	3,834	4,005	4,237	4,526	3,834	4,147
April	3,102	3,354	3,632	3,831	4,053	4,294	4,473	4,093	3,946
May	2,941	3,027	3,068	3,325	3,501	3,725	3,943	3,672	3,837
June	3,583	3,992	4,021	4,240	4,497	4,798	5,098	4,718	4,861
July	3,898	4,100	4,309	4,566	4,820	5,115	5,433	4,433	4,988
August	3,593	3,823	4,096	4,306	4,537	4,807	4,989	4,825	5,172
September	3,260	3,409	3,753	3,936	4,111	4,320	3,971	3,933	3,867
October	3,037	2,967	3,072	3,292	3,506	3,713	3,554	3,750	3,878
November	3,204	3,346	3,641	3,900	4,136	4,363	3,857	4,020	4,353
December	4,017	3,962	4,321	4,676	4,964	5,282	4,762	4,719	5,013

Source of Data: Arizona Highway Department, *Arizona Traffic*, various issues, 1961-1969.

Nor is Sonoyta's tourism particularly dependent upon the short visits of campers at Organ Pipe Cactus National Monument. Of at least equal (and probably greater) importance to Sonoyta's tourist industry is the town's position on the major Mexican highway between the large population centers of Baja California (Tijuana and Mexicali) and interior Mexico. This highway parallels the international border west of Sonoyta along the route of the old *Camino del Diablo*. East of Sonoyta it turns southward into the more populated agricultural areas of Northern Sonora.

The economy of the town of *Puerto Peñasco* is based on fishing and tourism. Most of the tourists in the area are residents of or visitors to Central or Southern Arizona who take advantage of *Puerto Peñasco's* relatively close position on the Gulf of California. The community is only half as distant from Phoenix or Tucson as is the Pacific Coast of Southern California. In addition, the economy of the Sonoran port is helped by some shrimp harvesting and other fishing activity.

Table 25
BUSINESS ACTIVITY IN MARICOPA COUNTY

Index of Business Activity (1960 average = 100)								
Month	1962	1963	1964	1965	1966	1967	1968	1969
January	119	106	129	128	139	137	165	185
February	110	133	130	128	138	157	157	188
March	111	116	124	132	146	146	165	191
April	112	121	132	128	144	150	154	204
May	121	124	131	132	144	151	174	211
June	107	111	119	125	144	142	171	198
July	106	118	127	119	139	140	167	195
August	106	111	120	124	138	149	166	203
September	108	117	121	124	143	148	174	202
October	110	85	124	134	147	147	182	204
November	113	142	129	138	149	159	181	220
December	129	142	144	146	160	170	198	244
Average	113	119	128	130	144	150	171	204

Source of Data: Division of Economic and Business Research, The University of Arizona.

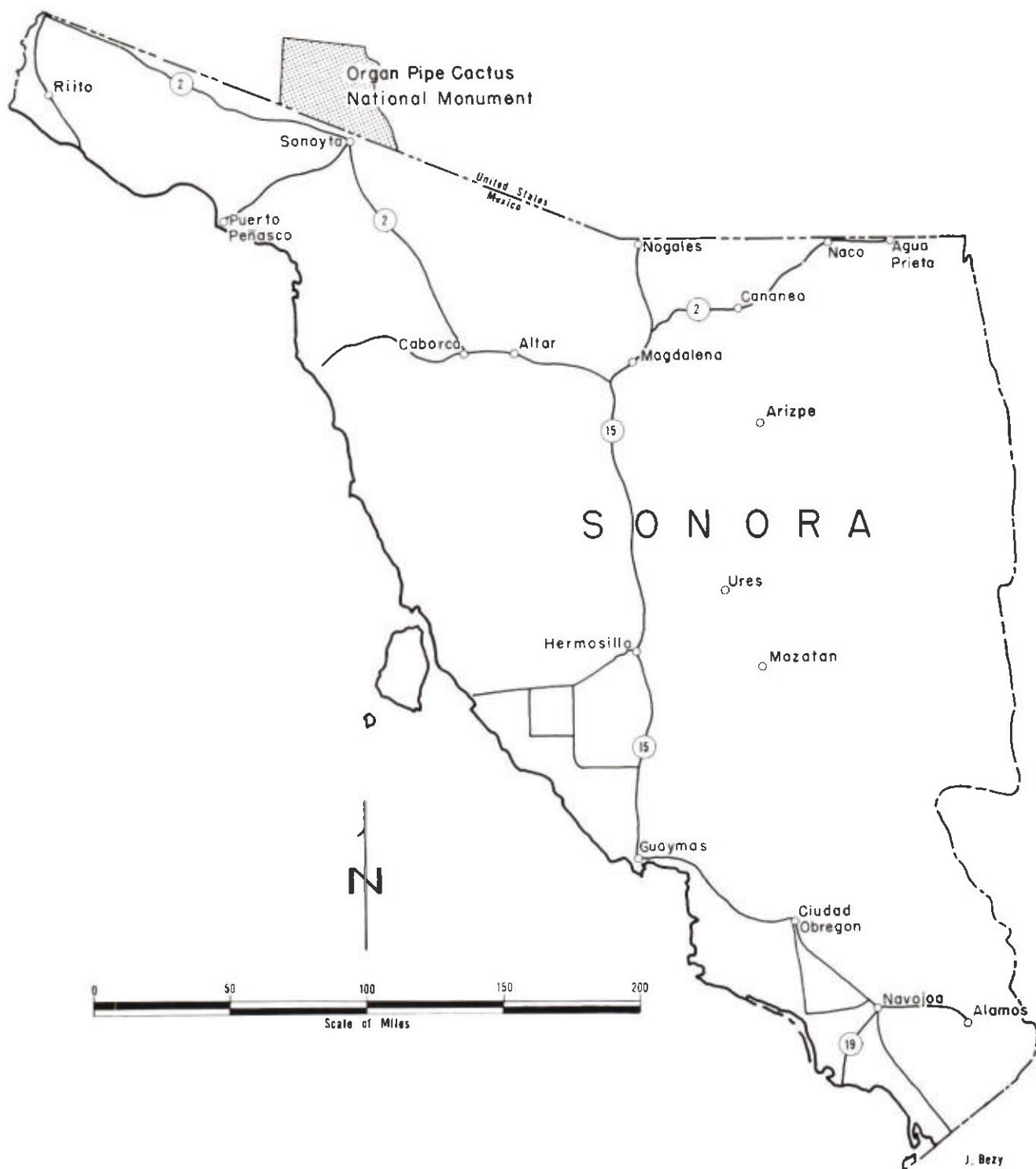


Fig. 25 - The seacoast town of Puerto Penasco in the northwestern part of Sonora, Mexico, exerts a strong influence on tourist travel through Organ Pipe Cactus National Monument.

The Gulf of California has been the primary factor in making Northwestern Sonora important in the tourism and recreation picture of the Southwestern United States. As shown by Table 26, the number of persons crossing the Mexican border through the *Municipio* of *Puerto Peñasco* has climbed from a little more than 200,000 in 1963 to almost 400,000 by 1967. Although there has been some commercial traffic in agricultural, marine, and mineral products across the border at Lukeville, most of these persons have been tourists. Even greater increases in border travel have occurred at Nogales and San Luis, Rio Colorado. At the latter crossing, the number of visitors going beyond Northwestern Sonora into interior Mexico has also shown a substantial increase since 1963. (See Table 28)

TABLE 26
BORDER CROSSINGS AT LUKEVILLE, ARIZONA

Month	Persons Entering the United States						
	1963	1964	1965	1966	1967	1968	1969
January	15,500	13,900	21,900	20,900	31,700	33,231	35,457
February	18,300	14,500	20,900	33,800	29,200	31,889	35,777
March	19,300	17,200	19,200	31,200	38,300	34,585	35,285
April	19,900	17,600	20,400	32,500	33,100	38,084	41,430
May	15,200	22,400	26,300	35,300	33,000	39,544	41,560
June	19,400	20,200	26,200	26,800	28,000	32,194	31,329
July	21,000	21,700	20,300	27,400	25,300	28,936	30,669
August	19,300	19,700	25,000	28,400	29,700	30,619	30,979
September	18,000	16,400	25,600	27,100	30,600	32,374	31,473
October	17,300	19,800	16,400	31,100	32,400	34,615	27,381
November	13,900	15,900	18,200	34,200	33,600	36,802	31,989
December	17,100	20,900	18,900	33,700	37,900	35,334	37,135
Total	214,200	220,200	259,300	362,500	382,800	408,207	410,464

Source of Data: U.S. Immigration and Naturalization Service.

Table 27

TRAVEL TO INTERIOR MEXICO THROUGH NOGALES^a

Year	Vehicles	Persons
1956	36,043	62,385
1957	39,832	68,640
1958	39,013	67,405
1959	38,891	73,024
1960	35,200	64,556
1961	35,231	62,760
1962	38,999	73,241
1963	42,047	79,665
1964	49,269	87,200
1965	29,827	94,509
1966	54,010	99,885
1967	52,762	97,420
1968	57,804	115,492
1969	62,238	126,928

^aInterior Mexico is defined as any part of Mexico beyond the perimeter of the Nogales free port.

Source of Data: American Automobile Association, *Tourist Traffic to Mexico*, various issues, 1956-1969.

Table 28

**TRAVEL TO INTERIOR MEXICO
THROUGH SAN LUIS RIO COLORADO**

Month	Number of Persons						
	1963	1964	1965	1966	1967	1968	1969
January	808	786	1,492	997	1,084	1,172	1,462
February	851	812	1,117	809	872	1,015	1,218
March	822	NA	1,222	849	1,630	1,244	4,489
April	1,349	811	2,356	1,850	1,017	2,191	1,220
May	523	823	1,269	677	695	1,303	NA
June	644	NA	1,226	947	901	1,694	1,434
July	729	NA	1,325	867	872	1,284	1,240
August	732	840	1,013	856	875	1,565	1,293
September	690	642	815	710	611	1,565	NA
October	647	910	1,059	1,068	1,030	1,147	1,292
November	NA	1,088	1,390	1,279	1,544	1,562	1,678
December	NA	NA	2,214	2,278	2,299	3,251	3,608
Total	7,795	6,712	16,498	13,187	13,430	18,993	18,934

Source of Data: American Automobile Association from official Mexican sources.

FIGURE 26

TRAVEL TO INTERIOR MEXICO THROUGH NOGALES

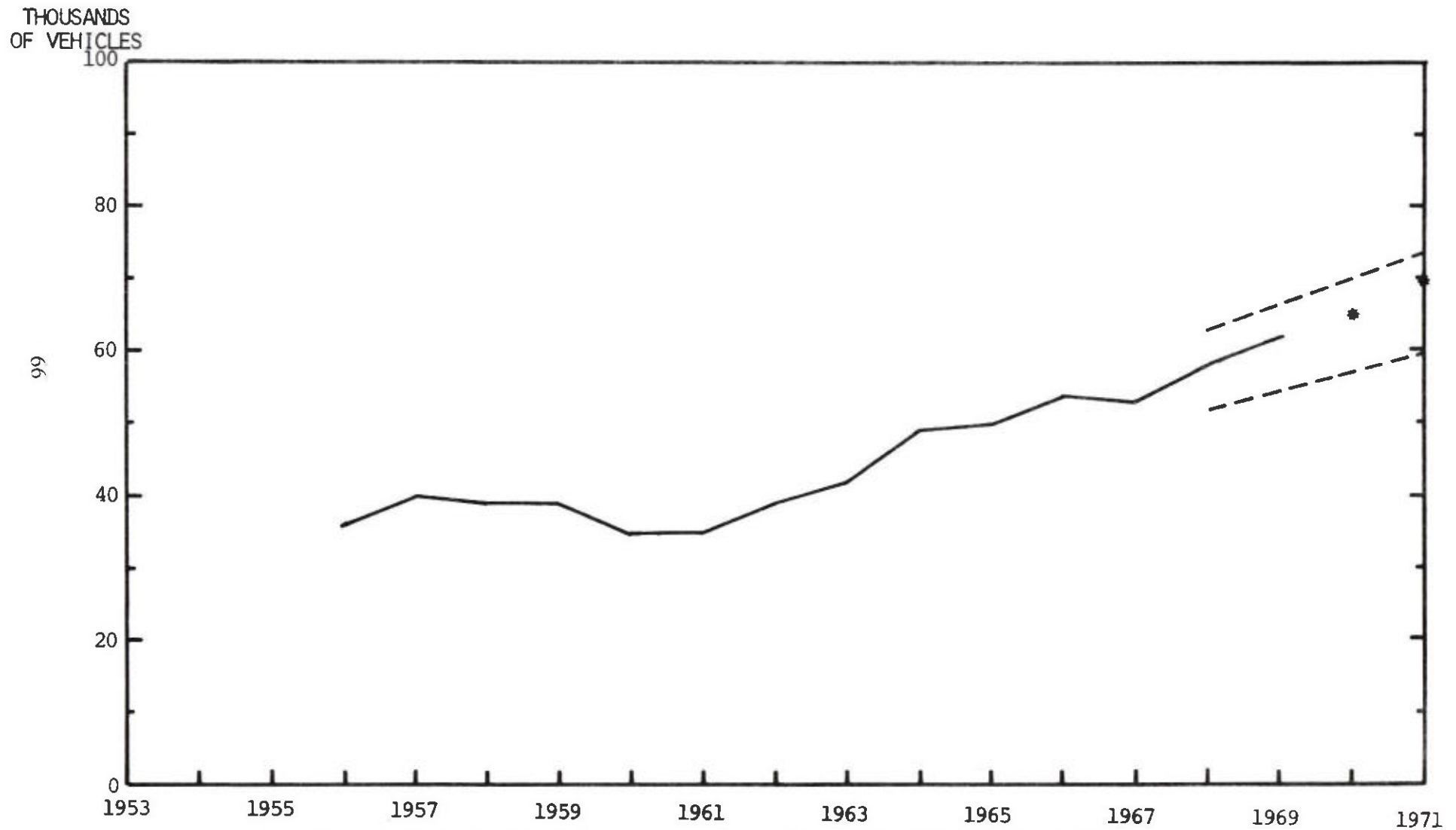


Fig. 26 - Travel to interior Mexico through Nogales in nearby Santa Cruz County has risen substantially since the early 1960's. Similar travel through Sonoyta, just south of Organ Pipe Cactus National Monument has also increased.

OTHER RELATED ECONOMIES

There are several areas of the Southwestern United States, other than those immediately adjacent to Organ Pipe Cactus National Monument, whose local economies have an influence upon the Monument and are in turn affected by it. The most notable of these more distant but related economies is that of Mohave County, Arizona. Mohave County is situated just north of Yuma County along the Colorado River, and in effect forms the northwestern corner of Arizona. The county's economy is based primarily on mining and tourism with some manufacturing and agriculture also contributing to local economic health.

Since the early 1960's, Mohave County has experienced the highest percentage rate of economic growth in Arizona. The boom has been the result, primarily, of new developments in copper mining, coupled with the construction of a retirement community along the

Table 29

BUSINESS ACTIVITY IN MOHAVE COUNTY 1962 - 1969

Month	Index of Business Activity (1960 average = 100)							
	1962	1963	1964	1965	1966	1967	1968	1969
January	119	87	163	214	314	307	258	541
February	141	165	169	219	339	351	379	544
March	140	138	179	199	372	460	857	705
April	142	177	193	216	361	399	413	567
May	159	177	246	310	369	457	477	662
June	154	175	312	301	370	560	550	672
July	150	247	254	369	396	532	542	684
August	141	218	220	328	386	471	506	717
September	134	171	254	319	389	490	574	677
October	117	158	224	329	370	434	578	669
November	105	170	211	376	340	548	589	668
December	135	170	252	356	350	498	495	658
Average	136	171	223	295	363	459	518	647

Source of Data: Division of Economic and Business Research, The University of Arizona.

Table 30

**VISITS TO LAKE MEAD NATIONAL RECREATION AREA
1956-1962**

Total Recreational Visitors							
Month	1956	1957	1958	1959	1960	1961	1962
January	125,717	148,186	191,102	191,297	83,078	113,100	118,215
February	153,628	177,004	211,578	192,067	112,358	155,260	153,810
March	210,234	226,821	241,120	296,191	173,289	199,260	187,010
April	213,522	242,691	332,788	314,963	258,880	248,945	314,595
May	239,128	265,914	322,178	350,701	266,517	239,160	235,680
June	314,041	337,093	317,183	353,800	283,808	265,265	253,516
July	319,168	376,160	357,692	373,356	262,088	210,215	287,869
August	330,564	387,195	356,728	373,778	193,412	198,470	312,155
September	193,708	247,632	269,068	285,696	179,353	179,800	257,465
October	216,652	237,596	230,630	295,330	156,395	166,435	203,605
November	186,602	161,174	183,765	201,787	192,035	136,505	200,350
December	169,810	147,791	176,748	161,608	92,970	107,545	164,475
Total	2,672,774	2,955,257	3,190,580	3,390,574	2,254,183	2,219,960	2,688,745

Colorado River at Lake Havasu. Overall economic activity has risen almost four times since 1962. (See Table 29.)

Mohave County's tourist activity is of two types. One involves through travellers using U.S. Route 66 between the Los Angeles Metropolitan Area and points east as well as travellers on U.S. Route 93 between Phoenix and Las Vegas, Nevada. The county's other tourist activity involves the Colorado River and the lakes formed by Hoover, Davis, and Parker Dams. Two of these lakes, Lake Mohave and Lake Mead, are within the Lake Mead National Recreation Area. It is the Colorado River tourism that is most closely related to activity at Organ Pipe Cactus National Monument.

To the east of the Monument the economy of Santa Cruz County, Arizona, is also related to activity at Organ Pipe. Santa Cruz County's economy is based largely on tourism and international trade. Much of the county's tourist activity is dependent upon factors similar to those existing in Western Pima County. Travel to Mexico is an important part of tourism in Santa Cruz County, but the area has some facilities (e.g., the Coronado National Forest, Tumacacori Mission National Monument) that are themselves tourist attractions. The county's visitor activity is also heavily influenced by the nearness of the Tucson and Phoenix Metropolitan Areas.

Table 30 (Continued)

**VISITS TO LAKE MEAD NATIONAL RECREATION AREA
1963-1969**

Month	Total Recreational Visitors						
	1963	1964	1965	1966	1967	1968	1969
January	157,233	195,750	202,505	186,530	200,645	232,005	273,135
February	237,300	213,350	242,260	211,815	294,570	338,690	333,950
March	261,240	298,485	264,930	293,200	430,755	381,105	368,000
April	371,580	307,365	363,600	505,795	358,195	549,625	704,600
May	371,900	379,230	381,170	385,825	394,195	474,890	489,160
June	418,125	393,185	429,390	461,915	529,292	582,910	603,780
July	351,085	389,460	391,185	366,525	385,860	509,855	600,360
August	335,610	364,380	381,755	301,480	325,045	390,710	534,335
September	247,790	307,600	313,250	290,695	367,480	403,215	426,015
October	208,195	236,305	256,865	304,315	328,740	337,475	405,510
November	205,885	206,155	216,100	269,455	320,810	301,220	462,290
December	183,600	171,315	151,055	179,175	166,750	250,095	413,805
Total	3,349,543	3,462,580	3,594,065	3,756,725	4,102,337	4,751,795	5,614,940

Source of Data: U.S. National Park Service, *Monthly Public Use Report, Lake Mead National Recreation Area*, various issues, 1956-1969.

The remaining major area within the Southwest that is related economically to Organ Pipe Cactus National Monument is Southern California. Los Angeles, San Diego, and other metropolitan areas of Southern California provide an enormous pool of actual and potential visitors to the Monument. Most of the millions of people living in Southern California are only a day's drive from the Monument. Furthermore, tourist attractions and facilities located in Southern California serve to draw tourists to the Southwest from other parts of the continent. Many of these spend time in Southern Arizona before or after visiting Southern California and thus become actual or potential visitors at Organ Pipe Cactus National Monument.

Table 31

**BUSINESS ACTIVITY IN SANTA CRUZ COUNTY
1962-1969**

Month	Index of Business Activity (1960 average = 100)							
	1962	1963	1964	1965	1966	1967	1968	1969
January	125	105	147	149	122	194	198	129
February	96	140	119	129	131	143	144	115
March	101	89	104	109	118	132	145	122
April	117	114	126	136	166	166	139	147
May	118	109	117	162	129	144	162	134
June	99	111	115	126	108	148	170	129
July	112	124	120	123	139	144	138	117
August	105	109	116	125	128	143	139	117
September	101	113	110	115	130	142	151	118
October	108	75	114	125	126	142	150	121
November	110	128	235	160	137	148	169	142
December	157	144	164	205	181	210	188	153
Average	112	113	132	139	135	155	158	129

Source of Data: Division of Economic & Business Research, The University of Arizona.

THE ECONOMIC IMPACT OF ORGAN PIPE CACTUS NATIONAL MONUMENT

Direct Influences

Compared with other federal installations in Southern Arizona, employment and payrolls at Organ Pipe Cactus National Monument have been relatively small. Nevertheless, even the comparatively minor employment at the Monument has more than tripled over the past ten years. In 1957 the Monument had six permanent employees and one temporary employee. By 1963, the number of permanent personnel had more than doubled to 13, but since then the increase has been slight. In 1968 the Monument had 14 permanent employees.

The increase in temporary personnel at Organ Pipe Cactus National Monument has been much more substantial. From one person in 1957, there was a sharp increase to 13 temporary personnel employed by the Monument in 1961. The number rose to a high of 28 in 1963, but has since declined to 15 (in 1968). Higher than usual turnover rates among temporary personnel were responsible for most of the increase. Total employment at the Monument thus went from seven in 1957 to a high of 41 in 1963, but it has since dropped to a level slightly under 30, approximately half of whom are permanent personnel.

The size of payrolls, rather than the number of total permanent or temporary employees, is a far better measure of the direct influence on the local economy of employment by the National Park Service at Organ Pipe Cactus National Monument. The increase in the Monument's total annual payroll since the late 1960's has been proportionally far less than the increase in total employment. This reflects the increasing importance of temporary and part-time personnel in the work of the unit. In 1957 the total annual payroll at the Monument was just a little over \$100,000. This has risen steadily, to almost \$139,000 in 1968, representing an increase of less than 40 percent.

Organ Pipe Cactus National Monument has had direct effects on the local economy other than through its employees. The National Park Service is itself a purchaser of local goods and services in addition to being an employer. In Fiscal 1968, local purchases totalling more than \$27,000 were made for the Monument. Over the past three years, such local purchases have averaged more than \$25,000 per year. All of this has been spent in Pima or Maricopa Counties.

The construction of major facilities at Organ Pipe Cactus National Monument also has had a significant, if brief, impact upon local economic activity. The most recent of such projects, the construction of a 208-space campground with related roads, sanitary facilities, and potable water system added nearly \$300,000 to the local economy in payments for construction labor and materials. Even if special large construction projects are excluded, however, the total direct economic impact of Organ Pipe Cactus National Monument currently is approximately \$170,000 per year in payrolls and local purchases of goods and services. The indirect effects of the Monument are much greater.

Monument Visitors

Organ Pipe Cactus National Monument is one of the Primary tourist attractions in Southern Arizona, and the total number of visits to the Monument has reflected that importance. In 1954, there were approximately 200,000 visits to the Monument. By 1968, this had grown to nearly 375,000, an increase of about 90 percent. A large increase came in the mid-1950's when total annual visits at the Monument climbed to over 263,000. This was followed by a decline in the late 1950's and then a resurgence starting about 1962.

Highway traffic on Arizona State Route 85, between Ajo and the Mexican border, forms

FEDERAL EMPLOYMENT AT ORGAN PIPE CACTUS NATIONAL MONUMENT

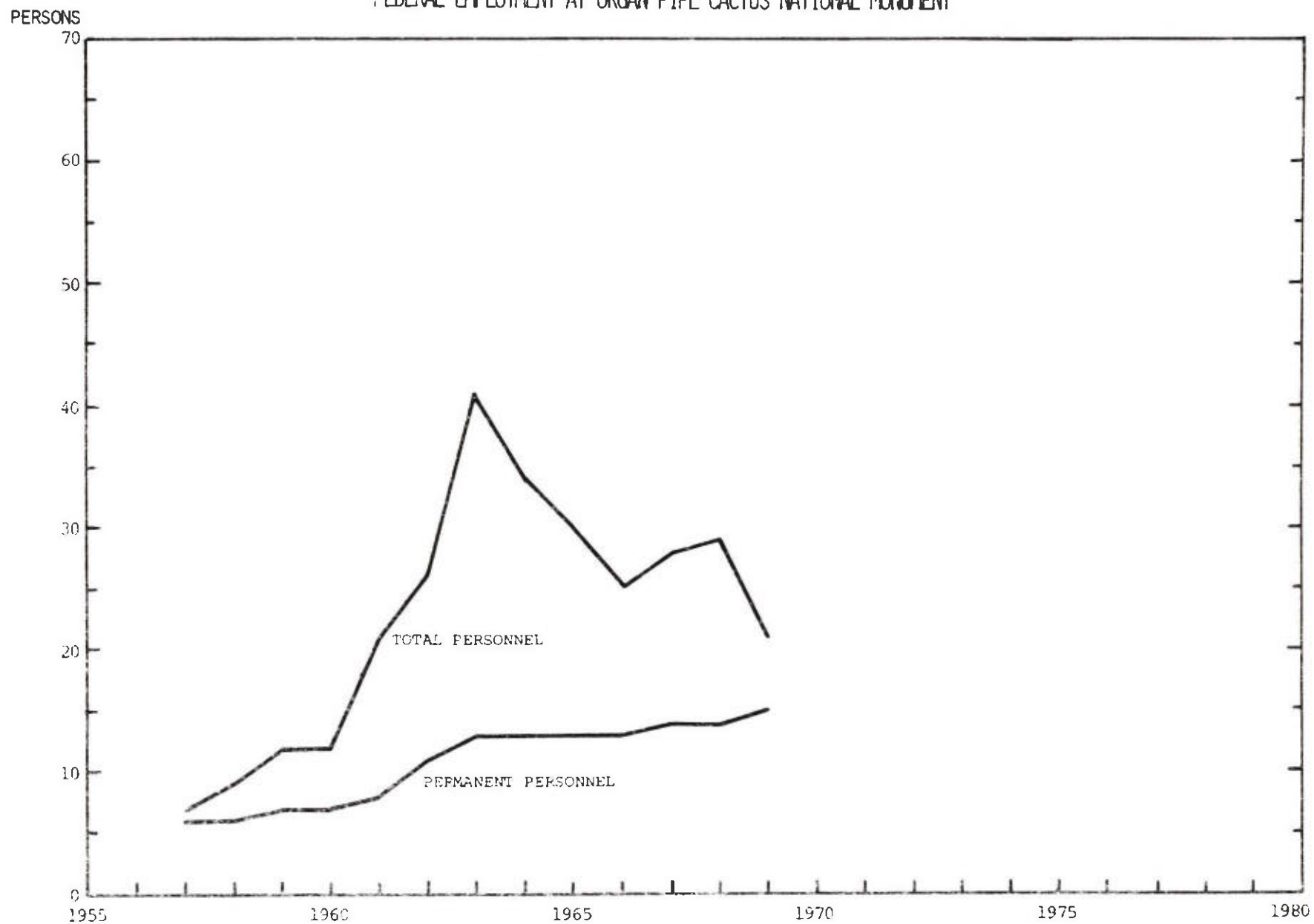


Fig. 27 - Federal employment at Organ Pipe Cactus National Monument in recent years has been only slightly greater than in the late 1950's.

a substantial part of total visit counts at Organ Pipe Cactus National Monument. As a result, the increase in *total visits* can be somewhat misleading as an indicator of the importance of Organ Pipe Cactus National Monument as a tourist attraction. Many of those recorded in the total visit count are merely highway travellers going through the area and would probably be using the highway regardless of whether or not the Monument existed as a unit of the National Park Service.

Table 32

**FEDERAL EMPLOYMENT AT
ORGAN PIPE CACTUS NATIONAL MONUMENT**

Year^a	Persons Employed		Total
	Permanent Personnel	Temporary^b Personnel	
1957	6	1	7
1958	6	3	9
1959	7	5	12
1960	7	5	12
1961	8	13	21
1962	11	15	26
1963	13	28	41
1964	13	21	34
1965	13	17	30
1966	13	12	25
1967	14	14	28
1968	14	15	29
1969	15	11	26

^aFiscal year ending June 30.

^bNumbers of individuals employed within the year. High numbers in early 1960's reflect an unusually high turnover rate for temporary personnel. Fulltime equivalents would be much less.

Source of Data: U.S. National Park Service.

A far better measure of the Monument's importance as a tourist attraction is the count of overnight visits. In 1954, nearly 9,000 overnight visits were made at Organ Pipe Cactus National Monument. This has increased steadily (with only slight exceptions in the early 1960's) to a level of more than 100,000 in 1969, representing a more than eleven fold increase. The decrease during the late 1950's corresponded with the economic recession in the nation, but the gains in the early 1960's ran contrary to the pattern of local recession in the Tucson Metropolitan Area.

The relative importance of different types of visits are shown in Table 35. *Overnight visits* are those involving the use of the developed campground. *Day-use visits* are those which involve use of the visitor center and/or loop roads, but no overnight facilities. *Through traveller visits* are entries by persons travelling through the Monument on State Route 85. In 1969, almost 75 percent of the total visitor days at Organ Pipe Cactus National Monument were of the through traveller variety. Recreational visitor days (both day and overnight) alone, however, totalled more than 27,000.

Table 33

**FEDERAL PAYROLLS AT
ORGAN PIPE CACTUS NATIONAL MONUMENT
1957-1969**

Year	Total Annual Payroll ^a
1957	\$100,400
1958	102,300
1959	104,200
1960	106,200
1961	106,200
1962	110,200
1963	110,400
1964	114,400
1965	116,500
1966	118,700
1967	123,200
1968	138,900
1969	144,600

^aRounded to the nearest hundred dollars.

Source of Data: National Park Service, Southwest Region.

Although the growth in the number of visits at Organ Pipe Cactus National Monument has been substantial since the early 1950's, the total visit count and the overnight visit count are both highly seasonal in nature. The importance of regular highway travellers using the road through the Monument is reflected in the dampened seasonality of the total visitor count. As shown by Table 36, seasonal variation in total visits at Organ Pipe Cactus National Monument has caused total monthly visits over the past four years to range from a low of 65 percent of the monthly average (during September) to a high of 135 percent (in March). Visitor counts for March, April, and May have been consistently above the monthly average, while the figures for July, August, and September have been consistently low. This is what would be expected during the hot weather season in that part of the country. Because of the prolonged labor dispute at the Ajo operations of the Phelps Dodge Corporation in the latter

Table 34

VISITS AT ORGAN PIPE CACTUS NATIONAL MONUMENT

Year	Number of Visits	
	All Visits	Overnight Visits
1954	198,670	8,840
1955	205,895	11,154
1956	263,296	12,255
1957	163,383	16,126
1958	247,448	24,788
1959	258,117	34,021
1960	262,062	31,094
1961	246,420	26,894
1962	290,051	35,084
1963	329,844	40,980
1964	324,700	52,765
1965	362,837	56,660
1966	293,402	58,052
1967	340,693	74,358
1968	374,844	87,691
1969	332,965	102,285

Source of Data: U.S. National Park Service, *Monthly Visitor Use Reports, Organ Pipe Cactus National Monument*, various issues, 1954 - 1968.

part of 1967 and early 1968, however, it is probable that the 1966 and 1969 seasonal variations are more typical of the "normal" seasonal pattern in total visits than either the 1967 or 1968 counts. Even in 1966, however, high traffic on Arizona State Route 85 during June and July appeared to upset the "normal" seasonal variation in the total visitor count.

A better indication of the seasonal variation in tourist travel for those considering Organ Pipe Cactus National Monument as an attraction in and of itself is shown in Table 37. These figures indicate the variation on a monthly basis for 1966, 1967, 1968, and 1969 of total overnight visits by persons in trailers at designated campsites. The variation in this type of visitor traffic is extremely strong with little or no such visitors during the months of July and August, only slight numbers during June and September, and extremely heavy visitation during late winter and early spring.

Table 35
NATURE OF VISITS
AT ORGAN PIPE CACTUS NATIONAL MONUMENT
1968

Month	Overnight Visitors	Visitor Days Accounted for By:		Total
		Day-Use Only Visitors	Through Travelers	
January	12,774	2,035	721	15,530
February	11,805	2,620	681	15,106
March	16,914	3,402	1,040	21,356
April	11,025	3,614	1,197	15,836
May	2,624	889	830	4,343
June	585	432	811	1,828
July	326	265	619	1,210
August	149	442	689	1,278
September	276	189	489	951
October	2,576	676	589	3,841
November	9,455	1,379	815	11,649
December	10,461	2,003	1,338	13,802
Total	78,970	17,946	9,814	106,730

Source of Data: U.S. National Park Service, *Monthly Visitor Use Report, Organ Pipe Cactus National Monument*, various issues, January-December 1969.

Overnight Visitor Characteristics

The increases in the total volume and the pattern of seasonal variation in overnight visits at Organ Pipe Cactus National Monument are shown in Tables 37 and 38. The number of overnight visits has increased substantially since the mid-1950's. The seasonal variation in such visits is extreme, with virtually all overnight visits made during the winter months and almost none during the months of June, July, August, and September.

Those who visit Organ Pipe Cactus National Monument for overnight stays are mostly couples. Only six percent of the Monument's overnight visitor parties during the 1967-68 season were single individuals, while 76 percent were composed of two persons. Large families have been even less common at Organ Pipe Cactus National Monument than single individuals. Groups of five or more persons comprised only seven percent of the parties visiting the Monument overnight during the 1967-68 season. There also seems to have been some variation in the size of party on a seasonal basis, with the proportion of couples (i.e.,

Table 36

SEASONAL VARIATION IN TOTAL VISITS AT ORGAN PIPE CACTUS NATIONAL MONUMENT

Month	1966	1967	Total Visits		Total	Average	Percent of Monthly Average ^a
			1968	1969			
January	27,671	23,164	28,589	27,114	106,538	26,635	95.3
February	27,377	24,398	30,851	27,092	109,718	27,430	98.1
March	24,024	44,026	42,990	40,260	151,300	37,825	135.3
April	21,494	32,099	51,186	44,864	149,643	37,411	133.8
May	27,773	31,279	33,113	29,342	121,507	30,377	108.7
June	26,259	32,987	31,012	28,057	118,315	29,579	105.8
July	25,106	30,165	36,170	21,376	112,817	28,204	100.9
August	19,771	24,355	20,179	23,558	87,863	21,966	78.6
September	18,414	19,537	17,692	16,595	72,238	18,060	64.6
October	21,619	23,778	23,778	21,364	90,539	22,635	80.1
November	27,637	23,597	33,469	26,676	111,379	27,845	99.6
December	26,257	31,308	25,815	26,667	110,047	27,512	98.4
Total	293,402	340,693	374,844	332,965	1,341,904	335,479	

^aMonthly average for the entire four year period is 27,957.

Source of Data: U.S. National Park Service, *Monthly Visitor Use Reports, Organ Pipe Cactus National Monument*, various issues, 1966-1969.

two-person parties) increasing during February and March. (See Table 39.)

Overnight visitors to Organ Pipe Cactus National Monument use a variety of vehicles and equipment for travel to and during their stay at the Monument. The majority, however, use house trailers towed by automobiles or trucks. During the 1967-68 season approximately 53 percent of the overnight visitor parties at Organ Pipe Cactus National Monument used a house trailer for their accommodations, while 29 percent used a camper mounted on a pickup truck. Only 10 percent used tent camping equipment. Approximately four percent used self-propelled camper facilities ranging from the small half-ton vans, outfitted as campers, up to the larger motor-homes. (See Table 40.)

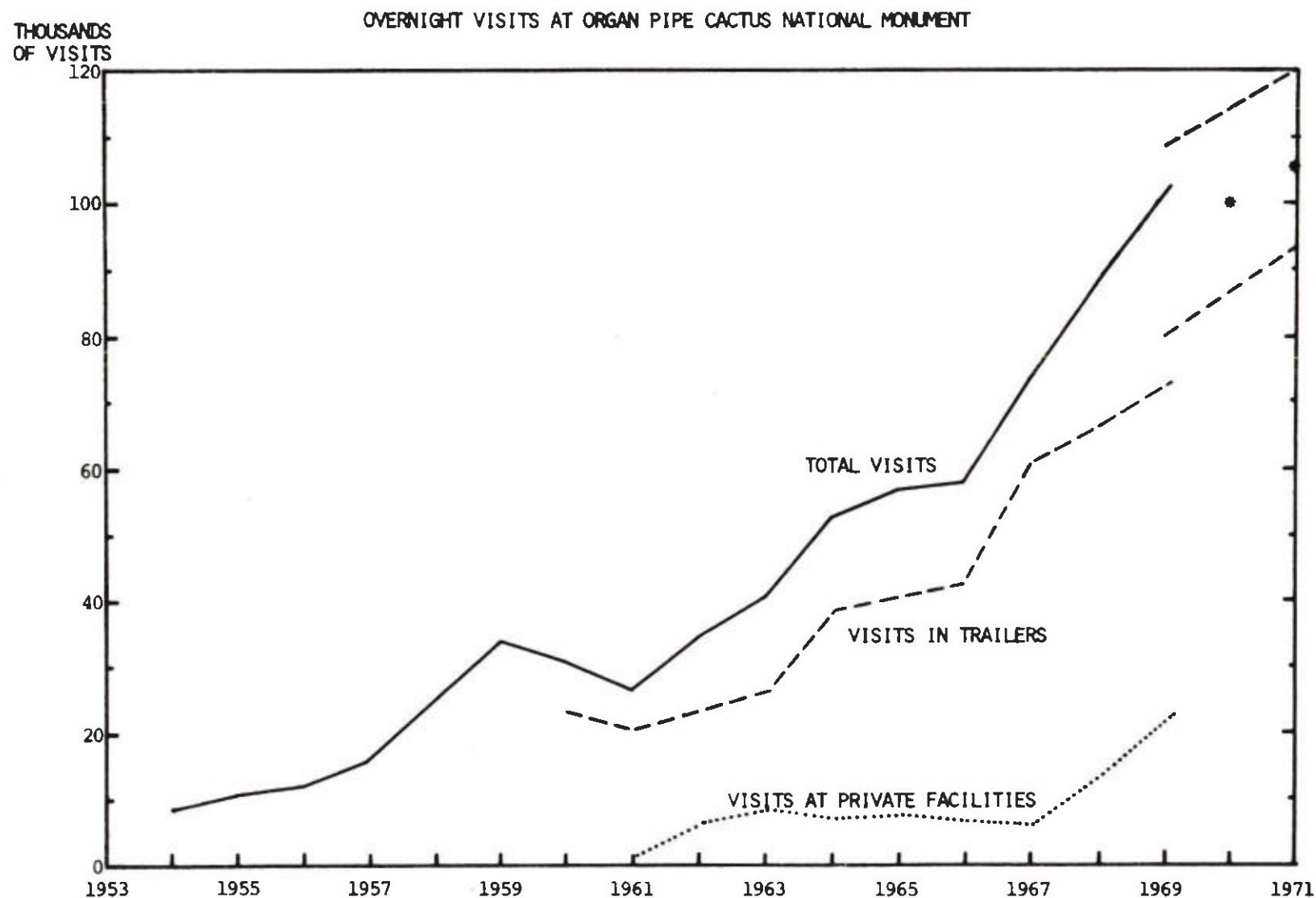
Just as overnight visitors to Organ Pipe Cactus National Monument during the 1967-68 season used a variety of vehicles, they also came from a variety of places. Nearly 60 percent were residents of the Southwest. Most of these (more than a third of the total) were from California, while 18 percent of the total were residents of Arizona. The Midwest and the Northwest produced the second largest groups of overnight visitors during the 1967-68

Table 37

**SEASONAL VARIATION IN TRAILER VISITORS AT
ORGAN PIPE CACTUS NATIONAL MONUMENT**

Month	Total Overnight Visits by Persons in Trailers at Designated Campsites			
	1966	1967	1968	1969
January	6,532	8,940	12,521	12,557
February	6,486	11,203	13,576	11,592
March	6,015	15,278	13,054	16,423
April	6,391	6,038	8,903	9,841
May	965	1,943	1,257	2,047
June	179	359	99	210
July	72	78	89	60
August	75	81	70	29
September	140	193	193	109
October	1,022	1,202	1,109	1,598
November	6,550	6,991	7,067	8,670
December	8,555	8,707	8,726	9,489

Source of Data: U.S. National Park Service, *Monthly Public Use Report, Organ Pipe Cactus National Monument*, various issues, 1966-1969.



SOURCE OF DATA: NATIONAL PARK SERVICE, VISITOR USE REPORTS

Fig. 28 - Overnight visits at Organ Pipe Cactus National Monument have increased sharply since the early 1960's.

season, each with about 15 percent of the total. Washington and Oregon together accounted for almost 12 percent of all overnight parties. The Midwestern visitors came mostly from Michigan and Minnesota, although Illinois, Ohio, Indiana, Iowa, and Wisconsin also provided significant numbers of visitors.

Only a relatively few parties from the northeastern part of the United States visited the Monument during the 1967-68 season, and the only single state supplying significant numbers of visitors from that region was New York. The Northeast as a whole accounted for only about four percent of total overnight visitor parties. There were hardly any visitors at

Table 38

**OVERNIGHT VISITS AT
ORGAN PIPE CACTUS NATIONAL MONUMENT**

Year	Total	Overnight Visits In-Park Trailers	Private Inholdings
1954	8,840	NA	NA
1955	11,154	NA	NA
1956	12,255	NA	NA
1957	16,126	NA	NA
1958	24,788	NA	NA
1959	34,021	NA	NA
1960	31,094	23,468	NA
1961	26,894	20,959	1,327
1962	35,084	23,737	6,598
1963	40,980	26,628	8,758
1964	52,765	39,160	7,291
1965	56,660	41,110	7,857
1966	58,052	42,982	6,948
1967	74,358	61,013	6,556
1968	87,691	66,664	13,230
1969	102,285	72,625	22,480

Source of Data: U.S. National Park Service, *Monthly Public Use Report, Organ Pipe Cactus National Monument*, various issues, 1954-1969.

Table 39

**NUMBER OF PERSONS IN OVERNIGHT VISITOR PARTIES,
ORGAN PIPE CACTUS NATIONAL MONUMENT
(frequency distribution of campground registrations)**

September 1967 - April 1968

Month	Number of Parties by Number of Persons in Party													Not Given	Total	Median
	1	2	3	4	5	6	7	8	9	10	11	12				
September	1	7	—	—	1	—	—	—	—	—	—	—		1	10	2
October	24	161	11	13	3	1	—	—	—	—	—	—	—	6	220	2
November	52	477	35	40	18	24	7	4	—	—	1	—	—	22	680	2
December	44	376	49	48	20	20	4	4	—	1	—	—	—	20	586	2
January	49	714	22	19	9	5	—	—	3	—	1	—	—	1	823	2
February	53	1011	41	37	5	10	3	1	1	—	—	—	—	18	1180	2
March	65	1034	56	56	24	8	2	3	—	—	—	1	1 ^a	46	1296	2
April	41	591	84	106	56	31	12	4	5	—	1	—	—	11	942	2
Total	329	4371	298	319	136	99	28	17	8	1	3	1	1 ^a	125	5737	2
Percent	6	76	5	6	2	2				1				2	100	

^a = 31 persons

Source of Data: Division of Economic and Business Research, The University of Arizona, in cooperation with the National Park Service.

all from the southeastern states or from the south-central states, each region accounting for less than two percent of total overnight parties during the 1967-68 season. Within those two regions, only Florida and Texas were indicated as the residences of significant numbers of visitors at the Monument.

The Pacific States, Alaska and Hawaii, accounted for practically no overnight visitors at all during the 1967-68 season. From outside of the United States, Canada supplied not quite three percent of total overnight visitors at Organ Pipe Cactus National Monument during the 1967-68 season. Somewhat surprisingly, Mexico accounted for almost none.

Of those parties of Arizona residents using the overnight facilities of Organ Pipe Cactus National Monument during the 1967-68 season, more than 80 percent came from the state's two large urban areas. Over half of the total came from the Greater Phoenix Area, while approximately 30 percent came from the Greater Tucson Area. Those sections of the state immediately adjacent to the Monument (Western Pima County, Southwestern Maricopa County, and Yuma County) accounted for only about three percent of all overnight parties of Arizonans at the Monument, and Yuma County accounted for nearly all of these. The rest of Southern Arizona sent very few visitors to the Monument during the 1967-68 season, with only Pinal County and Coconino County providing any consequential numbers. Northern

Table 40

**VEHICLES AND CAMPING EQUIPMENT USED BY OVERNIGHT VISITORS AT
ORGAN PIPE CACTUS NATIONAL MONUMENT**
(frequency distribution from campground registrations)

September 1967 - April 1968

Month	Camper	Tent	Number of Visitor Parties Using					Not Given	Total
			House Trailer	Auto	Van	Motor Home	Other		
September	4	2	3	--	--	--	--	1	10
October	55	50	96	3	4	--	--	12	220
November	179	76	356	10	26	10	--	23	680
December	192	63	297	5	16	4	1	8	586
January	280	47	459	1	14	14	--	8	823
February	346	50	707	7	22	25	--	23	1180
March	338	103	687	17	43	19	2	87	1296
April	259	151	433	15	34	11	1	38	942
Total	1653	542	3038	58	159	83	4	200	5737
Percent	29	10	53	1	3	1	--	3	100

Source of Data; Division of Economic and Business Research, The University of Arizona, in cooperation with the National Park Service.

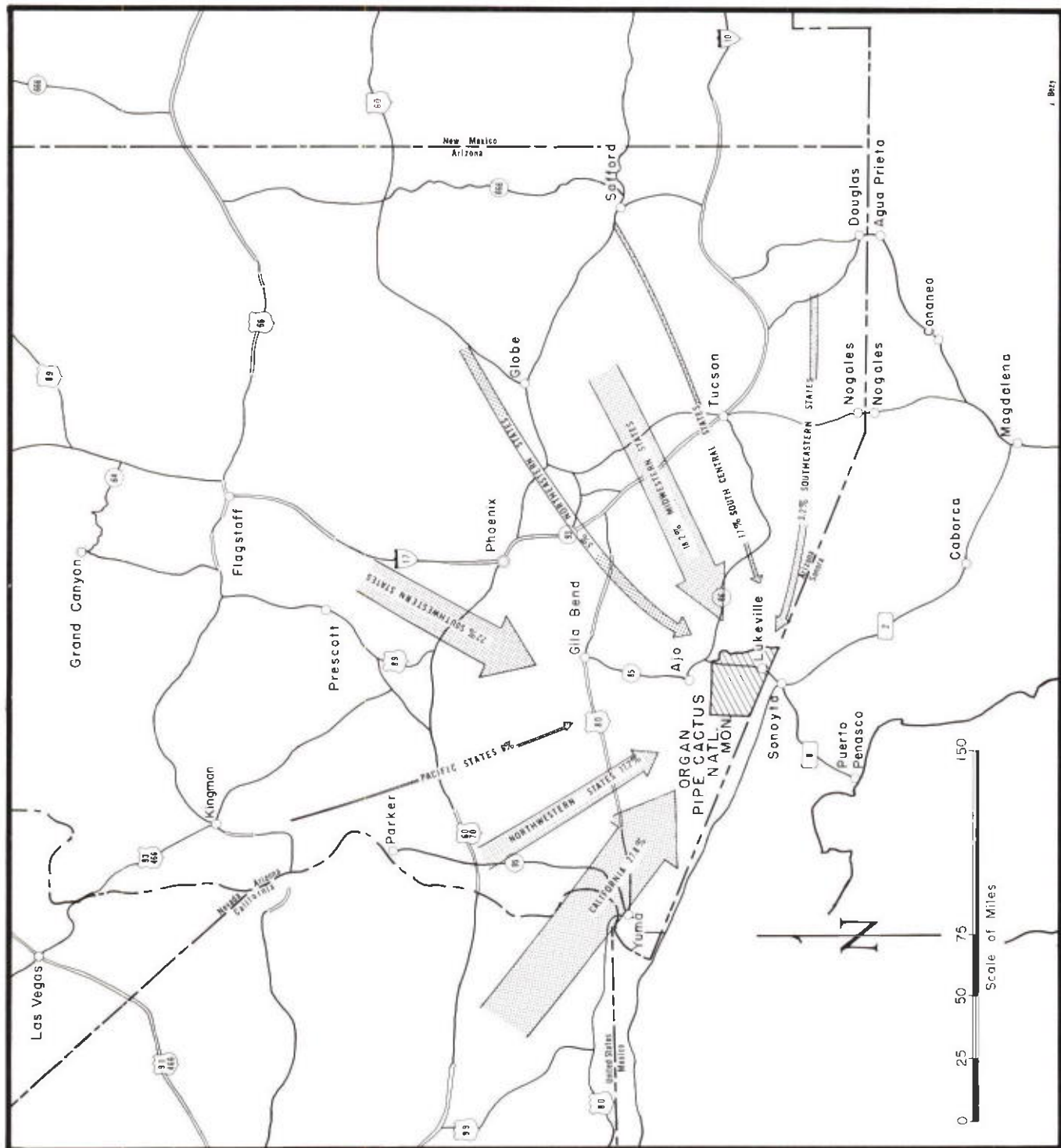


Fig. 29 - More than one-fourth of all recreational visitors to Organ Pipe Cactus National Monument in recent years have been from California.

Table 41

**ORIGIN OF CAMPGROUND REGISTRANTS,
ORGAN PIPE CACTUS NATIONAL MONUMENT
1967-68 Winter Season**

State and Region	Campground Registrants	
	Number of Parties	Percent
Northeast	212	4.2
Connecticut	15	*
Delaware	3	*
Maine	6	*
Maryland	12	*
Massachusetts	19	*
New Hampshire	13	*
New Jersey	23	*
New York	76	1.5
Pennsylvania	33	*
Rhode Island	2	*
Vermont	8	*
Washington, D.C.	2	*
Southeast	85	1.7
Alabama	2	*
Florida	52	1.0
Georgia	4	*
Kentucky	1	*
Mississippi	1	*
North Carolina	4	*
South Carolina	2	*
Tennessee	14	*
Virginia	3	*
West Virginia	2	*
Mid-West	783	15.6
Illinois	101	2.0
Indiana	51	1.0
Iowa	47	0.9
Kansas	40	*
Michigan	169	3.4
Minnesota	117	2.3
Missouri	42	*
Nebraska	22	*
North Dakota	6	*
Ohio	90	1.8
South Dakota	22	*
Wisconsin	76	1.5
South Central	90	1.8
Arkansas	10	*
Louisiana	2	*
Oklahoma	23	*
Texas	55	1.1

Table 41 (Continued)

State and Region	Campground Registrants	
	Number of Parties	Percent
Northwest	748	14.9
Idaho	66	1.3
Montana	48	1.0
Oregon	271	5.4
Washington	328	6.5
Wyoming	35	*
Southwest	2,925	58.3
Arizona	921	18.3
California	1,747	34.8
Colorado	138	2.7
Nevada	30	*
New Mexico	47	0.9
Utah	42	*
Pacific	23	0.4
Alaska	22	*
Hawaii	1	*
Outside U.S.	155	3.1
Canada	148	2.9
Mexico	1	*
Other Western Hemisphere	0	*
Elsewhere	6	*
Total	5,021	100.0

*Less than 0.9 of one percent

Source of Data: Division of Economic & Business Research, The University of Arizona, from records supplied by the National Park Service.

Arizona accounted for slightly more, with about four percent coming from Yavapai County, less than three percent from more populous Coconino County, and about one percent from Mohave County, along the Colorado River.

In driving to Organ Pipe Cactus National Monument, most overnight visitors have followed a consistent travel pattern, which has been dictated, of course, largely by the existing highway system. As shown by Table 43, the greatest number of overnight visitor parties have arrived at the Monument from the west, with their night prior to arrival normally spent in Yuma County and in most cases in the city of Yuma itself. Yuma, in fact, has provided facilities for nearly 21 percent of the Monument's overnight visitors on the night prior to arrival at the Monument. Those coming directly from the east and from the north have comprised a combined proportion of almost 22 percent of overnight visitor parties. About 14 percent of the total have spent the night prior to arrival at the Monument in Tucson, and nearly eight percent have come directly from Phoenix.

A reflection of the intensive use of the Monument's established overnight facilities during the 1967-68 winter season is shown by the appearance in the list of prior night stops of the community of Why and a location called *The Wash near Why*. *The Wash near Why* is actually an open field, accessible to trailer and camper users without charge, and located just outside of the Monument's northern boundary and adjacent to the west side of Arizona State Route 85. During the 1967-68 season, more than four percent of the Monument's overnight visitor parties used this site as a stopping point on the night prior to arrival at the Monument. *The Wash near Why* was also commonly used by trailer and camper visitors during the height of the winter season as a Monument overflow camping area. Many who arrived in the area late in the afternoon, after the designated campground at the Monument had been filled, would stop at *The Wash near Why* and wait for camping facilities to become vacant in the Monument proper on the following day.

Table 42

**ORIGIN OF CAMPGROUND REGISTRANTS RESIDENT IN ARIZONA,
ORGAN PIPE CACTUS NATIONAL MONUMENT
1967-68 Winter Season**

Arizona Residence	Campground Registrants Number of Parties	Percent
Nearest Areas	28	3.1
Western Pima County	3	.3
Southwestern Maricopa County	1	.1
Yuma County	24	2.7
Metropolitan Areas	739	82.7
Eastern Maricopa County (Greater Phoenix)	470	52.6
Eastern Pima County (Greater Tucson)	269	30.1
Other Southern Arizona	54	6.0
Cochise County	12	1.3
Gila County	1	.1
Graham County	1	.1
Greenlee County	1	.1
Pinal County	31	3.5
Santa Cruz County	8	.9
Northern Arizona	73	8.2
Apache County	0	-
Coconino County	23	2.6
Mohave County	11	1.2
Navajo County	3	.3
Yavapai County	36	3.9
Total	894	100.0

Source of Data: Division of Economic and Business Research, The University of Arizona, from records supplied by the National Park Service.

Table 43

**PLACE OF STAY OF CAMPGROUND USERS AT
ORGAN PIPE CACTUS NATIONAL MONUMENT
(Night Prior to Arrival)
1967-68 Winter Season**

Place of Stay on the Night Before Arrival at Organ Pipe Cactus National Monument	Percent of Sample
Yuma, Arizona	20.76
Tucson, Arizona	14.08
Phoenix, Arizona	7.64
Gila Bend, Arizona	4.06
Mesa, Arizona	3.82
Palo Verde Park (Tucson Mountains), Arizona	3.34
Winterhaven, California	2.63
The Wash near Why, Arizona	2.15
Why, Arizona	1.91
Ajo Arizona	1.67
Imperial Dam, Arizona-California	1.67
Casa Grande, Arizona	1.67
San Diego, California	1.43
Blythe, California	1.19
Tempe, Arizona	1.19
Benson, Arizona	.95
Quartzite, Arizona	.95
Apache Junction, Arizona	.95
Joshua Tree National Monument, California	.95
Deming, New Mexico	.95
Wickenburg, Arizona	.95
Tortillia Flats, Tonto National Forest, Arizona	.95
Tombstone, Arizona	.71
Prescott, Arizona	.71
Martinez Lake, Arizona	.71
Sun City, Arizona	.71
Wellton, Arizona	.71
Sabino Canyon, Coronado National Forest, Arizona	.71
Nogales, Arizona	.71
Neland, California	.71
Salton Sea, California	.71
Rocky Point-Cholla Bay, Sonora, Mexico	.71
Scottsdale, Arizona	.48
Flagstaff, Arizona	.48
San Carlos, Arizona	.48
Crystal Hill, Arizona	.48
Coronado National Forest, Arizona	.48
Bowie, Arizona	.48

Table 43 (Continued)

Place of Stay on the Night Before Arrival at Organ Pipe Cactus National Monument	Percent of Sample
Bart, California	.48
Indio, California	.48
Needles, California	.48
Calexico, California	.48
Lordsburg, New Mexico	.48
Mexico (in general)	.48
Santa Ana, Sonora, Mexico	.48
Black Canyon, Arizona	.24
Painted Rock Reservoir, Arizona	.24
Chandler, Arizona	.24
Buckeye, Arizona	.24
Springerville, Arizona	.24
St. David, Arizona	.24
Navajo Reservation, Arizona	.24
Pleasant Valley, Arizona	.24
Nogales, Arizona	.24
Mohawk, Arizona	.24
Texas Canyon, Arizona	.24
Tonto Lake, Arizona	.24
Fisher's Landing, Arizona	.24
Sierra Vista, Arizona	.24
Oak Creek Canyon, Arizona	.24
Carmen, Arizona	.24
Picacho Peak, Arizona	.24
Green Valley, Arizona	.24
Papago Reservation, Arizona	.24
Lukeville, Arizona	.24
Riverside, California	.24
Yucaipa, California	.24
California (in general)	.24
Banning, California	.24
Holtville, California	.24
Baja, California, Mexico	.24
Escondido, California	.24
Buttercup, California	.24
Palm Springs, California	.24
Andrea, California	.24
La Mesa, California	.24
Twenty-Nine Palms, California	.24
Hemet, California	.24
White Sands, New Mexico	.24
Carlsbad Caverns, New Mexico	.24

Table 43 (Continued)

Place of Stay, on the Night Before Arrival at Organ Pipe Cactus National Monument	Percent of Sample
Camp Verde, Arizona	.24
Willcox, Arizona	.24
Dateland, Arizona	.24
Las Vegas, Nevada	.24
Big Bend National Park, Texas	.24
El Paso, Texas	.24
Guaymas, Sonora, Mexico	.24
Kino Bay, Sonora, Mexico	.24
Caborca, Sonora, Mexico	.24
Hermosillo, Sonora, Mexico	.24
Total	100.0

Source of Data: Division of Economic and Business Research, The University of Arizona.

The use of other units administered by the National Park Service by overnight visitors at Organ Pipe Cactus National Monument is also indicated in Table 43. Such places as Joshua Tree National Monument, a number of sites within the Lake Mead National Recreation Area, White Sands National Monument, Carlsbad Caverns National Park, and even Big Bend National Park have been indicated as camping places immediately prior to arrival at Organ Pipe Cactus National Monument. Also important are areas administered by the United States Forest Service. A number of sites within the Tonto and Coronado National Forests in Arizona were frequently mentioned as places of visit prior to arrival at Organ Pipe Cactus National Monument.

The length of stay of overnight visitors at Organ Pipe Cactus National Monument has been governed in part by limitations placed on the use of the designated campgrounds by the National Park Service. During the high-use winter season, a 14-day limit has normally been placed on the use of the campground at the Monument. During the remainder of the year, a nominal 30-day limit has been in effect, although the actual length of stay has been governed directly by the availability of campsites. When sites were available, no effort was made to dislodge those who had overstayed the nominal limit. This policy appears to have worked very effectively in the utilization of the overnight facilities at the Monument. During the 1968-69 high-use season, however, the demand for facilities required imposition of a 10-day limit.

During the 1967-68 winter season, the mean length of stay for overnight visitors at Organ Pipe Cactus National Monument was slightly more than five days. (See Table 44.) The median length of stay was three days, but more parties stayed for one day than for any other number of days. Approximately 21 percent stayed only one night, but the proportion of those staying two nights was only slightly less. The measured difference between these two frequencies can be considered statistically insignificant. Slightly less than 14 percent of the visiting parties stayed for just three days.

As could be expected (because of the institutional limitations placed upon visitor stay

during the intensive use season), there is (as shown in Table 44) a cutoff in length of stay at 15 days, with very few visitor parties staying longer than that length of time. There is another gap in the frequency distribution after approximately 33 days, likewise reflecting the 30-day limitation policy established by the Monument administration for less intensive use periods. During the 1967-68 winter season, over half of the Monument's overnight visitors stayed three days or less, two-thirds stayed four days or less, and three-fourths stayed less than six days. Ninety percent of the overnight visitors at Organ Pipe Cactus National Monument during the 1967-68 season stayed less than 13 days at the Monument, while 99 percent stayed less than 33 days.

Although there are official limits on the length of stay in Park Service facilities, the length of stay and the seasonal variation in overnight visits to Organ Pipe Cactus National Monument seem more strongly affected by one characteristic of the visitors themselves. This characteristic is their age. During the 1967-68 winter season, about three-fourths of those persons using the Monument overnight were over 60 years of age. Approximately 54 percent

Table 44

**LENGTH OF STAY OF CAMPGROUND REGISTRANTS,
ORGAN PIPE CACTUS NATIONAL MONUMENT
1967-68 Winter Season**

Length of stay (Days)	Campground Registrants		Cumulative Percent
	Number of Parties	Percent	
1	1,216	21.6	21.6
2	1,199	21.3	42.9
3	779	13.9	56.8
4	487	8.6	65.4
5	350	6.2	71.6
6	256	4.5	76.1
7	200	3.6	79.7
8	126	2.2	81.9
9	126	2.2	84.1
10	85	1.5	85.6
11	85	1.5	87.1
12	82	1.4	88.5
13	101	1.8	90.3
14	189	3.4	93.7
15	72	1.3	95.0
16 - 22 (x=19)	133 (19 parties each)	2.4	97.4
23 - 33 (x=28)	91 (8 parties each)	1.6	99.0
34 - 41 (x=38)	32 (4 parties each)	0.6	99.6
42 - 81 (x=56)	22 (1 party each)	0.4	100.0
Total	5,631	100.0	

Mean = 5.3 days

Median = 3 days

Mode = 1 day

Source of Data: Division of Economic and Business Research, The University of Arizona, from records supplied by the National Park Service.

of them were between the ages of 60 and 69, with nearly 20 percent over 70 and more than one percent over 80. In fact, only about seven percent of the Monument's overnight visitors were less than 50 years of age. This points up the intensive use of Organ Pipe Cactus National Monument by older people, many of whom are either retired or on extended winter vacations. Most of those in the seven percent under 50 years of age were families or couples from the Phoenix or Tucson urban areas using the Monument's campgrounds on weekends, frequently as a stopover on the way to the Mexican resorts of Rocky Point or Cholla Bay on the Gulf of California.

Upon departure from Organ Pipe Cactus National Monument, the general movement of travellers seems to continue to flow from west to east. More than a fourth of the Monument's overnight visitors spent the night immediately after departure from the Monument at Tucson or in the immediate Tucson vicinity. Only 20 percent returned to or continued on to the west, spending the following night at Yuma. Approximately 18 percent left in a northerly direction and spent the following night in the Greater Phoenix Area. A relatively small percentage (less than five percent) went on into Mexico.

The importance of other units administered by the National Park Service is also reflected in the use of National Park Service facilities by those leaving Organ Pipe Cactus National Monument during the 1967-68 season. These units included Joshua Tree National Monument, various sites within the Lake Mead National Recreation Area, and the Saguaro

Table 45

**AGE OF CAMPGROUND VISITORS
ORGAN PIPE CACTUS NATIONAL MONUMENT
1967-68 Winter Season**

Age Class	Survey Respondents ^a	
	Number	Percent
10-19 Years	1	0.3
20-29	1	0.3
30-39	5	1.3
40-49	20	5.3
50-59	69	18.4
60-69	203	54.4
70-79	70	18.7
80-89	5	1.3
Total	374	100.0

^aTotal sample size varies with variations in response to survey questions.

Source of Data: Division of Economic and Business Research, The University of Arizona.

Table 46

**INTENDED PLACE OF STAY OF ORGAN PIPE CACTUS
NATIONAL MONUMENT CAMPGROUND USERS**

(Night After Departure)
1967-68 Winter Season

Intended Place of Stay on the Night After Departure From Organ Pipe Cactus National Monument	Percent
Tucson, Arizona	26.44
Yuma, Arizona	20.38
Phoenix, Arizona	14.87
Mesa, Arizona	3.85
Palo Verde Park, Tucson, Arizona	3.30
Lukeville, Arizona	2.20
Winterhaven, California	1.65
Casa Grande, Arizona	1.65
California (in general)	1.65
Gila Bend, Arizona	1.10
Rocky Point-Cholla Bay, Sonora, Mexico	1.10
Sun City, Arizona	1.10
The Wash near Why, Arizona	1.10
Why, Arizona	.82
Apache Junction, Arizona	.82
Prescott, Arizona	.82
Tempe, Arizona	.82
Lordsburg, New Mexico	.82
San Diego, California	.82
Salton Sea, California	.82
Tombstone, Arizona	.55
Quartzite, Arizona	.55
Scottsdale, Arizona	.55
Wickenburg, Arizona	.55
Palm Springs, California	.55
Imperial Dam, California	.55
Joshua Tree National Monument, California	.55
New Mexico (in general)	.55
Ajo, Arizona	.28
Papago Reservation, Arizona	.28
Saguaro National Monument, Arizona	.28
Flagstaff, Arizona	.28
Benson, Arizona	.28
Carmen, Arizona	.28
Camp Verde, Arizona	.28
Martinez Lake, Arizona	.28
Katherine's Landing (or Wash), Arizona	.28

Table 46 (Continued)

Intended Place of Stay on the Night After Departure From Organ Pipe Cactus National Monument	Percent
Tortilla Flats, Tonto National Forest, Arizona	.28
Glendale, Arizona	.28
Nogales, Arizona	.28
Lake Mohave, Arizona	.28
Sedona, Arizona	.28
Bisbee, Arizona	.28
Oatman, Arizona	.28
Davis Dam, Arizona	.28
Boulder Beach, Nevada	.28
Peña Blanca Lake, Arizona	.28
Colorado River, Arizona - California - Nevada	.28
Indio, California	.28
Blythe, California	.28
Escondido, California	.28
Banning, California	.28
Palm Desert, California	.28
Claremont, California	.28
Thousand Oaks, California	.28
Boulder Oaks Campground, California	.28
Anza Barrego State Forest, California	.28
Las Vegas, Nevada	.28
Amarillo, Texas	.28
Guaymas, Sonora, Mexico	.28
Mexico (in general)	.28
Hermosillo, Sonora, Mexico	.28
Total	100.05

Source of Data: Division of Economic and Business Research, The University of Arizona.

National Monument. The last was indicated as an intended stopover by some visitors even though it has no overnight facilities. Camping facilities administered by the United States Forest Service and various state and local governments in Arizona and California are also of apparent significance.

In examining the other areas visited by those who stay overnight at Organ Pipe Cactus National Monument, the importance of the Colorado River in the Southwest becomes apparent. Organ Pipe Cactus National Monument, for many winter visitors, seems to be the southern terminus on a trip along the Colorado River from Lake Mead southward. As the weather changes in the spring and Southern Arizona grows warm, these "snowbirds" return northward along more or less the same route. There are others among the winter visitors to the Monument, however, who come down the West Coast (or originate on the West Coast, either in Oregon, Washington, or California), cross into Arizona from California, visit the Monument, and then go on eastward into other parts of Arizona. After visiting in either the Greater Tucson or Phoenix Areas, some then go on into New Mexico and West Texas.

Table 47

**OTHER PLACES VISITED BY CAMPGROUND USERS BEFORE
ARRIVAL AT ORGAN PIPE CACTUS NATIONAL MONUMENT**

1967-68 Winter Season

Place Visited Before Arrival at Organ Pipe Cactus National Monument	Percent of Respondents
Yuma, Arizona	17.88
Tucson, Arizona	15.73
Phoenix, Arizona	6.68
Sonoyta, Sonora, Mexico	3.66
Chiricahua National Monument, Arizona	3.23
Tortilla Flats, Tonto National Forest, Arizona	3.01
Tombstone, Arizona	3.01
Palo Verde Park (Tucson Mountains), Arizona	3.01
Mexico (in general)	2.58
Ajo, Arizona	2.58
Mesa, Arizona	2.58
Nogales, Arizona	1.93
Apache Junction, Arizona	1.93
Quartzite, Arizona	1.93
Gila Bend, Arizona	1.93
Grand Canyon National Park, Arizona	1.72
Big Bend National Park, Texas	1.50
Roosevelt Dam, Tonto National Forest, Arizona	1.50
Sabino Canyon, Coronado National Forest, Arizona	1.50
Katherine's Landing (or Wash, Lake Mead National Recreation Area, Arizona	1.29
Imperial Dam, California	1.29
Saguaro National Monument, Arizona	1.07
Douglas, Arizona	1.07
Martinez Lake, Arizona	.86
Boulder Beach, Lake Mead National Recreation Area Nevada	.86
Lake Mead, Arizona-Nevada	.64
Casa Grande, Arizona	.64
Kingman, Arizona	.64
Parker, Arizona	.64
Lukeville, Arizona	.64
Coronado National Forest, Arizona	.64
Colorado River, Arizona-California-Nevada	.64
Crystal Hill, Arizona	.64
Boulder Dam, Lake Mead National Recreation Area, Arizona-Nevada	.64
Rocky Point-Cholla Bay, Sonora, Mexico	.64
Death Valley National Monument, California	.64
Blythe, California	.64

Table 47 (Continued)

Place Visited Before Arrival at Organ Pipe Cactus National Monument	Percent of Respondents
Tumacacori Mission National Monument, Arizona	.43
Bullhead City, Arizona	.43
Oak Creek Canyon, Coconino National Forest, Arizona	.43
Parker Dam, Arizona-California	.43
Glen Canyon National Recreation Area, Arizona	.43
Salt River, Arizona	.43
Payson, Arizona	.43
Arizona-Sonora Desert Museum, Arizona	.43
Mt. Lemmon, Coronado National Forest, Arizona	.43
Dateland, Arizona	.43
Wickenburg, Arizona	.43
Painted Rock Reservoir, Arizona	.43
Joshua Tree National Monument, California	.43
Winterhaven, California	.43
Salton Sea, California	.43
Papago Reservation, Arizona	.21
Madera Canyon, Coronado National Forest, Arizona	.21
Gunnery Range (Luke Air Base), Arizona	.21
Kitt Peak, Arizona	.21
Clifton, Arizona	.21
Showlow, Arizona	.21
Navajo National Monument, Arizona	.21
Willow Beach, Lake Mead National Recreation Area, Arizona	.21
Havasau City, Arizona	.21
Lake Havasu, Arizona	.21
Flagstaff, Arizona	.21
Temple Bar Marina, Lake Mead National Recreation Area, Arizona	.21
Williams AFB, Arizona	.21
Tempe, Arizona	.21
Chandler, Arizona	.21
Sedona, Arizona	.21
Davis Dam, Arizona	.21
Peña Blanca Lake, Coronado National Forest, Arizona	.21
Canyon Lake, Tonto National Forest, Arizona	.21
Monument Valley, Arizona	.21
Tonto Lake, Arizona	.21
Petrified Forest National Park, Arizona	.21
Clear Creek, Arizona	.21
Lake Powell, Arizona	.21
Sun City, Arizona	.21
Coconino Caverns, Arizona	.21
Peppersauce Canyon, Coronado National Forest, Arizona	.21
Benson, Arizona	.21
Pleasant Valley, Arizona	.21
The Wash near Why, Arizona	.21

Table 47 (Continued)

Place Visited Before Arrival at Organ Pipe Cactus National Monument	Percent of Respondents
Bryce Canyon National Park, Utah	.21
Zion National Park, Utah	.21
Cedar Breaks National Monument, Utah	.21
Flaming Gorge, Utah	.21
Boulder City, Nevada	.21
Carlsbad Caverns National Park, New Mexico	.21
Neland, California	.21
Needles, California	.21
Indio, California	.21
San Diego, California	.21
San Luis Rio Colorado, Sonora, Mexico	.21
Tijuana, Baja California, Mexico	.21

Source of Data: Division of Economic and Business Research, The University of Arizona.

A much smaller group of winter visitors appears to come from the East, visiting Organ Pipe Cactus National Monument en route to attractions in Southern California. These travellers frequently come through the Tucson or Phoenix areas, visit the Monument and then proceed west through Yuma to the San Diego area. A very few come in from the Phoenix and Tucson Metropolitan Areas and then, after leaving the Monument, proceed up the Colorado River route into California. Very few visitors at Organ Pipe Cactus National Monument have come from the other mountain states.

For overnight visitors at Organ Pipe Cactus National Monument, the definition of "the immediate area" is variable. For many, the "immediate area" is the adjacent part of Western Pima County. For others it means Southwestern Arizona, including Maricopa County, Yuma County, and Pima County, as well as adjacent areas of Northern Sonora. For still others, the "immediate area" means the entire Southwestern United States, from West Texas through New Mexico, Colorado, Utah, Arizona, and Nevada to California. Many visitors at the Monument (particularly those from the Midwest, the Northeast, and the Pacific Northwest) also visit many of the various other National Park Service units in the broadly defined Southwestern United States region that extends from Big Bend National Park in Texas north and west to areas such as Death Valley National Monument in California and Bryce and Zion National Parks in Utah, as part of a single circuit trip.

Many of the visitors interviewed during the 1967-68 season were very specific about the points of interest which they visited or intended to visit while at Organ Pipe Cactus National Monument or in the "immediate area." Others were more general in their responses and considered the Southwest itself an attraction. Some were visiting specific sites such as Tombstone, Quartzite, Carlsbad Caverns National Park, or the Arizona-Sonora Desert Museum, while others were visiting areas or states such as Nevada, Arizona, or Texas. For some visitors, the major items of attraction were cities such as San Antonio, Las Vegas, Tucson, or Phoenix. For others, the natural attractions administered by the National Park Service and the Forest Service were major points of interest. These people were visiting places such as Tumacacori Mission, the Petrified Forest, *Peña Blanca* Lake, or the Grand Canyon. A complete list of attractions visited by both groups before arriving at the Monument is given in Table 47. A similar list of places that Monument visitors intended to see after leaving is provided in Table 48.

Table 48

**IMMEDIATE ORIGINS OR DESTINATIONS OF
CAMPGROUND USERS AT ORGAN PIPE
CACTUS NATIONAL MONUMENT
(Nights Immediately Before or After Stay
At Organ Pipe Cactus National Monument)**

1967-68 Winter Season

Place of Stay	Percent of Survey Responses
Yuma, Arizona	20.58
Tucson, Arizona	19.82
Phoenix, Arizona	11.00
Mesa, Arizona	3.84
Palo Verde Park (Tucson Mountains), Arizona	3.32
Gila Bend, Arizona	2.69
Winterhaven, California	2.17
The Wash near Why, Arizona	1.66
Casa Grande, Arizona	1.66
Why, Arizona	1.41
San Diego, California	1.15
Imperial Dam, California	1.15
Lukeville, Arizona	1.15
Tempe, Arizona	1.02
Ajo, Arizona	1.02
Sun City, Arizona	.90
Apache Junction, Arizona	.90
Rocky Point-Cholla Bay, Sonora, Mexico	.90
California (in general)	.90
Prescott, Arizona	.77
Quartzite, Arizona	.77
Wickenburg, Arizona	.77
Joshua Tree National Monument, California	.77
Blythe, California	.77
Salton Sea, California	.77
Benson, Arizona	.64
Tortilla Flat, Arizona	.64
Tombstone, Arizona	.64
Lordsburg, New Mexico	.64
Scottsdale, Arizona	.51
Nogales, Arizona	.51
Martinez Lake, Arizona	.51
Neland, California	.51
Deming, New Mexico	.51
Flagstaff, Arizona	.38
Indio, California	.38
Palm Springs, California	.38

Table 48 (Continued)

Place of Stay	Percent of Survey Responses
Wellton, Arizona	.38
Sabino Canyon, Tucson, Arizona	.38
Mexico (in general)	.38
Carmen, Arizona	.25
Crystal Hill, Arizona	.25
Camp Verde, Arizona	.25
San Carlos, Arizona	.25
Bowie, Arizona	.25
Coronado National Forest, Arizona	.25
Papago Reservation, Arizona	.25
Bart, California	.25
Calexico, California	.25
Escondido, California	.25
Needles, California	.25
Banning, California	.25
New Mexico (in general)	.25
Las Vegas, Nevada	.25
Guaymas, Sonora, Mexico	.25
Santa Ana, Sonora, Mexico	.25
Hermosillo, Sonora, Mexico	.25
Picacho Peak, Arizona	.13
Green Valley, Arizona	.13
Chandler, Arizona	.13
Saguaro National Monument, Arizona	.13
Black Canyon, Arizona	.13
Buckeye, Arizona	.13
Glendale, Arizona	.13
Sierra Vista, Arizona	.13
Oak Creek Canyon, Arizona	.13
Willcox, Arizona	.13
Fishers Landing, Arizona	.13
Tonto Lake, Arizona	.13
Texas Canyon, Arizona	.13
Mohawk, Arizona	.13
Nogales, Arizona	.13
Pleasant Valley, Arizona	.13
Navajo Reservation, Arizona	.13
St. David, Arizona	.13
Springerville, Arizona	.13
Katherine's Landing (or Wash), Arizona	.13
Lake Mohave, Arizona	.13
Sedona, Arizona	.13
Bisbee, Arizona	.13
Oatman, Arizona	.13

Table 48 (Continued)

Place of Stay	Percent of Survey Responses
Dateland, Arizona	.13
Davis Dam, Arizona	.13
Peña Blanca, Arizona	.13
Colorado River, Arizona-California Nevada	.13
Hemet, California	.13
Twenty-Nine Palms, California	.13
La Mesa, California	.13
Andrea, California	.13
Buttercup, California	.13
Riverside, California	.13
Yucaipa, California	.13
Palm Desert, California	.13
Claremont, California	.13
Thousand Oaks, California	.13
Boulder Oaks Campground, California	.13
Anza Barrego State Forest, California	.13
Holtville, California	.13
Carlsbad Caverns, New Mexico	.13
White Sands, New Mexico	.13
Boulder Beach, Nevada	.13
Big Bend National Park, Texas	.13
El Paso, Texas	.13
Amarillo, Texas	.13
Kino Bay, Sonora, Mexico	.13
Caborca, Sonora, Mexico	.13
Baja California, Mexico	.13
Total	100.00

Source of Data: Division of Economic and Business Research, The University of Arizona.

For still other visitors at Organ Pipe Cactus National Monument, trailer or camper facilities have been of primary interest. In effect, these people seem to be visiting the climate of the Southwest during the winter, and a site for a temporary second home is their principal concern. For many of these persons, the specific sites within the Lake Mead National Recreation Area or elsewhere along the Colorado River appear to be of greatest importance. Also important for this purpose are specific facilities within the National Forests of Southern Arizona. For these visitors, Tortilla Flat in the Tonto National Forest, Katherine's Landing or Bullhead City on the Colorado River, or Palo Verde Park, a trailer campground in the Tucson Mountains, seem to be the point at which their interest generally focuses. The overnight facilities at Organ Pipe Cactus National Monument have thus become (for many) a second temporary residence during the winter. This also appears to be true of other camping and trailer facilities, both public and private, throughout the Southwest. It is also apparent, however, that these visitors are not interested in just settling in one place for the winter, but prefer to travel from site to site, with most of them using Park Service facilities for less than the regulation maximum.

Table 49

**OTHER PLACES TO BE VISITED BY CAMPGROUND USERS
AFTER LEAVING ORGAN PIPE CACTUS NATIONAL MONUMENT,
1967-68 Winter Season**

Places to be Visited After Leaving Organ Pipe Cactus National Monument	Percent of Survey Respondents
Tucson, Arizona	26.29
Phoenix, Arizona	13.57
Yuma, Arizona	10.99
Mesa, Arizona	4.59
Nogales, Arizona	4.59
Grand Canyon National Park, Arizona	3.87
Rocky Point-Cholla Bay, Sonora, Mexico	3.23
Colorado River, Arizona-California-Nevada	3.23
Mexico (in general)	3.01
Apache Junction, Arizona	3.01
Lake Mead National Recreation Area, Arizona-Nevada	2.80
Tombstone, Arizona	2.58
Quartzite, Arizona	2.15
Death Valley National Monument, California	1.93
Chiricahua National Monument, Arizona	1.72
Palo Verde Park (Tucson Mountains), Arizona	1.72
Sonoyta, Sonora, Mexico	1.50
Tortilla Flats, Tonto National Forest, Arizona	1.50
Oak Creek Canyon, Coconino National Forest Arizona	1.29
Katherine's Landing (or Wash), Lake Mead National Recreation Area, Arizona	1.29
Ajo, Arizona	1.07
Flagstaff, Arizona	1.07
California (in general)	1.07
Papago Reservation, Arizona	.86
Lukeville, Arizona	.86
Saguaro National Monument, Arizona	.86
Arizona-Sonora Desert Museum, Arizona	.86
Martinez Lake, Arizona	.86
Blythe, California	.86
Bullhead City, Arizona	.64
Sedona, Arizona	.64
Peña Blanca Lake, Coronado National Forest, Arizona	.64
Boulder Beach, Lake Mead National Recreation Area, Nevada	.64
Gila Bend, Arizona	.64
Old Tucson, Arizona	.43
Madera Canyon, Coronado National Forest, Arizona	.43
San Xavier Mission, Arizona	.43
Buckeye, Arizona	.43
Wickenburg, Arizona	.43
Chandler, Arizona	.43

Table 49 (Continued)

Places to be Visited After Leaving Organ Pipe Cactus National Monument	Percent of Survey Respondents
Davis Dam, Arizona	.43
Temple Bar Marina, Lake Mead National Recreation Area, Arizona	.43
White Mountains, Arizona	.43
Casa Grande, Arizona	.43
Willow Beach, Lake Mead National Recreation Area, Arizona	.43
Lake Havasu, Arizona	.43
Crystal Hill, Arizona	.43
Lake Mohave, Arizona	.43
Carlsbad Caverns National Park, New Mexico	.43
Big Bend National Park, Texas	.43
Tonto National Monument, Arizona	.21
Petrified Forest National Park, Arizona	.21
Willcox, Arizona	.21
Tumacacori Mission National Monument, Arizona	.21
Painted Desert, Arizona	.21
Prescott, Arizona	.21
Kingman, Arizona	.21
Havasu City, Arizona	.21
Cottonwood, Arizona	.21
Roosevelt Dam, Tonto National Forest, Arizona	.21
Superstition Mountains, Arizona	.21
Arizona (in general)	.21
"Boulder" Dam, Lake Mead National Recreation Area, Arizona-Nevada	.21
Nogales, Arizona	.21
Parker Dam, Arizona	.21
Canyon Lake, Tonto National Forest, Arizona	.21
Imperial Dam, Arizona-California	.21
Montezuma's Castle National Monument, Arizona	.21
Williams AFB, Arizona	.21
Painted Rock Reservoir, Arizona	.21
Glendale, Arizona	.21
Tonopah, Arizona	.21
Parker, Arizona	.21
Kitt Peak National Observatory, Arizona	.21
Coronado National Forest, Arizona	.21
Palm Springs, California	.21
Texas (in general)	.21
San Antonio, Texas	.21
Nevada (in general)	.21
New Mexico (in general)	.21
Las Vegas, Nevada	.21
Kino Bay, Sonora, Mexico	.21

Source of Data: Division of Economic and Business Research, The University of Arizona.



Fig. 30 - Typical Overnight facilities at Organ Pipe Cactus National Monument, Arizona (National Park Service Photo by Fred Mang, Jr.)

Table 50

**ALL OTHER PLACES VISITED OR TO BE VISITED
BY CAMPGROUND USERS AT
ORGAN PIPE CACTUS NATIONAL MONUMENT,
1967-68 Winter Season**

Place	Percent of Survey Respondents
Eastern Pima County, Arizona	
Tucson, Arizona	42.02
Palo Verde Park (Tucson Mountains)	4.74
Saguaro National Monument	1.93
Sabino Canyon, Coronado National Forest	1.50
Arizona-Sonora Desert Museum	1.29
Coronado National Forest (in general)	0.86
Madera Canyon, Coronado National Forest	0.64
Mt. Lemmon, Coronado National Forest	0.43
Kitt Peak National Observatory	0.43
San Xavier Mission	0.43
Old Tucson	0.43
Western Pima County, Arizona	
Ajo, Arizona	3.66
Lukeville, Arizona	1.50
Papago Indian Reservation	1.07
The Wash Near Why	0.21
Yuma County, Arizona	
Yuma, Arizona	28.87
Quartzite, Arizona	4.09
Martinez Lake	1.72
Imperial Dam	1.50
Crystal Hill, Arizona	1.07
Parker, Arizona	0.86
Parker Dam, Arizona	0.64
Dateland, Arizona	0.43
Luke Air Force Base Gunnery Range	0.21
Maricopa County, Arizona	
Phoenix, Arizona	20.25
Mesa, Arizona	7.54
Tortilla Flat, Tonto National Forest	4.52
Gila Bend, Arizona	2.58
Roosevelt Dam, Tonto National Forest	1.72
Wickenburg, Arizona	0.86
Chandler, Arizona	0.64
Painted Rock Reservoir	0.64
Williams Air Force Base	0.43
Buckeye, Arizona	0.43
Canyon Lake, Tonto National Forest	0.43

Table 50 (Continued)

Place	Percent of Survey Respondents
Maricopa County, Arizona (continued)	
Tonopah, Arizona	0.21
Glendale, Arizona	0.21
Tempe, Arizona	0.21
Sun City, Arizona	0.21
Mohave County, Arizona	
Colorado River	3.87
Lake Mead National Recreation Area (general)	3.44
Katherine's Landing, Lake Mead National Recreation Area	2.58
Bullhead City, Arizona	1.07
"Boulder" Dam, Arizona-Nevada	0.86
Kingman, Arizona	0.86
Willow Beach, Lake Mead National Recreation Area	0.64
Davis Dam, Lake Mead National Recreation Area	0.64
Temple Bar, Lake Mead National Recreation Area	0.64
Lake Havasu	0.64
Lake Mohave	0.43
Havasupai City, Arizona	0.43
Fisher's Landing	0.21
Other Northern Arizona	
Grand Canyon National Park	5.60
Oak Creek Canyon, Coconino National Forest	1.72
Flagstaff, Arizona	1.29
Sedona, Arizona	0.86
Glen Canyon National Recreation Area	0.43
Salt River Canyon	0.43
Payson, Arizona	0.43
White Mountains	0.43
Montezuma's Castle National Monument	0.21
Painted Desert	0.21
Prescott, Arizona	0.21
Showlow, Arizona	0.21
Navajo National Monument	0.21
Monument Valley	0.21
Tonto Lake	0.21
Petrified Forest National Park	0.21
Clear Creek, Arizona	0.21
Lake Powell, Glen Canyon National Recreation Area	0.21
Pleasant Valley, Arizona	0.21
Cottonwood, Arizona	0.21
Coconino Caverns, Arizona	0.21

Table 50 (Continued)

Places	Percent of Survey Respondents
Other Southern Arizona	
Tombstone, Arizona	5.60
Apache Junction, Arizona	4.95
Chiricahua National Monument	4.95
Douglas, Arizona	1.07
Casa Grande, Arizona	1.07
Peña Blanca Lake, Coronado National Forest	0.86
Tumacacori Mission National Monument	0.64
Superstition Mountains	0.21
Nogales, Arizona	0.21
Willcox, Arizona	0.21
Clifton, Arizona	0.21
Peppersauce Canyon, Coronado National Forest	0.21
Benson, Arizona	0.21
California	
Death Valley National Monument	2.58
Blythe, California	1.50
California (in general)	1.29
Joshua Tree National Monument	0.43
Winterhaven, California	0.43
Salton Sea	0.43
Palm Springs, California	0.21
Neland, California	0.21
Needles, California	0.21
Indio, California	0.21
San Diego, California	0.21
Nevada	
Boulder Beach, Lake Mead National Recreation Area	1.50
Nevada (in general)	0.21
Las Vegas, Nevada	0.21
Boulder City, Nevada	0.21
New Mexico	
Carlsbad Caverns National Park	0.64
New Mexico (in general)	0.21
Texas	
Big Bend National Park	1.93
San Antonio, Texas	0.21
Texas (in general)	0.21
Utah	
Bryce Canyon National Park	0.21
Zion National Park	0.21
Cedar City, Utah	0.21
Flaming Gorge National Recreation Area	0.21

Table 50 (Continued)

Places	Percent of Survey Respondents
Colorado	
Colorado (in general)	0.21
Mexico	
Nogales, Sonora, Mexico	6.89
Mexico (in general)	5.60
Sonoyta, Sonora, Mexico	5.17
Rocky Point-Cholla Bay, Sonora, Mexico	3.87
Kino Bay, Sonora, Mexico	0.21
Tijuana, Baja California, Mexico	0.21
San Luis Rio Colorado, Sonora, Mexico	0.21

Source of Data: Division of Economic and Business Research, The University of Arizona.

Surprisingly, this pattern of travel appears to be of recent origin since it is not reflected in the frequency of previous visits to Organ Pipe Cactus National Monument by overnight visitors during the 1967-68 winter season. As shown on Table 51, about 45 percent of the overnight parties had never been to Organ Pipe Cactus National Monument before the 1967-68 season, while more than a fourth had been there only once before. The remainder had been there more than once previously, with some having visited the Monument more than eight times. The average number of previous visits was less than two.

It thus appears that the previously mentioned attitude (held particularly by elderly winter visitors) that regards National Park Service campgrounds, Forest Service campgrounds, and National Recreation Area facilities as temporary winter residences, seems to be a recently developed phenomenon. The newness of this attitude is reflected in discussions with respondents to the survey of campground users conducted during the 1967-68 winter season. Many of the respondents indicated that they had just started coming to Arizona because of dissatisfaction with camping and trailer facilities in other states, primarily California and Florida. The dissatisfaction with California seemed strangely (or perhaps, not so strangely) enough, to come mostly from those who considered themselves to be permanent residents of California. The dissatisfaction with Florida, however, seemed to come primarily from those residents of the Midwest or the Northeast.

Although many of these visitors had not been at Organ Pipe Cactus National Monument previously, they expressed a strong desire to return to the area. On frequent occasions, unsolicited comments indicated a high degree of satisfaction with the state of Arizona, with the Sonoran Desert area, and with the National Park Service facilities and personnel. Of more than 400 overnight visitors interviewed, only one (a man of 87 who had been spending winters in the area for 20 years) was unhappy with the Park Service personnel. He simply felt that he knew more about the desert than they did. Thus, although there has been a relatively low propensity for visitors to return to Organ Pipe Cactus National Monument in the past, it appears that this is changing, and in the future there will be an increasing propensity for winter visitors to return.

Table 51

**FREQUENCY OF REPEAT VISITS BY CAMPGROUND USERS
ORGAN PIPE CACTUS NATIONAL MONUMENT
1967-68 Winter Season**

Number of Times Visited Before	Campground Survey Respondents ^a	
	Number of Parties	Percent
0	170	45.7
1	97	26.1
2	31	8.3
3	26	7.0
4	14	3.8
5	9	2.4
6	11	2.9
7	3	0.8
8	1	0.3
More than 8	10	2.7
Total	372	100.0

Median number of previous visits = 1

Mean number of previous visits = 1.6

Modal number of previous visits = 0

^aTotal sample size varies with variations in response to survey questions.

Source of Data: Division of Economic and Business Research, The University of Arizona.

Overnight Visitor Expenditures

Overnight visitors to Organ Pipe Cactus National Monument have had a sizeable economic impact upon the local area. During the 1967-68 travel year, beginning on September 1, 1967, and extending through August 31, 1968, the total economic impact of users of the Monument's designated campground alone amounted to more than half a million dollars in local purchases of goods and services. As shown in Table 52, nearly \$200,000 of this amount (more than one-third of the total) was spent by campers on food and beverages. The largest single item of expense, however, resulted from the maintenance and operation of motor vehicles. This accounted for more than \$235,000 or 43 percent of the total.

Camping and admissions fees paid by overnight visitors at Organ Pipe Cactus National Monument (either at the Monument itself, just before arriving at the Monument, or just after leaving) accounted for more than \$60,000 of expenditures during the 1967-68 travel year. For many, these expenditures included purchases of the seven dollar "Golden Eagle" annual federal recreation area permit. Miscellaneous expenditures amounted to less than \$50,000 during the travel year, about nine percent of the total. These miscellaneous expenditures covered a wide range of items, from film and post cards (purchased at the Monument itself or in Lukeville) to stock and other securities (purchased by winter visitors

Table 52

**LOCAL EXPEDITURES BY CAMPGROUND USERS
AT ORGAN PIPE CACTUS NATIONAL MONUMENT
1967-68 Season^a
By Type of Expenditure**

Category	Amount Spent^b	Percent
Food and beverages	\$193,820	36
Vehicle expenses	235,460	43
Camping and admission fees	63,560	12
Other expenses	48,390	9
Total	\$541,230	100

^aSeptember 1967 - August 1968

^bPlus or minus 5 percent at a 95 percent level of confidence.

Source of Data: Division of Economic and Business Research, The University of Arizona.

through Tucson brokerage firms) and even false teeth and other major dental work (obtained in Sonoyta, Mexico).

Of the total of more than \$540,000 spent by overnight visitors at Organ Pipe Cactus National Monument during the 1967-68 travel year, almost \$300,000 (55 percent) was spent in Pima County. More than \$94,000 (over 17 percent of the total) was spent within the Monument's boundaries, either at the Visitor Center or at private inholding facilities in Lukeville. Only slightly lesser amounts were each spent in the Ajo area (including the town of Ajo and the community of Why) and in the Greater Tucson Area. An even greater amount was spent in Yuma County than in any one of these three Pima County localities, however. Nearly \$108,000 (20 percent) of total camper expenditures were spent in Yuma itself, and almost \$12,000 were spent at other localities in Yuma County.

Only about one-half as much as was spent in Yuma County was spent in Maricopa County by overnight visitors at the Monument during 1967-68. Maricopa County received almost \$64,000 of visitor expenditures, with \$30,000 of these being spent in the Greater Phoenix Area. Only about \$26,000 was spent in the Gila Bend area, even though the latter is much closer to the Organ Pipe Cactus National Monument. Other Maricopa County areas, particularly Wickenburg, received less than \$8,000 in visitor expenditures.

Other locations in Arizona, principally in Santa Cruz, Yavapai, Pinal, and Mohave Counties, received less than ten percent (\$53,000) of total visitor expenditures. The entire amount spent within Arizona by overnight visitors at Organ Pipe Cactus National Monument in 1967-68 was slightly more than \$516,000, more than 95 percent of the total.

Surprisingly (and in spite of their proximity to the Monument and the Visitor Center and campground), relatively little was spent by the Monument's overnight visitors in nearby

Table 53

**LOCAL EXPENDITURES BY CAMPGROUND USERS
AT ORGAN PIPE CACTUS NATIONAL MONUMENT
1967-68 Season
By Location of Expenditure**

Place	Food & Beverages	Vehicle Expense	Lodging & Admissions	All Other	Total ^a
Pima County:					
Ajo Area	\$ 35,850	\$ 51,940	\$ 250	\$ 5,020	\$ 93,060
Lukeville & vicinity	36,030	31,390	19,630 ^b	7,180 ^b	94,230 ^b
Greater Tucson Area	34,640	41,390	5,070	11,340	92,440
Total	106,520	124,720	24,950	23,540	279,730
Maricopa County:					
Gila Bend	3,530	21,780	200	240	25,750
Greater Phoenix Area	10,500	14,340	2,450	2,900	30,190
Other Maricopa County	3,410	3,340	920	20	7,690
Total	17,440	39,460	3,570	3,160	63,630
Yuma County:					
Yuma	44,150	40,240	14,380	9,210	107,980
Other Yuma County	4,630	4,030	2,970	300	11,930
Total	48,780	44,270	17,350	9,510	119,910
Other Arizona:	15,720	21,620	10,940	4,470	52,750
Total Arizona	\$188,460	\$230,070	\$56,810	\$40,680	\$516,020
Sonora:					
Sonoyta	970	2,280	620	4,550	8,420
Nogales, Sonora	990	870	0	390	2,250
Other Sonora	2,520	1,200	0	2,090	5,810
Total	4,480	4,350	620	7,030	16,480
California:					
Winterhaven	0	50	1,610	30	1,690
Other California	780	800	0	650	2,230
Total	780	850	1,610	680	3,920
Other States:	100	190	4,520 ^c	0	4,810 ^c
Total All Areas	\$193,820	\$235,460	\$63,560	\$48,390	\$541,230

^aPlus or minus five percent at a 95 percent level of confidence.

^bIncludes expenditures at Organ Pipe Cactus National Monument.

^cRepresents largely purchase of \$7 "Golden Eagle" federal recreation permits before entering Arizona.

Source of Data: Division of Economic & Business Research, The University of Arizona.

Mexican communities in the state of Sonora. Most of the more than \$16,000 spent in Sonora was, as would be expected, spent in the town of Sonoyta, just two miles south of the international border. The \$8,000 sum spent at Sonoyta represents less than two percent of the total one-half million dollars spent by overnight visitors in the area during the 1967-68 travel year. Other Sonoran localities, primarily *Puerto Peñasco* (Rocky Point) and Cholla Bay, received less than \$6,000 in expenditures by persons who were or had been overnight visitors at Organ Pipe Cactus National Monument.

Despite the fact that many of the overnight visitors at the Monument during the 1967-68 travel year came from California, and the additional fact that even more visitors travelled through California immediately before arriving at the Monument, very little money was spent in California that could be directly related to overnight camping at Organ Pipe Cactus National Monument. Less than \$4,000 of the total \$541,000 spent by overnight visitors during the year was spent in California, and about half of this was spent at Winterhaven, just across the Colorado River from Yuma.

Other states in the Southwest and some of the more northern Mountain states together did even better than California, receiving somewhat less than \$5,000 in total. Of this total, however, a substantial portion represented purchases of the seven dollar, "Golden Eagle" federal recreation permits by campers in their home states before entering Arizona. Some permits were also purchased in adjacent states while en route to Organ Pipe Cactus National Monument.

The specific types of expenditures in the various localities in the immediate vicinity of Organ Pipe Cactus National Monument followed rather closely the pattern of total expenditure, with Pima County localities receiving more than approximately 40 percent of total food and beverage expenditures. This amount was exceeded by the nearly \$125,000 spent in Pima County for vehicle operation and maintenance.

The three significant exceptions to the overall pattern included expenditures in Sonora, where the "All Other" category exceeded any other class of spending. In Sonora, more than \$7,000 was spent in this miscellaneous expenditures category, while only about \$4,000 was spent there for food and beverages and another \$4,000 for vehicle expenses. The relatively high proportion of miscellaneous expenditures included spending for dental work and Mexican handicrafts. Only about \$6,000 was spent in Sonora for lodging, and all of this was spent in Sonoyta. Of the \$7,000 spent in Sonora for miscellaneous expenses, slightly less than \$5,000 was spent in the town of Sonoyta.

Another exception to the overall pattern was California, where lodging and admissions expenses overshadowed the other three expenditure categories. In California, approximately \$1,600 of the total \$4,000 was spent on lodging and admissions, and this entire sum was spent in Winterhaven. Only half as much was spent on vehicle expense and less than half as much on food and beverages in California.

The third exception was the amount spent in states other than Arizona, California, or Sonora. In these other states, lodging and admissions fees far exceeded other categories of expenditures, primarily because of the importance in those expenditures of the purchase of federal recreation permits.

As would be expected, local expenditures by campground users at Organ Pipe Cactus National Monument during the 1967-68 travel year varied widely from one month to another. Largest expenditures were made during February and March. In each of those months, total local expenditures by campground users exceeded \$112,000. In June, July, and August, however, expenditures dropped below \$3,000 per month, with a low in July of

only \$2,500. Nearly three-fourths of the total \$541,000 was spent during the months of January, February, March, and April, with 21 percent each during February and March, 16 percent in January, and 14 percent in April. Expenditures in November and December each ran about 10 percent of the yearly total.

For the most part, the seasonal pattern of expenditures within the four main categories, food and beverages, vehicle expense, lodging and admissions, and all other, followed the overall pattern. The significant exception was the vehicle expense category, which had a more extreme seasonal variation than the total. Only nominal amounts were spent during June, July, and August, with much higher amounts spent during the winter months. In March, for example, vehicle expenditures approached \$52,000, while in July, they were

Table 54

**LOCAL EXPENDITURES BY CAMPGROUND USERS
AT ORGAN PIPE CACTUS NATIONAL MONUMENT
1967-68 Season
By Month of Visit**

Month	Food & Beverages	Vehicle Expense	Lodging & Admissions	All Other	Total^a
September	\$ 1,990	\$ 400	\$ 110	\$ 500	\$ 3,000
October	4,850	8,780	2,370	1,210	17,210
November	18,270	27,130	7,320	4,560	57,280
December	21,510	23,380	6,310	5,370	56,570
January	34,980	32,830	8,860	8,730	85,400
February	42,480	47,080	12,710	10,610	112,880
March	37,260	51,700	13,960	9,300	112,220
April	21,200	37,580	10,140	5,290	74,210
May	5,620	5,740	1,550	1,400	14,310
June	1,900	360	100	480	2,840
July	1,760	240	70	440	2,510
August	2,000	240	60	500	2,800
Total	\$193,820	\$235,460	\$63,560	\$48,390	\$541,230

^aPlus or minus 5 percent at a 95 percent level of confidence.

Source of Data: Division of Economic and Business Research, The University of Arizona.

only about \$250. Furthermore, in the summer, vehicle expenses typically dropped below food and beverage expenses, whereas throughout most of the winter season vehicle expenditures were higher than those in any other single category.

During the travel year extending from September 1, 1967, through the end of August 1968, users of the overnight facilities at Organ Pipe Cactus National Monument spent more than \$540,000 within the local economy. Most of this was spent in Southern or Southwestern Arizona, with minor amounts in Northwestern Sonora and immediately adjacent areas of California. It should be noted that this is a minimum total expenditure for all overnight visitors. Those overnight visitors using the privately owned facilities at

Table 55

**SEASONAL VARIATION IN DAY-USE VISITS AT
ORGAN PIPE CACTUS NATIONAL MONUMENT
1965-1969**

Month	1965	1966	Number of Visits		1969	Total	Average	Percent of Monthly Average ^a
			1967	1968				
January	1,470	1,011	1,151	1,186	2,035	6,853	1,371	129.7
February	1,715	884	1,203	1,774	2,620	8,196	1,639	155.1
March	1,680	1,483	1,904	2,158	3,402	10,627	2,125	201.0
April	2,419	2,085	1,349	2,200	3,614	11,667	2,333	220.7
May	606	1,335	597	723	889	4,150	830	78.5
June	337	397	443	1,014	432	2,623	525	49.7
July	341	360	383	454	265	1,803	361	34.2
August	329	305	463	348	442	1,887	377	35.7
September	480	275	255	264	189	1,463	293	27.7
October	797	526	419	415	676	2,833	567	53.6
November	913	1,180	631	1,112	1,379	5,215	1,043	98.7
December	913	1,072	1,061	1,067	2,003	6,116	1,223	115.7
Total	12,000	10,913	9,859	12,715	17,946	63,433	12,687	

^aMonthly average for the five-year period is 1,057.

Source of Data: U.S. National Park Service, *Monthly Public Use Report, Organ Pipe Cactus National Monument*, various issues 1965-1969.

Lukeville are not included in this projection, nor are those campers who used the unofficial overflow camping area in *The Wash near Why*. If such were to be included, the total 1967-68 expenditure by overnight visitors would probably approach \$700,000. Then, too, the stated figure is a measure of the *direct* impact of purchases of goods and services by overnight visitors to the Monument. If a multiplier effect is applied, the total impact on the economy of Southwestern Arizona and Northern Sonora undoubtedly exceeds one million dollars.

Day-Use Visitor Characteristics

The characteristics of those visitors using the facilities of Organ Pipe Cactus National Monument during the day only are probably best indicated by the measured characteristics of those who use the Visitor Center at the Monument's Headquarters. Although the Visitor Center users include many who are also using the Monument's overnight facilities, a very high proportion of them are day-only visitors. Thus, the characteristics of Visitor Center registrants form a relatively accurate measure of the characteristics of day-use visitors. The total volume of day-use visitors has increased substantially at Organ Pipe Cactus National Monument over the past decade. The increase has not been as much as that of the number of campground users or overnight visitors, but it has been far greater on a percentage basis than the total visitor count.

As in the use of campground or overnight facilities at Organ Pipe Cactus National

Table 56

DAY-TO-DAY VARIATION IN VISITOR CENTER USE ORGAN PIPE CACTUS NATIONAL MONUMENT November 1967 - April 1968

Month	Number of Persons							Total
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
November	100	75	88	81	101	155	163	763
December	132	90	100	138	77	199	180	916
January	163	210	171	200	132	172	166	1,214
February	293	206	253	227	297	244	324	1,844
March	483	266	246	275	255	336	402	2,263
April	313	229	286	195	243	251	292	1,809
Total	1,484	1,076	1,144	1,116	1,105	1,357	1,527	8,809
Percent of Daily Average	118	86	91	89	88	108	121	700

Source of Data: Division of Economic and Business Research, The University of Arizona, in cooperation with the National Park Service.

Monument, the use of the Visitor Center has had a highly seasonal variation. The variation in use of the Visitor Center, however, has not been as extreme from one month to another as has the use of overnight facilities. The seasonal pattern of such activity, nevertheless, has been pronounced, with extremely heavy use occurring in February, March, and April, and limited use during June, July, August, and September.

There has also been a significant variation in Visitor Center activity (and correspondingly in use of the Monument's other facilities) by day-use visitors from one day of the week to the next. During the 1967-68 season, Saturday experienced the heaviest day-use of the Monument's facilities. This is consistent with the nature of the day-use facilities and the fact that visitors to the Monument during the day are mostly weekend travellers, many of whom are en route to *Puerto Peñasco* or Cholla Bay on the Gulf of California. Sunday experienced the second highest visitor activity, almost a fifth more than the daily average, while Friday also saw higher than average use. The day of the week on which the Visitor Center was used least was Monday, at 86 percent of the daily average. Tuesday, Wednesday, and Thursday each achieved approximately 90 percent of daily average use. The average variation within the week, however, was not extreme, ranging from 15 percent below the daily average during the early part of the week to about 20 percent above on the weekends.

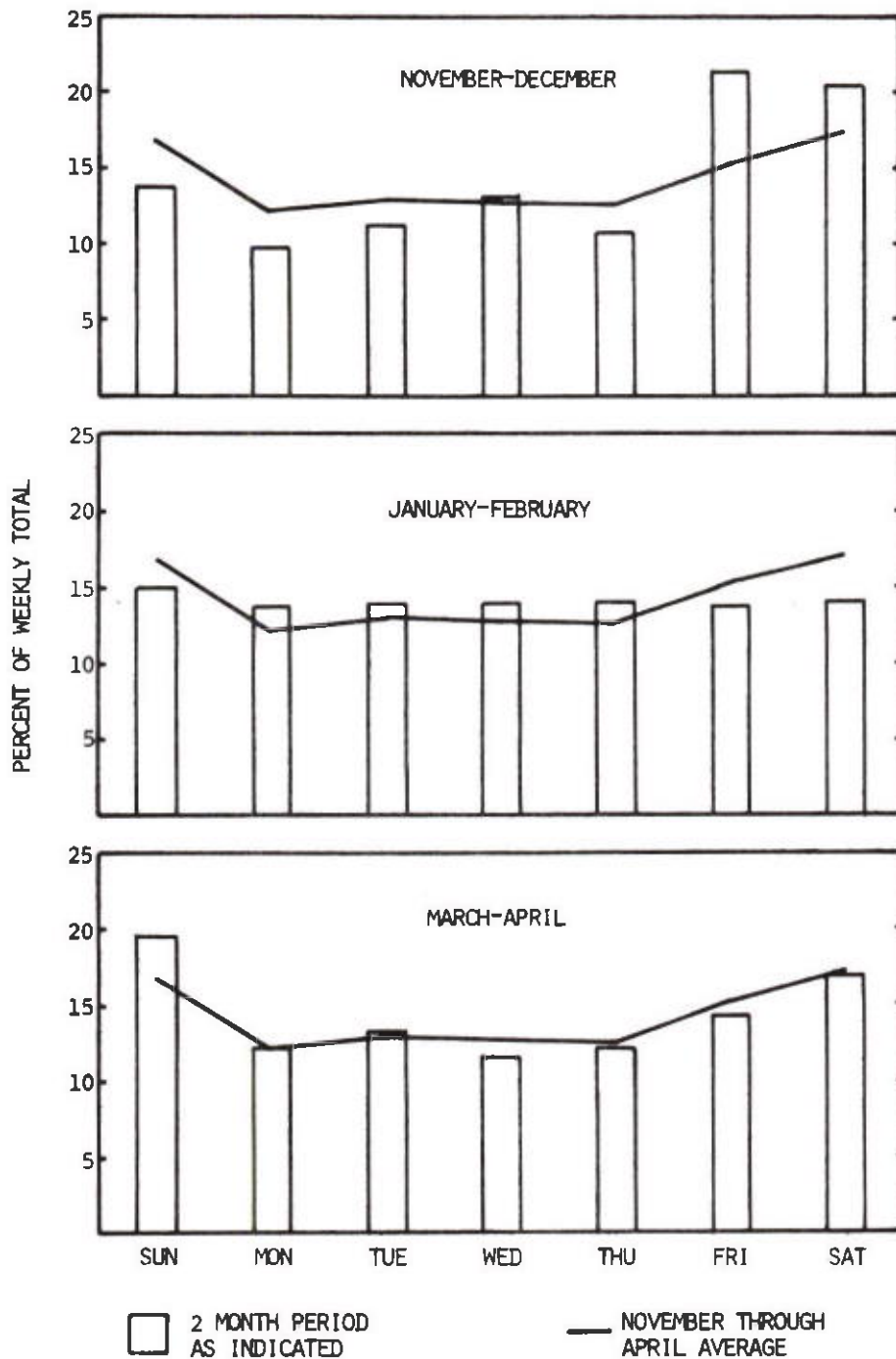
During the 1967-68 travel year, there appeared to be a seasonal influence on the daily use pattern of the Monument, with Sunday usage greatest during the heaviest part of the winter season (in March and April) and Saturday usage highest during the earlier part of the winter season (November through February). The higher Sunday activity during March and April appears to reflect, at least in part, the daytime use of the Monument by winter visitors spending vacations in the Tucson and Phoenix urban areas and making weekend or Sunday side trips to outlying visitor attractions. On the other hand, the pattern of higher Saturday activity during the earlier part of the winter season seems to reflect travel by permanent residents of Southern Arizona making weekend trips throughout Arizona or to ocean resorts in Mexico.

The state of permanent residence (the actual origin) of day-use visitors at Organ Pipe Cactus National Monument during the 1967-68 winter season seems to parallel rather closely the origin of overnight visitors. Of those who used the Visitor Center in the 1967-68 season, 55 percent came from the Southwest, with more than 25 percent of the total coming from California and an almost equal proportion from Arizona. Thus, California has been somewhat less important as a source of day-use visitors than it has as a source of overnight visitors. As a result, the relative importance of some of the other states has been greater. The Northwest has also been important but not nearly so much as the Midwest, which accounted for 20 percent of the Monument's day-use visitors during the 1967-68 winter season. The Northwest, on the other hand, accounted for only 12 percent, with most of these coming from Washington and Oregon. Most of the Monument's day users from the Midwest came (as did the overnight visitors from that area) from Michigan, Minnesota, Ohio, and Illinois.

The Northeastern United States accounted for only about five percent of the day-use visitors at Organ Pipe Cactus National Monument during the 1967-68 season, with New York and Pennsylvania the only single states providing significant numbers of such visitors. The Southeastern and South-Central states provided relatively few day-use visitors, with the only significant numbers coming from Florida and Texas. The Pacific Ocean States (Alaska and Hawaii) accounted for less than one-half of one percent of Visitor Center registrants during the 1967-68 season.

Areas outside of the United States were of somewhat greater importance as origins of day-use visitors than as origins of overnight visitors. Canada again led these areas in importance despite its distance from the Monument. There were also significant numbers of

DAILY VARIATION IN VISITS
AT ORGAN PIPE CACTUS NATIONAL MONUMENT



SOURCE: Division of Economic and Business Research, University of Arizona

Fig. 31 - The weekly pattern of variation in visits to Organ Pipe Cactus National Monument varies significantly with the season.

Table 57

**ORIGIN OF VISITOR CENTER REGISTRANTS
ORGAN PIPE CACTUS NATIONAL MONUMENT**

1967-68 Winter Season

State and Region	Visitor Center Registrants	
	Number of Parties	Percent
Northeast	465	* 5.4
Connecticut	31	*
Delaware	3	*
Maine	20	*
Maryland	14	*
Massachusetts	43	*
New Hampshire	14	*
New Jersey	55	*
New York	168	1.9
Pennsylvania	87	1.0
Rhode Island	7	*
Vermont	12	*
Washington, D.C.	11	*
Southeast	129	* 1.5
Alabama	6	*
Florida	45	0.5
Georgia	10	*
Kentucky	8	*
Mississippi	3	*
North Carolina	11	*
South Carolina	3	*
Tennessee	13	*
Virginia	20	*
West Virginia	7	*
Mid-West	1,735	* 20.0
Illinois	240	2.8
Indiana	102	1.2
Iowa	125	1.4
Kansas	94	1.1
Michigan	369	4.2
Minnesota	214	2.5
Missouri	91	1.0
Nebraska	81	0.9
North Dakota	24	*
Ohio	217	2.5
South Dakota	32	*
Wisconsin	146	1.7

Table 57 (Continued)

State and Region	Visitor Center Registrants	
	Number of Parties	Percent
South Central	161	1.8
Arkansas	18	*
Louisiana	10	*
Oklahoma	40	*
Texas	93	1.1
Northwest	1,048	12.1
Idaho	123	1.4
Montana	86	1.0
Oregon	339	3.9
Washington	446	5.1
Wyoming	54	*
Southwest	4,775	55.0
Arizona	2,061	23.7
California	2,229	25.7
Colorado	278	3.2
Nevada	41	*
New Mexico	91	1.0
Utah	75	*
Pacific	30	0.3
Alaska	20	*
Hawaii	10	*
Outside U.S.	342	3.9
Canada	218	2.5
Mexico	12	*
Other Western Hemisphere	1	*
Elsewhere	111	1.3
Total	8,685	100.0

* Less than one half of one percent.

Source of Data: Division of Economic and Business Research, The University of Arizona from records supplied by the National Park Service.

persons visiting the Monument during the day from places outside of the Western Hemisphere. Many of these (from Europe and Asia) were students at The University of Arizona and Arizona State University, while others appeared to be persons visiting Southern Arizona in some professional capacity.

Daytime visits by Arizona residents during the 1967-68 winter season paralleled the overnight use of the Monument's camping facilities by Arizonans. Nearly 80 percent of the Visitor Center registrants from Arizona during the 1967-68 season came from the state's two large metropolitan areas, Greater Phoenix and Greater Tucson, with the Greater

Table 58

**ORIGIN OF VISITOR CENTER REGISTRANTS FROM ARIZONA
ORGAN PIPE CACTUS NATIONAL MONUMENT
1967-68 Winter Season**

State and Region	Visitor Center Registrants	
	Number of Parties	Percent
Nearest Areas	206	10.0
Western Pima County	137	6.6
Southwestern Maricopa County	18	0.9
Yuma County	51	2.5
Metropolitan Areas	1,620	79.1
Eastern Maricopa County (Greater Phoenix)	1,620	53.3
Eastern Pima County (Greater Tucson)	529	25.8
Other Southern Arizona	116	5.7
Cochise County	44	2.1
Gila County	12	*
Graham County	1	*
Greenlee County	4	*
Pinal County	53	2.6
Santa Cruz County	2	*
Northern Arizona	106	5.2
Apache County	6	*
Coconino County	48	2.3
Mohave County	5	*
Navajo County	2	*
Yavapai County	45	2.2
Total	2,048	100.0

* Less than 0.9 percent.

Source of Data: Division of Economic and Business Research, The University of Arizona, from records supplied by the National Park Service.

Phoenix Area accounting for more than half of the total and the Greater Tucson Area accounting for about one-fourth. The immediately adjacent areas of Western Pima County, Southwestern Maricopa County, and Yuma County accounted for about 10 percent of the day-use visitors. Most of these (almost seven percent of the total) came from Western Pima County, essentially the Ajo community. Other areas in Southern Arizona supplied less than six percent of all Arizona day-use visitors at the Monument, with Cochise and Pinal Counties accounting for the only significant numbers. From Northern Arizona, Yavapai County and Coconino County together accounted for almost five percent, with negligible numbers

Table 59

**LOCAL EXPENDITURES BY DAY-USE VISITORS
AT ORGAN PIPE CACTUS NATIONAL MONUMENT
BY MONTH OF VISIT
September 1967 - August 1968**

Month	Total Expenditures
September	\$ 1,060
October	1,700
November	2,500
December	4,240
January	5,460
February	8,250
March	9,520
April	8,000
May	3,010
June	3,380
July	1,190
August	1,120
Total	\$49,430

Source of Data: Division of Economic and Business Research, The University of Arizona.

coming from other northern Arizona Counties.

Because of the shortness of visit and high incidence of local residents, day-use visits at Organ Pipe Cactus National Monument have had relatively little economic impact on the immediate area. As indicated in Table 59, the total for the 1967-68 travel year was less than \$50,000. Most of this was in gasoline purchases.

Through Traveller Characteristics and Expenditures

More than 300,000 through-travellers now visit Organ Pipe Cactus National Monument each year. In 1968 (as shown by Table 60), the number of such visits at the Monument exceeded 375,000. Since 1965, the number of such visits each year has been over 340,000, an excess of more than 28,000 visits each month.

Table 60
SEASONAL VARIATION IN THROUGH TRAVEL AT
ORGAN PIPE CACTUS NATIONAL MONUMENT
1965 - 1969

Month	Number of Visits by Through Travelers						Average	Percent of Monthly Average ^a
	1965	1966	1967	1968	1969	Total		
January	35,001	27,090	21,870	27,531	25,956	137,448	27,490	96.4
February	29,322	25,758	22,275	28,215	24,531	130,101	26,020	91.2
March	29,727	21,888	41,859	40,734	37,467	171,675	34,335	120.4
April	41,760	16,911	30,852	50,067	43,077	182,667	36,533	128.1
May	35,361	28,215	32,355	34,317	29,883	160,131	32,026	112.3
June	29,223	27,054	34,695	32,652	29,187	152,811	30,562	107.2
July	26,982	26,118	31,968	37,980	22,296	145,344	29,069	101.9
August	18,522	20,556	25,686	20,862	24,717	110,343	22,068	77.4
September	32,319	19,098	20,619	18,198	17,484	107,718	21,544	75.5
October	23,085	21,924	24,534	26,667	21,189	117,399	23,480	82.3
November	26,370	26,361	24,849	33,183	29,343	140,106	28,021	98.3
December	25,434	25,623	31,050	25,038	48,174	155,319	31,064	108.9
Total	353,106	286,596	342,612	375,444	353,304	1,711,062	342,212	

^aMonthly Average for the five-year period is 28,518.

Source of Data: U.S. National Park Service, *Monthly Public Use Report, Organ Pipe Cactus National Monument*, various issues, 1965-1969.

These through-travel visits are normally made by persons living in Southern Arizona who use State Highway 85 through the Monument but who do not stop at or otherwise use any of the National Park Service facilities within the Monument. Many of these visitors are persons from the Phoenix and Tucson Metropolitan Areas travelling to and from *Puerto Peñasco*, the Mexican community on the Gulf of California. Other such visits are made by people in Ajo, also travelling to the Gulf, and persons in *Puerto Peñasco*, and Sonoyta, Sonora, travelling to either Phoenix or Tucson for business or recreational purposes. In addition, some of these through-travel visits (or trips on the State Highway through the Monument) are accounted for by commercial vehicles travelling between Lukeville and points in Arizona. Some of these commercial vehicles are trucks importing produce and other commodities from Mexico for United States markets. In 1968, approximately 20 percent of all traffic on Arizona Highway 85 through the Monument consisted of commercial vehicles. (See Table 61.)

Table 61

**HIGHWAY TRAVEL THROUGH
ORGAN PIPE CACTUS NATIONAL MONUMENT
Annual Average 24 - Hour Traffic Volumes
1955 - 1968**

Year	Arizona Passenger Cars	Out-of-State Passenger Cars	Commercial Vehicles	All Vehicles
1955	129	30	40	199
1956	109	25	33	167
1957	132	30	40	202
1958	139	32	43	214
1959	167	38	51	256
1960	136	32	42	210
1961	158	36	49	243
1962	150	35	46	231
1963	144	34	45	223
1964	188	44	58	290
1965	252	58	78	388
1966	187	43	57	287
1967	211	49	65	325
1968	240	55	74	369

Source of Data: Arizona Highway Department, *Arizona Traffic*, various issues, 1956-1968.

It is questionable (and certainly controversial) whether or not the volume of traffic reflected in the total of through-travel visits to Organ Pipe Cactus National Monument would remain the same without the presence of the Monument. It is undoubtedly true that much of the traffic along this highway is in no way related to the presence of Organ Pipe Cactus National Monument. There is other traffic, however (and this includes some of the commercial vehicle traffic on State Route 85 through the Monument), that is generated secondarily by the presence of the Monument. For example, trips made by those vehicles owned by commercial enterprises in Sonoyta and Lukeville which depend upon visitors to Organ Pipe Cactus National Monument for a certain amount of their livelihood certainly are a reflection of the Monument's presence, although their specific visits to (i.e., trips through) the Monument are not directly connected with its existence.

The seasonal variation in through-travel visits to Organ Pipe Cactus National Monument reflects the commercial and local resident nature of this activity. The seasonal variation in such visits has been much less severe than it has for other types of visits to Organ Pipe Cactus National Monument, whether they be overnight or day-use only. The pattern of

Table 62

**LOCAL EXPENDITURES BY THROUGH-TRAVELERS
AT ORGAN PIPE CACTUS NATIONAL MONUMENT
September 1967 - August 1968
By Month**

Month	Total Expenditures
September	\$ 4,900
October	5,700
November	5,600
December	7,100
January	7,400
February	7,500
March	10,300
April	10,400
May	8,200
June	6,200
July	5,700
August	3,900
Total	\$82,900

Source of Data: Division of Economic and Business Research, The University of Arizona.

seasonal variation in through-travel visits, however, does follow somewhat the same month-to-month pattern followed by other visits to the Monument. For the period from 1965 through 1969, the monthly average of through travel visits at Organ Pipe Cactus National Monument reached a seasonal high in April, almost 30 percent more than the monthly average for the five years. The seasonal low was reached in September, with an amount approximately one-quarter below the five-year monthly average. The average seasonal pattern of through-travel visits at the Monument, unlike the pattern for overnight visits, has continued above the monthly average into June and July while falling below the monthly average in January and February. Thus, the through-travel visitor pattern has been somewhat out of phase with (and lagging behind) the recreational visit pattern on a month-to-month basis. This reflects, in large part, the importance in this through traffic of commercial vehicles hauling produce from Mexican farms in the Magdalena Valley of Northern Sonora. In fact, the travel pattern follows much more closely the produce hauling season and the fishing season at *Puerto Peñasco* than the normal tourist season for Southern Arizona.

Although, for the most part, through travel visitors to Organ Pipe Cactus National Monument would probably have an economic impact on the area whether or not the Monument were in existence, their economic impact is worth noting in conjunction with that of the Monument's actual recreational visitors. Virtually all expenditures by through-travel visitors have been for petroleum products and automotive services purchased at Lukeville, Ajo, or Why. As shown in Table 62, the total of such purchases approached \$83,000 in the 1967-68 travel year. This is considerably more than (almost twice) the total local expenditure impact of day-use only visitors at Organ Pipe Cactus National Monument. The much higher impact attributable to through-travel visitors is simply a result of the sheer volume of such traffic. It is probably true, however, that the total \$83,000 per year impact of this travel activity should not be attributed directly to the presence of Organ Pipe Cactus National Monument.

Other Economic Effects

Unlike most other National Monuments, Organ Pipe Cactus National Monument has had at least part of its area devoted to commercial activities other than those designed to serve visitors. Since the Monument's establishment, both limited grazing and mineral industry activity have been permitted within its boundaries. Aside from some infrequent but extensive exploration activity, mineral industry operations on the Monument have been confined to very small sites with only sporadic output. In recent years there has been virtually no mining production from mineral deposits located on Monument land.

Commercial agricultural operations have been conducted continuously on portions of the Monument since its establishment by a single firm which was able to obtain special grazing rights. In recent years approximately 1,000 head of cattle have been allowed to graze on the Monument at any one time. The head limitation, as well as the lack of water in some parts of the Monument have served to confine this activity to only a portion of the land lying within the Monument's boundaries. Based on averages for Pima County as contained in the 1964 Census of Agriculture, the grazing of 1,000 head of cattle should result in a gross agricultural income of about \$135,000 per year. Thus, the annual economic impact of grazing on Monument lands has been somewhat less than the \$170,000 effect of the National Park Service operations alone and only about one-fourth of the more than half a million dollar impact made by overnight visitors.

It should be remembered, however, that the local economic contributions of grazing and mining on Organ Pipe Cactus National Monument, have not been because of the Monument's existence, but in spite of its presence. The economic contributions of these two activities represent, in effect, the contributions of the potential alternative uses of the land.

The legislation which established the Monument allowed such multiple use to continue and thus has increased (apparently) the overall economic contribution of the *land*. The economic impact of the *National Monument*, however, remains that which results from the expenditures of the federal government and visitors to the Monument. Whether or not mining and grazing activity on Monument land has significantly decreased the economic impact of recreational or other use of the land has not been determined.

Summary

Organ Pipe Cactus National Monument *as an operating organization* presently has a direct economic impact of about \$170,000 per year on the area in which it is located. This results from regular local purchases by the National Park Service of goods and services and the employment of labor, but does not include special construction projects undertaken on an irregular bases.

The direct effects of *visitors* to Organ Pipe Cactus National Monument on the local economy are much greater. The bulk of this visitor effect is created by the presence in the area of overnight visitors. In the travel year extending from September 1967 through August 1968, such overnight visitors at Organ Pipe Cactus National Monument contributed more than \$541,000 to the local economy. More than half of this contribution came through expenditures made for the operation and maintenance of motor vehicles in travelling to, away from, and at the Monument. An additional major amount was spent on food and beverage expenses while staying in or travelling through Southwestern Arizona and nearby areas. Almost three-fifths of the total amount spent locally by overnight visitors was spent in Pima County. Another fourth was contributed to the economy of Yuma County, and a somewhat lesser amount was spent in Maricopa County and other parts of Arizona including Mohave, Santa Cruz, and Pinal Counties. Relatively small amounts were spent by these visitors in nearby communities of Mexico and California.

Local expenditures by day-use visitors at Organ Pipe Cactus National Monument during the 1967-68 travel year amounted to less than one-tenth of the total spent by overnight visitors. The total of over \$49,000 spent in the area by these day-use visitors was largely in the form of gasoline and other automotive-related goods and services purchased while in the immediate vicinity of the Monument. Through-travel visitors at Organ Pipe Cactus National Monument during the same travel year spent almost \$83,000 in the immediate vicinity, but these expenditures cannot be attributed primarily to the presence of Organ Pipe Cactus National Monument.

The total impact, both of Organ Pipe Cactus National Monument itself and its visitors on economic activities in Southwestern Arizona during the 1967-68 travel year amounted to approximately \$760,000. This does not include the contribution of the Monument's land to the agricultural sector in Western Pima County nor to mineral activity in the area. Grazing activity in recent years has had an impact of about \$135,000 annually. The effect on the minerals sector has been relatively negligible.

APPENDIX

METHODOLOGY OF THE STUDY

Overnight Visitor Characteristics and Expenditures

Estimates of the characteristics, travel patterns, and expenditure patterns of overnight visitors (campers) at Organ Pipe Cactus National Monument for the 1967-68 travel season contained in this report are based on statistical inference from data obtained from a representative sample of 464 overnight visitor parties during the winter travel season. The sample of interviewees was chosen on a two-stage combined judgment and periodic sampling basis. In the first stage, interviewing days were selected approximately 15 days apart during the period extending from November 1967 through April 1968. An attempt was made to include each of the seven days of the week in the sample and to include both holiday (Thanksgiving, Christmas, New Years, and Easter) periods as well as non-holiday periods. In the final selection, however, the availability of interviewer personnel necessitated some minor adjustments in the data collection schedule. Interviewing was actually begun on November 24, 1967, and concluded on April 12, 1968.

In the second stage of the sampling process, a periodic selection of overnight visitor parties was interviewed on each sample interview day. Using three interviewers, visitor parties occupying space in the Monument's designated campground were contacted in a systematic manner. Starting at about 10:00 a.m. on each interview day, one interviewer would start at each end of the campground and contact every visitor party in every other row of campsites. Normally the third interviewer would start in the middle row and contact each visitor party in every row of sites, working outward from the middle. Interviewing would be halted at approximately 4:00 p.m. each day, primarily because of approaching dusk.

A total of 464 visitor parties were contacted over the approximately five-months period of interviewing. None of the parties contacted refused to cooperate, although one visitor (the same elderly man mentioned in the body of the report as having the one unfavorable opinion of National Park Service personnel) was initially reluctant. After an hour of friendly discussion, however, he too willingly provided virtually all of the information sought by the interviewer. Despite the extremely high degree of general interviewee cooperation, some could not or would not respond to specific items in the questionnaire. As a result, non-response bias could not be completely eliminated, but it is considered to be minimal, and not sufficient to alter the inferences made about the population from the sample data. Specific item non-response was responsible for the variations in sample size noted in the body of the report.

The questionnaire used in the campground survey is shown on the following page. Administration of all nine questions usually required less than five minutes although most of the interviews lasted longer than that because of a high tendency on the part of many interviewees (particularly the elderly) to volunteer additional information and opinions and to question the interviewers about The University of Arizona, the state, and the Southwest.

Answers to the questions have been considered equally reliable in making the necessary statistical inferences but it was apparent that those answers dealing with intentions and specific expenditure amounts were somewhat less reliable than other items of information provided. As a result, expenditure data were rounded to reflect the order of magnitude considered most reliable. This information was further improved by comparisons between responses to questions 7 and 8 and adjustments made where necessary.

In making the statistical inferences about the population from the sample, the responses were treated as though from a simple random sample from an infinite population. The actual sample, however, is considered to be more representative than would a simple random sample of the same size and the results are thus considered by the authors to be more accurate than may be justifiably claimed on a purely statistical basis.

In order to ascertain the representativeness of the actual sample of campground interviewees, complete data on all campground registrations for the same period (November 1967 to April 1968) were secured and compared against information obtained in the personal interviews. For those items of comparable information (e.g., visitor origin, and vehicle type) there appeared to be no significant difference between interview and registration distributions at the 95 percent level of confidence as determined by a standard Chi Square analysis.

Day-Use Visitor Characteristics and Expenditures

Estimates of the characteristics of day-use visitors at Organ Pipe Cactus National Monument during the 1967-68 travel season are based on tabulations of information provided by visitors themselves in a regulation visitor register displayed in the Visitor Center throughout the period of the study. Although some of those providing information on the visitor register were actually overnight visitors, and despite the fact that there was some degree of non-response on the part of actual day-use visitors, spot-checks indicated that the visitor register data accurately reflected the characteristics of day-use visitors to the Monument.

Estimates of the expenditures of day-use visitors are based on daily expenditure data obtained in the campground survey, and the observed and indicated travel patterns and habits of those visiting the Monument for the day only. Estimates of the expenditures of through travellers were developed using a similar methodology.

Vehicle Type: _____ Boat: _____ VT _____
B _____

ORGAN PIPE CACTUS NATIONAL MONUMENT VISITOR SURVEY

GOOD (MORNING, AFTERNOON). WE ARE CONDUCTING A STUDY OF TOURISM FOR THE
UNIVERSITY OF ARIZONA. COULD YOU TELL ME:

1. How many persons are in your party? _____ 1 _____
2. Where is your permanent home? City _____ State _____ 2a _____
c _____
- 3.a. How long have you been here at Organ Pipe Cactus Monument? _____ 3a _____
b. How much longer do you plan to stay? _____ b _____
- 4.a. Have you visited Organ Pipe Cactus National Monument before? Yes ___ No ___ c _____
b. (If Yes) How many times? _____ 4a _____
- 5.a. Have you visited any other places in this area on this trip? Yes ___ No ___ b _____
b. (If Yes) What were they? (1) _____ c _____
(2) _____
(3) _____
- c. Where did you spend the night before arriving? _____ 6a _____
- 6.a. Do you plan to visit any other places while in this area? Yes ___ No ___ b _____
b. (If Yes) What are they? (1) _____
(2) _____
(3) _____ c _____
- c. Where do you plan to spend the night after leaving? _____ 7 _____
7. Could you tell me now much you have spent so far while in this area? _____ 8a _____
8. Could you tell me where and about how much you have spent so far in this
area for these items?

	<u>Where Purchased</u>	<u>Amount</u>	
a. Food and beverages	1. _____	_____	2 _____
	2. _____	_____	3 _____
	3. _____	_____	bl _____
b. Vehicle expense	1. _____	_____	2 _____
	2. _____	_____	3 _____
	3. _____	_____	cl _____
c. Camping and Admission fees	1. _____	_____	2 _____
	2. _____	_____	3 _____
	3. _____	_____	dl _____
d. Other	1. _____	_____	2 _____
	2. _____	_____	3 _____
	3. _____	_____	
9. Would you tell me about how old you are? _____ 9 _____

THANK YOU

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